

QUALITY REPORT  
2022



MEDICAL PARK

## MEDICAL PARK IN FIGURES

### PATIENT SATISFACTION

# +6

### PERCENTAGE POINTS

Six percentage points more than  
the average on [www.qualitaetskliniken.de](http://www.qualitaetskliniken.de)

# >70

### PERCENT EQUITY RATIO

demonstrates that Medical  
Park is a crisis-proof employer  
with innovative strength.

# 3,100

### BEDS

offering hotel comfort and  
the highest standards for boosting  
recovery.

# 3,650

### EMPLOYEES

make up a team of highly  
qualified doctors, therapists, nurses  
and service staff.

# 70,000

### PATIENTS A YEAR

mean our clinics are in high  
demand.

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## DEAR READERS

We are delighted to present you with the fourth edition of our quality report. It should give you an idea of the future direction we are planning to take with Medical Park – how we aim to uphold our claim of quality leadership among the rehabilitation clinics and how we intend to systematically drive this forward. Our quality is illustrated in figures, case reports and expert discussions from all corners of the Medical Park Group.

Whether you are a specialist colleague recommending a follow-up treatment for your patient or you would like to work with us, we can assure you of our outstanding quality.



**ULF LUDWIG**  
Chairman and Managing Director,  
Chairman of the Board of Directors

Patients at Medical Park should continue to be offered rehabilitation services of the highest quality and be assured of the best possible rehabilitation results. We aim to achieve this through continuing development and by continually adapting our work to reflect the latest scientific knowledge.

One element is the investment in state-of-the-art training equipment at our facilities. We integrate apps, virtual-reality technology and robotics into the rehabilitation programmes whenever appropriate and wherever this is likely to benefit our patients during their recovery process. Our use of computerized training equipment makes us pioneers in the industry while also making therapy more enjoyable.

We are aware that our employees must therefore be willing to further their training. Nevertheless, we encourage their innovative spirit and reward them with the best possible earning potential and an extensive package of benefits. We are grateful to our colleagues for accompanying us on this journey of continuing development. The mood at Medical Park is positive.



**JOHANNES KNEISSL**  
Director of Central Service Quality Management  
and Internal Auditing

At Medical Park, we show that rehabilitation services are delivered on the basis of evidence, i.e. studies and statistics, and that quality in rehabilitation is of the utmost importance. We will continue to work towards improving this evidence and quality within the company, also in the future.

Working at Medical Park means working for the best provider of rehabilitation services in Germany. This is clearly evident from the analysis of patient satisfaction between competitors in the online portal, Qualitätskliniken.de, where we achieve the highest scores.

Our colleagues always take pride in the success achieved by their patients at Medical Park by the end of their rehabilitative journey. It is thanks to their efforts that the patients return home in better health. The figures in this report provide the proof. They speak for themselves and illustrate the tremendous appreciation shown for the entire Medical Park team and the teams at each clinic.



**PROF. DR. MED. MARTIN HALLE**  
Medical Director of Preventive Sports Medicine and  
Sports Cardiology at Technical University Munich and  
Medical Strategy Coordinator at Medical Park

In medicine, innovation is ubiquitous. Therefore, rehabilitation must likewise adapt to new therapeutic and surgical procedures in acute medicine. Medical Park's response to this is a new medical strategy. Its core task is to incorporate the latest scientific findings directly into Medical Park's rehabilitation programme, thus guaranteeing our patients the best possible results during their stay. This scientific basis is combined at Medical Park with innovative therapeutic concepts so that the spectrum and the possibilities of future rehabilitation are redefined. As described in this report, examples are therapeutic sailing for mental health, more intensive cardiovascular training, or the use of gamification in neurological therapy.

A new medical rehabilitation approach like this also poses new challenges, however. The latest scientific findings must be shared with a rehab team of nurses, medical professionals and therapists who, in turn, must redefine and coordinate processes. The advanced training concept that has been launched is a central component designed to encourage intensive exchange between the professional groups and beyond the boundaries of the individual Medical Park clinics with acute medicine.

The success of treatment must be measurable. We therefore continuously monitor our patients and their satisfaction with our services. The data is collected digitally as well as with traditional pen and paper. The results of our measurements are entered in the patient records. We apply international standards and outcome parameters to achieve the utmost transparency in terms of quality. This is how we assure quality and compete at the quality level.

#### DATA COLLECTION

In many Medical Park clinics, we have implemented our own IT solutions with which to collect and document all manner of data and conduct patient tests. Our colleagues can frequently set up and conduct these tests directly in the hospital information system (HIS). Test data is otherwise imported into the HIS from stand-alone electronic test systems. Some clinics have apps that patients can install on their mobile devices and use to access information about their stay and rehabilitation plan while at the same time enabling them to complete questionnaires digitally. We evaluate the satisfaction of our patients digitally and anonymously at all our facilities on devices installed in-house. Patient feedback can thus be evaluated and processed immediately. In addition, all data can still be collected in the traditional way using pen and paper.

#### OUTCOME QUALITY

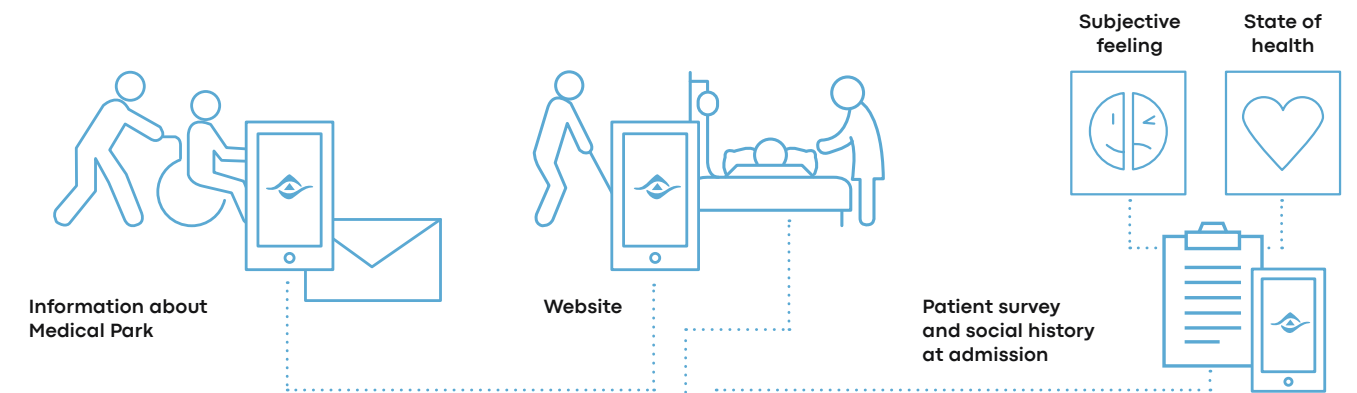
Measurements comprise the patient's health from a medical and therapeutic perspective and the subjective well-being of the patients on admission and discharge. Deficits can thus be identified, therapeutic strategies devised, progress

demonstrated, and outcome quality measured. At the end of their stay with us, moreover, we always ask the patients how satisfied they were with their stay.

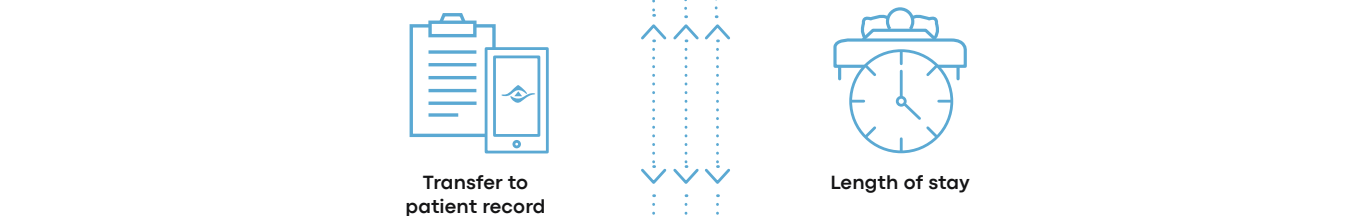
#### FOLLOW-UP

Follow-up surveys are conducted systematically at the Medical Park clinics. It is especially important to know how our patients are doing after their stay. We write to all patients after six months, provided they agree. We ask, for example, how the patients rate their quality of life, whether it has changed since staying at one of our clinics or is the same as at discharge. We learn from the patients' responses and use the insights thus gained to improve our clinical services. This concept is unique among rehab clinics.

#### PREPARATION AND ADMISSION



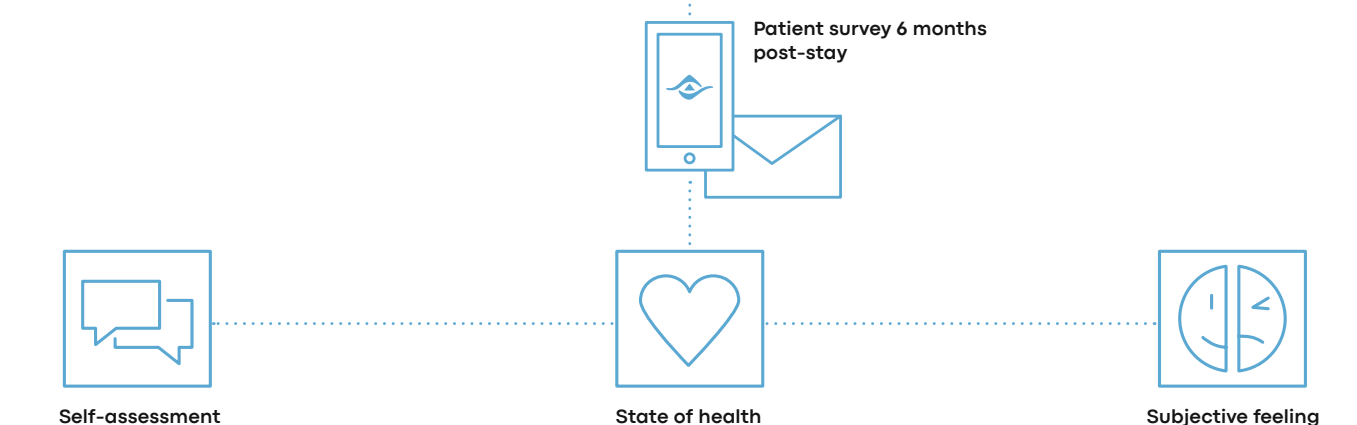
#### STAY



#### DISCHARGE



#### FOLLOW-UP



We collect a lot of data, measure, compare and analyse. The results are presented on the facts pages under each specialty. The indicators we use in the individual specialties are described on the blue pages. To make the data easier to interpret, the pages are structured in a similar way and most of the charts follow a standardised format. The figures are in each case presented in comparisons of the clinics in the respective specialties.

#### INDICATORS AND PARAMETERS

There are numerous indicators that can be used to measure the severity and intensity of each condition in every specialty. Aside from measuring the quality and outcome of the medical, therapeutic and nursing services, these indicators can also be used to monitor the patient's progress. These quality indicators enable us to verify our success.

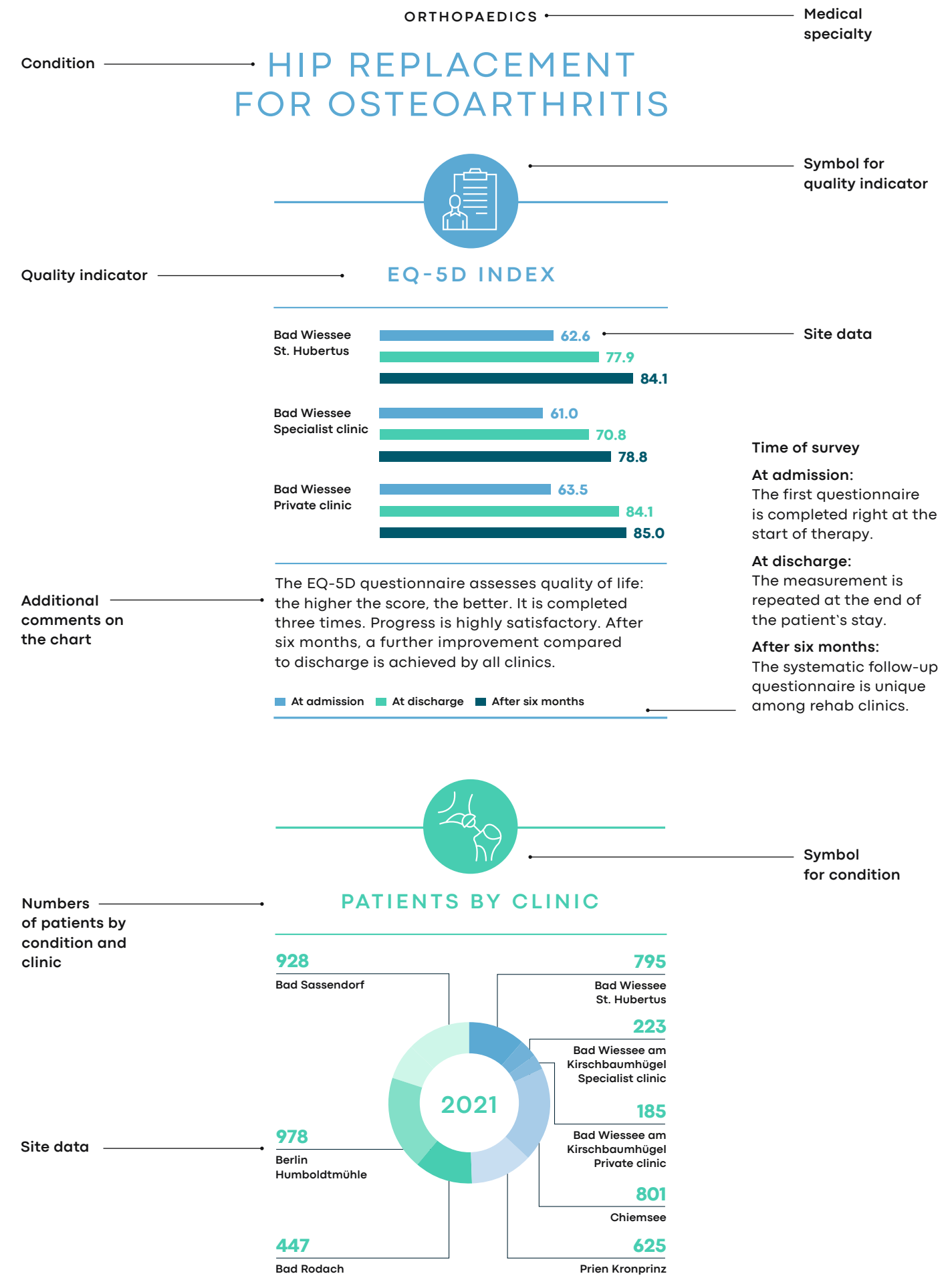
#### PROMS IN REHAB

We have developed an objective and comparable method for outcome measurement in rehabilitation at Medical Park based primarily on patient reported outcome measurements (PROMs). This system has long been used internationally as a means of measuring the change in health as subjectively perceived by the patient. PROMs are therefore an important quality parameter for assessing the treatment outcome. A good example is EQ-5D, which is explained on the right. EQ-5D is the most widely used PROM worldwide. Various other PROMs which we employ for measurement purposes, including VR12, SF-36 and PROMIS, are also addressed in this report.

Our patients are questioned at the start and end of their rehabilitation programme, and six months after their stay. We thus obtain insights into the extent to which the subjective health of each patient has improved. With the aid of PROMs, it should be possible to enhance or supplement the existing assessment methods. By using PROMs, patients and referring doctors can make comparisons with numerous treatment options available worldwide.

#### OUR FACILITIES COMPARED

Our clinics do not shy away from comparison – on the contrary: Specialist teams comprising representatives from each site work to continuously improve our medical, therapeutic and nursing services. With such a strategy, Medical Park promotes exchange between the clinics. On the facts pages, we report the results from all facilities where the respective condition is treated. The information presented should provide patients with an objective view of the services provided by our clinics and offer transparency in their comparison. Consequently, patients can select a clinic that best meets their needs.



# ORTHOPAEDICS: REGAINING FREEDOM OF MOVEMENT

Our clinics cover the entire orthopaedic spectrum. A thorough diagnostic examination of the musculo-skeletal system and treatment based on an integrated, interdisciplinary therapeutic concept are for us a matter of course. We work with various sports associations, and welcome professional and elite athletes on a regular basis. All our patients benefit from this expertise. On the following pages, we describe how cutting-edge training equipment and our dedicated therapeutic team get patients back up and running.



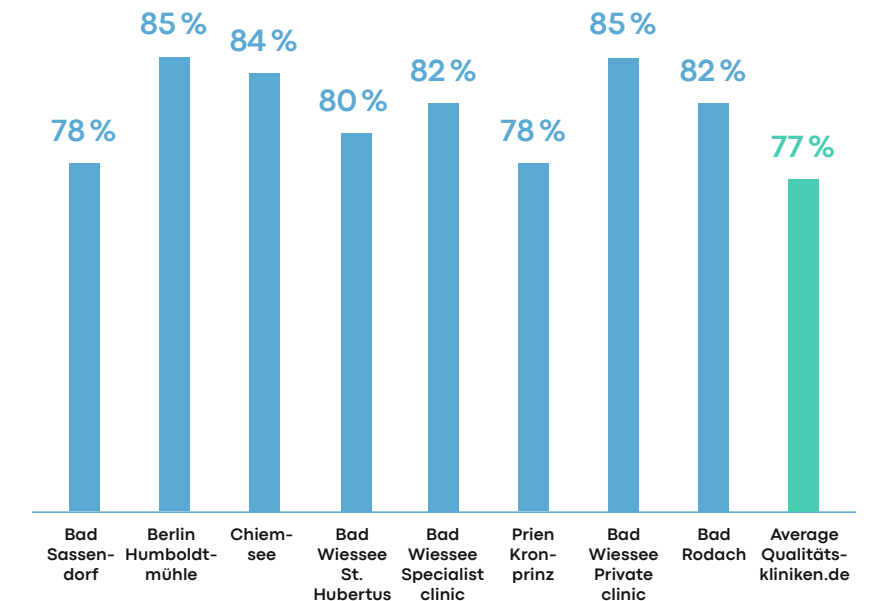
SEE FOR YOURSELF HOW THERAPY IS MANAGED IN BAD RODACH  
AND READ MORE ABOUT ORTHOPAEDICS AS A SPECIALTY

## PATIENT SATISFACTION

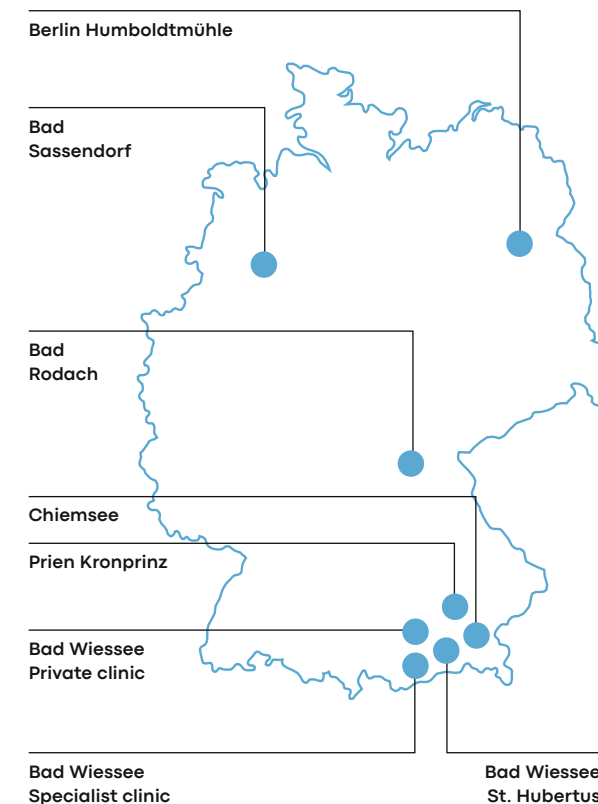
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PERCENT

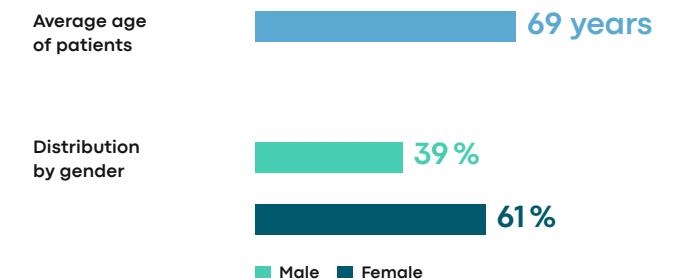
means 5 percentage points more than the average (77 percent) on Qualitätskliniken.de.



## ORTHOPAEDICS SITES



## PATIENT STRUCTURE IN 2021



## OUTSTANDING THERAPY

Overall, 91 percent of our orthopaedic patients are very satisfied with the care received from our therapists.



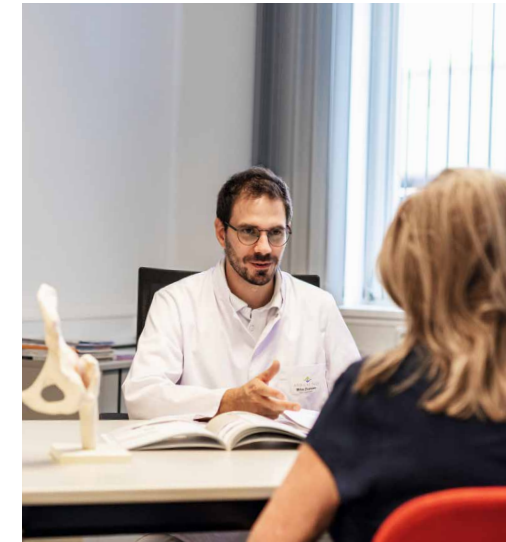
# Back on your own two feet

Angelika Prantl has opted for a hip replacement due to her severe osteoarthritis. She enjoys a rapid recovery from the operation at the Medical Park Bad Rodach rehab clinic – in part due to state-of-the-art therapeutic concepts.



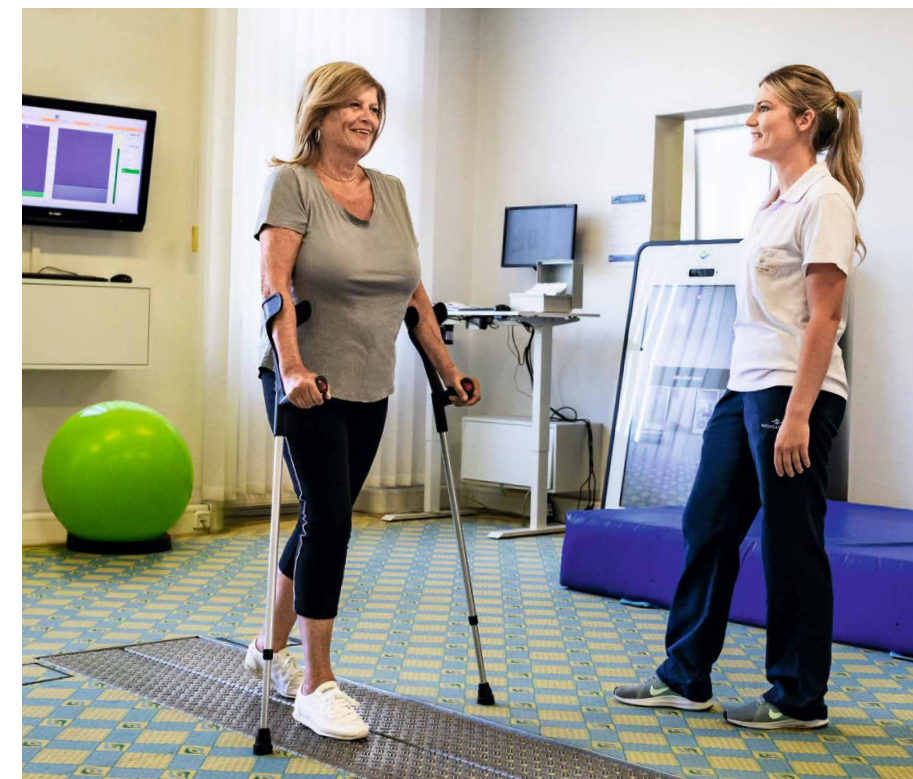
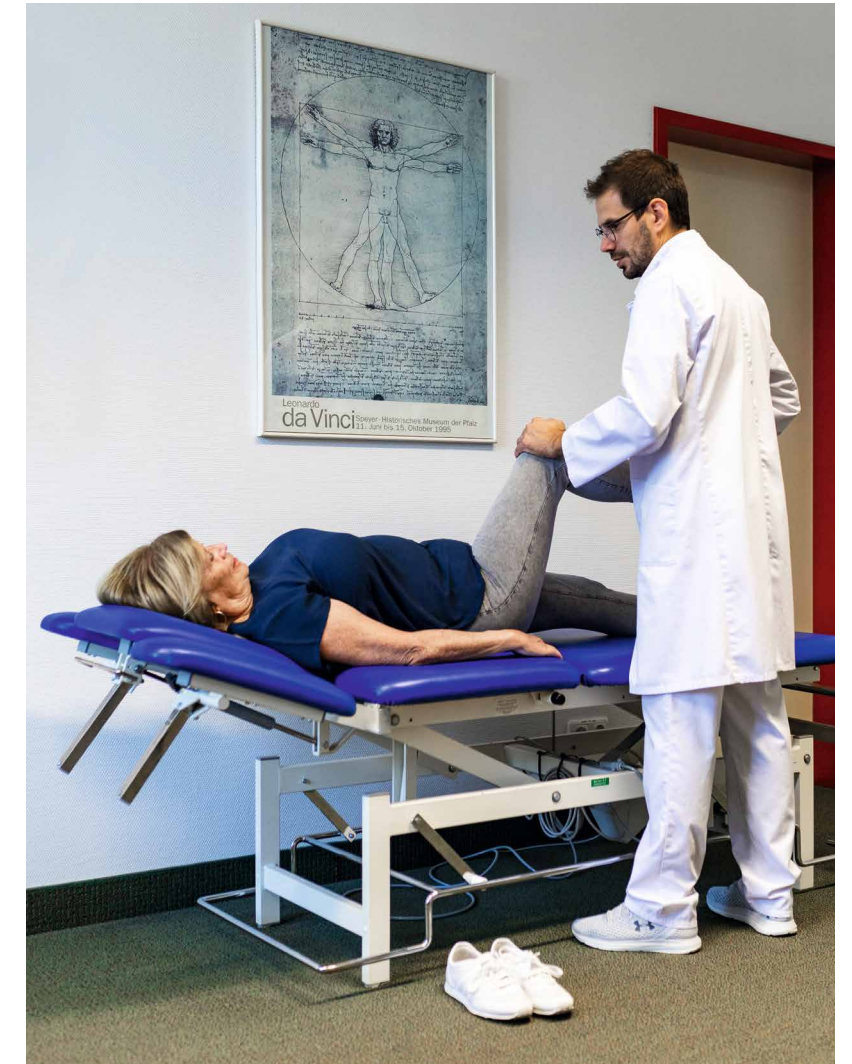
## GOOD PROSPECTS

For many years, the osteoarthritis in Angelika Prantl's right hip always made it painful to walk. After retiring, the former primary school teacher opted for a hip replacement – an artificial hip. Eight days after surgery, she arrives in Bad Rodach for her postoperative therapy. "The pain has gone", says Angelika Prantl. Now she wants to get quickly back on her feet.



## TARGET MEETING

The admitting physician, Dr Milos Zivanovic, asks Angelika Prantl about her medical history and checks the range of motion in her operated joint. Together, they agree on a primary rehab goal in line with the patient's wishes: "I'd like to dance again at last!" And she is determined to climb the Great Arber mountain in the Bavarian Forest once more with her grandchildren.



## STEP BY STEP

To ensure that the cementless hip joint is not overloaded and the bone can fuse properly with the implant, the doctor orders partial weight-bearing of 20 kilos for Angelika Prantl during the first week. To help her grasp this concept, she is guided along the walking track by physiotherapist Cindy Dorst. Over the 3.5 metre track, the force of her footsteps can be measured and displayed on a screen.





OUTDOORS

The initial outing in the therapy garden of Medical Park Bad Rodach still feels rather strange to Angelika Prantl. "Pretty shaky", she says, as she navigates the changing terrain of the exercise path: stones, sand, bark mulch. "Should I even be attempting this already?", she asks Cindy Dorst. But the physiotherapist reassures her: "Your joint is stable. And I'm right here!" So it's not only the crutches that support Angelika Prantl when she tries to walk.

COMBINED FORCES

Modern therapeutic equipment, such as the Alter-G anti-gravity treadmill and the digital Pixformance station, support the therapists in their work. And the patient sees her progress live on a screen.

WEIGHTLESS

The Alter-G anti-gravity treadmill looks rather odd to Angelika Prantl at first glance – but suspended in the inflated air bag, feeling lighter and lighter and walking without crutches, she doesn't want it to end: "It's like walking in the clouds!" On the screen, she can watch the movements of her feet from the cameras recording from every direction. She learns in this way, like playing a game, how to control the width of her steps and regain the symmetrical gait she lost by compensating for her pain.



WORTH THE EFFORT

To ensure that the joint head is held securely within the socket during movement, Angelika Prantl needs to activate, strengthen and stabilise the muscles surrounding the joint. On the leg press, she manages to support almost her entire body weight. With her feet positioned on a balance board, she also learns how to distribute her weight equally between both legs on wobbly, uneven surfaces. "I can feel the strain in my thigh", she says – a healthy response from the reactivated muscle.



