

Children's and Adolescents' Hospital, Datteln  
University of Witten/Herdecke



## 20 years of the GERMAN PEDIATRIC PAIN CENTER

20 years of learning together about  
chronic pain in children and adolescents



*“Hearing the laughter of patients and  
laughing together with them fills me with incredible energy.”*

– GPPC Team Member –

# CONTENT

Welcome.....	5
<b>1</b> The German Pediatric Pain Center .....	6
<b>2</b> Who comes to see us?.....	6
<b>3</b> What do we mean by chronic pain? .....	9
<b>4</b> What do we offer patients and their families? .....	9
<b>4.1</b> First outpatient visit .....	11
<b>4.2</b> Multiprofessional outpatient treatment.....	13
<b>4.3</b> Outpatient pain psychotherapy.....	13
<b>4.4</b> Inpatient interdisciplinary multimodal pain treatment.....	14
<b>5</b> Why are there so many superheroes at the German Pediatric Pain Center?.....	17
<b>6</b> What results can patients and their families expect?.....	19
<b>7</b> Our findings on chronic pain in children and adolescents.....	20
<b>8</b> Continuing education and training in pain therapy.....	25
<b>9</b> Research for and with children and adolescents suffering from chronic pain.....	27
<b>10</b> Challenges to address over the next 20 years .....	28
<b>11</b> Recognition and awards.....	31
<b>12</b> Collaborative partners.....	32
<b>13</b> Future plans .....	35
<b>14</b> Acknowledgements.....	36
<b>15</b> Bibliography .....	38
<b>16</b> Films .....	40
Imprint.....	43



*“We stand by the children so that their pain is believed  
and they will be spared from people saying  
‘don’t be silly, you just have to want to feel better...!’”*

– GPPC Team Member –

## DEAR READERS,

The Vestische Child and Youth Clinic – University of Witten/Herdecke has existed for 75 (plus 1!) years. This year, we look back with gratitude on 20 years of children’s pain therapy.

In 2002, we were allowed to treat the first pediatric pain patients on an outpatient basis within the framework personally authorized by the Westphalia-Lippe Association of Statutory Health Insurance. The very first patients were cared for by pediatric nurse Andrea Menke and psychologists Michael Dobe, Uta Rohr, and me.

**From the very beginning, we acted as a team. This team spirit has remained with us ever since.** With great support from our mentor, Prof. Dr. Werner Andler – and in cooperation with a wonderful child and youth clinic – that small pediatric outpatient pain clinic has blossomed into the German Pediatric Pain Center (GPPC).

**We have drawn strength from standing together, from our team spirit.**

We are fortunate to have been supported by foundations such as the Vodafone Foundation Germany and the Rudolf Augstein Foundation, and by entrepreneurs such as Stephan Kohorst.

Hilde Domin guided us whenever we were in danger of failing due to seemingly insurmountable obstacles. During these times, we secretly recited what is probably her best known poem:



*“Not to become tired  
but to hold out your hand to the miracle  
gently, as though to a bird.”*

Now we look back gratefully together with you, dear readers, on 20 years of pediatric pain therapy!

Dear patients, parents, referring physicians, collaborative partners, funding agencies, sponsors, and companions, let us continue our work together in the future so that more children and adolescents can manage their pain and live self-determined lives.

Warm regards on behalf of the team of the German Pediatric Pain Center

Yours,

Boris Zernikow

Datteln, November 2022

## **1 THE GERMAN PEDIATRIC PAIN CENTER**

The German Pediatric Pain Center is an integrative component of the Vestische Child and Youth Hospital Datteln – Witten/Herdecke University.

Every year, 1,500 outpatients present to the German Pediatric Pain Center; 300 are treated as inpatients in the pain wards, 20-30 of whom are young adults between the ages of 18 and 25.

## **2 WHO COMES TO SEE US?**

Children, adolescents and young adults who visit the German Pediatric Pain Center predominantly have:

- Headaches,
- abdominal pain, and/or
- muscle and joint pain

Many patients experience pain in more than one area of the body. The pain is usually NOT a warning sign of – and NOT a consequence of – organ damage. The pain itself is the disease (this is called “primary” pain).

