RBGB

Bio- and Genome Bank, Denmark

ANNUAL REPORT 2025

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Preface

RBGB: A national infrastructure

Bio- and Genome Bank Denmark (RBGB) provides a national infrastructure for the collection of high-quality biological material and data. The main purpose of RBGB is to support diagnostics by ensuring biological material for patients current and future treatment. Through national and international collaborations, RBGB supports health research and contribute to the development and implementation of personalized medicine and targeted treatments (figure 1).

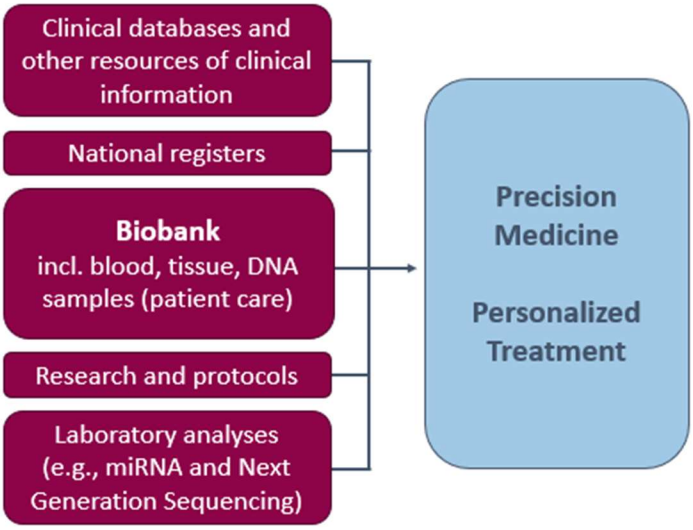

Figure 1. RBGBs contribution to personalized medicine. The figure illustrates important factors that contribute to making personalized medicine become a reality in the health sector. Clinical databases, national registers, biobanks (e.g. RBGB), research in biomarkers and laboratory analyses (e.g. Next Generation Sequencing) play essential roles.

The infrastructure is continuously expanding and today RBGB consists of 14 biobanks:

Danish Blood Donor Biobank (DBB)
Danish Cancer Biobank (DCB)
Danish Covid-19 Biobank (D19B)
Danish Derma Biobank (DDeB)
Danish Diabetes Biobank (DDB)
Danish Endocrinologic Biobank (DEB)
Danish Eye Biobank (DØB)
Danish Genetic Biobank (DGB)
Danish Heart Biobank (DHB)
Danish Nephro Biobank (DNefB)
Danish Research Biobank (DFB)
Danish Rheumatologic Biobank (DRB)
Danish Screening Biobank (DScB)
Danish Whole Genome Biobank (DWB)

These biobanks are based on national collaborations between hospital departments in Denmark. RBGB has biobank centers situated in every region of the country, ensuring the possibility for a nationwide sample collection and patient inclusion. While centers are mainly located in major cities, they may cover sample collection via satellite centers at every hospital within the region. All biobank centers are headed by a project manager who is responsible for correct handling and registration of samples from all hospital departments connected to their center. The biological material is handled by trained personnel using RBGB instructions

and guidelines to ensure national standardization, high coverage and high-quality sample collection. While samples are stored locally, all data connected to the samples is registered in the online RBGB registry, a nationwide registration system used by all departments and coordinated by the RBGB secretariat.

The structure of RBGB

RBGB is headed by the Regional Directors of Health in a structure consisting of a National Steering Committee (figure 2 and table 1) and a national RBGB secretariat. Each national biobank has a Scientific Advisory Board consisting of project managers from regional biobank centers, representatives of local departments, doctors, and in some cases, patient representatives (figure 2).

The RBGB secretariat, in close cooperation with the Scientific Advisory Boards, is responsible for preparing national recommendations and Standard Operating Procedures (SOPs) applicable to all biobanks, ensuring standardization across biobanks and regions. The national RBGB secretariat is situated at the Department of Pathology, Herlev and Gentofte Hospital, Herlev. The secretariat is engaged in general administrative tasks; knowledge-sharing; coordination among biobanks, biobank centers, and local departments; supporting registration and continued optimization of the RBGB registry; and is responsible for updating and maintaining the RBGB homepage and LinkedIn profile. It also provides legal consultation to ensure that collection of samples is facilitated in accordance with national laws. Furthermore, they manage requests from clinicians, researchers, and other stakeholders.

With the initiation of the Danish Regions' Project on Personalized Medicine, the Board for Danish Regions has agreed on a set of criteria for biobanks to be included in the RBGB infrastructure. These criteria are described in the document entitled *"Princippapir for RBGB"*, which includes the main principles of the organization. Both current and future biobanks must comply with these principles, whilst the infrastructure must be able to accommodate current and new biobanks. The Regional Health Directors have appointed Regional Chief Executive Jesper Gyllenborg as Head of the National Steering Committee, and Estrid Høgdall as Director of RBGB.

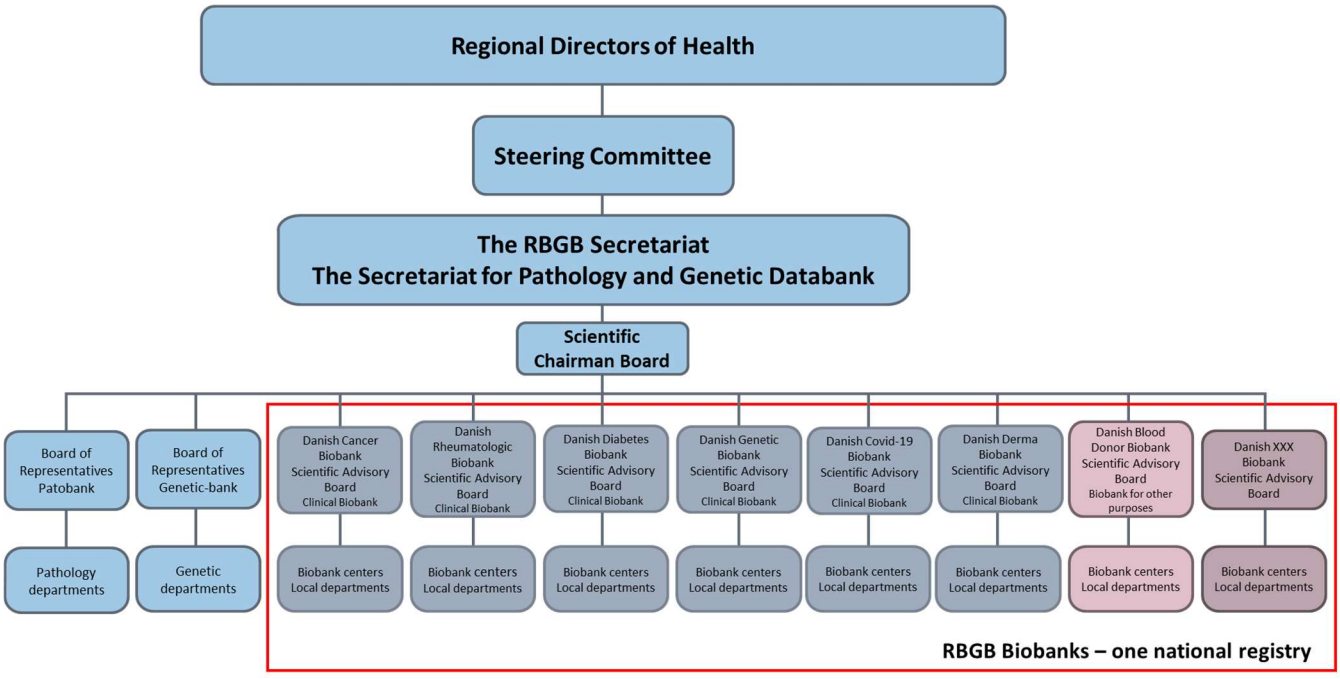

Figure 2. Organization of RBGB. The figure shows how RBGB is organized with a Steering Committee, a national Secretariat, and Scientific Advisory Boards for present and future biobanks.

Name	Position	Organization	Workplace
Chairman			
Jesper Gyllenborg	Regional Chief Executive	Region Zealand	Region Zealand
Members			
Randi Brinckmann	Deputy Chief Executive, Centre Director, Centre of Diagnostic Investigation	Capital Region of Denmark	Rigshospitalet
Lars Dyrskjøt Andersen	Professor	Central Denmark Region	Aarhus University Hospital
Thomas Birk Kristiansen	Physician	The Danish College of General Practitioners	General Practice
Anne Tjønneland	Professor	Danish Patients	Danish Cancer Society
Ruth Frikke-Schmidt	Professor	Organization of Danish Medical Societies	Rigshospitalet
Anne-Marie Vangsted	Executive Vice President for Biobank	Statens Serum Institut	Statens Serum Institut
Karen Julie Gehl	Professor	Region Zealand	Zealand University Hospital
Anne-Katrine Skovby Lindquist	Consultant	Danish Regions	Danish Regions
Stefan Starup Jeppesen	Medical Director	Region of Southern Denmark	University Hospital of Southern Denmark
Jan Nybo	Chief Physician	North Denmark Region	Aalborg University Hospital
Henrik Ancher Sørensen	Senior Consultant Physician	Region Zealand	Region Zealand Headquarters
Estrid Høgdall	Director of RBGB	RBGB	Herlev Hospital

Table 1. Members of the National Steering Committee for RBGB, 2025.

Overview of Biobanks in RBGB

As RBGB expands with new biobanks, samples are contributed by a diverse cohort of patients across multiple clinical areas, as well as from healthy donors, representing a broad spectrum of diseases, diagnostic groups, and research initiatives within the biobanks. While RBGB consists of 14 biobanks, some are yet to be nationally implemented (table 2).

DCB and the RBGB registry has existed since January 1st, 2010. On May 1st, 2015, DRB started the collection of material and online registration, and from January 1st, 2017, DBB joined the RBGB infrastructure with their collection of blood samples, DNA extracts, and registration in the RBGB registry. These three are all nationally implemented with a continuous high activity in sample collection and research requests. From March 2020, D19B was established to ensure collection and registration of blood samples from patients suspected of or diagnosed with Covid-19. The biobank quickly became national with a sample collection reflecting the general infection level of the population. As infection rates declined, activity within the biobank decreased accordingly.

DGB started registration of samples in the RBGB registry from Biobank Center Aalborg in 2020 and Biobank Center Rigshospitalet in 2022. DDeB started inclusion of their first samples in February 2022 and with sustained high activity, the biobank is expected to expand beyond Gentofte Hospital in the coming years. In

2022, DScB started registration of samples and have so far registered samples dating back to 2014. Since 2023, the RBGB infrastructure has continued to expand with the approval of additional biobanks, including DWB, DØB, and DEB in 2023, DNefB in 2024, and lastly DHB in 2025. These newly established biobanks are currently in the process of initiating patient inclusion or preparing projects to support upcoming inclusion. Both DNefB and DHB are expected to be nationally implemented in 2026.

Region	Biobank Center	Biobanks
Capital Region of Denmark	Herlev & Gentofte Hospital	DCB, D19B, DDeB, DNefB
	Rigshospitalet	DCB, DRB, DBB, D19B, DGB, DEB, DØB
Region Zealand	Zealand university Hospital (Næstved)	DCB, DRB, DBB, D19B
Region of Southern Denmark	Odense University Hospital	DCB, DRB, D19B
	Danish Hospital for Rheumatic Diseases (Sønderborg)	DRB
Central Denmark Region	Aarhus University Hospital	DCB, DRB, DBB, D19B, DGB, DEB
Region of Northern Denmark	Aalborg University Hospital	DCB, DRB, D19B, DGB

Table 2. Established Biobank Centers. The table provides an overview of established centers and the biobanks collecting from the center in 2025. Each centers covers multiple collection sites within the region.

The Annual Report 2025

This annual report describes the activity in the nationally implemented biobanks DCB, DRB and DBB in 2025 based on 8 general indicators (a description of the indicators is provided in section 13). Furthermore, the report provides a short overview of the biobanks: D19B, DDeB, DScB, DGB, DWB and DEB. Further expansion is anticipated in the coming years, both in terms of additional biobanks being incorporated into future annual reports and an overall increase in the number of biobanks integrated into the RBGB infrastructure.

Data is collected from the national RBGB registry, Patobank, the Danish nationwide quality register DANBIO, and from the Danish Blood Donor Study. The report is prepared by the RBGB secretariat and based on data from the period January 1st to December 31st, 2025, extracted January 31st, 2026.

0. Overview of Bio- and Genome Bank Denmark

As of 2025, four of the 14 biobanks in Bio- and Genome Bank Denmark (RBGB) are nationally implemented biobanks: Danish Cancer Biobank (DCB), Danish Rheumatologic Biobank (DRB), Danish Blood Donor Biobank (DBB) and Danish Covid-19 Biobank (D19B). DCB has collected blood and tissue since 2010 and in 2013, the biobank was expanded with the collection of hematological samples (bone marrow and hematological blood). In DRB, the collection started in May 2015. DBB started collecting materials in RBGB from January 2017. DBB collects blood samples from healthy donors included in the Danish Blood Donor Study. D19B was established in March 2020 to ensure collection and registration of blood samples from patients infected or suspected of infection with Covid-19. Due to the public infection status, the activity in D19B has decreased.

Figure 0.1.1 shows the development in the total number of unique patients/donors in DCB, DRB, DBB and D19B from 2010-2025, whereas figure 0.1.2 shows the number of biological materials collected. In 2025, RBGB received 51,802 blood materials, 8,630 tissue materials, and 670 bone marrow materials from 40,663, 5,225 and 655 unique patients/donors, respectively, in the four biobanks (figure 0.1.1 and 0.1.2). Furthermore, 2,613 patients were registered without material in RBGB. These are primarily reported in DCB and may be cases where there has not been sufficient material for the biobank (e.g., due to small tumors). Patient registration without material is recorded as part of quality assurance demonstrating that the laboratory was prepared to receive and handle the material. The departments are not funded for patients registered without material.

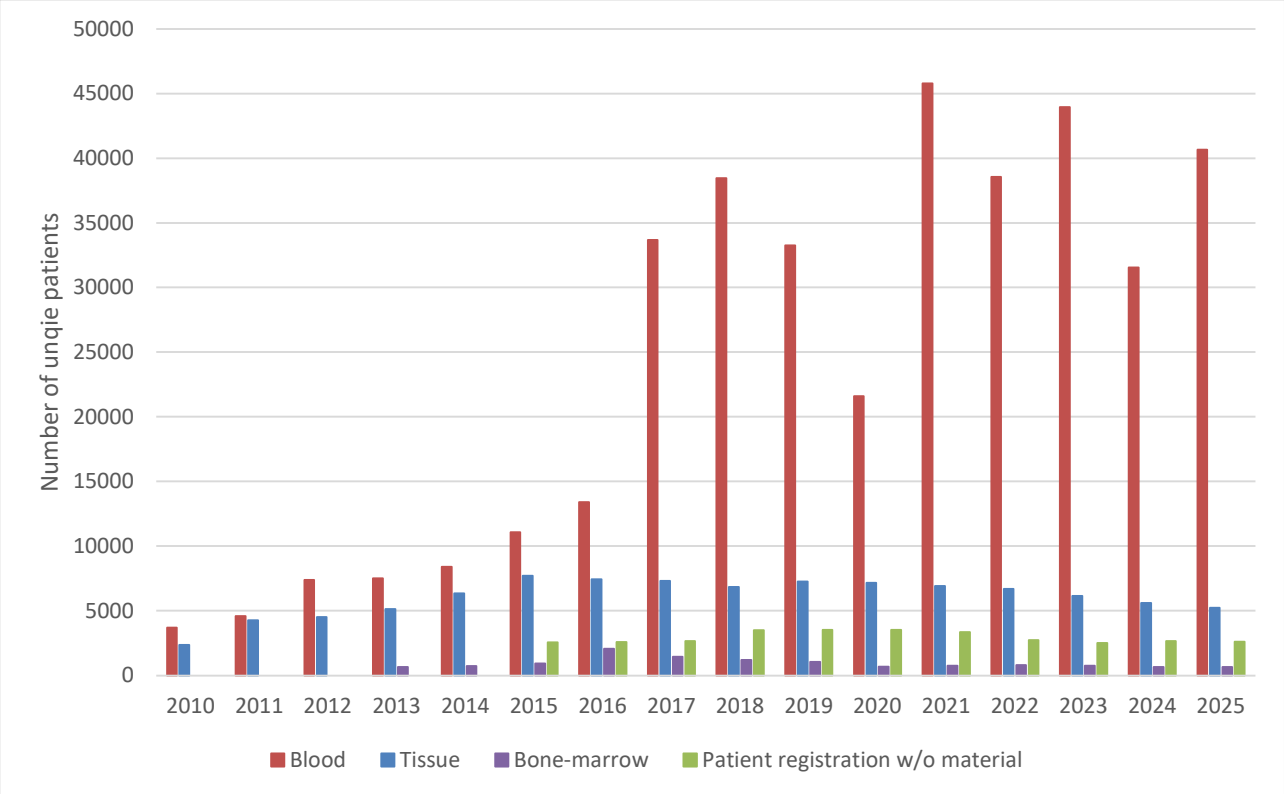

Figure 0.1.1. **Number of unique patients/donors in DCB, DRB, DBB and D19B, 2010-2025.** The figure shows the number of unique patients and donors, who have provided blood (red incl. hematological blood), tissue (blue) and bone marrow

(purple) to DCB, DRB, DBB and D19B from 2010-2025. Patient registration without material (green) refers to patients that have been registered without biological material. *From 2025 and onwards, the number of unique patients includes the archive samples registered in DBB that year.

The increase in the number of blood samples from 2014 to 2015 (figure 0.1.2) reflects the establishment of DRB in 2015. In 2017, an even more pronounced increase in the number of blood samples in RBGB is observed due to the establishment of DBB. Tissue and bone marrow materials are only collected in DCB, but at a stable level. In 2020, the number of blood samples collected decreased significantly compared to previous years. This is despite the fact, that a new biobank (D19B) was established, which usually leads to an increase in sample numbers. Even though blood samples were collected in D19B, the Covid-19 pandemic had an overall negative effect on the collection of blood samples. This was particularly apparent in DRB and DBB where the last mentioned had to suspend inclusion of donors most of the year. In 2021, a large increase in the collection of blood samples was observed, primarily due to two factors: 1) DBB significantly increased their inclusion of donors after almost a full year of lockdown from the Covid-19 pandemic and 2) D19B continued to collect samples, especially center Rigshospitalet collected a high number for a vaccine study. In 2022, a general decline in blood sample collection was observed compared to 2021, followed by a continued decrease in subsequent years, largely attributed to the overall infection situation in Denmark. In 2025, the collection of bone marrow remained relatively stable compared to previous years, while blood materials showed an increase compared to 2024. The number of tissue materials has minor fluctuations over the years and in 2025, the collection shows a decrease from 2024. The two figures also show that each year the total number of materials (figure 0.1.2) exceeds the number of unique patients/donors (figure 0.1.1), reflecting multiple samplings from the same patient. This shows that there is focus on longitudinal sample collection over the course of a patient's disease and/or treatment.

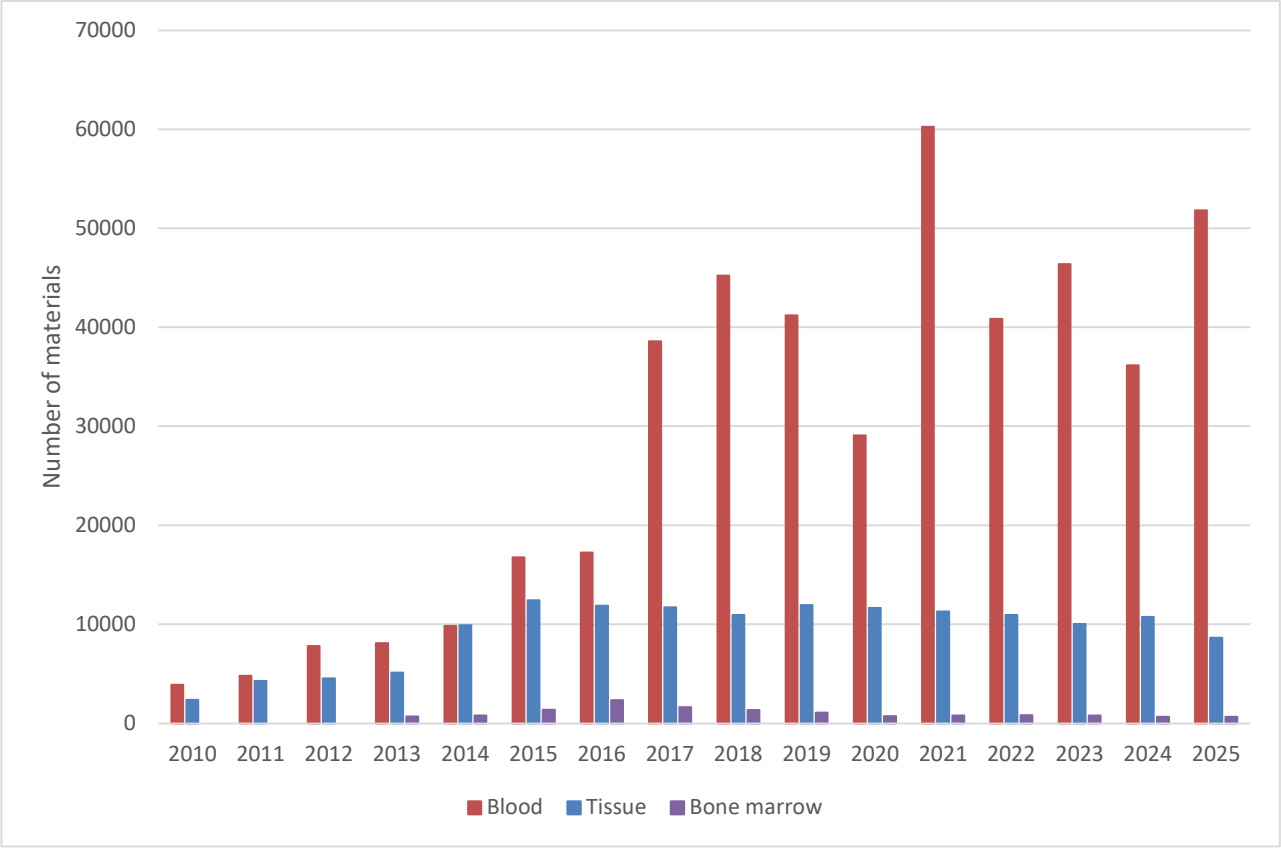

Figure 0.1.2. Number of materials in DCB, DRB, DBB and D19B, 2010-2025. The figure shows the number of blood (red), tissue (blue) and bone marrow (purple) materials collected in DCB, DRB, DBB and D19B each year from 2010-2025. *From 2025 and onwards, the number of unique materials includes the archive samples registered in DBB that year.

Several additional biobanks have recently initiated sample collection and metadata registration in the RBGB registry, including the Danish Derma Biobank (DDeB), the Danish Genetic Biobank (DGB), the Danish Whole-Genome Biobank (DWB), the Danish Screening Biobank (DScB), and the Danish Endocrinological Biobank (DEB). The Danish Derma Biobank (DDeB) began patient inclusion in February 2022, with sample collection steadily increasing through to 2025 where they received funding to expand their sample collection again. The Danish Screening Biobank (DScB) primarily imports historical samples, with a total of 42,163 unique materials registered since its inception. Within the Danish Genetic Biobank (DGB), the centres in Aalborg and Rigshospitalet had collectively imported 71,427 unique materials by 2025. The Danish Whole-Genome Biobank (DWB) continues to import samples collected between 2020 and 2025, reaching a total of 11,871 unique materials in the RBGB database by the end of 2025. The Danish Endocrinological Biobank (DEB) has initiated its collection activities, with 311 unique materials registered in RBGB by the end of 2025.

The number of unique donors across the five biobanks is presented in Figure 0.1.3, and the number of unique materials collected is shown in Figure 0.1.4.

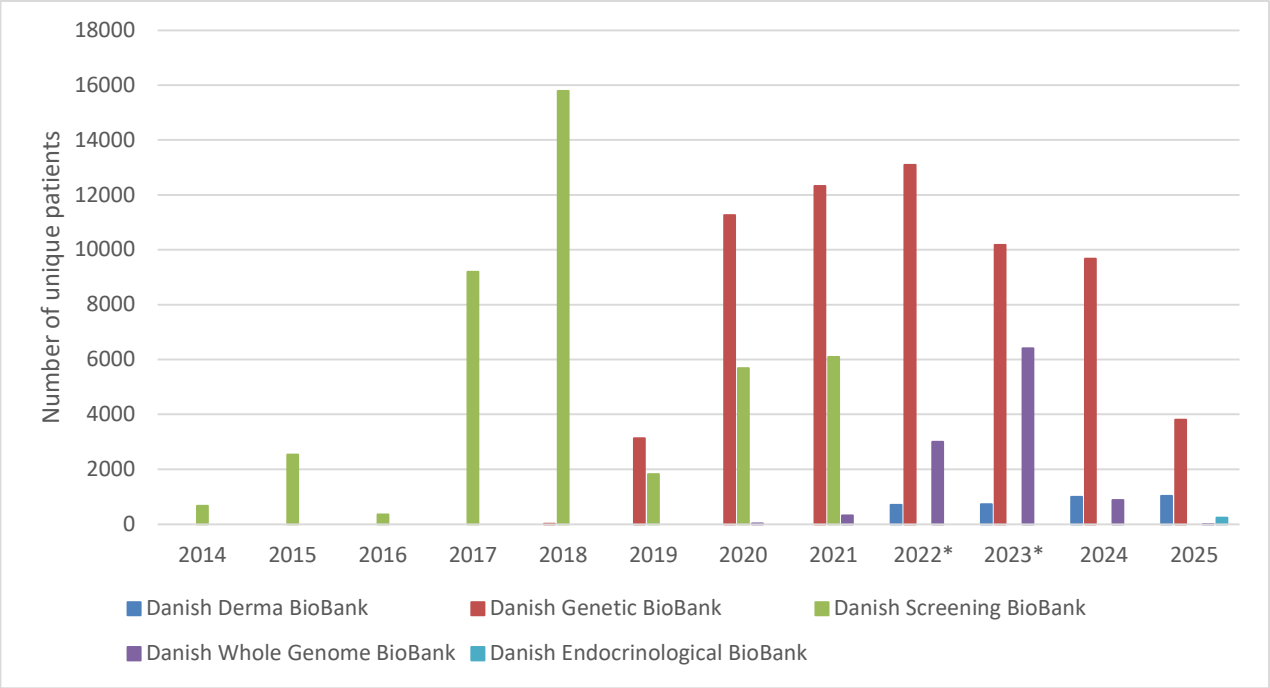

Figure 0.1.3. Number of unique patients/donors in Danish Derma Biobank, Danish Genetic Biobank, Danish Screening Biobank and Danish Whole Genome Biobank, respectively. The figure shows the number of patients in Danish Derma Biobank (blue), Danish Genetic Biobank (red), Danish Screening Biobank (green), Danish Whole Genome Biobank (purple) and Danish Endocrinological Biobank (aqua) who have provided materials in RBGB from 2014-2025. *Indicate that the numbers for that given year has been updated with the annual report in 2024 for DWB, due to not all data being updated for the 2023 annual report.

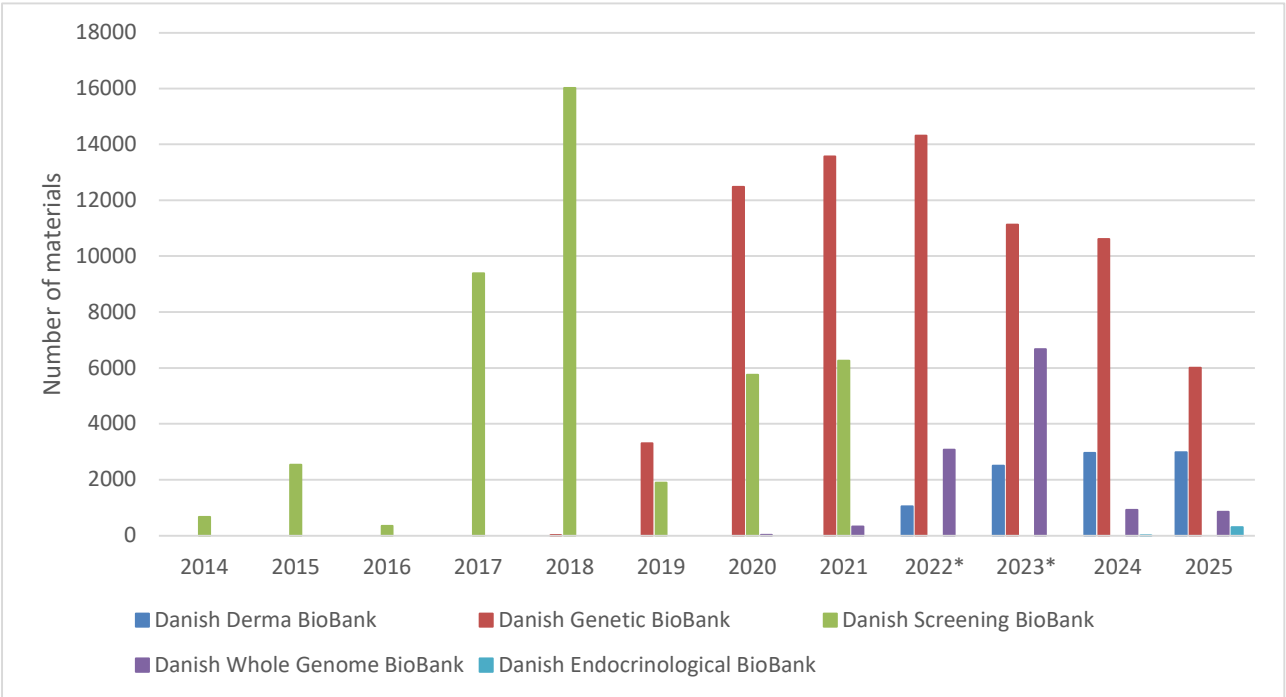

Figure 0.1.4. Number of unique materials in Danish Derma Biobank, Danish Genetic Biobank, Danish Screening Biobank and Danish Whole Genome Biobank, respectively. The figure shows the number of unique materials collected in Danish Derma Biobank (blue), Danish Genetic Biobank (red), Danish Screening Biobank (green), Danish Whole

Genome Biobank (purple) and Danish Endocrinological Biobank (aqua) in RBGB from 2014-2025. *Indication that the numbers for that given year have been updated with the annual report in 2024 for DWB, due to not all data being updated for the 2023 annual report.

1. Danish Cancer Biobank

1.1. Foreword

The Danish Cancer Biobank (DCB) is a national collaboration between hospital departments, which handle blood, tissue, and other materials from cancer patients. The staff working in DCB are biomedical laboratory scientists, molecular biologists, medical doctors, nurses, biologists, and secretaries from hospitals across Denmark. The primary purpose of DCB is to accommodate the need for biological samples in diagnostics and treatment for present and future cancer patients. Furthermore, DCB aims to strengthen the infrastructure for clinical cancer research all together to help achieve the goal of personalized medicine.

A Scientific Advisory Board has been appointed for DCB to follow the development of DCB and ensure the daily workflow. The tasks of the Scientific Advisory Board include:

1. Developing and maintaining recommendations for national procedures for the collection, handling, freezing and storage of blood and tissue materials from patients with newly diagnosed cancer or undergoing treatment.
2. Preparing and maintaining laboratory guidelines/SOPs adapted to central/local conditions.
3. Ensuring the quality of national procedures regarding handling of blood and tissue.
4. Developing and maintaining requirement specifications for the national RBGB registry and ensuring the continued development of it.
5. Ensuring high coverage and high data quality in the RBGB registry.
6. Preparing and maintaining contract templates for collaborations with Danish Multidisciplinary Cancer Groups (DMCGs) and other researchers.
7. Preparing and maintaining guidelines for sample retrieval approved by the National Steering Committee
8. Developing and maintaining RBGB patient information and statements.
9. Ensuring cooperation across all biobanks in RBGB and harmonization between the biobanks.

On behalf of the Scientific Advisory Board for the Danish Cancer Biobank
The members of the Scientific Advisory Board can be seen in appendix 12.1.0.

1.2 Overview of DCB, 2023-2025

In 2025, DCB received tissue, blood, and bone marrow from 5,225, 6,515 and 655 unique patients respectively (figure 1.2.1). Additionally, 41,721 valuable archive samples (blood) from 2,509 unique patients were located and registered to the RBGB registry (data not included in figures due to historical sample dates). Yet, the last three years have seen a steady decline across all three materials.

Figure 1.2.1 also shows that in 2025, 2,613 patients without materials were registered maintaining the same level as 2024. The lack of material may be due to patients diagnosed with small tumors where the entire tumor is used for diagnostic purposes, leaving no material for the biobank. Patient registration without material is recorded for quality assurance purposes i.e., to show that the laboratories (mainly Department of Pathologys) were ready to handle the material, but for varying reasons no biological material was included in RBGB. The departments are not funded for patient registrations without material.

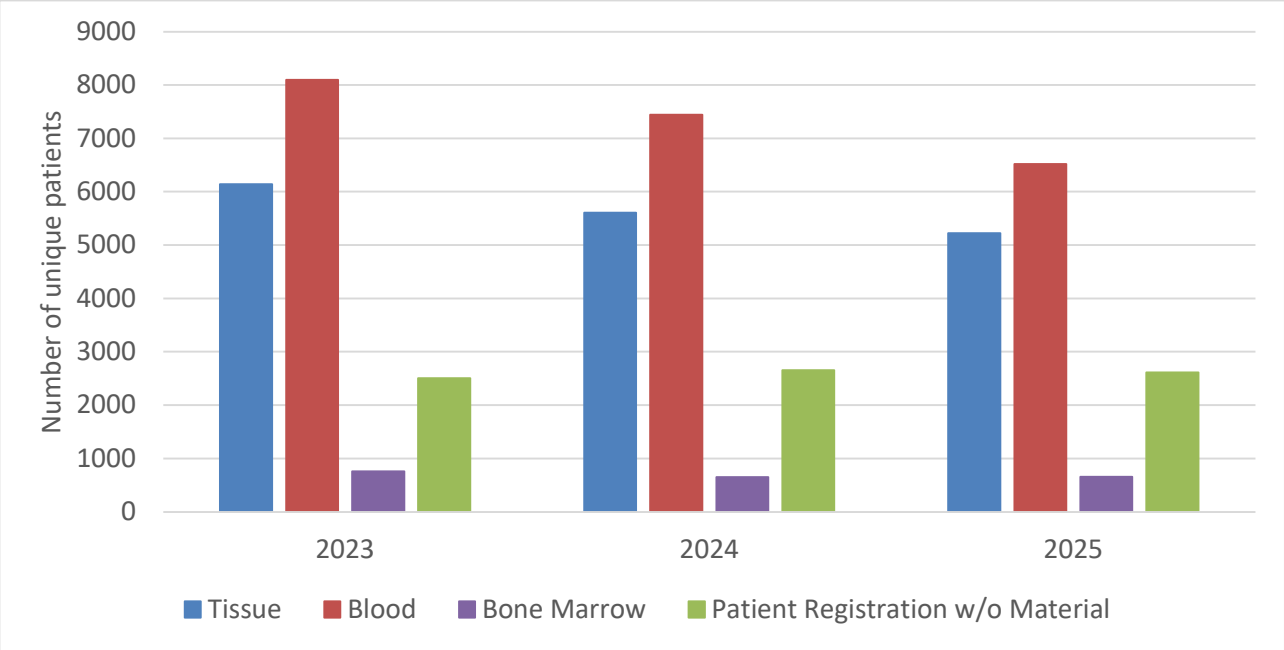

Figure 1.2.1. **DCB**. **Number of unique patients per year, 2023-2025.** The figure shows the number of unique patients, who have provided material from 2023-2025. The number of unique patients is calculated for each material type – tissue (blue), blood (red) and bone marrow (purple). Patient registration w/o material (green) refers to patient registrations without material.

Figure 1.2.2 shows the number of unique patients included in DCB each month in 2025. Although some month-to-month variation was observed, the overall distribution remained stable throughout the year, with no notable trends or significant fluctuations. Due to high serial sampling of blood, the sum of unique patients each month is higher than the total number of unique patients in 2025.

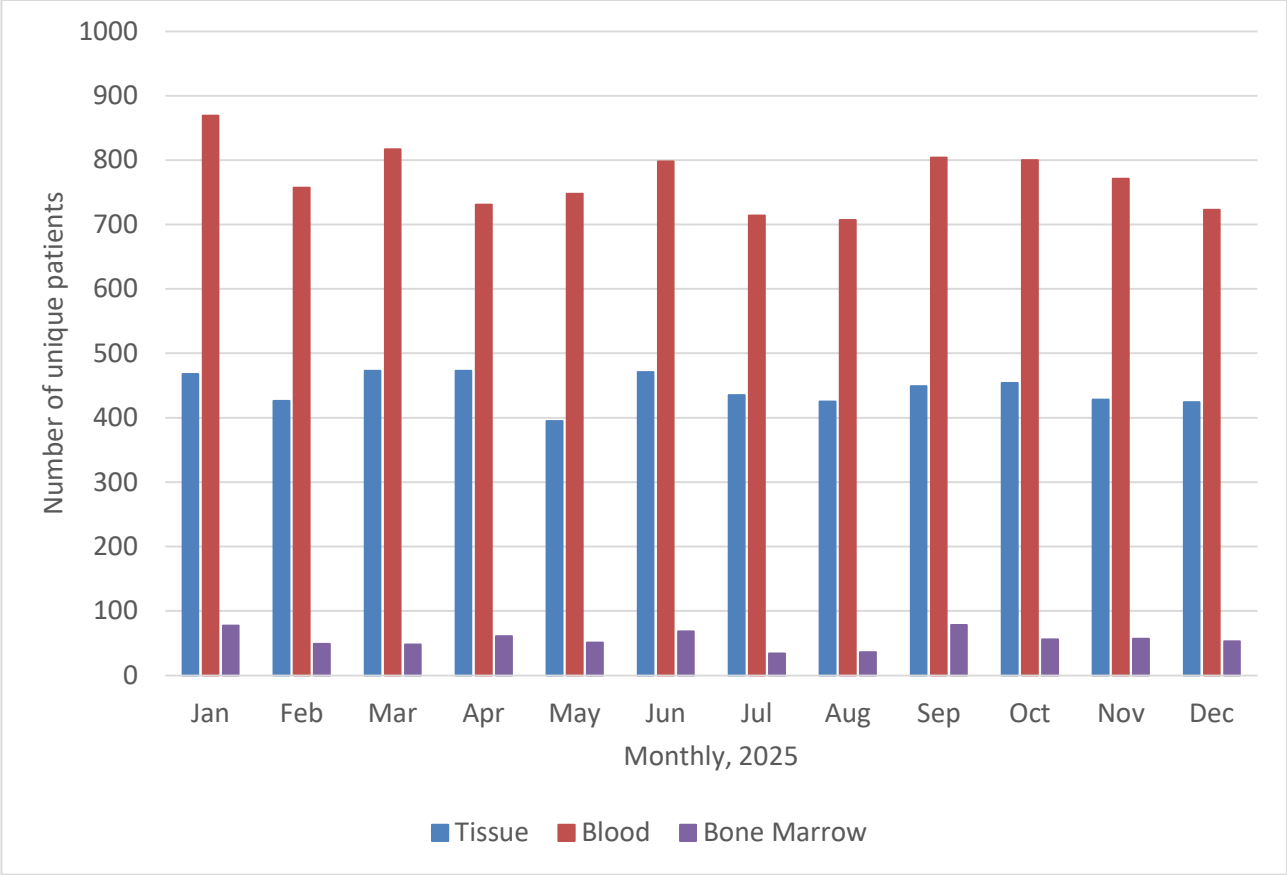

Figure 1.2.2. DCB. **Number of unique patients included each month, 2025.** The figure shows the monthly number of unique patients, from whom DCB has received tissue, blood (incl. hematological blood), and bone marrow.

Figure 1.2.3 shows the number of unique patients included in each center from 2023-2025. The number of unique patients providing tissue has continued declining in Biobank Center Rigshospitalet and Herlev. Region Sjælland and Aalborg have bounced back and stopped their decline while the last biobank centers have maintained comparable levels.

The inclusion of unique patients providing blood is also mixed. Herlev and Rigshospitalet have by far seen the largest and consistent decline, including less patients than previous years. The decline at center Aarhus is less pronounced. Odense and Region Sjælland have maintained their consistent levels with some variance year-to-year. Biobank center Aalborg is trending to increase the inclusion of unique patients providing blood.

The inclusion of unique patients providing bone marrow is lower than tissue and blood meaning that larger variance is expected. All biobank centers that sample bone marrow have included a consistent number of patients. It is worth noticing that Aarhus biobank center has seen a steady increase over the last three years.

In 2021 the inclusion of hematology patients moved from Herlev to Rigshospitalet, so there is no longer inclusion of patients in Center Herlev. Likewise, in center Region Sjælland there is no collection of bone marrow in DCB (figure 1.2.3).