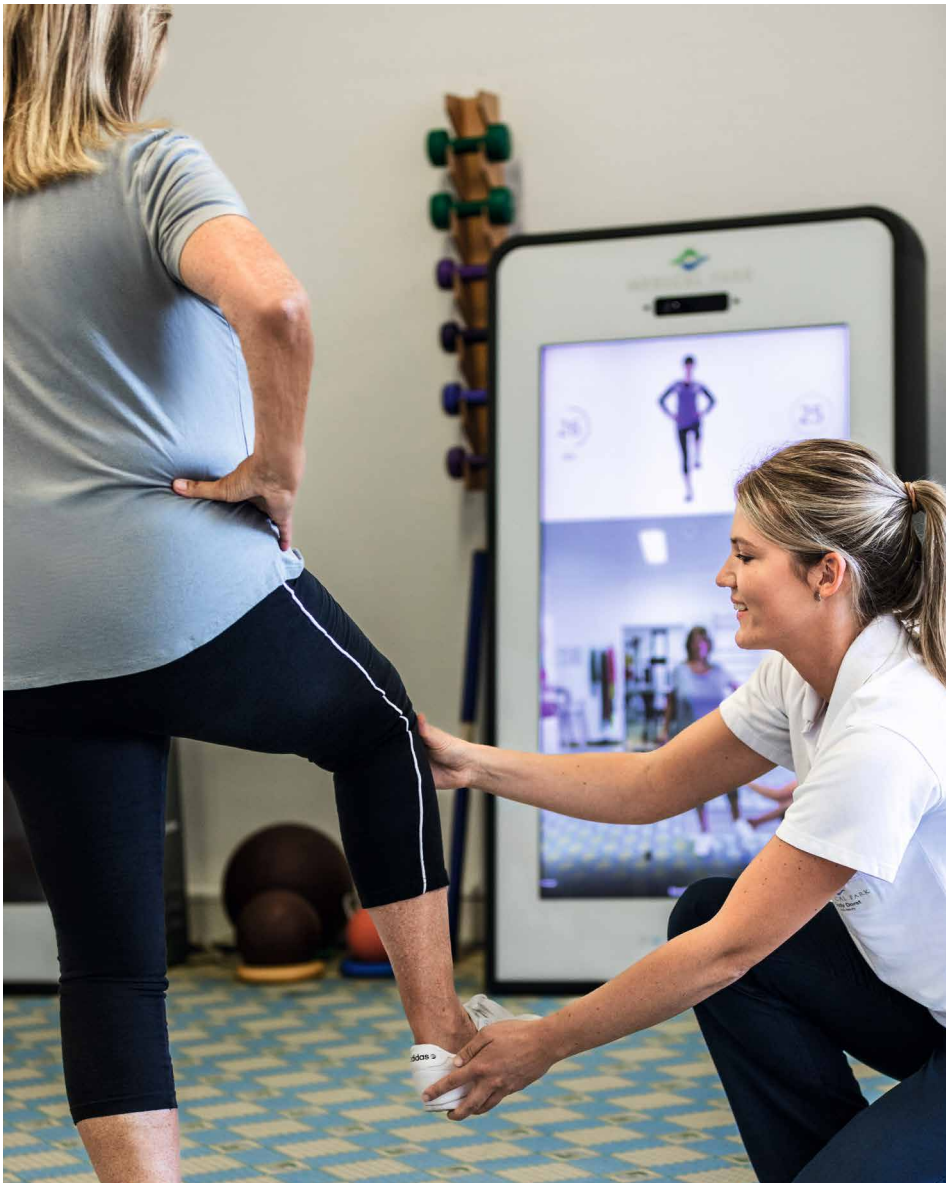
BAD RODACH

21

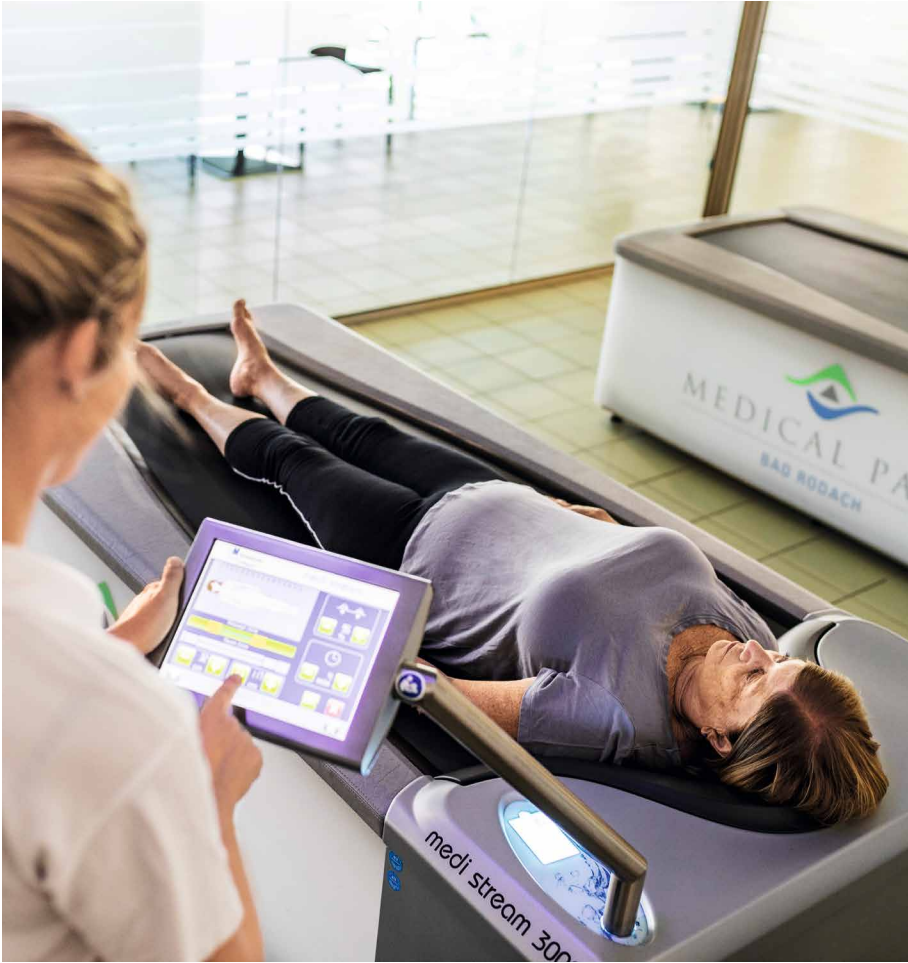
DAYS IS THE AVERAGE TREATMENT DURATION PER PATIENT

DIGITAL MIRROR

Angelika Prantl uses the Pixformance station to exercise on her own between therapy sessions. The exercises are demonstrated on a large screen by a digital coach, with her own movements mirrored below. Cindy Dorst initially assists Angelika Prantl with the exercises; thereafter, the software prompts her in real time to make corrections – followed by an analysis with motivational feedback.







BAD RODACH

4,200

NUMBER OF PATIENTS  
IN 2021

### ABOVE WATER

If you want to recover, you have to relax – this is the motto with the Hydrojet, a type of water bed with adjustable massage jets. Angelika Prantl lies on a tub covered with a neoprene mat. Cindy Dorst digitally controls the direction and intensity of the massage jets – focusing less on the hip so as to spare the wound and more on the neck and shoulders instead. “I’m really feeling the strain from all the walking on crutches.”

### BACK AT THE WHEEL

In the “coaching car”, Angelika Prantl practises how to get in and out correctly without twisting her hip. The reaction test is even more important: Because they are no longer in pain, patients frequently overestimate the reactivity and strength of their operated leg. In the brake test, Angelika Prantl initially takes 0.3 seconds – too long – to react to an obstacle. By the end of rehab, she has improved to 0.2 seconds and is now ready to return to the wheel.



### IMMERSION

Aqua aerobic exercises in the therapy pool help Angelika Prantl to learn to swim front crawl rather than breaststroke, thus encouraging the use of her legs in a way that reduces the strain on her hips. Walking in the pool is another good exercise for gait training. She can purposely manage all movements against increased resistance: knee lifts, side steps, heel-to-toe transitions. She uses the buoyancy to restore the mobility in her joint. “It’s all much easier in the water.”



### EVERYDAY TRAINING

Preparing to return to daily life is also covered by the rehab programme: driving, climbing stairs, cooking, gardening. And at the end, the patient is given an individual training programme to take home.



### FREE OF PAIN AT LAST

Shortly before being discharged after three weeks at Medical Park Bad Rodach, Angelika Prantl is given another exercise by Cindy Dorst for strengthening the muscles in her buttocks. She receives a hometraining programme in a personalised brochure which includes QR codes for accessing the accompanying videos. If she sticks to it, Angelika Prantl will soon be ready for the dance floor and for ascending the Great Arber mountain. Four weeks after surgery, however, the toughest part is already over. And she is free of the pain that plagued her for years. “Things can only get better from here!”





**DR. MED. HANS-JÜRGEN MEES**

has been Senior Orthopaedic Consultant at Medical Park Bad Rodach since 1999. He received his doctorate from the Friedrich Alexander University Erlangen-Nuremberg, gaining specialist titles in both orthopaedics and trauma surgery. Dr Mees is a lecturer at the Faculty of Sport Science of Leipzig University and belongs to numerous medical associations.



**GUNTER HÖLIG**

is a qualified sports coach and has been Director of Therapy at Medical Park Bad Rodach for more than 20 years. He was a lecturer at Leipzig University for many years and has practical experience in diverse approaches to gait rehabilitation. Gunter Hölig holds talks on subjects such as neuromuscular diseases and the therapeutic use of robotics and sensory systems.

## THERAPEUTIC GAMIFICATION

The orthopaedics department of Medical Park Bad Rodach rehab clinic ensures that patients with artificial joints can return to normal life fully fit after surgery. In addition to classic treatments, therapy also involves state-of-the-art exercise equipment. Let's talk about the support provided by technical assistants, the enduring value of human attention, and patients feeling like they are walking on the moon when on the anti-gravity treadmill.

**What conditions do the patients have who come to your orthopaedic department in Bad Rodach for rehabilitation?**

**DR HANS-JÜRGEN MEES** Roughly 80 percent of our patients have had a hip or knee replacement or spinal surgery. The remaining 20 percent have problems with other joints such as the shoulder or ankle, or with ligaments such as the cruciate ligament.

**How do you design an appropriate therapeutic concept?**

**DR MEES** We look at the overall picture first: External findings of the surgeon, findings of the admitting physician, X-ray images. Then we hold an admission consultation with the patient to discuss their wishes and personal rehab goals.

**AXEL KRÜGER** For each diagnosis, there are medical standards to consider when treating a patient – such as after a hip replacement. These standards, which apply across the Medical Park group, are then adapted specifically to the patient in question.

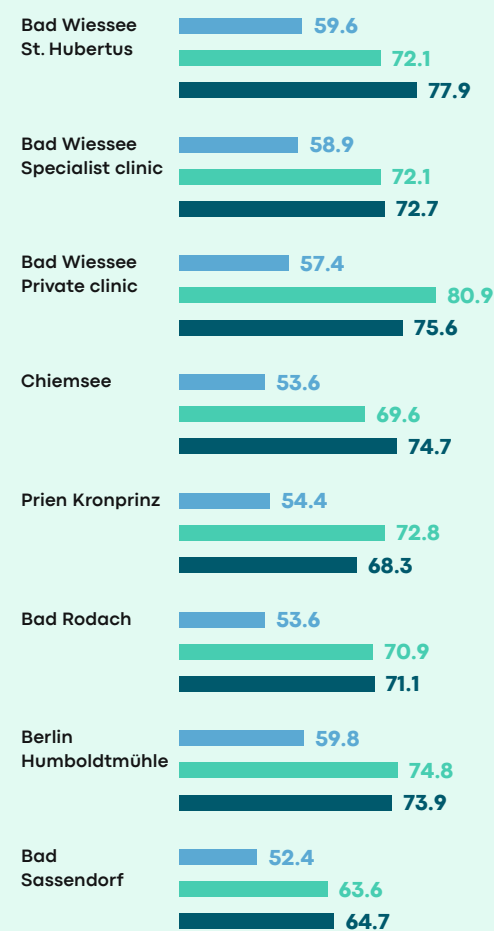
**GUNTER HÖLIG** The therapeutic concept is always based on the patient's expectations. We agree on a rehab goal, which we take as the ultimate objective of treatment and adapt to the patient's hobbies, daily activities, and living circumstances.

**ANNE VÖLTZKE** If the patient lives on the third floor without a lift, then we prepare them for managing the stairs. Maybe they'd like to ride a bike again in six months. If so, we do a lot of training on the bicycle ergometer.

**HÖLIG** Based on these objectives, we break the general therapeutic concept down to suit the individual. In doing so, we also consider, of course, what experience the patient has with such training. Our task is to prepare the patients for the demands of daily life by building up their strength, mobility and muscle control.



### EQ-5D INDEX



In points

The EQ-5D questionnaire evaluates quality of life. The figures refer to patients with a femoral neck fracture, the majority of whom have undergone a total hip replacement. At 72.4, the average score in the follow-up survey after six months is high and even slightly above the average of 72.0 at the time of discharge.

■ At admission ■ At discharge ■ After six months

**Which factors are crucial to the success of the therapy?**

**DR MEES** Motivation comes first and foremost. The all-important element is to draw the patients away from passivity and get them actively involved. They must want to take matters into their own hands – then we will support them throughout.

**VÖLTZKE** Motivation is strongly linked with the individual training plan and communication with the patients: Only if they understand why they are doing all this will they remain motivated. If the patient wants to get back to playing football with the grandchildren in the garden, that's something to look forward to and work towards.

**HÖLIG** It's important to have realistic goals and not expect miracles. By agreeing and working together on reasonable targets, the patients will be highly motivated and get a good sense of their self-efficacy. Every successful treatment results from the joint efforts of an interdisciplinary team of medical experts, nurses, occupational therapists, physiotherapists, sports therapists and psychologists – and the patient's family of course.

**How can you even determine, or measure, whether a treatment is successful?**

**DR MEES** On the one hand there are subjective feelings: These are evident from our dealings with the patient and the use of scientifically founded questionnaires they are asked complete at the start and end of treatment and six months after discharge, enabling a comparison of the results – not only within the clinic group. On the other hand, we have scoring systems involving standardised tests that can be used to measure walking distances or speeds when climbing stairs and thus permit the outcome to be evaluated objectively. And of course we receive regular reports from the doctors and therapists, which can be compared with the findings at the time of admission.

**HÖLIG** We regularly measure aspects such as joint mobility and strength to obtain reliable and meaningful before-and-after values.

**KRÜGER** At the end, an overall analysis takes place which is linked to the official rehabilitation therapy standards of the German Pension Insurance (Deutsche Rentenversicherung). The quality indicators we record there are documented across all clinics.

**How can therapy be translated into daily life after discharge?**

**HÖLIG** We already get started on this during the patient's stay: Medical Park has a specially designed, highly reliable ADL (activities of daily living) concept which is a standardised element of our therapeutic programme. We use a dozen different exercises to prepare for the pressures and challenges of daily life.

**KRÜGER** We have what we call a coaching car for the patient to practise getting in and out, and loading their shopping, for example. Important aspects like strength in the operated leg when pressing the break can also be tested – something that many people initially misjudge. In our teaching kitchen, we practise the movements required when cooking: stooping, bending, stretching. It is much more important, however, that patients discuss their diet with our nutritionists, cooking and enjoying a delicious lunch together. This provides for a perfect combination of theory and practice. And the recipes can be taken home in a specially created cookbook. Ultimately, to reflect daily life at the office, we even installed a workstation with desk. These ADL steps are included in the early phase of rehabilitation across all departments – by physical, sports and occupational therapists.

**You work with the very latest therapeutic equipment in orthopaedics. Which is the most important?**

**HÖLIG** One of the most important items of equipment is our walking track. Plates embedded in the floor measure the walking loads. The measurements are immediately displayed on a monitor at the end of the track. The patient thus receives precise feedback on the weight distribution between the left and right leg. In the past, scales had to be used to determine such loads, a process that was very laborious and prone to errors.

**KRÜGER** The walking track delivers accurate values – not only when standing but also when active, with walking and rolling movements. This is especially important for patients who are still restricted by partial weight-bearing prescribed after surgery. Then they can see clearly whether they are heeding the doctor's orders.



It was already demonstrated in 2005, as part of the German gait-training study (Deutsche Gangtrainer Studie (DEGAS)), that patients are back on their feet faster with equipment-assisted gait therapy than with physiotherapy that does not involve such apparatus. These findings have since been confirmed by a number of other studies and incorporated in the guidelines of professional medical societies.



**AXEL KRÜGER**

has been Director of Therapeutic Planning at Medical Park Bad Rodach since 2011. After graduating in sports sciences at the Martin Luther University of Halle-Wittenberg (specialising in rehabilitation sports, sports therapy and sport for the disabled), he worked as a sports coach at Mittelbayerisches Rehaszentrum Bad Kötzing.



**ANNE VÖLTZKE**

has worked as a qualified sports coach in Bad Rodach since 2006 and took over as Director of Sports Therapy in 2011. She gained a diploma in sports sciences at the Faculty of Sport Science of Leipzig University (specialising in rehabilitation sports, sports therapy and sport for the disabled).

**DR MEES** The surgeons basically specify whether full or partial weight-bearing is permitted. After revision procedures in particular, patients are often allowed to only partially bear weight on the operated side for a few weeks. Often, they find the concept difficult to grasp: how much is 20 kg, 30 kg, or half my body weight?

**VÖLTZKE** Most of them have no idea what partial weight-bearing of 50 percent means. When they can follow each step live on the screen, many then have a genuine aha moment.

**DR MEES** The walking track is also highly motivating in group therapy, as the patients can see the results and spur one another on.

#### What other equipment do you use?

**DR MEES** When it's time to slowly increase the load, we often use the Alter-G, an anti-gravity treadmill. It is an excellent way to finely control the load without the aid of crutches or a walking frame. This helps to also stimulate the arm movements without risking a fall, which could happen if walking freely.

**VÖLTZKE** This is extremely helpful, especially in the early, postoperative phase of rehabilitation. The air bag offers patients a similar level of relief as hydrotherapy, but they can progress much more freely and exercise the operated joint without subjecting it to excessive strain.

**HÖLIG** Sensors under the belt continuously measure the force of the steps and a microprocessor controls how much air is pumped in or released. It is a sophisticated piece of technology developed by NASA for simulating the change in gravity experienced in space.

#### What equipment is used once full weight-bearing is possible again?

**DR MEES** We have treadmills that are also used for performance diagnostics in elite sport. They can be set at gradients of up to 10 percent to encourage patients to use the muscles in their buttocks and thighs more – an excellent exercise for patients with total hip replacements.

**HÖLIG** In addition to regular therapy, supplementary training can take place on the Pixformance stations: Patients are given a chip card on which their personal training plan is programmed, with 10 to 12 exercises. By holding the card against the Pixformance screens, which look like oversized

smartphones, a virtual coach appears and demonstrates the exercises. The patient follows, the machine records the movements on camera, and feedback is provided on whether the exercise has been completed properly or corrections are necessary.

**DR MEES** With this highly motivating, game-like approach, it is without doubt one of the best innovations in recent years. The technology is similar to a games console, where points of the body are tracked and used for control, and transferred to a medical device. At the end comes an overall analysis so that the patients always know where they stand. They see their progress and can increase the level of difficulty – thus motivating them to do even better the next time.

**HÖLIG** Once the exercises have been perfected during rehab, the feedback function is no longer needed and the exercises can be continued virtually at home on any device.

**VÖLTZKE** For the patients, the transition is easy and seamless. Exercises on large items of equipment such as a leg press are not so easily transferred, of course, as not everyone has a gym nearby. The Pixformance exercises can be performed with weights or a Theraband, or without any additional apparatus, and can easily be transferred after the three weeks.

#### How do patients react to the high-tech equipment?

**KRÜGER** You might assume that older patients in particular have an aversion to technical equipment – but we tend to see the opposite. They are often very enthusiastic, exclaiming: “It's great, I can't wait to show my grandchildren!”

**VÖLTZKE** There are sometimes reservations at first with the Alter-G anti-gravity treadmill, given that it's simply bigger and more voluminous than a regular treadmill. But once they are in it and sense the weightlessness, some of them bounce around like an astronaut, shouting “I'm flying” or “I'm on the moon!”

#### Sounds great. With all the technical assistance, do you still need therapists?

**HÖLIG** The equipment is ultimately only a tool. The therapist is still the deciding factor. People connect. Empathising, building a relationship, gaining trust, allaying fears – no machine can do that. Only a therapist can decide who does what

on which machine, and when. This requires thorough specialist knowledge of the nerves, muscles and bones, and the entire anatomy and physiology of the human body. This cannot be automated.

**DR MEES** We don't use the equipment to replace therapists, but to support them. Technology, no matter how new and modern, must never become an end in itself. It must always be incorporated wisely into the therapeutic concept. Then it can be of great help to the therapists: In the past, they had to provide manual support over a prolonged period even for repetitive exercises, which was quite tiring. The therapy equipment doesn't get tired, either at 8 in the morning or 5 in the afternoon. And its feedback is always equally reliable.

**VÖLTZKE** But the possibilities of such equipment are always limited. Recently we had a patient who wanted to get back on his boat after a hip replacement. To simulate the swaying on deck, you have to be pretty creative as a therapist. No standard plan will achieve this – nor a machine, as modern as it is.

#### How has the role of the therapist changed through using such technology?

**VÖLTZKE** Very little. The technology is simply a good addition. Where in the past we had to explain a lot and hope that the patients trusted us, the values on the screen now provide the evidence. This increases acceptance and makes things easier for us.

**HÖLIG** The therapists need to be familiar with the machines, of course, because they must decide when to use which technology. All therapists therefore receive thorough training in the use of the equipment – and initially do the exercises themselves so that later they can appreciate how the patient feels. These days, therapists are like pilots or captains, helping the patients navigate the technology and accompanying them on their rehabilitation journey. In doing so, however, they need to keep an eye on everything that a machine can never control – from neuromuscular functions to sensorimotor skills. Even in the future, a wide range of expertise, skills and experience will be needed. The most important thing is still that as therapists we must put our heart and soul into our work!

#### What are the other elements of therapy at Medical Park?

**DR MEES** Well, we've already talked about ADL. And of course we also offer physiotherapy, on a one-to-one basis, which is a standard for us. We use lymphomats rather than manual lymph drainage and give the patients dry water massages, where they lie on a type of water bed and are massaged by hydrojets through a rubber membrane. We have a large exercise pool, very importantly, for classic hydrotherapy. And then there's the most important element, of course, as Gunter Hölig already said: our team of doctors, therapists, psychologists, urologists, neurologists, and specialists in internal medicine. Many individual discussions are held in order to achieve the therapeutic goals with combined forces.

#### But the patients also have time to recover in between, don't they?

**VÖLTZKE** Absolutely! Recovery is crucial in the treatment process. And because learning to relax is also important, we have options such as autogenic training, progressive muscle relaxation and alternative exercises, a little like Tai Chi. The atmosphere at our clinic helps with relaxation too – such as soaking up the sun by our outdoor pool.

**HÖLIG** From our therapy garden, you can walk straight through the gate into the beautiful rolling hills of the Coburger Land, the perfect location for a walk, hike, or bike ride. You'll certainly be back on your feet faster here than in an urban hospital.

**DR MEES** Anyone wanting to recover needs to be able to rest, especially after the stress of an operation. It helps to have a view of the countryside and be so close to nature. And the air quality here is outstanding! Which is also important to a rapid recovery.



The Alter-G anti-gravity treadmill helps us to reduce the body weight on an almost infinitely adjustable scale by up to 80 percent using an automatically regulated air bag. Video monitoring documents the patient's gait and the touchscreen cockpit delivers feedback on the running time, step rate, weight distribution, gait symmetry, pain assessment, step length symmetry and symmetry of foot force.

# ORTHOPAEDICS INDICATORS



## EQ-5D INDEX

The EQ-5D index is the most widely used method worldwide for measuring health-related quality of life. It examines five dimensions that can be awarded different scores by the patient: mobility, self-care, usual activities, pain/discomfort and anxiety/depression.



## 10-METRE WALK TEST

The walking speed is calculated based on the time the patient takes to cover a distance of ten metres. Conclusions can thus be drawn on the postoperative recovery process. The averages achieved by healthy individuals, which usually range from 6.8 to 8.2 seconds, can be used for comparison.



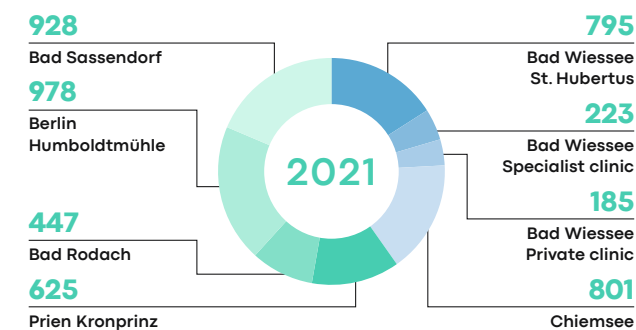
## PAIN SCALE

This scale is used to measure the patient's subjective pain intensity. The current pain perception is marked on a scale, visually presented on a horizontal line or with numbers. By using the scale at the start and the end of rehab, a statement about the success of therapy can be formulated.

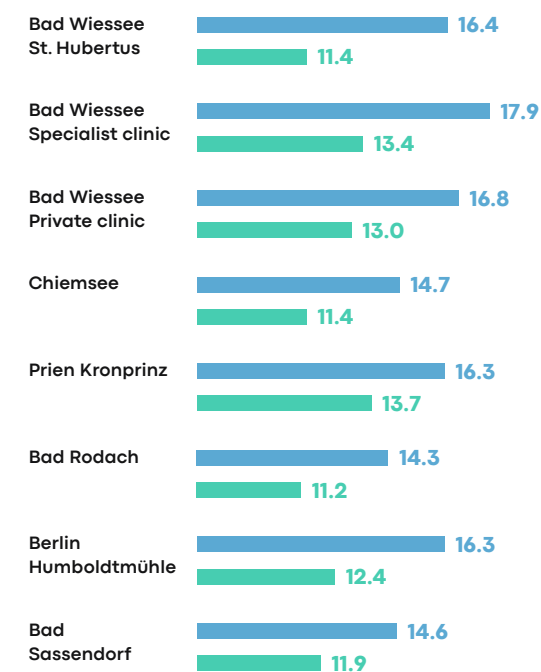
# HIP REPLACEMENT FOR OSTEOARTHRITIS



## PATIENTS BY CLINIC



## 10-METRE WALK TEST



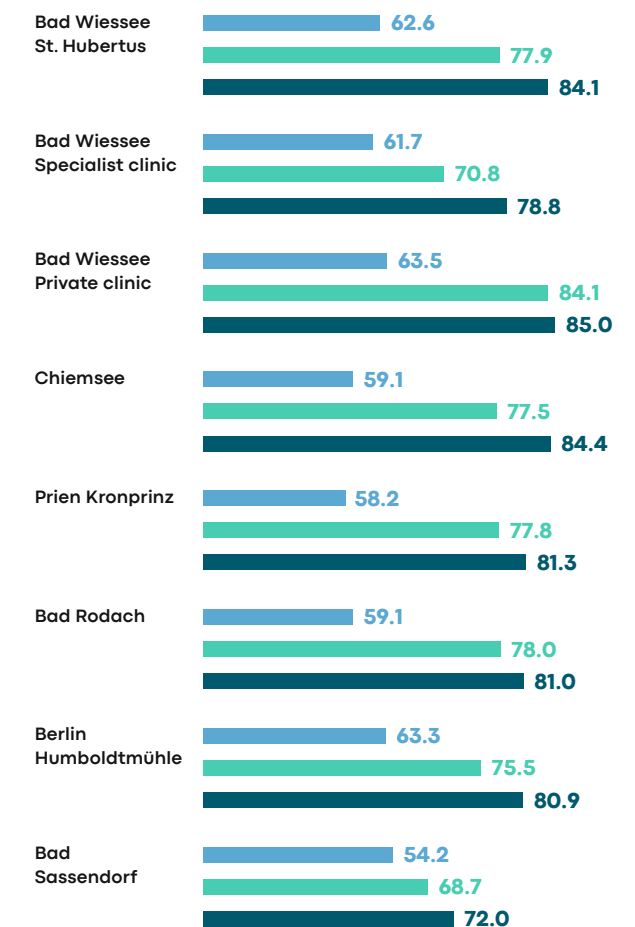
In seconds

This test is used to determine the improvement in mobility. All patients improve by 3.6 seconds on average, meaning that their walking pace increases by almost 25 percent.

■ At admission ■ At discharge



## EQ-5D INDEX



In points

Quality of life is measured based on five dimensions – at discharge and by means of a questionnaire six months later. The progress is highly satisfactory. On average, the patients achieve 81 points.

■ At admission ■ At discharge ■ After six months

## LESS PAIN MEDICATION

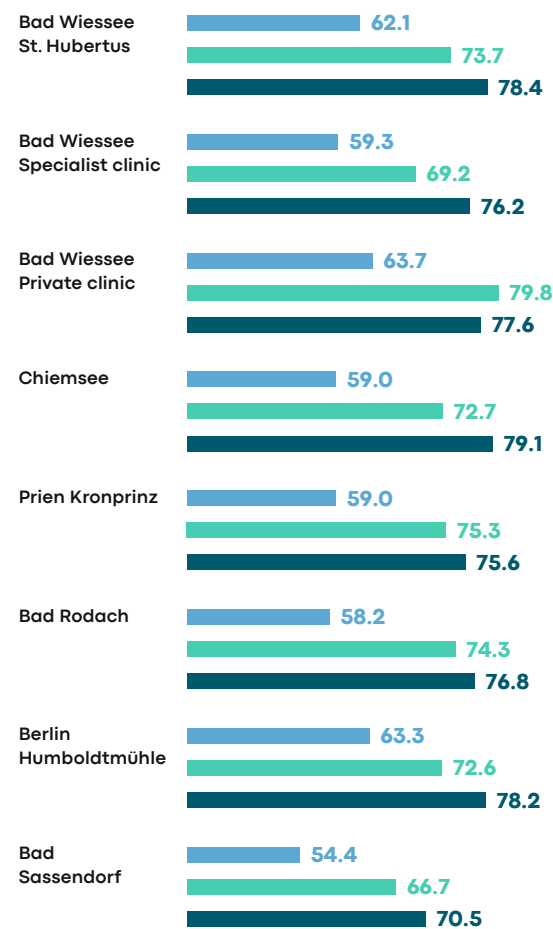
By discharge, 73 percent of our patients require no pain medication or have considerably reduced their analgesic intake.