**The German Pediatric Pain Center includes:**

- **Two outpatient departments** (one medical and one psychotherapeutic)
- **Two inpatient wards:**
  - The Lighthouse ward (21 beds)
  - Paula’s House (8 beds)
- **A training academy**
- **A research department**

Primary pain can persist for several months or years. It is accompanied by restrictions in daily life such as frequent absences from school or withdrawal from friends and hobbies.

Many patients suffer from emotional distress (such as anxiety, depression, or post-traumatic stress disorder) and/or reduced quality of life. Primary treatment is rarely successful.

Families often feel helpless because they try so many different things, yet the pain persists.



David, 8 years



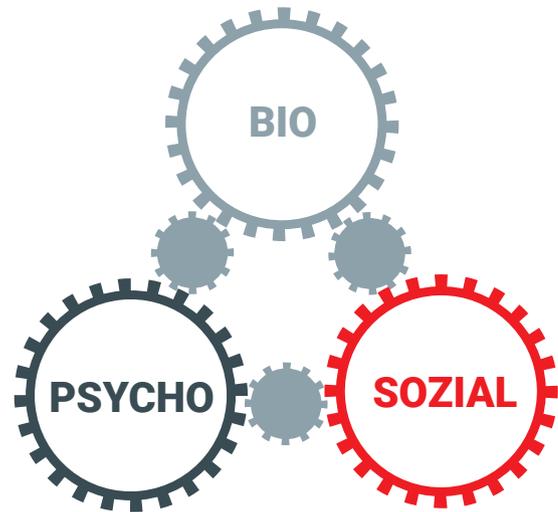
Eser, 9 years

### 3 WHAT DO WE MEAN BY CHRONIC PAIN?

About 30% of all children in secondary schools in Germany experience pain that has persisted for at least 3 months or recurs at least once a week. An estimated 550,000 children and adolescents in Germany suffer from severely debilitating chronic pain.

“Chronic pain” is a bio-psycho-social phenomenon. In the brain of a child with chronic pain the pain-processing neural networks function particularly well, while the pain-inhibiting neural systems function poorly.

The biological basis of chronic pain arises and is maintained by an increased perception of body signals. This is due to psychological factors such as anxiety, which lead to a neural “maladaptation” of the brain. Social factors such as the normal parental



responses to a child’s expressions of pain (increased parental attention and concern) reinforce these “pain learning” processes.

**Chronic pain is “learned” by the brain like a foreign language.** Unlearning this pain is exhausting and takes time, but it is possible!

### 4 WHAT DO WE OFFER PATIENTS AND THEIR FAMILIES?

After calling us (+49-2363-975-180), patients and their parents are emailed a link to the German Pain Questionnaire for children and adolescents. The link includes a version for parents and a version for children and adolescents.

The comprehensive questionnaire helps us to create

a standardized bio-psycho-social case history. With this information, we can optimally prepare for the initial consultation.

After the questionnaire is completed online, we will call to schedule an appointment with the family for an initial in-person outpatient visit.



*“The mixture makes the difference:  
Old, young, male, female, diverse, inexperienced,  
experienced, strict, gentle, big, small.”*

– GPPC Team Member –

## 4.1 FIRST OUTPATIENT VISIT

The initial outpatient appointment takes 2 hours. A pediatric and adolescent medicine specialist and a child and youth psychotherapist will meet with the family together. This simultaneous interview technique has proven to be helpful. It reflects our understanding of chronic pain: pain is never solely “physical” or “psychological”! It is both physical and psycho-social! We need a multiprofessional team to understand a child’s pain comprehensively.

During this first outpatient appointment we decide the course of further treatment together. We offer the following treatment options:

- **Outpatient multidisciplinary treatment** in conjunction with local primary care providers
- **Outpatient pain psychotherapy** at the German Pediatric Pain Center
- **Inpatient interdisciplinary multi-modal pain therapy** for 3-4 weeks in one of the pediatric pain units



### THE PEDIATRIC PAIN OUTPATIENT CLINIC TEAM

Our multiprofessional team includes staff members from the fields of psychotherapy, pediatrics, IT and administration



Yves-Severin, 8 years

## 4.2 MULTIPROFESSIONAL OUTPATIENT TREATMENT

If pain-related impairment is mild to moderate, we establish an **outpatient bio-psycho-social treatment plan** that we communicate with the child's primary care providers. The treatment mainly takes place in the local provider network. If necessary, we will schedule a follow-up visit at the German Pediatric Pain Center.