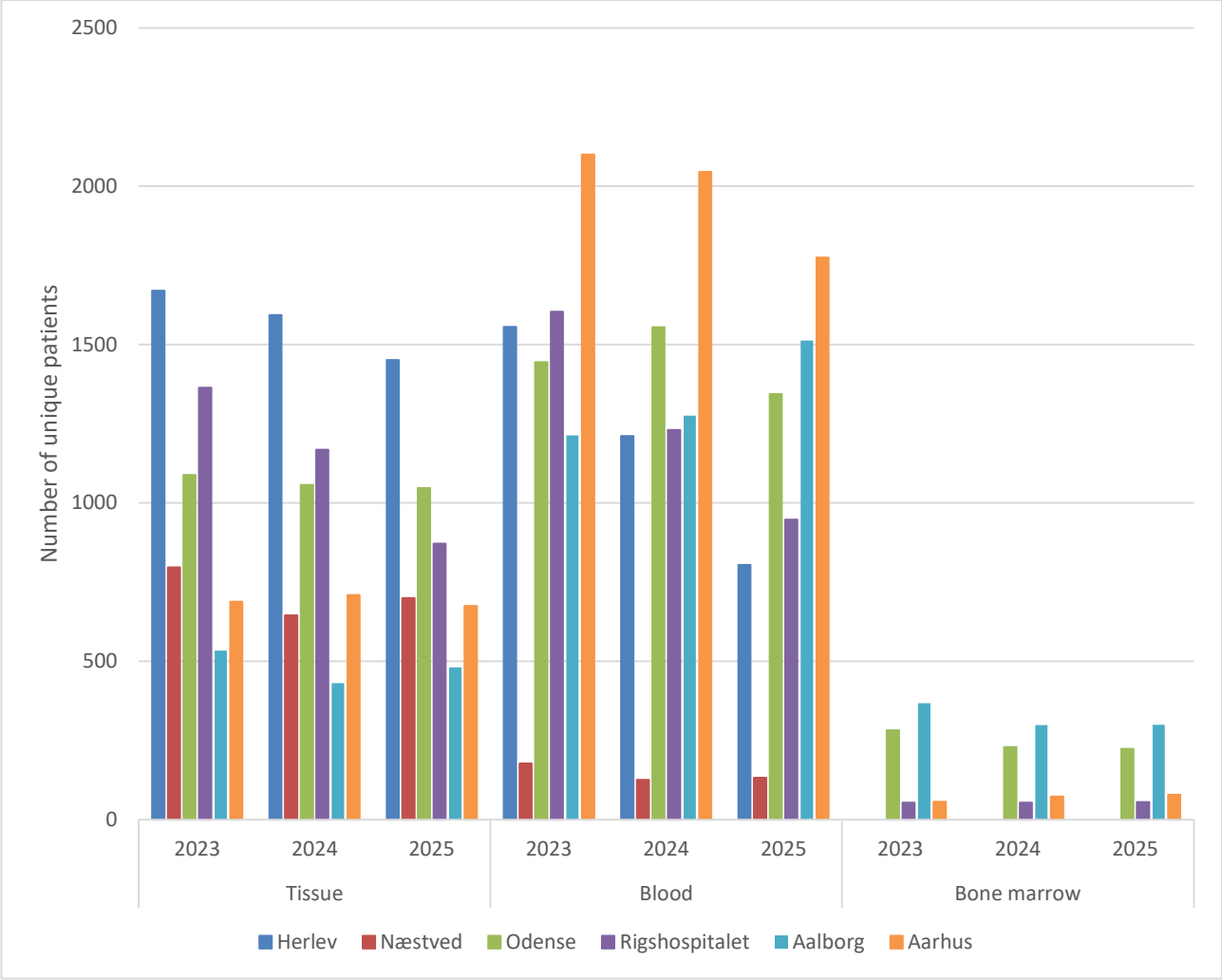

Figure 1.2.3. DCB. Number of unique patients per center, 2023-2025. The figure shows the number of unique patients providing tissue, blood, or bone marrow in each of the six biobank centers in DCB from 2023-2025.

Please note that the number of unique patients in figures 1.2.1 and 1.2.3 does not necessarily equate to one another. This is because the sampling of patients can happen across multiple biobank centers throughout a year, resulting in the discrepancy between the two figures.

	Number of unique patients		
2025	**Tissue**	**Blood**	**Bone marrow**
Herlev CancerBiobank Center			
Department of Clinical Biochemistry, Herlev Hospital	0	710	0
Department of Pathology, Herlev Hospital	1,451	94	0
Department of Haematology, Herlev Hospital	0	<10	<10
Region Sjælland CancerBiobank Center			
Department of Clinical Biochemistry, Holbæk	0	<10	0
Department of Clinical Biochemistry, Region Sjælland	0	30	0
Department of Clinical Biochemistry, Roskilde	0	<10	0
Department of Clinical Biochemistry, Køge	0	11	0
Department of Clinical Biochemistry, Slagelse	0	82	0

Department of Pathology, Roskilde	700	0	0
Odense CancerBiobank Center			
Department of Clinical Biochemistry, Odense University Hospital	0	623	0
Department of Clinical Biochemistry, Svendborg	0	139	0
Department of Clinical Diagnostics, Esbjerg	0	373	0
Department of Clinical Biochemistry, Vejle	0	85	0
Department of Clinical Biochemistry, Sygehus Sønderjylland	0	81	0
Clinical Department of Pathology, Odense University Hospital	904	<10	<10
Department of Pathology, Esbjerg	75	0	0
Clinical Department of Pathology, Vejle Hospital	68	0	0
Haematology Department, Odense University Hospital	0	41	220
Rigshospitalet CancerBiobank Center			
Blood Bank, Amager and Hvidovre Hospital	0	<10	<10
Department of Clinical Immunology, Blood Bank, Rigshospitalet	0	699	0
Department of Clinical Immunology, Blood Bank, Hillerød	0	699	0
Department of Clinical Biochemistry, Bispebjerg & Frederiksbjerg Hospitals	0	26	0
Department of Pathology, Rigshospitalet	819	137	13
Department of Pathology, Amager and Hvidovre hospital	52	0	0
Department of Haematology, Rigshospitalet	0	50	42
Aalborg CancerBiobank Center			
Clinical Biochemistry, Aalborg University Hospital	0	1,197	0
Institute of Pathology, Aalborg University Hospital	479	<10	<10
Institute of Pathology, Hjørring Regional Hospital	0	<10	<10
Haematology Outpatient Clinic, Aalborg University Hospital	<10	310	295
Aarhus CancerBiobank Center			
Department of Clinical Biochemistry PJJ, Aarhus University Hospital	0	1,245	0
Molecular Medicine Department, Aarhus University Hospital	0	451	0
Department of Clinical Biochemistry, Randers Regional Hospital	0	<10	<10
Institute of Pathology, Randers Regional Hospital	114	0	0
Institute of Pathology Viborg, Central Hospital Unit	94	0	0
Institute of Pathology, Aarhus University Hospital	467	11	10
Haematology Department R, Aarhus University Hospital	0	68	68
2024	**Tissue**	**Blood**	**Bone marrow**
Herlev CancerBiobank Center			
Department of Clinical Biochemistry, Herlev Hospital	0	1,136	0
Department of Pathology, Herlev Hospital	1,593	75	0
Department of Haematology, Herlev Hospital	0	0	0
Region Sjælland CancerBiobank Center			
Department of Clinical Biochemistry, Holbæk	0	<10	0
Department of Clinical Biochemistry, Region Sjælland	0	22	0
Department of Clinical Biochemistry, Roskilde	0	<10	0
Department of Clinical Biochemistry, Køge	0	<10	0
Department of Clinical Biochemistry, Slagelse	0	92	0

Department of Pathology, Roskilde	645	0	0
Odense CancerBiobank Center			
Department of Clinical Biochemistry, Odense University Hospital-Odense University Hospital	0	777	0
Department of Clinical Biochemistry, Svendborg	0	144	0
Department of Clinical Diagnostics, Esbjerg	0	337	0
Department of Clinical Biochemistry, Vejle	0	95	0
Department of Clinical Biochemistry, Sygehus Sønderjylland	0	148	0
Clinical Department of Pathology, Odense University Hospital	916	<10	<10
Department of Pathology, Esbjerg	80	0	0
Clinical Department of Pathology, Vejle Hospital	61	0	0
Haematology Department, Odense University Hospital	0	53	227
Rigshospitalet CancerBiobank Center			
Blood Bank, Amager and Hvidovre Hospital	0	0	0
Department of Clinical Immunology, Blood Bank, Rigshospitalet	0	950	0
Department of Clinical Immunology, Blood Bank, Hillerød	0	44	0
Department of Clinical Biochemistry, Bispebjerg & Frederiksbjerg Hospitals	0	55	0
Department of Pathology, Rigshospitalet	1,124	125	<10
Department of Pathology, Amager and Hvidovre hospital	44	0	0
Department of Haematology, Rigshospitalet	0	56	48
Aalborg CancerBiobank Center			
Clinical Biochemistry, Aalborg University Hospital	0	940	0
Institute of Pathology, Aalborg University Hospital	427	<10	<10
Institute of Pathology, Hjørring Regional Hospital	0	0	0
Haematology Outpatient Clinic, Aalborg University Hospital	<10	320	295
Aarhus CancerBiobank Center			
Department of Clinical Biochemistry PJJ, Aarhus University Hospital	0	1,422	0
Molecular Medicine Department, Aarhus University Hospital	0	548	0
Department of Clinical Biochemistry, Randers Regional Hospital	0	<10	0
Institute of Pathology, Randers Regional Hospital	106	0	0
Institute of Pathology Viborg, Central Hospital Unit	97	0	0
Institute of Pathology, Aarhus University Hospital	506	12	13
Haematology Department R, Aarhus University Hospital	0	61	60

Table 1.2.1.1 DCB. Number of unique patients per sample collecting department, 2024-2025. The table shows the number of unique patients providing tissue, blood (incl. hematological blood), and bone marrow and their distribution among departments in 2024-2025. For departments with less than 10 unique patients per sample type, the number is given as <10 to ensure anonymity of the patients.

In 2025, DCB registered 8,630 tissue materials, 9,747 blood materials and 670 bone marrow materials (figure 1.2.4). Nationally the total amount of tissue and blood samples have continued the trend of declining while bone marrow has remained steady.

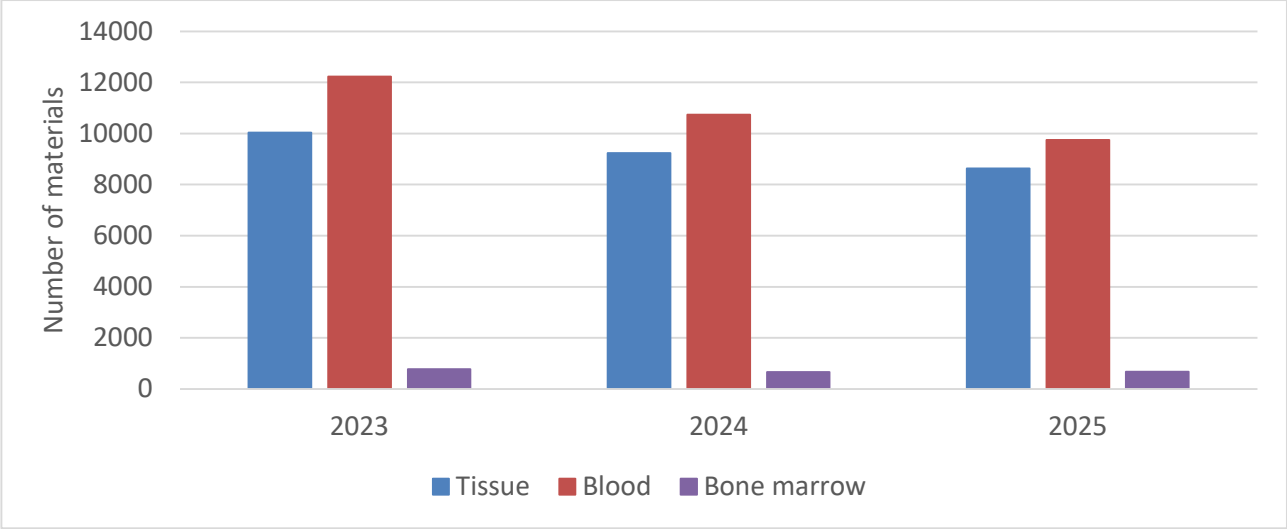

Figure 1.2.4. DCB. Number of materials per year, 2023-2025. The figure shows the number of tissue, blood, and bone marrow materials collected in DCB each year from 2023-2025.

The amount of tissue collected in DCB by each biobank center shows mixed trends (figure 1.2.5). Biobank Center Herlev and Rigshospitalet have declined with the former at a steady rate and the latter more sharply. The rest of the biobank centers have maintained a level trend with some variance year-over-year

The amount of blood materials collected exhibit a significant rise for both Biobank Center Aalborg and Region Sjælland. Odense has maintained a level trend with a small dip for 2025. Finally, Herlev, Rigshospitalet and Aarhus show a decline (figure 1.2.5). However, in 2025 center Rigshospitalet undertook the task of identifying, picking and registering 2,509 archive samples consisting of 41,721 blood fractions from 2,509 patients with colorectal cancer. Although archive samples are not included as part of the indicators as they were not collected in 2025, this effort contributed to the overall activity and value of the biobank.

For bone marrow samples, the inclusion of hematology patients moved from Herlev to Rigshospitalet, and since 2021 there is no longer inclusion of patients in Center Herlev. In Center Region Sjælland, collection of bone marrow in DCB is not implemented (figure 1.2.5). The trend for collection of bone marrow is stable at all biobank centers registered.

The reason that the number of materials collected nationally exceeds the number of unique patients demonstrates that longitudinal sample collection occurs, meaning that some patients provide multiple samples throughout their treatment within a given year.

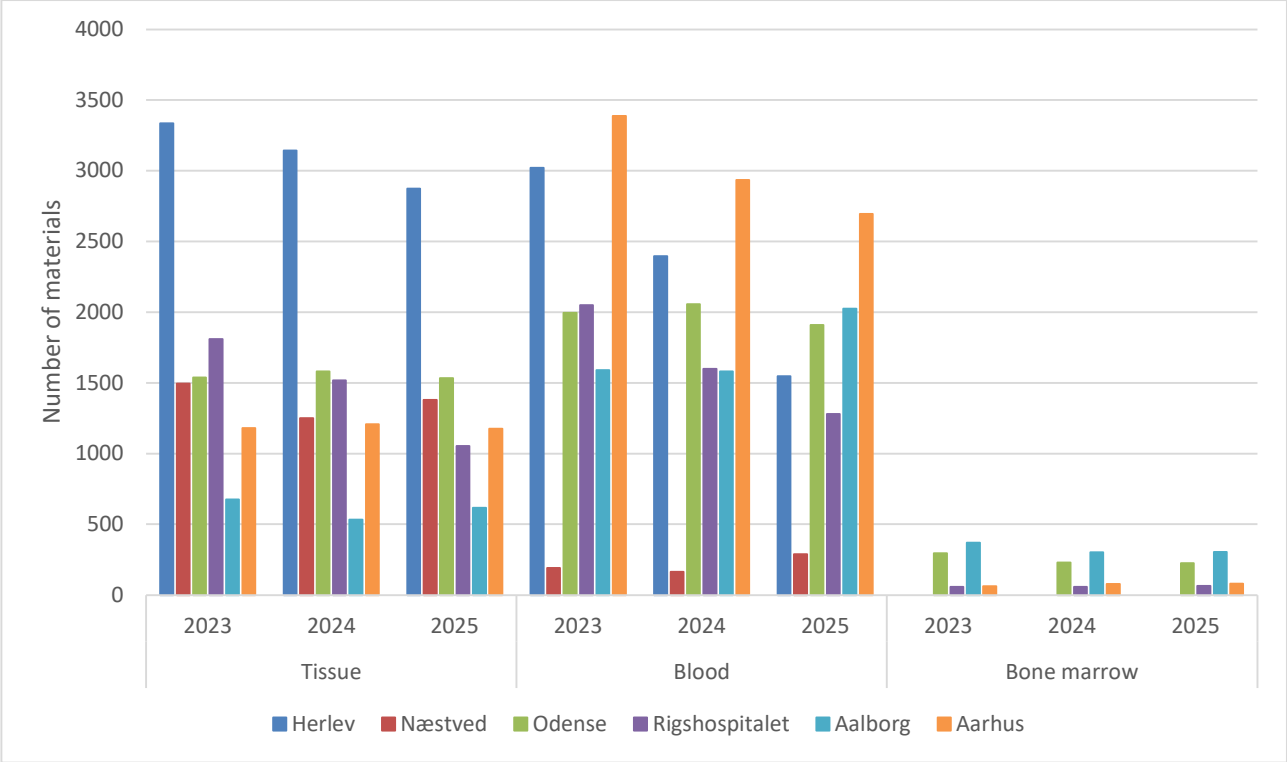

Figure 1.2.5. DCB. Number of materials per center, 2023-2025. The figure shows the number of tissue, blood, and bone marrow materials collected in each center in 2023-2025.

1.3 Indicators, DCB

1.3.1 Indicator 1: Quality of registration

Indicator 1 describes the quality of registration of the samples in DCB. It is important that data registration is completed for all samples in the biobank to ensure high quality of the samples. The indicator is divided into four sections.

Quality goal:
1A: ≥95% of the fractions that should have a freezer position are assigned a freezer position.
1B: ≥95% of the fractions have all three handling time points registered.
1C: <5% of the fractions have an error in registration.
1D: ≥95% of the tissue and bone marrow materials should have a complete registration.

This indicator has been moved to the appendix (12.1) as agreed at the scientific advisory board meeting in 2023. Below is listed whether the quality goal of the indicator has been fulfilled or not. For further detail please see appendix 12.1.

1A. Material with registered freezer position: Quality goal has been fulfilled (appendix 12.1.1.1 and 12.1.1.2).

1B. Material with all handling time points registered: Quality goal is partially fulfilled (the quality goal is met by hematological blood, tissue and bone marrow but not by blood) (appendix 12.1.1.3 and 12.1.1.4).

1C. Materials with an error in time point registration: Quality goal has been fulfilled (appendix 12.1.1.5 and 12.1.1.6)

1D. The number of biological materials that have a complete registration in the RBGB registry: Quality goal has not been fulfilled (appendix 12.1.1.7).

1.3.2 Indicator 2: Sample quality

Indicator 2 describes the quality of the material collected in DCB measured by processing time, which is defined as the period from sampling to freezing. To ensure high quality of the material, the processing time should be as short as possible. According to recommendations, blood (excl. hematological blood) should be processed within 3 hours and tissue within 1 hour. It is recommended that hematological material is handled within the same day or at the latest, the following day. Accordingly, it is recommended that hematological blood and bone marrow should be processed within 36 hours.

The processing time is calculated for standard fractions except PAXgene tubes (blood), FFPE-tissue and RNAlater fractions (tissue) since these are handled differently. Fractions with a time for 'First in freezer' are included in the data. Since fractions with status 'Freezing' ('*Nedfrysning*') does not have the data point, they are omitted.

In order to identify whether prolonged processing time is caused by extended transport time, the transport time is measured for each material as well. The transport time is defined as the time from sampling to sample receival at the laboratory.

Quality goal: ≥90% of the materials are processed within the recommended time.

In DCB 94% of all blood fractions have been processed within 3 hours which is a great improvement from 2024 (88%), meaning the quality goal of this indicator has been met nationally (table 1.3.2.1.). Biobank Center Odense has the lowest percentage at 68%, but it is 6 percentage points better than last year. Biobank Center Aalborg has seen a large increase in the amount of blood fractions for processing. This means that the percentage of blood processed within 3 hours has dropped from 95% to 88%. The other biobank centers have levels comparable to last year.

		Fractions - Processing time	
		Blood	
		Total	**≤ 3 h, % (n)**
2025			
National	**TOTAL**	**68,736**	**94 (64,677)**
Center	Herlev	11,180	93 (10,440)
	Region Sjælland	1,615	99 (1,599)
	Odense	11,496	68 (7,851)
	Rigshospitalet	9,382	95 (8,946)
	Aalborg	17,775	88 (15,777)
	Aarhus	17,288	94 (16,213)
2024			

National	**TOTAL**	**74,831**	**88 (66,145)**
Center	Herlev	17,102	94 (16,154)
	Region Sjælland	1,311	98 (1,287)
	Odense	13,414	62 (8,340)
	Rigshospitalet	11,730	93 (10,909)
	Aalborg	12,410	95 (11,835)
	Aarhus	18,864	93 (17,620)
2023			
National	**TOTAL**	**89,274**	**93 (82,816)**
Center	Herlev	21,606	95 (20,520)
	Region Sjælland	1,513	99 (1,505)
	Odense	17,193	100 (17,156)
	Rigshospitalet	15,177	90 (13,706)
	Aalborg	11,507	94 (10,812)
	Aarhus	22,278	86 (19,117)

Table 1.3.2.1. DCB. Processing time for blood, 2023-2025. The table shows the percentage and number (n) of blood fractions (except PAXgene) that have been processed within the recommended 3 hours. Data are shown for each center from 2023-2025.

The transport time for blood processing has remained consistently high in 2025, matching the levels observed in 2024 (table 1.3.2.2). Over the past three years, the indicator has been stable at a high level, demonstrating sustained performance in transport time. At every biobank center, almost all blood fractions are transported to the laboratories within 3 hours indicating that transport time no longer is a delaying factor in processing time.

		Fractions - Transport time	
		Blood	
		Total	**≤ 3 h, % (n)**
2025			
National	**TOTAL**	**75,450**	**99 (74,364)**
Center	Herlev	11,180	99 (11,018)
	Region Sjælland	1,615	99 (1,599)
	Odense	18,119	100 (18,095)
	Rigshospitalet	9,443	100 (9,402)
	Aalborg	17,775	97 (17,257)
	Aarhus	17,318	98 (16,993)
2024			
National	**TOTAL**	**80,062**	**99 (79,013)**
Center	Herlev	17,102	99 (16,988)
	Region Sjælland	1,311	99 (1,303)

	Odense	18,645	100 (18,629)
	Rigshospitalet	11,730	99 (11,561)
	Aalborg	12,410	98 (12,217)
	Aarhus	18,864	97 (18,315)
2023			
National	**TOTAL**	**90,080**	**98 (88,091)**
Center	Herlev	21,606	99 (2,1396)
	Region Sjælland	1,513	99 (1,505)
	Odense	17,999	100 (17,999)
	Rigshospitalet	15,177	97 (14,773)
	Aalborg	11,507	99 (11,380)
	Aarhus	22,278	94 (21,038)

Table 1.3.2.2. DCB. Transport time for blood, 2023-2025. The table shows the percentage and number (n) of blood fractions that have been transported to the laboratories within 3 hours. Data is shown for each center.

The processing time for hematological blood samples is shown as the percentage of fractions that have been processed within 12 hours, 12-36 hours, and over 36 hours (table 1.3.2.3). The quality goal of this indicator is that 90% of the hematological blood fractions is processed within 36 hours.

Nationally, 92% of hematological blood fractions were processed within 36 hours in 2025 (table 1.3.2.3), and 22% of the fractions were handled the same day (within 12 hours). Biobank Center Odense does not have any samples processed within 36 hours and Biobank Center Rigshospitalet has 15% processed after the deadline. This indicates that both biobank centers are facing challenges that negatively affects processing times. The general trend of less and less hematological blood fractions being processed within 12 hours has continued. From 35% in 2023 to 22% this year. Since the percentage of samples processed within 36 hours has remained stable, this development is not critical. Yet, it is important to note that the sooner the blood is processed the better the quality.

		Fractions - Processing time			
		Hematological blood			
		Total	**≤ 12 h, % (n)**	**12-36 h, % (n)**	**>36 h, % (n)**
2025					
National	**TOTAL**	**6,197**	**22 (1,390)**	**70 (4,330)**	**8 (477)**
Center	Herlev	0	0 (0)	0 (0)	0 (0)
	Region Sjælland	0	0 (0)	0 (0)	0 (0)
	Odense	380	0 (0)	0 (0)	100 (380)
	Rigshospitalet	1,863	21 (384)	64 (1,186)	15 (293)
	Aalborg	3,294	30 (977)	65 (2,150)	9 (293)
	Aarhus	660	4 (29)	93 (614)	3 (17)
2024					
National	**TOTAL**	**6,289**	**26 (1,640)**	**66 (4,141)**	**8 (508)**
Center	Herlev	0	0 (0)	0 (0)	0 (0)

	Region Sjælland	0	0 (0)	0 (0)	0 (0)
	Odense	511	8 (43)	88 (452)	3 (16)
	Rigshospitalet	1,744	15 (255)	69 (1,201)	17 (288)
	Aalborg	3,427	38 (1,286)	57 (1,948)	6 (193)
	Aarhus	607	9 (56)	89 (540)	2 (11)
2023					
National	**TOTAL**	**8,154**	**35 (2,852)**	**61 (4,999)**	**3 (277)**
Center	Herlev	0	0 (0)	0 (0)	0 (0)
	Region Sjælland	0	0 (0)	0 (0)	0 (0)
	Odense	1,434	2 (24)	88 (1,269)	8 (115)
	Rigshospitalet	2,183	39 (854)	56 (1,226)	5 (103)
	Aalborg	3,978	49 (1,955)	49 (1,964)	1 (59)
	Aarhus	559	3 (19)	97 (540)	0 (0)

Table 1.3.2.3. DCB. Processing time for hematological blood, 2023-2025. The table shows the percentage and number (n) of hematological blood fractions that have been processed within 12 hours, 12-36 hours, and over 36 hours. Data are shown for each center from 2023-2025.

The transport time of hematological blood has continued at the level of 2024. Most samples reach the laboratory within 12 hours, but there is still a significant portion arriving later. Biobank Center Rigshospitalet has the greatest challenge with lowering transportation time. Since transport time directly affects processing time, it is important to monitor this development closely to prevent further extensions of the processing time and have as many samples processed within 36 hours, as possible.

		Fractions - Transport time			
		Hematological blood			
		Total	**≤ 12 h, % (n)**	**12-36 h, % (n)**	**>36 h, % (n)**
2025					
National	**TOTAL**	**6,203**	**75 (4,672)**	**22 (1,355)**	**3 (176)**
Center	Herlev	0	0 (0)	0 (0)	0 (0)
	Region Sjælland	0	0 (0)	0 (0)	0 (0)
	Odense	380	92 (350)	8 (30)	0 (0)
	Rigshospitalet	1,863	47 (870)	45 (840)	8 (153)
	Aalborg	3,296	88 (2,900)	11 (373)	1 (23)
	Aarhus	664	83 (552)	17 (112)	0 (0)
2024					
National	**TOTAL**	**6,290**	**75 (4,707)**	**22 (1,354)**	**2 (157)**
Center	Herlev	0	0 (0)	0 (0)	0 (0)
	Region Sjælland	0	0 (0)	0 (0)	0 (0)
	Odense	456	100 (456)	0 (0)	0 (0)
	Rigshospitalet	1,744	48 (840)	45 (785)	7 (119)
	Aalborg	3,428	84 (2,878)	15 (512)	1 (38)
	Aarhus	590	90 (533)	10 (57)	0 (0)

2023					
National	**TOTAL**	**8,156**	**91 (7,088)**	**8 (634)**	**1 (57)**
Center	Herlev	0	0 (0)	0 (0)	0 (0)
	Region Sjælland	0	0 (0)	0 (0)	0 (0)
	Odense	1,395	97 (1,362)	2 (22)	1 (11)
	Rigshospitalet	2,183	81 (1,758)	19 (405)	1 (20)
	Aalborg	3,980	91 (3,603)	9 (348)	1 (29)
	Aarhus	504	84 (423)	16 (81)	0 (0)

Table 1.3.2.4. DCB. Transport time for hematological blood, 2023-2025. The table shows the percentage and number (n) of hematological blood fractions that have been received in the laboratory within 12 hours, 12-36 hours, and >36 hours. Data are shown for each center in 2023-2025.

The processing time for tissue fractions is shown in table 1.3.2.5. In 2025 48% of tissue fractions were processed within 1 hour and the indicator has not been fulfilled.

The overall processing time is far from the stated goal, yet the percentage for both Biobank Center Region Sjælland and Rigshospitalet have improved. Biobank Center Aalborg has unfortunately not been able to continue their impressive numbers from last year. Biobank Center Herlev seems to be struggling the most as only 27% of tissue samples are processed within an hour. Since 87% of samples arrive in Herlev within the hour, transport time does not seem to be directly responsible for the low percentage. Furthermore, the trend has persisted over the last three years. Biobank Center Odense and Aarhus are affected by transport time the most with 82% and 68% samples respectively arriving within the hour. This lowers the total amount of samples available to being processed within the hour and suggests a need to improve transportation time, if possible.

In total, the quality goal of this indicator has not been fulfilled but the trend over the last three years is positive and if tissue-handling departments continue to focus on improving the logistics and laboratory workflow to further improve processing time, 86% of samples are received at the Department of Pathologys within 1 hour, and therefore there is potential for improvement.

Examining the more detailed figure for processing time (appendix 12.1.2.1), it shows that 84% of tissue fractions are processed within 3 hours and 90% within 7 hours. This indicates that the laboratories are focused on keeping the processing time as short as possible and preferably within the same day.

		Fractions - Processing time	
		Tissue	
		Total	**≤1 h, % (n)**
2025			
National	**TOTAL**	**34,211**	**48 (16,434)**
Center	Herlev	9,858	27 (2,663)
	Region Sjælland	7,762	58 (4,485)
	Odense	6,226	46 (2,891)
	Rigshospitalet	2,841	65 (1,851)
	Aalborg	3,003	72 (2,164)
	Aarhus	4,521	53 (2,380)

2024			
National	**TOTAL**	**36,427**	**42 (15,251)**
Center	Herlev	11,050	26 (2,820)
	Region Sjælland	6,994	32 (2,241)
	Odense	6,519	43 (2,814)
	Rigshospitalet	4,699	56 (2,646)
	Aalborg	2,459	94 (2,300)
	Aarhus	4,706	52 (2,430)
2023			
National	**TOTAL**	**39,397**	**39 (15,327)**
Center	Herlev	10,822	25 (2,690)
	Region Sjælland	8,377	15 (1,250)
	Odense	6,796	45 (3,044)
	Rigshospitalet	5,581	53 (2,959)
	Aalborg	3,082	93 (2,881)
	Aarhus	4,739	53 (2,503)

Table 1.3.2.5. DCB. Processing time for tissue, 2023-2025. The table shows the percentage and number (n) of tissue fractions that have been processed within the recommended 1 hour. Data are shown for each center in 2023-2025.

		Fractions - Transport time	
		Tissue	
		Total	**≤1 h, % (n)**
2025			
National	**TOTAL**	**34,282**	**86 (29,554)**
Center	Herlev	9,905	87 (8,650)
	Region Sjælland	7,782	91 (7,108)
	Odense	6,230	82 (5,126)
	Rigshospitalet	2,841	92 (2,602)
	Aalborg	3,003	99 (2,982)
	Aarhus	4,521	68 (3,086)
2024			
National	**TOTAL**	**36,453**	**86 (31,493)**
Center	Herlev	11,050	89 (9,881)
	Region Sjælland	7,002	90 (6,312)
	Odense	6,528	81 (5,259)
	Rigshospitalet	4,699	94 (4,407)
	Aalborg	2,459	99 (2,437)
	Aarhus	4,715	68 (3,197)
2023			

National	**TOTAL**	**39,439**	**87 (34,287)**
Center	Herlev	10,822	89 (9,579)
	Region Sjælland	8,377	83 (6,941)
	Odense	6,798	87 (5,923)
	Rigshospitalet	5,581	94 (5,246)
	Aalborg	3,082	100 (3,067)
	Aarhus	4,779	74 (3,531)

Table 1.3.2.6. DCB. Transport time for tissue, 2023-2025. The table shows the percentage and number (n) of tissue fractions that have been transported within 1 hour. Data are shown for each center in 2023-2025.

The processing time for bone marrow fractions is reported in table 1.3.2.7. Nationally, 98% of the bone marrow fractions are processed within 36 hours as previous years. Furthermore, 21% of the fractions were processed the same day as they were received in the laboratory (within 12 hours). The quality goal of the indicator is fulfilled nationally. It is noteworthy that Biobank Center Rigshospitalet has improved their processing time and hopefully continues their positive development.

		Fractions - Processing time			
		Bone marrow			
		Total	**≤ 12 h, % (n)**	**12-36 h, % (n)**	**>36 h, % (n)**
2025					
National	**TOTAL**	**4,231**	**21 (876)**	**77 (3,253)**	**2 (102)**
Center	Herlev	0	0 (0)	0 (0)	0 (0)
	Region Sjælland	0	0 (0)	0 (0)	0 (0)
	Odense	1,541	6 (95)	93 (1,433)	1 (13)
	Rigshospitalet	461	30 (136)	59 (272)	11 (53)
	Aalborg	1,662	38 (628)	61 (1,013)	3 (21)
	Aarhus	567	3 (17)	94 (535)	3 (15)
2024					
National	**TOTAL**	**4,284**	**26 (1,100)**	**71 (3,028)**	**4 (156)**
Center	Herlev	0	0 (0)	0 (0)	0 (0)
	Region Sjælland	0	0 (0)	0 (0)	0 (0)
	Odense	1,584	7 (106)	93 (1,469)	1 (9)
	Rigshospitalet	421	13 (55)	67 (284)	19 (82)
	Aalborg	1,758	51 (892)	46 (809)	3 (57)
	Aarhus	521	9 (47)	89 (466)	2 (8)
2023					
National	**TOTAL**	**5,457**	**32 (1,764)**	**66 (3,625)**	**1 (68)**
Center	Herlev	0	0 (0)	0 (0)	0 (0)
	Region Sjælland	0	0 (0)	0 (0)	0 (0)
	Odense	2,015	4 (87)	94 (1,886)	2 (42)

	Rigshospitalet	411	28 (115)	69 (283)	3 (13)
	Aalborg	2,630	59 (1,551)	41 (1,066)	0 (13)
	Aarhus	401	3 (11)	97 (390)	0 (0)

Table 1.3.2.7. DCB. Processing time for bone marrow, 2023-2025. The table shows the percentage and number (n) of bone marrow fractions that have been processed within 12 hours, 12-36 hours, and more than 36 hours. Data are shown for each center from 2023-2025.

		Fractions - Transport time			
		Bone marrow			
		Total	**≤ 12 h, % (n)**	**12-36 h, % (n)**	**>36 h, % (n)**
2025					
National	**TOTAL**	**4,232**	**91 (3,862)**	**8 (327)**	**1 (43)**
Center	Herlev	0	0 (0)	0 (0)	0 (0)
	Region Sjælland	0	0 (0)	0 (0)	0 (0)
	Odense	1,542	100 (1,542)	0 (0)	0 (0)
	Rigshospitalet	461	45 (208)	46 (210)	9 (43)
	Aalborg	1,662	99 (1,648)	1 (14)	0 (0)
	Aarhus	567	82 (464)	18 (103)	0 (0)
2024					
National	**TOTAL**	**4,270**	**89 (3,806)**	**9 (402)**	**1 (62)**
Center	Herlev	0	0 (0)	0 (0)	0 (0)
	Region Sjælland	0	0 (0)	0 (0)	0 (0)
	Odense	1,586	100 (1,586)	0 (0)	0 (0)
	Rigshospitalet	421	20 (84)	67 (282)	13 (55)
	Aalborg	1,758	96 (1,682)	4 (69)	0 (7)
	Aarhus	505	90 (454)	10 (51)	0 (0)
2023					
National	**TOTAL**	**5,430**	**93 (5,069)**	**7 (313)**	**0 (8)**
Center	Herlev	0	0 (0)	0 (0)	0 (0)
	Region Sjælland	0	0 (0)	0 (0)	0 (0)
	Odense	2,023	100 (2,015)	0 (8)	0 (0)
	Rigshospitalet	411	46 (188)	54 (223)	0 (0)
	Aalborg	2,630	97 (2,563)	2 (59)	0 (8)
	Aarhus	366	83 (303)	17 (63)	0 (0)

Table 1.3.2.8. DCB. Transport time for bone marrow, 2023-2025. The table shows the percentage and number (n) of bone marrow fractions that have been transported within 12 hours, 12-36 hours, and more than 36 hours. Data are shown for each center in 2023-2025.

RECOMMENDATION

Blood processing in DCB shows that most samples are high quality. Biobank Center Aalborg has increased their volume of blood fractions processed by almost 50%. This increase coincides with a drop in blood samples processed under 3 hours, warranting further monitoring to determine whether this reflects the impact of increased activity or other operational factors.

Hematological blood processing in Biobank Center Odense need to find the reasons that hematological blood is not processed as quickly as earlier years. Since transport time is comparable the explanation seems to be something else.

Tissue processing continues the trend of lowering the processing time. Since 84% is finished within 3 hours, every biobank center is encouraged to look at optimizing workflows and remove administrative challenges in order to improve tissue processing speed.

Bone marrow processing show that Biobank Center Rigshospitalet has improved and need to identify how to continue the positive trend.

1.3.3 Indicator 3: Coverage

The guidelines for handling of material in DCB define standard sets for blood, tissue, hematological blood, and bone marrow. This is to ensure that there is enough material and different types of fractions to accommodate the needs in the clinic for patients' own diagnosis/treatment and if needed for future research.

Indicator 3 is defined as the percentage of blood (3A), tissue (3B), and hematological materials (3C), that contain the recommended number of fractions or more. The coverage is calculated by counting the number of materials containing the recommended number of fractions, i.e., the type of fraction included in each material is not evaluated.

Quality goal:

3A: ≥90% of the blood materials should contain ≥8 fractions.
3B: ≥50% of tissue materials should contain ≥5 fractions.
3C: ≥90% of the hematological blood and bone marrow materials should contain ≥4 and ≥2 fractions.

This indicator has been moved to the appendix (12.1) as agreed at the scientific advisory board meeting in 2023. Below is listed whether the quality goal of the indicator has been fulfilled or not. For further details please see appendix 12.1.

3A. Coverage for blood materials: Quality goal has been fulfilled (appendix 12.1.3.1).

3B. Coverage for tissue materials: Quality goal has been fulfilled (appendix 12.1.3.2).

3C. Coverage for hematological materials: Quality goal has been fulfilled (appendix 12.1.3.3).

3D. Coverage for bone marrow materials: Quality goal has been fulfilled (appendix 12.1.3.4).

1.3.4 Indicator 4: Completeness

Indicator 4 describes the completeness of the samples collected in DCB.

4A. The number of tissue samples with a corresponding blood sample

In DCB, it is registered whether blood samples are received from the patient within 14 days *before* surgery/tissue sampling (biopsy). These samples are referred to as tissue samples with a corresponding blood sample. Corresponding samples are highly valuable in relation to personalized medicine in diagnostics and research and should therefore be collected from as many patients as possible. Biomarkers may be found in tissue samples and can then be used for blood testing. Therefore, to ensure optimal usability, both biological materials should be collected as corresponding samples.

Indicator 4A is defined as the percentage of tissue material with a corresponding blood material taken up to 14 days before the tissue has been sampled (date of operation). Blood samples taken more than 14 days before surgery, and blood samples taken after surgery are not considered corresponding.

Quality goal: ≥50% of all tissue materials should have corresponding blood material.

In 2025, 21% of the tissue samples have corresponding blood fractions, and the quality goal is therefore not met nationally (table 1.3.4.1). Over the past three years, the proportion has remained stable at approximately 21-22%.

Biobank Center Aalborg and Aarhus have both fulfilled the national indicator and deserve to be commended. Aarhus has consistently fulfilled the national indicator, and Aalborg has made strides in improving their percentage. All biobank centers are encouraged to draw inspiration from these biobanks to solve the challenges of not meeting the national indicator. Furthermore, the biobank centers are encouraged to focus on the importance of corresponding samples and improve the coordination between blood and tissue sampling.

		Materials		
		Tissue w. corresponding blood		
		Total	corresponding, n	corresponding, %
2025				
National	**TOTAL**	**8,632**	**1,803**	**21**
Center	Herlev	2,875	95	3
	Region Sjælland	1,379	12	1
	Odense	1,533	592	39
	Rigshospitalet	1,053	39	4
	Aalborg	617	373	60
	Aarhus	1,175	692	59
2024				
National	**TOTAL**	**9,238**	**2,022**	**22**
Center	Herlev	3,144	417	13
	Region Sjælland	1,252	10	1
	Odense	1,582	573	36

	Rigshospitalet	1,518	87	6
	Aalborg	533	187	35
	Aarhus	1,209	748	62
	2023			
National	**TOTAL**	**10,035**	**2,242**	**22**
Center	Herlev	3,336	703	21
	Region Sjælland	1,495	43	3
	Odense	1,537	337	22
	Rigshospitalet	1,81	164	9
	Aalborg	676	271	40
	Aarhus	1,181	724	61

Table 1.3.4.1. DCB. Tissue materials with corresponding blood material, 2023-2025. The table shows the number and percentage of tissue materials having a corresponding blood material. Data are shown for each center from 2023-2025.