# KNEE REPLACEMENT FOR OSTEOARTHRITIS



## EQ-5D INDEX



In points

Five dimensions are used to determine quality of life. The measurements are taken three times. Progress is highly satisfactory, even after six months. The scores improve to an average of 76.5 points – a good quality of life.

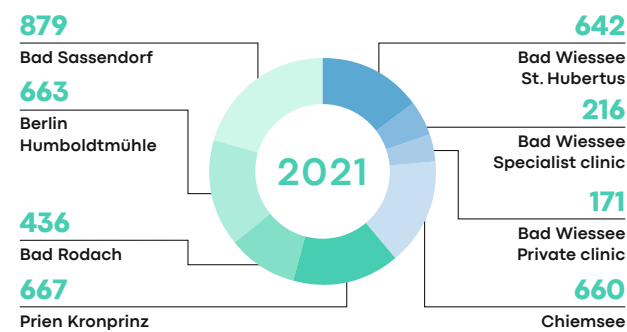
■ At admission ■ At discharge ■ After six months

## INCREASED JOINT MOBILITY

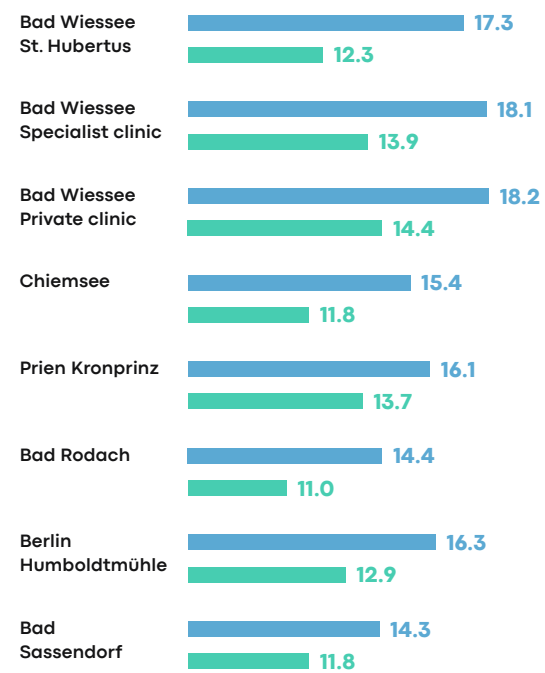
A significant improvement in joint mobility is noted in 90 percent of our patients.



## PATIENTS BY CLINIC



## 10-METRE WALK TEST



In seconds

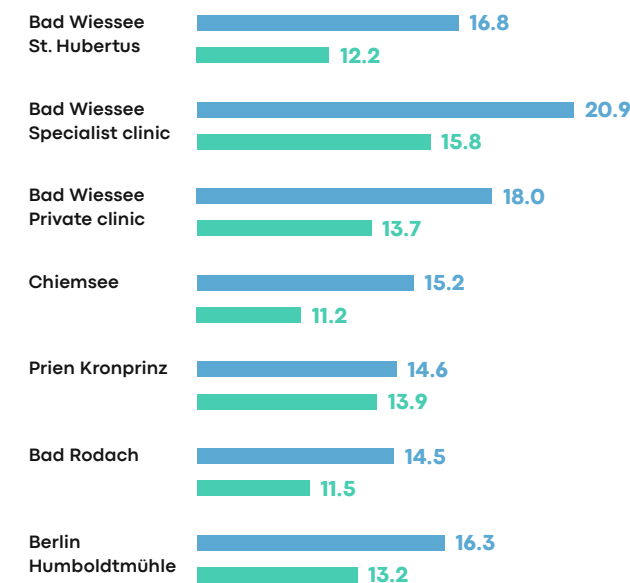
Far more mobile: By the end of their stay, our patients are 3.6 seconds faster on average than at the start of their stay at one of our Medical Park clinics.

■ At admission ■ At discharge

# REVISION HIP AND KNEE REPLACEMENT



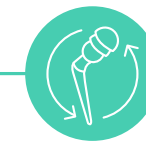
## 10-METRE WALK TEST



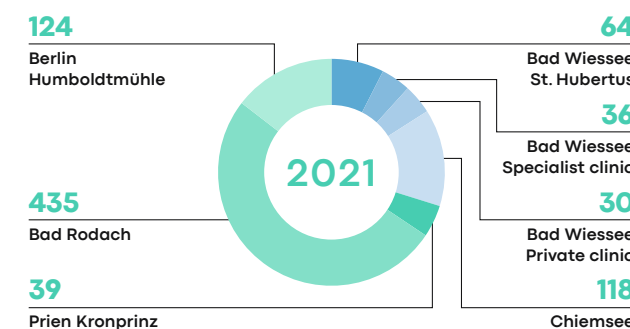
In seconds

By discharge, our patients are 3.0 seconds faster over the 10-metre track than at admission. As a revision joint replacement is more demanding in terms of recovery, the results are very good when compared.

■ At admission ■ At discharge



## PATIENTS BY CLINIC

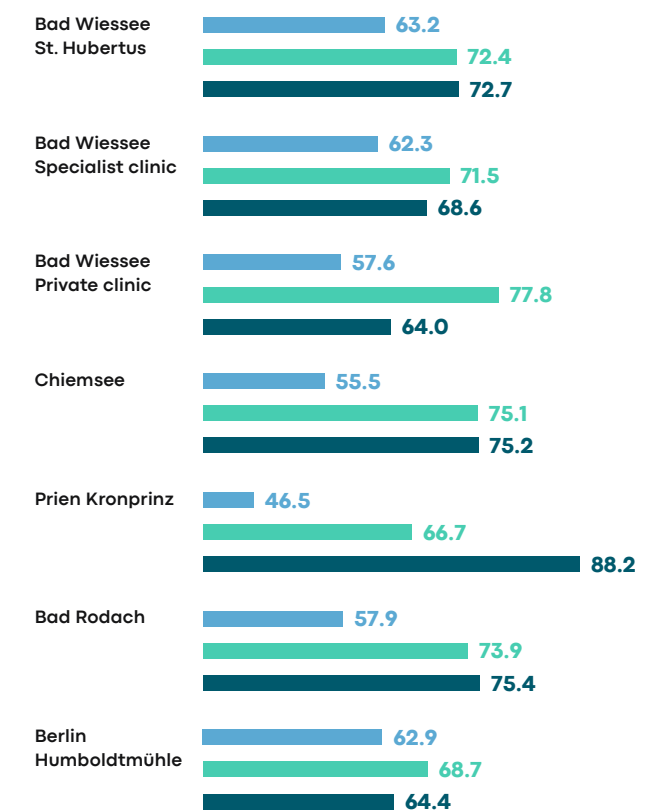


## BETTER AT CLIMBING STAIRS

By discharge, 85 percent of our patients no longer need a handrail to climb the stairs.



## EQ-5D INDEX

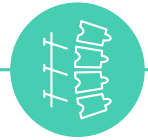


In points

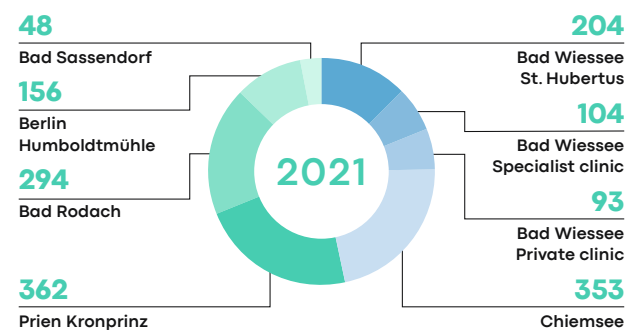
The EQ-5D questionnaire assesses quality of life: the higher the score, the better. On average, the score at discharge is maintained by the patients even after six months. Given the complexity of an implant replacement, this is a very good result.

■ At admission ■ At discharge ■ After six months

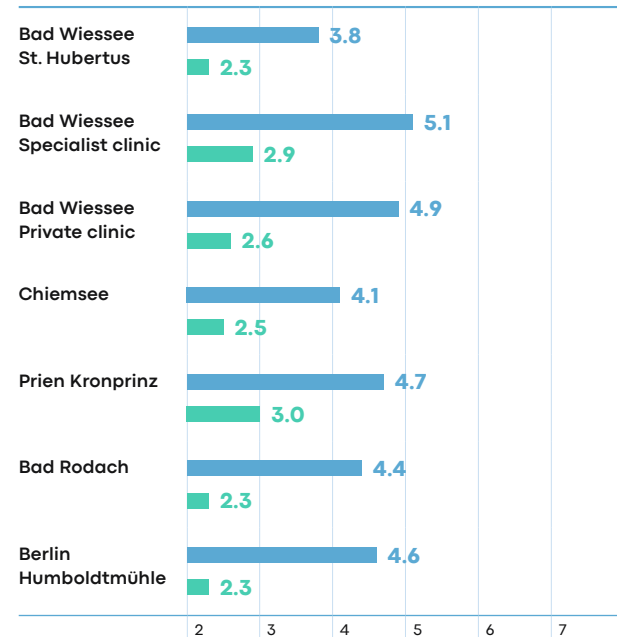
# BACK THERAPY AFTER SPINAL SURGERY



## PATIENTS BY CLINIC



## PAIN SCALE



Even after in some cases major surgery to the spine, the patients' subjective pain decreases considerably during their stay. The values determined show a reduction of 56 percent.

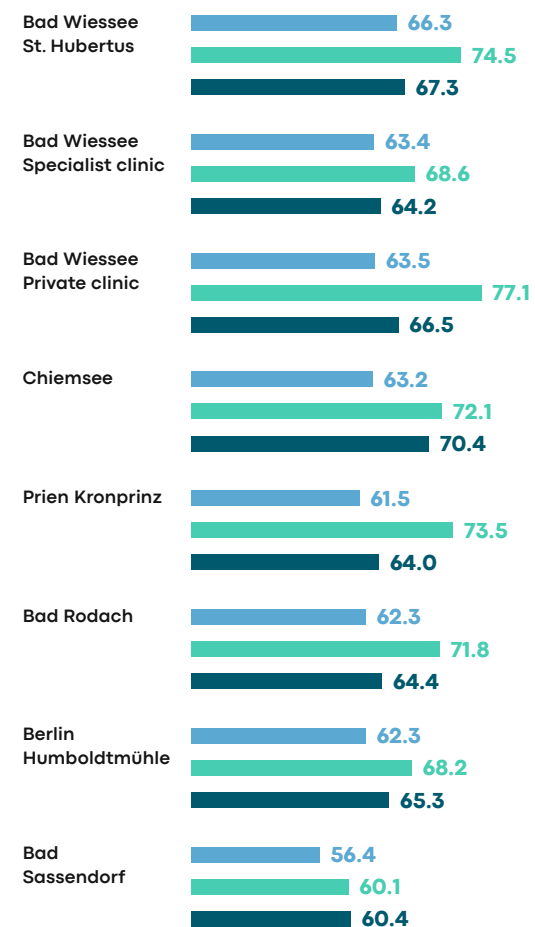
■ At admission ■ At discharge

## MANAGING BETTER AT HOME

Our patients can manage  
39 percent more of their tasks at home.



## EQ-5D INDEX

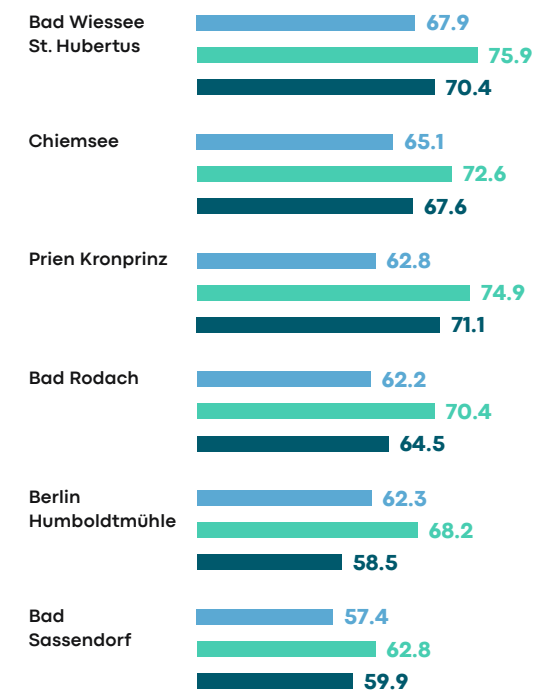


In points

The significant improvements between admission and discharge demonstrate that the course of therapy following complex surgical procedures on the spine is optimal. The follow-up surveys show that quality of life after six months is still better overall than before therapy.

■ At admission ■ At discharge ■ After six months

## EQ-5D INDEX



In points

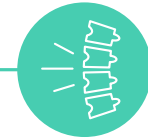
The EQ-5D score is a reflection of health-related quality of life. On average, patients come close to 71 points by discharge. According to the index, this score represents a good quality of life for patients with long-term back pain.

■ At admission ■ At discharge ■ After six months

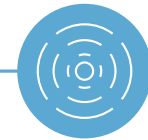
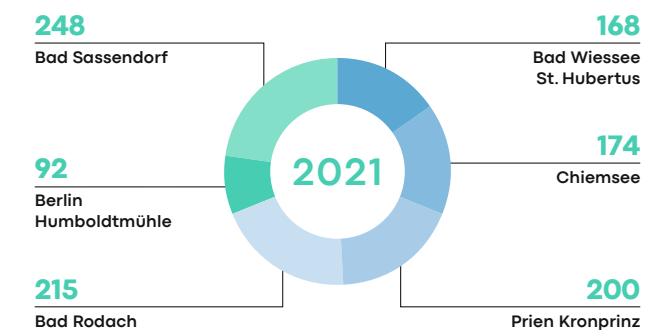
## GREATER JOINT MOBILITY

Joint mobility is improved  
in our patients by an average of  
15 percent.

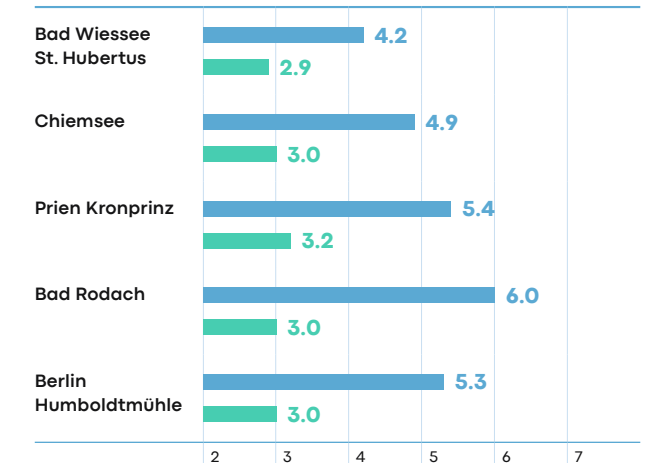
# CONSERVATIVE BACK THERAPY



## PATIENTS BY CLINIC



## PAIN SCALE



The baseline value for subjective pain is comparatively high for chronic back pain: reaching up to 6.5 out of 10 points. The average score of 3 points by discharge is therefore all the more remarkable.

■ At admission ■ At discharge



# NEUROLOGY: RETURNING TO AN ACTIVE LIFE

Neurological conditions such as stroke often snatch patients from the midst of life. Our company-wide rehabilitation concept is geared to the specific needs of stroke patients of all severity levels.

It ensures the seamless delivery of care across all phases from B to D. We therefore enable patients to regain as much independence as possible in their daily lives. Emergency care is provided more rapidly with the aid of the mobile stroke unit (MSU) in Berlin. The advantages of its use, also for follow-up treatment, are described on the following pages.



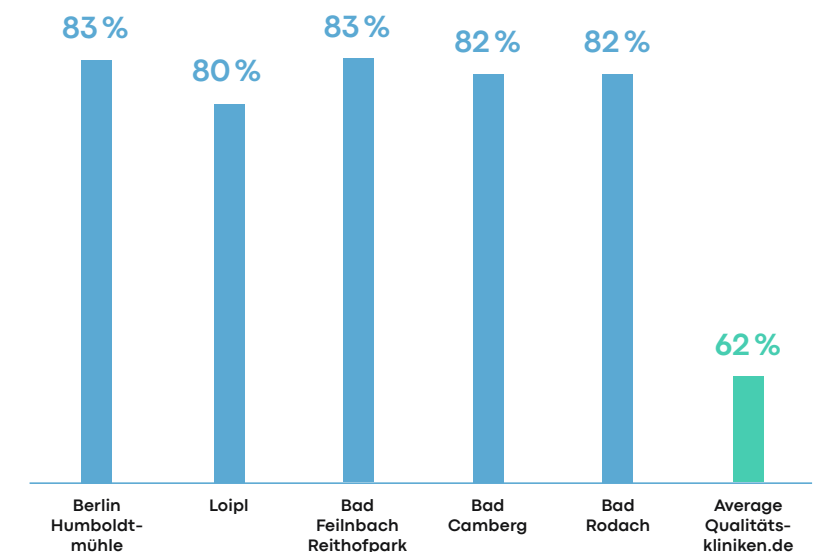
READ MORE ABOUT  
NEUROLOGY AS A SPECIALTY

## PATIENT SATISFACTION

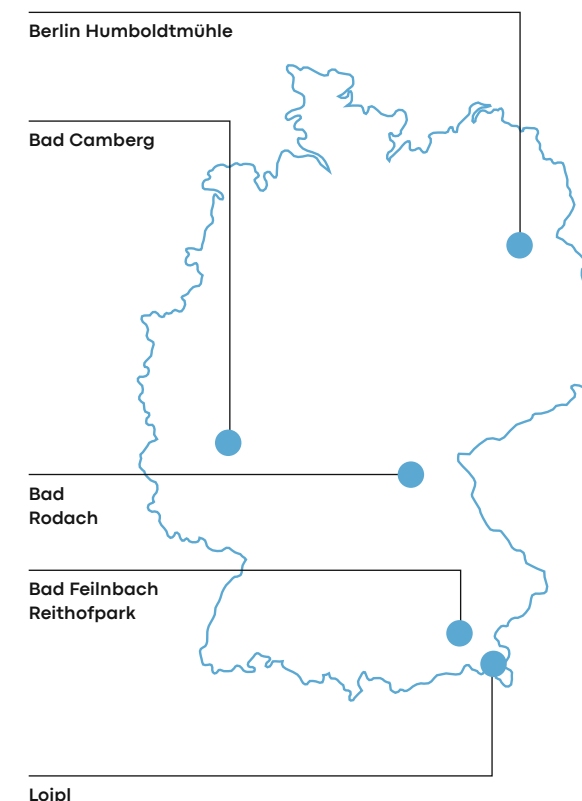
# 82

PERCENT

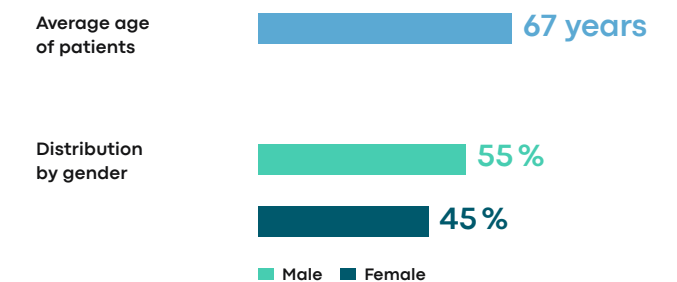
means 20 percentage points more than the average (62 percent) on Qualitätskliniken.de.



## NEUROLOGY SITES



## PATIENT STRUCTURE IN 2021



## OUTSTANDING THERAPY

Overall, 90 percent of our neurology patients are very satisfied with the care received from our therapists.

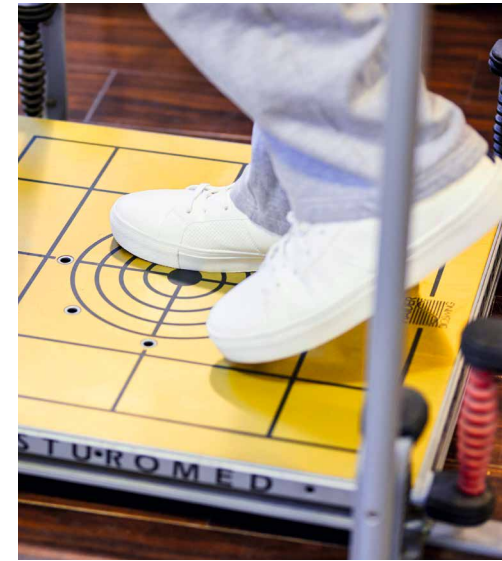
# Mobile emergency assistance

Ingo Pfeiffer received prompt emergency assistance after his stroke from the MSU, a special mobile stroke unit.

In part he also benefits from this during his rehabilitation at Medical Park Berlin Humboldtmühle.

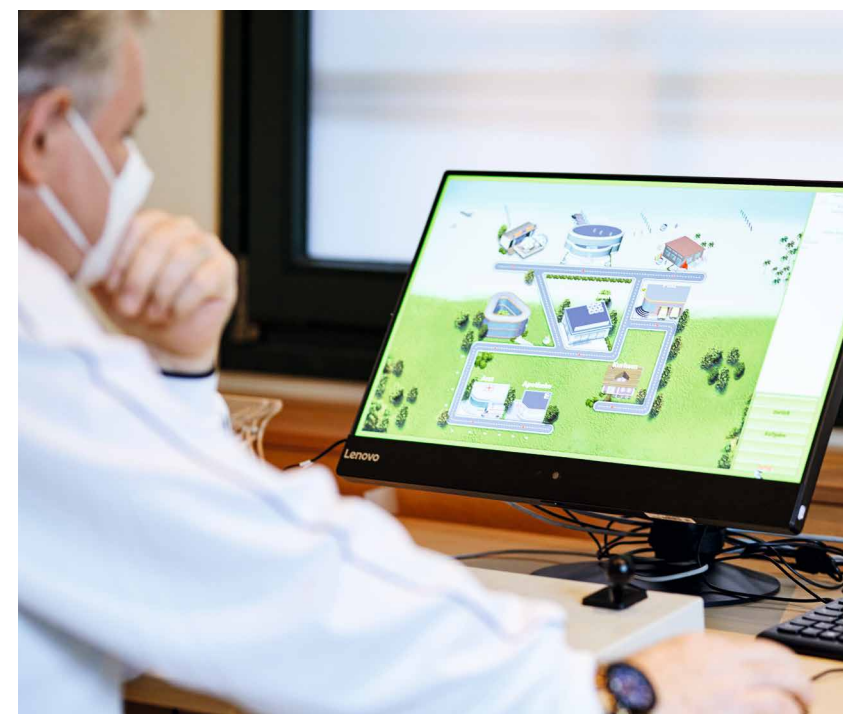
## IN GOOD HANDS

Ingo Pfeiffer is greeted by senior physician Dr Sabine Nunnemann, who visits him in his room to check his progress. To recover from his stroke, he began with rehabilitation at Medical Park Berlin Humboldtmühle two weeks ago. The fine motor skills in his right hand are affected, and initially he also found it very difficult to walk. "Now", says Ingo Pfeiffer, "I am more confident, especially when walking. I am no longer so wary as before. Where I was previously anxious, I am now merely cautious."



## GAINING BALANCE

Ingo Pfeiffer on the Posturomed. The base plate of this therapeutic apparatus is suspended on a swinging mechanism that generates pendulum movements. This stimulates and trains the sense of balance. After two weeks of rehab, Ingo Pfeiffer can already compensate for the vibrations without holding on. "To do this, the upper body must be controlled at the right moment", says sports therapist Markus Koch, "which is harder than it sounds." Markus Koch controls Ingo Pfeiffer's movement patterns and explains his progress to him on the screen.



## MENTAL WORKOUT

PC training is another part of the everyday rehab programme following a stroke. The exercises on the monitor help to train numerous cognitive skills, such as concentration, planning, memory, orientation and imagination. Ingo Pfeiffer has to navigate a virtual city, memorising and prioritising appointments and always finding the best route. "That wasn't difficult", Ingo Pfeiffer laughs. He can now manage every level perfectly.



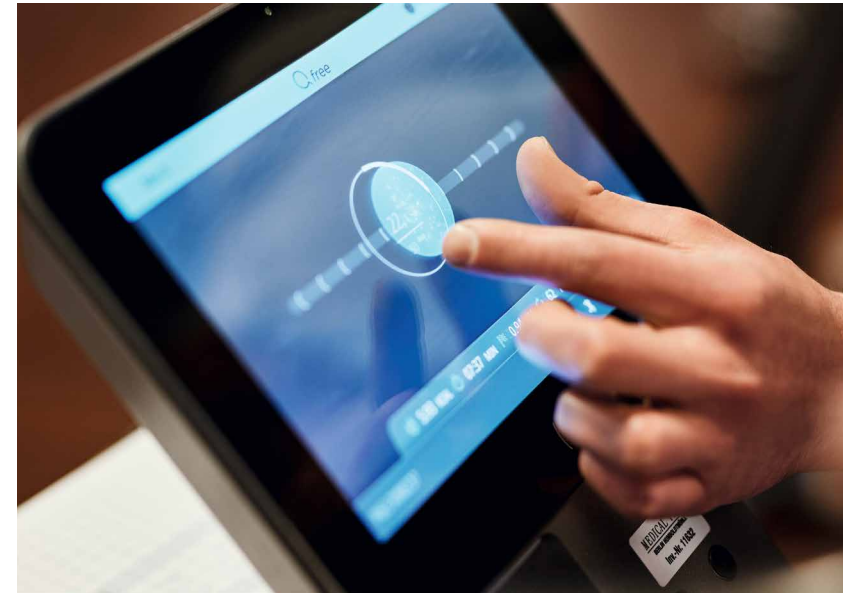


## BLESSING IN DISGUISE

Ingo Pfeiffer's stroke turned his life upside down. Until this sudden attack, the 58-year-old from Berlin was an active caretaker. One winter morning, when it was still dark outside, Ingo Pfeiffer noticed shortly after getting up that something wasn't quite right: "I could see in the bathroom mirror that the left side of my face was sagging, and I could no longer speak. Then I collapsed." Ingo Pfeiffer had suffered an ischaemic stroke. His wife immediately called the emergency services. The MSU team administered treatment immediately, while still in the ambulance. This was a contributory factor in Ingo Pfeiffer's ability to laugh again today.

## MEDICAL VISIT

One-sided paralysis and speech disorders are diagnosed and confirmed at our emergency unit. Ingo Pfeiffer receives further treatments here after undergoing thrombolysis in the MSU – among others, mechanical removal of the blood clot in his head. "They told me that I was really lucky", Ingo Pfeiffer recalls. Today is the start of his third week in rehab. Senior physician Dr Sabine Nunnemann checks his face for sensitivity. And also reviews the progress made with his previously paralysed right arm. Her interim conclusion: "You're progressing well, Mr Pfeiffer".



HUMBOLDTMÜHLE

31

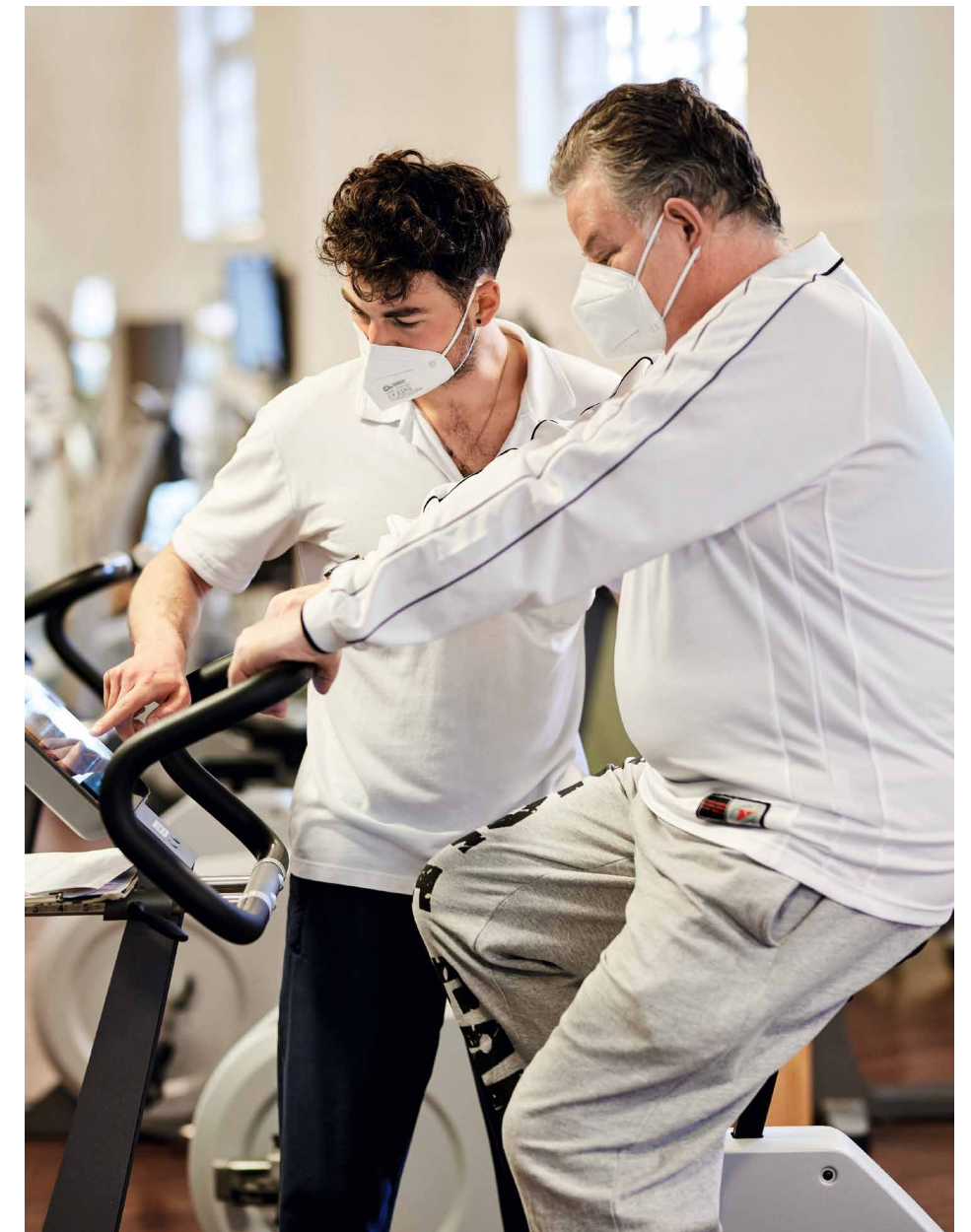
DAYS IS THE AVERAGE  
TREATMENT DURATION PER  
PATIENT

## FULL STEAM AHEAD

Ingo Pfeiffer pedals energetically on the exercise bike. Slowly but steadily, his pulse and wattage increase until the reading ultimately reaches 50. This corresponds to an average speed of 15 km/h. Ingo Pfeiffer is strengthening his cardiovascular system with such training and is slowly getting used to the demands of daily life again. An especially practical aspect is his room key card, on which all his individual settings and values for each piece of apparatus are saved. Just slot the card in and get going!

