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2024



GLA:D[®] GERMANY

ANNUAL REPORT 2024

Good Life with osteoArthritis in Denmark (GLA:D[®])

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EDITORIAL

GLA:D® stands for "Good Life with osteoArthritis in Denmark" and was developed at the University of Southern Denmark (SDU) in collaboration with researchers, clinicians and patients.

GLA:D® is an evidence-based treatment program for individuals with knee and hip osteoarthritis. It is based on the latest research and international guidelines, and is continuously evaluated and updated. The core components of GLA:D® include patient education and a supervised exercise program, with the overall goal of promoting self-management skills.

GLA:D® has already been implemented in ten countries. All participating countries are part of the GLA:D® International Network (GIN), engaging in regular exchanges on current research findings to continuously develop and refine the program.

This annual report provides an overview of the current status and research findings of GLA:D® in Germany.

In 2024, we further expanded the implementation of GLA:D® in Germany, considerably improving care for individuals with knee and hip osteoarthritis. Our network has grown substantially, with many new physicians and physiotherapists joining the program. In addition, we presented GLA:D® at trade fairs and congresses, increased public awareness through television reports, and expanded our training and webinar offerings.

We hope you enjoy reading this annual report!

Your GLA:D® Germany Team



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WHAT IS GLA:D®?

GLA:D® is an international, evidence-based program for patients with knee and hip osteoarthritis, originally developed in Denmark in 2013. The program aims to translate international and national guidelines into clinical practice to improve the quality of care.

The GLA:D® concept is based on three pillars: a standardized two-day training course for therapists; a structured program of 18 therapy sessions for patients; and the GLA:D® data registry.

The collected data is continuously evaluated and published.

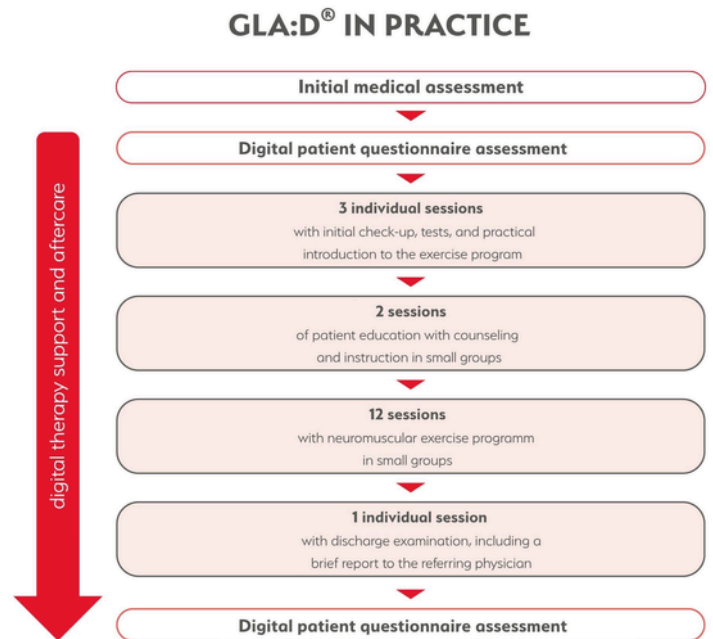


FIGURE 1: THE GLA:D® PROGRAM PROCESS

WHAT PATIENTS RECEIVE IN GLA:D®:

1. Three individual sessions - including a physical examination, functional tests, assessment of the individual exercise level, and registration in the national GLA:D® data registry.
2. Two educational sessions - providing comprehensive knowledge about osteoarthritis, risk factors, pain mechanisms, symptoms, recommendations for pain management, and coping strategies.
3. Six to eight weeks of supervised group training (with two sessions per week).
4. One final individual session - repeating the functional tests, offering a personal evaluation, and giving advice on continuing independent training.

ACCESS TO GLA:D®

Patients with knee or hip osteoarthritis can enter the program through:

- Referral by a general practitioner
- Referral by a specialist
- Self-referral
- Referral via health insurance companies

AIMS OF GLA:D®

GLA:D® aims to implement international best-practice guidelines in osteoarthritis care and to:

- ensure equal access to high-quality, evidence-based treatment for all patients with hip and knee osteoarthritis - regardless of where they live or their financial situation,
- promote patient self-management and shared decision-making.