4B. The number of patients providing several samples

Some patients provided material to DCB several times during the year. Multiple blood samplings receive the largest focus and provides the best opportunity to have serial sampling throughout the treatment. With the focus on e.g., cfDNA for monitoring of disease, serial sampling may be highly relevant. In 2025 over 1,293 unique patients (23.6%) provided blood more than once (table 1.3.4.2). This is very similar to the amount of longitudinal sampling observed in 2024 and 2023 (data not shown). The number of patients providing multiple samples of tissue, hematological blood and bone marrow has decreased slightly from 2024, and is still relatively low.

	Number of unique patients			
Number of donations	**Tissue**	**Blood**	**Hematological blood**	**Bone marrow**
1	5,132	4,195	605	361
2	86	731	14	<10
3	<10	359	<10	-
4	-	140	<10	-
5	-	20	<10	-
6	-	23	-	-
7	-	10	-	-
8	-	<10	-	-
9	-	<10	-	-
≥10	-	<10	-	-

Table 1.3.4.2. DCB. Longitudinal sampling, 2025. The table shows the distribution of longitudinal samplings of tissue, blood, hematological blood, and bone marrow in 2025. Data are shown as numbers of unique patients within each category.

RECOMMENDATION

Focus should be on collecting corresponding tissue and blood materials at all centers. This requires a close collaboration between departments, which should be ensured especially in the beginning of all collection areas and projects. A plan for enhancing this should be worked out drawing on inspiration from the biobank.

The number of patients that have provided blood more than once is at a stable level when comparing to recent years. Focus on the collection of samples throughout the patient's disease course should be maintained as these are valuable samples for both the patient and research projects.

1.3.5 Indicator 5: Diagnostic purposes

Indicator 5 evaluates the number of sample retrievals for diagnostic and genetic counseling. A quality goal has not yet been defined for this indicator, but all centers are encouraged to focus on retrieving samples for diagnostic use and genetic counseling.

In 2025, 165 tissue fractions and 3 blood fractions from a total of 158 patients have been retrieved for diagnostic purposes (table 1.3.5.1). This represents a small decrease in the number of tissue fractions retrieved compared to previous years, with a particularly notable decline in the retrieval of blood fractions for diagnostic use.

			Fractions retrieved for diagnostic follow-up			
		Number of patients	Tissue	Blood	Hematological blood	Bone marrow
2025						
National	**TOTAL**	**158**	**165**	**<10**	**0**	**0**
Center	Herlev	<10	0	<10	0	0
	Region Sjælland	0	0	0	0	0
	Odense	10	10	0	0	0
	Rigshospitalet	136	145	<10	0	0
	Aalborg	<10	<10	0	0	0
	Aarhus	<10	<10	<10	0	0
2024						
National	**TOTAL**	**257**	**200**	**79**	**0**	**0**
Center	Herlev	0	0	0	0	0
	Region Sjælland	0	0	0	0	0
	Odense	16	18	0	0	0
	Rigshospitalet	137	157	<10	0	0
	Aalborg	96	19	77	0	0
	Aarhus	<10	<10	<10	0	0
2023						
National	**TOTAL**	**217**	**231**	**<10**	**0**	**<10**
Center	Herlev	<10	<10	0	0	0
	Region Sjælland	0	0	0	0	0

	Odense	51	51	0	0	<10
	Rigshospitalet	131	145	0	0	0
	Aalborg	24	25	0	0	0
	Aarhus	<10	<10	<10	0	0

Table 1.3.5.1. DCB. Number of fractions retrieved for diagnostic purposes, 2023-2025. The table shows the number of fractions of the different material types that have been retrieved for diagnostic follow-up or genetic counseling. Data are shown for each center in 2023-2025.

DCB also receives inquiries for retrieval of biological material for diagnostic follow-up/genetic counseling that do not lead to an actual retrieval because no material has been biobanked. Even though these inquiries do not lead to a retrieval of material they are still important to consider, as they show an interest and an awareness of the biobank. However, it is hard to measure the number of inquiries as this entails that the biobank centers note how many inquiries, they have received and report it to the RBGB secretariat.

The RBGB secretariat has received reports from the centers in Aarhus and Odense. Center Odense reported one inquiry that did not result in retrieval, whereas all inquiries received by Aarhus resulted in retrieval of material for diagnostic use or genetic counseling. Overall, the RBGB secretariat has recorded only one inquiry regarding material for diagnostic use or genetic counseling that did not lead to retrieval.

RECOMMENDATION

Currently, it is expected that fractions retrieved for diagnostic purpose has an under reported number due to possible inconsistency in work procedures across regions. To solve this, the secretariat is updating the national guideline and encouraging local departments to follow this carefully.

The number of materials retrieved for diagnostic follow-up or genetic counseling is expected to increase as more molecular tests are being performed regarding genetic counseling and personalized medicine. High quality DNA is in general important for molecular analyses, which can be fulfilled by using fresh frozen tissue or other high-quality materials. Molecular analyses seem to be extended to large sequencing panels, exome sequencing, and array-based technologies where high-quality material may be of utmost importance.

All centers are encouraged to spread information about the biobank, infrastructure, and sample collection, which is highly applicable in relation to diagnostic follow-up.

1.3.6 Indicator 6: Research

Provided that all relevant legal approvals are obtained by the researcher, biological materials may be collected through DCB with a reservation for individual research projects and may be retrieved for this purpose.

Altogether, from 2010 to 2025, 114 local and 40 national projects have been registered in DCB (Figure 1.3.6.1). Although the graph suggests that the number of local projects remained stable at 99 between 2023 and 2024, this likely reflects delayed updates rather than a true plateau in activity. The recent update of records accounts for the apparent increase to 114 local projects in 2025.

As of 2025, a total of 25 local projects and 25 national projects were active, indicating continued and active use of DCB.

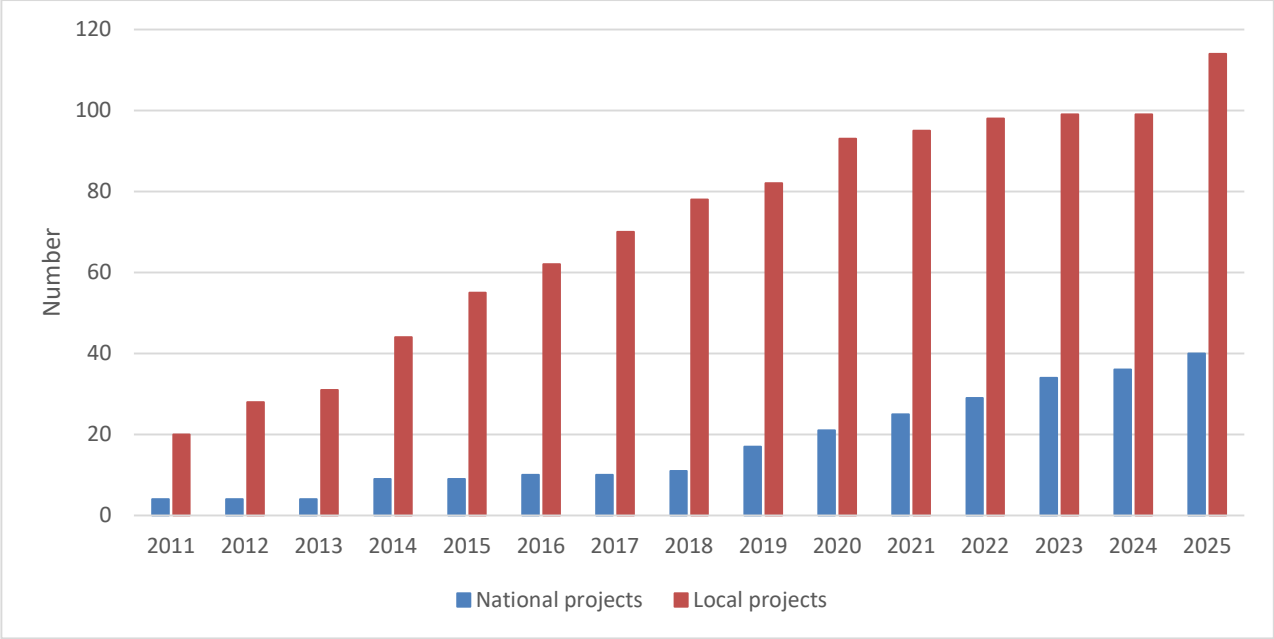

Figure 1.3.6.1. DCB. Number of accumulated research projects collecting via DCB. The figure shows the number of national and local research projects in DCB accumulated through the years 2010-2025.

Indicator 6 evaluates the number of fractions retrieved for research projects.

Quality goal: The number of retrieved fractions nationally should be higher than the average of the past five years.

In 2025, 24,648 blood fractions, 2,859 tissue fractions and 17 hematological blood fractions were retrieved for research projects (table 1.3.6.1 and 1.3.6.2). As the average amount of retrieved blood samples over the last five years is 26,192 fractions, the quality goal for blood retrieval is not met nationally.

		Fractions	
		Blood	**Hematological blood**
		Number of fractions, n	**Number of fractions, n**
2025			
Nationalt	**Total**	**24,648**	**17**
Center	Herlev	246	0
	Region Sjælland	<10	0
	Odense	12,483	17
	Rigshospitalet	1,279	0
	Aalborg	2,758	0
	Aarhus	7,881	0
2024*			
Nationalt	**Total**	**21,786**	**166**
Center	Herlev	1,242	0

	Region Sjælland	<10	0
	Odense	6,057	93
	Rigshospitalet	2,370	0
	Aalborg	2,142	73
	Aarhus	9,966	0
2023			
Nationalt	**Total**	**29,967**	**0**
Center	Herlev	1,674	0
	Region Sjælland	0	0
	Odense	6,408	0
	Rigshospitalet	8,522	0
	Aalborg	1,524	0
	Aarhus	11,839	0

Table 1.3.6.1. DCB. Number of blood and hematological blood fractions retrieved for research projects, 2023-2025. The table shows the number of blood and hematological blood fractions retrieved for research projects. Data are shown for each center from 2023-2025.

*A large study (GWAS) retrieving blood fractions from all DCB patients has not been included in this tables, as it would completely skew the numbers for 2024. Data can be found in the Annual Report 2024.

The average number of retrieved tissue samples over the past five years was 4,557. In 2025, a total of 2,859 tissue samples were retrieved, and the quality target was therefore not achieved.

Retrieval of bone marrow samples also fell below the quality target. Over the past five years, the average number of retrieved bone marrow fractions was 38, compared to 17 fractions retrieved in 2025.

In addition, retrieval of hematological material declined in 2025. All centers are encouraged to strengthen their focus on sample retrieval by increasing awareness among researchers of the bone marrow collection available in DCB.

		Fractions	
		Tissue	**Bone marrow**
		Number of fractions, n	**Number of fractions, n**
2025			
Nationalt	**I ALT**	**2,859**	**0**
Center	Herlev	18	0
	Region Sjælland	0	0
	Odense	594	17
	Rigshospitalet	1,414	0
	Aalborg	651	0
	Aarhus	182	0
2024			
Nationalt	**I ALT**	**2,833**	**357**
Center	Herlev	211	0

	Region Sjælland	29	0
	Odense	1,482	347
	Rigshospitalet	206	0
	Aalborg	554	10
	Aarhus	351	0
2023			
Nationalt	**I ALT**	**4,111**	**50**
Center	Herlev	237	0
	Region Sjælland	0	0
	Odense	510	0
	Rigshospitalet	164	0
	Aalborg	377	50
	Aarhus	2,823	0

Table 1.3.6.3. DCB. Number of tissue and bone marrow fractions retrieved for research projects, 2023-2025. The table shows the number of tissue and bone marrow fractions that have been retrieved for research projects shown for each center from 2023-2025.

RECOMMENDATION

The retrieval activity in 2025 does not meet the established quality indicators. RBGB supports the development of personalized medicine, and it is therefore recommended that DCB samples are actively considered for use in translational research studies. While previous years have shown satisfactory performance for bone marrow and hematological samples, this was not observed in 2025.

An increased and continued focus within DCB is needed to promote awareness of the biobank, its infrastructure, and its collections among researchers. Expanded use of these materials in translational research has the potential to generate important knowledge that may contribute to the development of future targeted treatments for patients.

1.3.7 Indicator 7: Clinical data

The link between biological samples and clinical data increases the value of the samples. To date, clinical data relevant for samples in DCB are registered in several different clinical databases, which makes it complicated to retrieve them. The clinical quality databases ('Regionernes Kliniske Kvalitetsudviklingsprogram', RKKP) and RBGB are jointly working to find an easier way to link RBGB-samples with clinical data. In this report only information that can be retrieved directly from the RBGB registry is shown.

The majority of the patients whose samples were collected in 2025 were aged ≥50 years (figure 1.3.7.1). Such observation is expected as the risk of cancer increases with age. A total of 6,529 females and 4,357 males provided material for DCB in 2025 (data not shown). The larger number of women compared to men can be explained by the fact, that there is a large focus on collecting mamma cancer and gynaecological cancer samples for the biobank (table 1.3.7.1).

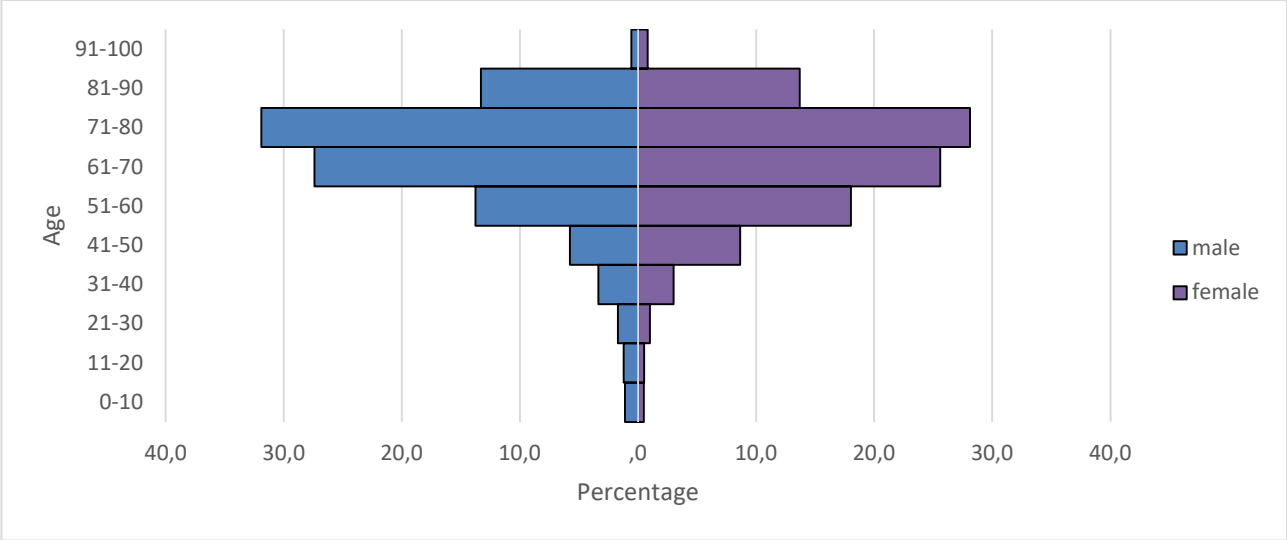

Figure 1.3.7.1. DCB. Population distribution by age and gender for patients, 2025. The figure shows the distribution of age and gender of the patients who have provided material for DCB in 2025.

Biological materials collected in DCB are registered with a suspected primary organ, which indicates the expected origin of the cancer. According to table 1.3.7.1, materials are collected from most suspected primary organs.

Looking at the trend of tissue samples of various suspected organs reveal that the overall trend is downward meaning less tissue is being collected. However, some suspected primary organ categories remain stable or trend upwards such as: cervix uteri; colon; kidney; "Muscles, tendons, soft tissue"; neuro; other; rectum; small intestines; and Ventricle and omentum.

Looking at the trend of blood samples of various suspected primary organ categories reveals mixed trends. The suspected primary organs that are trending negatively are anal region; bile ducts; bones and joints; cervix uteri; mamma; other; ovarium; prostate; skin and subcutis; and Urinary tract and bladder. The suspected primary organs that trend positively are head and throat; kidney; lymph nodes and thymus; pancreas; rectum; and vulva. The rest is trending neutrally.

Looking at the trend of bone marrow samples of various suspected primary organs reveals a stable trend in the few categories where bone marrow sampling applies.

	Materials								
	Tissue			Blood			Bone marrow		
Suspected primary organ	**2023**	**2024**	**2025**	**2023**	**2024**	**2025**	**2023**	**2024**	**2025**
Adrenal gland	80	74	51	<10	<10	<10	0	<10	0
Anal region	0	0	0	228	111	28	0	0	0
Appendix	<10	0	<10	0	<10	<10	0	0	0
Bile ducts	20	0	<10	779	63	39	0	0	0
Blood	10	<10	<10	674	538	571	81	79	77
Blood vessel	221	0	0	243	0	0	0	0	0
Bone marrow	104	0	0	243	294	298	0	499	515
Bones and joints	<10	23	15	45	110	65	0	<10	0
Bronchi and lung	55	156	94	110	261	244	0	0	0
Cardia	0	<10	<10	0	29	49	0	0	0
Cervix Uteri	1,653	45	65	2,317	74	54	0	0	0

Colon	256	1,659	1,698	282	2,138	2,041	0	0	0
Corpus uteri	0	289	201	74	218	207	0	0	0
Ear	<10	0	0	321	0	0	0	0	0
Esophagus	0	<10	<10	0	331	276	0	0	0
Eye	0	<10	<10	406	48	39	578	0	0
Genetics	0	0	0	0	<10*	0	0	0	0
Head and throat	0	<10	<10	0	470	717	0	0	0
Heart	185	0	<10	317	0	0	0	0	0
Kidney	372	751	760	92	311	461	0	0	0
Larynx	3,738	0	0	2,605	0	<10	0	0	0
Liver	<10	80	68	0	262	188	0	0	0
Liver metastasis	131	<10	<10	0	109	143	0	0	0
Lymph node and thymus	637	379	287	170	69	119	123	85	78
Mamma	<10	3,461	3,220	0	2,153	1,362	0	0	0
Mouth, lips and tongue	283	0	12	750	<10	11	0	0	0
Multiple Sclerosis	0	0	0	0	0	<10*	0	0	0
Muscles, tendons, soft tissue	0	113	102	0	0	0	0	0	0
Nervous system	23	1,117	1,003	22	49	41	0	0	0
Neuro	0	48	123	0	0	0	0	0	0
Nose and sinus	47	<10	<10	262	<10	<10	0	0	0
Occult cancer	<10	0	0	0	0	0	0	0	0
Other	45	29	41	<10	217	136	0	0	0
Ovarium	185	180	149	269	489	352	0	0	0
Pancreas	309	155	133	730	448	632	0	0	0
Penis	12	33	26	0	20	15	0	0	0
Pharynx	227	0	<10	43	<10	0	0	0	0
Pleura	41	19	<10	0	<10	<10	0	0	0
Prostate	<10	149	110	0	296	193	0	0	0
Rectum	36	173	214	79	673	724	0	0	0
Salivary gland	67	<10	0	101	0	0	0	0	0
Skin and subcutis	1,212	16	<10	79	511	309	0	0	0
Small intestine	<10	19	21	<10	27	36	0	0	0
Spleen	16	14	<10	24	<10	<10	0	0	0
Testis	31	121	98	519	23	13	0	0	0
Thyreoidea and parathyreoidea	<10	15	<10	<10	0	0	0	0	0
Tonsil	<10	<10	<10	62	12	<10	0	0	0
Tuba uterina and parametrium	<10	<10	<10	39	<10	<10	0	0	0
Urinary tract and bladder	10,035	31	29	12,234	182	46	782	0	0
Vagina	0	<10	<10	0	<10	<10	0	0	0
Ventricle and omentum	104	41	44	125	99	100	0	0	0
Vulva	14	<10	<10	81	78	217	0	0	0

Table 1.3.7.1 DCB. **Number of materials collected according to suspected primary organ, 2023-2025.** The table shows the number of blood, tissue, and bone marrow materials collected in 2023-2025 categorized by suspected primary organ. For primary organs with less than 10 materials, the number is given as <10 to ensure the anonymity of the patients. *These registrations are errors, and will be corrected in the data and future annual reports.

Tissue and bone marrow materials collected in DCB are registered with an associated DMCG (table 1.3.7.2). In 2025, tissue was collected in association with all DMCGs except Danish Ocular Oncology Group (DOOG). The trend from 2023 to 2025 shows that less tissue is collected year over year. It has gone from

10,035 samples collected in 2023 to 8,630 samples collected in 2025. While most DMCG collected less samples in 2025, a few managed to keep their level such as DAPECA, DARENECA, DBCG, and DPCG. The amount of bone marrow samples registered with a DMCG is stable.

There is some variance in the number of samples that are not registered with a DMCG which is necessary for a complete registration.

	Materials					
	Tissue			Bone marrow		
DMCG	**2023**	**2024**	**2025**	**2023**	**2024**	**2025**
Benign disorder	13	18	<10	-	-	-
DABLACA	30	33	18	-	-	-
DACG	0	0	10	-	-	-
DAHANCA	48	24	<10	-	-	-
DAPECA	15	18	25	-	-	-
DAPHO	30	30	22	-	-	-
DAPROCA	175	150	97	-	-	-
DARENCA	594	669	682	-	-	-
DATECA	121	105	85	-	-	-
DBCG	3,585	3,276	3,115	-	-	-
DCCG	1,779	1,707	1,586	-	-	-
DECV	45	34	30	-	-	-
DGCG	564	519	332	-	-	-
DLGCG	37	36	39	-	-	-
DLCG	266	161	90	-	-	-
DMG	15	15	<10	-	-	-
DNOG	443	398	334	-	-	-
DOCG	<10	0	0	-	-	-
DPCG	88	90	96	-	-	-
DSG	89	57	49	-	-	-
Hematological common DMCG	313	274	227	722	604	600
Other	108	102	66	-	-	-
No DMCG	1,675	1,517	1,707	59	62	70
Total	10,035	9,233	8,630	782	666	670

Table 1.3.7.2 DCB. Number of tissue and bone marrow materials categorized by DMCG, 2023-2025. The table shows the number of tissue and bone marrow materials collected in DCB categorized by Danish Multidisciplinary Cancer Group (DMCG) from 2023-2025. For DMCGs with less than 10 materials, the number is given as <10 to ensure the anonymity of the patients.

It is important to monitor the consent of the patients to ensure that samples are used correctly. In RBGB, patients can be involved in research projects which they have given a specific informed consent to, which is registered in the RBGB registry. Patients have the option of signing a letter of intent that informs them of what having biological material stored in RBGB entails. The letter of intent and the specific informed consent is not mutually exclusive and providing both is recommended. The number (n) and percentage of materials that have a consent and/or statement registered in the RBGB registry is shown in tabel 1.3.7.3, 1.3.7.4, 1.3.7.5 and 1.3.7.6.

In 2025, 60% of collected blood materials have an informed consent registered for a specific research project. In total, 94% of all blood materials is registered with af statement for storage in RBGB. 6% of materials have been marked as "Do not know" which is quite an increase from 1% in 2024.

		Blood materials					
		Total	**Yes, RBGB, % (n)**	**Yes, RBGB and research, % (n)**	**Yes, research project, % (n)**	**Do not know, % (n)**	**Consent not required, % (n)**
2025							
National	**TOTAL**	**9,072**	**34 (3,055)**	**60 (5,439)**	**0 (36)**	**6 (544)**	**0 (0)**
Center	Herlev	1,547	38 (588)	42 (653)	0 (0)	20 (306)	0 (0)
	Region Sjælland	289	0 (0)	31 (90)	0 (0)	69 (199)	0 (0)
	Odense	1,866	33 (622)	65 (1,204)	0 (<5)	2 (37)	0 (0)
	Rigshospitalet	1,063	62 (654)	38 (409)	0 (0)	0 (0)	0 (0)
	Aalborg	1,694	24 (411)	74 (1249)	2 (32)	0 (<5)	0 (0)
	Aarhus	2,615	29 (814)	69 (1,967)	3 (72)	0 (0)	0 (0)
2024							
National	**TOTAL**	**10,036**	**45 (4,479)**	**54 (5,410)**	**1 (87)**	**1 (57)**	**0 (<5)**
Center	Herlev	2,396	69 (1,644)	31 (749)	0 (2)	0 (0)	0 (<5)
	Region Sjælland	163	58 (94)	38 (62)	0 (0)	4 (7)	0 (0)
	Odense	1,998	33 (651)	65 (1,303)	0 (0)	2 (43)	0 (<5)
	Rigshospitalet	1,401	57 (797)	43 (600)	0 (0)	0 (<5)	0 (<5)
	Aalborg	1,224	39 (479)	60 (729)	1 (13)	0 (<5)	0 (0)
	Aarhus	2,854	29 (814)	69 (1,967)	3 (72)	0 (<5)	0 (0)
2023							
National	**TOTAL**	**11,347**	**48 (5,411)**	**50 (5,708)**	**2 (193)**	**0 (34)**	**0 (<5)**
Center	Herlev	3,02	81 (2,436)	18 (532)	2 (46)	0 (6)	0 (0)
	Region Sjælland	190	46 (87)	36 (68)	18 (35)	0 (0)	0 (0)
	Odense	1,832	32 (592)	66 (1,217)	0 (0)	1 (22)	0 (<5)
	Rigshospitalet	1,802	50 (903)	50 (892)	0 (<5)	0 (<5)	0 (0)
	Aalborg	1,179	50 (586)	50 (584)	1 (8)	0 (<5)	0 (0)
	Aarhus	3,324	24 (807)	73 (2415)	3 (101)	0 (<5)	0 (0)

Tabel 1.3.7.3. DCB. Number (n) and percentage of materials that have a consent and/or statement registered in the RBGB registry, 2023-2025. The table shows the number of blood materials that have a form of consent and/or statement registred in the RBGB registry. Data is shown for each form of consent for 2023-2025.

For hematological blood the picture is not as one sided. Only 23% of the materials are registered with a consent to a specific research project and a letter of intent for RBGB storage, an increase of 1% over last year. In total, 65% materials are registered with a letter of intent for admittance to RBGB. The 35% marked as "do not know" stem mainly from Biobank Center Rigshospitalet and Aalborg which has been the trend for the

last three years. Further work may be warranted to ensure greater clarity regarding patient intentions and consent related to the storage of hematological blood samples in RBGB.

		Hematological blood materials					
		Total	Yes, RBGB, % (n)	Yes, RBGB and re-search, % (n)	Yes, re-search project, % (n)	Do not know, % (n)	Consent not requi-red, % (n)
2025							
National	**TOTAL**	**673**	**42 (281)**	**23 (157)**	**0 (0)**	**35 (235)**	**0 (0)**
Center	Herlev	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	Region Sjælland	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	Odense	44	100 (44)	0 (0)	0 (0)	0 (0)	0 (0)
	Rigshospitalet	217	0 (0)	31 (67)	0 (0)	69 (150)	0 (0)
	Aalborg	331	71 (235)	3 (11)	0 (0)	26 (85)	0 (0)
	Aarhus	81	2 (<5)	98 (79)	0 (0)	0 (0)	0 (0)
2024							
National	**TOTAL**	**697**	**46 (321)**	**21 (149)**	**1 (6)**	**32 (221)**	**0 (0)**
Center	Herlev	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	Region Sjælland	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	Odense	59	98 (58)	0 (0)	0 (0)	2 (<5)	0 (0)
	Rigshospitalet	199	0 (0)	32 (63)	0 (0)	68 (136)	0 (0)
	Aalborg	357	73 (259)	3 (9)	2 (6)	23 (83)	0 (0)
	Aarhus	82	5 (<5)	94 (77)	0 (0)	1 (<5)	0 (0)
2023							
National	**TOTAL**	**887**	**50 (440)**	**20 (176)**	**0 (2)**	**30 (269)**	**15 (133)**
Center	Herlev	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	Region Sjælland	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	Odense	163	98 (160)	0 (0)	0 (0)	2 (<5)	82 (133)
	Rigshospitalet	412	67 (277)	10 (43)	0 (<5)	22 (90)	0 (0)
	Aalborg	248	0 (0)	29 (72)	0 (0)	71 (176)	0 (0)
	Aarhus	64	5 (<5)	95 (61)	0 (0)	0 (0)	0 (0)

Tabel 1.3.7.4. DCB. Number (n) and percentage of materials that have a consent and/or statement registered in the RBGB registry, 2023-2025. The table shows the number of hematological materials that have a form of consent and/or statement registred in the RBGB registry. Data is shown for each form of consent for 2023-2025.

The trend of consent for tissue is definitely the least straight forward. 49% of the materials are registered as “do not know”(table 1.3.7.5) which means that for the first time in the last 3 years, this metric has been under 50%. Only 10% of the materials have a consent to admittance to RBGB and a specific research project. This might seem low but the trend is clearly positive since the percentage have doubled since 2023. In total, 34% of the materials is registered with admittance to RBGB. Finally, only 3% is registered with agreement to a specific research project. For 14% of the materials, a consent is not required.

		Tissue materials					
		Total	Yes, RBGB, % (n)	Yes, RBGB and research, % (n)	Yes, research project, % (n)	Do not know, % (n)	Consent not required, % (n)
2025							
National	**TOTAL**	**8,630**	**24 (2,033)**	**10 (870)**	**3 (248)**	**49 (4,259)**	**14 (1,220)**
Center	Herlev	2,873	58 (1658)	4 (124)	0 (0)	38 (1,091)	0 (0)
	Region Sjælland	1,379	8 (117)	3 (35)	0 (<5)	89 (1,225)	0 (0)
	Odense	1,533	9 (140)	0 (6)	0 (0)	11 (167)	80 (1,220)
	Rigshospitalet	1,053	0 (<5)	0 (0)	0 (0)	100 (1,052)	0 (0)
	Aalborg	617	19 (116)	38 (237)	0 (0)	43 (264)	0 (0)
	Aarhus	1,175	0 (<5)	40 (468)	21 (246)	39 (460)	0 (0)
2024							
National	**TOTAL**	**9,233**	**23 (2,124)**	**7 (645)**	**3 (276)**	**53 (4,918)**	**14 (1,270)**
Center	Herlev	3,144	54 (1709)	2 (56)	0 (2)	44 (1,377)	0 (0)
	Region Sjælland	1,25	11 (139)	4 (45)	0 (0)	85 (1,066)	0 (0)
	Odense	1,582	8 (128)	1 (14)	0 (1)	11 (169)	80 (1,270)
	Rigshospitalet	1,518	1 (14)	0 (2)	0 (0)	99 (1,502)	0 (0)
	Aalborg	532	22 (115)	12 (64)	0 (1)	66 (352)	0 (0)
	Aarhus	1,207	2 (19)	38 (464)	23 (272)	37 (452)	0 (0)
2023							
National	**TOTAL**	**10,035**	**21 (2140)**	**5 (481)**	**3 (252)**	**59 (5,880)**	**13 (1,282)**
Center	Herlev	3,336	50 (1663)	3 (112)	0 (0)	47 (1,560)	0 (1)
	Region Sjælland	1,495	14 (209)	6 (89)	0 (0)	80 (1,197)	0 (0)
	Odense	1,537	5 (75)	0 (2)	0 (0)	12 (179)	83 (1,281)
	Rigshospitalet	1,81	1 (18)	0 (2)	0 (0)	99 (1,790)	0 (0)
	Aalborg	676	24 (159)	4 (26)	12 (84)	60 (407)	0 (0)
	Aarhus	1,181	1 (16)	21 (250)	14 (168)	63 (747)	0 (0)

Tabel 1.3.7.5. DCB. Number (n) and percentage of materials that have a consent and/or statement registered in the RBGB registry, 2023-2025. The table shows the number of tissue materials that have a form of consent and/or statement registred in the RBGB registry. Data is shown for each form of consent for 2023-2025.

For bone marrow, 77% of the materials are registered with a consent to RBGB storage, while only 20% have a consent to RBGB and a specific research project, indicating that most of the bone marrow materials are collected as part of the treatment of the patients.

		Bone marrow materials					
		Total	Yes, RBGB, % (n)	Yes, RBGB and research, % (n)	Yes, research project, % (n)	Do not know, % (n)	Consent not required, % (n)
2025							
National	**TOTAL**	**670**	**77 (518)**	**20 (130)**	**0 (0)**	**3 (22)**	**0 (0)**

Center	Herlev	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	Region Sjælland	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	Odense	224	96 (216)	0 (0)	0 (0)	4 (8)	0 (0)
	Rigshospitalet	64	0 (0)	78 (50)	0 (0)	22 (14)	0 (0)
	Aalborg	303	99 (301)	1 (<5)	0 (0)	0 (0)	0 (0)
	Aarhus	79	1 (<5)	99 (78)	0 (0)	0 (0)	0 (0)
	2024						
National	**TOTAL**	**666**	**77 (515)**	**19 (128)**	**1 (4)**	**3 (19)**	**0 (0)**
Center	Herlev	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	Region Sjælland	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	Odense	229	96 (220)	0 (0)	0 (0)	4 (9)	0 (0)
	Rigshospitalet	57	0 (0)	91 (52)	0 (0)	9 (5)	0 (0)
	Aalborg	302	96 (291)	1 (<5)	1 (<5)	1 (<5)	0 (0)
	Aarhus	78	5 (<5)	94 (73)	0 (0)	1 (<5)	0 (0)
	2023						
National	**TOTAL**	**782**	**78 (608)**	**15 (120)**	**0 (2)**	**7 (52)**	**0 (1)**
Center	Herlev	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	Region Sjælland	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	Odense	294	98 (289)	0 (0)	0 (0)	2 (5)	0 (0)
	Rigshospitalet	57	0 (0)	88 (50)	0 (0)	12 (7)	0 (0)
	Aalborg	370	85 (316)	3 (12)	1 (<5)	11 (40)	0 (0)
	Aarhus	61	5 (<5)	95 (58)	0 (0)	0 (0)	0 (0)

Tabel 1.3.7.6. DCB. Number (n) and percentage of materials that have a consent and/or statement registered in the RBGB registry, 2023-2025. The table shows the number of bone marrow materials that have a form of consent and/or statement registred in the RBGB registry. Data is shown for each form of consent for 2023-2025.

1.3.8. Indicator 8: Inquiries regarding research

8A. Number of inquiries about material in the biobank for research

Anyone can inquire the number of specific materials in the biobank. Requests may stem from a researcher wanting to investigate the possibility of using the material in a project. Not all inquiries lead to a subsequent delivery of the material, but the number of inquiries corresponds to the level of interest in the biobank. However, it is hard to measure the number of inquiries that do not lead to a subsequent retrieval of samples as this requires that the biobank centers note how many inquiries, they have received and report it to the RBGB secretariat.

The RBGB secretariat has received 11 enquiries that has not yet led to a retrieval of material for research. 4 of them are ongoing and it is expected that they will lead to distribution of samples. 6 of them are preliminary as they have not provided the secretariat with registrations or approvals. The inventory of RBGB did have the required material but was not contacted afterwards. The final inquiry was from a foreign research project looking for very specific material types that is not collected in RBGB.

8B. Number of applications for retrieval of samples for retrospective research, that have been handled within the recommended 2 months

Retrieval of material for projects is possible when the project has the necessary approvals in place and when it has been confirmed that the patients involved are not registered in 'Vævsanvendelsesregisteret' (VAR). Upon request for retrieval of non-project-labeled material, an application is sent to the RBGB secretariat. As some applications must be processed in local biobank committees, a deadline of two months is set from all relevant information is available until the applicant receives a decision. The indicator is measured as the percentage of applications approved within this deadline. It is also described how many applications have been refused retrieval of material as well as the reason for this.

The RBGB secretariat have received two applications of retrieval of material for retrospective research. All applications were approved within the recommended two months.

8C. Number of materials retrieved for research within the recommended timeframe

Only when retrieval to a research project has been approved by the RBGB secretariat or the biobank center, the project has the necessary approvals in place and the patients have been checked in VAR can material be retrieved for the project. The deadline for submission counts from the approved application until the material has been retrieved for the project. The indicator is divided according to how many samples are to be handed out, as a large number require more planning and time for picking the samples.

For retrieval of up to 1000 whole fractions, a deadline of one month is set, regardless of whether the material is delivered from department, center, regionally or nationally. For retrieval of more than 1000 fractions, no standard has been set as the time will depend on the complexity and therefore must be agreed individually.

All materials for retrieval were handled within the 1-month timeframe.

RECOMMENDATION

Biobank centers should focus on registering how many inquiries they receive, and the information be reported to the RBGB secretariat as this gives an indication of the interest for the biobank.

All centers should continue to have a focus on retrieving material for researchers as quickly as possible.

1.3.9. Indicator 9: Sharing of Knowledge

DCB facilitates many research projects with collection of samples. Therefore, an increase in the number of published articles in which DCB/RBGB is stated at least in the acknowledgements-section, must be expected. Unfortunately, it is not possible to search for acknowledgements in PubMed, which makes it difficult to identify research groups that have published studies based on material from DCB. The secretariat, therefore, made a search for articles published in 2025 including DCB in the acknowledgements-section in Google Scholar. The identified articles were checked manually for acknowledgements. The list below includes articles that have been reported to the secretariat for 2025 as well as those identified in Google Scholar.

It is still important to remind researchers to acknowledge DCB/RBGB in research articles to increase the awareness of the biobank, the present collection and the work that is done. Researchers must inform the

secretariat regarding newly published articles, which are based on biobank material. These will be included in the RBGB newsletter and posted on the website etc.

The secretariat for RBGB also contributes with the sharing of knowledge via newsletters, the annual report, the RBGB website, and presentations at various conferences.

Publications, 2025:

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RECOMMENDATION

If data or samples from DCB are used in published research, this should always be stated in the acknowledgements section: "The Bio- and Genome Bank Denmark is acknowledged for biological material and for the data regarding handling and storage."

The indicator is difficult to measure, as acknowledgements cannot be searched for in PubMed. RBGB will establish new methods to search for published research based on data or samples from RBGB.

2. Danish Rheumatologic Biobank

2.1 Foreword

The Danish Rheumatologic Biobank is a national infrastructure established to improve the lives of people with inflammatory rheumatic diseases through research and better understanding, earlier diagnosis, and more precise treatment. Founded on 1 January 2015 with support from the Danish Rheumatism Association and Danish Regions, the biobank was created to bridge high-quality biological material with comprehensive clinical data, enabling research that directly benefits patients and society. Since the first blood sample was collected in May 2015, the biobank has grown into a nationwide collaboration, with more than 22,000 biological samples collected just in 2025.

The strength of the Danish Rheumatologic Biobank lies in its close integration with routine clinical care and its strong national collaboration across departments of rheumatology, clinical biochemistry, and other clinical units responsible for sample collection. Each sample is linked to detailed, prospectively collected clinical data from national clinical quality and research databases as REDCap, DANBIO, or other. Today, DANBIO alone contains data from more than 80,000 patients with inflammatory arthritis. Together, these clinical databases provide a unique foundation for personalized medicine strategy in Denmark.

Inflammatory rheumatic diseases affect a large part of the Danish population. At least 75,000 people live with rheumatoid arthritis, psoriatic arthritis, or spondyloarthritis, and an additional 25,000 are affected by connective tissue diseases such as systemic lupus erythematosus and Sjögren's syndrome whereas vasculitis disorders (e.g. giant cell arteritis) are rare. Although biological therapies have substantially improved outcomes over the past two decades, treatment response varies widely. Approximately 30–40% of patients experience insufficient effect or adverse reactions, and many lose treatment efficacy over time, despite biological therapies accounting for around DKK 1 billion in annual public healthcare expenditure.

Research enabled by the Danish Rheumatologic Biobank directly addresses these challenges by linking biological material with high-quality clinical data. This allows identification of biological subgroups, prediction of treatment response, and development of more targeted and effective therapies. To date, 38 national and local research projects and collaborations have utilized the biobank's infrastructure, all conducted with informed consent and in accordance with ethical and legal requirements.

Looking ahead to 2026 and beyond, the Danish Rheumatologic Biobank represents a cornerstone of personalized medicine in rheumatology. Through continued national collaboration, high-quality data, and strong patient involvement, the biobank contributes to better outcomes for individuals living with inflammatory rheumatic diseases and to a more effective and sustainable healthcare system for the Danish population.

On behalf of the Scientific Advisory Board for Danish Rheumatologic Biobank
The members of the Scientific Advisory Board can be seen in appendix 12.2.0

2.2 Overview of DRB, 2023-2025

In 2025, blood was collected from 1,660 unique patients. This is a small increase compared to 2024 where 1,589 unique patients were included (figure 2.2.1). Although both synovial fluid and urine can be collected in DRB, only blood was collected in 2025, indicating that other sample types play a minor role in the biobank possibly due to low demand in both clinic and research projects.