## TAKING A BREAK HELPS

Customised rehab plans with carefully scheduled breaks are important. Only when resting can new connections be established between the nerve cells and what has been learned.







HUMBOLDTMÜHLE

3,700

NUMBER OF PATIENTS  
IN 2021

## PUMP IT UP

Ingo Pfeiffer pumps iron on the arm press under the guidance of physiotherapist Markus Koch. He soon manages to increase the initial weight of 15 kilograms to 30 kilograms. But he feels he is nowhere near his limit: "My goal is 100 kilos by the time I leave here." The arm press expands the chest, increasing the oxygen supply in the blood and training the fine motor skills in the hands.

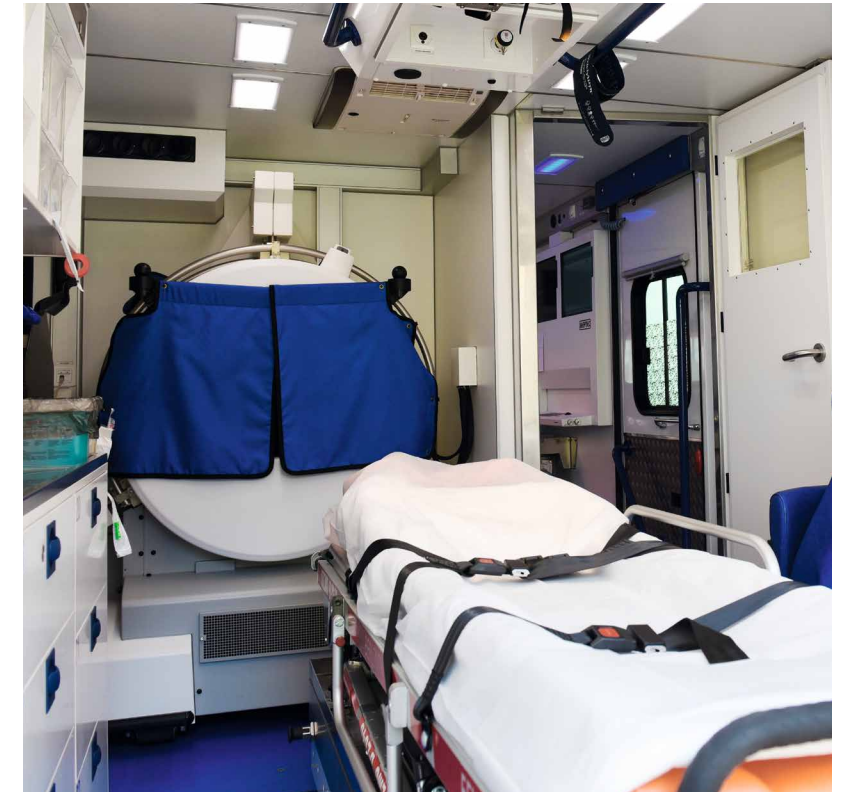
## PURE RELAXATION

Rest and relaxation is the motto on the hydrojet – a type of water bed with adjustable massage jets that activate the muscular trigger points from underneath and can be individually adapted to meet the needs of each patient. Markus Koch has selected a circulating programme with a jet pressure of 60 percent for Ingo Pfeiffer, which he clearly very much enjoys: "The hydrojet is my favourite therapy – it's pure relaxation!"



## MSU

The MSU is a specialist emergency vehicle – a mobile unit equipped with first-class technology in which stroke patients can have a CT scan immediately to rule out bleeding as the cause of the stroke. After ruling out a haemorrhage, thrombolysis can be commenced immediately to thin the blood and help dissolve any clots in the brain. Conventional ambulances do not have CT equipment for initial diagnostic purposes.



## MOBILE SERVICE

Three MSUs are stationed in Berlin, guaranteeing stroke patients the fastest possible assistance.



## WITH EXPERTISE

Supported by his team, Prof. Martin Ebinger has demonstrated that attending to stroke patients with MSUs saves an average of more than 30 minutes. In Ingo Pfeiffer's case, his prompt treatment in this specialist emergency vehicle maximised his chances of survival. "In the event of a moderate to severe stroke, as in Mr Pfeiffer's case, there is normally no guarantee of survival", according to Prof. Ebinger. The fact that the patient is now doing relatively well despite the severity of his stroke is also attributed by Ebinger to the rapid emergency response.





**PROF. DR. MED. DR. PHIL. MARTIN EBINGER**

is one of Europe's most distinguished stroke experts. He has been Senior Neurology Consultant at Medical Park Humboldtmühle since May 2017. Having worked at Royal Melbourne Hospital in Australia and Berlin Charité, among others, Ebinger was instrumental in the development of the MSU and continues with research today into its medical relevance.



**DR. SABINE NUNNEMANN**

has held the role of Senior Neurologist at Medical Park Berlin Humboldtmühle since July 2020. She trained as a specialist at Klinikum rechts der Isar of the Technical University of Munich. She initially worked as a neurologist in independent practice in Berlin, covering a broad clinical spectrum. Working closely with patients is one of the things she enjoys the most – also at Humboldtmühle.

## BECAUSE EVERY MINUTE COUNTS

For more than ten years, Berlin stroke patients have benefited from faster emergency assistance thanks to the MSU (mobile stroke unit). Prof. Martin Ebinger was instrumental in the development of this specialist vehicle and has conducted highly acclaimed studies into its impact. Working with the entire medical and therapeutic team at Medical Park Berlin Humboldtmühle, he now helps people to get back on their feet after suffering a stroke.

**The MSU has now been out on the roads of the German capital for over ten years. Is it a success story?**

**PROF. MARTIN EBINGER** We're very satisfied. Together with a team of experts, we have demonstrated that stroke patients can generally be treated more rapidly. This is also verified by the statistical results of a recent meta-study. The average time saved by the MSU is about half an hour ...

**DR SABINE NUNNEMANN** ... which was also highly advantageous to our patient, Ingo Pfeiffer. His stroke was rated as 22 on the NIH Stroke Scale (NIHSS), meaning his condition was moderate to severe. If Mr Pfeiffer had not received assistance so quickly, lysis may never have been possible. And in the time that would have passed without the MSU, approx. two million brain cells would have died per minute. The reason why Mr Pfeiffer is doing so well today is certainly also due to the rapid emergency assistance he received.

**PROF. EBINGER** Mr Pfeiffer's recovery is also consistent with the results of our latest study in which we specifically examined functional outcomes. We demonstrated that the probability of achieving a better outcome increases by 27 percent with the MSU. In medicine, this is a phenomenal result.

**So stroke patients benefit from the fact that more of them are administered thrombolysis in the MSU?**

**PROF. EBINGER** Precisely. During the study, lysis was performed in 60 percent of patients in the MSU compared to only 48 percent without the MSU.

**DR NUNNEMANN** If lysis is not performed on the scene, valuable time is lost. After four and a half hours, the chances of successfully clearing the blockage in the blood vessel are drastically reduced. Consequently, the time saving offered by the on-site procedure not only influences the quality of the treatment outcome but also whether a specific treatment can even be considered.

**PROF. EBINGER** Another advantage of the MSU is that its three team members constitute a well-coordinated task force with one primary goal: to perform intravenous lysis as quickly as possible. If patients arrive at the hospital via the conventional route, however, the response of the medical team can sometimes be slightly more conservative.

**Dr Wendt, as a neurologist and emergency doctor, you are a regular member of the MSU team and were involved a few weeks ago in attending to Ingo Pfeiffer. How did this particular emergency callout go?**

**DR MATTHIAS WENDT** Mr Pfeiffer's wife called the emergency services at 7:20 AM after the patient started experiencing symptoms at 7:05 AM. We were alerted by the dispatch centre immediately. Our MSU is stationed at the emergency hospital, Unfallkrankenhaus Berlin, about 14 kilometres from the scene of the incident. We arrived at 7:42 AM. It is important to know that an emergency medical vehicle (EMV) is always notified by the dispatch centre in parallel and usually arrives first.

**Was that also the case here?**

**DR WENDT** Yes. Paramedics had already measured Mr Pfeiffer's vital signs and administered initial treatment. Our examination in the MSU then confirmed that it was a stroke. After taking laboratory parameters and a CT scan, we began with lysis at precisely 8:00 AM.

**So from alert to lysis, only 40 minutes had passed.**

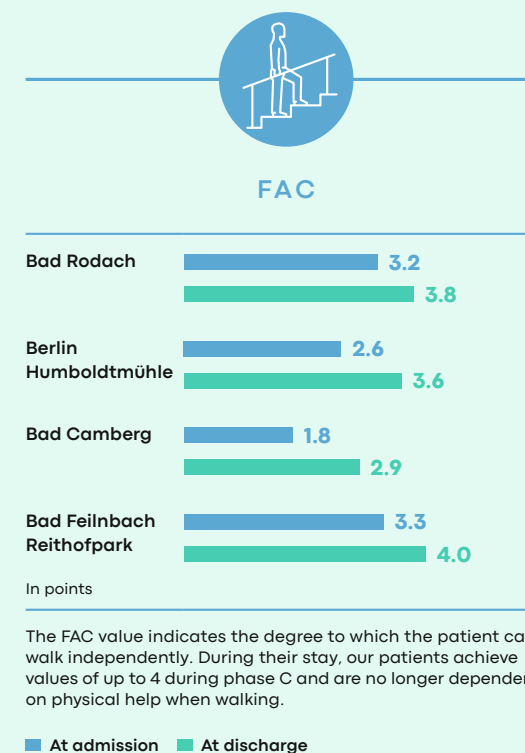
**DR WENDT** That was what we call "golden-hour thrombolysis". This refers to the rare cases in which lysis can be performed within an hour after onset of the symptoms. The MSU has increased the chances of "golden-hour thrombolysis" ten-fold, as demonstrated by Prof. Ebinger and the research team at Charité.

**What happens to patients in whom thrombolysis cannot be performed despite attention from the MSU? Do they still benefit?**

**DR NUNNEMANN** All stroke patients undergo a CT scan on board. Computed tomography is the only means of determining the exact nature of the stroke. Out of 100 strokes, 85 are ischaemic, meaning a blockage in an artery that supplies blood to the brain. On the other hand, 15 percent are haemorrhagic, meaning that the stroke has been caused by a bleed. In the case of haemorrhage, lysis is an absolute contraindication. An antidote is sometimes required to stop the bleeding in these patients. This is always the case if the patient has previously been treated with certain types of blood thinner. Antidotes are always carried on board.

**PROF. EBINGER** Even if the patient has not had a stroke, it's never a bad idea for our experts to see the patient very early on – such as after an epileptic seizure. The MSU was not developed specifically for this purpose, but the accompanying neurologist can already gather evidence on the scene that can prove invaluable to the hospital later.

**DR NUNNEMANN** Examining the medical history is extremely important, especially in neurology. Due to speech disorders, cognitive changes, or perhaps even unconsciousness, patients are frequently unable to communicate as they would like. The



sooner you can obtain valuable information, the better you are placed to make a faster diagnosis and begin with essential therapeutic measures.

**What is the specific procedure for transferring MSU patients to an emergency unit? And under what conditions do rehabilitation measures start at your facility?**

**PROF. EBINGER** The MSU reports to the emergency service, and if the patient is a candidate for thrombectomy, the mechanical removal of a blood clot, ideally they will be transferred directly to the catheterisation lab to immediately continue with treatment.

**DR WENDT** This is another advantage of the MSU: Based on the results from our on-board CT scan, patients can be triaged better and always brought to the nearest, most appropriate hospital. Because not every facility can perform thrombectomy, not every facility has a neurosurgery department – which is important in the event of bleeding. Furthermore, we save the CT images on a CD and write a doctor's letter for the hospital during the journey.

**DR NUNNEMANN** Mr Pfeiffer also had a thrombectomy to remove the blood clot. As a rule, the patients receive treatment in the emergency unit for three to five days before being transferred for follow-up treatment, namely rehabilitation. Mr Pfeiffer was doing so well after his hospital stay that he could spend a while at home before we needed to see him.

**And then you came into play as a therapist, Mr Koch, right?**

**MARKUS KOCH** Indeed. If, like Mr Pfeiffer, the patients are less compromised, a higher training level can be set as a target and progress achieved very rapidly.

**DR NUNNEMANN** How did he get on in training today?

**KOCH** Remarkably well! Firstly, his strength has improved considerably on the arm press. He started at 15 kilograms and is now – nine sessions later – managing 30 kilograms. His performance on the exercise bike is also impressive. Lastly, I put him through a very tricky balancing exercise on the Posturomed. Standing on the wobbly base, he had to throw a ball against the wall and catch it again – which worked a treat.



Mobile stroke units play an important role in the initial treatment of stroke patients. Thrombolysis can be started before the patient is transported to the emergency department. A study published in JAMA by, among others, Prof. Ebinger, demonstrates that stroke patients are confronted with severe impairments or disabilities less frequently if they have been treated on board an MSU.

Study: corporate.medicalpark.de/qualitaetsbericht/neurologie/studie-stemo



**DR. MATTHIAS WENDT**

was involved in setting up the MSU project at the department of neurology with stroke unit and early rehabilitation of the emergency hospital, Unfallkrankenhaus Berlin, in 2016. He has worked at the clinic since 2014, starting as a junior doctor and later becoming a specialist. Since November 2017, he has held the position of senior physician. Since April 2017, Dr Wendt has been the medical support manager for the STEMO 6100 mobile stroke unit.



**MARKUS KOCH**

is a therapist at Medical Park Berlin Humboldtmühle, caring for neurology and orthopaedic patients since 2018. He previously studied preventive and rehabilitation sport at the Chemnitz University of Technology, gaining a wide range of qualifications in the fields of orthopaedics, internal medicine, performance diagnostics, and neurology and neurophysiology.



**JOSEPHIN GERSTMANN**

has been on the management team of Medical Park Berlin Humboldtmühle since she graduated with a Bachelor of Arts in Economics and Management at the beginning of 2018. As therapy director, she is responsible for the strategic orientation of the entire therapeutic programme. She has worked at the site since 2011 – initially as a physiotherapist, later as department director and key account manager.

**DR NUNNEMANN** Great, that's what I love to hear!

**And a general question: What distinguishes therapy at Medical Park Humboldtmühle?**

**JOSEPHIN GERSTMANN** We changed the admission process in the neurology department three years ago. Since then, patients have always been received by both a doctor and a therapist. For the patient, the experience is therefore more personal and reassuring. For our part, this additional combined approach means we can offer them even better care. To attend to patients on a more individual basis, we have generally reduced the numbers in our group-therapy sessions.

**PROF. EBINGER** Though group therapy is sometimes still ridiculed or considered a cost-saving exercise, its importance is immense: To see that you are not the only one whose hand shakes at certain movements can bring a great sense of relief. The feeling of togetherness can also be uplifting and motivational.

**What is planned for therapy in the future?**

**GERSTMANN** Equipment-based therapy is becoming increasingly digital. We will soon start using virtual-reality headsets, which patients can use to practise everyday tasks such as chopping vegetables and boiling water. In the summer of 2022, we also began using paddle boards for therapeutic purposes – on the Havel river right outside our door.

**DR NUNNEMANN** And it is still important, of course, to offer our patients customised rehabilitation plans – including carefully scheduled breaks: During rest phases in particular, the nerve cells develop new connections which are so desperately needed. In all, delivering quality is and remains our primary principle. But of course we would be delighted if we can further expand our range of therapies in the process.

**PROF. EBINGER** For me, the people who work here make up the unique selling point of this clinic: consummate professionals who are caring and sincere. Such praise may sound rather trite, but it's the truth.

**To return once more to the subject of the MSU: How many calls are handled each day in Berlin?**

**DR WENDT** At least one stroke occurs per hour in Berlin. Three vehicles are therefore in use, covering the entire city. If the dispatch centre concludes from an emergency call that a stroke has occurred, this starts a chain reaction that dispatches both the MSU and an EMV. At Unfallkrankenhaus Berlin emergency hospital alone, we handle more than 2,000 such incidents a year.

**The technologically sophisticated MSU with mobile lab and X-ray capability was developed in Germany ...**

**PROF. EBINGER** In this respect, might I just add that our colleague, Panagiotis Kostopoulos, was the first doctor on board such a special vehicle in Homburg, Saarland, where an MSU is still on the road today. He was pivotal in driving the development of the MSU together with colleagues in Saarland and is now Senior Neurology Consultant at Medical Park Bad Camberg. In the meantime, MSUs are available in almost 30 locations worldwide.

**...improving emergency care for patients there too?**

**PROF. EBINGER** This has always been our vision. After all, with a stroke, every minute counts. We neurologists have a saying: "Save a minute, save a day". If you can save one minute, you can salvage one day of healthy living. That's something worth fighting for.

# NEUROLOGY INDICATORS



## EARLY REHABILITATION BARTHEL INDEX

The Barthel Index is expanded here to include parameters that are used during the early rehabilitation phase for evaluation purposes. Indicators are severe, sometimes life-threatening features such as mandatory monitoring, dependency on ventilation, or loss of speech.



## COMMUNITY OF AMBULATORY INDEX (CAI) 10-METRE WALK TEST

By measuring walking speed, conclusions can be drawn concerning the patient's ability to cope with activities of daily living. Patients are assigned to groups that offer practical ratings on the radius of the patient's life.



## BARTHEL INDEX

The Barthel Index uses a scoring system to assess a patient's independence in activities of daily living (independence with eating, washing, continence etc.). The need for everyday care can thus be determined.



## PRESSURE ULCERS

Pressure ulcers are diagnosed using an international classification system comprising four categories. Their severity ranges from reddened yet intact skin to weeping wounds and completely destroyed tissue with exposed bones, tendons and muscles.



## FUNCTIONAL AMBULATION CATEGORIES (FAC)

These categories are used to measure and standardise the ability of the patient to walk and the level of assistance they need in doing so. The scores range from 0 (unable to walk) to 5 (patient can walk without restriction), with gradations in between, accordingly.



## PATIENT-REPORTED OUTCOMES MEASUREMENT INFORMATION SYSTEM (PROMIS)

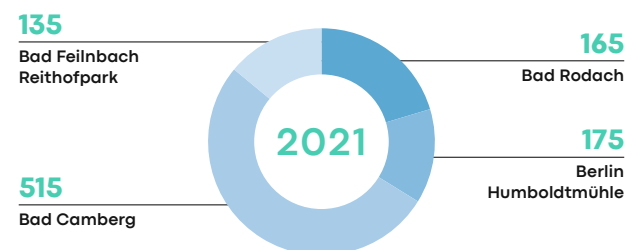
This system is used to document the change in subjective well-being. The items can be freely selected and adapted with great flexibility to the needs of the patient. This standardised system of measurement enables an interpersonal and intrapersonal comparison, also across disease groups.



## PHASE B: ENROLMENT IN PHASE B, DISCHARGE FROM PHASE C/D



### PATIENTS BY CLINIC



**45**  
PERCENT

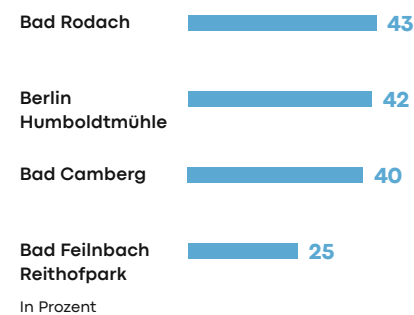
of our patients from  
phase B can be cared for over  
several phases.

### INCREASED MOBILITY AFTER TWO PHASES

Patients enrolled in phase B  
and discharged from phase C have  
30 percent greater mobility.



### PRESSURE ULCER CURED WITH TREATMENT

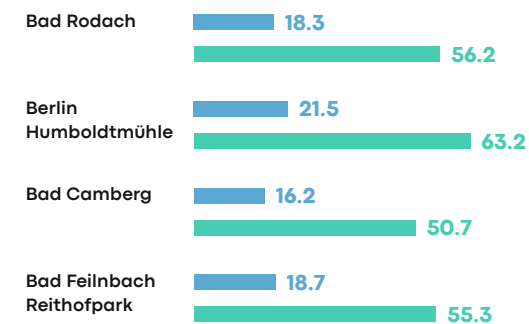


A pressure ulcer can develop very quickly, but treatment can sometimes be lengthy. Hence, it is all the more satisfactory that almost 40 percent of our patients recover completely.

■ Cured with treatment



### BARTHEL INDEX



In points

The Barthel Index measures activities of daily living (ADL). A pleasing development is that, with an average of about 56 points, patients have achieved more than half of the possible 100 points on the Barthel Index after completing phase C or D. This means that the patients have already regained independence in some activities.

■ At admission ■ At discharge

**80**  
PERCENT

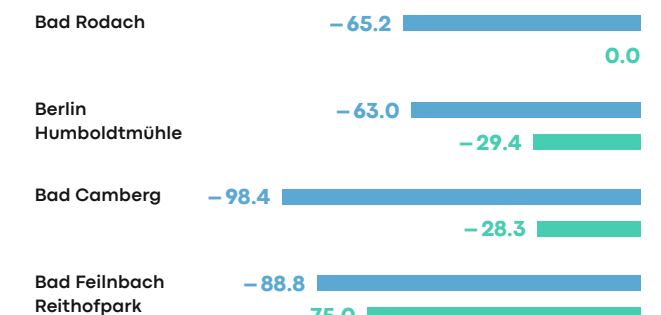
of our phase B patients  
can already feed themselves  
again after rehab.

### INCREASE IN MOBILITY AFTER THREE PHASES

Our patients who have  
completed three rehab phases have  
60 percent more mobility.



### EARLY REHABILITATION BARTHEL INDEX



In points

At the time of enrolment in phase B, the baseline values are in the high negative range. The therapeutic objectives in phase C and D are to achieve independence in the patients' daily lives and restore their capabilities. These objectives are met.

■ At admission ■ At discharge

## PHASE C

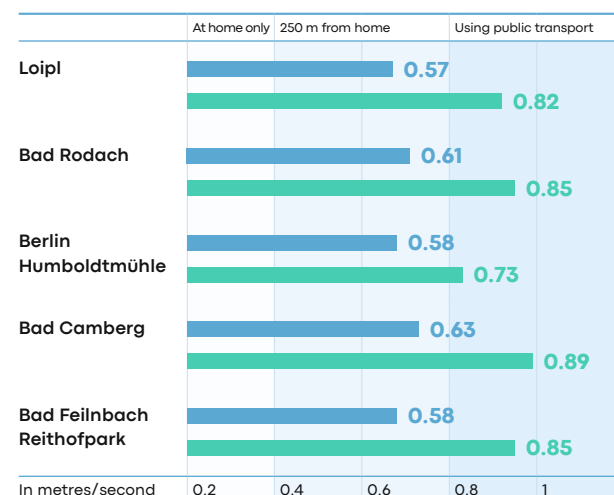
# 59

## PERCENT

of patients achieve an improvement in their physical health during their stay.



## 10-METRE WALK TEST

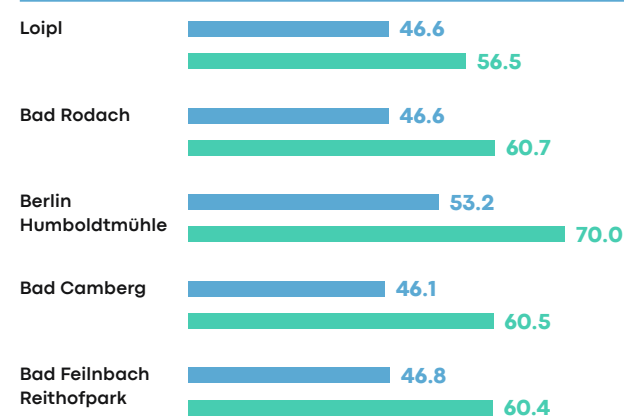


Walking speed is defined by the CAI: The patient is mobile only at home, in a radius of 250 metres from home, or can travel by bus or train. By discharge, all patients increase their radius significantly, achieving 0.83 m/s on average and thus regaining their independence.

■ At admission ■ At discharge



## BARTHEL INDEX



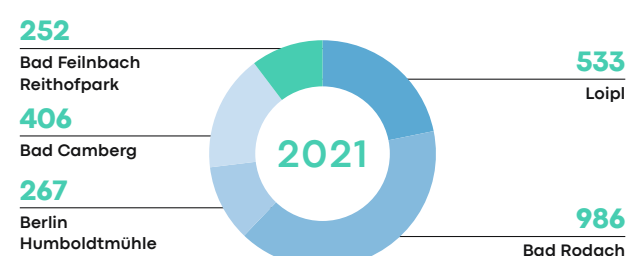
In points

The Barthel Index measures activities of daily living (ADL). A pleasing development is that, with an average of about 62 points, patients have achieved two thirds of the possible 100 points on the Barthel Index by the end of phase C. We are delighted if patients can already manage some of the activities themselves.

■ At admission ■ At discharge



## PATIENTS BY CLINIC



## PHASE D

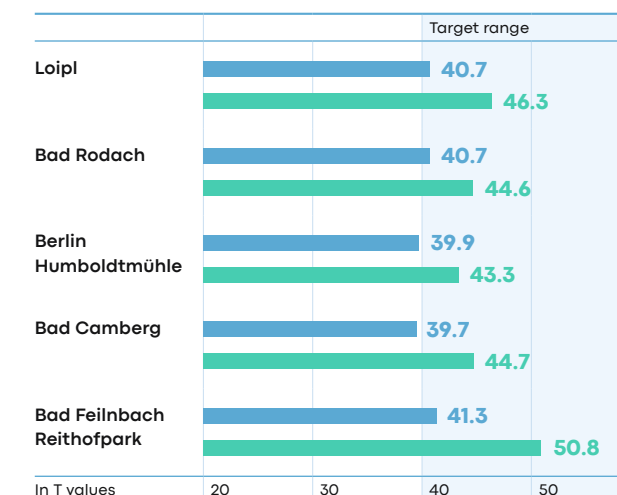
# 58

## PERCENT

of patients experience an improvement in their mental health during their stay.



## PROMIS PHYSICAL

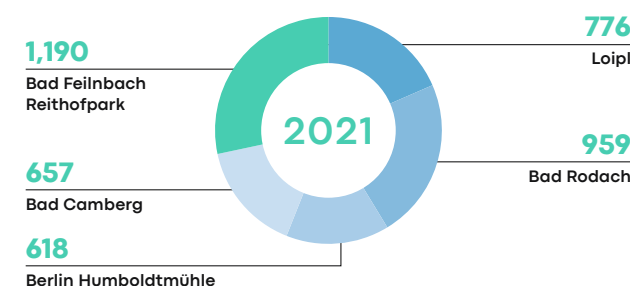


Given their physical situation, our patients are around the target range in their self-assessments when admitted. By discharge, they have improved significantly and are much more mobile when they leave us.

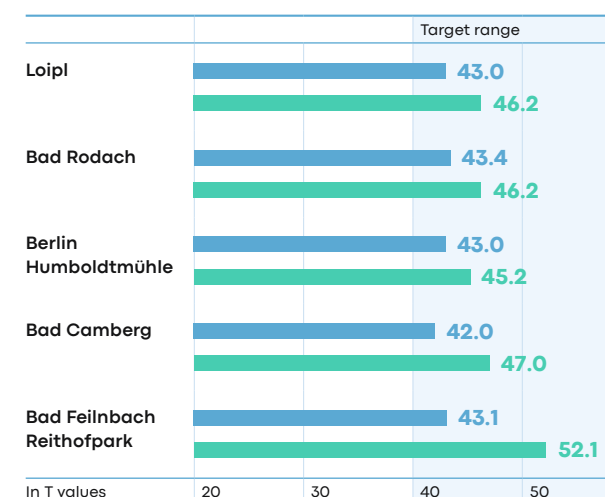
■ At admission ■ At discharge



## PATIENTS BY CLINIC



## PROMIS MENTAL



PROMIS is used to measure the change in subjective well-being. In terms of their mental health, all our patients are already within the target range when admitted. By discharge, their scores have improved significantly and they return home happier.