IMPLEMENTATION AND REACH

In **autumn 2021**, **13 therapists** were trained as GLA:D® Germany **instructors** in a two-day course conducted by the SDU team. Only individuals who have been trained by the Danish developers are authorized to deliver the two-day course to train other therapists.

This ensures that all GLA:D® providers teach the content of the patient education and therapeutic exercise program in a standardized manner.

In 2024, **ten GLA:D® courses** were held in Germany, training a total of **173 physiotherapists**. At present, GLA:D® is mainly offered by physiotherapists, but there are long-term plans to expand the program to other professional groups as well.

In **2024**, our network comprised **100 GLA:D® centers** with **406 trained physiotherapists**, offering the program to patients with knee and hip osteoarthritis (see Figure 2).

Unlike in other countries, in Germany contracts with health insurance companies require the involvement of physicians (general practitioners and specialists). These physicians are responsible for referring patients to the program.

By the **end of 2024**, GLA:D® Germany had successfully recruited **190 physicians** to the network and aims to further expand this number in the future. Patients can locate the nearest GLA:D® partner (physician or physiotherapist) using the **network search tool** at www.glad-deutschland.de (see Figure 3).



FIGURE 2: GLA:D® GERMANY NETWORK

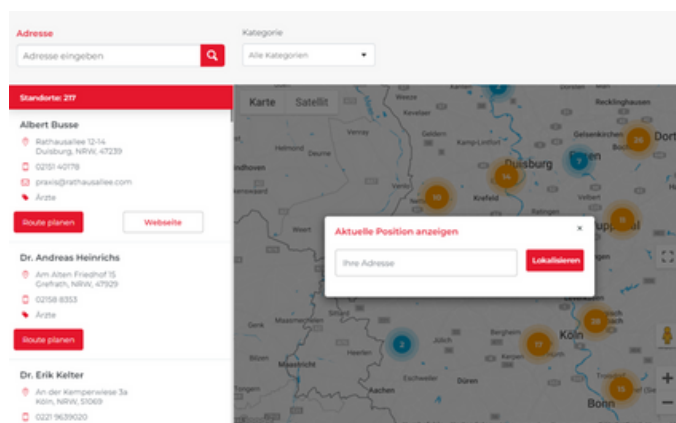


FIGURE 3: GLA:D® NETWORK SEARCH

HEALTH INSURANCE COMPANIES

Following BARMER's launch of the GLA:D® program, numerous additional health insurance companies joined in 2023, with further expansion continuing throughout 2024.

In **August 2024**, **KKH** became another key contractual partner of GLA:D®, enabling a full reimbursement for many more patients participating in the program.

All participating health insurance companies now offer GLA:D® with full coverage for individuals with knee and hip osteoarthritis. While the program is primarily available in the pilot region of North Rhine-Westphalia (NRW), it is now represented nationwide through new contractual partnerships.

NOVITAS BKK was the first health insurance company in Germany to offer its members **nationwide** access to the GLA:D® program. In 2024, other providers followed suit, granting their members nationwide access to GLA:D® (see Figure 4).

Patients with knee and hip osteoarthritis who are not covered by any of the listed providers can also **participate in GLA:D® on a self-pay basis**.

For 2025, the aim is to secure reimbursement for GLA:D® from additional health insurance companies.



FIGURE 4: CURRENTLY PARTICIPATING HEALTH INSURANCE COMPANIES

GLA:D® GERMANY PARTICIPANTS

Since its launch in Germany, a total of **872 GLA:D® completions** have been recorded in the GLA:D® registry by the end of 2024.

PRESCRIPTION VOLUME

A total of **1,926 GLA:D® prescriptions** have been issued by participating network physicians, of which **1,283 patients** have started treatment at a participating GLA:D® physiotherapy center.

A total of **1,202 GLA:D® prescriptions** were issued in 2024, representing an increase of **278** compared to the previous year.

GLA:D® prescriptions	
2023	2024
724	1202

REFERRING PHYSICIANS

The data indicates that **orthopedists are the primary referrers** to the GLA:D® program, accounting for **93%** of all prescriptions. The remaining prescriptions are issued by general practitioners, rheumatologists, and other specialist groups.