*“The beautifully designed rooms  
and the attention to detail,  
[the GPPC’s] ‘healing architecture’  
puts me in a good mood every day.”*

– GPPC Team Member –

## 4.3 OUTPATIENT PAIN PSYCHOTHERAPY AT THE GERMAN PEDIATRIC PAIN CENTER

For patients with a mental illness that reinforces or aggravates the pain we offer up to 25 hours of **short-term outpatient psychotherapy** with a child and youth psychotherapist who is certified in pain psychotherapy.



## 4.4 INPATIENT INTER-DISCIPLINARY MULTIMODAL PAIN THERAPY

For patients whose quality of life is **severely impaired by their pain**, outpatient treatment is not effective, especially in the face of pain-aggravating mental illness or other special social circumstances. Implementing an ineffective outpatient pain therapy could lead to feelings of frustration and what we call “pain chronification” (“I’m going to have this pain forever... no one can help us”). We offer these patients **inpatient interdisciplinary multi-modal pain therapy** over a period of 3-4 weeks in one of our two pediatric pain

wards. This treatment is highly effective and is described in detail in a **therapy manual** (see section 6).

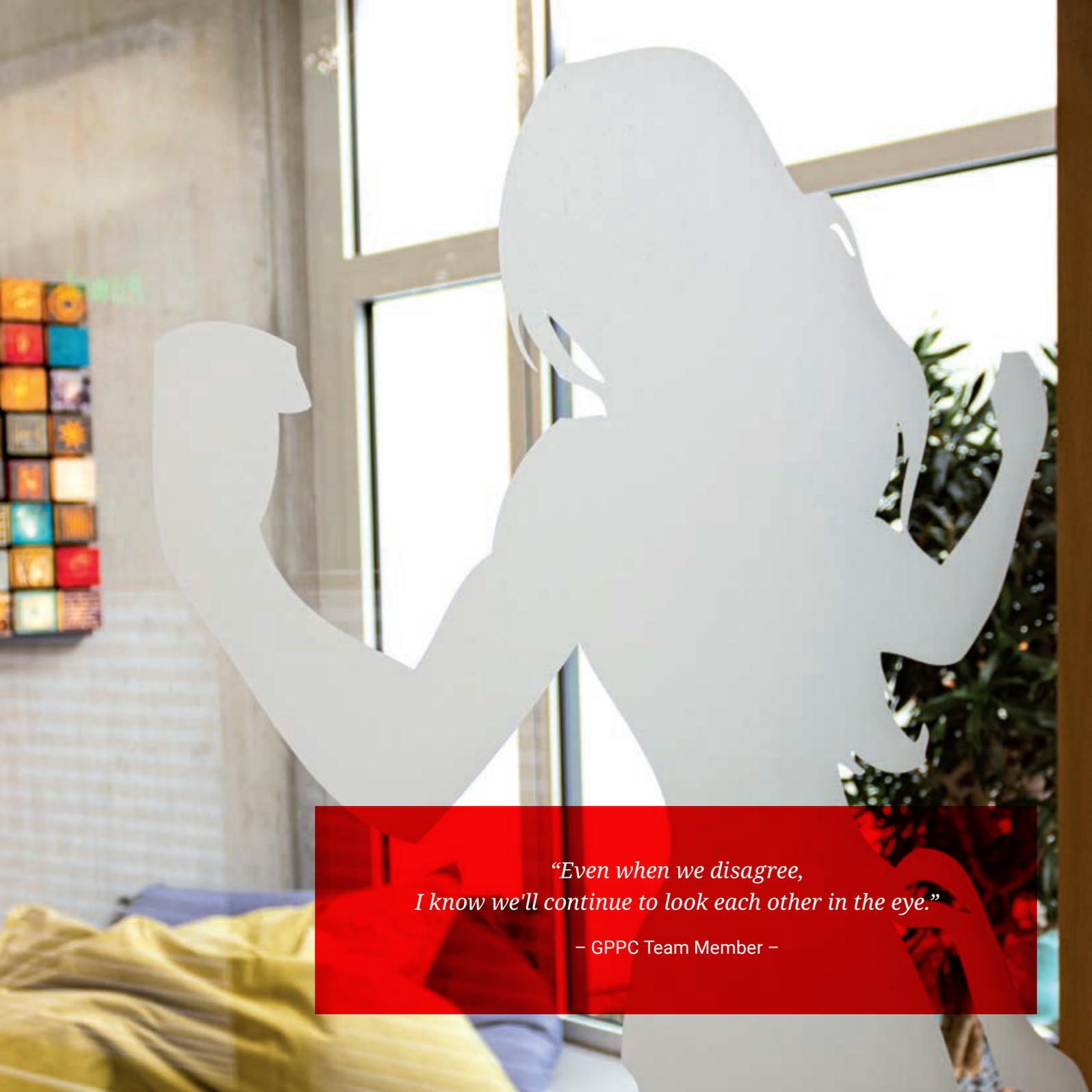
*“As a team, we stick together and we work together so that children and adolescents can understand their pain and be able to manage it.”*