■ At admission ■ At discharge



# MENTAL HEALTH: REDISCOVERING JOY

At Medical Park Chiemseeblick, our specialist mental health clinic, we focus on a holistic approach to health and sickness. We treat our patients in line with an integrative therapeutic concept – an approach that combines depth psychology and behavioural therapy with methods that promote movement and creativity. Since the spring of 2020, the clinic has also been offering therapeutic sailing as part of a pilot project accompanied by scientific research. Our initial findings are described on the following pages.



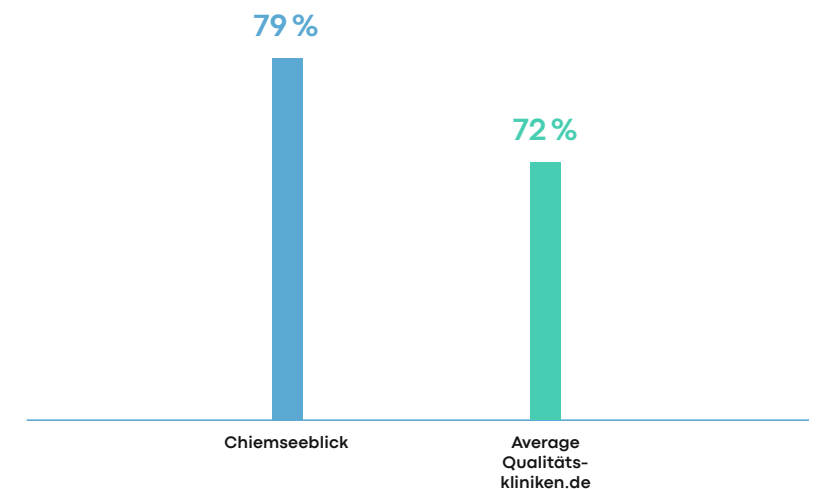
READ MORE ABOUT  
MENTAL HEALTH AS A SPECIALTY

## PATIENT SATISFACTION

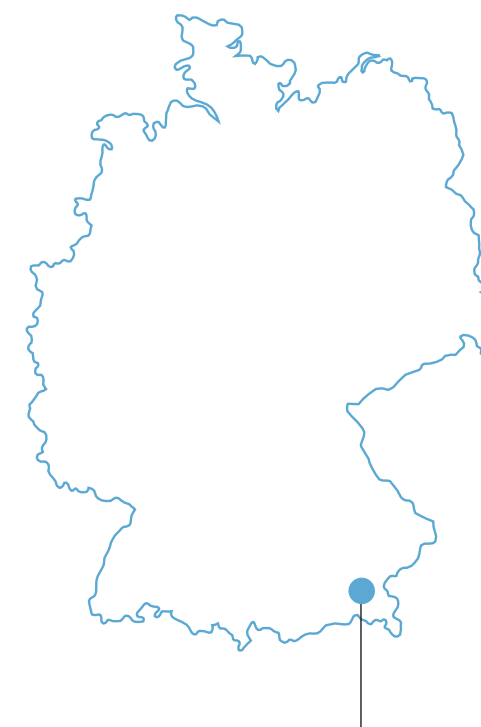
79

PERCENT

means 7 percentage points more than the average (72 percent) on Qualitätskliniken.de.

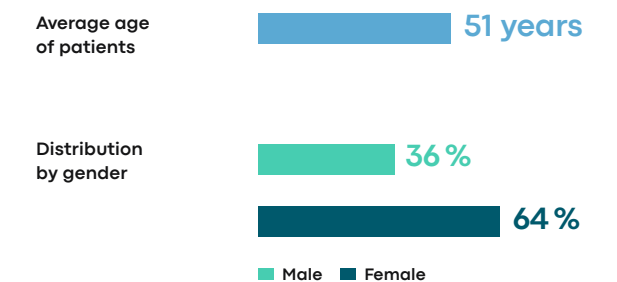


## MENTAL HEALTH SITES



Chiemseeblick

## PATIENT STRUCTURE IN 2021



## OUTSTANDING THERAPY

Overall, 85 percent of our mental health patients are very satisfied with the care received from our therapists.

# Feeling good in the here and now

For Christian Buchbinder, who suffers from depression, sailing therapy was one of the most formative experiences of his stay at Medical Park Chiemseeblick.

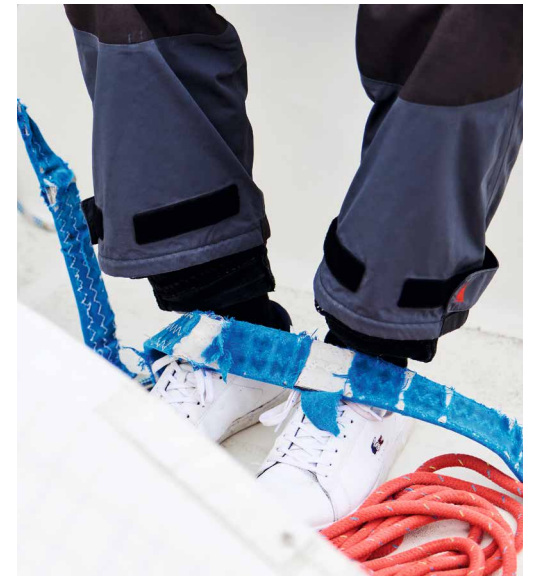


## THE JOURNEY AS A GOAL

Christian Buchbinder (right) is 43 years old and a management consultant. He loves his job. Nevertheless, he could no longer cope with his daily life and his expectations of himself. The diagnosis: depression and social phobia. He wasn't sure at first what sailing therapy could offer him. However, he embarked on a group sailing trip with therapeutic support – a decision he has never regretted.

## SAFE ON BOARD

The therapy vessel is a keel boat that can't capsize. Especially when patients dare to venture into a new experience, it is important that they feel safe. This is conveyed by the sailing instructor, who thoroughly explains the basics of the sport beforehand. As psychotherapeutic groundwork, everyone should set their own personal goals for the trip. Christian resolved to trust in the other group members and relinquish responsibility.



CHIMSEEBLICK

41

DAYS IS THE AVERAGE  
TREATMENT DURATION PER  
PATIENT

## IN FULL SAIL

Christian Buchbinder is an athlete and likes a challenge. On board, he also wanted to lean back over the side. "It was pretty exhausting", he says. Though at the same time it was a great feeling, once he had overcome his fears.





## LIFE LESSONS

Sailing is a team effort. Everyone has their position and with it a job to do – whether setting the sails, at the sheets, or at the helm. “It’s a situation you can also apply very well to your own life”, Christian says. He was particularly fascinated by the fact that positions sometimes changed en route. That shifts both the perspective and the social dynamics within the small group. By then Christian had realised that sailing is not only a sport but can also be a philosophy for life.

## HEAD CLEAR

Sailing exposes patients to the unpredictable forces of nature. It demands full concentration in the here and now. For many patients, it is the first time in ages that their minds stop spinning.



## TREMENDOUS FEELING

Christian admits that he has difficulty showing his emotions: “I’m often wrapped up in my own head.” For others, however, being exposed on deck may well give rise to unexpected emotions. One patient ended up in tears on this trip too. For Christian, his fellow patient’s emotions were not at all unpleasant – on the contrary, they were a sign of appreciation. He thanked her for sharing it.

## INNER IMAGES

Reflection is the first step toward changing ingrained behaviours and attitudes. “I had actually wanted to hand over responsibility, but in the end I was indeed back at the helm,” says Christian Buchbinder. But this time the motivation was different: He didn’t feel – as he usually would – that it wouldn’t work without him. He found the right inner image for his situation in the telltales at the leading edge of the mainsail. They show that the boat is moving, even though there seems to be no progress.



## NEW IMPULSES

Once the boat has docked again, the therapeutic intervention is not yet over. Discussion in the group and with the consultant is a central component of the therapeutic concept. Christian Buchbinder found this discussion extremely intensive. In retrospect, he is amazed at how greatly he was inspired to continue with his therapy: “I would never have thought that so much could change in those two hours under sail.”



CHIEMSEEBLICK

2,060

NUMBER OF PATIENTS  
IN 2021





**PROF. DR. MED. ANDREAS MENKE**

has been Medical Director of the specialist mental health clinic at Medical Park Chiemseeblick since 2020. After almost ten years at the Max Planck Institute of Psychiatry in Munich, he joined the University Psychiatric Hospital of Würzburg as senior physician executive. He is an internationally recognised expert in the treatment of depressive disorders, bipolar disorder, and stress-induced mental illnesses.



**KAROLIN BAUER**

studied psychology, gaining a Master of Science. She has now been working at the specialist mental health clinic for more than a year. She is one of the ten therapists who join the sailing therapy groups. Alongside her job, she is currently training to become a psycho-therapist.

## SETTING NEW SAILS

Therapeutic sailing has been offered by the specialist mental health clinic of Medical Park Chiemseeblick since the spring of 2022. It is a pilot project that forms part of the psychotherapeutic programme. Since its introduction, this unique complementary activity is monitored from a scientific perspective and evaluated on an interdisciplinary level by the clinic. The results are still pending, but so far the feedback from patients has been resoundingly positive.

Traditionally, sailing is classed as a sport. What therapeutic effects can sailing have?

**PROF. ANDREAS MENKE** We have designed the therapeutic sailing as a combination of exercise and nature-based therapy. The primary objective is exposure – exposing the patients to the forces of nature and to their own fears and inhibitions. Often, our patients with mental health issues are fearful of losing control or concerned about relinquishing or assuming responsibility. The sailboat offers a space where patients can face these fears and get a sense of self. Self-efficacy is the key word here. Mentally ill patients, in particular, need to feel that they have things under control.

**KAROLIN BAUER** This is especially the case with depression, where low self-esteem is frequently one of the symptoms. The feeling of managing something, either alone or with support, is extremely rewarding. This activating approach is one of the mainstays of our therapeutic concept here at the clinic.

**CHRISTOPHER KÄSSBERGER** With sailing, you learn to deal with the situation around you: If the wind isn't blowing, you have to be patient. It doesn't always go to plan. This is also an important experience that can be gained from sailing.

How did the partnership between the clinic and the sailing school come about?

**PROF. MENKE** As our clinic is close to both the water and the sailing school, it seemed obvious that the Chiemsee lake should be actively used for the purposes of therapy. Stress-related illnesses

and depression are also my scientific focus. I was therefore especially interested in sailing as a new form of therapy for the patients concerned. From experience, I know that such complementary activities are important to the overall success of therapy. So I developed a therapeutic concept after consulting closely with everyone involved.

What exactly does the concept for this new therapy look like?

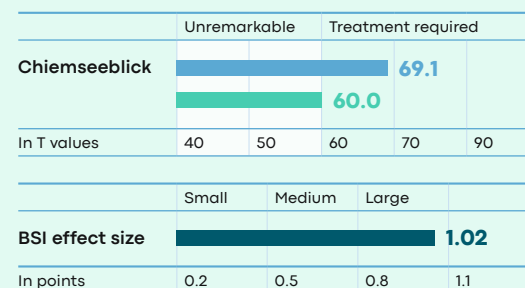
**PROF. MENKE** We usually select patients with depression or anxiety disorders and create groups for sailing therapy. In a preliminary meeting, the patients each describe the fears they wish to be exposed to and formulate personal goals for the sailing trip. The boat takes four patients and one therapist at a time – and is accompanied by a motor boat in case of an emergency.

**KÄSSBERGER** I explain the safety precautions and general sailing theory to everyone before they board the boat. The patients must feel safe during the two-hour trip.

**BAUER** The therapy takes its course not only while on deck but also, mainly, during the in-depth follow-up discussion, when we can reflect on emotional reactions and social interactions on board. We also examine whether and to what extent the participants have come closer to their own goals. It is important to conclude the process as a group.



### CHANGE IN MENTAL AND PHYSICAL IMPAIRMENTS (BSI)



According to the effect size, the treatment of depression is highly effective.

■ At admission ■ At discharge

Were you able to draw on scientific data when developing the concept of therapeutic sailing?

**PROF. MENKE** Only a few studies so far have demonstrated that sailing interventions have positive effects on patients not only with depression, bipolar disorder, or anxiety disorders, but also schizophrenia and substance dependence. Given the paucity of data, we are monitoring the activity scientifically. The patients complete self-assessment questionnaires beforehand and afterwards, which we analyse. But it will be at least two years before valid data is available. An evidence-based approach is very important to us here at the clinic.

**BAUER** One aspect that many studies have scientifically confirmed is the calming effect – also of nature's hues: the blue of the lake and the green of the surrounding forests.

**PROF. MENKE** These blue-health and green-space interventions, as they are called, can help reduce chronic toxic stress. As a member of our new Chiemsee Alliance against Depression, I am also in contact with experts who are conducting research in this regard.

How do patients react to the concept?

**PROF. MENKE** Many are enthusiastic, some more reserved – ultimately, however, most of them do want to take part. So far, the immediate feedback has revealed that the sailing was initially beneficial to all patients.

**BAUER** Often, the patients' initial refusals are not related to what has been offered, but are born of habit. They say no to everything because they feel overwhelmed. Many of my patients also reflect on this afterwards. And they realise that by agreeing to go sailing they have broken through this obstructionism. This also gives a sense of achievement.

Therapeutic work also takes place during the sailing trip. How does it play out?

**BAUER** There are groups that need guidance, and groups that manage well on their own. With the latter, I take a step back and watch what goes on. I can learn a lot about my patients in this way. But I still have the patients' goals at the back of my mind, of course. If a patient avoids taking the helm, for instance, I remind them of the goal they have set for themselves. Now and then, we try to incorporate mindfulness exercises as well. It is a pleasant, constantly developing process.

**KÄSSBERGER** The following rule applies on board: Everyone can join in, but it's not a must. However, naturally we are keen for everyone to be actively involved. One is at the helm, one operates the mainsail and two are at the bow, while one takes a break. So each position is occupied. It all depends on the team, on social interaction. This gives the patients the sense, therefore, that they are needed.

How does sailing influence the course of therapy in general?

**BAUER** As a rule, it is the interplay of the various therapies we offer that brings about their effect. Nevertheless, I've seen how this new experience on the sailboat also has an immediate effect. In addition to feeling good about achieving something, many patients create images for themselves during their sailing trip that can be transferred to their lives. These metaphors can be used very well for the purposes of therapy.

**KÄSSBERGER** Taking the helm, determining the course and being active even if there appears to be a lull are all factors that play a significant role in the lives of people with these conditions.

Few patients will have the opportunity to sail again after therapy ends. To what extent is a one-off intervention effective?

**PROF. MENKE** The one-off intervention is important to our psychotherapeutic journey, because we can set important processes in motion. Of course it is not enough to bring about remission in a patient. There have also been studies in this regard, showing that the effects of such measures wear off after a certain length of time.

**BAUER** But the experience on deck is transferable. For many, the sailing adventure is an opportunity to find something that perhaps had a similar effect in the past. In that sense, sailing can be a wake-up call to finally do something for yourself and again find an activity that has a lasting positive effect on your own mental state.



Therapeutic sailing is a combination of sports and nature-based therapy. Its primary mechanism of effect, however, is psychotherapeutic exposure. This means that the patients face their fears – such as the fear of losing or relinquishing control. This is done with the aim of initiating therapeutic processes and self-reflection.



**CHRISTOPHER KÄSSBERGER**

is a sailing instructor and owner of a sailing school in Breitbrunn am Chiemsee which he founded in 2012. He is a qualified mechanical engineer but has sailed his entire life – and is always present on board to supervise the therapeutic sailing trips.



# MENTAL HEALTH INDICATORS



## BRIEF SYMPTOM INVENTORY (BSI)

This method is used to measure the patient's perceived impairment from physical and psychological symptoms over a period of seven days. Sum scores below 40 indicate that the symptoms are of a pathological nature. Scores between 40 and a maximum of 60 are considered normal. Patients therefore see for themselves how their condition has improved.



## SHORT FORM HEALTH QUESTIONNAIRE (SF-36)

The SF-36 is used to document the health-related quality of life of patients. It comprises 36 items, such as mental well-being, general physical constitution, and social contacts. The individual results are compared against reference values. The questionnaire takes ten minutes to complete.



## BECK DEPRESSION INVENTORY II (BDI)

The Beck Depression Inventory II is a psychological test method for documenting the severity of depression. It entails a 21-item self-assessment questionnaire aimed, for example, at social withdrawal and fatigue. The patient must indicate which out of a choice of four possible answers is the most applicable in each case. The sum of the answers provides an insight into the severity of the depression. The effect size compares the patient's condition at the time of admission and discharge. The bigger the difference between the two values, the greater the effect of therapy. With scores between 0.2 and 0.5 the effects are deemed small, between 0.5 and 0.8 moderate, and above 0.8 large.

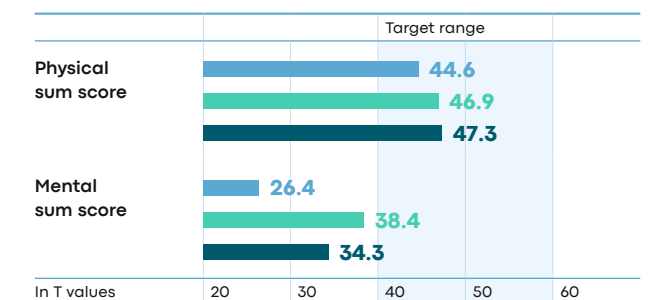
# DEPRESSION

**90**  
PERCENT

of our patients who previously had depression are enjoying life more by the time they are discharged.



## HEALTH-RELATED QUALITY OF LIFE SF-36

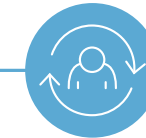


The SF-36 measures quality of life in relation to physical and mental well-being. The graph shows not only a marked improvement over the course of therapy, but also a positive development six months after discharge compared to baseline (admission).

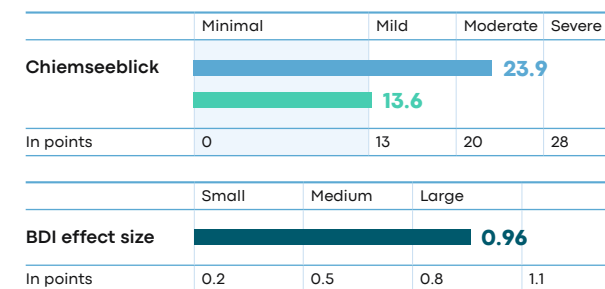
■ At admission ■ At discharge ■ After six months

## STRONG EFFECT

The BSI effect size reaches a score of 1.02 – evidence of the efficacy of therapy.



## DEVELOPMENT ACCORDING TO BDI AND BDI EFFECT SIZE



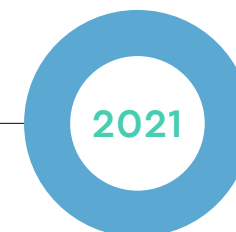
Scores of over 20 points in the BDI system indicate moderate depression. After inpatient therapy at our clinic, the average score drops to 13.6 – a marked improvement. The BDI effect size corresponds to the effectiveness of therapy, whereby a score of 0.8 or more can be considered very good.

■ At admission ■ At discharge



## PATIENTS BY CLINIC

1,565  
Chiemseeblick



# ANXIETY DISORDERS



## PATIENTS BY CLINIC

112  
Chiemseeblick

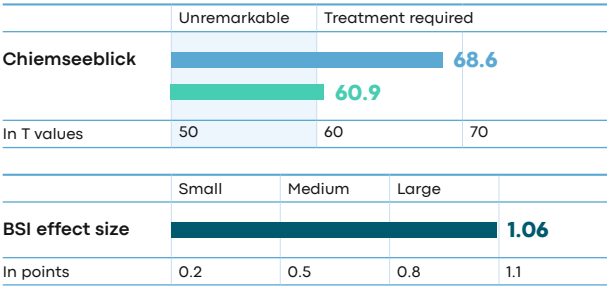


## SOCIALLY MORE ACTIVE

On average, the social skills of our patients are within the target range.



## CHANGE IN MENTAL AND PHYSICAL IMPAIRMENT (BSI)

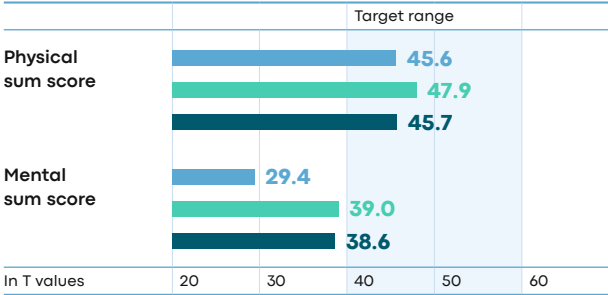


The scores demonstrate that, after staying with us, the patients' psychological and physical symptoms improve. The effect size of 1.06 shows that the therapy offers a measurably good effect.

■ At admission ■ At discharge



## HEALTH-RELATED QUALITY OF LIFE SF-36



The SF-36 measures quality of life in relation to physical and mental well-being. During therapy, we can set our patients on such a good path that, when surveyed six months after discharge, they come well within the target range.

■ At admission ■ At discharge ■ After six months

89  
PERCENT

of our patients with anxiety disorders assess their mental well-being as better both after their stay and six months later.

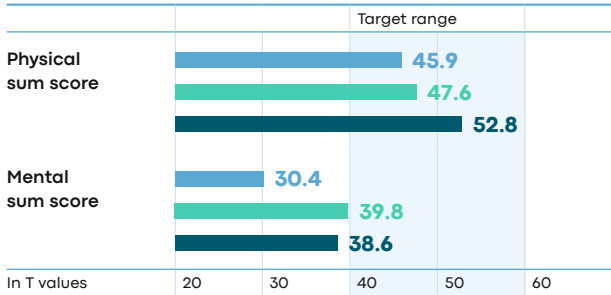
# ADAPTATION DISORDERS

86  
PERCENT

of our patients judge their vitality to be better both after their stay and six months later.



## HEALTH-RELATED QUALITY OF LIFE SF-36



The SF-36 measures quality of life in relation to physical and mental well-being. The physical symptoms improve over the course of therapy and are also well within the target range six months after discharge. A good level of mental stability is achieved and maintained.

■ At admission ■ At discharge ■ After six months

## MAJOR EFFECTS

on mental well-being are experienced by our patients with adaptation disorders.

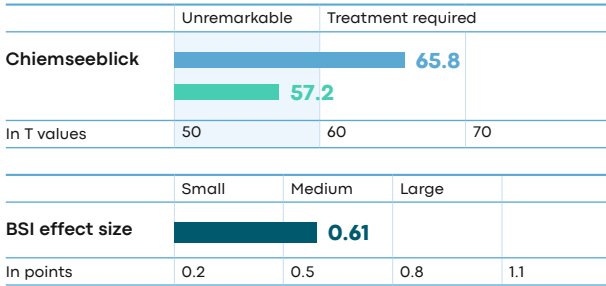


## PATIENTS BY CLINIC

191  
Chiemseeblick



## CHANGE IN MENTAL AND PHYSICAL IMPAIRMENT (BSI)



The therapy has an immediate, positive effect on mental and physical well-being. The respective score drops to 57.2 at our clinic. Our patients are left with only minor residual symptoms after their therapy. This is also confirmed by the effect size.

■ At admission ■ At discharge



# CARDIOLOGY: ENJOYING LIFE ANEW

At Medical Park St. Hubertus in Bad Wiessee, we offer patients rehabilitation after a stroke or heart surgery based on state-of-the-art treatments and therapies. Furthermore, the clinic's interdisciplinary team of specialists can diagnose and treat chronic heart conditions. On the following pages, we describe how a rehab stay helped a patient gain new confidence in his pacemaker.



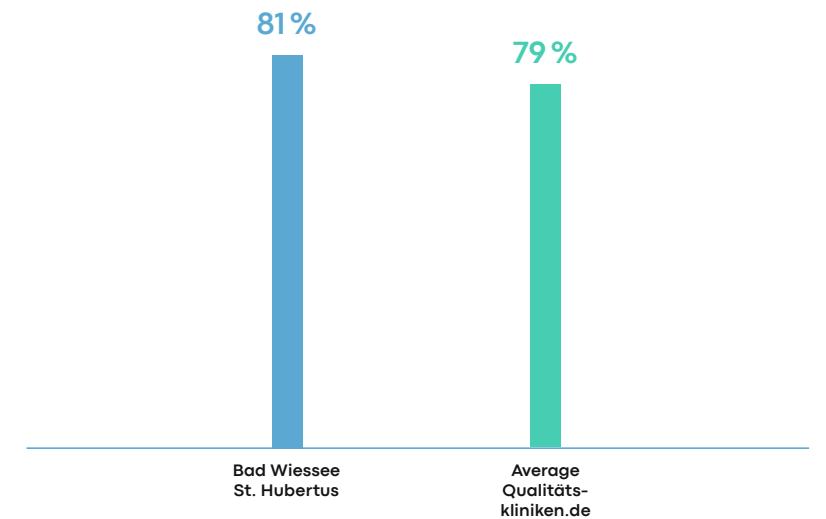
READ MORE ABOUT  
CARDIOLOGY AS A SPECIALTY

## PATIENT SATISFACTION

# 81

PERCENT

means 2 percentage points more than the average (79 percent) on Qualitätskliniken.de.

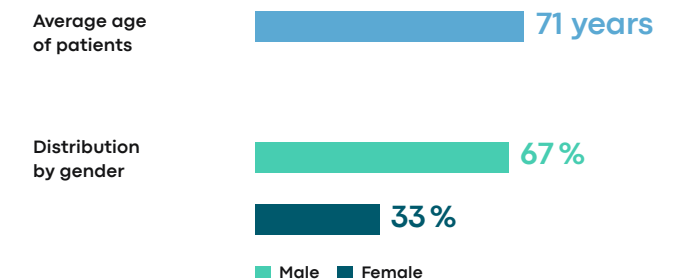


## CARDIOLOGY SITES



Bad Wiessee  
St. Hubertus

## PATIENT STRUCTURE IN 2021



## OUTSTANDING THERAPY

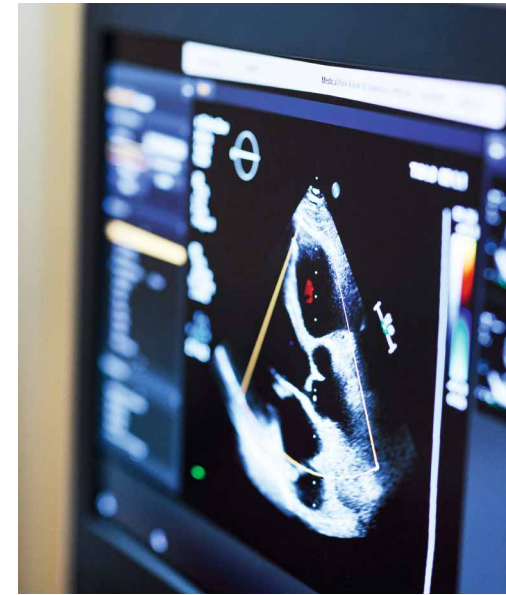
Overall, 90 percent of our cardiology patients are very satisfied with the care received from our therapists.

# Finding your own rhythm

When the heart is out of sync, things can soon prove problematic. Enrico Schiller knows all about this from personal experience. During his rehab stay at Medical Park St. Hubertus, he regained confidence in himself – and his pacemaker.