KNEE AND HIP OSTEOARTHRITIS

Overall, **70%** of the participating patients had **knee osteoarthritis**, compared to approximately **30%** who had **hip osteoarthritis**. In addition, more women (75%) than men took part in the GLA:D® program.

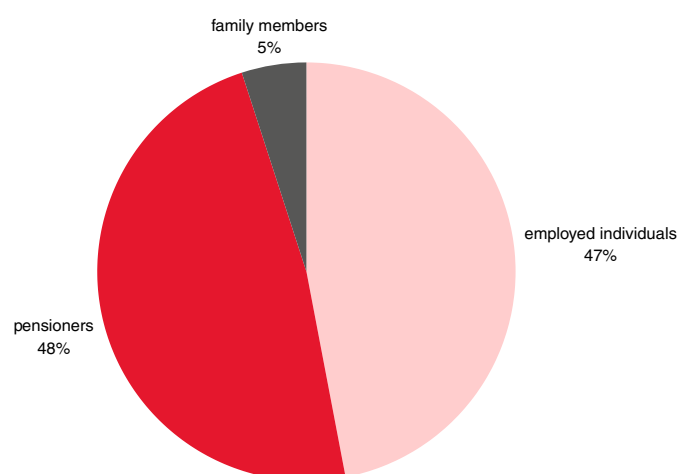
According to reports from physicians, 80% of patients had already exhausted all conservative therapy options at the time GLA:D® was prescribed.

Knee	Hip
892 Participants	388 Participants
70%	30%

Women	Men
960 Participants	320 Participants
75%	25%

PATIENT INSURANCE STATUS

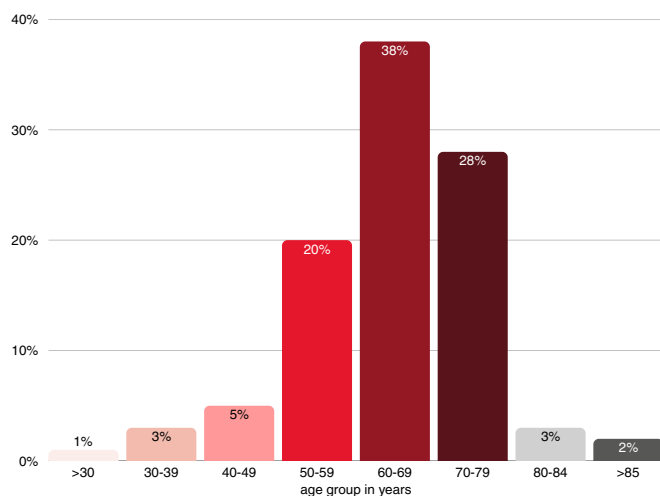
By the end of 2024, a total of 1,283 patients had started the GLA:D® program. Insurance data indicates an equal distribution of **retirees** and employed **insured individuals (status 1)**.



AGE DISTRIBUTION

The age distribution shows that the program effectively reaches its **target group** of osteoarthritis patients (average **age 65**).

In addition, approximately 30% of patients are under 60 years of age, highlighting the potential to offer affected individuals the opportunity to participate in GLA:D® at an earlier stage, potentially preventing or delaying the onset or progression of osteoarthritis.



SEVERITY OF OSTEOARTHRITIS

In the majority of patients, the **severity of osteoarthritis** was assessed using **X-rays**. Approximately 67% of participants in the GLA:D® program had clearly visible joint changes (**Kellgren-Lawrence score ≥ 3**), indicating advanced osteoarthritis.

KELLGREN-LAWRENCE-SCORE

1	2	3	4	NA
7% n = 88	18% n = 236	40% n = 510	27% n = 340	8% n = 106

As an active exercise program, GLA:D® is also prescribed for patients with more severe osteoarthritis and has been shown to achieve positive results.

In particular, **patients with severe osteoarthritis** are often recommended for **total joint replacement surgery**, which can be successfully **delayed** or, in some cases, even **avoided** by participating in the GLA:D® program.

GLA:D® RESULTS

For this annual report, data from all participants in the GLA:D® program up to **31 December 2024** was analyzed.

This included outcomes from **patient questionnaires** completed **after 3 and 12 months** of participation, as well as **results from functional tests** (walking speed, leg strength) conducted immediately before and after participation in the GLA:D® program.