– GPPC Team Member –



### PEDIATRIC PAIN OUTPATIENT CLINIC TEAM

Our multiprofessional team consists of staff members from the fields of psychotherapy, nursing, pediatrics, social work, physiotherapy, pedagogy, IT and administration



*“Even when we disagree,  
I know we’ll continue to look each other in the eye.”*

– GPPC Team Member –



*“We are open to learning from patients and families  
and accepting them as they are.”*

– GPPC Team Member –

## 5 WHY ARE THERE SO MANY SUPERHEROES AT THE GERMAN PEDIATRIC PAIN CENTER?

Invasive measures and drugs are largely ineffective at treating chronic primary pain, with only a few exceptions. For example, analgesics such as ibuprofen or triptans effectively alleviate the discomfort of migraine attacks.

An interprofessional and multimodal approach that both increases a patient's self-efficacy and empowers parents can "cure" 60-80% of patients. Now, "cure" does not mean that our young patients no longer experience pain. Pain helps protect us, and it is nearly impossible to survive without it. What it means is that patients can "MANAGE THEIR PAIN".

Our patients carry within themselves the power to one day say, "I have my pain under control – and not the other way around!".

Our patients are "superheroes" with "superpowers". We are like a coach who helps to activate these "super healing powers". That is why you can find images and sculptures of superheroes everywhere in the German Pediatric Pain Center.