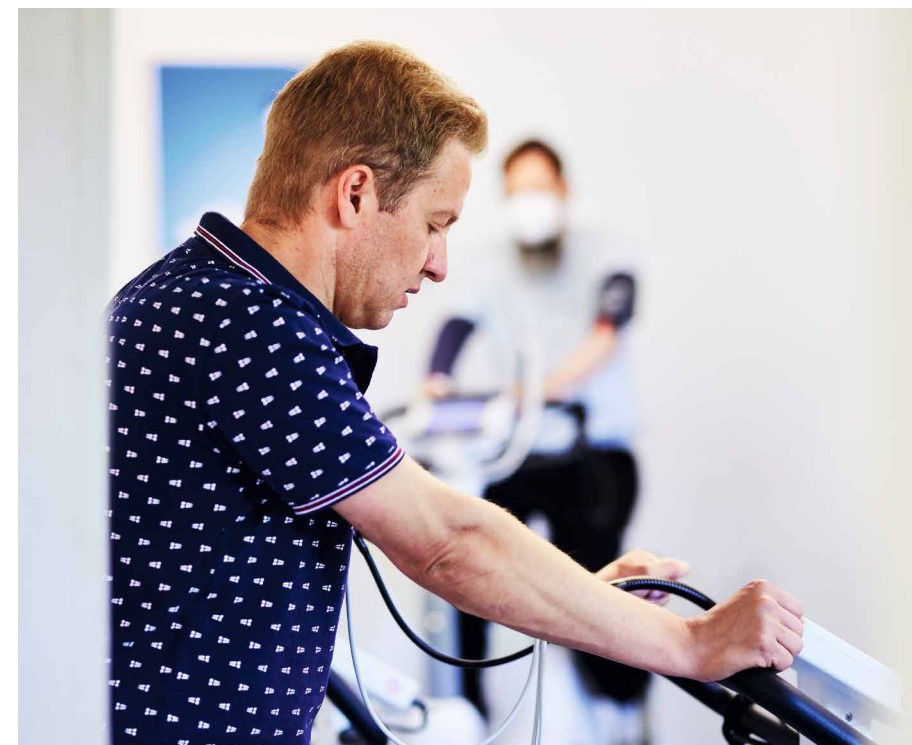
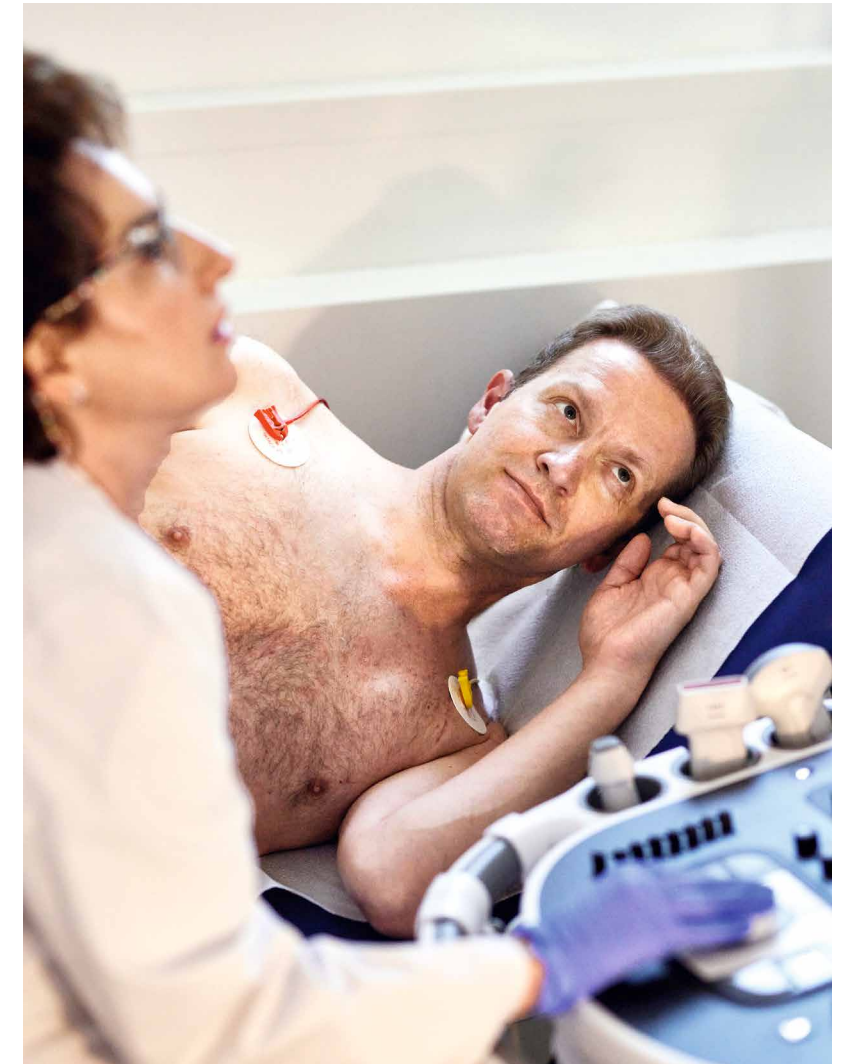
## VERY MUCH AT YOUR SERVICE

Enrico Schiller, aged 45, was a constant presence to his guests. Working as a waiter in a Munich restaurant, he was in his element for many years until suddenly, in the autumn of 2021, his strength failed him. Several visits to the doctor and inpatient cardiology stays later, he received the diagnosis: sarcoidosis, a rare inflammatory disease, had befallen his heart. Given the very high risk of infection, prompt surgery was advisable. He was fitted with a triventricular pacemaker (CRT) in the middle of April 2022 and by mid May had begun rehab in Bad Wiessee.



## MONITORING THE PUMPING ACTION ...

The pumping action of the heart is measured using the newest 3D ultrasound technology available today. How has Enrico Schiller's general health improved and what can be gleaned from his therapy? It's all about the ejection fraction (EF). A healthy heart has an EF of 50 to 75 percent; below 35, the risk of sudden cardiac arrest increases.



## ... AND DAILY WATTAGES

Group therapy on the exercise bike: In group cycling sessions, the therapeutic team sets each patient an individual programme that is finely tuned to their current condition. In addition to blood pressure and pulse, one parameter above all is recorded: the wattage. Training usually starts at 25 to 50 watts. Enrico Schiller's daily form is upbeat: He achieves a level of 75 to 100 watts, which corresponds to cycling or swimming slowly, with a relatively normal pulse. Others in the group reach their limits sooner.





## BREATHING IS GOOD EXERCISE

In physiotherapy, Enrico Schiller completes simple but very effective breathing exercises that help to ease the tension in his shoulders. In addition, his therapist uses an experienced hand and diaphragmatic manoeuvres to better position his ribcage and help him breathe more easily. Good for his heart, and good for his self-confidence.



## EASY DOES IT

Enrico Schiller sits on a stool in the garden, forming part of a circle with other patients. The physical exercises begin with a bit of fun but soon become more serious. The programme trains motor and coordination skills. "Sit up straight. Steadily march on the spot. Bend and stretch your arms, then circle them from side to side."



## TIME FOR FINE-TUNING

Senior physician Dr. Jacqueline Walter discusses Enrico Schiller's latest test results and the further course of training with him during her visit. Since the stimulation percentages of the pacemaker are not quite sufficient, the dose of beta-blockers is increased a little. The direction is right, and all the values are soon well-balanced.



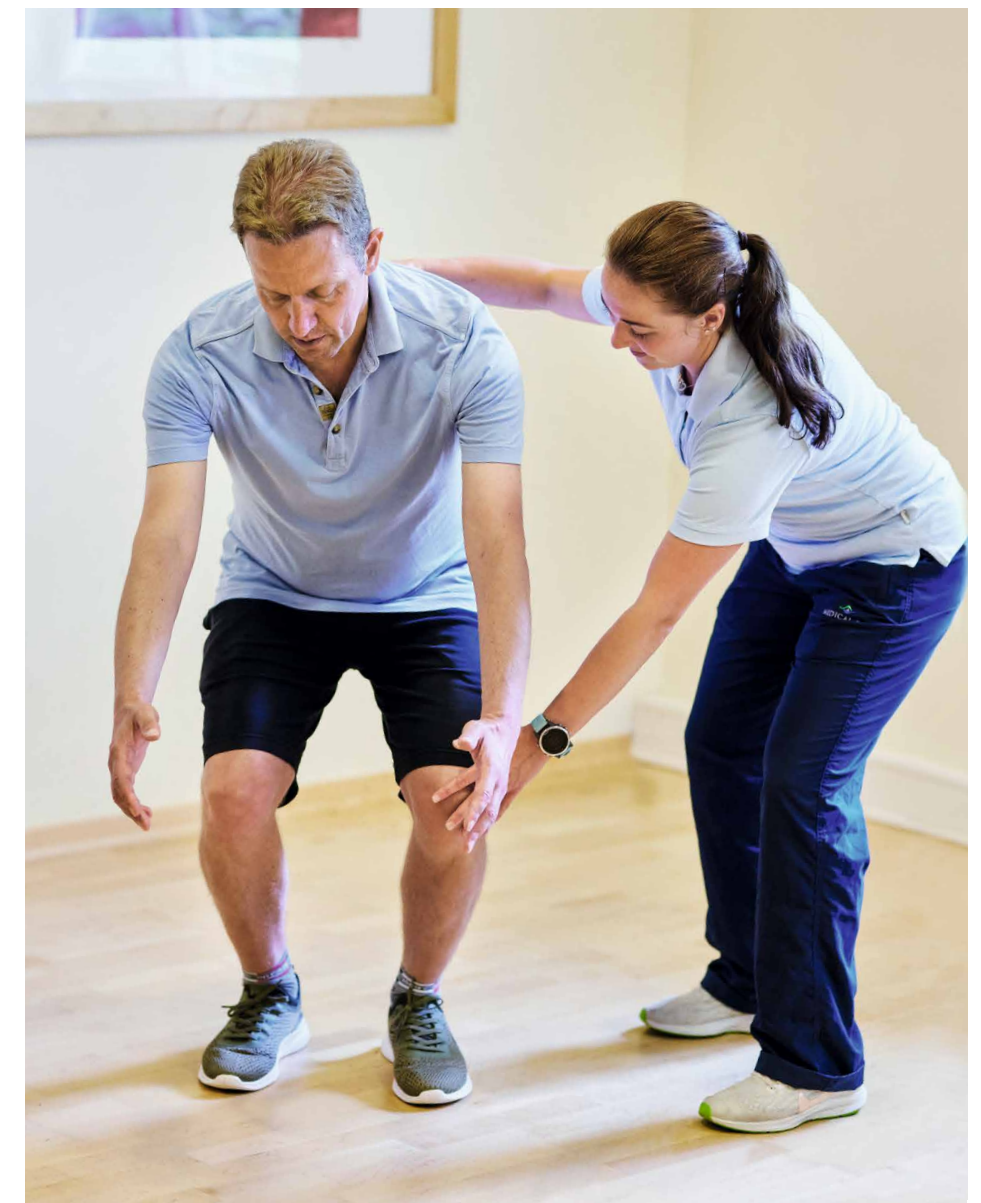
BAD WIESSEE  
ST. HUBERTUS

6,570

NUMBER OF PATIENTS  
IN 2021

## STABILISING THE UPPER BODY

All the muscle layers of the upper body are addressed. The physical exercises in the small cardiology group are aimed at maintaining basic tension and supporting the breathing. The team at Medical Park St. Hubertus is convinced: Isolated training focused only on the heart does not deliver a lasting effect.







**PROF. DR. CHRISTIAN FIRSCHKE**

is Senior Consultant in Internal Medicine and Cardiology at Medical Park St. Hubertus and Medical Director and Pandemic Officer of the Tegernseer Tal clinics. He previously worked, among others, as a specialist in internal medicine and cardiology at University Hospital rechts der Isar and the German Heart Centre of the Technical University of Munich. He specialises in the treatment of heart failure, imaging examinations of the heart, and sports cardiology.



**DR. JACQUELINE WALTER**

is Senior Physician in Internal Medicine and Cardiology at Medical Park St. Hubertus. She previously worked at Klinikum Ingolstadt and the Department of Cardiovascular Surgery at the German Heart Centre Munich. As a hypertension specialist (DHL certified), she is an expert in treating high blood pressure.

## CHRONIC HEART FAILURE

**Treating about 120 patients a year, the inpatient rehabilitation clinic for cardiovascular diseases of Medical Park St. Hubertus is one of the leading facilities of its kind – and also one of the largest in Germany. The experienced medical and therapeutic team works on an interdisciplinary level, attending to patients who have undergone major operations or have complex forms of heart failure.**

**Chronic cardiac insufficiency is one of the most common causes of death. What significance does inpatient rehab have in cardiology?**

**PROF. CHRISTIAN FIRSCHKE** In recent years, a lot of progress has been made with interventional, that is to say, minimally invasive surgical techniques. Nowadays, simultaneous multiple surgeries involving two or three heart valves or, as in Mr Schiller's case, a triventricular pacemaker, are frequently performed. He has tachycardia combined with sarcoidosis, a combination that is as rare as it is complex. At 45, Mr Schiller is relatively young. Many of our patients are much older and their general health is considerably compromised. We are very familiar with the surgeries they have had and their conditions. We have a medical team of six experienced cardiologists who have all previously worked in large emergency hospitals. If complications develop, we must always be able to determine whether the patients need to return to the referring hospital, so to surgery or to cardiology.

**DR JACQUELINE WALTER** One of the most common symptoms we encounter is exertional dyspnoea – exercise-induced shortness of breath. We help these patients find their inner strength again – with both medication and mobility training, including psychological/motivational support of course.

**Physical and occupational therapy, nutritional advice, biofeedback training – the therapeutic spectrum is broad. What characterises your therapeutic concept?**

**PROF. FIRSCHKE** Heart rate-controlled training is all-important. Our focus is always on the patient's general health. It's all about coping better with daily life once more. For example, we use anti-gravity treadmills or mechanical balance boards to promote balance and coordination. Fall prevention is also important. Many patients are on blood thinners or dual antiplatelet therapy – in some cases both. A fall can lead to intracerebral bleeding, which may prove life-threatening.

**DR WALTER** We carefully tailor each therapy session to the patient in question. One basic element is ergometer training, as it clearly demonstrates how the patient's cardiac output and general condition are improving. The mix of an individually tailored programme and joint training session is a guarantee for success. It is always important to consider that the causes of heart failure are diverse: from a lack of exercise to an unhealthy diet and obesity to the dangers of ongoing stress. Some patients have had heart attacks a long time ago. Or there are toxic effects from alcohol, as in Mr Schiller's case. Others, meanwhile, may have developed heart failure or myocarditis due to long COVID. But the following applies to them all: They all want their inner strength back.

**The heart as drive and motor – does this mean that the mind is always in play?**

**DR WALTER** Yes, especially in patients who have a difficult operation behind them. Heart disease is a life-changing experience. Therefore, we dedicate time to one-on-one discussions and also



### 6-MINUTE WALK TEST

Bad Wiessee	342
St. Hubertus	412

In metres

Therapeutic outcomes can be measured in metres. The greater the distance, the fitter the patient. With 70 metres more than at the first attempt, very good results are achieved at Medical Park St. Hubertus in Bad Wiessee.

■ At admission ■ At discharge

offer every patient care from specially trained psychologists.

**ISABEL MITZEL** As therapists, we remain in constant contact with the medical team. Our patients sense that we are informed and we know about their complaints. It is our job to give them courage and reassure them, to build their self-confidence in their own physical capabilities.

**With which equipment do you achieve particularly good therapeutic results?**

**DR WALTER** It varies from case to case. We achieve really good results with our PIXformance machines – large, upright screens that deliver real-time feedback, turning them into virtual personal trainers.

**PROF. FIRSCHKE** ... Or with our biofeedback stations. All in all, we have one of the most modern collections of equipment.

**You are well-connected with universities and research institutions, for example with the Technical University of Munich (TUM).**

**PROF. FIRSCHKE** That's right. We work with TUM in sports medicine to further develop our central tool, which is mobility training. We regularly consult with each other on matters of internal medicine. In addition to Prof. Dirk Haller and myself, we have an external expert with whom we can examine and discuss issues in more detail. We also encourage intensive exchange among our staff: Our colleagues spend time at TUM and vice versa. We have training expertise here in cardiology and internal medicine, while at TUM you can qualify in sports medicine and sports cardiology. TUM is an outpatient institution and we are an inpatient facility – a great combination, meaning we complement each other perfectly.

**Heart diseases are often very insidious. How can you determine as early as possible that the condition is becoming serious?**

**DR WALTER** General practitioners, specialists and clinics work closely together. But it is also clear that everyone bears a great deal of personal responsibility. It is important to impart appropriate knowledge about lifestyles and health risks, the keywords being: lack of exercise. We provide a lot of impetus here and offer check-ups, for example as part of occupational health management.

Laboratory parameters are recorded and oxygen levels measured. We examine everything very closely and then make recommendations as to whether or not further investigation is necessary.

**MITZEL** There is a very successful rehabilitation aftercare concept called T-RENA which we have been using in orthopaedics for some time and now also offer to our cardiology patients. We use it to compile individual home training programmes to promote strength, endurance and coordination according to the patient's needs. It is an approach that is equally suitable for prevention: Many people already have a smartwatch and regularly measure their heart rate. In any case, the willingness to monitor oneself is increasing sharply, which is a good thing. With a little practice, it is possible to record cardiac arrhythmias or atrial fibrillation.

**Where are the overlaps with sports rehabilitation?**

**DR WALTER** The advantage is that we combine orthopaedics and cardiology under one roof. We offer walks of one to two hours in cardiology, and anyone who is really fit can always opt for group or individual therapies from orthopaedics – our Nordic walking group, for example, is very popular. If they want to push themselves further, however, the patients can do so in their free time. Nothing stands in the way of a short or even longer mountain hike. After all, here in Bad Wiessee we're in a fabulous area for hiking.



The therapeutic achievements of the team at Medical Park St. Hubertus rehab clinic are spectacular, in part due to the use of state-of-the-art PIXformance stations: Networked via app and online platform, these digital training stations enable fully customised training with motion analysis in real time. This is not only motivational, but also ensures that therapy is effective.



**ISABEL MITZEL**

has been at Medical Park St. Hubertus since 2007 and now works in the cardiology and orthopaedics departments. Since 2018, after completing various advanced and further training courses, the therapist has been responsible for the induction and supervision of new employees in physiotherapy. In November 2021, Mitzel also began studying for a degree in physiotherapy.



# CARDIOLOGY INDICATORS



## 6-MINUTE WALK TEST

Physical fitness is assessed with the walk test. Following a set course, the patient walks as far as possible for a duration of six minutes at their chosen pace. The distance covered and, optionally, the patient's pulse, blood pressure and oxygen saturation are then measured. The test is easy to replicate and provides important insights into the condition and regenerative capacity of our patients.



## EQ-5D INDEX

The EQ-5D index is the most widely used method worldwide for measuring health-related quality of life. It examines five dimensions that can be awarded different scores by the patient. The dimensions are: mobility, self-care, usual activities, pain/discomfort and anxiety/depression.



## NEW YORK HEART ASSOCIATION (NYHA)

This classification provides information about the patient's limitations due to the cardiac disorder. For example, NYHA class I includes all cardiac disorders that do not result in a direct physical limitation. Complaints from ordinary physical activities, but where walks of up to five kilometres are still easily managed, correspond to class II. Patients whose physical activity is considerably limited come under class III. They have no symptoms at rest, but even minor physical exertion can lead to shortness of breath. Patients in whom any physical exertion causes discomfort belong to NYHA class IV.



## PAIN SCALE

This scale is used to measure the patient's subjective pain intensity. The current pain perception is marked on a scale, visually presented on a horizontal line or with numbers. By using the scale at the start and the end of rehab, a statement about the success of therapy can be formulated.

# CORONARY HEART DISEASE



## 6-MINUTE WALK TEST

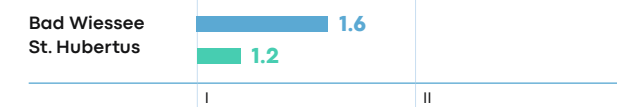


By the time they are discharged, our patients are significantly fitter. When the clock stops after six minutes, they have covered a remarkable 63 metres more than at the time of their admission.

■ At admission ■ At discharge

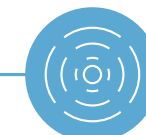


## NYHA CLASSES

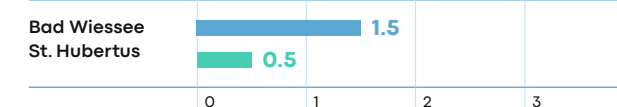


The lower the value, the better. Because the NYHA classification measures physical impairment. By discharge, our patients have improved from the upper to the lower end of class I, indicating that there are no limitations to their physical fitness.

■ At admission ■ At discharge

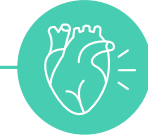


## PAIN SCALE



As our patients recover, their pain dissipates. They improve by one whole level, to a range below 1, meaning little pain or even no symptoms at all.

■ At admission ■ At discharge



## PATIENTS BY CLINIC

612

Bad Wiessee  
St. Hubertus

2021



## EQ-5D INDEX



In points

The EQ-5D questionnaire delivers a meaningful score for measuring quality of life. By discharge, our patients achieve a score of 83.9 points. Six months after discharge the score drops slightly but hovers around 81.8 points.

■ At admission ■ At discharge ■ After six months

88  
PERCENT

of our patients improve in terms  
of endurance.

# AORTIC VALVE DISEASE



## 6-MINUTE WALK TEST



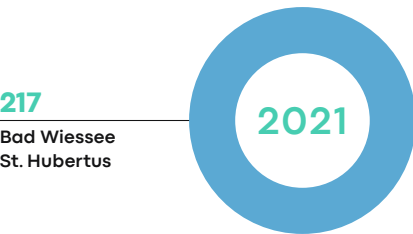
In metres

A proud achievement by our patients with aortic valve disease: 82 metres more in six minutes than at the beginning of their rehab stay.

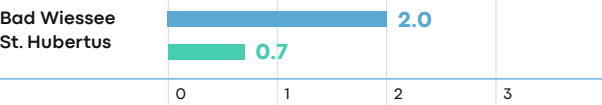
■ At admission ■ At discharge ■ After six months



## PATIENTS BY CLINIC



## PAIN SCALE



Thanks to pain management and the recovery process, the pain decreases significantly. The patients leap more than one level – a great achievement.

■ At admission ■ At discharge

# MITRAL VALVE DISEASE



## NYHA CLASSES



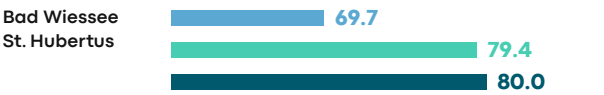
I II

A classification system that evaluates the resilience of patients with cardiac disorders. No limitations or impairments are expected in class I, and our patients settle into the lower range of the class during their stay.

■ At admission ■ At discharge



## EQ-5D INDEX



In points

The EQ-5D score reflects the health-related quality of life. Of interest is the score six months after discharge: at 80 points – corresponding to the average for healthy individuals – it is therefore even slightly higher than at the time of discharge.

■ At admission ■ At discharge ■ After six months



of our patients improve by at least one class according to the New York Heart Association classification.



## 6-MINUTE WALK TEST



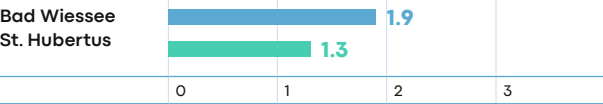
In metres

Walking 89 metres further by discharge is a valid indication of increased physical resilience. Our patients' fitness noticeably and visibly improves during therapy.

■ At admission ■ At discharge ■ After six months



## PAIN SCALE

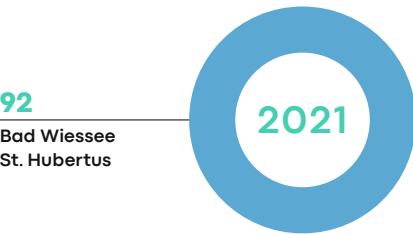


Our patients are in less pain after surgery and rehabilitation. They improve within levels 1 to 2 and are left only with mild pain.

■ At admission ■ At discharge



## PATIENTS BY CLINIC





# ONCOLOGY: FOCUSING ON THE INDIVIDUAL

At Medical Park Bad Feilnbach Blumenhof, our specialised rehabilitation hospital for oncology, we are highly focused on personal needs and offer the best possible follow-up care to patients with gynaecological, urological or internal indications. Our comprehensive, integrated cancer treatment concepts always focus on the individual as a whole. The following pages outline how we achieve success with our interdisciplinary therapy, combining oncology and urology.



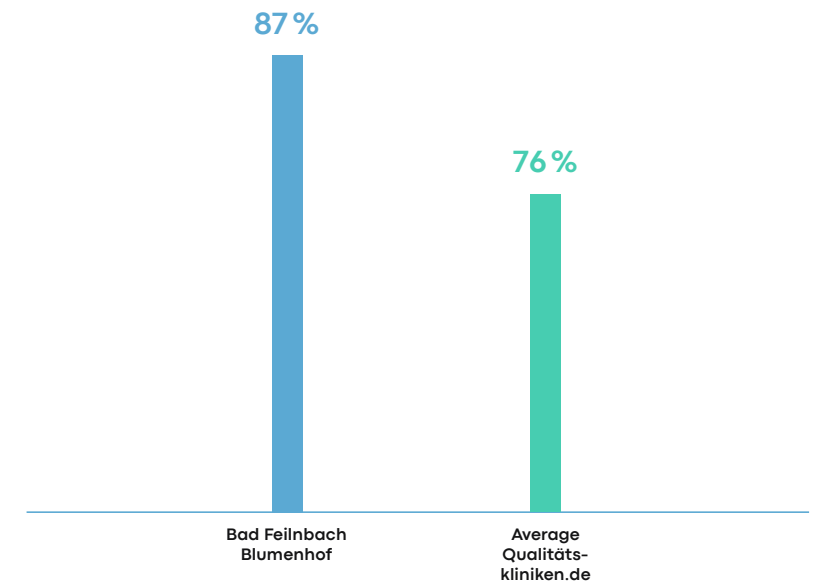
READ MORE ABOUT  
ONCOLOGY AS A SPECIALTY

## PATIENT SATISFACTION

# 87

PERCENT

means 11 percentage points more than the average (76 percent) on Qualitätskliniken.de.

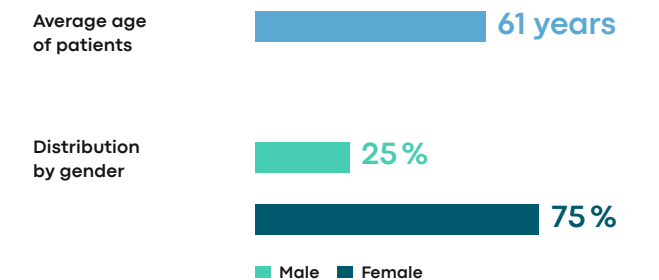


## ONCOLOGY SITES



Bad Feilnbach  
Blumenhof

## PATIENT STRUCTURE IN 2021



## OUTSTANDING THERAPY

Overall, 92 percent of our cancer patients are very satisfied with the care received from our therapists.

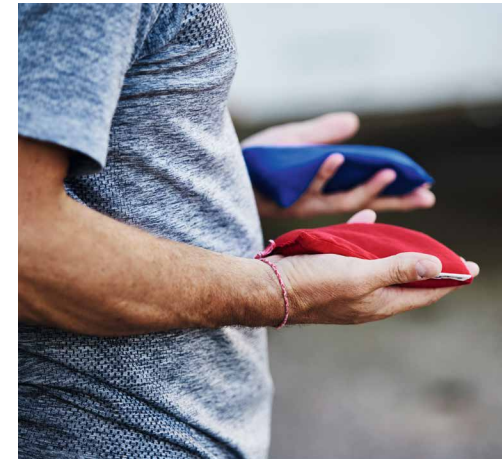


# Paving the way for recovery

After acute treatments for prostate cancer, we focus on the pelvic floor: The therapeutic concept at Medical Park Bad Feilnbach Blumenhof aims to reactivate this important supportive structure to the internal organs and to improve the patient's general condition.

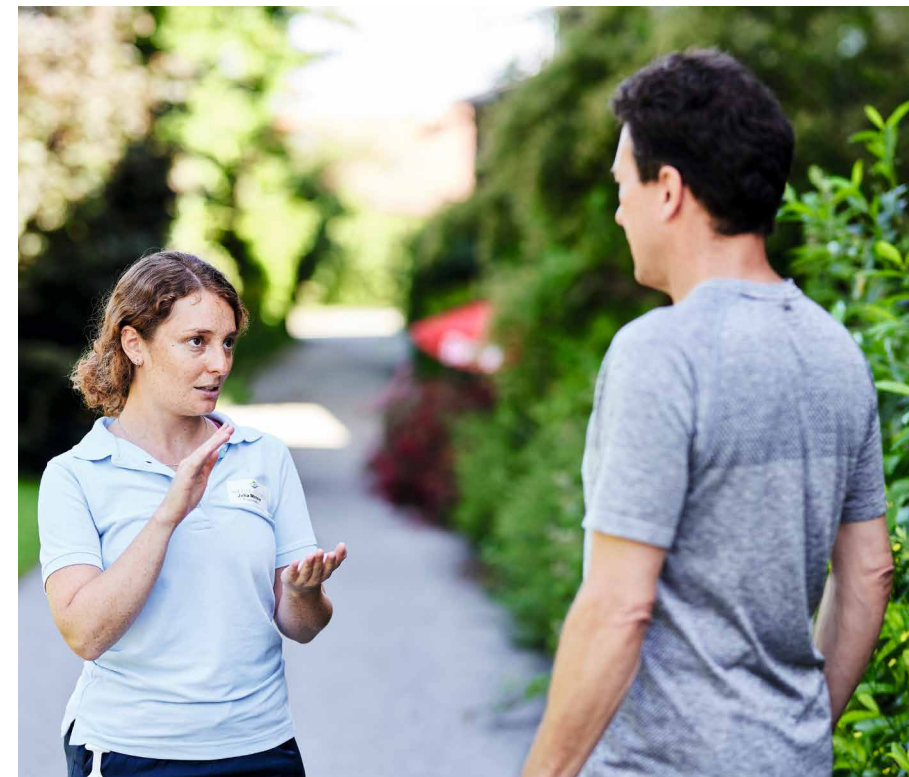
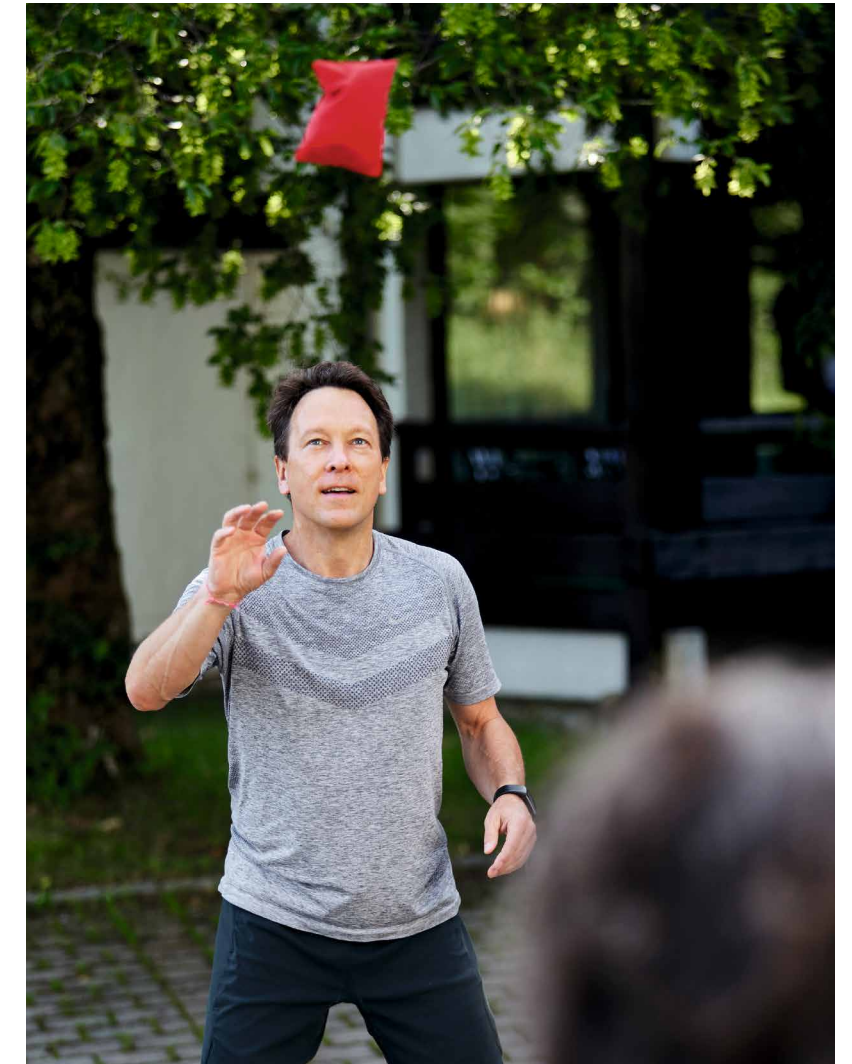
## MOUNTAIN HIKES AND MOORLAND WALKS

Thanks to regular screening examinations, Dr Bernhard Stockmeyer's prostate cancer was promptly detected. His decision to undergo post-operative rehabilitation at Blumenhof was easy – not least because of the beautiful surroundings in the foothills of the Alps. Ten days into his stay, the sporty business engineer in his mid-fifties was already joining gentle hikes into the mountains and the moor.