Participants' physical function is determined using the 40-Meter Walk Test and the 30-Second Chair Stand Test.

IMPROVED PHYSICAL FUNCTION

Participation in GLA:D® increased **walking speed** over a **40 meter** distance **by 2 seconds** (from 29.42 seconds to 27.42 seconds), corresponding to an improvement of approximately 7%.

Participants' ability to repeatedly **stand up from a chair** within 30 seconds also improved. Before the program, the average number of stands was **11.74**; after completing GLA:D®, this **increased to 14.09**, representing an absolute improvement of over 2 repetitions and a relative increase of approximately **20%**.

	after 3 months
Walking speed 	+ 7%
Leg strength 	+ 20%

LESS PAIN

Patients who participated in the GLA:D® program reported a significant reduction in pain. Pain intensity, measured on a 0-100 numerical rating scale (NRS), decreased by 27% (from 54.57 to 40.11) after 3 months and by 33% (from 54.57 to 36.71) after 12 months of participation.

REDUCED PAIN MEDICATION USE

Patients also benefited from program in terms of their use of pain medication.

Those with knee osteoarthritis took 28% less pain medication after 3 months (from 53% to 38%), with a 17% reduction after 12 months (53% to 44%). Patients with hip osteoarthritis reduced their pain medication by 20% after 3 months (from 59% to 47%) and by 22% after 12 months (from 59% to 46%).

KOOS-12 AND HOOS-12

All patients participating in the GLA:D® program are asked to complete the Knee Injury and Osteoarthritis Outcome Score (KOOS)-12 or Hip Injury and Osteoarthritis Outcome Score (HOOS)-12 questionnaires before starting the program and at follow-up assessment after 3 and 12 months.

Both the KOOS-12 and HOOS-12 results showed improvements in pain, function, and quality of life following the completion of the GLA:D® program.

IMPROVED QUALITY OF LIFE

Patients who participated in the GLA:D® program reported an increase in their average health-related quality of life.

For patients with knee osteoarthritis, quality of life improved by 26% after 3 months (from 38.73 to 48.71) and remained at 26% improvement after 12 months (from 38.73 to 48.68). For patients with hip osteoarthritis, quality of life increased by 16% after 3 months (from 45.92 to 53.04), continuing to improve over the long term, with a 12% increase after 12 months (from 45.92 to 51.61).

RESULTS IN COMPARISON

AFTER 3 MONTHS

	Knee	Hip
Pain (NRS) 	- 27%	- 33%
Pain medication 	- 28%	- 20%
Quality of life 	+ 26%	+ 16%

AFTER 12 MONTHS

	Knee	Hip
Pain (NRS) 	- 27%	- 33%
Pain medication 	- 17%	- 22%
Quality of life 	+ 26%	+ 12%

GLA:D® GERMANY THERAPISTS

To assess the **impact of the two-day GLA:D® training course** from the **therapists' perspective**, participants are invited to complete a web-based survey at three time points: immediately before the training (T_0), two weeks after completion (T_1), and one year later (T_2).

In 2024, **173 new therapists** completed the course. By the end of the year, a total of **406 therapists** in Germany had undergone GLA:D® training, **354** of whom participated in the baseline survey (**response rate: 88%**).

The respondents had an average age of **36.5 years** (range 22-70 years), and **49%** were **female** (173/354). On average, they reported **12 years of professional experience** (range 0-45 years). Most participants had graduated from **vocational school** (240/354, 68%). Around 22% (79/354) reported having a **bachelor's degree** as their highest qualification, 2% (8/354) a diploma, 6% (21/354) a master's degree, and 0.6% (2/254) a doctorate. The majority of physiotherapists worked in **private practices** (321/354, 91%).



FIGURE 5: IMPRESSIONS FROM THE GLA:D® THERAPIST TRAINING

The results of the **before-and-after comparison** showed that participation in the GLA:D® training course **improved therapists' knowledge and confidence** in providing guideline-based treatment for patients with knee and hip osteoarthritis (see Table 1).