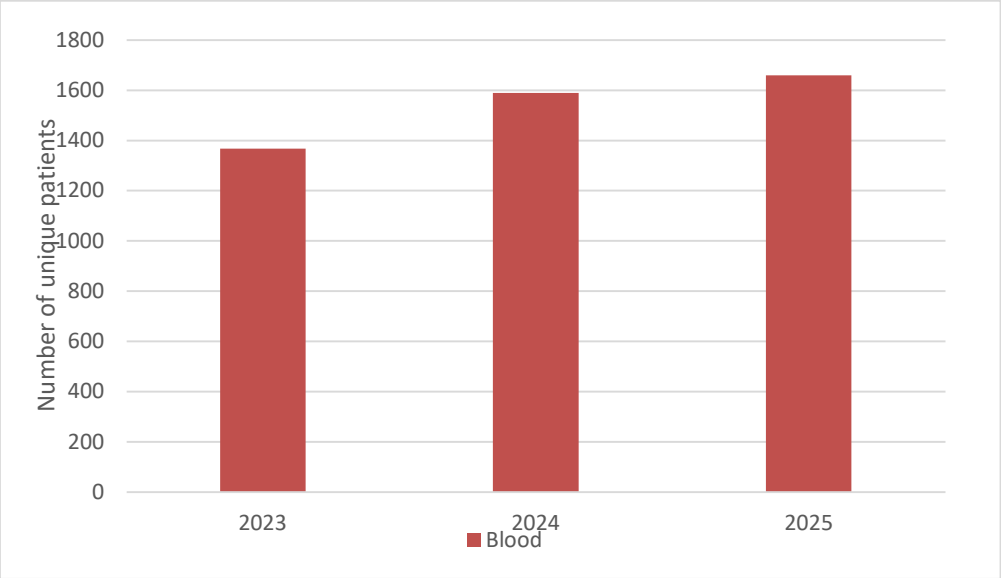

Figure 2.2.1. **DRB**. **Number of unique patients, 2023-2025**. The figure shows the number of unique patients, who have provided blood samples in each year from 2023-2025.

Figure 2.2.2 shows the number of unique patients included in DRB each month throughout 2025. As shown in the figure, there is little variation throughout the year mostly corresponding to the major holidays.

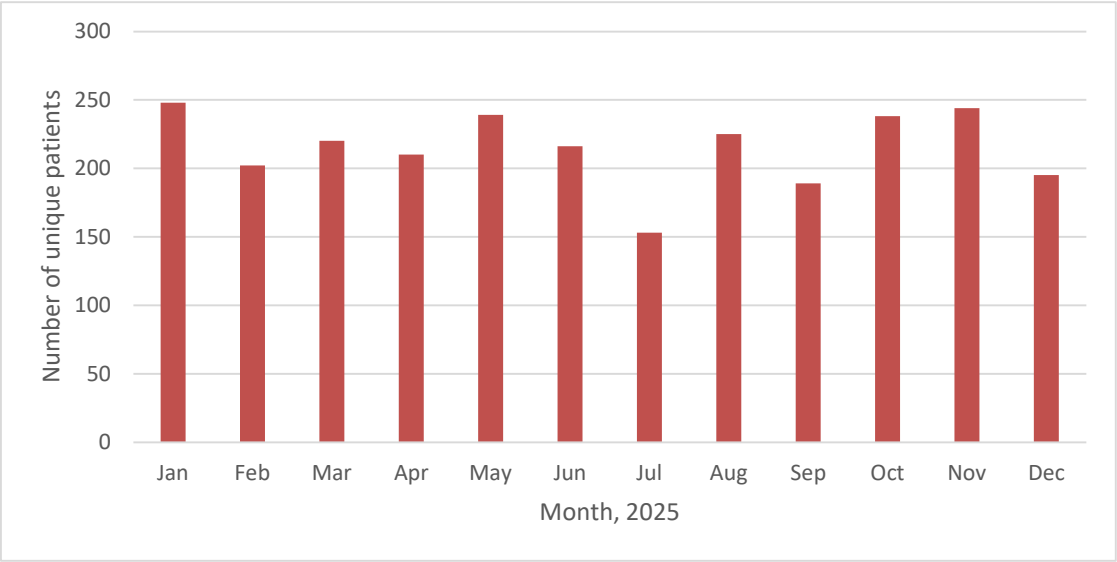

Figure 2.2.2. DRB. Number of unique patients per month, 2025. The figure shows the number of unique patients providing blood samples to DRB in each month during 2025.

The figure below shows different trends in number of unique patients across the DRB biobank centers between 2023 and 2025. Glostrup has seen an increase, while Sønderborg has remained relatively stable with only a slight decline when comparing 2024 to 2025. In contrast, Hjørring and Næstved have experienced a decrease in the number of unique patients compared to 2024. Also, Odense shows a small increase. Aarhus has seen a substantial increase in the number of unique patients, which likely contributes significantly to the overall national numbers (figure 2.2.3).

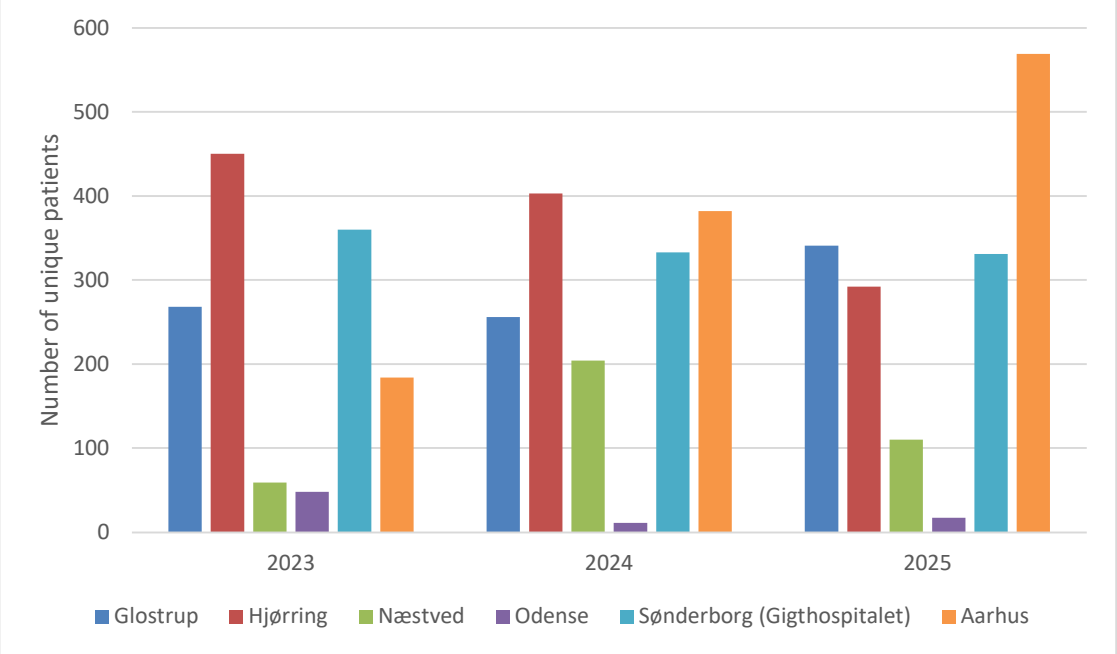

Figure 2.2.3. DRB. Number of unique patients per center, 2023-2025. The figure shows the number of unique patients that have provided blood in the six biobank centers in DRB from 2023-2025.

The number of unique patients from each department in each biobank center is shown in table 2.2.4.

	Number of unique patients		
	Blood	**Synovial fluid**	**Urine**
Danish Rheumatologic Biobank Glostrup	**341**	**0**	**0**
Department of Clinical Biochemistry, Gentofte	<10	0	0
Department of Clinical Biochemistry, Glostrup	311	0	0
Department of Clinical Immunology, Blood Bank, Rigshospitalet	22	0	0
Danish Rheumatologic Biobank Hjørring	**292**	**0**	**0**
Department of Clinical Biochemistry, Regionshospital Nordjylland, Hjørring	57	0	0
Department of Clinical Biochemistry, Aalborg University Hospital	235	0	0
Danish Rheumatologic Biobank Region Sjælland	**110**	**0**	**0**
Department of Clinical Biochemistry, Slagelse	<10	0	0
Department of Clinical Biochemistry, Køge	72	0	0
Department of Clinical Biochemistry, Næstved	11	0	0
Department of Clinical Biochemistry, Holbæk	16	0	0

Department of Clinical Biochemistry, Nykøbing F.	<10	0	0
Danish Rheumatologic Biobank Odense	**17**	**0**	**0**
Department of Clinical Biochemistry, Odense University Hospital	<10	0	0
Department of Clinical Biochemistry, Svendborg	15	0	0
Danish Rheumatologic Biobank Sønderborg	**331**	**0**	**0**
Danish Hospital for Rheumatic Diseases	325	0	0
Department of Clinical Biochemistry and Immunology, Vejle	<10	0	0
Danish Rheumatologic Biobank Århus	**569**	**0**	**0**
Department of Clinical Biochemistry, Aarhus University Hospital	409	0	0
Department of Clinical Biochemistry Gødstrup, West Hospital Unit	72	0	0
Department of Clinical Biochemistry, Horsens Regional Hospital	39	0	0
Department of Clinical Biochemistry Silkeborg, Central Hospital Unit	49	0	0

Table 2.2.4. DRB. Number of unique patients per sample type by each collecting department, 2025. The table shows the number of unique patients and their sample type for each collecting department in 2025. For departments with less than 10 unique patients per sample type, the number is given as <10 to ensure the anonymity of the patients.

A total of 2,832 materials were collected in 2025 which represents an increase of approximately 18% from last year's 2,380 materials (figure 2.2.5).

Looking at the collection per center (figure 2.2.6), Glostrup experienced an increase in the number of blood materials. Næstved continued its growth, increasing from 214 to 340 materials, while Odense also showed a little increase from 12 to 21 materials. Sønderborg maintained stable numbers. Hjørring saw a slight decrease, whereas Aarhus rose from 654 to 858 contributing significantly to the overall national increase (figure 2.2.6). The number of registered materials from each department (figure 2.2.5, figure 2.2.6) exceeds the number of unique patients (table 2.2.4), which shows that the same patient has provided samples several times. This reflects that for patient care and some scientific projects, there is a large focus on collecting longitudinal samples, e.g., over the course of a patient's disease progression and/or treatment.

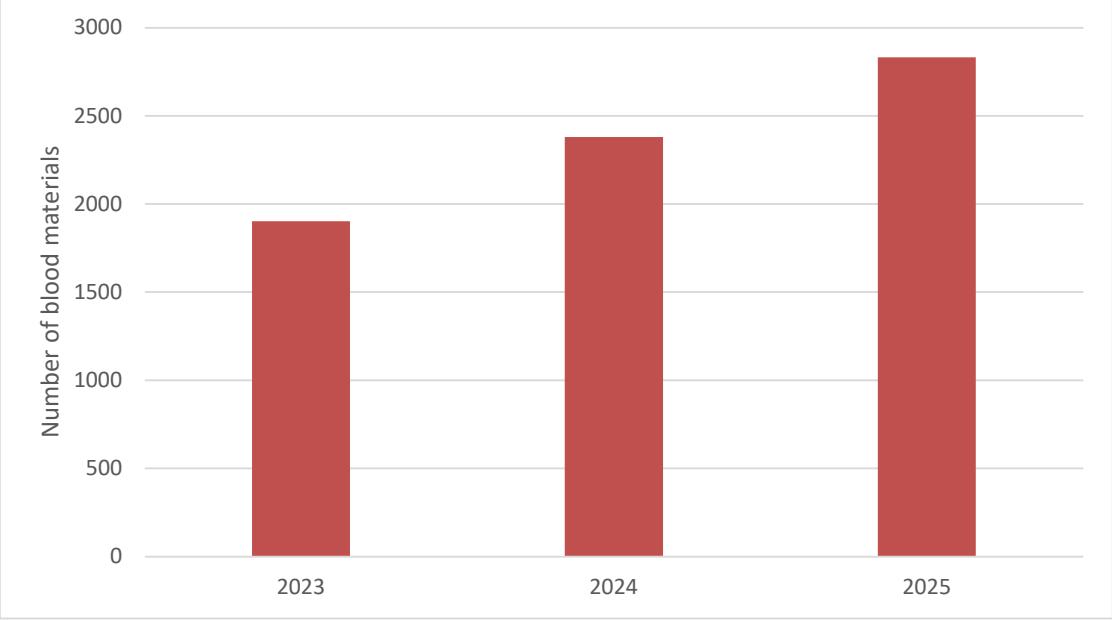

Figure 2.2.5. DRB. Number of blood materials collected, 2023-2025. The figure shows the total number of materials collected in DRB each year from 2023-2025.

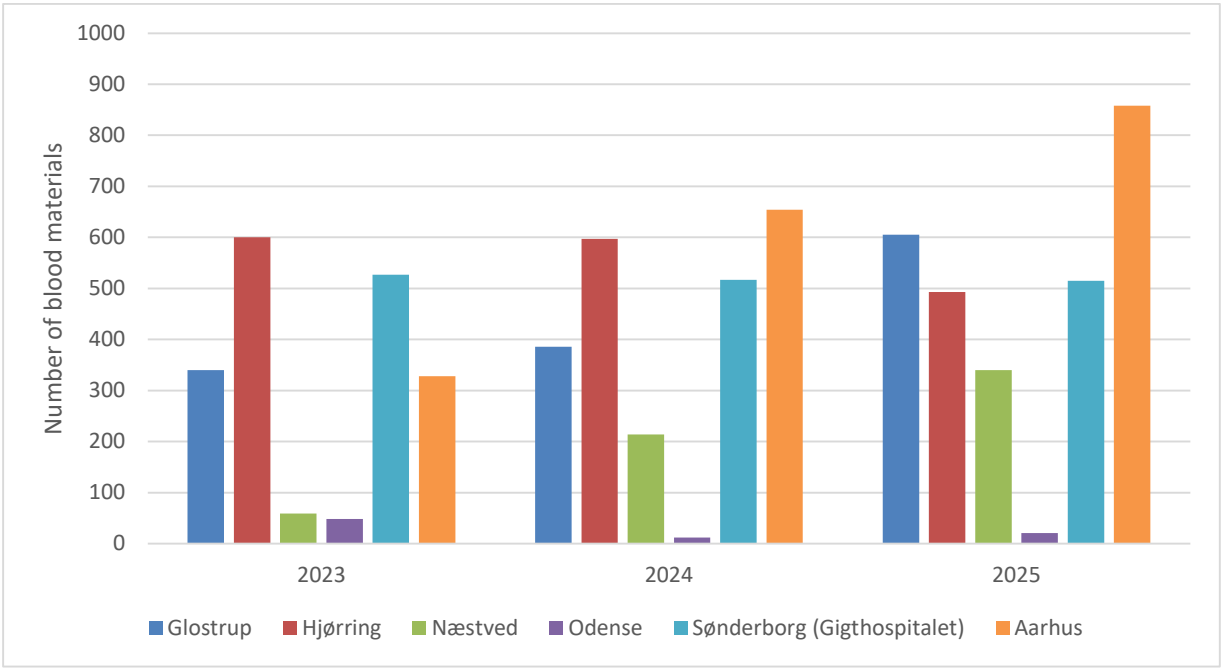

Figure 2.2.6. DRB. Number of blood materials per center, 2023-2025. The figure shows the number of materials collected by each biobank center in 2023-2025.

2.3 Indicators, DRB

2.3.1 Indicator 1: Quality of registration

Indicator 1 describes the quality of registration of the samples in DRB. It is important that data registration is completed for all samples in the biobank to ensure high quality. The indicator is divided into three sections: 1A, 1B, and 1C.

Quality goal:
1A: ≥95% of the fractions that should have a freezer position are assigned a freezer position.
1B: ≥95% of the fractions have all three handling time points registered.
1C: <5% of the fractions have an error in registration.

This indicator has been moved to the appendix (12.2) as agreed at the scientific advisory board meeting in 2023. Below is listed whether the quality goal of the indicator has been fulfilled or not. For further detail please see appendix 12.2.

1A. Material with registered freezer position: Quality goal has been fulfilled (appendix 12.2.1.1).

1B. Material with all handling time points registered: Quality goal has been fulfilled (appendix 12.2.1.2).

1C. Materials with an error in time point registration: Quality goal has been fulfilled (appendix 12.2.1.3).

2.3.2 Indicator 2: Sample Quality

Indicator 2 describes the sample quality of the material collected in DRB measured as processing time, the time between sampling the patient until the biospecimen is placed in a -80°C freezer. The goal is that ≥90% of the materials are processed within the recommended time. The processing time is calculated separately for PAXgene tubes (blood) since these are handled differently.

The indicator for processing time has been fulfilled nationally. While the total number of fractions has increased since last year, nationally, the proportion of fractions processed within three hours increased from 94% to 96%. Most biobank centers have maintained or improved their processing times compared to last year. However, Gentofte, Køge, Holbæk, and Vejle show a slight decrease in the proportion of fractions processed within three hours. Rigshospitalet (95%) and Hjørring (97%) have now fulfilled the goal while Køge (88%) and Vejle (83%) are well on their way (table 2.3.2.1). Indicator 2 processing time for PAXgene samples can only be estimated rather than measured. Due to technical limitation the estimation does not take prolonged storage at -20°C into account. It is therefore reasonable to assume that the real processing time is significantly better than the 68% shown in table 2.3.2.1.

	Fractions – Processing Time			
	Blood		PAXgene	
2025	**Total**	**≤ 3 hours, % (n)**	**Total**	**≤ 72 hours, % (n)**
National	**21,300**	**96 (20,470)**	**1,101**	**68 (754)**
Danish Rheumatologic Biobank Glostrup	**4,802**	**97 (4,679)**	**334**	**26 (87)**
Department of Clinical Biochemistry, Gentofte	108	25 (27)	0	0 (0)
Department of Clinical Biochemistry, Glostrup	4,351	99 (4,327)	294	18 (52)
Department of Clinical Immunology, Blood Bank, Rigshospitalet	343	95 (325)	40	88 (35)
Danish Rheumatologic Biobank Hjørring	**3,930**	**96 (3,789)**	**<10**	**100 (<10)**
Department of Clinical Biochemistry, Regionshospital Nordjylland, Hjørring	733	97 (712)	0	0 (0)
Department of Clinical Biochemistry, Aalborg University Hospital	3,197	96 (3,077)	<10	100 (<10)
Danish Rheumatologic Biobank Region Sjælland	**944**	**92 (864)**	**0**	**0 (0)**
Department of Clinical Biochemistry, Slagelse	32	100 (32)	0	0 (0)
Department of Clinical Biochemistry, Køge	617	88 (545)	0	0 (0)
Department of Clinical Biochemistry, Næstved	87	100 (87)	0	0 (0)
Department of Clinical Biochemistry, Holbæk	144	94 (136)	0	0 (0)
Department of Clinical Biochemistry, Nykøbing F.	64	100 (64)	0	0 (0)
Danish Rheumatologic Biobank Odense	**150**	**100 (150)**	**15**	**33 (<10)**
Department of Clinical Biochemistry, Svendborg	150	100 (150)	15	33 (<10)
Danish Rheumatologic Biobank Sønderborg	**4,125**	**99 (4,101)**	**462**	**91 (421)**
Danish Hospital for Rheumatic Diseases	4,077	100 (4,061)	456	91 (417)
Department of Clinical Biochemistry and Immunology, Vejle	48	83 (40)	<10	67 (<10)

Danish Rheumatologic Biobank Aarhus	**7,349**	**94 (6,887)**	**287**	**83 (238)**
Department of Clinical Biochemistry PJJ, Aarhus University Hospital	4,907	91 (4,471)	239	82 (195)
Department of Clinical Biochemistry Gødstrup, West Hospital Unit	1,150	98 (1,132)	41	90 (37)
Department of Clinical Biochemistry, Horsens Regional Hospital	432	98 (424)	0	0 (0)
Department of Clinical Biochemistry Silkeborg, Central Hospital Unit	860	100 (860)	<10	86 (<10)
2024	**Total**	**≤ 3 hours, % (n)**	**Total**	**≤ 72 hours, % (n)**
National	**19,094**	**94 (18,010)**	**967**	**60 (583)**
Danish Rheumatologic Biobank Glostrup	**3,109**	**86 (2,684)**	**258**	**14 (37)**
Department of Clinical Biochemistry, Gentofte	451	35 (156)	<10	100 (<10)
Department of Clinical Biochemistry, Glostrup	2,431	96 (2,333)	214	5 (10)
Department of Clinical Immunology, Blood Bank, Rigshospitalet	227	86 (195)	44	61 (27)
Danish Rheumatologic Biobank Hjørring	**4,775**	**96 (4,575)**	**119**	**24 (29)**
Department of Clinical Biochemistry, Regionshospital Nordjylland, Hjørring	1,545	89 (1,377)	115	22 (25)
Department of Clinical Biochemistry, Aalborg University Hospital	3,230	99 (3,198)	<10	100 (<10)
Danish Rheumatologic Biobank Region Sjælland	**1,673**	**97 (1,616)**	**0**	**0 (0)**
Department of Clinical Biochemistry, Slagelse	120	93 (112)	0	0 (0)
Department of Clinical Biochemistry, Køge	964	96 (923)	0	0 (0)
Department of Clinical Biochemistry, Næstved	189	96 (181)	0	0 (0)
Department of Clinical Biochemistry, Holbæk	280	100 (280)	0	0 (0)
Department of Clinical Biochemistry, Nykøbing F.	120	100 (120)	0	0 (0)
Danish Rheumatologic Biobank Odense	**0**	**0 (0)**	**0**	**0 (0)**
Department of Clinical Biochemistry, Odense University Hospital	0	0 (0)	0	0 (0)
Danish Rheumatologic Biobank Sønderborg	**4,128**	**100 (4,128)**	**488**	**92 (448)**
Danish Hospital for Rheumatic Diseases	4,000	100 (4,000)	472	93 (440)
Department of Clinical Biochemistry and Immunology, Vejle	128	100 (128)	16	50 (<10)
Danish Rheumatologic Biobank Aarhus	**5,401**	**93 (5,007)**	**93**	**65 (60)**
Department of Clinical Biochemistry PJJ, Aarhus University Hospital	3,641	92 (3,349)	93	65 (60)
Department of Clinical Biochemistry, Randers Regional Hospital	14	0 (0)	0	100 (0)
Department of Clinical Biochemistry Gødstrup, West Hospital Unit	698	98 (682)	<10	100 (<10)
Department of Clinical Biochemistry, Horsens Regional Hospital	440	91 (400)	0	100 (0)

Department of Clinical Biochemistry Silkeborg, Central Hospital Unit	608	95 (576)	0	100 (0)

Table 2.3.2.1. DRB. Processing time for blood, 2024-2025. The table shows the percentage and number (n) of blood fractions that have been processed within the recommended 3 hours (blood) and 72 hours (PAXgene). Data is shown for each collecting department in 2024-2025.

Transport times for blood samples have improved across all biobank centers compared to last year (table 2.3.2.2). The proportion of blood fractions transported within 3 hours increased from 98% to 99%, while PAXgene remained stable at 100%. Nationally, the transport time target continues to be met for both blood samples and PAXgene samples. Nearly all collecting departments meet the target, however, Gentofte is the only department experiencing challenges in achieving the transport time goal for blood with 33% of total. For PAXgene samples, the number of fractions increased by approximately 20%, and for blood samples the number of fractions increased by approximately 15% from 2024 to 2025. Table 2.3.2.1 only considers samples that have been placed in a freezer, which is why the totals are lower than those of table 2.3.2.2 below.

	Fractions – Transport Time			
	Blood		**PAXgene**	
2025	**Total**	**≤ 3 hours, % (n)**	**Total**	**≤ 72 hours, % (n)**
National	**21,419**	**99 (21,101)**	**1,199**	**100 (1,199)**
Danish Rheumatologic Biobank Glostrup	**4,809**	**98 (4,735)**	**56**	**100 (56)**
Department of Clinical Biochemistry, Gentofte	108	33 (36)	0	0 (0)
Department of Clinical Biochemistry, Glostrup	4,358	100 (4,358)	329	100 (329)
Department of Clinical Immunology, Blood Bank, Rigshospitalet	343	99 (341)	40	100 (40)
Danish Rheumatologic Biobank Hjørring	**3,938**	**99 (3,882)**	**56**	**100 (56)**
Department of Clinical Biochemistry, Regionshospital Nordjylland, Hjørring	733	100 (733)	53	100 (53)
Department of Clinical Biochemistry, Aalborg University Hospital	3,205	98 (3,149)	<10	100 (<10)
Danish Rheumatologic Biobank Region Sjælland	**944**	**93 (880)**	**0**	**0 (0)**
Department of Clinical Biochemistry, Slagelse	32	100 (32)	0	0 (0)
Department of Clinical Biochemistry, Køge	617	91 (561)	0	0 (0)
Department of Clinical Biochemistry, Næstved	87	100 (87)	0	0 (0)
Department of Clinical Biochemistry, Holbæk	144	94 (136)	0	0 (0)
Department of Clinical Biochemistry, Nykøbing F.	64	100 (64)	0	0 (0)
Danish Rheumatologic Biobank Odense	**198**	**100 (198)**	**21**	**100 (21)**
Department of Clinical Biochemistry, Odense University Hospital	48	100 (48)	<10	100 (<10)
Department of Clinical Biochemistry, Svendborg	150	100 (150)	15	100 (15)
Danish Rheumatologic Biobank Sønderborg	**4,125**	**100 (4,125)**	**462**	**100 (462)**

Danish Hospital for Rheumatic Diseases	4,077	100 (4,077)	456	100 (456)
Department of Clinical Biochemistry and Immunology, Vejle	48	100 (48)	<10	100 (<10)
Danish Rheumatologic Biobank Aarhus	**7,405**	**98 (7,281)**	**291**	**100 (291)**
Department of Clinical Biochemistry PJJ, Aarhus University Hospital	4,907	97 (4,783)	239	100 (239)
Department of Clinical Biochemistry Gødstrup, West Hospital Unit	1,180	100 (1,180)	45	100 (45)
Department of Clinical Biochemistry, Horsens Regional Hospital	432	100 (432)	0	0 (0)
Department of Clinical Biochemistry Silkeborg, Central Hospital Unit	886	100 (886)	<10	100 (<10)
2024	**Total**	**≤ 3 hours, % (n)**	**Total**	**≤ 72 hours, % (n)**
National	**19,200**	**98 (18,733)**	**1,011**	**100 (1,011)**
Danish Rheumatologic Biobank Glostrup	**3,125**	**91 (2,848)**	**260**	**100 (268)**
Department of Clinical Biochemistry, Gentofte	451	39 (174)	<10	100 (<10)
Department of Clinical Biochemistry, Glostrup	2,447	100 (2,447)	216	100 (216)
Department of Clinical Immunology, Blood Bank, Rigshospitalet	227	100 (227)	44	100 (44)
Danish Rheumatologic Biobank Hjørring	**4,775**	**100 (4,767)**	**156**	**100 (160)**
Department of Clinical Biochemistry, Regionshospital Nordjylland, Hjørring	1,545	89 (1,377)	156	100 (156)
Department of Clinical Biochemistry, Aalborg University Hospital	3,230	99 (3,198)	<10	100 (<10)
Danish Rheumatologic Biobank Region Sjælland	**1,673**	**100 (1,665)**	**0**	**100 (0)**
Department of Clinical Biochemistry, Slagelse	120	93 (112)	0	100 (0)
Department of Clinical Biochemistry, Køge	964	96 (923)	0	100 (0)
Department of Clinical Biochemistry, Næstved	189	96 (181)	0	100 (0)
Department of Clinical Biochemistry, Holbæk	280	100 (280)	0	100 (0)
Department of Clinical Biochemistry, Nykøbing F.	120	100 (120)	0	100 (0)
Danish Rheumatologic Biobank Odense	**90**	100 (90)	<10	100 (<10)
Department of Clinical Biochemistry, Odense University Hospital	90	100 (90)	<10	100 (<10)
Danish Rheumatologic Biobank Sønderborg	**4,136**	**100 (4136)**	**488**	**100 (488)**
Danish Hospital for Rheumatic Diseases	4,000	100 (4,000)	472	100 (472)
Department of Clinical Biochemistry and Immunology, Vejle	136	100 (136)	16	100 (16)
Danish Rheumatologic Biobank Aarhus	**5,401**	**97 (18,733)**	**94**	**100 (94)**
Department of Clinical Biochemistry PJJ, Aarhus University Hospital	3,641	93 (3,389)	93	100 (93)

Department of Clinical Biochemistry, Randers Regional Hospital	14	0 (0)	0	100 (0)
Department of Clinical Biochemistry Gødstrup, West Hospital Unit	698	100 (698)	<10	100 (<10)
Department of Clinical Biochemistry, Horsens Regional Hospital	440	100 (440)	0	100 (0)
Department of Clinical Biochemistry Silkeborg, Central Hospital Unit	608	99 (600)	0	100 (0)

Table 2.3.2.2. DRB. Transport time for blood, 2024-2025. The table shows the percentage and number (n) of blood fractions that have been transported within the recommended 3 hours. Data is shown for each collecting department in 2024 and 2025.

RECOMMENDATION

Transport and processing time metrics show strong national performance but highlight notable variation between collecting departments. Nationally, 99% of blood and 100% of PAXgene samples meet the transport time targets, while 96% of blood and 68% of PAXgene samples meet the processing time targets.

Departments in Glostrup, Aarhus, Hjørring, and Sønderborg handle many samples and therefore have the greatest influence on national performance. While transport time is near-optimal in these departments (≥97% for blood and PAXgene), processing time shows more variability.

The large variations between departments suggest that local or systemic workflow challenges may exist. It is worth looking into why this is observed and explore whether it is due to an impractical workflow, or the registration procedures.

Overall, the transport time metric remains excellent for both blood and PAXgene, and processing performance, though variable, shows clear potential for optimization.

2.3.3 Indicator 3: Coverage

The guidelines for material handling in DRB define a standard set for blood. This is to ensure that there is enough material and different types of fractions to accommodate the needs in the clinic and, if possible, for future research. Indicator 3 evaluates the coverage, which is defined as the amount (n) and proportion of blood materials that contain the recommended number of fractions or more.

Quality goal: ≥90% of the blood materials should contain ≥8 fractions.

This indicator has been moved to the appendix (12.2) as agreed at the scientific advisory board meeting in 2023. Below is listed whether the quality goal of the indicator has been fulfilled or not. For further detail please see appendix 12.2.

The quality goal for this indicator has not been fulfilled nationally. Further details are available in appendix 12.2.3.1.

2.3.4 Indicator 4: Completeness

Indicator 4 evaluates the number of patients providing several samples. Some patients provided material to DRB several times last year. Especially within blood sampling, there is a focus on, and better opportunities for, collecting samples over the course of the patient's disease and/or treatment. Accordingly, in 2025, 639 unique patients (38% of all donors) provided blood more than once (table 2.3.4.1). This is an increase from the 448 unique patients (31% of all donors) who provided blood more than once in 2024.

	Number of unique patients
Number of donations	**Blood**
1	1,021
2	297
3	189
4	124
5	23
6	<10
7	<10
8	<10

Table 2.3.4.1. DRB. Longitudinal sampling, 2025. The table shows the distribution of longitudinal samplings of blood in 2025.

RECOMMENDATION

Focus on the collection of samples throughout the patient's disease and treatment should be maintained, as these are valuable samples for the patient's own treatment and for current and future research projects.

2.3.5 Indicator 5: Diagnostic purposes

Indicator 5 evaluates the number of requests for biospecimens for a clinical assessment and treatment of patients in the Danish Healthcare system. A quality goal has not yet been defined for this indicator, but all centers are encouraged to focus on retrieving samples for diagnostic follow-up/genetic counseling.

No material from DRB has been retrieved for diagnostic follow-up/genetic counseling.

2.3.6 Indicator 6: Research

The primary goals for DRB is to collect samples for patients' own use and to facilitate the collection of samples for research projects. In 2025, four new local projects and one new national project started collecting material through DRB. Including all projects initiated since 2015, DRB has now registered 25 local and 13 national projects, i.e., 38 research projects in total (figure 2.3.6.1). These are cumulative figures. By the end of 2025, DRB was facilitating sample collection with informed consent to 20 ongoing projects (eleven local and nine national projects).

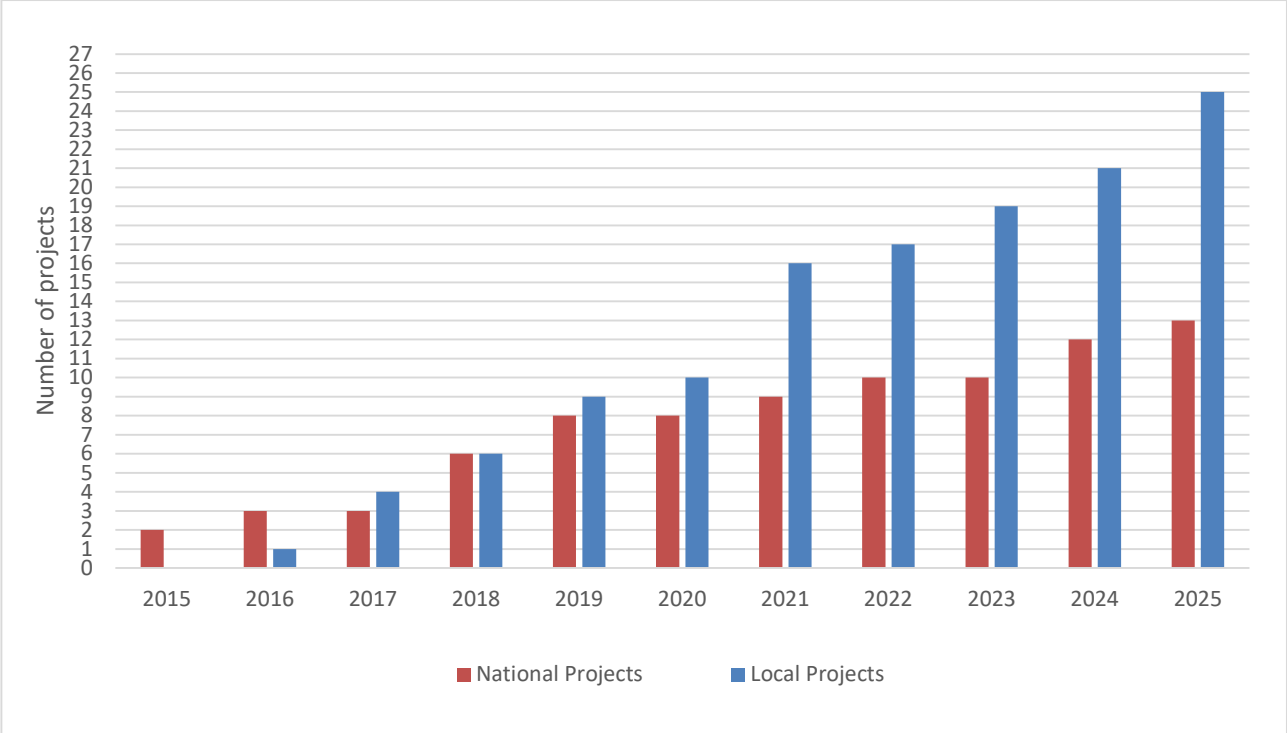

Figure 2.3.6.1. DRB. Number of research projects collecting via DRB. The figure shows the number of both national and local research projects in DRB accumulated through the years 2015-2025.

RBGB is an infrastructure that, besides facilitating diagnostics, also facilitates research and collaboration within the field of inflammatory arthritis. Indicator 6 evaluates the number of fractions retrieved for research projects which should be higher than the average of the previous five years.

In 2025, a total of 2,551 blood fractions were retrieved for research projects, which is fewer than in the previous year (table 2.3.6.1). Each fraction is attributed to the department that originally collected it, rather than the location where it was stored at the time of retrieval.

Over the past five years, the average number of fractions retrieved for research has been 4,114. With only 2,551 fractions retrieved in 2025, this indicator is not met. However, it should be noted that the average is influenced by a high number of retrievals in 2023, when Aarhus alone retrieved more than 7,000 fractions. Overall, the number of retrieved fractions in 2025 is below the expected level, partly due to this skewed average. It should be noted that fractions retrieved to the ScandRA project in 2024 have been omitted from the average to not skew it further.

	Fractions retrieved for research	
	2024	**2025**
	Blood	**Blood**
	Number of fractions, n	**Number of fractions, n**
National	**3,876**	**2,551**
Danish Rheumatologic Biobank Glostrup	**206**	**587**
Department of Clinical Biochemistry, Gentofte	45	0
Department of Clinical Biochemistry, Glostrup	143	37
Department of Clinical Immunology, Blood Bank, Rigshospitalet	0	550
Clinical Immunology Department, North Zealand Hospital	0	0

Department of Clinical Biochemistry, Bispebjerg & Frederiksberg	18	0
Danish Rheumatologic Biobank Hjørring	**0**	**1,926**
Department of Clinical Biochemistry, Regionshospital Nordjylland, Hjørring	0	<10
Department of Clinical Biochemistry, Aalborg University Hospital	0	1,922
Danish Rheumatologic Biobank Region Sjælland	**0**	**0**
Department of Clinical Biochemistry, Slagelse	0	0
Department of Clinical Biochemistry, Køge	0	0
Department of Clinical Biochemistry, Næstved	0	0
Department of Clinical Biochemistry, Holbæk	0	0
Department of Clinical Biochemistry, Nykøbing F.	0	0
Danish Rheumatologic Biobank Odense	**101**	**38**
Department of Clinical Biochemistry, Odense University Hospital	54	38
Department of Clinical Biochemistry, Svendborg Hospital	47	0
Danish Rheumatologic Biobank Sønderborg	**186**	**0**
Danish Hospital for Rheumatic Diseases	132	0
Department of Clinical Biochemistry and Immunology, Vejle	54	0
Danish Rheumatologic Biobank Århus	**3,383**	**0**
Department of Clinical Biochemistry PJJ, Aarhus University Hospital	1,470	0
Department of Clinical Biochemistry NBG, Aarhus University Hospital	0	0
Department of Molecular Medicine, Aarhus University Hospital	0	0
Rheumatic Department, Aarhus University Hospital	24	0
Department of Clinical Biochemistry, Randers Regional Hospital	0	0
Department of Clinical Biochemistry Gødstrup, West Hospital Unit	0	0
Department of Clinical Biochemistry, Horsens Regional Hospital	404	0
Department of Clinical Biochemistry Silkeborg, Central Hospital Unit	1,485	0

Table 2.3.6.1. DRB. Number of blood fractions retrieved for research projects, 2024-2025. The table shows the number of blood fractions distributed to research projects. Data are shown for each biobank center from 2024-2025.

RECOMMENDATION

The materials in DRB are of high quality and can be very useful for researchers who are working to improve treatment and diagnosis of patients with rheumatological diseases. The number of fractions used for research varies between years, reflecting fluctuations in research activity and sample utilization.

Continued focus on increasing the visibility of DRB may contribute to increased utilization of the available material.

2.3.7 Indicator 7: Clinical Data

Clinical data corresponding to the samples in DRB are registered in the clinical databases such as REDCap and DANBIO. However, some information about the samples can be retrieved from the RBGB registry. These include age, sex and data about which type of consent has been registered in the RBGB registry.

The number of patients who have provided samples for DRB increases with age (figure 2.3.7.1). A total of 1,045 females and 614 males provided material for DRB in 2025. The large number of women compared to men can be explained by the fact, that approximately half of the patients (64.3%) in DRB are diagnosed with rheumatoid arthritis (table 2.3.7.5), which disproportionately affects women.

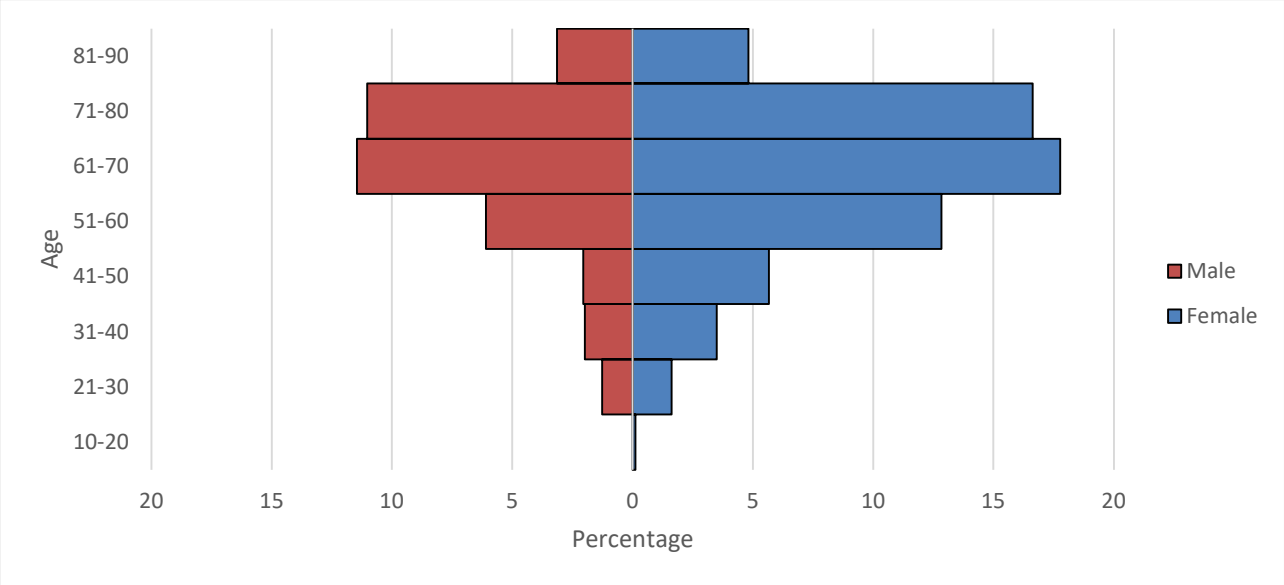

Figure 2.3.7.1. DRB. Population distribution by age and sex for patients, 2025. The figure shows the distribution of age and gender of the patients who have provided material for DRB in 2025.