## HARMONY BETWEEN BODY AND MIND

In coordination training, mind and movement are closely combined. The patients throw brightly coloured bean bags to each other: depending on the colour of the bean bag they catch, they must complete specific movements while solving brain teasers. For example: blue means extending the right leg and naming an animal. Some exercises can't be managed at the first attempt – but the effort is worthwhile: their coordination usually swiftly improves.



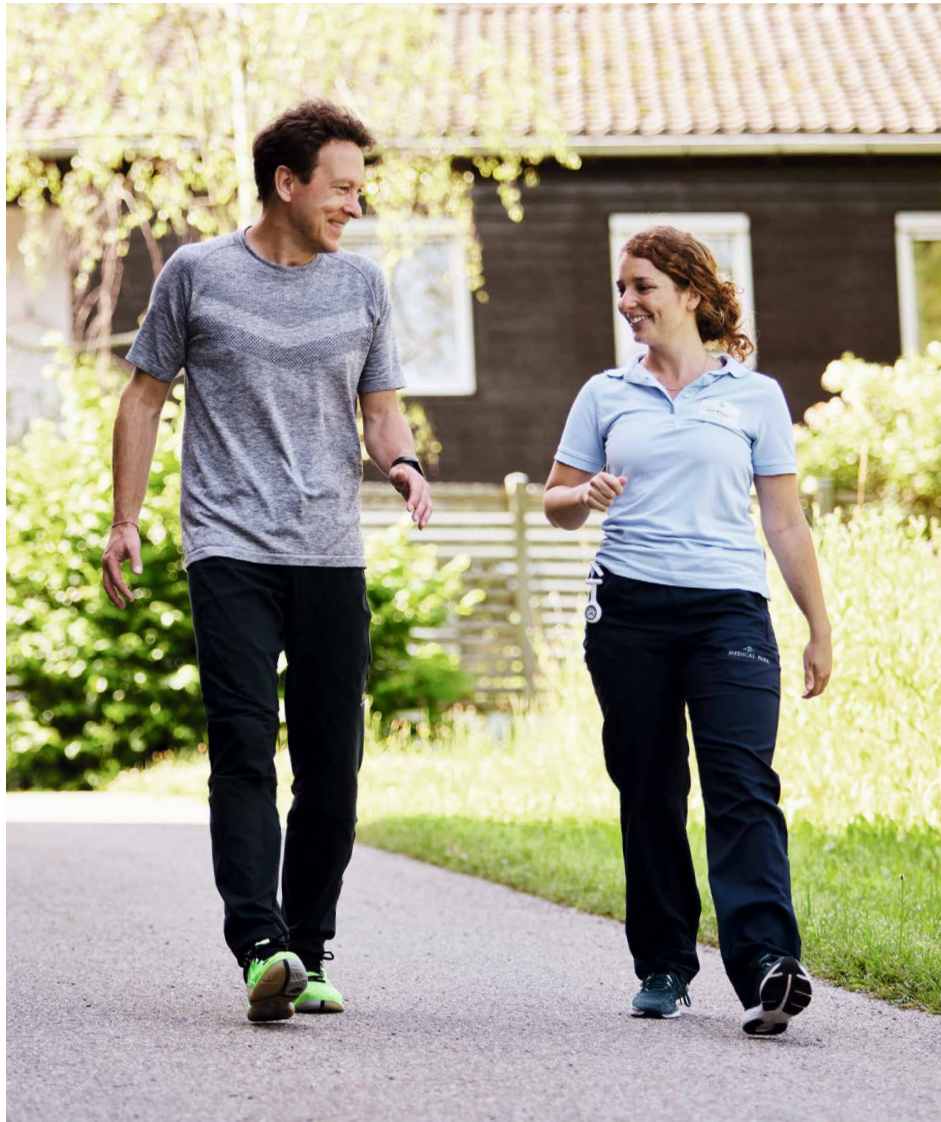
## BOOSTING MOTIVATION – OR BRAKING FIRST

Elderly patients weakened by surgery or radiotherapy need a boost in self-confidence if they are to become more active again. The therapeutic concept therefore includes psychological elements. Patients like Bernhard Stockmeyer who are in good physical shape, however, are usually already highly motivated – sometimes excessively so. Even when using minimally invasive methods, lower abdominal surgery for cancer is always a major procedure. In terms of physiotherapy and medical training therapy, this means starting the exercises slowly and gently increasing the intensity.



## GETTING THE HANG OF IT

A complex interplay of muscles, tendons and ligaments stabilises the pelvic outlet and activates the sphincter. But how is it possible to better sense and more consciously control this central, supporting muscle? Under the guidance of his therapist in one-on-one walking sessions, Bernhard Stockmeyer works on sensing his pelvic floor muscles and tightening the sphincter, holding the position for as long as possible. Exercise phases are alternated with breaks during which the muscles can relax again.



## WALKING

Improving the function of the pelvic floor muscles helps with a variety of complaints. Just half an hour of walking a day activates the muscles.



## RELEASING BLOCKAGES

Hardening or cramps cause sensitisation disorders in the interplay of muscle fibres, fascia and tendons. Massage therapy targets trigger points in the neck and shoulder muscles to relieve blockages and pain. The therapeutic effect improves self-perception and radiates into the pelvic floor.

## HELPFUL IMPULSES

Stimulating the muscles with functional electrostimulation (FES) is a valuable supportive measure in physiotherapy for managing incontinence. Individually adjustable electrical impulses cause tension in the muscles and help Bernhard Stockmeyer get a better sense of the position of his pelvic floor. The impulses are transmitted via surface electrodes on the skin. In most cases, a frequency of 5 or 10 hertz is used, and one treatment unit lasts 20 minutes.



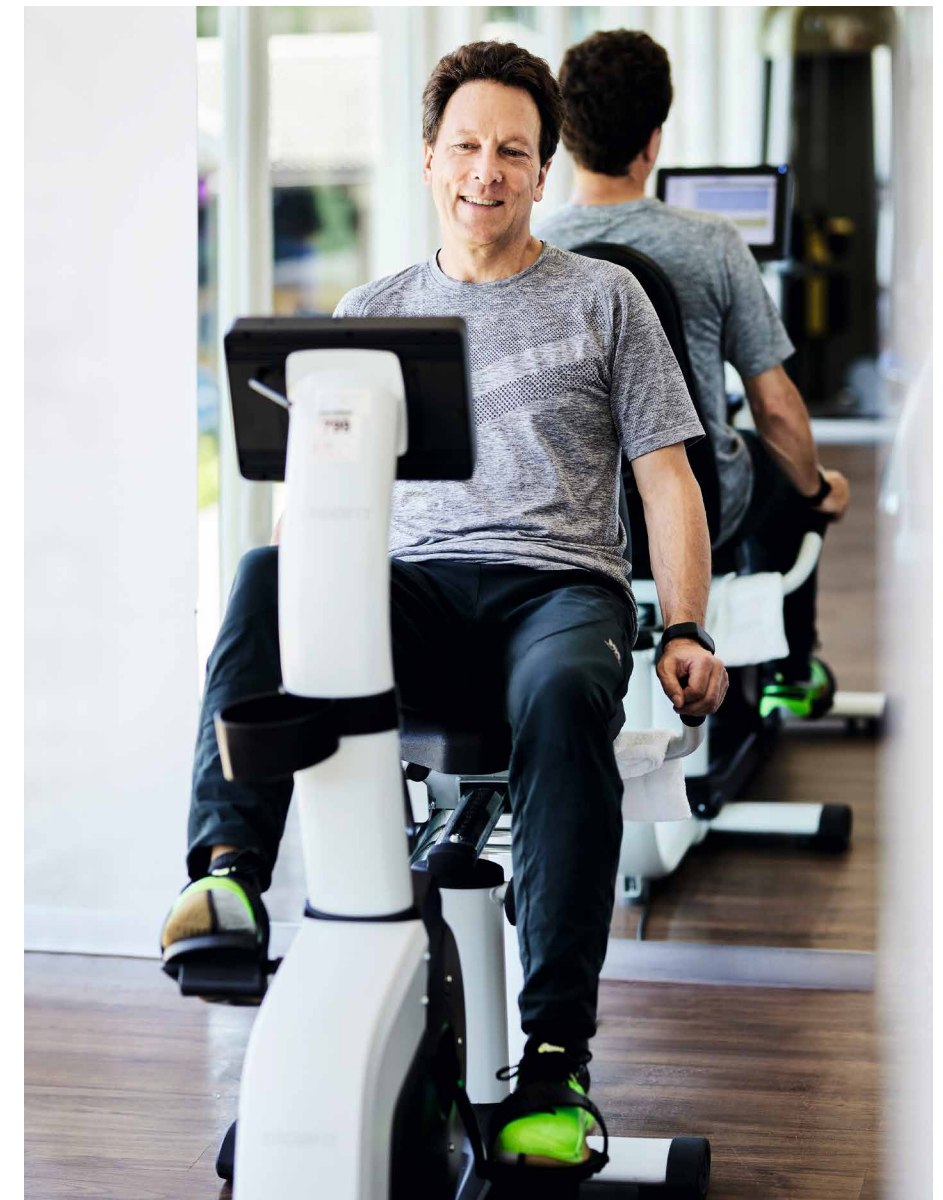
BAD FEILNBACH  
BLUMENHOF

1,620

NUMBER OF PATIENTS  
IN 2021

## RIDING RECLINED

Bernhard is an endurance athlete. The recumbent bicycle ergometer or exercise bike facilitates balanced physical activity while sparing the back, spine, joints and pelvic muscles, which are still susceptible to compression loads. The performance is displayed precisely in watts and carefully monitored by the therapist.







DR. MED.  
ANDREAS ARNDT

has headed the cancer rehabilitation hospital in Bad Feilnbach since 2009 and has significantly enhanced the expertise offered in-house. As a specialist in internal medicine, he has many years of experience in the treatment of oncological and internal disorders, complemented by additional qualifications in nutritional medicine and diagnostic sonography. Supported by his team, Dr Arndt strives – beyond administering medical treatment for the acute condition – to lay the foundation for taking more conscious care of one's own health.

## UROLOGICAL REHABILITATION

Prostate cancer is currently the most common form of cancer in men. The number of bladder carcinomas is also on the rise. Medical Park Blumenhof in Bad Feilnbach is the only cancer rehabilitation hospital in the network and guarantees high-quality care for patients after undergoing acute treatment for cancer. A geriatric department to care for older patients will soon be opened.

What distinguishes your rehabilitation hospital for follow-up care after urological cancer surgery and acute treatment?

**DR ANDREAS ARNDT** Given our history as a sanatorium, we already have extensive experience at Bad Feilnbach in the administration of curative treatments. Medical Park Blumenhof has specialised in cancer rehabilitation for more than ten years. What distinguishes us from other rehabilitation hospitals in this discipline is that our in-house team also includes a urologist. We therefore have a very good set-up for offering patients the best therapy following acute treatment for lower abdominal cancers. This is also evident from the reviews. We regularly top the ratings on Qualitätskliniken.de in over 400 quality indicators. In a pilot study involving 13 cancer rehab hospitals, we ranked first in almost all categories. And we achieved this despite only half of our rooms being available at present due to renovation work. Our new geriatric department is due to be completed shortly, meaning that we can soon provide even better care for the elderly than before.

**SYLVIA WUNDERLICH** We benefit from the beautiful surroundings of course. Understandably, the Alpine foothills are top of the list for many when choosing a rehab destination. The average length of stay is three weeks.

The most common indications we encounter here include bladder and bowel incontinence. To what extent is your therapeutic concept geared towards this?

**WUNDERLICH** We focus on active therapy and sports therapy, concentrating on pelvic floor

training. We have therapists who are specially trained in Physio Pelvica exercises and use special apparatus such as the Pelvictrainer to help our patients sense these invisible muscles in the first place. This is the prerequisite for tightening the pelvic floor muscles in isolation. We have one stationary and two mobile Pelvictrainers with biofeedback function. Another piece of training equipment that we often integrate into our therapeutic concept is the Galileo (vibration) platform. With variable amplitudes and frequencies, the vibrating plate stimulates a movement pattern similar to the human gait. Fast rocking movements cause the pelvis to tilt – as when walking, only more frequently. The body reacts with compensatory, rhythmic muscle contractions, like reflexes, alternating between the left and right sides of the body. These side alternating vibrations achieve an enormous training effect. In this way, we primarily activate the pelvic floor itself, but also the muscles in the legs, abdomen and back as far as the torso.

**DR ARNDT** We must never overlook the fact that our patients are weakened by their treatment – whether surgery or chemotherapy – and their general fitness, both physically and cognitively, is limited. We therefore offer a wide variety of activities to suit each individual case, often in a group setting and, if necessary, as one-on-one therapy. Our patient, Dr Bernhard Stockmeyer, is still relatively young and in good condition, and only slightly affected by incontinence. If we consider all urological patients after prostatectomy, incontinence and erectile dysfunction are the two main symptoms. But we often also see patients with rectal, bladder or colon cancer. In such cases, isolated functional disorders or structural impairments are therefore the concern. In addition to the oncological disorder, chronic fatigue syndrome can sometimes occur.

There is also a psychological burden on the patients. How do you address this?

**WUNDERLICH** Education is always the starting point. We explain to the patients what the pelvic floor is, where it is, and what it does. In addition: What has changed following surgery or radiotherapy? Functional disorders are manifested of course in various symptoms: involuntary urination, difficulty preventing bowel movements, but also prolapsed internal organs or pain in the lower abdomen, in the back. The lower abdomen is also an intimate region – especially for the older generations. With increasing age, the pelvic floor is also compromised by weakened



## FATIGUE

Cancer is often accompanied by chronic exhaustion. Therapies such as yoga, pilates and Qigong help not only to improve fitness, but also to achieve greater peace of mind and balance. Giving individual, psychooncological support is thereby important.

connective tissue or obesity. The characteristics differ in each patient, depending on strength and condition. The Pelvictrainer is therefore invaluable. It enables the patient to specifically train the pelvic floor while fully clothed and sitting in a relaxed position, with visual support thanks to biofeedback. Where necessary, we do our best to provide the patient with all-round support: We have two psychologists on the team: one has been working with our cancer patients for more than ten years, the other has an additional qualification in psychooncology.

What changes are taking place in oncological disorders in Germany, when viewed across the board?

**DR ARNDT** In general, cancer rates are still on the rise. The explanation for this is the ageing population. We believe that lifestyle also plays a role. Obesity rates are also increasing and many of the patients we see have high blood pressure or diabetes. In some cancers, such as uterine carcinoma in women or renal tumours, the number of obese patients is now already above the average. Meanwhile, we are treating significantly more patients who have already reached the palliative stage. Cancer screening for early detection is therefore very important. This is demonstrated by our patient's case story. Consequently, subsequent illnesses can often be prevented.

Prevention is therefore essential. But what about aftercare?

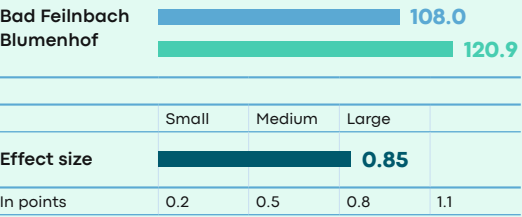
**DR ARNDT** Our patients should receive ongoing care from a specialist, whenever possible. We always recommend active therapy going forward and continued exercise, moreover, depending on the patient's condition. Our mission is to motivate patients and sensitise them to things that should come naturally in preparation for the post-rehab phase. Consider the cancer aftercare card. Not many patients have one. A lot of persuasive effort is still needed – not only from us, but of course we see ourselves as responsible in this regard. After all, for most patients the actual aftercare only begins once rehab has finished.

How do you measure the progress of your therapies? Have you established new therapeutic standards?

**DR ARNDT** We have a standardised test method for patients with incontinence, namely the one-hour pad test. There is also a 24-hour pad test. We use the one-hour method, however, as it is less stressful for our patients. The exercises are predefined: The patient must drink half a litre of fluid and then complete various exercises – bending over, straightening up again, climbing stairs, coughing vigorously several times, and other similar activities. Subsequently, the amount of urine lost is measured from the incontinence pad. We conduct this test at admission and discharge, in each case at the same time of the day. Patients with other symptoms are asked to complete the FACT-G quality of life questionnaire and the FACT-P extension module. For oncology



## FACT-P



FACT-P is an extension of the overarching FACT-G questionnaire, with added items specific to the indication of prostate cancer. After completion of treatment, large effects are noted, and the patients improve by almost 13 points.

■ At admission ■ At discharge



SYLVIA  
WUNDERLICH

gained experience as a trained physiotherapist in orthopaedics, outpatient care, and competitive sport before graduating in therapeutic sciences. She is a certified therapist in pelvic floor rehabilitation (Physio Pelvica). Furthermore, she has a passion for her role as lecturer in the physiotherapy degree programme – which proves again and again to be a good starting point for recruiting young professionals for the oncology sector.





The possibility to train the pelvic floor in everyday clothing and thereby receive bio-feedback gives many patients an additional motivational boost. Whether for more endurance, increased strength, or relaxation – the Pelvictrainer displays the training progress in real time on the screen. It is the world's first external pelvic floor trainer for men and women.

assessments, there are basically two internationally accepted methods for evaluating impaired activities of daily living: the Barthel Index and the Karnofsky Index. We decide on a case-by-case basis which assessment to use to best judge the patient's condition and the progress to be expected from therapy.

**WUNDERLICH** The rehabilitation standard of the German Pension Insurance (Deutsche Rentenversicherung, DRV) for breast cancer patients served as a basis and has been adapted to our specialties. Our in-house medical team defined what adjustments should be made. Our therapeutic team of around 25 qualified professionals is committed to putting our therapeutic standards into practice on a daily basis. Aside from occupational, physical and sports therapists, we have medical psychologists, social services, massage therapists and nutritionists.

**Renovations are underway in the building. What prospects do you see with respect to the new facilities?**

**DR ARNDT** At the end of 2022 we will open our geriatric rehab unit with 81 beds. We can then offer comprehensive care to elderly patients with multimorbidity. If they have anaemia or elevated inflammatory parameters, for instance, we can draw on the services of our in-house laboratory and the capabilities of modern ultrasound technology.

**WUNDERLICH** To address the subject of geriatrics here from another perspective: I personally believe it is very important to inspire young people to join our profession. The demands are growing everywhere, also on therapists, and I very much welcome the fact that the training has been elevated to an academic level – which is why I am also dedicated to my role as a lecturer in the physiotherapy degree programme at the Technical University of Rosenheim. Compared with other cancer rehab hospitals, we find it relatively easy to recruit young people for internships. I must add that we have very many motivated, grateful and content patients here. This is a welcome endorsement. And a massive incentive!

**Let's take another look at the surroundings: They are ideal for a stroll or a hike. Which destinations are most popular?**

**DR ARNDT** There are delightful paths leading onto the nearby Sterntaler Filze moor or into the foothills around Bad Feilnbach. Our hospital is ideally located. The Tregler Alm hut, which is only a few kilometres away, can be reached from here on foot in under 30 minutes. Anyone who feels they are physically up to it can continue along the Jenbachtal valley as far as the Wirtsalm hut. But there are many other worthwhile destinations.

## HOLISM

**How do patients regain long-term strength after a stressful period of cancer treatment? Cancer rehab helps patients to recover physically while dealing mentally and emotionally with their situation and the possible consequences.**

# ONCOLOGY INDICATORS



## FACT – FUNCTIONAL ASSESSMENT OF CANCER THERAPY

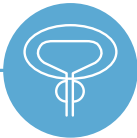
Modules G, B, P and C of this questionnaire are used to assess disease-specific, health-related quality of life in the treatment of cancer. In addition to the FACT-G, which covers multiple indications, indication-specific modules with 9 to 12 additional items each are used to evaluate the symptom burden of the disease and its treatment. FACT-B is applicable to breast cancer, FACT-P to prostate cancer, and FACT-C to colorectal cancer. The scores range on a scale from zero to 156 points.



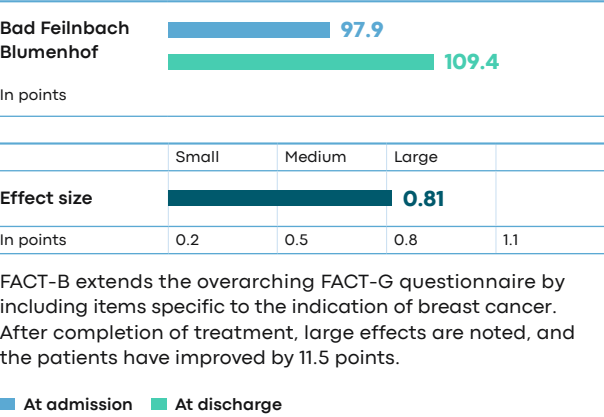
## VR-12 PCS AND VR-12 MCS

The Veterans RAND 12 Item Health Survey is a 12-item questionnaire. It covers the two main dimensions of physical and mental health-related quality of life and in terms of content and analytical methodology is related to the SF-12. In the VR-12, however, the formulations have been improved and dichotomous response categories created. The VR-12 was validated in a study involving US veterans, but can also be used in other populations to measure the overall health-related quality of life. It is divided into sets of questions concerning physical (PCS) and mental (MCS) quality of life. The sum scores are recorded as T values, with higher values indicating better subjective health.

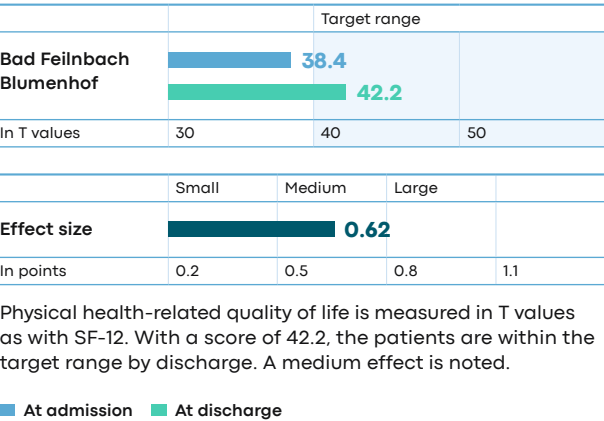
# BREAST CANCER TREATMENT



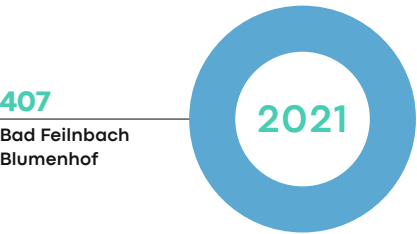
## FACT-B



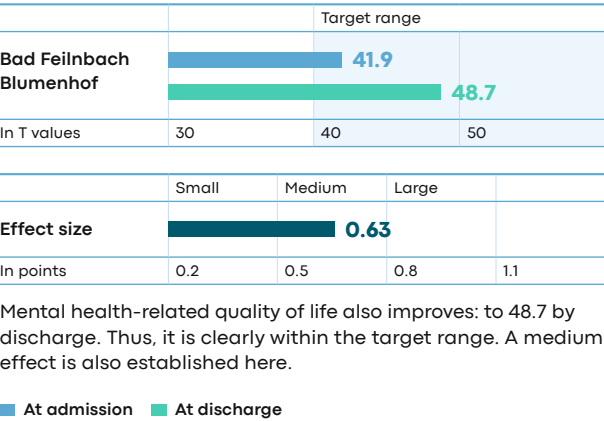
## VR-12 PCS



## PATIENTS BY CLINIC



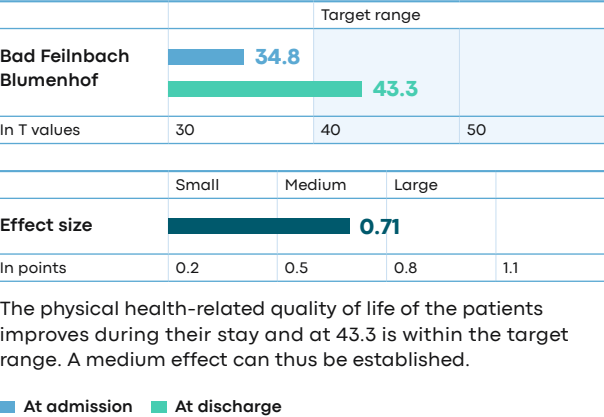
## VR-12 MCS



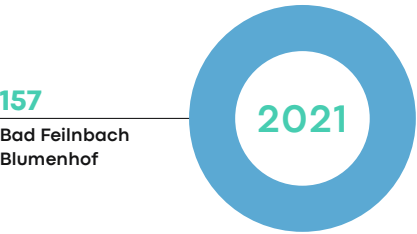
# COLORECTAL CANCER TREATMENT



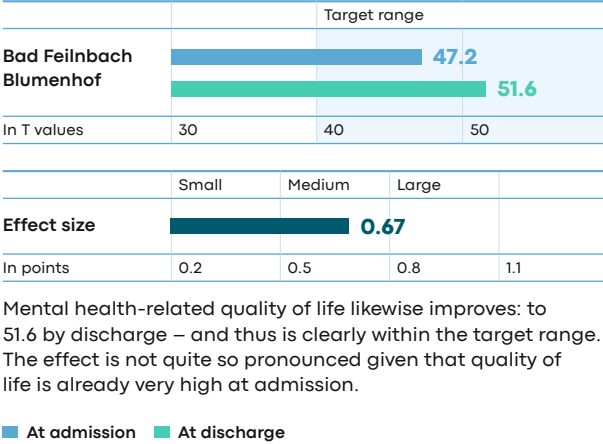
## VR-12 PCS



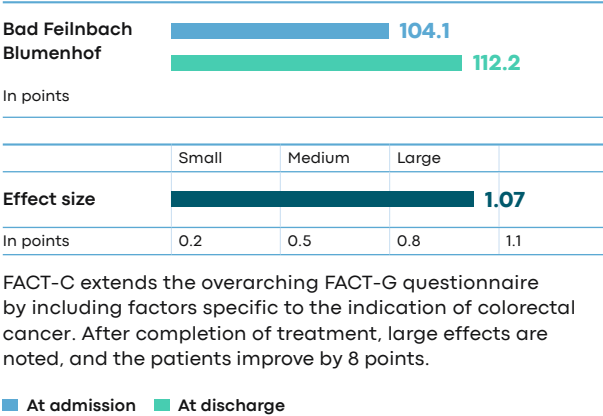
## PATIENTS BY CLINIC



## VR-12 MCS



## FACT-C





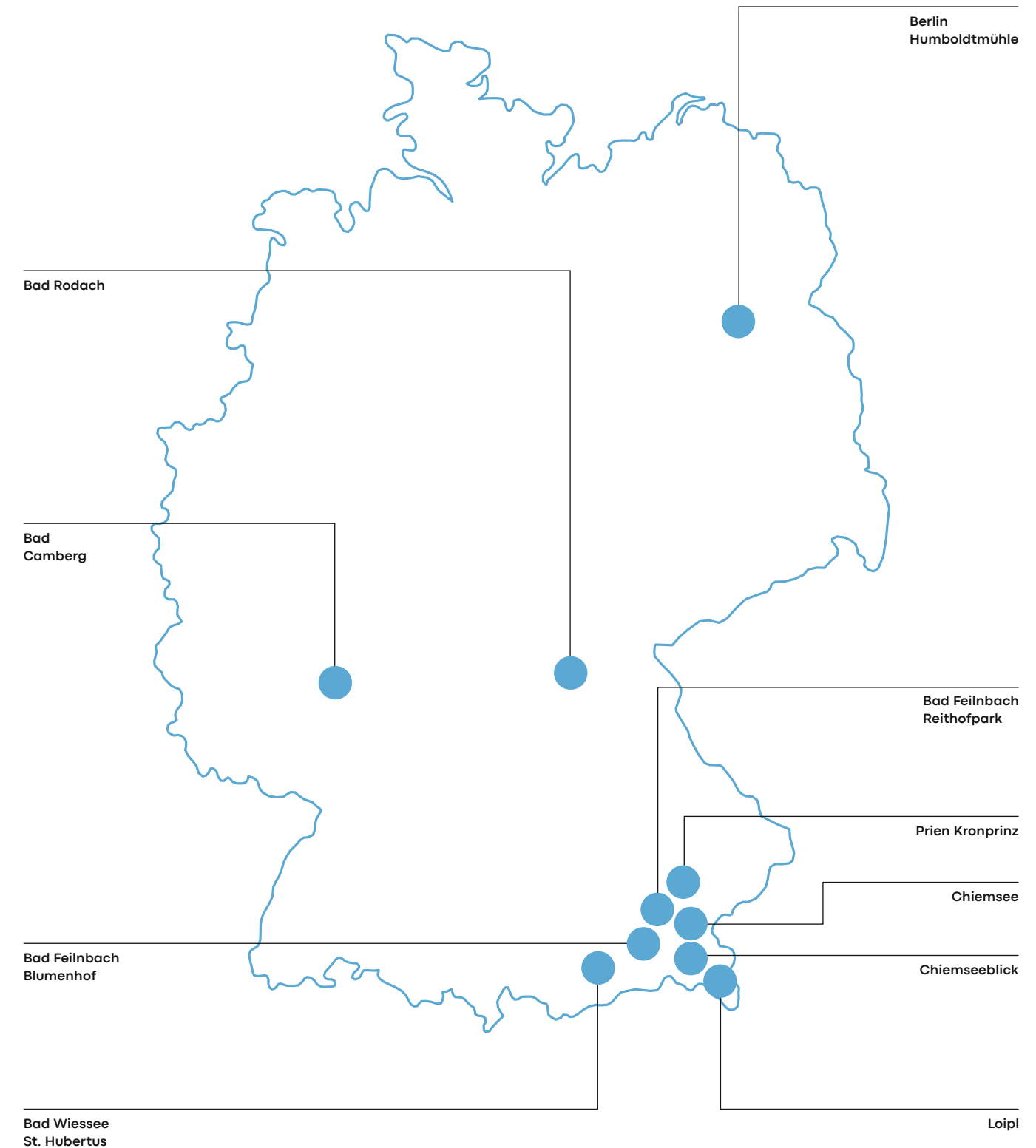
# POST-COVID: HOLISTICALLY EASING LONG-TERM CONSEQUENCES

If patients have lasting effects following a COVID-19 infection, a dedicated post-COVID rehabilitation programme can help. The respective therapy, which relies on interdisciplinary teamwork, is as diverse as the clinical picture with its various symptoms. The following pages describe how one patient managed, step by step, to return to everyday life.