Knowledge, training, ability	T_0 (n = 354)	T_1 (n = 116)
I know how to provide exercise therapy and education for people with hip and/or knee osteoarthritis in accordance with current guideline recommendations.	271 (76,6%)	114 (98,3%)
I have been trained to provide exercise therapy and education to people with hip and/or knee osteoarthritis in accordance with current guideline recommendations.	209 (59,0%)	114 (98,3%)
I am able to provide exercise therapy and education in accordance with current guideline recommendations for persons with hip and/or knee joint osteoarthritis.	247 (69,8%)	115 (99,1%)

Confidence	T ₀ (n = 354)	T ₁ (n = 116)
I am confident that I can provide training therapy and education in accordance with current guideline recommendations for people with hip and/or knee osteoarthritis.	255 (72,0%)	114 (98,3%)
I am confident that I can provide exercise therapy and education in accordance with current guideline recommendations for people with hip and/or knee osteoarthritis, even if the person is not motivated.	171 (48,3%)	90 (77,6%)

TABLE 1: RESULTS OF THE GLA:D® THERAPIST SURVEY
NOTE: UNPAIRED BEFORE-AND-AFTER COMPARISON (LOST TO FOLLOW-UP: 67.2%)

PUBLIC RELATIONS

Once again, the GLA:D® Germany team was represented at several **national and international conferences** this year.

The aim was to further raise awareness of the GLA:D® program, present research findings, and expand the network of partners.

In **April**, the team presented the results from GLA:D® Germany to an international audience at the **OARSI World Congress on Osteoarthritis in Vienna**. Also in April, GLA:D® Germany participated in the **annual conference of the United South German Orthopedists and Trauma Surgeons (VSOU)** in Baden-Baden. There, the team hosted an exhibition stand and gave two specialist presentations (see Figure 6).

Later in the year, the team also contributed to the **German Congress for Health Services Research (DKVF)** in Potsdam and the **German Congress for Orthopedics and Trauma Surgery (DKOU)** in Berlin.



FIGURE 6: CHIARA STRUNK AND SIMONE NAPIERALA-KOMP AT THE VSOU IN BADEN-BADEN

At this year's DKOU, Denmark and Switzerland were honored as guest nations. Professor Søren Thorgaard Skou, one of the initiators of GLA:D®, chaired the session 'Osteoarthritis in the hip and knee - exercises and rapid surgery - experiences from Denmark' and presented the GLA:D® program as implemented in Denmark (see Figure 9).

The year concluded with the 8th **Research Symposium for Physiotherapy** in Senftenberg, where GLA:D® Germany was also represented (see Figure 8).

In addition, the GLA:D® program was featured on German television and further disseminated among healthcare professionals as well as patients with knee and hip osteoarthritis.

In **May 2024**, **NDR** broadcast a report entitled 'Physiotherapy: Help for joint problems is too rarely prescribed' as part of its program 'Visite' (see Figure 7). The report was later broadcast on several other television programs, increasing awareness of GLA:D®, especially among patients.



FIGURE 7: NDR REPORT WITH PROF. DR. CHRISTIAN KOPKOW

The report can be accessed at <https://www.ndr.de/ratgeber/gesundheit/Physiotherapie-Hilfe-bei-Gelenkproblemen-zu-selten-verordnet,physiotherapie154.html>.

Furthermore, in **2024**, we expanded our **webinar offerings** for **physiotherapists** and **medical assistants**. A total of **six webinars** were conducted, each lasting around one hour.

These sessions provided key **information** on the **GLA:D® process**, participating health insurance companies, prescription procedures, the **use of the GLA:D® portal**, and documentation requirements in physiotherapy centers.

The primary aim was to familiarize those involved in the organizational aspects of **GLA:D®**, who were not directly participating in the training courses, with the necessary content for successful program implementation.

Additional webinars are planned for 2025 to ensure optimal support for the ongoing implementation of GLA:D® clinical practice.