It is important to know what type of consent is connected to various material types in the biobank to ensure that the material is only used for the purpose it was collected.

In RBGB, patients can be involved in research projects for which they have given a specific informed consent. Informed consent is registered in the RBGB registry. Patients can also sign a letter of intent allowing collection and storage of their samples in RBGB (the letter of intent is not mandatory, but recommended for all new projects in DRB). This letter of intent can be signed on its own or with an informed consent form for a specific research project. The number (n) and percentage of materials that have a consent and/or signed letter of intent are registered in the RBGB registry and shown in table 2.3.7.1.

In total, 88% of the materials in DRB in 2025 are registered with an informed consent to a specific research project and storage in RBGB (table 2.3.7.1). This is consistent with the fact that patients included in DRB are included as part of a research project. It is the second year in a row where there is an increase in the “Do not

know" category which continues to be used extensively by the Danish Rheumatologic Biobank Region Sjælland.

	Material					
	Blood					
2025	**Total**	**Yes, RBGB, % (n)**	**Yes, RBGB and research, % (n)**	**Yes, research project, % (n)**	**Do not know, % (n)**	**Consent not required, % (n)**
National	**2,817**	**0 (<10)**	**88 (2,485)**	**1 (12)**	**12 (343)**	**0 (0)**
Danish Rheumatologic Biobank Glostrup	**605**	**2 (<10)**	**100 (604)**	**0 (0)**	**0 (0)**	**0 (0)**
Department of Clinical Biochemistry, Gentofte	12	0 (0)	100 (12)	0 (0)	0 (0)	0 (0)
Department of Clinical Biochemistry, Glostrup	543	0 (0)	100 (543)	0 (0)	0 (0)	0 (0)
Department of Clinical Immunology, Blood Bank, Rigshospitalet	50	2 (<10)	98 (49)	0 (0)	0 (0)	0 (0)
Danish Rheumatologic Biobank Hjørring	**493**	**0 (<10)**	**99 (489)**	**0 (0)**	**1 (<10)**	**0 (0)**
Department of Clinical Biochemistry, Regionshospital Nordjylland, Hjørring	92	0 (0)	99 (91)	0 (0)	1 (<10)	0 (0)
Department of Clinical Biochemistry, Aalborg University Hospital	401	0 (<10)	99 (398)	0 (0)	0 (<10)	0 (0)
Danish Rheumatologic Biobank Region Sjælland	**340**	**0 (0)**	**0 (0)**	**0 (0)**	**100 (340)**	**0 (0)**
Department of Clinical Biochemistry, Slagelse	10	0 (0)	0 (0)	0 (0)	10 (10)	0 (0)
Department of Clinical Biochemistry, Køge	239	0 (0)	0 (0)	0 (0)	100 (239)	0 (0)
Department of Clinical Biochemistry, Næstved	35	0 (0)	0 (0)	0 (0)	100 (35)	0 (0)
Department of Clinical Biochemistry, Holbæk	38	0 (0)	0 (0)	0 (0)	100 (38)	0 (0)
Department of Clinical Biochemistry, Nykøbing F.	18	0 (0)	0 (0)	0 (0)	100 (18)	0 (0)
Danish Rheumatologic Biobank Odense	**6**	**0 (0)**	**100 (6)**	**0 (0)**	**0 (0)**	**0 (0)**
Department of Clinical Biochemistry, Odense University Hospital	6	0 (0)	100 (6)	0 (0)	0 (0)	0 (0)
Danish Rheumatologic Biobank Sønderborg	**515**	**0 (0)**	**100 (515)**	**0 (0)**	**0 (0)**	**0 (0)**
Danish Hospital for Rheumatic Diseases	509	0 (0)	100 (509)	0 (0)	0 (0)	0 (0)

Department of Clinical Biochemistry and Immunology, Vejle	6	0 (0)	100 (6)	0 (0)	0 (0)	0 (0)
Danish Rheumatologic Biobank Århus	**857**	**0 (<10)**	**99 (856)**	**0 (0)**	**0 (<10)**	**0 (0)**
Department of Clinical Biochemistry PJJ, Aarhus University Hospital	558	0 (0)	100 (558)	0 (0)	0 (0)	0 (0)
Department of Clinical Biochemistry, Randers Regional Hospital	0	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Department of Clinical Biochemistry Gødstrup, West Hospital Unit	136	0 (0)	100 (136)	0 (0)	0 (0)	0 (0)
Department of Clinical Biochemistry, Horsens Regional Hospital	55	0 (0)	100 (55)	0 (0)	0 (0)	0 (0)
Department of Clinical Biochemistry Silkeborg, Central Hospital Unit	109	0 (0)	100 (109)	0 (0)	0 (0)	0 (0)
2024	**Total**	**Yes, RBGB, % (n)**	**Yes, RBGB and research, % (n)**	**Yes, research project, % (n)**	**Do not know, % (n)**	**Consent not required, % (n)**
National	**2,380**	**0 (<10)**	**91 (2,154)**	**1 (12)**	**9 (213)**	**0 (0)**
Danish Rheumatologic Biobank Glostrup	**386**	**0 (0)**	**97 (374)**	**0 (<10)**	**0 (0)**	**0 (0)**
Department of Clinical Biochemistry, Gentofte	52	0 (0)	85 (44)	<10 (<10)	0 (0)	0 (0)
Department of Clinical Biochemistry, Glostrup	303	0 (0)	99 (299)	<10 (<10)	0 (0)	0 (0)
Department of Clinical Immunology, Blood Bank, Rigshospitalet	31	0 (0)	100 (31)	0 (0)	0 (0)	0 (0)
Danish Rheumatologic Biobank Hjørring	**597**	**0 (0)**	**100 (597)**	**0 (0)**	**0 (0)**	**0 (0)**
Department of Clinical Biochemistry, Regionshospital Nordjylland, Hjørring	193	0 (0)	100 (193)	0 (0)	0 (0)	0 (0)
Department of Clinical Biochemistry, Aalborg University Hospital	404	0 (0)	100 (404)	0 (0)	0 (0)	0 (0)
Danish Rheumatologic Biobank Region Sjælland	**214**	**0 (0)**	**0 (<10)**	**0 (0)**	**100 (213)**	**0 (0)**
Department of Clinical Biochemistry, Slagelse	15	0 (0)	0 (0)	0 (0)	100 (15)	0 (0)
Department of Clinical Biochemistry, Køge	122	0 (0)	1 (<10)	0 (0)	99 (121)	0 (0)
Department of Clinical Biochemistry, Næstved	24	0 (0)	0 (0)	0 (0)	100 (24)	0 (0)
Department of Clinical Biochemistry, Holbæk	38	0 (0)	0 (0)	0 (0)	100 (38)	0 (0)
Department of Clinical Biochemistry, Nykøbing F.	15	0 (0)	0 (0)	0 (0)	100 (15)	0 (0)

Danish Rheumatologic Biobank Odense	**12**	**0 (0)**	**100 (12)**	**100 (<10)**	**0 (0)**	**0 (0)**
Department of Clinical Biochemistry, Odense University Hospital	12	0 (0)	100 (12)	100 (<10)	0 (0)	0 (0)
Danish Rheumatologic Biobank Sønderborg	**517**	**0 (0)**	**100 (517)**	**0 (0)**	**0 (0)**	**0 (0)**
Danish Hospital for Rheumatic Diseases	500	0 (0)	100 (500)	0 (0)	0 (0)	0 (0)
Department of Clinical Biochemistry and Immunology, Vejle	17	0 (0)	100 (17)	0 (0)	0 (0)	0 (0)
Danish Rheumatologic Biobank Århus	**652**	**0 (<10)**	**100 (651)**	**0 (0)**	**0 (0)**	**0 (0)**
Department of Clinical Biochemistry PJJ, Aarhus University Hospital	434	1 (<10)	100 (433)	0 (0)	0 (0)	0 (0)
Department of Clinical Biochemistry, Randers Regional Hospital	<10	0 (0)	100 (<10)	0 (0)	0 (0)	0 (0)
Department of Clinical Biochemistry Gødstrup, West Hospital Unit	87	0 (0)	100 (87)	0 (0)	0 (0)	0 (0)
Department of Clinical Biochemistry, Horsens Regional Hospital	55	0 (0)	100 (55)	0 (0)	0 (0)	0 (0)
Department of Clinical Biochemistry Silkeborg, Central Hospital Unit	76	0 (0)	100 (76)	0 (0)	0 (0)	0 (0)

Table 2.3.7.1. DRB. Number (n) and percentage of materials that have a consent and/or statement registered in the RBGB registry, 2024-2025. The table shows which type of consent and/or statement is registered for the materials in DRB. Data is shown for each collecting department in 2024 and 2025.

For the optimal use of the material in DRB, consent to scientific research and clinical data regarding diagnosis, antirheumatic treatment, disease activity and disease status should be available to the corresponding biological material. Clinical data on rheumatological patients is mainly registered in the clinical registry, DANBIO. Clinical data from DANBIO has been processed by the secretariat of DANBIO and linked to the biobank samples.

By far, most patients in DANBIO with material in DRB have given informed consent to the national research project, the Biomarker Protocol (table 2.3.7.2). This informed consent is registered in both the RBGB registry and in DANBIO, and samples are retrieved to the project upon request. An overview of the number of patients with informed consent to this project and other projects in DRB is shown in table 2.3.7.2 and table 2.3.7.3. Not all active projects in DRB register consent in DANBIO but use other clinical databases such as e.g. REDCap. RBGB does not have access to data in databases other than DANBIO and therefore not all active DRB projects are currently represented in table 2.3.7.2 and table 2.3.7.3.

		Number of unique patients	
		Consent to the Biomarker protocol	**Consent to other protocols**
National	TOTAL	**1,141**	**324**
Hospital	Frederiksberg	27	N/A
	Glostrup	277	134

	Rigshospitalet	15	<10
	Svendborg sygehus	15	N/A
	Køge	10	N/A
	Horsens Sygehus	15	N/A
	Sygehus Lillebælt	<10	N/A
	Dansk Gigthospital	325	87
	Randers Sygehus	19	N/A
	Hjørring	47	N/A
	Aalborg	119	22
	Hospitalsenhed Midt	12	N/A
	Regionshospitalet Gødstrup	48	N/A
	Aarhus	204	73
	Other	<10	N/A

Table 2.3.7.2. DRB. Number of unique patients who gave informed consent in 2025 according to DANBIO. The table shows the number of unique patients with samples in DRB who have a registered consent in DANBIO to either the biomarker protocol or other protocols. Data is collected from all hospitals in DRB in 2025.

Project	Number of unique patients with consent
BIODOPT	<10
CANART	<10
NORDSTAR	38
RACTX	65
SLEGEIST	13
CIMTI	17
PANGUIAN	23
DECODIR	47
SPINCODE	21
PETRA	48
ANDET	38

Table 2.3.7.3. DRB. Number of patients with registered consent to other scientific projects than the Biomarker protocol, according to DANBIO, 2025. The table shows the number of patients with registered consent to each protocol in 2025 as registered in DANBIO.

Patients may provide material several times, and 4,544 patients have two samples stored in the biobank (table 2.3.7.4). Furthermore, 538 patients provided their first sample to the biomarker protocol in 2025 and 267 patients provided ≥2 samples.

		Number of patients			
		Total, one sample	Total, two samples	First sample in 2025	≥ 2 samples in 2025
National	**TOTAL**	**6,059**	**4,544**	**538**	**267**
Hospital	Rigshospitalet	442	84	<10	<10
	Glostrup Hospital	1,205	1,010	158	126
	Frederiksberg Hospital	808	248	24	13
	Sjællands Universitetshospital (Køge og Roskilde)	89	193	<10	<10
	Midt- og Vestsjællands Hospital (Slagelse)	<10	0	0	0
	Holbæk Sygehus	<10	0	0	0
	Odense Universitetshospital	134	66	0	0
	Svendborg Sygehus	19	98	13	<10
	Dansk Gigthospital	786	948	53	50
	Sygehus Lillebælt	475	321	0	<10
	Aarhus Universitetshospital	476	617	127	<10
	Regionshospitalet Horsens	16	<10	14	0
	Hospitalsenheden Midt	22	22	<10	<10
	Regionshospitalet Gødstrup	47	<10	46	0
	Regionshospitalet Randers	20	<10	19	0
	Aalborg Universitetshospital	124	474	37	47
	Regionshospital Nordjylland (Hjørring)	1,358	449	20	<10
	Other	27	<10	<10	<10

Table 2.3.7.4. DRB. Distribution of patients providing cross-sectional and longitudinal samplings in total (all years) and in 2025 alone, according to DANBIO. The table shows the number of patients that have provided material once or several times to the biomarker protocol, according to DANBIO.

Information about rheumatic disease is registered in DANBIO. In 2025, over half (1061; 64.3%) of the samples were collected from patients diagnosed with rheumatoid arthritis (table 2.3.7.5).

		Samples	
		Blood	
		Number, n	% of total
National	**TOTAL**	**1,649**	**100**
Diagnosis	Rheumatoid arthritis	1,061	65
	Axial spondyloarthritis	214	13
	Psoriatic arthritis	219	13
	Lupus erythematosus	21	1
	Other	134	8

Table 2.3.7.5. DRB. Number of blood samples categorized by diagnosis, 2025. The table shows the number of blood samples registered under each diagnosis in DANBIO in 2025.

Information about treatment is also registered in DANBIO. In total, 1,649 samples were collected from patients treated with a biologic disease-modifying antirheumatic drug (bDMARD). 26.5% of these were only

treated with bDMARD, while 26.1% were treated with bDMARD in combination with a conventional synthetic disease-modifying antirheumatic drug (csDMARD). 37.1% of samples were collected from patients treated with only csDMARD, and 2.1% only treated with NSAID. 8.1% of the samples collected in 2025 were collected from patients not currently undergoing treatment (table 2.3.7.6).

		Samples	
		Blood	
		Number, n	% of total
National	**TOTAL**	**1,649**	**100**
Type of treatment	bDMARD (mono)	437	26.5
	bDMARD + csDMARD	432	26.2
	Only csDMARD	611	37.1
	NSAID	35	2.1
	No treatment	134	8.1

Table 2.3.7.6. DRB. Number of blood samples categorized by treatment, 2025. The table shows the number of blood samples registered under each treatment in DANBIO in 2025. Abbreviations: **bDMARD**: biologic disease-modifying antirheumatic drugs, **csDMARD**: conventional synthetic disease-modifying antirheumatic drugs, **NSAID:** non-steroid anti-inflammatory drug.

To increase the applicability of the blood samples in a research context, it is important that a blood sample is linked to information about the patient's current disease activity. This data consists partly of the patient's own registration via touch screens in the rheumatology department's waiting rooms; since 2020 the patient can also provide the data from home by computer, tablet, or smartphone via patient.danbio.dk; and the doctor's registration of disease activity (e.g., number of swollen and tender joints) and paraclinical data (e.g., C-reactive protein). Thereby, a combined measurement of the patient's disease activity can be calculated (e.g., CDAI or ASDAS depending on the diagnosis).

Information about patient reported outcomes (PRO) is available for 55% of the blood samples in 2025, and information about disease activity is available for 52% of the patients (table 2.3.7.7). Rheumatologists and patients are encouraged to focus on the importance of self-reporting. By maintaining the high level of registration of disease activity in DANBIO, the quality and applicability of the samples in DRB increases.

	Samples		
	Blood		
Registration of disease activity	**Number, n**	**Total**	**% of total**
Patient VAS Global	910	1,649	55
CDAI/ ASDAS*	849	1,628	52

*Patients with systemic lupus erythematosus are not included in the calculation of this variable.

Table 2.3.7.7. DRB. Number of blood samples with registration of disease activity, 2025. The table shows the number of blood samples where disease activity was registered in DANBIO in 2025. The percentages are calculated for each type of available information.

The close collaboration between RBGB and DANBIO is an exemplary partnership that establishes a strong foundation that greatly benefits patients' own assessment and treatment. Subsequently, it creates important opportunities for biomarker research, contributing to translational benefits in diagnostics and treatment. Thus, the collaboration contributes to the development of personalized medicine and targeted treatments.

2.3.8 Indicator 8: Inquiries regarding research

8A. Number of inquiries about material in the biobank for research

Anyone can inquire the number of specific materials in the biobank, for example a researcher wanting to investigate the possibility of using the material in a project. Not all inquiries lead to a subsequent delivery of the material, but the number of inquiries corresponds to the level of interest in the biobank. However, to measure the number of inquiries the biobank centers need to note how many inquiries they have received and report them to the RBGB secretariat.

The RBGB secretariat has not received any reports from the biobank centers, and it remains unclear whether new procedures for registering inquiries have been established or implemented locally.

In 2025, the RBGB secretariat received no inquiries. This absence of reported activity should not be interpreted as a lack of engagement or availability on the part of RBGB but may instead reflect changes in local practices or procedures within the biobank centers.

8B. Number of applications for retrieval of samples for retrospective research that have been handled within the recommended two months

Retrieval of material for projects is possible when the project has the necessary legal and ethical approvals in place and when it has been confirmed that the patients involved are not registered in the National Database of Non-Consent to the Use of Tissue Samples for Scientific Purposes (VAR). Upon request for retrieval of non-project-labeled material, an application is sent to the RBGB secretariat. As some applications must be processed in local biobank committees, a deadline of two months is set from when all relevant information is available until the applicant receives a decision. The indicator is measured as the percentage of applications approved within this deadline. It is also described how many applications have been refused retrieval of material as well as the reason for this.

The RBGB secretariat did not receive an application for the retrieval of material for retrospective research in 2025.

8C. Number of materials retrieved for research within the recommended timeframe

Only when retrieval to a research project has been approved by the RBGB secretariat or the biobank center, the project has the necessary approvals in place and the patients have been checked in VAR can material be retrieved for the project. The deadline for retrieval counts from the approved application by the project leader of the center until the material has been retrieved for the project. The indicator is divided according to how many samples are to be handed out, as a large number may require more planning.

For retrieval of up to 1000 whole fractions, a deadline of 30 days is set, regardless of whether the material is delivered from a department, biobank center, regionally or nationally. For retrieval of more than 1000 fractions, no standard has been set, and the time will depend on the complexity and therefore must be agreed to on an ad hoc basis.

Several retrievals of under 1000 fractions were performed in 2025, and all were finished before the one-month deadline.

RECOMMENDATION

It is important that the timeframe for retrieving samples from the biobank is quick, so researchers can use the samples for their research projects. Biobank centers are recommended to focus on optimizing workflows regarding the storage of project-marked fractions and non-reserved fractions, which can significantly reduce the workload during sample retrieval.

Nonetheless, it is recommended that the biobank centers continue the good work of finding and retrieving samples for researchers.

2.3.9 Indicator 9: Sharing of Knowledge

DRB supports an increasing number of research projects involving the collection of biological material, which is reflected in scientific publications. In 2025, three of the publications acknowledging the use of DRB/RBGB material have been identified rather than being reported. This is unfortunate since the lack of reporting makes the indicator look less successful than it is.

It is important to note that databases such as PubMed do not allow systematic searches for acknowledgements, RBGB relies on researchers to self-report their publications. To enhance visibility, researchers are encouraged to acknowledge DRB/RBGB in their articles and inform the secretariat of relevant publications. These are shared via the RBGB newsletter and website throughout the year.

The RBGB secretariat also promotes knowledge sharing through newsletters, the annual report, the website, LinkedIn, and conference presentations.

Publications in 2025:

Mathsson Alm L, Westerlind H, Gehring I, Hansson M, Ghasemzadeh N, Rojas-Restrepo J, Saevarsdottir S, Sexton J, Lillegraven S, Haavardsholm E, Glintborg B, Hammer HB, Kvien TK, Hetland ML, Padyukov L; Swedish Rheumatology Quality Register Biobank Study Group (SRQb), The Danish Rheumatologic Biobank Study Group; Askling J, Grönwall C. Recognition of Glycine Versus Nonglycine Citrulline Motifs Dictating the HLA Class II Association of Anticitrullinated Protein Antibodies: Insights From Autoantibody Profiling of 6,900 Scandinavian Patients With Rheumatoid Arthritis. Arthritis Rheumatol. 2025 Sep;77(9):1179-1193.
doi: 10.1002/art.43161. Epub 2025 Apr 30. PMID: 40116570; PMCID: PMC12401802.
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Leffers HCB, Troldborg A, Andersen M, Sanchez ACG, Jonsdottir I, Diaz-Gallo LM, Saevarsdottir S, Deleuran B, Voss A, Dreyer L, Leonard D, Svenungsson E, Kristensen S, Colic A, Banasik K, Linauskas A, Pedersen OB, Johnsen L, Krogh NS, Ostrowski SR, Sørensen E, Schwinn M, Erikstrup C, Brunak S, Stefansson K, Jacobsen S; DBDS

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https://doi.org/10.1016/j.trsl.2025.11.001

Mens H, Gynthersen R, Christensen JR, Blinkenberg M, Sellebjerg F, El Fassi D, Glintborg B, Jensen DV, Jensen JS, Lebech AM. Prevalence of tick-borne neoehrlichia mikurensis in individuals undergoing B-cell depleting therapy in Denmark: A prospective cohort study 2023-2024. Int J Infect Dis. 2025 Dec;161:108069. doi: 10.1016/j.ijid.2025.108069. Epub 2025 Sep 17. PMID: 40972815.
https://doi.org/10.1016/j.ijid.2025.108069

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https://doi.org/10.1007/s10654-025-01239-4

RECOMMENDATION

If data or material from DRB is used in published research, this should always be stated in the Acknowledgements section: “The Bio- and Genome Bank Denmark is acknowledged for biological material and for the data regarding handling and storage.”

The indicator is difficult to measure, as acknowledgements cannot be searched for in PubMed.

3. Danish Blood Donor Biobank

3.1 Foreword

The Danish Blood Donor Biobank (DBB) was established as part of Bio- and Genome Bank Denmark in January 2017 and consists of samples collected for the Danish Blood Donor Study (DBDS). DBDS was established in 2010 as a collaboration between the blood banks in the Central Denmark Region and the Capital Region. In 2012, North Denmark Region and Region Zealand joined, and from 2015 the study has been nationwide, as Region of Southern Denmark joined. DBDS is based on the infrastructure of the Danish blood banks and on the philanthropic participation of Danish blood donors.

DBDS is a nationwide research platform based on healthy blood donors. The study includes basic lifestyle and health questionnaire data, access to registry data, and consecutive blood samples from each blood donation. The study aims to contribute to health promotion and help Danish patients by creating a national resource for research in public health, causes of illness, diagnosis, and treatment. DBDS is the largest cohort of healthy people in Denmark and to our knowledge the largest biobank of sequentially collected plasma samples worldwide. While these individuals at inclusion were healthy enough to donate blood, they may develop diseases over time. DBDS is therefore a source for the study of early biomarkers of disease (early disease detection).

Samples collected for DBB are now a part of RBGB's national infrastructure, thereby ensuring systematic and structured national collection and storage of blood samples.

Blood banks from all five regions contribute with staff who daily recruit and register blood donors, draw material, and collect for the biobanks. There is also access to databases of selected phenotypes of the donors.

All blood samples collected in DBB are assigned barcodes, and then imported into the RBGB registry. Data on blood samples donated in the different regions are collected in a database before being imported into the RBGB registry. This ensures data alignment across regions and the import of high-quality data to the RBGB registry.

On behalf of the Scientific Advisory Board for Danish Blood Donor Biobank
The members of the Scientific Advisory Board can be seen in appendix 12.3.0

3.2. Overview of DBB, 2023-2025

In 2025, blood from 32,485 unique donors was included in DBB. Since the restart of inclusion of samples to DBDS in 2020, the collection of samples has remained stable with the inclusion of more than 30,000 unique samples each year (figure 3.2.1).

Year-to-year fluctuations in the number of unique samples are observed, along with variation across individual months. In 2025, new questionnaires were distributed in June, which meant that fewer participants were included in the period leading up to distribution as shown in figure 3.2.2. The number of unique donors that have donated blood peaked in June with the inclusion of 6,680 unique samples (figure 3.2.2).

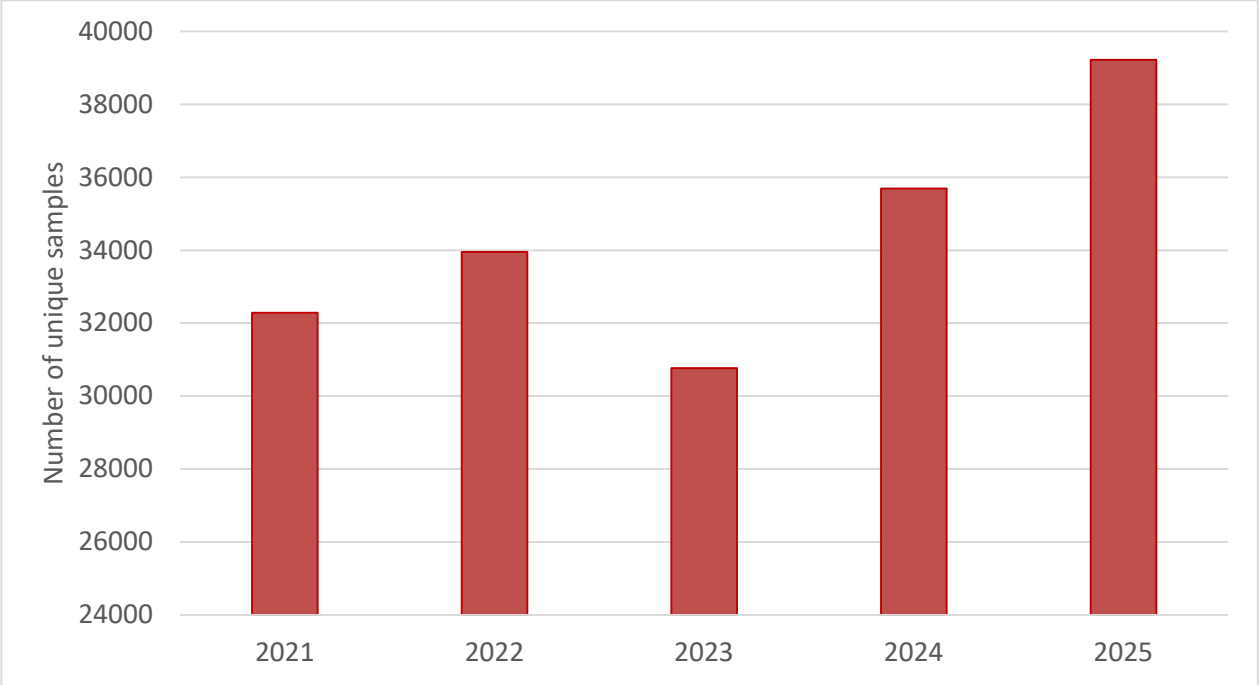

Figure 3.2.1. DBB. Number of unique samples, 2021-2025. The figure shows the number of unique samples collected through DDB from 2021-2025. *The figure includes valuable archival samples collected for specific research projects.

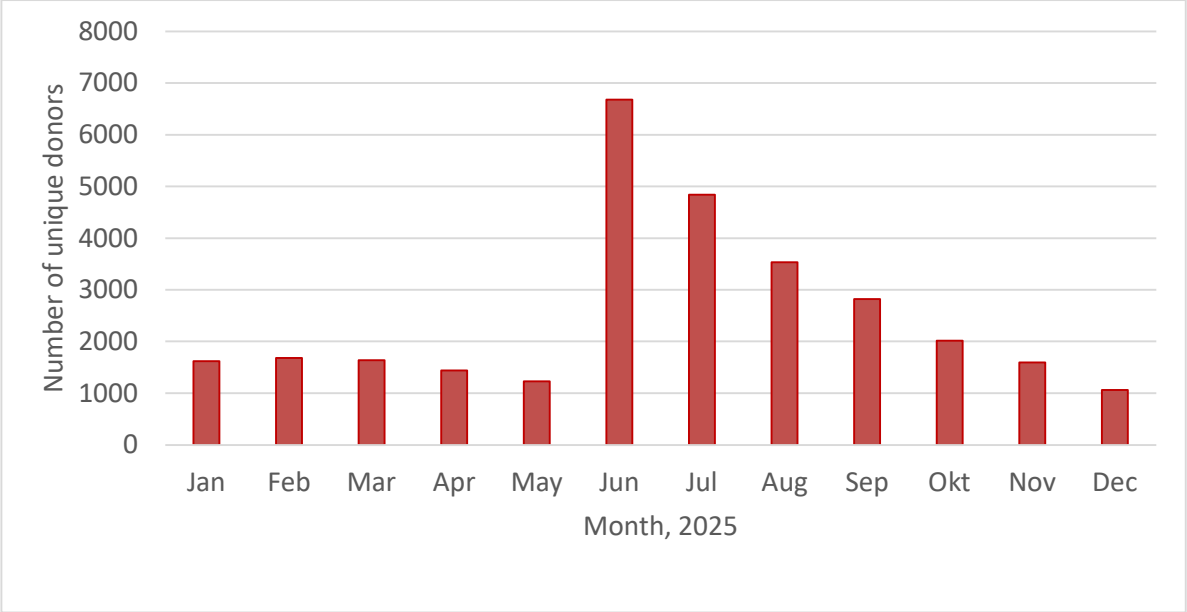

Figure 3.2.2. DBB. The number of unique samples included each month, 2025. The figure shows the number of unique samples collected by DBB each month during 2025.

Additionally, samples that were collected from patients before an eventual diagnosis have been identified. These archival samples are very valuable in research focusing on early detection before clinical manifestation. In 2025, follow-up samples were selected based on a range of diagnoses and for each case, a matched control was also selected. The cohort includes multiple samples per individual per year, making it highly valuable for studies on early disease diagnostics as well. Aliquots from all samples have been sent to deCODE for proteomics analysis. Archive samples are not included in the indicators described in the following sections as they were not collected in 2025.

Blood samples for DBB are collected from all five regions in Denmark. The Danish population is not equally distributed among the Danish Regions, so some regions have a smaller pool of potential donors, accounting for some of the variation between regions. Inclusion of patients in 2025 may have been affected by the distribution of new questionnaires.

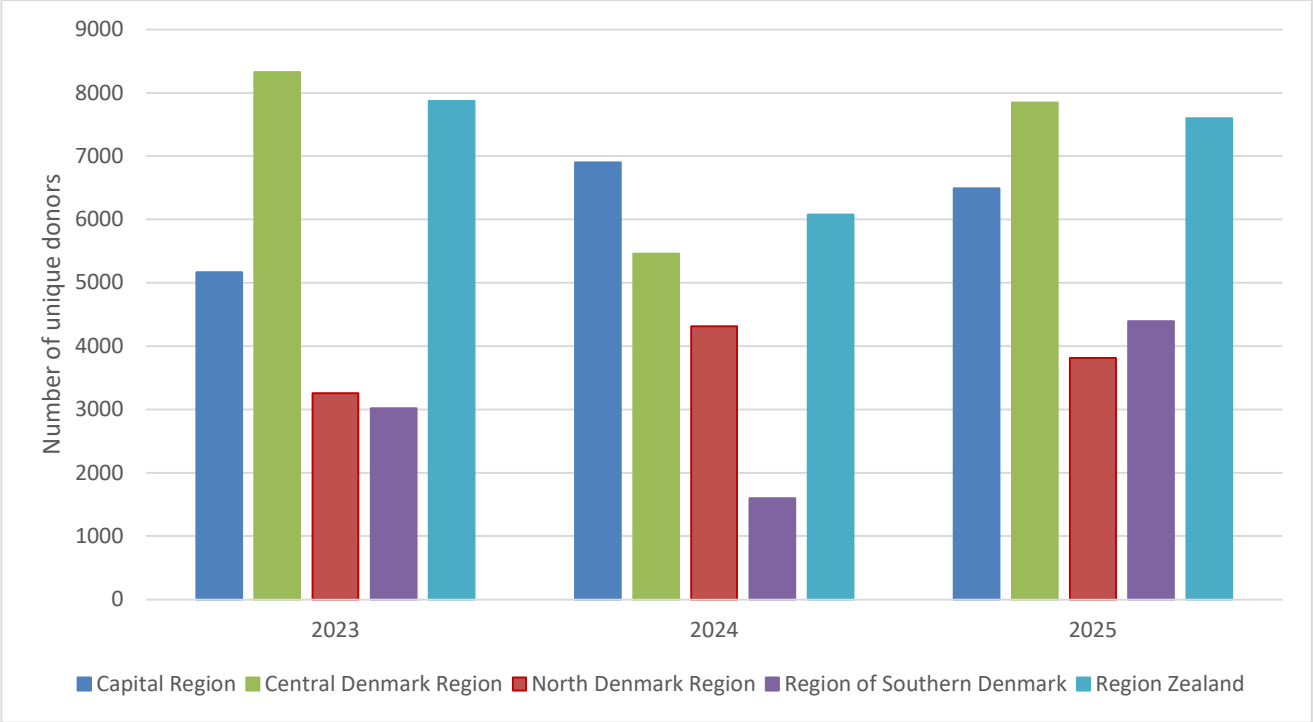

Figure 3.2.3. DBB. Number of unique samples per region, 2023-2025. The figure shows the number of unique samples collected by DBB in each of the five Danish regions in 2023-2025.

3.3. Indicators, DBB

3.3.1 Indicator 1: Quality of registration

Indicator 1 describes the quality of registration of the samples in DBB. It is important that data registration is completed for all samples in the biobank to ensure the high quality of the samples. The indicator is divided into three sections.

Quality goal:
1A: ≥95% of the fractions that should have a freezer position are assigned a freezer position.
1B: ≥95% of the fractions have all three handling time points registered.
1C: <5% of the fractions have an error in registration.

This indicator has been moved to the appendix (12.3) as agreed at the scientific advisory board meeting in 2023. Below is listed whether the quality goal of the indicator has been fulfilled or not. For further detail please see appendix 12.3.

1A. Material with registered freezer position: Quality goal has been fulfilled (appendix 12.3.1.1).

1B. Material with all handling time points registered: Quality goal has been fulfilled (appendix 12.3.1.2)

1C. Material with an error in registration: Quality goal has been fulfilled (no fractions in DBB have an error in registration)

RECOMMENDATION

The goals of this indicator are successfully fulfilled for all five regions with 100%. This result should be maintained in 2026 because freezer position is a prerequisite for retrieving samples, and correct time registration is important to ensure high quality of the samples.

3.3.2 Indicator 3: Coverage

In 2017, only the whole blood fraction from each donation was registered in the RBGB registry. From 2018 it was decided to also register a plasma fraction from each donation, i.e., each donation results in two blood-derived fractions, one whole blood and one plasma. By initially collecting both whole blood and plasma fractions, the applicability of the sample is increased. From 2023 it was decided that follow up samples should only consist of a plasma fraction. This adjustment reduces the total number of stored samples, addressing the growing challenges of limited freezer space while also supporting greener biobank practices.

Quality goal: ≥90% of the blood materials should contain ≥2 fractions.

The recent transition to follow-up sampling consisting solely of plasma fractions limits the relevance of the existing quality indicator. The revised sampling practices became fully implemented in 2025, as the Central Denmark Region implanted the procedures in autumn of 2025. Since the indicator has not been updated to account for the new practises of DBB, ironically the Central Denmark Region is the only region that fulfils this indicator (table 3.3.2.1). Regions are encouraged to ensure the collection and storage of both whole blood and plasma fractions for initial sampling and reducing the follow-up samples to consist of one plasma fraction. Using this adapted definition, approximately 98% of imported plasma fractions in 2025 can be linked to a corresponding whole blood fraction from the same donor. This indicator will be updated at the next revision of indicators.

		Number of unique donors			
		Blood			
		Total	Whole blood and plasma donation, % (n)	Whole blood donation only, % (n)	Plasma donation only % (n)
2025					
National	**TOTAL**	**27,802**	**51 (14,187)**	**0 (55)**	**49 (13,560)**
Center	Capital Region	6,033	38 (2,282)	0 (12)	62 (3,739)
	Central Denmark Region	7,267	93 (6,741)	0 (21)	7 (505)
	North Denmark Region	3,540	51 (1,788)	0 (<10)	49 (1,751)
	Region of Southern Denmark	3,941	36 (1,402)	0 (16)	64 (2,523)
	Region Zealand	7,021	28 (1,974)	0 (<10)	72 (5,042)
2024					
National	**TOTAL**	**24,347**	**68 (16,676)**	**0 (57)**	**31 (7,614)**
Center	Capital Region	6,899	45 (3,106)	0 (<10)	55 (3,788)
	Central Denmark Region	5,461	93 (5,071)	1 (34)	7 (356)

	North Denmark Region	4,311	99 (4,276)	0 (<10)	1 (33)
	Region of Southern Denmark*	1,600	66 (1,061)	0 (<10)	33 (535)
	Region Zealand	6,076	52 (3,162)	0 (12)	48 (2,902)
2023					
National	**TOTAL**	**27,642**	**63 (17,302)**	**0 (83)**	**37 (10,257)**
Center	Capital Region	5,169	34 (1,752)	0 (<10)	66 (3,412)
	Central Denmark Region	8,325	93 (7,711)	0 (41)	7 (573)
	North Denmark Region	3,257	98 (3,193)	0 (<10)	2 (61)
	Region of Southern Denmark	3,020	45 (1,373)	2 (23)	54 (1,624)
	Region Zealand	7,871	42 (3,273)	0 (11)	58 (4,587)

Table 3.3.2.1. DBB. Coverage, 2023-2025. The table shows the percentage and number of donors, who have donated both whole blood and plasma, or whole blood or plasma alone. Data is shown for each region in 2023-2025.

RECOMMENDATION

This indicator has only been met by one region. Following the revised recommendations for collection and storage implemented in 2023, a decline in indicator fulfillment is anticipated moving forward. Regions are encouraged to maintain a strong focus on collecting both plasma and whole blood from donors' initial samples. Ensuring the collection of adequate blood material remains critical for maintaining high national coverage and securing sufficient resources for future research.

Furthermore, the quality indicator will be revised to account for the updated procedures.

3.3.3 Indicator 6: Research

As DBB collects material from donors that participate in the DBDS, it is expected that a large amount of the material in DBB is retrieved for research projects. The number of plasma fractions retrieved for research can be seen below.

- N = 1608: Early blood-based identification of Alzheimer's disease
- N = 369: DonorSense - Correlate modelled and measured air pollution exposure and examine exposure levels association with biomarkers
- N = 356: Explore how donor inflammation markers may influence transfusion outcomes
- N = 2660: Genome-wide association study of asthma, allergy and IgE sensitization and the effect of environmental exposures
- N = 57: Evaluation of neuronal autoantibodies as biomarkers for cancer
- N = 19: Characterization of anti-Ro52 (TRIM21) autoantibodies in healthy blood donors before development of anti-Ro52-associated disease

3.3.4 Indicator 7: Phenotypic Data

In 2025, 13,835 females and 13,985 males donated blood to DBB. A blood donor in Denmark may donate blood from the age of 17 until the age of 75, and all blood donors over 18 can be a part of the DBDS and thereby included in DBB. As shown in figure 3.3.4.1 all ages are well represented.