READ MORE ABOUT  
POST-COVID REHABILITATION

## MEDICAL PARK SITES OFFERING POST-COVID TREATMENT



# The long road back to the old life

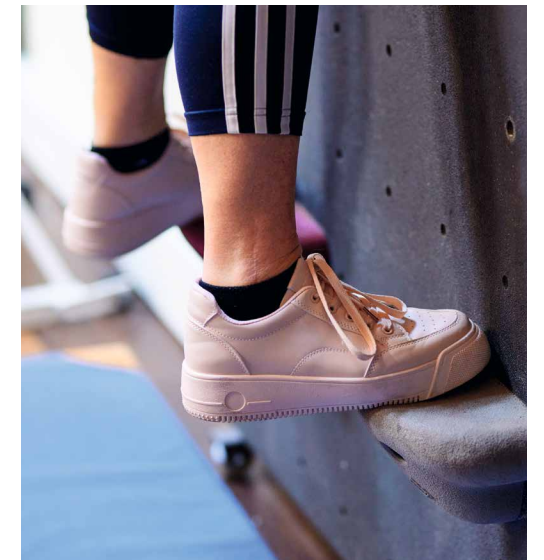
Since her SARS-CoV-2 infection, hardly anything in Simone Wehner-Engelbrecht's life is how it once was.

At Medical Park Bad Feilnbach, the post-COVID patient is helped back onto her feet – in the truest sense.



## HELP AT LAST

Simone Wehner-Engelbrecht is a nurse. She contracted the virus at the end of 2020 when working on the COVID ward. Almost two years later, post-COVID symptoms such as severe pain, physical weakness and difficulty concentrating are making her daily life a chore and her professional life impossible. "I can't believe that I'm no longer physically fit", says the 58-year-old, who is usually active and full of life. After her long and frustrating journey of suffering, she is glad that her condition is being taken seriously and treated accordingly at the neurological rehabilitation hospital.



## BALANCING ACT

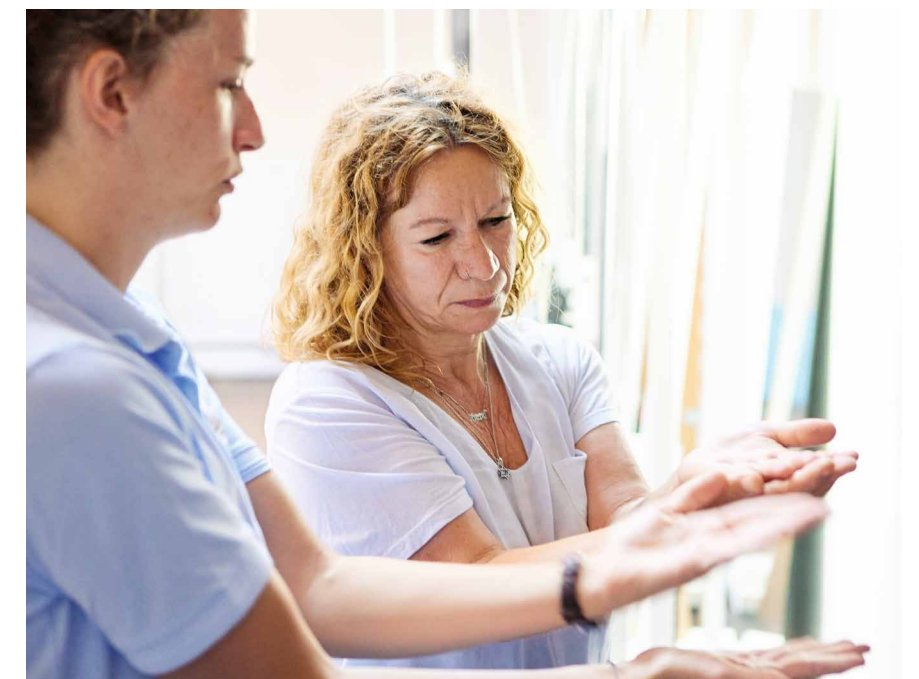
Therapeutic climbing can be helpful on several levels to patients with impaired physical perception: It promotes coordination and concentration, effectively increases strength, and helps patients to again find their centre of gravity. The training ends with stretching exercises, as Simone Wehner-Engelbrecht can still barely achieve the full range of motion in her wrists. However, wall climbing has helped significantly improve the situation compared to when she started rehab.



BAD FEILNBACH  
REITHOFPARK

36

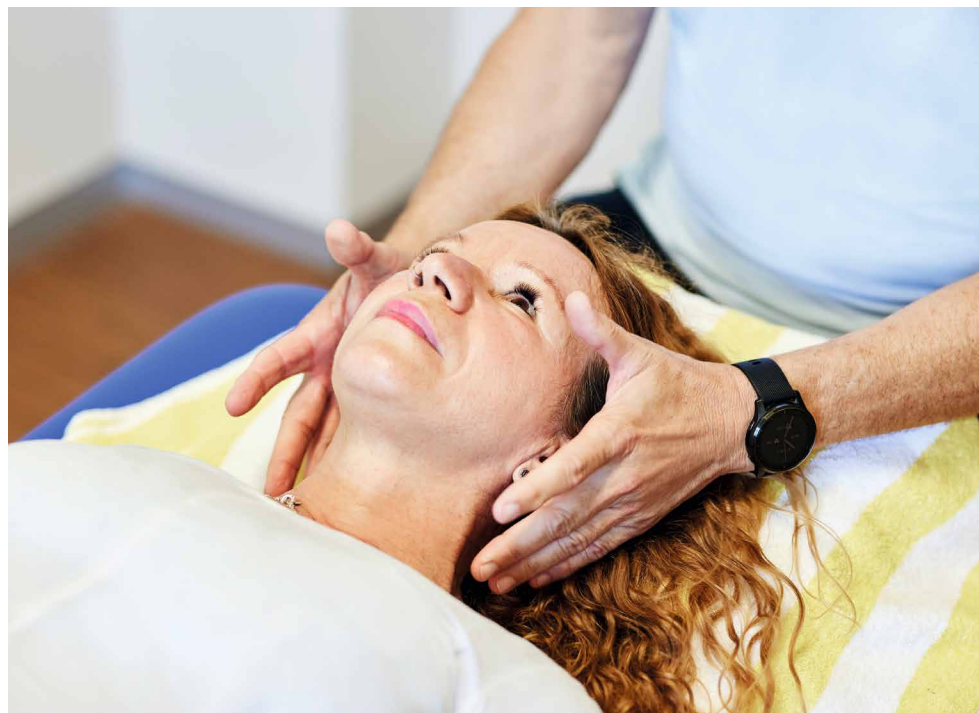
DAYS IS THE AVERAGE TREATMENT  
DURATION PER PATIENT





## GETTING ALONG

Long COVID is mentally very stressful. Neuropsychotherapy enables Simone Wehner-Engelbrecht to reflect on her situation in conversation. Sometimes she loses her voice here. After all, she is struggling not only with her own fate but also with the trauma of the many deaths encountered on her ward during the pandemic. Prompted by the psychologist, she taps certain pressure points on her body, which has an equally calming and activating effect.

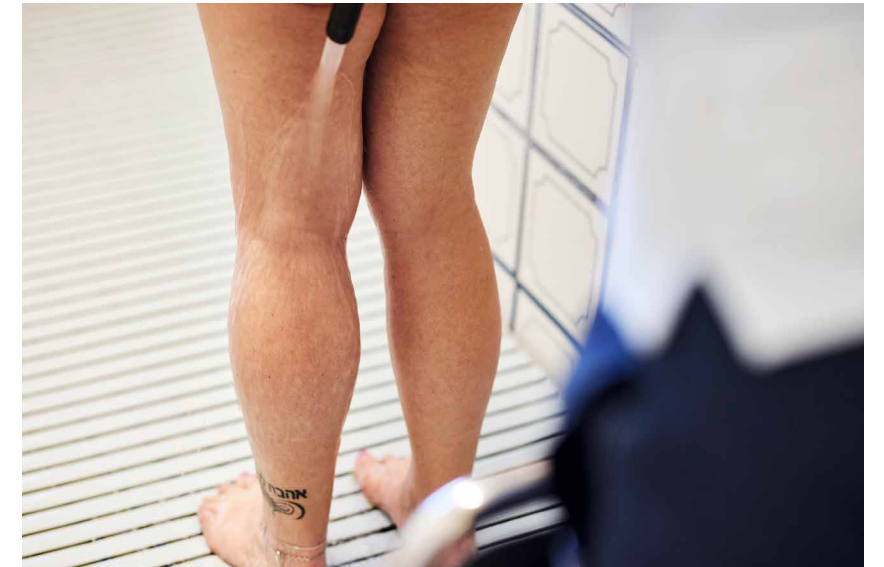


## HELP WITH HELPING YOURSELF

The constant pain in Simone Wehner-Engelbrecht's bones feels like severe toothache. It especially affects her legs. The rehab therapist thus attempts to activate her body's own assistive forces by means of craniosacral therapy. The use of different therapies, such as craniosacral or manual therapy, forms the basis of patient-orientated rehabilitation. Creating an individual plan is important to successfully managing post-COVID syndrome.

## STIMULUS AND RESPONSE

Since she has been plagued by persistent pain, Simone Wehner-Engelbrecht has been taking ice-cold showers only. "It numbs the pain", the patient says. Hence, alternating applications of warm and cold water for her aching legs and feet are also a blessing to the post-COVID patient. The hydrotherapy method developed by the Allgäu priest Sebastian Kneipp is as simple as it is effective: It promotes blood circulation, relaxing the muscles and improving sensitivity in case of sensory defects.



## PUSHING THE LIMITS

The daily rehabilitation programme means hard work for the patients. Simone Wehner-Engelbrecht quickly reaches her limits. This was painfully clear to her on a short walk the previous day. Nevertheless, outdoor exercise is on the next day's agenda: this time strength training with a Theraband. Her efforts are delivering results. Simone Wehner-Engelbrecht now feels stronger physically and more self-confident mentally – both factors are important prerequisites for overcoming the post-COVID syndrome in the long term.





**PROF. DR. MED. PETER YOUNG**

is an expert in all areas of neurology and has an additional qualification in intensive care and sleep medicine. From 2013 to 2019, he headed the Institute for Sleep Medicine and Neuro-muscular Diseases of Münster University Hospital. Since 2019, he has been Medical Director and Senior Consultant in Neurology at Medical Park Reithof-park. Young belongs to numerous national and international professional neurological associations.



**DR. MED. SYLVIA BECKSTEIN**

has been a senior physician executive since 2015, initially in orthopaedics and, as of 2019, in neurological rehabilitation. She is a specialist in physical rehabilitative medicine and sports, nutritional and special medicine. Beckstein's interdisciplinary experience helps her in the management of complex post-COVID cases.

## INDIVIDUAL AND INTERDISCIPLINARY

**SARS-CoV-2 presents the health care system with new challenges – also due to the large number of patients battling the long-term effects of infection from the virus. At the neurological rehabilitation hospital of Medical Park Bad Feilnbach Reithofpark, the team helps patients with post-COVID syndrome by drawing on experience gained to date, close interdisciplinary collaboration, and a therapy tailored to the individual patient.**

**When it comes to the long-term effects of a coronavirus infection, the picture is still very diffuse. What exactly are the symptoms and how are they medically classified?**

**PROF. PETER YOUNG** It already became clear to us during the first wave of the pandemic that an acute SARS-CoV-2 infection can have long-term consequences, both directly and indirectly, in a relatively large number of cases. On the one hand, we must differentiate here between patients who require a very long period of rehabilitation subsequent to treatment on the intensive care unit. If there is a continuum between infection and subsequent symptoms, we refer to this as long COVID. Post-COVID, on the other hand, usually develops in patients who have mild to moderate cases, are not hospitalised, and subsequently experience sudden symptoms such as persistent fatigue, rapid exhaustion, cognitive disorders and depressive moods. These symptoms do not correlate with the severity of the infection. Therefore, we soon realised that we are dealing with a separate clinical picture.

**DR SYLVIA BECKSTEIN** The physical resilience of patients with post-COVID syndrome is often severely compromised, or the patients can no longer cope with their everyday lives because, for example, they are hypersensitive to sensory stimuli. Some time ago we had a patient who was incredibly sensitive to noise and could only cope by wearing headphones to muffle the sounds around her. Each patient has a unique set of symptoms. COVID is a chameleon.

**The multitude of possible symptoms certainly does not make targeted therapy any easier. Why is neurology a good port of call for post-COVID patients?**

**PROF. YOUNG** We deal with every possible neurological disease. Many such diseases have similar symptoms. Personally, I specialise in neurological muscle disorders such as muscular dystrophies and sleep disorders. Muscle disorders also frequently result in fatigue syndrome, as is the case with post-COVID. Sleep disorders are likewise commonly associated with post-COVID syndrome. So we're not starting from scratch here, but can build on our many years of experience. Furthermore, there is no other somatic discipline that is so closely related to psychology. We have a very well-established team of psychologists at our hospital.

**How are somatics and psychosomatics associated with post-COVID patients?**

**DR KATRIN PAHLKE** Post-COVID patients are often heavily burdened because they can no longer manage as they believe they should. This leads to depressive moods, sometimes even depression. In addition, we are dealing with post-traumatic stress disorders here which have arisen due to intensive medical care. The fears encountered at the start of the pandemic, when there was no vaccine and hardly any other means of protection against the virus, are still taking their toll. Here at the neuropsychology department, we keep all this in mind when examining post-COVID patients at the beginning of their stay for their physical (somatic) and mental health (psychosomatic) disorders and possible correlations. The results of these tests then become the foundation for further treatment.

**PROF. YOUNG** I believe it is important to stress that post-COVID syndrome is usually a physical condition – even if the disease can lead to mental health problems and disorders. Some patients also explicitly refuse psychosomatic treatment.

**DR BECKSTEIN** Every patient has a different starting point, a different environment, and different issues. Predefined therapeutic concepts are of no use to us in post-COVID management. It is therefore important to design the therapy as individually as possible. An important element for us here is the “therapy visit”, as we call it, which we introduced specifically for post-COVID patients.

**What form does such a therapy visit take?**

**PROF. YOUNG** The rehabilitation team consists of senior physicians in neurology and rehabilitative medicine alongside therapists working in the areas of motor function, speech and psychology. The team meets with the patient at the start of their stay for a detailed discussion of their condition, their goals, and their personal environment. We therefore gain as comprehensive a picture as possible of the patient's situation right from the start, which we can then address by drawing on the wide range of therapeutic measures available in-house. Adjustments can of course be made during therapy, whenever necessary. However, experience has shown that there are really no alternatives to our interdisciplinary approach to this highly complex clinical syndrome.

**THOMAS ROHBECK** The therapy visit is also important for patients because it gives them a good impression of how the different teams at the hospital form one unit. In addition, there are central therapist plans in which to record any special events and the patient's acute mental state. Every stakeholder can thus react quickly and purposefully. This flexibility and the close interaction between everyone involved are crucial to the success of therapy.

**Despite the claim of delivering as individual a therapy as possible, what are the fundamental principles behind your therapeutic concept for post-COVID patients?**

**DR PAHLKE** To challenge, but not overchallenge – for me, this is a very fundamental principle in our work. We should not tip the balance between exertion and relaxation, as the resulting stress is counterproductive. It aggravates symptoms such as headaches, exhaustibility, and cognitive impairment.

**PROF. YOUNG** It is our task to increase the physical resilience of post-COVID patients again in addition to offering neuropsychological support. The method employed is called pacing, which roughly means a step-by-step approach to energy management. The patients must work at slowly but steadily increasing their fitness while remaining mindful of their own limitations. When using this method, we are also guided by the

## SPECTACULAR VARIETY

Thanks to its multidisciplinary team, the neurological rehabilitation hospital of Medical Park Bad Feilnbach Reithofpark covers a particularly broad spectrum. That is in the nature of the matter. The limitations from the neurological disorder can only be controlled by the interplay of different medical disciplines and methods. As well as classic rehabilitation medicine, this also includes sports therapy, occupational therapy, hydrotherapy, complementary therapies and psychological and psychiatric care. The medical team decides on the therapeutic programme according to the respective patient's health and living situation.



**DR. KATRIN PAHLKE**

has a diploma in psychology and has headed the neuropsychology department at Medical Park Reithofpark since 2021. She is qualified in clinical neuropsychology and is also a systemic therapist in accordance with the guidelines of the German Society for Systemic Therapy, Counseling and Family Therapy.



**THOMAS ROHBECK**

has worked in neurological rehabilitation at the Medical Park Group since 2009, covering all rehab phases, and has been a therapy director at the Reithofpark site since 2020. He has 15 years of professional experience as a physiotherapist, Bobath and manual therapist, and has completed numerous specialist training courses which he relies on when devising neurological therapies in any phase of rehabilitation.





What do we know about post-COVID? Not enough yet. In 2021, the World Health Organization published a preliminary definition. It is not yet clear how often post-COVID occurs. Based on a review of various publications, between 7.5 and 41 percent of all non-hospitalised adults were struggling with post-COVID syndrome. Among the patients who were hospitalised, the corresponding figure was 37.6 percent. This is consistent with the assumption that long-term effects are more likely from severe cases. This finding also applies to patients with pre-existing diseases. There is evidence that full vaccination can alleviate the long-term effects.

Source: Robert Koch Institute

findings from research into chronic fatigue syndrome (CFS); in addition, we collaborate with the CFS outpatient centre at Berlin Charité University Hospital.

**DR BECKSTEIN** A prerequisite is that the patients acknowledge and accept their own physical limitations. It is quite striking how many post-COVID patients were high performers before they contracted the illness. They were very sporty or held executive roles. Frustration and despair about their situation are therefore even more acute in this group of individuals.

**How can tolerance to such frustration be increased among these patients on the long road to recovery?**

**ROHBECK** We notice immediately when post-COVID patients reach their limits. We can meet the therapeutic needs of patients by working closely with our psychological department. It is a matter of learning how to deal constructively with the condition. An important factor is that patients can see the progress they are making based on the therapy prescribed. Where did I start, and how far have I come? The hierarchical structure of therapeutic groups, which we have staggered according to performance levels, is helpful in this regard.

## BODY AND MIND

Post-COVID syndrome usually entails physical (somatic) disorders – even if the disease can lead to mental health (psychosomatic) issues and disorders. Psychological support during rehabilitation is therefore extremely important. Medical Park Reithofpark has a well-established team of psychologists for this very purpose.

**When is a post-COVID patient ready for discharge?**

**PROF. YOUNG** Our claim is not that patients are completely healthy when they are discharged. That would be unrealistic. But the patients should be able to see that things are on the up again. To this end, pacing is the method of choice: showing patients a path they can follow with new optimism and self-confidence.

**DR PAHLKE** The connection with everyday life is very important. The patients should also be able to apply what they have learned from rehab in their living environment – and receive the necessary support to this end.

**DR BECKSTEIN** Another very important point in this context is sociomedical support. After all, with post-COVID it is often difficult to continue working as before and manage daily life without assistance. The patients ask themselves a lot of questions. Do I need to retrain? Can and should I remain on sick leave? Should I opt for reintegration? And how does a temporary partial disability pension work? In particular, the uncertainty as to how things will continue for the patients after rehab causes stress and existential insecurity. We try to alleviate these concerns by providing each patient with a presentation and a dedicated supervision visit to specifically inform them about the follow-up options available after rehabilitation.

**For patients, rehabilitation medicine always comes at the end of a treatment. Does rehabilitation play a pioneering role in post-COVID treatment?**

**PROF. YOUNG** In this case, I would say that rehabilitation facilities are indeed at the forefront – also with respect to acute diagnostics. We offer the patients the necessary space beyond the realms of their usual social environment to find their own rhythm in life again.

**DR BECKSTEIN** There are now outpatient centres and specialist practices for post-COVID patients. However, they are unable to offer a comprehensive, consistent, tailored therapeutic concept like we do here. Inpatient rehabilitation is certainly advisable, especially at the onset of post-COVID, which is why patients are now coming to us from all over Germany.



## AT YOUR OWN PACE

The central element of neurological treatment for post-COVID is the principle of pacing. Patients should gradually and continuously increase their individual exposure limits. The key here is to maintain the balance between caution and activation. Patients thus develop the necessary confidence and patience to continue working on improving their condition even after their rehabilitation stay.

**All told, we still know very little about post-COVID. How do you evaluate the therapy?**

**PROF. YOUNG** We monitor therapy by asking the patients to complete questionnaires. We will evaluate them once the sample size is statistically representative. A retrospective review over the medium and, above all, the long term would make absolute sense, but we can't manage that here at present. However, we have a good network and share information of course – especially within our hospital group.

**ROHBECK** We are still gathering experience in the management of post-COVID. Accumulating and channelling knowledge is definitely a task for the future, but adequate frameworks are still lacking.

**Will the pandemic and its long-term consequences bring about lasting changes to our health system?**

**ROHBECK** Yes, we are already seeing that. Post-COVID patients can't be treated according to a standard regimen. It is essential to interconnect the various therapeutic services, from balneotherapy through sports to occupational therapy. Therapies such as those conceived by Kneipp, or certain occupational therapy methods for patients with sensory disorders, are flourishing again. We are seeing how old therapeutic tools are taking on new meaning.

**DR PAHLKE** I have the impression that because of post-COVID and the broad public perception of the symptoms, conditions such as chronic fatigue syndrome are finally being taken more seriously. Hopefully, this will help many of those affected whose complaints have so far always been dismissed as imaginary.

**PROF. YOUNG** As dreadful as the effects of the pandemic are and have been – we are experiencing live, so to speak, how a disease is changing the world. This is incredibly exciting and challenging for us as doctors and therapists. As a team, however, we are thoroughly prepared for this challenge at Reithofpark.



After a severe case of COVID, patients are transferred directly from the intensive care unit to early neurological rehabilitation. They continue to receive treatment here as they did in the hospital (follow-up curative treatment). Patients who develop post-COVID symptoms despite a mild course are usually referred to us for rehabilitation by their general practitioner or a specialist. Keeping an eye on the specifics of the symptoms and damage is thereby important. In addition to neurological rehab, pulmonological, cardiological, and mental health rehabilitation may be indicated for post-COVID, depending on the symptoms.

EDS.

MEDICAL PARK SE, AMERANG

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MEDICAL PARK REHABILITATION HOSPITALS

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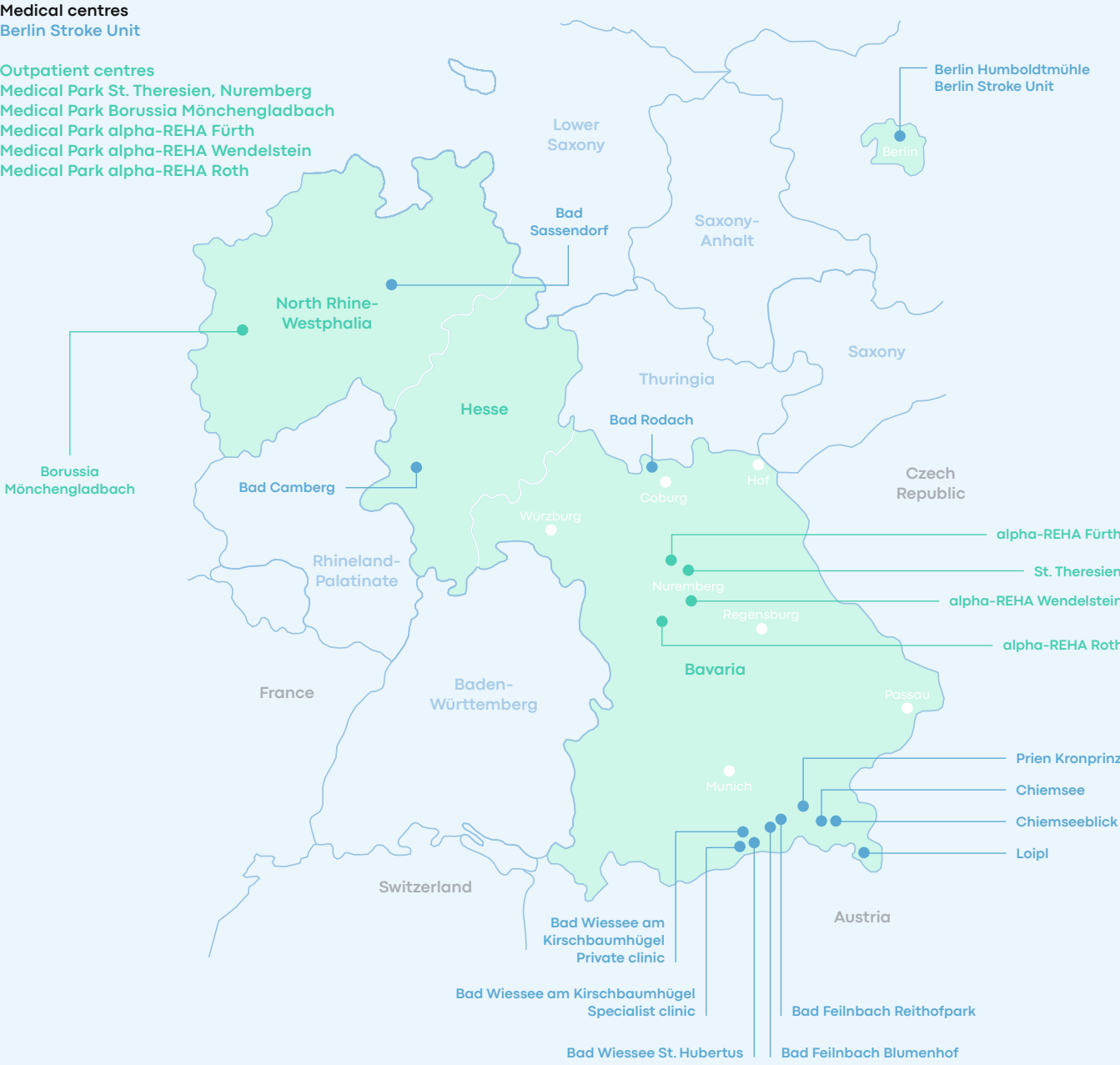
MILICA SIMON, CHIEMSEEBLICK

KATRIN STRASSER, BAD FEILNBACH

LENA HETTLAGE, BAD SASSENDORF

ISA WEIMAR, BAD CAMBERG

DATA FROM 2021 IS PRESENTED IN THIS REPORT. ALMOST ALL PATIENTS TREATED AT THE MEDICAL PARK REHABILITATION HOSPITALS ARE INCLUDED IN THE STATISTICS. MISSING VALUES CAN BE ATTRIBUTED TO VOLUNTARY SURVEYS WHERE NOT EVERY CASE CAN BE DOCUMENTED.



FIELDS OF TREATMENT OF THE MEDICAL PARK HOSPITALS

	Orthopaedics	Neurology	Cardiology	Oncology	Mental health
Medical Park Bad Camberg		●			
Medical Park Bad Rodach	●	●			
Medical Park Berlin Humboldtmühle	●	●			
Medical Park Bad Wiessee am Kirschbaumhügel Private clinic	●				
Medical Park Bad Wiessee St. Hubertus	●		●		
Medical Park Bad Wiessee am Kirschbaumhügel Specialist clinic	●				
Medical Park Bad Feilnbach Blumenhof				●	
Medical Park Bad Feilnbach Reithofpark		●			
Medical Park Chiemsee (Bernau-Felden)	●				
Medical Park Chiemseeblick (Bernau-Felden)					●
Medical Park Prien Kronprinz	●				
Medical Park Loipl		●			
Klinik im Park Bad Sassendorf	●				