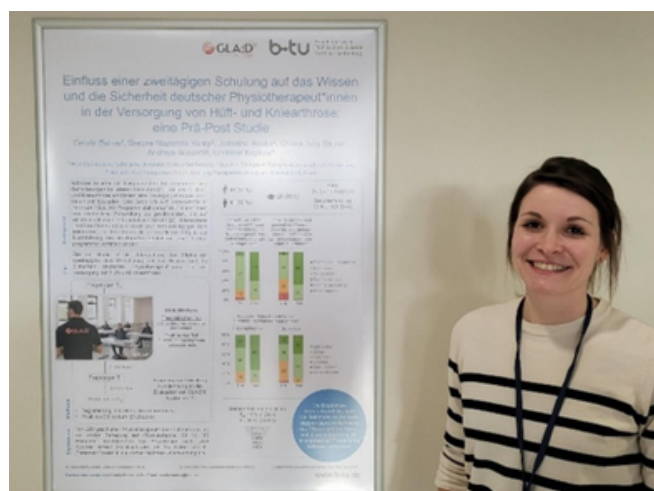


FIGURE 8: DR. CAROLIN BAHNS AT THE RESEARCH SYMPOSIUM FOR PHYSIOTHERAPY IN SENFTENBERG



FIGURE 9: THE GLA:D® GERMANY TEAM WITH PROF. SØREN SKOU, ONE OF THE DEVELOPERS OF GLA:D®, AT THE DKU IN BERLIN

GLA:D® INTERNATIONAL NETWORK



FIGURE 10: GLA:D® INTERNATIONAL NETWORK WITH ALL PARTICIPATING NATIONS

LATEST NEWS

The **GLA:D® International Network (GIN)** was **founded** in **2018** and now includes numerous countries that have successfully implemented the Danish program.

In **2024**, the network expanded with the launch of **GLA:D® Netherlands**, intensifying international exchange.

GLA:D® is currently offered in **Denmark, Canada, Australia, China, New Zealand, Switzerland, Austria, Norway, the Netherlands, the United States, Germany and Ireland.**

GIN MEETING 2024

Regular GIN meetings and workshops provide opportunities to share best practices and discuss country-specific adaptations of the program.

There are plans to initiate collaborative research projects in 2025, with the aim of expanding the global database and gain cross-border insights into osteoarthritis management.

In addition, efforts will focus on developing standardized training materials to ensure consistent quality of therapist training worldwide.

FUTURE DIRECTIONS

In **2024**, GLA:D® continued to grow in Germany. Following a successful **pilot phase** in North Rhine-Westphalia, the program was expanded to additional federal states, providing comprehensive care for patients with knee and hip osteoarthritis. The quality of care has been further enhanced by ongoing physiotherapist training and the integration of new digital tools, such as the GLA:D® app.

Plans for **2025** include strengthening **cooperation with health insurance companies** to facilitate **cost coverage for patients** and thus improving access to the program. In addition, new **research projects** will be initiated to evaluate the effectiveness of GLA:D® in different settings and identify potential for further optimization.

The GLA:D® Germany team will be represented at several key events in 2025: the **Federal Congress Managed Care Berlin (BMC)** in Berlin in January (see Figure 11), the **Annual Meeting of the United South German Orthopedists and Trauma Surgeons (VSOU)** in Baden-Baden in May (see Figure 12), and the **OARSI World Congress on Osteoarthritis** in South Korea (see Figure 13).

Additional conferences are scheduled for the second half of the year, including the annual physiotherapy research symposium (FSPT) of the German Society for Physiotherapy Science (DGPTW).

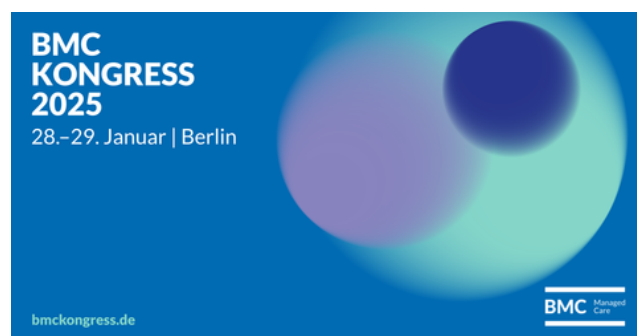


FIGURE 11: FEDERAL CONGRESS MANAGED CARE (BERLIN)



FIGURE 12: ASSOCIATION OF SOUTH GERMAN ORTHOPEDISTS AND TRAUMA SURGEONS CONGRESS (BADEN-BADEN)



FIGURE 13: OARSI WORLD CONGRESS ON OSTEOARTHRITIS (SOUTH KOREA)



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