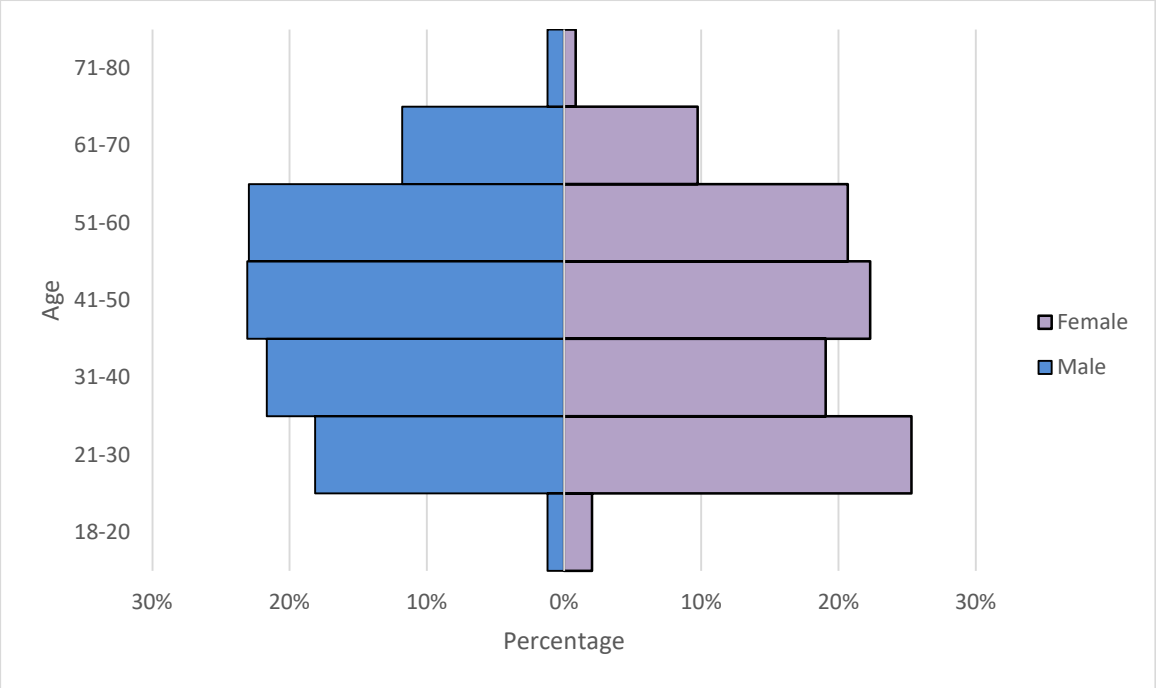

Figure 3.3.4.1. DBB. Population distribution by age and gender for donors, 2025. The figure shows the distribution of age and gender of the donors who have donated samples to DBB in 2025.

For the optimal use of the material in DBB, phenotypic data needs to be coupled with the samples. Every donor included in DBDS answers a questionnaire with a series of questions regarding both physical and mental health. A few general data retrieved from the DBDS-5 questionnaire is presented here.

A total of 26,553 donors answered the questionnaires in 2025: 13,386 females and 13,167 males. In the questionnaire the donor is asked to supply information about weight and height from which the Body Mass Index (BMI) can be calculated (table 3.3.4.1).

Gender	Number of donors that have answered the questionnaire	Average BMI
2025		
Female	13,386	26.3
Male	13,167	26.6
2024		
Female	11,730	25.9
Male	9,807	26.5
2023		
Female	12,287	25.9
Male	12,246	26.4

Table 3.3.4.1. DBB. The average BMI of donors in DBDS5, 2023-2025. The table shows the average BMI of the donors in DBDS-5 from 2023-2025. The BMI was calculated for female and male donors separately. Note that people theoretically can answer multiple questionnaires.

The questionnaire also contains questions on smoking habits. In 2025, the proportion of donors who reported smoking decreased to 8%, compared to a stable level of 10% observed the two previous years (table 3.3.4.2). This is lower than the average percentage of smokers in Denmark, which is 19% (Danskernes Rygevaner 2022, Sundhedsstyrelsen). This confirms the general principle that blood donors in general have a healthier lifestyle than the average population.

		Smoking					
Gender	Number of donors that have answered the questionnaire	No	Previous smoker	Every day	At least once a week	Less than once a week	Donors smoking, %
2025							
Female	13,381	10,411	1,850	513	198	409	8
Male	13,156	10,255	1,827	466	191	417	8
2024							
Female	11,726	9,272	1,237	589	228	400	10
Male	9,804	7,783	1,071	395	161	394	10
2023							
Female	12,922	10,222	1,409	634	234	423	10
Male	12,824	10,154	1,443	547	216	464	10

Table 3.3.4.2. DBB. The percentage of donors smoking in DBDS5, 2023-2025. The table shows how the donors have answered the DBDS questionnaire regarding smoking from 2023-2025. The percentage of donors smoking is also shown. The data is shown for female and male donors separately. Note that people theoretically can answer multiple questionnaires.

3.3.5 Indicator 9: Sharing of Knowledge

DBB facilitates many research projects with material collection. Therefore, an increase in the number of published articles, in which DBB/RBGB is mentioned in the acknowledgements for handling of material, must be expected. Unfortunately, it is not possible to search for acknowledgements in PubMed, which makes it difficult to identify which research groups have currently published studies based on material from DBB. In 2025, the secretariat received reports of 43 published studies based on material from DBB, which is listed below.

It is still important to remind researchers to mention DBB in the acknowledgements to raise awareness of the biobank. Researchers should inform the secretariat regarding newly published articles, which are based on biobank samples. These will be included in the RBGB newsletter, posted on the website etc.

The secretariat for RBGB also contributes with sharing of knowledge via newsletters, the annual report, the RBGB website, and presentations at various conferences.

Publications, 2025:

1. Smeets MJR, Petersen PB, Jørgensen CC, Cannegieter SC, Ostrowski SR, Kehlet H, Nemeth B. Validation of the 5-SNP score for the prediction of venous thromboembolism in a Danish fast-track cohort of 6789 total hip and total knee arthroplasty patients. Res Pract Thromb Haemost. 2024 Nov 28;9(1):102644. doi: 10.1016/j.rpth.2024. PMID: 39810985; PMCID: PMC11731481.

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3. Tummoszeit IZ, Olofsson IA, Chalmer MA, Henriksen AP, Aagaard B, Brunak S, Bruun MT, Didriksen M, Erikstrup C, Hjalgrim H, Mikkelsen C, Mikkelsen S, Ostrowski SR, Pedersen OBV, Quinn L, Sørensen E, Ullum H, Olesen J, Banasik K, Hansen TF, Kogelman LJA; DBDS Genomic consortium group. No association between migraine and HLA alleles in a cohort of 13,210 individuals with migraine from the Danish Blood Donor Study. Headache. 2025 Jan;65(1):124-131. doi: 10.1111/head.14784. Epub 2024 Oct 1. PMID: 39352055; PMCID: PMC11726007.

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Palsson F, Pedersen OB, Schwinn M, Sigurdsson EL, Skaftason A, Stefansdottir L, Stefansson H, Steingrimsdottir T, Sturluson A, Styrkarsdottir U, Sørensen E, Teitsdottir UD, Thorgeirsson TE, Thorisson GA, Thorsteinsdottir U, Ulfarsson MO, Ullum H, Vikingsson A, Walters GB; DBDS Genomic Consortium; Nadauld LD, Bundgaard H, Ostrowski SR, Helgason A, Halldorsson BV, Norddahl GL, Ripatti S, Gudbjartsson DF, Thorleifsson G, Steinthorsdottir V, Holm H, Sulem P, Stefansson K. Missense variants in FRS3 affect body mass index in populations of diverse ancestries. Nat Commun. 2025 Mar 25;16(1):2694. doi: 10.1038/s41467-025-57753-2. PMID: 40133257; PMCID: PMC11937519.10.

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RECOMMENDATION

If data or material from DBB is used in published research, it should always be stated in the acknowledgements: “The Bio- and Genome Bank Denmark is acknowledged for biological material and for the data regarding handling and storage.”

The indicator is difficult to measure, as acknowledgements cannot be searched for in PubMed.

4. Danish Covid-19 Biobank

4.1 Foreword

In March 2020, when the global Covid-19 pandemic first began, it was decided to establish a joint Danish biobank, the Danish Covid-19 Biobank (D19B). The purpose of the biobank is to collect biological samples and data from patients with early stages of Covid-19 (outpatient), patients with life-threatening Covid-19 infection (in intensive care), and Danes with no symptoms who have had a Covid-19 infection (asymptomatic). Additionally, from 2022 and on, samples from Covid-19 vaccinated persons were included.

D19B continued to collect materials routinely up until 2023, but due to the general infection level of Covid-19 in the Danish society the number of samples collected decreased drastically from 2024, and in 2025, a total of 3 unique patients have been included in D19B. As a result of the general infection level and a diminishing focus from the government, the number of ongoing Covid-19 research projects investigating the impact of Covid-19 and the effects of vaccines has decreased. Therefore, The Scientific Advisory Board have decided that D19B will not get a full comprehensive and detailed overview in the Annual Report of 2024 and onwards, and instead be kept at a minimum. D19B will be kept as a biobank and the samples will still be available for clinical analysis, long term follow-up and research if new research projects should be commenced.

Since the establishment of D19B, a total of 11,864 unique patients have contributed to the biobank, and a total of 34,636 samples have been collected across all centers. Despite its short lifespan D19B contains valuable data and represents a significant resource for potential future research projects.

4.2 Overview of D19B

Inclusion in the D19B biobank has now largely ceased, reflecting the transition of COVID-19 from a global pandemic. In 2025, a total of 3 unique patients were included, consistent with the 3 patients included in 2024. This decline in inclusion and sample collection aligns with the reduced clinical burden of COVID-19 in Denmark and a decreased number of active research projects in this area.

5. Danish Derma Biobank

5.1 Foreword

Since February 2022, Danish Derma Biobank (DDeB) has collected samples from patients with inflammatory skin conditions such as psoriasis, atopic dermatitis, and contact dermatitis for long-term storage. In addition to being clinical samples, the samples are also part of the BIOSKIN research project. The primary aim of the BIOSKIN project is to increase the understanding of how inflammatory skin conditions evolve over time, with the goal of improving patient care through prevention and personalized treatment. The objective of researchers at the Department of Dermatology and Allergy at Herlev-Gentofte Hospital is to gather data via clinical studies, comprising skin and blood samples from 1,000 patients in each group. Recruitment for these studies is primarily focused on patients who are referred to the department, as well as through patient organizations and general practitioners. Patients included through DDeB in the clinical BIOSKIN project are followed for a minimum of 5 years, and since the inclusion of the first participant in February 2022, 1,514 patients have been enrolled up until the end of 2025. The BIOSKIN research group has expanded and now includes six medical doctors in PhD positions, seven project nurses and one laboratory technician.

The project benefits from strong support across the entire department, and a new website (www.bioskin.dk) launched in 2024 to provide information for patients as well as potential collaborators. Looking ahead, BIOSKIN aims to further develop its biobank through the inclusion of additional research projects. At the beginning of 2026, the BIOSKIN research project was awarded a grant, extending the project by an additional five years thereby providing a unique opportunity to gain deeper insights into the progression of inflammatory skin diseases. Furthermore, the research project will expand its inclusion criteria to encompass hidradenitis suppurativa, alopecia areata, and vitiligo.

The DDeB is not yet a national biobank, and as such, a full report is not presented in the Annual Report 2025. Lastly, as the DDeB grows and additional projects hopefully are started, the focus will be on establishing a scientific advisory board for the biobank.

5.2 Overview of DDeB, 2025

In 2025, a total of 1,018 unique patients included at Herlev-Gentofte Hospital were registered into the biobank, compared to 998 unique patients in 2024 (data not shown). The number of unique patients has increased slightly from 2024 to 2025 for both blood and skin material (figure 5.2.1).

Collection in DDeB started in February 2022 with the inclusion of 20 patients and has in 2025 reached a steady rate of inclusion throughout the year (figure 5.2.2). In 2025, a total of 2,980 materials was collected, marking an increase compared to 2024 across all material types (figure 5.2.3). Specifically, 1,448 blood materials and 1,532 skin materials (figure 5.2.3) were collected.

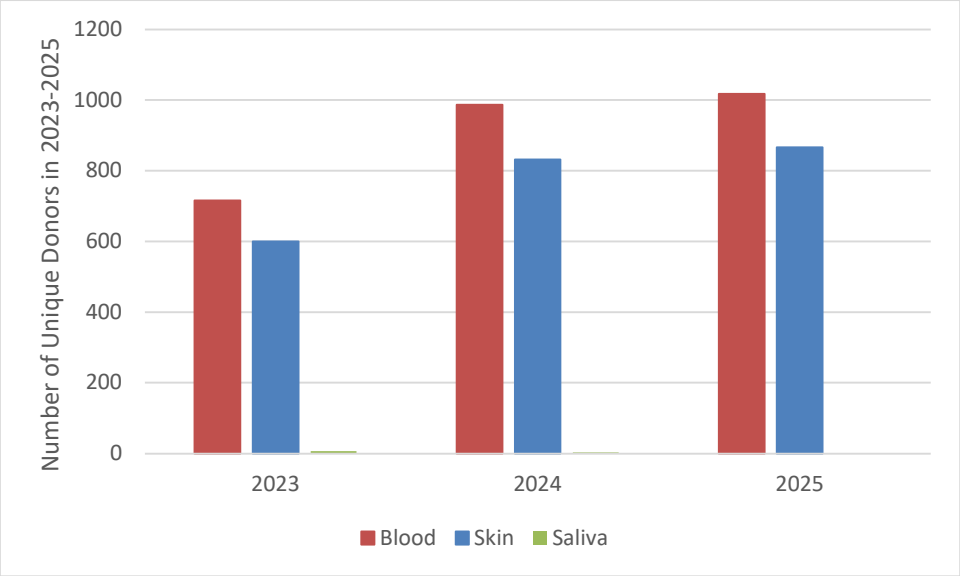

Figure 5.2.1. DDeB. The number of unique patients per material from 2023-2025. This figure shows the number of unique patients/donors from whom DDeB has received blood (red), skin (blue) or saliva (green) samples.

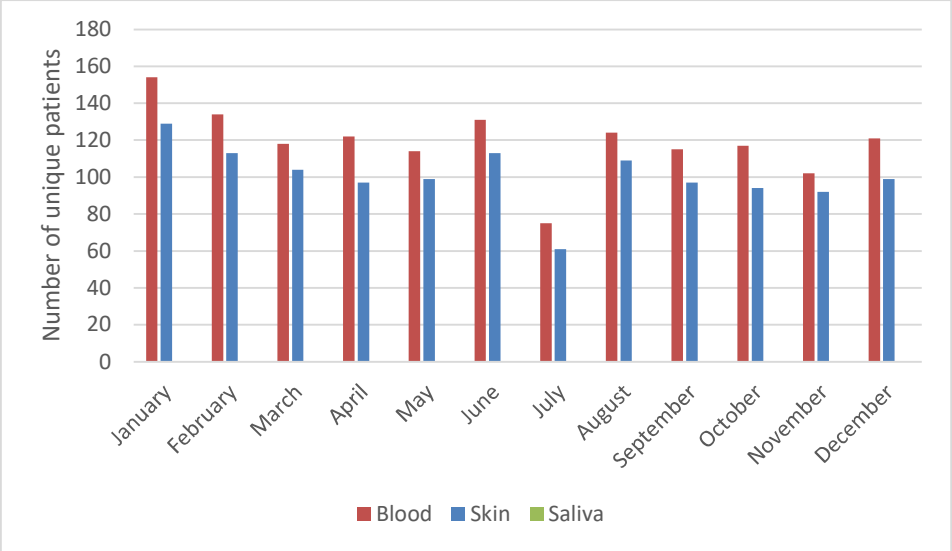

Figure 5.2.2. DDeB. The number of unique patients included each month in 2025. This figure shows the number of unique patients/donors per month in 2025, from whom DDeB has received blood (red), skin (blue) and saliva (green).

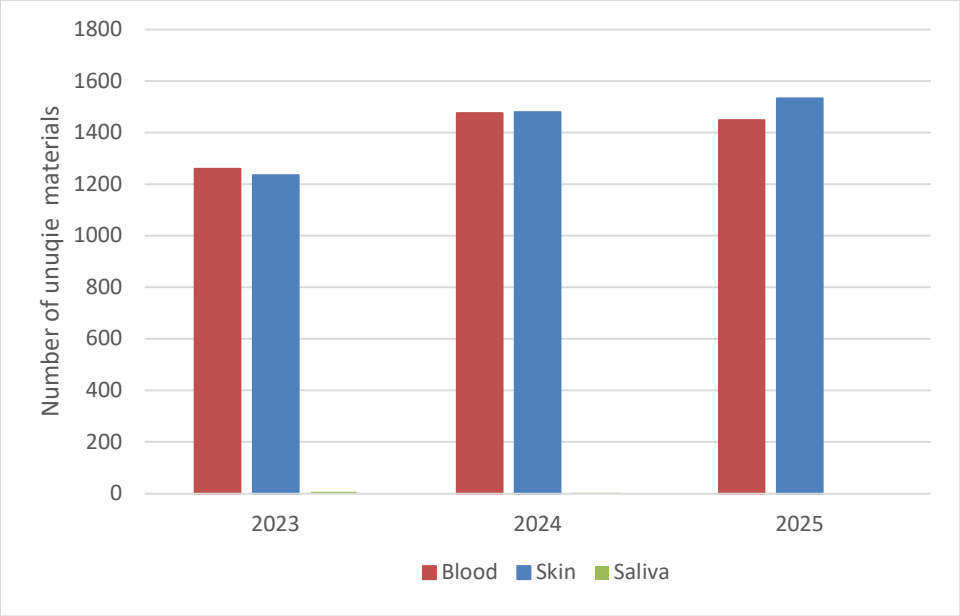

Figure 5.2.3. DDeB. The number of materials collected in 2023-2025. This figure shows the number of materials collected in DDeB from 2023-2025. The materials are divided by type and consist of blood (red), skin (blue), and saliva (green) samples.

6. Danish Screening Biobank

6.1 Foreword

The transition to molecular HPV testing as the primary modality in the Danish cervical cancer screening program represents a landmark advancement in cervical cancer prevention. Molecular screening has been fully implemented nationwide in May 2025 following a phased introduction initiated in 2021. This transformation aligns Denmark with leading international screening programs and reflects the growing global consensus that organized HPV-based screening, supported by robust biobanking infrastructure, is essential to achieving the World Health Organization 2040 targets for cervical cancer elimination.

The implementation of HPV testing has fundamentally changed both the scientific and operational requirements of quality assurance and clinical governance within screening programs. Comparable national biobank-supported screening infrastructures have demonstrated that systematic retention of biological material is critical for maintaining diagnostic accuracy, supporting technological innovation, enabling rapid response to assay performance concerns, and facilitating translational research in precision prevention.

To meet these emerging needs, the Danish Screening Biobank (DScB) is established through a national infrastructure (Bio- and GenomeBank, Denmark, RBGB) supporting cervical cancer prevention, quality assurance, patient care, and future innovation. DScB is designed to serve functions comparable to internationally recognized screening biobanks and reference repositories by ensuring secure, standardized, and equitable access to high-quality biological material linked to screening data.

The objectives of DScB are to:

- Support confirmatory HPV testing and supporting molecular analyses for cancer audits
- Maintain high-quality biological material for continuous QA/QC and screening program improvement
- Ensure availability of material for clinically relevant diagnostic testing and patient care
- Support evaluation and implementation of new technologies in HPV-related cancer diagnostics and prevention
- Develop best practices for handling HPV self-sampling specimens to ensure equitable and reliable screening services

Beyond its operational role, DScB is intended to become a strategic national resource for research, innovation, and evidence-based policy development within cervical cancer prevention. By integrating biological material with high-quality registry and screening data, the biobank will support future epidemiological studies, method development, informing about best screening practice and facilitate national and international collaboration in women's health and cancer prevention.

The Capital Region of Denmark is the first Danish region to implement integrated storage of biological material and associated screening data. As DScB is in an establishment phase following the 2025 screening method shift and not yet fully nationalized, a comprehensive operational report is not included in the Annual Report 2025. Samples from 2021-2025 have been biobanked for the Capital Region of Denmark, but not yet reported into the RBGB registration structure. It is the anticipation that this post-hoc registration effort will be completed in summer of 2026. The formation of the scientific advisory board is to be established reflecting

when additional regional centers are incorporated into the infrastructure, future annual reports will provide a complete national overview of the activities, governance, and scientific contributions of DScB.

6.2 Overview of DScB

A total of 42,163 unique patients (figure 6.2.1 – green bar) were included with test dates between 2014 and 2021, resulting in the collection and import of 42,885 materials to the RBGB database (figure 6.2.2 – green bar). It should be noted that the import of samples is still in the implementation phase. As a result, the number of samples imported per year may fluctuate, reflecting the ongoing process of importing these historical samples. Furthermore, as samples are stored by local departments for up to a year, samples from 2025 are yet to be imported. However, the import of samples has greatly increased, and DScB is recognized for this improvement.

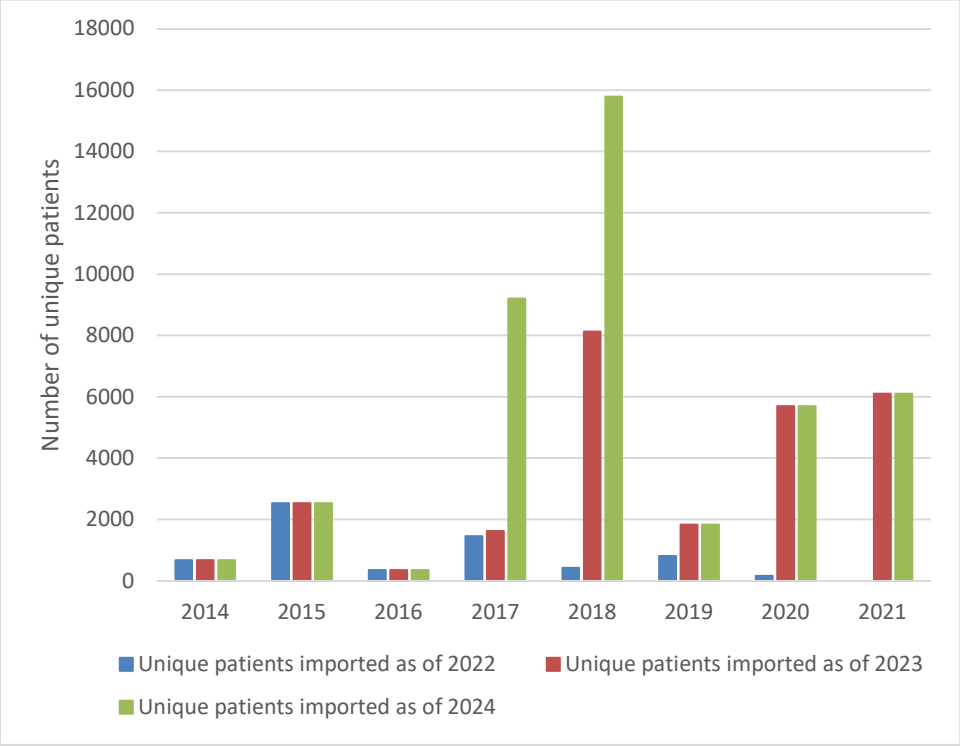

Figure 6.2.1. DScB. The number of unique patients from 2014-2021 imported as of 2025. The figure shows the number of unique patients whom DScB has collected samples from in the period 2014-2021. The bars represent the cumulative number of unique patients imported into the RBGB module as of 2022 (blue), 2023 (red) and 2024 (green).

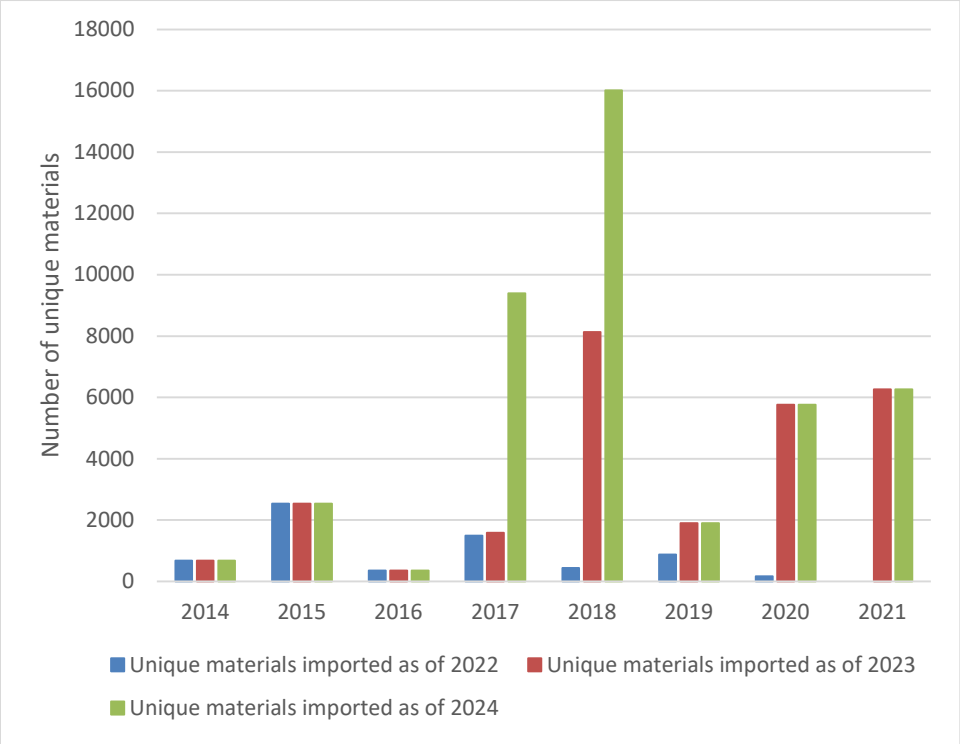

Figure 6.2.2. DScB. The number of collected materials from 2014-2021 imported as of 2025. The figure shows the number of materials collected in DScB between 2014-2021. The bars represent the cumulative number of collected materials that have been imported into the RBGB module at the end of 2022 (blue), 2023 (red), 2024 (green).

7. Danish Genetic Biobank

7.1 Foreword

In 2020 the Danish Regions decided to expand the national biobank infrastructure to include a biobank for genetic samples, the Danish Genetic Biobank (DGB). The aim of this biobank is to facilitate the infrastructure to register and track samples used for genetic analyses, mainly DNA and RNA extracted in molecular laboratories. A further aim is to provide a nationwide register of samples used for genetic analyses across Denmark. A scientific steering committee has been established for (DGB) and six clinical genetic departments are currently represented in the committee.

In 2025 Aalborg, Aarhus, and Rigshospitalet have registered data for genetic samples to the RBGB registry, which is featured below. At the beginning of 2026, Odense had prepared data for 2020-2025. The data is to be imported in 2026 and will be included in the Annual Report 2026.

The remaining departments in DGB are still testing the import of data to the RBGB registry. Feedback from the beginning of 2025 indicated that that the data would soon be ready for import. One region made it clear that preparing data for import was not a priority due to organizational changes and new software. We hope that the more biobank centers will provide import data in 2026.

The RBGB secretariat continues to provide support and guidance to the departments in need to ensure that the RBGB registry provides an overview of samples used nationally for genetic counseling.

7.2 Overview of DGB

In 2025, a total of 2,715 unique patients were registered at Biobank Center Rigshospitalet, 2,872 at Biobank Center Aalborg, and 147 at Biobank Center Aarhus (Figure 7.2.1). A marked decrease was observed at Biobank Center Rigshospitalet compared to 2024, where 6,689 unique patients were registered. In contrast, registrations at Biobank Center Aalborg remained consistent with previous years. Biobank Center Aarhus commenced registration activities in 2025 and recorded 147 unique patients in its first year.

The monthly number of unique patients peaked in January at Biobank Center Rigshospitalet and in December at Biobank Center Aalborg (Figure 7.2.2). Registrations at Biobank Center Aalborg were stable throughout the year, whereas Biobank Center Rigshospitalet recorded activity over only five months (January–May), with a gradual decline in registrations from January until cessation in May (Figure 7.2.2).

A total of 2,927 unique materials were collected at Center Rigshospitalet in 2025, representing a decrease compared to the previous year (Figure 7.2.3). At Center Aalborg, 2,929 unique materials were collected, which is in line with collection levels observed in previous years (Figure 7.2.3).

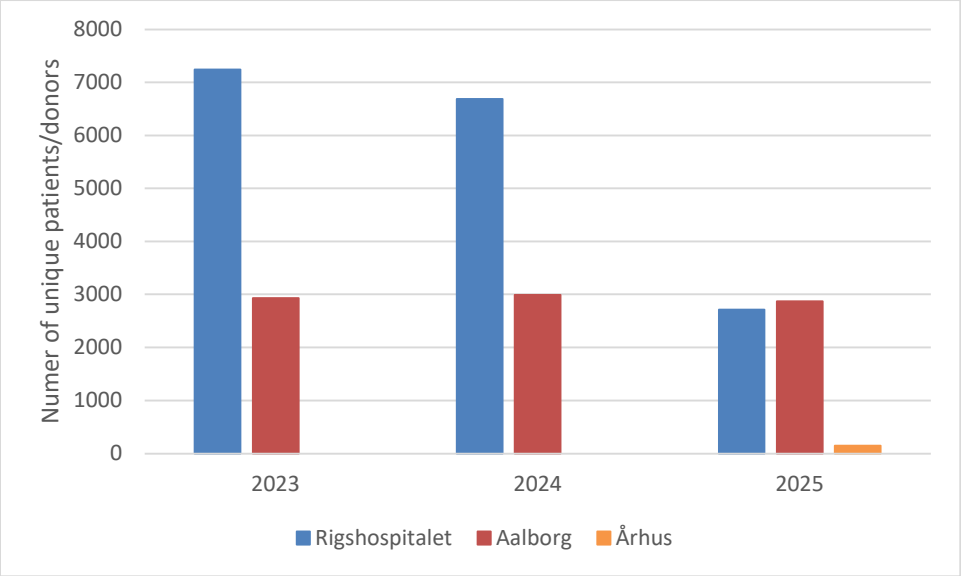

Figure 7.2.1. DGB. The number of unique patients, 2023-2025. This figure shows the number of unique patients/donors from whom DGB has collected materials in the period 2023-2025 at Rigshospitalet (blue), Aalborg (orange), and Aarhus (orange).

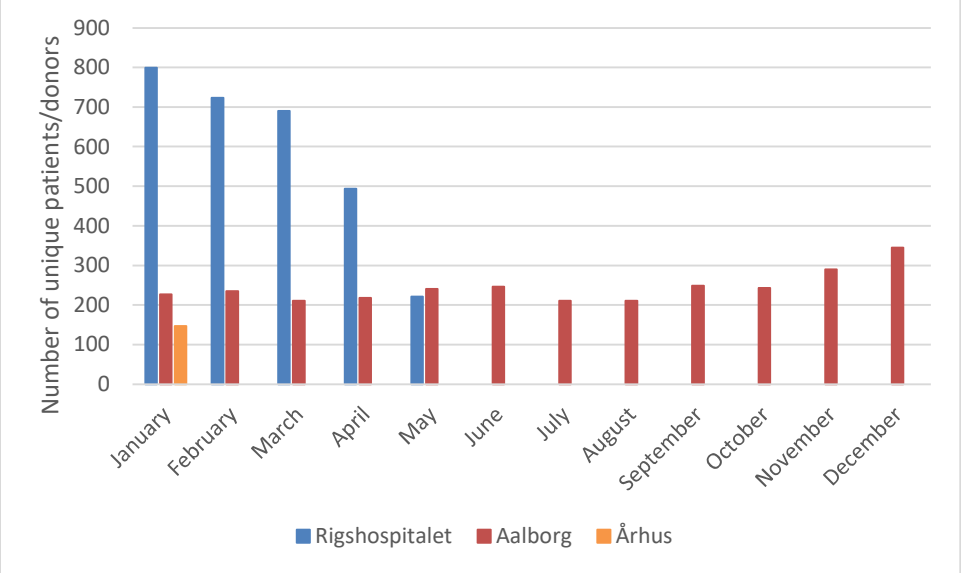

Figure 7.2.2. DGB. The number of unique patients included each month, 2025. This figure shows the number of unique patients/donors per month in 2025, from whom DGB has received materials at Rigshospitalet (blue), Aalborg (red) and Aarhus (orange).

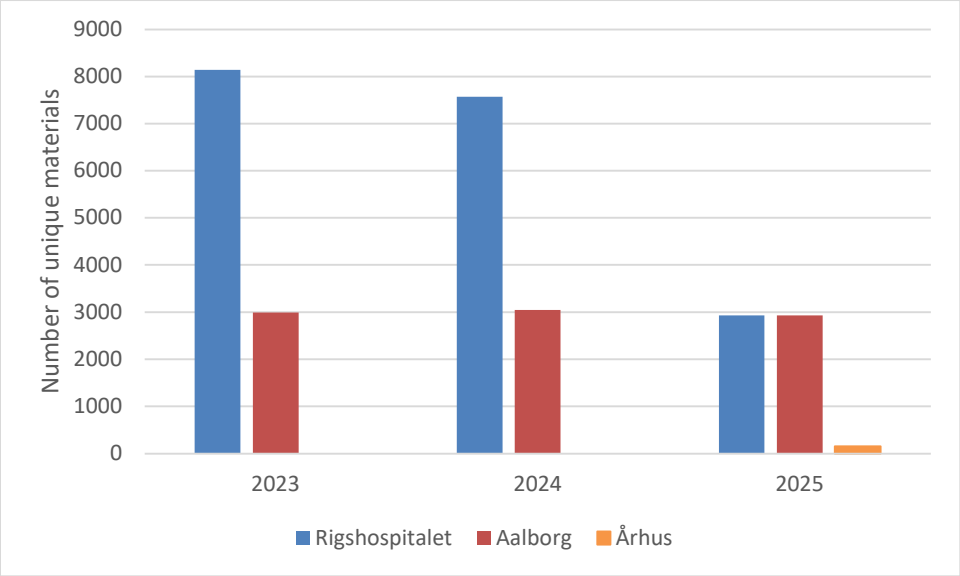

Figure 7.2.3. DGB. The number of materials included, 2023-2025. This figure shows the number of materials collected at center Rigshospitalet (blue), Aalborg (red) and Aarhus (orange) in DGB between 2023-2025.

7.3 Indicators, DGB

7.3.1 Indicator 1: Quality of registration

Indicator 1 describes the quality of registration of the samples in DGB. It is important that data registration is completed for all samples in the biobank to ensure the high quality of the samples. The indicator is divided into three sections.

1A. Material with registered freezer position

This indicator measures the number (n) and proportion (%) of fractions with a freezer position in the RBGB registry. Fractions are only available for handout if they are registered with a freezer position, therefore this information is mandatory. Fractions that have been handed out or are in transit between two freezer positions are not included in the analysis.

Quality goal: ≥95% of the fractions that should have a freezer position are assigned a freezer position.

In 2025, a total of 6,003 fractions were collected in DGB, of which 5,485 were assigned a freezer position (Table 7.3.1.1). This corresponds to an overall rate of 91% of fractions with an assigned freezer position (Table 1.3.1.1), indicating that the national indicator is not fully met.

At the biobank center level, Aalborg and Aarhus meet the target for this indicator, whereas Biobank Center Rigshospitalet does not. However, Biobank Center Rigshospitalet has shown a substantial improvement compared with the previous year, during which challenges related to data import affected performance.

Fractions		
DNA		
Total	w/o freezer position, n	With freezer position, %

2025				
National	**TOTAL**	**6,003**	**518**	**91**
Center	Rigshospitalet	2,927	489	83
	Aalborg	2,929	29	99
	Aarhus	147	0	100
2024				
National	**TOTAL**	**10,614**	**7,569**	**29**
Center	Rigshospitalet	7,569	7,569	0
	Aalborg	3,045	0	100
	Aarhus	0	0	0
2023				
National	**TOTAL**	**11,131**	**167**	**98**
Center	Rigshospitalet	8,140	167	98
	Aalborg	2,991	0	100
	Aarhus	0	0	0

Table 7.3.1.1. DGB. Distribution of fractions without a registered freezer position, 2023-2025. The table shows the number of fractions without a freezer position and the percentage of fractions with a freezer position. Numbers are shown for each center from 2023-2025.

1B. Material with all handling time points registered.

This indicator measures the number (n) and proportion (%) of fractions that have a registration of all three handling time points: 'Sampling', 'Received' and 'First in freezer' in the RBGB registry. The timepoint should include both date and time. If no time is given the processing time cannot be calculated and the quality of the sample cannot be documented.

Quality goal: ≥95% of the fractions have all three handling time points registered.

The number of fractions without all three timepoints registered ('Sampling', 'Received' and 'Retrieved') and the percentage of fractions with a complete time log are presented in table 7.3.1.2. The goal of this indicator has been met nationally as all biobank centers have registered a complete log for every fraction resulting in a 100% registration rate (table 7.3.1.2).

		Fractions		
		DNA		
		Total	**w/o complete time registration, n**	**With complete time registration, %**
2025				
National	**TOTAL**	**6,003**	**0**	**100**
Center	Rigshospitalet	2,927	0	100
	Aalborg	2,929	0	100
	Aarhus	147	0	100

2024				
National	**TOTAL**	**10,614**	**0**	**100**
Center	Rigshospitalet	7,569	0	100
	Aalborg	3,045	0	100
	Aarhus	0	0	0
2023				
National	**TOTAL**	**11,131**	**0**	**100**
Center	Rigshospitalet	8,140	0	100
	Aalborg	2,991	0	100
	Aarhus	0	0	0

Table 7.3.1.2. DGB. Distribution of fractions with all handling timepoints registered, 2023-2025. The table shows the number of fractions without all three timepoints registered and the percentage of fractions with a complete time registered ('Sampling', 'Received' and 'First in freezer'). Numbers are shown for each center.

1C. Materials with an error in time point registration

This indicator measures the number (n) of fractions that have an error in time point registration, for example if a fraction has a time point for 'In freezer' before the time point for 'Received' or a time point for 'Received' before 'Retrieved'.

Quality goal: <5% of the fractions have an error in registration.

The number of fractions with an error in registration are presented in table 7.3.1.3. The goal of this indicator has been met nationally, with all centers having no fractions with an error in registration (table 7.3.1.2).

		Fractions		
		DNA		
		Total	**Status 'In freezer' before status 'Received'**	**Status 'Received' before status 'retrieved'**
2025				
National	**TOTAL**	**6,003**	**0**	**0**
Center	Rigshospitalet	0	0	0
	Aalborg	0	0	0
	Aarhus	0	0	0
2024				
National	**TOTAL**	**10,614**	**0**	**0**
Center	Rigshospitalet	7,569	0	0
	Aalborg	3,045	0	0
	Aarhus	0	0	0

2023				
National	**TOTAL**	**11,131**	**0**	**0**
Center	Rigshospitalet	8,140	0	0
	Aalborg	2,991	0	0
	Aarhus	0	0	0

Table 7.3.1.3. DGB. Number of fractions that have an error in registration, 2023-2025. The table shows the number of fractions that have a specific error in time registration.

RECOMMENDATION

Overall, data quality and registration completeness remained high across the national biobank network in 2025. While the target for assignment of freezer positions was not fully achieved at the national level, performance improved compared with the previous year, reflecting continued progress.

Future efforts should focus on further improving registration completeness (assigned freezer position), while maintaining the excellent quality levels achieved concerning time point registration.

7.3.2 indicator 5: Diagnostic purposes

Indicator 5 evaluates the number of requests for biospecimens used in diagnosis and treatment. Further it evaluates the number of samples handed out for diagnosis and treatment. A quality goal has not yet been defined for this indicator, but all centers are encouraged to facilitate the handout of biospecimens for diagnosis upon request.

In 2025 there has been no requests for handout of material from DGB for diagnostic or genetic assessment. The usage of the clinical material for diagnosis is done by the local department before it is sent to RBGB for long-term storage, which explains why there have been no requests for material.

7.3.3 Indicator 6: Research

Indicator 6 evaluates the number of research projects in the biobank, both accumulated and active. It also evaluates the number of samples that have been handed out to research projects.

To the knowledge of the secretariat there are no ongoing research project in DGB, and no material has been handed out in 2025 to research projects.

7.3.4 Indicator 7: Clinical data

DGB is a clinical biobank, and the material in the biobank is used for diagnosis and genetic assessment at the local departments before being shipped to RBGB for long-term storage. As such the material in the biobank is equipped with clinical data from the patient's own medical record.

7.3.5 Indicator 9: Sharing of Knowledge

To the best of our knowledge, there has not been published any research articles in which DGB has contributed with biological samples. If DGB has contributed to any articles that the RBGB secretariat does not know of, the authors are encouraged to inform the secretariat, so that the article can be featured in the annual report and in the quarterly newsletter.

8. Danish Whole Genome Biobank

8.1 Foreword

In 2021, it was decided that material used for whole genome sequencing (WGS) executed at National Genome Center (NGC) shall be stored and registered as part of the RBGB infrastructure. For this purpose, the clinical biobank Danish Whole Genome Biobank (DWB) was established. Sequencing Center West performs all the sequencing for the Regions of Central, North, and South of Denmark, while Sequencing Center East performs all the sequencing for the Capital Region and Region Zealand. After the WGS has been performed, the material is either stored locally or sent to Herlev Hospital for long-term storage. In both cases, data connected to the samples will be imported into the RBGB database.

Both Sequencing Center East and Center West have sent samples to Herlev Hospital for long-term storage, and all the data for the corresponding samples have been imported to the RBGB database. A workflow has been established between Center East and the RBGB secretariat where samples and corresponding data are sent to Herlev Hospital on a weekly basis, resulting in a steady increase of registered samples in the Danish Whole Genome Biobank.

Technical difficulties stopped delivery of samples and data import in 2024 and most of 2025. At the end of 2025 Herlev Hospital began receiving both samples and data. Unfortunately, there was not time to include the data in the 2025 Annual Report. It is expected that the technical difficulties have been solved, and the backlog of data and samples will be handled in 2026, thus, the data will be included in the 2026 annual report.

8.2 Overview of DWB

In 2023, the first samples were transferred from Sequencing Center West to Herlev Hospital, and in 2024, weekly shipments from Sequencing Center East were initiated as part of a routine workflow. However, this workflow has encountered challenges, resulting in fluctuations in the number of samples imported into the RBGB database.

In total, 7,956 materials (figure 8.2.1) from 7,648 patients (figure 8.2.2) collected between 2020-2025 have been shipped from Sequencing Center East and imported into the RBGB database. Most of the shipped materials were collected in 2023, evident by the collection of 5,259 materials from Sequencing Center East (figure 8.2.1). The shipment of materials from sequencing Center East has been reestablished, therefore an increase in the number of imported samples is expected to be seen in 2026.

At Sequencing Center West, 5,392 materials (figure 8.2.1) from 5,075 patients (figure 8.2.2) have been shipped to Herlev Hospital and imported into the RBGB database. These numbers are expected to increase as Sequencing Center West and the RBGB secretariat continue to work on an arrangement for shipping materials to Herlev Hospital. Additionally, these numbers will further increase when the Central Denmark Region receives and registers material which have been collected locally.

The number of materials imported into the RBGB database from the Eastern region has remained very low since 2023, with no imports recorded in 2024. In 2025, a limited number of materials were again received, indicating a partial resumption of activity. In contrast, the number of materials imported from the Western region has remained stable throughout the period.

RBGB continues to work towards fully re-establishing a stable workflow, ensuring that future data more accurately reflect the actual number of samples collected and transferred. Furthermore, the secretariat is collaborating with the chairman of the steering committee to determine the most appropriate way to present

these data in the annual report and to communicate the underlying technical challenges to the National Genome Center, ensuring full transparency and clarity regarding the situation.

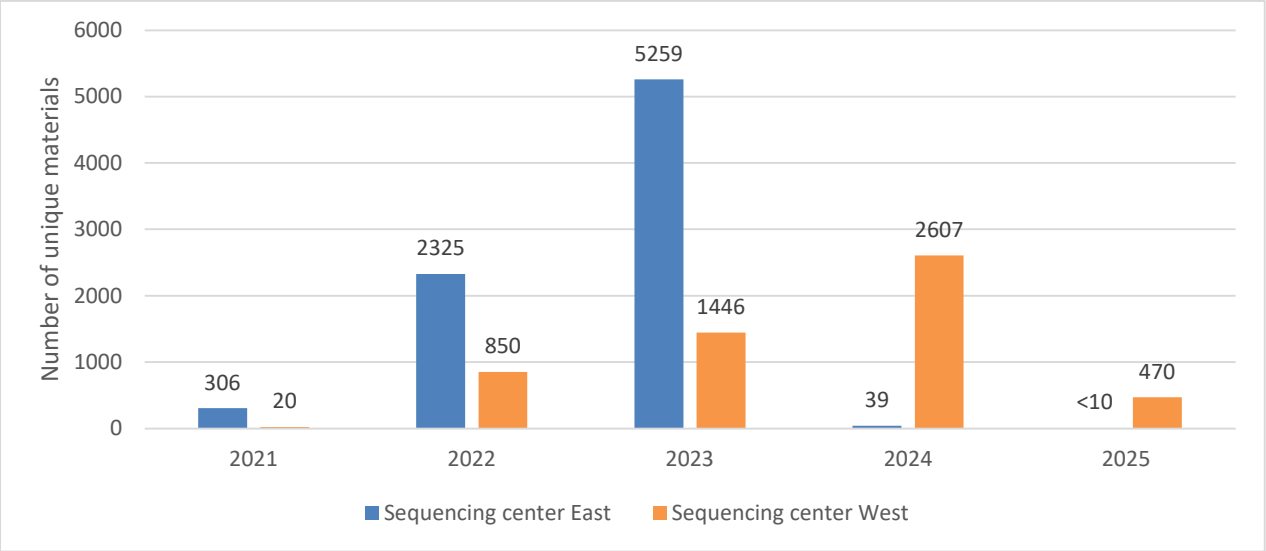

Figure 8.2.1. DWB. The number of unique materials, 2021-2025. This figure shows the number of unique materials that DWB has collected each year in the period 2021-2025. The numbers are divided by Sequencing Center East (blue) and Sequencing Center West (orange). Data are continuously imported and updated. Consequently, values shown for the current and previous years may differ between annual reports as additional records are incorporated over time.

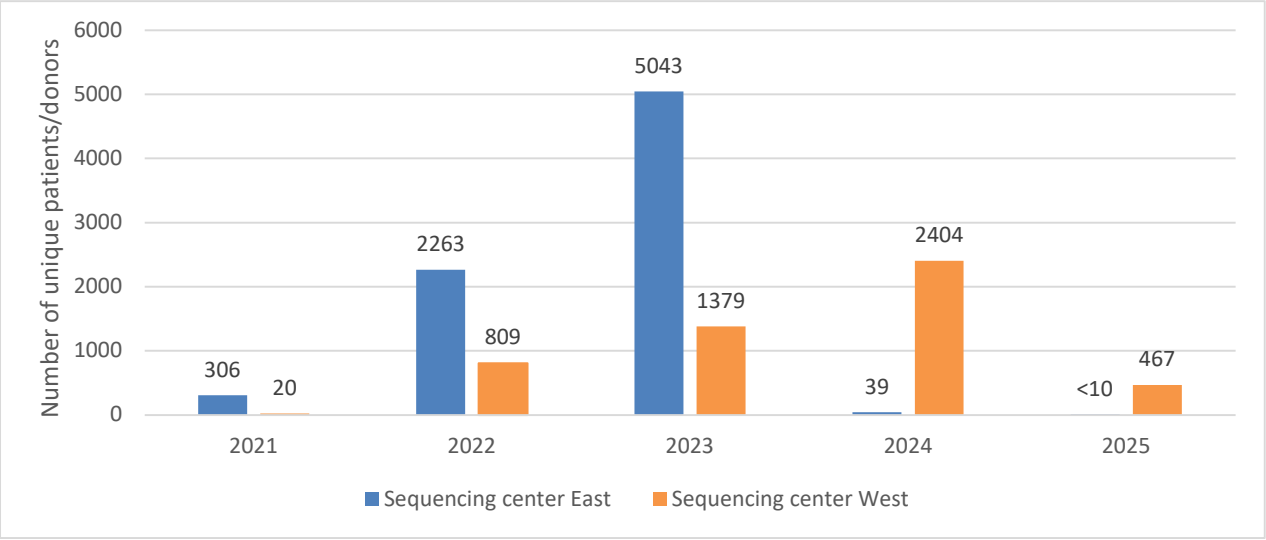

Figure 8.2.2. DWB. The number of unique patients included, 2021-2025. This figure shows for each year separately the number of unique patients from whom DWB has collected materials in the period 2021-2025. The numbers are divided by Sequencing Center East (blue) and Sequencing Center West (orange). Data are continuously imported and updated. Consequently, values shown for the current and previous years may differ between annual reports as additional records are incorporated over time.

9. Danish Endocrinological Biobank

9.1 Foreword

The Danish Endocrinological Biobank (DEB) was established in 2023 as part of the RBGB infrastructure with the aim of strengthening and supporting research in endocrinology.

Currently, DEB houses samples from the LightCOM project, which includes three clinical intervention studies, one of which involves national sample collection. The project also has an international perspective, collaborating with research groups in the United Kingdom.

With the establishment of the Danish Endocrinological Biobank, a solid foundation is created for clinical studies and future research projects in endocrinology. The ambition is that the biobank can develop into a central resource for both national and international collaborations.

9.2 Overview of DEB

In 2024, the first samples were collected and registered in the Danish Endocrinological Biobank (DEB). Since then, sampling activity has increased substantially, particularly in 2025, reflecting the continued implementation and expansion of ongoing projects.

Less than 10 blood materials were collected in 2024, increasing markedly to 302 in 2025. The majority of these samples originate from the Capital Region, which contributed 261 materials in 2025, while the Region of Southern Denmark contributed 41. Cumulatively, this corresponds to 311 blood materials collected across the two regions during the period 2024–2025 (figure 8.2.1).

Similarly, the number of unique patients in the biobank has increased to 240 in 2025. Of these, 206 patients were included from the Capital Region and 34 from the Region of Southern Denmark in 2025. In total, 249 unique patients have been included in DEB since its establishment (figure 8.2.2).

Overall, these data demonstrate a rapid scale-up of biobank activity following its establishment, with a notable increase in both sample collection and patient inclusion from 2024 to 2025.

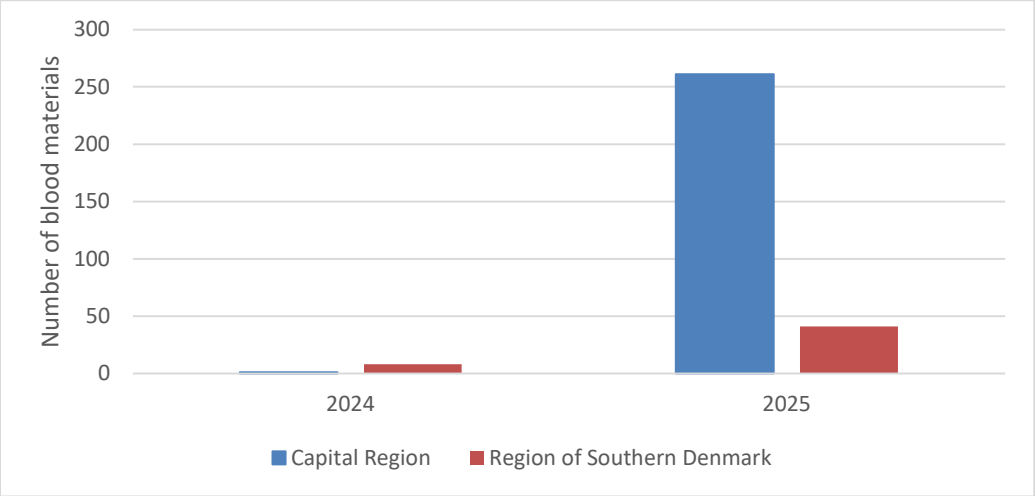

Figure 9.2.1. DEB. The number of blood materials, 2024-2025. This figure shows the number of blood materials that DEB has collected each year in the period 2024-2025. The data are stratified by region, with the Capital Region shown in blue and the Region of Southern Denmark in red.

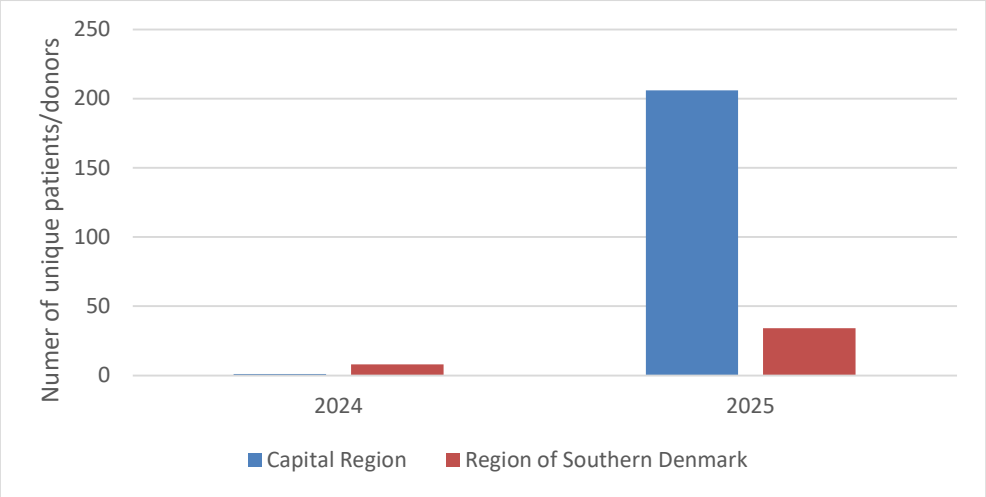

Figure 9.2.2. DEB. The number of unique patients included, 2024-2025. This figure shows the number of unique patients from whom DEB has collected materials in the period 2024-2025. The data are stratified by region, with the Capital Region shown in blue and the Region of Southern Denmark in red.

10. Definitions

Biobank: A structured collection of human biological material available according to specific criteria and where information bound in the biological material can be attributed to individuals.
Indicator: A measurable variable used to monitor and evaluate quality of the material in the biobanks.
Materials: Data referred to as "materials" is based on the number of unique "MaterialeID" as defined in the RBGB registration system.
Samples/Sampling: Data referred to as "samples/sampling" is based on the number of unique "PrøveID" as defined in the RBGB registration system.
Fractions: Data referred to as "fractions" is based on the number of unique "FraktionsID" as defined in the RBGB registration system.

11. Abbreviations

bDMARD: biologic disease-modifying antirheumatic drugs
BMI: Body Mass Index
csDMARD: conventional synthetic disease-modifying antirheumatic drugs
DABLACA: Danish Blatter Cancer Committee
DACG: Danish Anal Cancer Group
DAHANCA: Danish Head-Neck Cancer Group
DANBIO: Danish Rheumatologic Database
DAPECA: Danish Penis Cancer Committee
DAPHO: Danish Pediatric Hematology and Oncology
DAPROCA: Danish Prostate Cancer Committee
DARENCA: Danish Renal Cancer Committee
DATECA: Danish Testis Cancer Committee
DBB: Danish Blood Donor Biobank
DBCG: Danish Breast Cancer Cooperative Group
DBDS: The Danish Blood Donor Study
DCB: Danish Cancer Biobank
DCCG: Danish Colorectal Cancer Group
DECV: Danish Esophagus Cardia Ventricle Cancer Group
DGCG: Danish Gynecological Cancer Group
DLCG: Danish Lung Cancer Group
DLGCG: Danish Liver Bile duct Cancer Group
DMCG: Danish Multidisciplinary Cancer Group
DMG: Danish Melanoma Group
DNOG: Danish Neuro Oncology Group
DOOG: Danish Ocular Oncology Group
DPCG: Danish Pancreas Cancer Group
DRB: Danish Rheumatologic Biobank
DSG: Danish Sarcoma Group
DUCG: Danish Urologic Cancer Group
D19B: Danish Covid-19 Biobank
FFPE: Formalin-Fixed Paraffin-Embedded
PRO: patient reported outcome
RBGB: Bio- and Genome Bank Denmark
RKKP: Regionernes Kliniske Kvalitetsudviklingsprogram

SOP: Standard Operating Procedure
SSI: Statens Serum Institut
VAR: Vævsanvendelsesregisteret

12. Appendix

12.1 Danish Cancer Biobank (DCB)

Name	Represents	Biobank center/Region
Chairman		
Henrik Krarup	The Region	North Denmark Region
Members		
Anja Høegh Brügmann	Patobanken	North Denmark Region
Karen Dybkær Sørensen	Hematology	North Denmark Region
Estrid Høgdall	RBGB	Capital Region
Wojciech Skovrider-Ruminski	Tissue	Herlev
Shoaib Afzal	Blood	Herlev
Helga Fibiger Munch-Petersen	Tissue	Rigshospitalet
Janna Nissen	Blood	Rigshospitalet
Per Ibsen	Local department	Capital Region
Erik Sørensen	The Region	Capital Region
Jens Ole Eriksen	Tissue and Blood	Region Sjælland
Anette Vad	Local department	Region Sjælland
Birgitte Preiss	Tissue	Odense
Marina Bjørling-Poulsen	Blood	Odense
Jonna Skov Madsen	Local department	Region of Southern Denmark
Torben Frøstrup Hansen	The Region	Region of Southern Denmark
Katrine Vogt Møller	Tissue	Aarhus
Charlotte Modin	Blood	Aarhus
Tine Meyer	Local department	Central Denmark Region
Iben Lyskjær Heimann	The Region	Central Denmark Region
Louise Serup Christoffersen	Tissue	Aalborg
Mariann Bech Henriksen	Blood	Aalborg
Morten Johansen	Local department	North Denmark Region
Jan Nybo	The Region	North Denmark Region

Appendix 12.1.0 Members of the Scientific Advisory Board for DCB as of ultimo 2025. The table shows the members of the Scientific Advisory Board for DCB, which organization they represent and which biobank center or region they are from.

12.1.1 Indicator 1: Quality of registration

Indicator 1 describes the quality of registration of the samples in DCB. It is important that data registration is completed for all samples in the biobank to ensure high quality of the samples. The indicator is divided into four sections.

1A. Material with registered freezer position

This indicator measures the number (n) and proportion (%) of fractions with a freezer position in the RBGB registry. Since fractions are only visible and thereby available for retrieval if they are registered with a freezer position, this information is mandatory. Formalin-Fixed Paraffin Embedded (FFPE) tissue fractions and

fractions that have been retrieved or are in transit between two freezer positions are not included in the analysis, as these naturally do not have a freezer position.

Quality goal: ≥95% of the fractions that should have a freezer position are assigned a freezer position.

In 2025, a total of 64,598 blood fractions were collected in DCB and were expected to have a freezer position. Of these, 64,537 have a freezer position. A total of 6,141 hematological blood fractions were collected of which 6,134 have a freezer position.

The overall percentage of fractions assigned a freezer position is 100% for both blood and hematological blood fractions (appendix 12.1.1.1.). All centers fulfill the goal of this indicator.

		Fractions					
		Blood			Hematological blood		
		Total	w/o freezer position, n	with freezer position, %	Total	w/o freezer position, n	with freezer position, %
2025							
National	**TOTAL**	**64,598**	**61**	**100**	**6,141**	**<10**	**100**
Center	Herlev	11,108	0	100	0	0	0
	Region Sjælland	1,462	0	100	0	0	0
	Odense*	11,583	0	100	380	0	100
	Rigshospitalet	8,577	61	99	1,808	0	100
	Aalborg	14,553	0	100	3,294	<10	100
	Aarhus	17,315	0	100	659	<10	99
2024							
National	**TOTAL**	**71,352**	**58**	**100**	**6,256**	**14**	**100**
Center	Herlev	16,739	36	100	0	0	0
	Region Sjælland	1,353	<10	100	0	0	0
	Odense*	12,637	0	100	511	0	100
	Rigshospitalet	10,662	20	100	1,732	14	99
	Aalborg	11,097	0	100	3,415	0	100
	Aarhus	18,864	0	100	598	0	100
2023							
National	**TOTAL**	**80,095**	**193**	**100**	**8,120**	**11**	**100**
Center	Herlev	20,578	18	100	0	0	0
	Region Sjælland	1,513	175	88	0	0	0
	Odense	11,591	0	100	1,434	0	100
	Rigshospitalet	14,161	0	100	2,183	11	99
	Aalborg	9,974	0	100	3,944	0	100
	Aarhus	22,278	0	100	559	0	100

Appendix 12.1.1.1. DCB. Distribution of blood fractions according to registered freezer position, 2023-2025. The table shows the number of blood and hematological blood fractions (excl. FFPE -, retrieved fractions and fractions in transit)

without a freezer position and with a freezer position, respectively. Numbers are shown for each center from 2023-2025.
*Odense had 1,673 fractions in 2024 and 2,500 fractions in 2025 with status “freezing” which counts as the status “in freezer”.

In 2025, a total of 39,816 tissue fractions (excluding FFPE tissue) have a status that indicates that they have a freezer position. 2,455 fractions were registered without a freezer position. Most notably were the 2,140 fractions from Biobank Center Region Sjælland. After some exploration, it was found that the fractions were registered incorrectly and have since been corrected. When accounting for the corrected fractions the freezer position percentage is at 99%. A total of 4,230 bone marrow fractions were collected and less than 10 are without a freezer position. The national indicator has been fulfilled for both.

		Fractions					
		Tissue			**Bone marrow**		
		Total	**w/o freezer position, n**	**with freezer position, %**	**Total**	**w/o freezer position, n**	**with freezer position, %**
2025							
National	**TOTAL**	**39,816**	**2,455**	**94**	**4,230**	**<10**	**100**
Center	Herlev	11,500	184	98	0	0	0
	Region Sjælland	10,110	2140	79	0	0	0
	Odense	6,866	56	99	1,540	<10	100
	Rigshospitalet	2,904	21	99	459	<10	100
	Aalborg	3,031	45	99	1,662	0	100
	Aarhus	5,405	<10	100	567	0	100
2024							
National	**TOTAL**	**41,163**	**35**	**100**	**4,281**	**0**	**100**
Center	Herlev	12,972	<10	100	0	0	0
	Region Sjælland	8,829	<10	100	0	0	0
	Odense	6,842	<10	100	1,585	0	100
	Rigshospitalet	4,924	0	100	421	0	100
	Aalborg	3,112	0	100	1,756	0	100
	Aarhus	4,484	25	99	519	0	100
2023							
National	**TOTAL**	**45,692**	**129**	**100**	**5,452**	**0**	**100**
Center	Herlev	12,531	64	99	0	0	0
	Region Sjælland	10,559	0	100	0	0	0
	Odense	7,56	13	100	2,023	0	100
	Rigshospitalet	6,041	0	100	411	0	100
	Aalborg	3,88	22	99	2,617	0	100
	Aarhus	5,121	30	99	401	0	100

Appendix 12.1.1.2. DCB. Distribution of tissue fractions according to registered freezer position, 2023-2025. The table shows the number of tissue and bone marrow fractions without a freezer position and the percentage of tissue and bone marrow fractions with a freezer position. Numbers are shown for each center from 2023-2025.

1B. Material with all handling time points registered

This indicator measures the number (n) and proportion (%) of fractions that have a registration of all three handling time points: 'Sampling', 'Received' and 'First in freezer' in the RBGB registry. The timepoint should include both date and time. If no time is given the processing time cannot be calculated and thereby quality of the sample cannot be documented.

FFPE-fractions are stored at room temperature and therefore do not have a time point for 'First in freezer' and are not included in the analysis. Biobank Center Region Sjælland does not collect hematological material, and data are therefore not available.

Quality goal: ≥95% of the fractions have all three handling time points registered.

For blood, the goal of this indicator is almost met nationally by all centers, but center Odense has 6,623 samples without a complete time registration (appendix 12.1.1.3). 2,500 of the 6,623 fractions are due to usage of status 'Freezing', as they now use this status to indicate that the fractions are stored at -70°C for a limited time. Furthermore, Biobank Center Odense has also begun immediate delivery of samples from the fractions that have the "freezing" status to research projects. This means that 4,123 samples have been distributed without receiving all of the time stamps needed for a complete time registration. The national percentage is at 91% and has been fulfilled. When accounting for the fractions from Biobank Center Odense, the national indicator is at 100%.

For hematological blood, the indicator is met nationally. Biobank Center Odense has had an incredible improvement over the last two years but generally the processing of hematological blood is at a high level.

		Fractions					
		Blood			Hematological blood		
		Total	w/o complete time registration, n	with complete time registration, %	Total	w/o complete time registration, n	with complete time registration, %
2025							
National	**TOTAL**	**75,706**	**6,714**	**91**	**6,203**	**<10**	**100**
Center	Herlev	11,208	0	100	0	0	0
	Region Sjælland	1,674	0	100	0	0	0
	Odense	18,119	6,623	63	380	0	100
	Rigshospitalet	9,443	61	99	1,863	0	100
	Aalborg	17,775	0	100	3,294	<10	100
	Aarhus	17,457	0	100	660	<10	99
2024							
National	**TOTAL**	**89,564**	**5,231**	**94**	**6,29**	**226**	**96**
Center	Herlev	17,219	0	100	0	0	0

	Region Sjælland	1,353	0	100	0	0	0
	Odense	18,645	5231	72	511	131	74
	Rigshospitalet	11,730	0	100	1,744	0	100
	Aalborg	12,410	0	100	3,428	<10	100
	Aarhus	28,207	0	100	607	94	85
2023							
National	**TOTAL**	**101,867**	**1,157**	**99**	**8,156**	**622**	**92**
Center	Herlev	21,763	0	100	0	0	0
	Region Sjælland	1,513	0	100	0	0	0
	Odense	17,999	806	96	1,434	532	63
	Rigshospitalet	15,177	0	100	2,183	0	100
	Aalborg	11,507	0	100	3,98	<10	100
	Aarhus	33,908	351	99	559	88	84

Appendix 12.1.1.3. DCB. Distribution of blood fractions with all handling timepoints registered, 2023-2025. The table shows the percentage of blood and hematological blood fractions that have a timepoint registered for 'Sampling', 'Received' and 'First in freezer'. Numbers are shown for each center.

The indicator for tissue has been fulfilled nationally with 94% of fractions having a complete time registration. Furthermore, it is important to note that the 2,140 fractions that were incorrectly registered and subsequently corrected is still present in this figure. Disregarding the 2,140 fractions gives a 99% registration rate.

For bone marrow only one fraction is without a complete time registration.

		Fractions					
		Tissue			**Bone marrow**		
		Total	**w/o complete time registration, n**	**with complete time registration, %**	**Total**	**w/o complete time registration, n**	**with complete time registration, %**
2025							
National	**TOTAL**	**41,458**	**2400**	**94**	**4,232**	**<10**	**100**
Center	Herlev	11,520	184	98	0	0	0
	Region Sjælland	10,110	2140	79	0	0	0
	Odense	7,391	54	99	1,542	<10	100
	Rigshospitalet	3,001	20	99	461	0	100
	Aalborg	3,918	0	100	1,662	0	100
	Aarhus	5,518	<10	100	567	0	100
2024							
National	**TOTAL**	**44,02**	**728**	**98**	**4,286**	**82**	**98**
Center	Herlev	13,009	41	100	0	0	0
	Region Sjælland	9,007	172	98	0	0	0
	Odense	7,781	193	98	1,586	<10	100

	Rigshospitalet	5,149	16	100	421	0	100
	Aalborg	3,365	<10	100	1,758	0	100
	Aarhus	5,709	301	95	521	79	85
2023							
National	**TOTAL**	**47,854**	**528**	**99**	**5,465**	**143**	**97**
Center	Herlev	12,648	39	100	0	0	0
	Region Sjælland	10,699	140	99	0	0	0
	Odense	8,118	65	99	2,023	84	96
	Rigshospitalet	6,301	19	100	411	0	100
	Aalborg	4,201	0	100	2,63	0	100
	Aarhus	5,887	265	95	401	59	85

Appendix 12.1.1.4. DCB. Distribution of tissue fractions with all handling timepoints registered, 2023-2025. The table shows the percentage of tissue and bone marrow fractions that have a timepoint registered for 'Sampling', 'Received' and 'First in freezer'. Numbers are shown for each center.

1C. Materials with an error in time point registration

This indicator measures the number (n) of fractions that have an error in time point registration, for example if a fraction has a time point for 'In freezer' before the time point for 'Received' or a time point for 'Received' that lays before 'Sampling'.

Quality goal: <5% of the fractions have an error in registration.

Appendix 12.1.1.5 shows the number of blood and hematological blood fractions that have a specific error in time registration. Only the registration errors that occur are shown in the appendix. Very few fractions have an error in time registration and the goal of this indicator is met nationally.

		Fractions						
		Blood				**Hematological blood**		
		Total	**Status 'In freezer' before status 'Sampling'**	**Status 'In freez-er' before status 'Received'**	**Status 'Received' before status 'Sampling'**	**Total**	**Status 'In freezer' before status 'Received'**	**Status 'Received' before status 'Sampling'**
2025								
National	**TOTAL**	**84,383**	**0**	**43**	**0**	**6,203**	**10**	**0**
Center	Herlev	11,208	0	11	0	0	0	0
	Region Sjælland	1,674	0	13	0	0	0	0
	Odense	18,119	0	0	0	380	0	0
	Rigshospitalet	9,443	0	0	0	1,863	0	0
	Aalborg	17,775	0	0	0	3,296	0	0
	Aarhus	26,164	0	19*	0	664	10	0
2024								
National	**TOTAL**	**89,564**	**0**	**<10**	**0**	**6,290**	**0**	**72**

Center	Herlev	17,219	0	0	0	0	0	0
	Region Sjælland	1,353	0	<10	0	0	0	0
	Odense	18,645	0	0	0	511	0	55
	Rigshospitalet	11,73	0	0	0	1,744	0	0
	Aalborg	12,41	0	0	0	3,428	0	0
	Aarhus	28,207	0	0	0	607	0	17
2023								
National	**TOTAL**	**101,867**	**0**	**53**	**0**	**8,156**	**0**	**8062**
Center	Herlev	21,763	0	<10	0	0	0	0
	Region Sjælland	1,513	0	<10	0	0	0	0
	Odense	17,999	0	13	0	1,434	0	1,395
	Rigshospitalet	15,177	0	26	0	2,183	0	2,183
	Aalborg	11,507	0	0	0	3,98	0	3,98
	Aarhus	33,908	0	<10	0	559	0	504

Appendix 12.1.1.5. DCB. Number of blood fractions that have an error in registration, 2023-2025. The table shows the number of blood and hematological blood fractions that have a specific error in time registration. *Due to technical limitations, the "First in freezer" date and time cannot be changed. The actual registration has been corrected.

Appendix 12.1.1.6 shows the number of tissue and bone marrow fractions that have a specific error in time registration. Only the registration errors that occur are shown in the table. Very few fractions have an error in time registration and the goal of this indicator is met nationally and at center level.

		Fractions						
		Tissue				**Bone marrow**		
		Total	**Status 'In freezer' before status 'Received'**	**Status 'In freezer' before status 'Sampling'**	**Status 'Received' before status 'Sampling'**	**Total**	**Status 'In freezer' before status 'Received'**	**Status 'Received' before status 'Sampling'**
2025								
National	**TOTAL**	**49,048**	17	<10	0	**4,232**	<10	0
Center	Herlev	14,589	0	0	0	0	0	0
	Region Sjælland	11,466	0	0	0	0	0	0
	Odense	8,777	<10	<10	0	1,542	0	0
	Rigshospitalet	3,289	0	0	0	461	0	0
	Aalborg	4,497	0	<10	0	1,662	0	0
	Aarhus	6,430	10	<10	0	567	<10	0
2024								
National	**TOTAL**	**51,650**	**15**	**164**	**105**	**4,286**	**0**	**16**
Center	Herlev	16,111	<10	0	0	0	0	0
	Region Sjælland	10,251	0	0	0	0	0	0
	Odense	9,198	<10	<10	18	1,586	0	0

	Rigshospitalet	5,874	0	<10	0	421	0	0
	Aalborg	3,835	0	<10	0	1,758	0	0
	Aarhus	6,381	0	159	87	521	0	16
2023								
National	**TOTAL**	**56,488**	**51**	**60**	**104**	**5,465**	**0**	**35**
Center	Herlev	15,818	<10	0	<10	0	0	0
	Region Sjælland	12,195	0	0	0	0	0	0
	Odense	9,552	19	0	0	2,023	0	0
	Rigshospitalet	7,288	0	<10	<10	411	0	0
	Aalborg	4,824	<10	<10	0	2,63	0	0
	Aarhus	6,811	18	54	91	401	0	35

Appendix 12.1.1.6. DCB. Number of tissue fractions that have an error in registration, 2023-2025. The table shows the number of tissue and bone marrow fractions that have a specific error in time registration.

1D. The number of biological materials that have a complete registration in the RBGB registry.

This indicator evaluates whether tissue and bone marrow materials have a complete registration in the RBGB registry. The indicator is defined as the percentage of tissue and bone marrow materials that have been pathologically verified and registered with a diagnosis and a DMCG. This information increases the applicability and thereby the value of the samples.

Quality goal: ≥95% of the tissue and bone marrow materials should have a complete registration.

In 2025, the national percentage of tissue materials with a complete registration was 78% (appendix 12.1.1.7). This means that the national indicator is not fulfilled. Biobank Center Region Sjælland and Aalborg have both fulfilled the indicator locally. Biobank Center Herlev falls a little short of the 95%. Biobank Center Rigshospitalet continues to have 0% with a complete registration for two years straight. There has been an issue with SNOMED codes, but the resolution of the problem has not led to improvement. Biobank Center Rigshospitalet is encouraged to explore solutions to support complete tissue registrations.

For bone marrow, the registration completeness decreased from 91% in 2023 to 78% in 2025, highlighting an area for continued attention and improvement. Biobank Center Rigshospitalet and Odense have not fulfilled the indicator. There is good reason for the two biobank centers to draw inspiration from the others to improve workflow and remove obstacles that hinder complete registration.

		Materials					
		Tissue			**Bone marrow**		
		Total	**Registration completed, n**	**Registration completed, %**	**Total**	**Registration completed, n**	**Registration completed, %**
2025							
National	**TOTAL**	**8,630**	**6,709**	**78**	**670**	520	78
Center	Herlev	2,873	2,686	93	0	0	0
	Region Sjælland	1,379	1,355	98	0	0	0
	Odense	1,533	1,122	73	224	150	67

	Rigshospitalet	1,053	<10	0	64	0	0
	Aalborg	617	612	99	303	295	97
	Aarhus	1,175	931	79	79	75	95
2024							
National	**TOTAL**	**9,233**	**7,186**	**78**	**666**	**555**	**83**
Center	Herlev	3,144	2,944	94	0	0	0
	Region Sjælland	1,250	1,232	99	0	0	0
	Odense	1,582	1,526	96	229	225	98
	Rigshospitalet	1,518	<10	0	57	0	0
	Aalborg	532	523	98	302	267	88
	Aarhus	1,207	954	79	78	63	81
2023							
National	**TOTAL**	**10,035**	**8,134**	**81**	**782**	**708**	**91**
Center	Herlev	3,336	3,087	93	0	0	0
	Region Sjælland	1,495	1,487	99	0	0	0
	Odense	1,537	1,507	98	294	294	100
	Rigshospitalet	1,810	394	22	57	0	0
	Aalborg	676	655	97	370	366	99
	Aarhus	1,181	1,004	85	61	48	79

Appendix 12.1.1.7. DCB. Number of tissue and bone marrow materials with a complete registration, 2023-2025. The table shows the number of tissue and bone marrow materials that has a complete registration in RBGB including a diagnosis code, pathological verification and is coupled with a DMCG. Data are shown for each center from 2023-2025.

12.1.2 Indicator 2: Sample Quality

		Fractions - Processing time						
		Tissue						
		Total	**≤1 h, % (n)**	**1-3 hours, % (n)**	**3-7 hours, % (n)**	**7-12 hours, % (n)**	**12-24 hours, % (n)**	**>24 hours, % (n)**
2025								
National	**TOTAL**	**34,211**	**48 (16,434)**	**36 (12,270)**	**6 (2,029)**	**1 (458)**	**7 (2,413)**	**2 (607)**
Center	Herlev	9,858	27 (2,663)	51 (4,987)	10 (937)	0 (18)	10 (998)	3 (255)
	Region Sjælland	7,762	58 (4,485)	31 (2,397)	9 (664)	0 (0)	2 (180)	0 (36)
	Odense	6,226	46 (2,891)	42 (2,595)	1 (67)	0 (0)	8 (504)	3 (169)
	Rigshospitalet	2,841	65 (1,851)	23 (667)	2 (45)	0 (0)	6 (167)	4 (111)
	Aalborg	3,003	72 (2,164)	27 (824)	1 (14)	0 (0)	0 (0)	0 (<10)
	Aarhus	4,521	53 (2,380)	18 (800)	7 (302)	10 (440)	12 (564)	1 (35)

Appendix 12.1.2.1. DCB. Tissue processing time, 2025. The table shows a more detailed look at tissue processing time in DCB 2025.

		Fractions - Processing time					
		Blood					
		Total	≤ 3 h, % (n)	3-7 hours, % (n)	7-12 hours, % (n)	12-24 hours, % (n)	>24 hours, % (n)
2025							
National	TOTAL	68,736	88 (60,826)	5 (3,525)	0 (<10)	1 (526)	6 (3,851)
Center	Herlev	11,180	94 (10,440)	5 (564)	0 (0)	0 (24)	1 (152)
	Region Sjælland	1,615	99 (1599)	1 (<10)	0 (0)	0 (0)	0 (<10)
	Odense	11,496	62 (7,851)	0 (24)	0 (<10)	0 (0)	38 (3,613)
	Rigshospitalet	9,382	95 (8,946)	1 (104)	0 (0)	4 (330)	0 (<10)
	Aalborg	17,775	89 (15,777)	11 (1,920)	0 (0)	0 (66)	0 (12)
	Aarhus	17,288	94 (16,213)	5 (905)	0 (0)	1 (106)	0 (64)

Appendix 12.1.2.2. DCB. Blood processing time, 2025. The table shows a more detailed look at blood processing time in DCB 2025.

12.1.3 Indicator 3: Coverage

The guidelines for handling of material in DCB define standard sets for blood, tissue, hematological blood, and bone marrow. This is to ensure that there is enough material and different types of fractions to accommodate the needs in the clinic for patients' own diagnosis/treatment and if needed for future research.

Indicator 3 is defined as the percentage of blood (3A), tissue (3B), and hematological materials (3C), that contain the recommended number of fractions or more. The coverage is calculated by counting the number of materials containing the recommended number of fractions, i.e., the type of fraction included in each material is not evaluated.

Quality goal:

3A: ≥90% of the blood materials should contain ≥8 fractions.

3B: ≥50% of tissue materials should contain ≥5 fractions.

3C: ≥90% of the hematological blood and bone marrow materials should contain ≥4 and ≥2 fractions.

3A. Coverage for blood materials

In 2025 the total number of blood samplings declined from 11,347 in 2023 to 9,074. However, the coverage percent remains stable at 91% meaning that the indicator has been fulfilled.

Biobank Center Region Sjælland has the lowest coverage percentage at 59%; a steep drop from the 99% last year. Herlev Biobank Center has the penultimate percentage with 75%; a percentage that has been stable for at least the last three years. The rest of the biobank centers have numbers that are comparable to last year.

Nationally, the quality goal of this indicator has been met. However, there should be room for improvement in the lowest performing regions.

	Materials		
	Blood		
	Total	Containing ≥8 fractions, n	Coverage, %
2025			

National	**TOTAL**	**9,074**	**8,271**	**91**
Center	Herlev	1,547	1,155	75
	Region Sjælland	289	171	59
	Odense	1,866	1,847	99
	Rigshospitalet	1,063	985	93
	Aalborg	1,694	1,647	97
	Aarhus	2,615	2,466	94*
	2024			
National	**TOTAL**	**10,036**	**9,113**	**91**
Center	Herlev	2,396	1,794	75
	Region Sjælland	163	162	99
	Odense	1,998	1,978	99
	Rigshospitalet	1,401	1,278	91
	Aalborg	1,224	1,199	98
	Aarhus	2,854	2,702	95
	2023			
National	**TOTAL**	**11,347**	**10,245**	**90**
Center	Herlev	3,02	2,231	74
	Region Sjælland	190	184	97
	Odense	1,832	1,824	100
	Rigshospitalet	1,802	1,664	92
	Aalborg	1,179	1,138	97
	Aarhus	3,324	3,204	96

Appendix 12.1.3.1. DCB. Coverage for blood, 2023-2025. The table shows the number and percentage of blood materials containing ≥8 fractions, as recommended. Data are shown for each center in 2023-2025. *These are due to materials with low yield as well as samples of larger individual volumes, making a set of 8 or more fractions either unattainable or unnecessary.

3B. Coverage for tissue materials

Previously the coverage for tissue has been calculated as the percentage of tissue materials (tumor and normal tissue) that, as a minimum, have nine fractions as described for the standard set. However, due to smaller tumors at time of surgery it is often difficult to collect a full standard set. Therefore, the coverage is now calculated as the percentage of tissue materials (tumor and normal tissue) that, as a minimum, have five fractions, one of them being formalin and paraffin embedded tissue.

In 2025, 61% of the tissue materials, nationally, contained at least five fractions (appendix 12.1.3.2). With the lower number of fractions required to fulfill the goal, it is met in all centers except Biobank Center Rigshospitalet. However, it should be noted that most of the tissue samples with lower fraction numbers are from areas with less available material, which explains the lower coverage. For Herlev, these are primarily Mamma samples, where better screening has led to earlier detection, and thus smaller tumors, and for Rigshospitalet, the majority are from the Nervous System, where the tumors are naturally smaller.

		Materials		
		Tissue		
		Total	Containing ≥ 5 fractions	Coverage, %
2025				
National	**TOTAL**	**8,630**	**5,294**	61
Center	Herlev	2,873	1,495	52
	Region Sjælland	1,379	1,342	97
	Odense	1,533	1,046	68
	Rigshospitalet	1,053	181	17
	Aalborg	617	524	85
	Aarhus	1,175	706	60
2024				
National	**TOTAL**	**9,233**	**5,646**	61
Center	Herlev	3,144	1,715	55
	Region Sjælland	1,250	1,217	97
	Odense	1,582	1,132	72
	Rigshospitalet	1,518	433	29
	Aalborg	532	407	77
	Aarhus	1,207	742	61
2023				
National	**TOTAL**	**10,035**	**6,114**	61
Center	Herlev	3,336	1,658	50
	Region Sjælland	1,495	1,464	98
	Odense	1,537	1,165	76
	Rigshospitalet	1,81	567	31
	Aalborg	676	518	77
	Aarhus	1,181	742	63

Appendix 12.1.3.2. DCB. Coverage for tissue, 2023-2025. The table shows the number and percentage of tissue materials that has a minimum of nine or five fractions. Data are shown for each center from 2023-2025.

3C. Coverage for hematological materials

The coverage for hematological blood is calculated as the percentage of hematological blood materials that, as a minimum, have the recommended four fractions described for the standard set.

In 2025 the total number of hematological blood samplings in DCB have continued declining from 887 samplings in 2023 to 673 in 2025. The coverage percentage is 94% and the quality goal for this indicator has been fulfilled.

Biobank Center Rigshospitalet has the lowest coverage percentage at 89%. It should also be noted that Biobank Center Aalborg and Aarhus have seen a 5% and 9% increase respectively. Finally, it is important to note the consistency of Biobank Center Odense. Their 99% or 100% coverage rate for the last three years is impressive.

Materials

		Hematological blood		
		Total	Containing ≥4 fractions	Coverage, %
2025				
National	**TOTAL**	**673**	**635**	**94**
Center	Herlev	0	0	0
	Region Sjælland	0	0	0
	Odense	44	44	100
	Rigshospitalet	217	193	89
	Aalborg	331	320	97
	Aarhus	81	78	96
2024				
National	**TOTAL**	**697**	**635**	**91**
Center	Herlev	0	0	0
	Region Sjælland	0	0	0
	Odense	59	59	100
	Rigshospitalet	199	179	90
	Aalborg	357	326	91
	Aarhus	82	71	87
2023				
National	**TOTAL**	**887**	**841**	**95**
Center	Herlev	0	0	0
	Region Sjælland	0	0	0
	Odense	163	162	99
	Rigshospitalet	248	223	90
	Aalborg	412	400	97
	Aarhus	64	56	88

Appendix 12.1.3.3. DCB. Coverage for hematological blood, 2023-2025. The table shows the number and percentage of hematological blood materials that as a minimum have four fractions. Data are shown for each center from 2023-2025.

3D. Coverage for bone marrow materials

The coverage for bone marrow is calculated as the percentage of bone marrow materials which contains the recommended two fractions or more, as described for the standard set. In 2025, the national coverage for bone marrow materials returned to 99% coverage (appendix 12.1.3.4), however the quality goal is still reached nationally as well as by all centers in DCB.

		Materials		
		Bone marrow		
		Total	Containing ≥2 fractions	Coverage, %
2025				
National	**TOTAL**	**670**	**661**	**99**

Center	Herlev	0	0	0
	Region Sjælland	0	0	0
	Odense	224	224	100
	Rigshospitalet	64	62	97
	Aalborg	303	298	98
	Aarhus	79	77	97
	2024			
National	**TOTAL**	**666**	**641**	**96**
Center	Herlev	0	0	0
	Region Sjælland	0	0	0
	Odense	229	228	100
	Rigshospitalet	57	55	96
	Aalborg	302	283	94
	Aarhus	78	75	96
	2023			
National	**TOTAL**	**782**	**773**	**99**
Center	Herlev	0	0	0
	Region Sjælland	0	0	0
	Odense	294	293	100
	Rigshospitalet	57	57	100
	Aalborg	370	367	99
	Aarhus	61	56	92

Appendix 12.1.3.4. DCB. Coverage for bone marrow, 2023-2025. The table shows the number and percentage of bone marrow materials that as a minimum have two fractions. Data are shown for each center from 2023-2025.

12.2 Danish Rheumatologic Biobank (DRB)

Name	Represents	Biobank Center
Chairman		
Salome Kristensen		
Vice chairman		
Henrik Christian Bidstrup Leffers		
Members		
Bente Glintborg	DANBIO	
Estrid Høgdall	RBGB	
Ida Due	Laboratory	Glostrup
Sofie Guldbech	Laboratory	Glostrup
Heidi Lausten Munk	Clinic	Glostrup
Pernille Hurup Nordholm	Local department	Glostrup
Charlotte Modin	Laboratory	Aarhus
Anne-Gitte Loft	Clinic	Aarhus
Camilla Villsen (Barsel juni 2026)	Laboratory	Hjørring
Helle Hyldgaard Schmidt	For spørgsmål vedr. projekter og andet under barslen for Camilla	
Asta Linauskas	Clinic	Hjørring
Palle Lyngsie Pedersen	Laboratory	Næstved
Ole Birger Pedersen	Clinic	Næstved
Ada Colic	Local department	Køge
Charlotte Drachmann	Laboratory	Sønderborg
Marina Bjørling-Poulsen	Laboratory	Odense
Karen Schreiber	Clinic	Sønderborg

Appendix 12.2.0 Members of the Scientific Advisory Board for DRB as of ultimo 2025. The table shows the members of the Scientific Advisory Board for DRB, which organization they represent and which biobank center or region they are from.

12.2.1. Indicator 1: Quality of registration

Indicator 1 describes the quality of registration of the samples in DRB. It is important that data registration is completed for all samples in the biobank to ensure high quality of the samples. The indicator is divided into three sections. On the back of the scientific advisory board meeting the 7th of September 2023, a table showing the details of each collecting department is also added.

1A. Material with registered freezer position

This indicator describes the number (n) and proportion (%) of fractions that have been registered and assigned a freezer position in the RBGB registry. Since fractions are only visible and thereby available for retrieval if they are registered with a freezer position, this information is mandatory. Fractions that have been retrieved or fractions in transit between two freezer positions are not included in the analysis, as these naturally do not have a freezer position.

Quality goal: ≥95% of the fractions that should have a freezer position are assigned a freezer position.

In 2025, a total of 22,618 blood sample types were collected, and almost all of them were assigned a freezer position. Odense is an exception, as their samples are registered without a freezer position due to a different local procedure. This practice is related to a change implemented three years ago, where the temperature in the department's local freezers was raised to –70 °C. As these freezers have limited capacity, samples are periodically moved to long-term storage in OUH's freezer facility at –80 °C. According to an agreement with the RBGB secretariat, samples are given the status "freezing" when placed in the local –70 °C freezer and only receive the status "in freezer" once they are transferred to the –80 °C freezer facility. This makes it possible to track when a temperature change has occurred but delays the full registration. Despite this procedural difference, the indicator is considered fulfilled nationally.

	Blood fractions		
2025	**Total**	**W/o freezer position, n**	**With freezer position, %**
National	**22,618**	**365**	**98**
Danish Rheumatologic Biobank Glostrup	**5,178**	**0**	**100**
Department of Clinical Biochemistry, Gentofte	108	0	100
Department of Clinical Biochemistry, Glostrup	4,687	0	100
Department of Clinical Biochemistry, Gentofte	383	0	100
Danish Rheumatologic Biobank Hjørring	**3,994**	**0**	**100**
Department of Clinical Biochemistry, Regionshospital Nordjylland, Hjørring	786	0	100
Department of Clinical Biochemistry, Aalborg University Hospital	3,208	0	100
Danish Rheumatologic Biobank Region Sjælland	**944**	**311**	**71**
Department of Clinical Biochemistry, Slagelse	32	0	100
Department of Clinical Biochemistry, Køge	617	191	69
Department of Clinical Biochemistry, Næstved	87	24	72
Department of Clinical Biochemistry, Holbæk	144	72	50
Department of Clinical Biochemistry, Nykøbing F.	64	24	63
Danish Rheumatologic Biobank Odense	**219**	**0**	100
Department of Clinical Biochemistry, Odense University Hospital	54	54	0
Department of Clinical Biochemistry, Svendborg	165	0	100
Danish Rheumatologic Biobank Sønderborg	**4,587**	**0**	**100**
Danish Hospital for Rheumatic Diseasess	4,533	0	100
Department of Clinical Biochemistry and Immunology, Vejle	54	0	100
Danish Rheumatologic Biobank Århus	**7,696**	**0**	**100**
Department of Clinical Biochemistry PJJ, Aarhus University Hospital	5,146	0	100

Department of Clinical Biochemistry Gødstrup, West Hospital Unit	1,225	0	100
Department of Clinical Biochemistry, Herning West Hospital Unit	432	0	100
Department of Clinical Biochemistry Silkeborg, Central Hospital Unit	893	0	100
2024	**Total**	**W/o freezer position, n**	**With freezer position, %**
National	**1,9615**	**0**	**100**
Danish Rheumatologic Biobank Glostrup	**3,329**	**0**	**100**
Department of Clinical Biochemistry, Gentofte	459	0	100
Department of Clinical Biochemistry, Glostrup	2,599	0	100
Department of Clinical Immunology, Blood Bank, Rigshospitalet	271	0	100
Danish Rheumatologic Biobank Hjørring	**4,894**	**0**	**100**
Department of Clinical Biochemistry, Regionshospital Nordjylland, Hjørring	1,660	0	100
Department of Clinical Biochemistry, Aalborg University Hospital	3,234	0	100
Danish Rheumatologic Biobank Region Sjælland	**1,273**	**0**	**100**
Department of Clinical Biochemistry, Slagelse	120	0	100
Department of Clinical Biochemistry, Køge	964	0	100
Department of Clinical Biochemistry, Næstved	189	0	100
Department of Clinical Biochemistry, Holbæk	280	0	100
Department of Clinical Biochemistry, Nykøbing F.	120	0	100
Danish Rheumatologic Biobank Odense	**8**		
Department of Clinical Biochemistry, Odense University Hospital	8	0	100
Danish Rheumatologic Biobank Sønderborg	**4,616**	**0**	**100**
Danish Hospital for Rheumatic Diseasess	4,472	0	100
Department of Clinical Biochemistry and Immunology, Vejle	144	0	100
Danish Rheumatologic Biobank Århus	**5,495**	**0**	**100**
Department of Clinical Biochemistry, Aarhus University Hospital	3,734	0	100
Department of Clinical Biochemistry, Randers Regional Hospital	14	0	100
Department of Clinical Biochemistry, Herning West Hospital Unit	699	0	100
Department of Clinical Biochemistry, Horsens Regional Hospital	440	0	100
Department of Clinical Biochemistry Silkeborg, Central Hospital Unit	608	0	100

Appendix 12.2.1.1. DRB. Distribution of fractions according to registered freezer position (all departments), 2025. The table shows the number of blood fractions without a freezer position and the proportion of blood fractions with a freezer position. Numbers shown for each collecting department, 2025.

1B. Material with all handling time points registered.

This indicator measures the number (n) and proportion (%) of fractions that have a registration of all three handling time points: 'Sampling', 'Received' and 'First in freezer' in the RBGB registry.

Quality goal: ≥95% of the fractions have all three handling time points registered.

This indicator has been fulfilled nationally.

	Blood fractions		
2025	**Total**	**W/o complete time registration, n**	**With complete time registration, %**
National	**22,618**	**163**	**99**
Danish Rheumatologic Biobank Glostrup	**5,178**	**42**	**99**
Department of Clinical Biochemistry, Gentofte	108	0	100
Department of Clinical Biochemistry, Glostrup	4,687	42	99
Department of Clinical Immunology, Blood Bank, Rigshospitalet	383	0	100
Danish Rheumatologic Biobank Hjørring	**3,994**	**61**	**98**
Department of Clinical Biochemistry, Regionshospital Nordjylland, Hjørring	786	53	93
Department of Clinical Biochemistry, Aalborg University Hospital	3,208	<10	100
Danish Rheumatologic Biobank Region Sjælland	**944**	**0**	**100**
Department of Clinical Biochemistry, Slagelse	32	0	100
Department of Clinical Biochemistry, Køge	617	0	100
Department of Clinical Biochemistry, Næstved	87	0	100
Department of Clinical Biochemistry, Holbæk	144	0	100
Department of Clinical Biochemistry, Nykøbing F.	64	0	100
Danish Rheumatologic Biobank Odense	**219**	**0**	**100**
Department of Clinical Biochemistry, Odense University Hospital	54	0	100
Department of Clinical Biochemistry, Svendborg	165	0	100
Danish Rheumatologic Biobank Sønderborg	**4,587**	**0**	**100**
Danish Hospital for Rheumatic Diseases	4,533	0	100
Department of Clinical Biochemistry and Immunology, Vejle	54	0	100
Danish Rheumatologic Biobank Århus	**7,696**	**0**	**99**
Department of Clinical Biochemistry PJJ, Aarhus University Hospital	5,146	0	100
Department of Clinical Biochemistry, Randers Regional Hospital	0	0	0
Department of Clinical Biochemistry Gødstrup, West Hospital Unit	1,225	0	97

Department of Clinical Biochemistry, Horsens Regional Hospital	432	0	100
Department of Clinical Biochemistry Silkeborg, Central Hospital Unit	893	0	97
2024	**Total**	**W/o complete time registration, n**	**With complete time registration, %**
National	**19,744**	**41**	**100**
Danish Rheumatologic Biobank Glostrup	**3,375**	**0**	**100**
Department of Clinical Biochemistry, Gentofte	459	0	100
Department of Clinical Biochemistry, Glostrup	2,645	0	100
Department of Clinical Immunology, Blood Bank, Rigshospitalet	271	0	100
Danish Rheumatologic Biobank Hjørring	**4,894**	**41**	**99**
Department of Clinical Biochemistry, Regionshospital Nordjylland, Hjørring	1,660	41	98
Department of Clinical Biochemistry, Aalborg University Hospital	3,234	0	100
Danish Rheumatologic Biobank Region Sjælland	**1,273**	**0**	**100**
Department of Clinical Biochemistry, Slagelse	120	0	100
Department of Clinical Biochemistry, Køge	964	0	100
Department of Clinical Biochemistry, Næstved	189	0	100
Department of Clinical Biochemistry, Holbæk	280	0	100
Department of Clinical Biochemistry, Nykøbing F.	120	0	100
Danish Rheumatologic Biobank Odense	**91**	**0**	**100**
Department of Clinical Biochemistry, Odense University Hospital	91	0	100
Danish Rheumatologic Biobank Sønderborg	**4,616**	**<10**	**100**
Danish Hospital for Rheumatic Diseases	4,472	0	100
Department of Clinical Biochemistry and Immunology, Vejle	144	<10	94
Danish Rheumatologic Biobank Århus	**5,495**	**0**	**100**
Department of Clinical Biochemistry PJJ, Aarhus University Hospital	3,734	0	100
Department of Clinical Biochemistry, Randers Regional Hospital	14	0	100
Department of Clinical Biochemistry, Herning West Hospital Unit	699	0	100
Department of Clinical Biochemistry, Horsens Regional Hospital	440	0	100
Department of Clinical Biochemistry Silkeborg, Central Hospital Unit	608	0	100

Appendix 12.2.1.2. DRB. Distribution of blood fractions with all handling timepoints registered (all departments), 2024-2025. The table shows the percentage of blood fractions that have a timepoint registered for 'Sampling', 'Received', and 'First in freezer'. Numbers are shown for each collecting department for 2025.

1C. Materials with an error in time point registration

This indicator measures the number (n) of fractions that have an error in time point registration. An error in registration can be a fraction that has a time point for 'In freezer' before the time point for 'Received' or a fraction has a time point for 'Received' before the time point for 'Sampling'.

Quality goal: < 5% of the fractions should have an error in registration.

This indicator has been fulfilled, and errors are at a low level.

	Blood fractions		
2025	**Total**	**Status 'In freezer' before status 'Received'**	**Status 'Received' before status 'Sampling'**
National	**42,161**	**16**	**0**
Danish Rheumatologic Biobank Glostrup	**5,178**	**0**	**0**
Department of Clinical Biochemistry, Gentofte	108	0	0
Department of Clinical Biochemistry, Glostrup	4,687	0	0
Department of Clinical Immunology, Blood Bank, Rigshospitalet	383	0	0
Danish Rheumatologic Biobank Hjørring	**951**	**0**	**0**
Department of Clinical Biochemistry, Regionshospital Nordjylland, Hjørring	786	0	0
Department of Clinical Biochemistry, Aalborg University Hospital	165	0	0
Danish Rheumatologic Biobank Region Sjælland	**23,530**	**<10**	**0**
Department of Clinical Biochemistry, Slagelse	22,618	<10	0
Department of Clinical Biochemistry, Køge	617	0	0
Department of Clinical Biochemistry, Næstved	87	0	0
Department of Clinical Biochemistry, Holbæk	144	0	0
Department of Clinical Biochemistry, Nykøbing F.	64	0	0
Danish Rheumatologic Biobank Odense	**219**	**0**	**0**
Department of Clinical Biochemistry, Svendborg	165	0	0
Department of Clinical Biochemistry, Odense University Hospital	54	0	0
Danish Rheumatologic Biobank Sønderborg	**4,587**	**0**	**0**
Danish Hospital for Rheumatic Diseases	4,533	0	0
Department of Clinical Biochemistry and Immunology, Vejle	54	0	0
Danish Rheumatologic Biobank Aarhus	**7,696**	**0**	**0**
Department of Clinical Biochemistry PJJ, Aarhus University Hospital	5,146	0	0
Department of Clinical Biochemistry Gødstrup, West Hospital Unit	1,225	0	0

Department of Clinical Biochemistry, Horsens Regional Hospital	432	0	0
Department of Clinical Biochemistry Silkeborg, Central Hospital Unit	893	0	0
2024	**Total**	**Status 'In freezer' before status 'Received'**	**Status 'Received' before status 'Sampling'**
National	**19,803**	**24**	**8**
Danish Rheumatologic Biobank Glostrup	**3,393**	**16**	**0**
Department of Clinical Biochemistry, Gentofte	459	0	0
Department of Clinical Biochemistry, Glostrup	2,663	16	0
Department of Clinical Immunology, Blood Bank, Rigshospitalet	271	0	0
Danish Rheumatologic Biobank Hjørring	**4,935**	**0**	**0**
Department of Clinical Biochemistry, Regionshospital Nordjylland, Hjørring	1,701	0	0
Department of Clinical Biochemistry, Aalborg University Hospital	3,234	0	0
Danish Rheumatologic Biobank Region Sjælland	**1,273**	**<10**	**0**
Department of Clinical Biochemistry, Slagelse	120	0	0
Department of Clinical Biochemistry, Køge	964	0	0
Department of Clinical Biochemistry, Næstved	189	0	0
Department of Clinical Biochemistry, Holbæk	280	0	0
Department of Clinical Biochemistry, Nykøbing F.	120	<10	0
Danish Rheumatologic Biobank Odense	**91**	**0**	**0**
Department of Clinical Biochemistry, Odense University Hospital	91	0	0
Danish Rheumatologic Biobank Sønderborg	**4,624**	**0**	**0**
Danish Hospital for Rheumatic Diseases	4,472	0	0
Department of Clinical Biochemistry and Immunology, Vejle	152	0	0
Danish Rheumatologic Biobank Århus	**5,487**	**0**	**<10**
Blood Test and Biochemistry PJJ, Aarhus University Hospital	3,734	0	0
Department of Clinical Biochemistry, Randers Regional Hospital	14	0	0
Department of Clinical Biochemistry, Herning West Hospital Unit	699	0	0
Department of Clinical Biochemistry, Horsens Regional Hospital	432	0	<10
Department of Clinical Biochemistry Silkeborg, Central Hospital Unit	608	0	0

Appendix 12.2.1.3. DRB. Number of fractions that have an error in registration (all departments), 2024-2025. The table shows the number of blood fractions that have a specific error in time registration. Data shown for each collecting department.

12.2.2 Indicator 2: Sample Quality

Indicator 2 describes the sample quality of the material collected in DRB measured as processing time, which is defined as the time between sampling from the patient until the biospecimen is placed in a freezer. To ensure the quality of the material for research, the processing time should be as short as possible. For blood, the recommended processing time is within 3 hours. Furthermore, to clarify whether the processing time is due to an extended transport time, the latter is also calculated. Transport time is defined as the time from sampling until the material is received at the laboratory.

To ensure that the material is of the highest quality, the goal of this indicator is that 90% of the blood material should be processed within 3 hours. Only fractions with the status 'In the freezer' ('I fryser') during the freezing process and a concomitant 'First in freezer'-timestamp are included in the data analysis. Fractions with the status 'Freezing' ('*Nedfrysning*') are therefore not covered by the data analysis, as a timestamp for 'First in freezer' does not exist for these. For PAXgene tubes (blood), both processing - and transport times are calculated separately since these tubes are handled differently from the other blood materials.

PAXgene fractions should upon reception be stored at room temperature for up to 72 hours, followed by freezing at -20°C for at least 24 hours, and thereafter stored long term at -80°C. Hence, the processing time for PAXgene fractions is longer than for other blood fractions and is therefore calculated separately. The goal for the processing time for PAXgene fractions is that 90% of the fractions should be placed at -20°C within 72 hours. Unfortunately, with how the registration system is currently designed, it is not possible to retrieve data regarding the pre-freezing step at -20°C. The data for PAXgene fractions shown in appendix 2.3.2.1 and 2.3.2.1A is calculated as the time from sampling until it is transferred to -80°C. According to the manufacturer, PAXgene vials can be stored at -20°C for a long period of time without compromising sample quality. In some centers, PAXgene vials are therefore stored at -20°C for more than 72 hours before long term storage at -80°C. The information shown in the appendix can thus only be used as an estimate of the actual processing time.

Quality goal: ≥90% of the materials are processed within the recommended time.

12.2.3 Indicator 3: Coverage

The guidelines for material handling in DRB define a standard set for blood. This is to ensure that there is enough material and different types of fractions to accommodate the needs in the clinic and, if possible, for future research. Indicator 3 evaluates the coverage, which is defined as the number (n) and proportion of blood materials that contain the recommended number of fractions or more. The coverage is calculated by counting the number of materials containing the recommended number of fractions, i.e., the type of fraction included in each material is not evaluated. In 2016 the standard set in DRB contained 10 blood fractions, as two PAXgene fractions were included. From 2017, PAXgene vials are no longer a part of the standard set, reducing the set to 8 fractions.

Quality goal: ≥90% of the blood materials should contain ≥8 fractions.

This indicator is not fulfilled nationally. Performance varies across sampling departments, with lower levels observed at the Clinical Immunology Department at the Blood Bank at Rigshospitalet (80%), and at the Departments of Clinical Biochemistry in Holbæk, Køge, Næstved, Nykøbing F., and Slagelse (29%, 11%, 9%, 28%, and 20%, respectively).

	Blood materials		
2025	**Total**	**Containing ≥ 8**	**Coverage, %**
National	**2,832**	**2,504**	**88**
Danish Rheumatologic Biobank Glostrup	**605**	**592**	98
Department of Clinical Biochemistry, Gentofte	12	12	100
Department of Clinical Biochemistry, Glostrup	543	540	99
Department of Clinical Immunology, Blood Bank, Rigshospitalet	50	40	80
Danish Rheumatologic Biobank Hjørring	**493**	**491**	**100**
Department of Clinical Biochemistry, Regionshospital Nordjylland, Hjørring	92	91	99
Department of Clinical Biochemistry, Aalborg University Hospital	401	400	100
Danish Rheumatologic Biobank Region Sjælland	**340**	**47**	**14**
Department of Clinical Biochemistry, Slagelse	10	<10	20
Department of Clinical Biochemistry, Køge	239	26	11
Department of Clinical Biochemistry, Næstved	35	<10	9
Department of Clinical Biochemistry, Holbæk	38	11	29
Department of Clinical Biochemistry, Nykøbing F.	18	<10	28
Danish Rheumatologic Biobank Odense	**21**	**21**	**100**
Department of Clinical Biochemistry, Odense University Hospital	<10	<10	100
Department of Clinical Biochemistry, Svendborg	15	15	100
Danish Rheumatologic Biobank Sønderborg	**515**	**515**	**100**
Danish Hospital for Rheumatic Diseases	509	509	100
Department of Clinical Biochemistry and Immunology, Vejle	<10	10	100
Danish Rheumatologic Biobank Århus	**858**	**838**	**98**
Department of Clinical Biochemistry PJJ, Aarhus University Hospital	558	542	97
Department of Clinical Biochemistry Gødstrup, West Hospital Unit	136	136	100
Department of Clinical Biochemistry, Horsens Regional Hospital	55	51	93
Department of Clinical Biochemistry Silkeborg, Central Hospital Unit	109	109	100
2024	**Total**	**Containing ≥ 8**	**Coverage, %**
National	**2,380**	**2,313**	**97**
Danish Rheumatologic Biobank Glostrup	**386**	**378**	**98**
Department of Clinical Biochemistry, Gentofte	52	52	100
Department of Clinical Biochemistry, Glostrup	303	300	99

Department of Clinical Immunology, Blood Bank, Rigshospitalet	31	26	84
Danish Rheumatologic Biobank Hjørring	**597**	**596**	**100**
Department of Clinical Biochemistry, Regionshospital Nordjylland, Hjørring	193	193	100
Department of Clinical Biochemistry, Aalborg University Hospital	404	403	100
Danish Rheumatologic Biobank Region Sjælland	**214**	**197**	**92**
Department of Clinical Biochemistry, Slagelse	15	15	100
Department of Clinical Biochemistry, Køge	122	113	93
Department of Clinical Biochemistry, Næstved	24	22	92
Department of Clinical Biochemistry, Holbæk	38	32	84
Department of Clinical Biochemistry, Nykøbing F.	15	15	100
Danish Rheumatologic Biobank Odense	**12**	**<10**	**75**
Department of Clinical Biochemistry, Odense University Hospital	12	<10	75
Danish Rheumatologic Biobank Sønderborg	**517**	**517**	**100**
Danish Hospital for Rheumatic Diseases	500	500	100
Department of Clinical Biochemistry and Immunology, Vejle	17	17	100
Danish Rheumatologic Biobank Århus	**654**	**616**	**94**
Department of Clinical Biochemistry PJJ, Aarhus University Hospital	434	398	92
Department of Clinical Biochemistry, Randers Regional Hospital	<10	0	0
Department of Clinical Biochemistry Gødstrup, West Hospital Unit	87	87	100
Department of Clinical Biochemistry, Horsens Regional Hospital	55	55	100
Department of Clinical Biochemistry Silkeborg, Central Hospital Unit	76	76	100

Appendix 12.2.3.1. DRB. Coverage for blood, 2025. The table shows the number and percentage of blood materials that contain ≥8 fractions. The data is shown for each collecting department for 2025.

12.3 Danish Blood Donor Biobank (DBB)

Name	Represents	Region
Chairman		
Christian Erikstrup	Steering Committee, DBDS	Central Denmark Region
Members		
Christina Mikkelsen	Steering Committee, DBDS	Capital Region
Erik Sørensen	Steering Committee, DBDS	Capital Region
Thomas Folkmann Hansen	Steering Committee, DBDS	Capital Region
Janna Nissen	Steering Committee, DBDS	Capital Region
Sisse Rye Ostrowski	Steering Committee, DBDS	Capital Region
Morten Bagge Hansen	Board of Directors, DBDS	Capital Region
Bjarne Kuno Møller	Board of Directors, DBDS	Central Denmark Region
Keld Homburg	Board of Directors, DBDS	Region Zealand
Ole Birger Pedersen	Steering Committee, DBDS	Region Zealand
Mie Topholm Bruun	Steering Committee, DBDS	Region of Southern Denmark
Christine Nilsson	Steering Committee, DBDS	Region of Southern Denmark
Bitten Aagaard Jensen	Inclusion, DBDS	North Denmark Region
Betina Samuelsen Sørensen	Board of Directors, DBDS	North Denmark Region
Henrik Hjalgrim	Statens Serum Institut	
Karina Banasik	University of Copenhagen	
Lisbet Schønau	Blood Donors in Denmark	
Bente Graversen	Blood Donors in Denmark	
Estrid Høgdall	RBGB	

Appendix 12.3.0. DBB. Members of the Scientific Advisory Board as of ultimo 2025. The table shows the members of the Scientific Advisory Board for DBB, which organization they represent and which region they are from.

12.3.1. Indicator 1: Quality of registration

1A. Material with registered freezer position

This indicator describes the amount (n) and proportion (%) of fractions that have been registered and assigned a freezer position in the RBGB registry. Since fractions are only visible and thereby available for retrieval if they are registered with a freezer position, this information is mandatory. Fractions that have been retrieved or fractions in transit between two freezer positions are not included in the analysis, as these naturally do not have a freezer position.

In 2025, 44,890 blood fractions were collected, and all were assigned a freezer position. All regions fulfill the goal of this indicator, with 100% of all fractions registered with a freezer position (appendix 12.3.1.1) as they have been since the establishment of DBB in RBGB in 2017.

		Blood fractions		
		Total	**W/o freezer position, n**	**With freezer position, %**
2025				
National	**TOTAL**	**44,890**	**0**	**100**

Center	Capital Region	8,780	0	100
	Central Denmark Region	15,086	0	100
	North Denmark Region	5,639	0	100
	Region of Southern Denmark	5,802	0	100
	Region Zealand	9,583	0	100
2024				
National	**TOTAL**	**41,368**	**0**	**100**
Center	Capital Region	10,095	0	100
	Central Denmark Region	10,597	0	100
	North Denmark Region	8,668	0	100
	Region of Southern Denmark	2,685	0	100
	Region Zealand	9,323	0	100
2023				
National	**TOTAL**	**47,547**	**0**	**100**
Center	Capital Region	7,101	0	100
	Central Denmark Region	17,136	0	100
	North Denmark Region	6,811	0	100
	Region of Southern Denmark	4,714	0	100
	Region Zealand	11,785	0	100

Appendix 12.3.1.1. DBB. Distribution of blood fractions according to registered freezer position, 2023-2025. The table shows the number of blood fractions without a freezer position and the percentage of blood fractions with a freezer position. Numbers are shown for each region from 2023-2025.

1B. Material with all handling time points registered

This indicator measures the number (n) and proportion (%) of fractions that have a registration of all three handling time points: 'Sampling', 'Received', and 'First in freezer' in the RBGB registry.

All fractions in DBB have all three time points registered, and the indicator is fulfilled for all biobank centers as it has been since the inclusion of indicator 1B in 2021 (appendix 12.3.1.2).

		Blood fractions		
		Total	**W/o complete time registration, n**	**With complete time registration, %**
2025				
National	**TOTAL**	**44,890**	**0**	**100**
Center	Capital Region	8,780	0	100
	Central Denmark Region	15,086	0	100
	North Denmark Region	5,639	0	100
	Region of Southern Denmark	5,802	0	100
	Region Zealand	9,583	0	100
2024				
National	**TOTAL**	**41,367**	**0**	**100**

Center	Capital Region	10,095	0	100
	Central Denmark Region	10,597	0	100
	North Denmark Region	8,668	0	100
	Region of Southern Denmark	2,685	0	100
	Region Zealand	9,322	0	100
2023				
National	**TOTAL**	**47,547**	**0**	**100**
Center	Capital Region	7,101	0	100
	Central Denmark Region	17,136	0	100
	North Denmark Region	6,811	0	100
	Region of Southern Denmark	4,714	0	100
	Region Zealand	11,785	0	100

Appendix 12.3.1.2. DBB. Distribution of blood fractions with all handling timepoints registered, 2023-2025. The table shows the percentage of blood fractions that have a timepoint registered for 'Sampling', 'Received' and 'In freezer'. Numbers are shown for each region.

13. Description of Indicators

13.1 Indicators

Nr.	Indicator	Description of Indicators	Goal of the indicator	Data source	Level of reporting
1.	Quality of registration	1A. Percentage of biological material with a freezer position 1B. Percentage of biological material that has all mandatory handling times registered 1C. Percentage of biological material with an error in registration 1D. Percentage of biological material that has been completely registered (DCB)	A. >95% B. >95% C. <5% D. >95%	RBGB Registry	National Center
2.	Sample Quality	2A. Percentage of biological material that are processed within the recommended times	A. >90%	RBGB Registry	National Center
3.	Coverage	3A. Percentage of blood materials that contain the recommended fractions 3B. Percentage of tissue materials that contain the recommended fractions 3C. Percentage of hematological materials that contain the recommended fractions	A. >90% B. >50% C. >90%	RBGB Registry	National Center
4.	Completeness	4A. Percentage of tissue material with corresponding blood (DCB) 4B. Number of patients/donors that donate material more than once	A. >50%	RBGB Registry	National Center
5.	Diagnostic Follow-up	5A. Number of inquiries about material in the biobank for diagnostic follow-up 5B. Number of fractions that have been handed out to diagnostic follow-up	B. higher than the average the last 5 years	RBGB Registry	

6.	Research	6A. Number of projects in each biobank 6B. Percentage of fractions that have been handed out to research projects.	B. higher than the average the last 5 years	RBGB Registry	National Center
7.	Clinical/phenotypic data	7A. Description of different clinical and phenotypic data coupled to the biological material		RBGB Registy and clinical databases (DCB, DRB, D19B) or questionnaires (DBB)	National Center
8.	Inquiries	8A. Number of inquiries about material in the biobank for research 8B. Number of applications for hand out of material to retrospective research that have been approved within the recommended time limit 8C. Percentage of material that is retrieved for research projects within the recommended time frame.	B. >90% C. >90%		
9.	Sharing of Knowledge	9A. Researchers: Manuscripts published in peer reviewed journals 9B. RBGB secretariat: Newsletters, annual reports, articles, data transfer to The National Biobank Register at SSI	A. Same number or more compared to the year before B. Same level of information as previous years.	Principal investigators for projects in RBGB, center project managers, clinicians, RBGB secretariat	National

13.2 Specifications

Indicator 1. Quality of registration

1A. Percentage of fractions with a freezer position

In the RBGB registry, the biological material is given a freezer position. The indicator is measured as the percentage of fractions allocated to a freezer position, which is a prerequisite for retrieval of material and thus use in research/diagnostic follow-up. Fractions that are retrieved or under relocation between to freezer are not included in the data analysis as these naturally do not have a freezer position.

1B. Percentage of fractions that has all mandatory handling times registered.

In the RBGB registry, three mandatory handling times are registered: 'Sampling', 'Received' and time for 'First in freezer'. These three times are crucial to be able to measure the correct processing time and thereby ensure the quality of the samples. The indicator is measured as the percentage of the fractions that have the three handling times registered.

1C. Percentage of materials with an error in time point registration

When registering material in the RBGB registry, incorrect registrations can occur, e.g., time for 'Sampling' is after 'First in freezer' or time for 'Received' before 'Sampling'. It is important that there are as few error registrations as possible for the processing times to be correct. The indicator is measured as a percentage of fractions with error in registration.

1D. Percentage of biological materials that has been completely registered (DCB)

To ensure high quality of tissue and bone marrow samples in DCB all samples are pathologically verified in the RBGB registry. When the tissue or bone marrow material has been verified and registered with a diagnosis and DMCG coupled it is completely registered. The indicator is measured as a percentage of the tissue and bone marrow material that has been completely registered.

Indicator 2. Sample Quality

Percentage of biological materials that is processed within the recommended time frames

To ensure the quality of the material for research, the processing time should be as short as possible. The processing time is defined as the time between material retrieval from the patient until the material is placed in a freezer; only fractions that had a status 'In freezer' ('I fryser') are included in the analysis (status 'Freezing' ['Nedfrysning'] are omitted). The recommended maximum processing time for each material type is shown in the table below:

Material	The recommended maximum processing time
Tissue (except RNAlater and FFPE treated tissue)	1 hours
Blood (except TEMPUS/PAXgene fractions)	3 hours
Bone marrow	36 hours
Hematological blood	36 hours

RNAlater treated tissue has a treatment before freezing and the processing time is therefore longer. The TEMPUS/PAXgene blood samples have a pre-freezing step before long term storage and will therefore also

have a longer processing time. Formalin-fixed and paraffin-embedded tissue are fixed prior to embedding, so that for this material there will be a longer processing time. The indicator is measured as the percentage of fractions that meet the recommended processing time excluding the above exceptions.

Indicator 3. Coverage

3A. Percentage of blood materials that contain the recommended fractions

When collecting blood material, it should be attempted to collect a complete standard set as described in the recommendation for handling blood in RBGB. The indicator is measured as the percentage of materials that have the recommended number of fractions according to the standard set.

3B. Percentage of tissue materials that contain the recommended fractions

When collecting tissue material, it should be attempted to collect a complete standard set as described in the recommendation for handling tissue in RBGB. The indicator is measured as the percentage of materials that have the recommended number of fractions according to the standard set.

3C. Percentage of hematological blood and bone marrow materials that contain the recommended fractions

When collecting hematological material, it should be attempted to collect a complete standard set as described in the recommendation for handling hematological material in RBGB. The indicator is measured as the percentage of materials that have the recommended number of fractions according to the standard set.

Indicator 4. Completeness

4A. Percentage of tissue material with corresponding blood

In the Danish Cancer Biobank (DCB) it is registered whether tissue materials have corresponding blood material. Blood material is corresponding to tissue material if it is taken within 14 days before the tissue. To ensure the highest quality of material for research most tissue materials should have corresponding blood material. The indicator is measured as the percentage of tissue material with a blood material taken within 14 days (corresponding), 28 days and more than 28 days.

4B. Number of patients/donors that donate material more than once

Some patients/donors donate material to RBGB several times. These longitudinal samples provide an opportunity to follow the patient's/donor's course. The indicator is presented as the number of patients/donors who have donated material 1, 2 and ≥3 times.

Indicator 5. Diagnostic Follow-up

5A. Number of inquiries about material in the biobank for diagnostic follow-up.

Material collected in RBGB can be used for diagnostics, the patient's own treatment and genetic assessment. Clinicians can inquire if there is material in the biobank from a patient. If there is material in the biobank, the material is handed out for clinical use. However, there are also cases where there is no material on the patient. Therefore, not all inquiries lead to a subsequent retrieval of the material, but the number of inquiries corresponds to the level of interest for the biobank. The indicator is described as the number of inquiries about materials in the biobank.

5B. Number of fractions that have been handed out to diagnostic follow-up

Material collected in RBGB can be used for research projects, but the primary aim is to use the material for diagnostic follow-up/the patient's treatment. The indicator describes the type of material, number of fractions and the center that has handed out the material. The indicator is measured as the percentage of fractions that has been handed out to diagnostic follow-up.

To ensure that the most optimal material for diagnostic follow-up is being collected in RBGB, the type of materials being handed out should be followed.

Indicator 6. Research

6A. Number of projects in each biobank

In RBGB, clinical samples can be collected and labeled for research projects. Projects can request samples from RBGB. All projects for which the samples are marked are registered in the RBGB registry. The indicator describes the total number of projects as well as the number of active projects in the individual biobanks.

6B. Number of fractions that have been handed out to research projects.

If a project has the necessary approvals and the patients are not registered in 'Vævsanvendelsesregisteret' (VAR), the project can receive material from RBGB. The indicator describes the number of fractions that have been retrieved for projects.

Indicator 7. Clinical/phenotypic data

Description of different clinical and phenotypic data coupled to the biological material

The possibility of optimal use of material collected in RBGB is only present when clinical/phenotype data can be linked to the material. Some of the data coupled to the biological material from clinical databases (e.g., DMCG's databases, DANBIO) or from questionnaires (DBB) is presented in this indicator. The chairman of each biobank's Technical Advisory Board is responsible for delivery of data for this indicator.

Indicator 8. Inquiries from researchers

8A. Number of inquiries about material in the biobank for research

Anyone can inquire about the number of specific materials in the biobank. This may be in order for the researcher to investigate the possibility of using the material in a project. Not all inquiries lead to a subsequent release of the material, but the number of inquiries corresponds to the level of interest for the biobank. The indicator is described as the number of inquiries about materials in biobanks.

8B. Number of applications for hand out of material to retrospective research that have been approved within the recommended time limit

Retrieval of material for projects is possible when the project has the necessary approvals in place and when it has been confirmed that the patients involved are not registered in VAR. If a researcher wishes to use non-project-labeled material from the biobank, an application is sent to the RBGB secretariat, where a quick expedition is sought. As some applications have to be processed in local biobank committees, a deadline of 2 months is set from all relevant information available until the applicant receives a decision. The indicator is measured as the percentage of applications approved within this deadline. It is also described how many applications that have been refused samples, as well as the reasons for this.

8C. Percentage of material that is retrieved for research projects within the recommended time frame.

Only when retrieval to a research project has been approved by the RBGB secretariat or the biobank center and the project has the necessary approvals in place and the patients have been checked in VAR can material be retrieved for the project. The deadline for retrieval counts from the approved application until the material has been handed out to the project. The indicator is divided according to how many samples are to be retrieved, as a large number may require greater planning.

For retrieval of up to 1000 whole fractions, a deadline of 1 month is set, regardless of whether the material is delivered from a department, center, regionally or nationally. The indicator is measured as the percentage of retrievals that meet this deadline.

For retrieval of more than 1000 fractions, no standard has been set as the time will depend on complexity and must therefore be decided individually.

Indicator 9. Transfer of Knowledge

9A. Manuscripts published in peer reviewed journals

RBGB aims to ensure optimal biological material for diagnostics and research. The success criterion according to research will be the use of material that results in published research results that can contribute to better treatment and screening of patients. The indicator is described based on feedback from the clinical project managers, the principal investigators of projects in RBGB and from the responsible contact person for projects that have received material. The indicator is fulfilled if an increase is seen compared to previous years.

9B. Newsletters, annual reports, articles, data transfer to SSI

RBGB secretariat publishes newsletters and annual reports and articles related to RBGB. The indicator is described as the level of information provided by the RBGB secretariat which must as a minimum be the same as previous years.