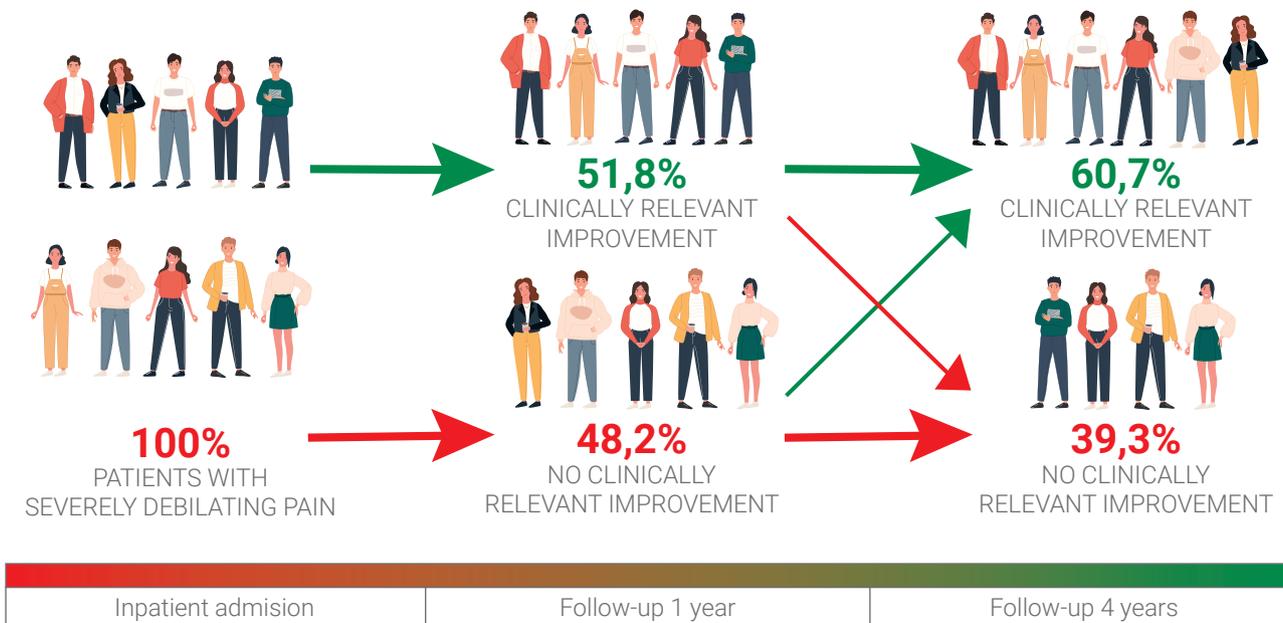
**Sarah, 7 years**

## 6 WHAT RESULTS CAN PATIENTS AND THEIR FAMILIES EXPECT?

Our pain therapy is very effective. In the long term, we can help about 60% of our patients to the point where their quality of life is no longer diminished by chronic pain. For most of them, chronic pain no longer plays a role at all. Another 20% of patients experience a significant improvement and become much more active again. Only about 20% of our patients cannot

be helped sufficiently to get their chronic pain under control. We are constantly working to further develop and optimize our treatment approaches; if you would like to read about this process, you will find a detailed description of our scientific research in **section 9** as well as a compilation of scientific publications in **section 15**.

### LONG-TERM EFFECTS OF INPATIENT PAIN THERAPY



According to Zernikow et al., clinically relevant improvements in quality of life, school absenteeism and pain intensity indicate a significant overall improvement in patients' daily lives (Clinical and Economic Long-Term Treatment Outcome of Children and Adolescents with Disabling Chronic Pain. Pain Med 2018;19(1):16-28)

## 7 OUR FINDINGS ON CHRONIC PAIN IN CHILDREN AND ADOLESCENTS

Through our research over the past 20 years, we have gained many important insights into chronic pain in children and adolescents. We would like to share some of these with you.

### School

- In Germany, 1 in 10 school children suffers from severe chronic pain (*Könning et al. 2021a*).
- Sleep problems, feelings of depression, and parental chronic pain are the most important risk factors for the development of chronic pain in children (*Brown et al. 2021b; 2021a; Wager et al. 2020*).
- Approximately 2 in 3 children with chronic pain regularly use pain medications; use of pain medications is even more prevalent among children with headaches (*Könning et al. 2021b*).
- In a review, we found that carrying a heavy school backpack was not a risk factor for the development of back pain in children. Competitive sports, anxiety and depression, however, were associated with increased back pain in children (*Frosch et al. 2022*).
- During the coronavirus pandemic, particularly otherwise vulnerable children developed chronic pain for the first time (*Rau et al. 2021*).

### Primary care

- Many children and adolescents who see a pediatrician or adolescent physician for recurrent pain already have a bio-psycho-social understanding of pain; they think stress is the most common cause (*Könning et al. 2021c*).
- For 75% of all children with chronic pain, primary treatment is sufficient. However, if this is not successful after 3 months, pain improvement under primary treatment is extremely unlikely (*Wager et al. 2019*).

### Tertiary care

- Pain therapy works best when implemented by a team (*Stahlschmidt et al. 2016*).
- Many patients experience pain in more than one area of their body (*Zernikow et al. 2012*).
- Nearly half of patients have daily or persistent pain (*Zernikow et al. 2012*).
- Pain patients have significantly more problems with anxiety and depression than the age-matched general population (*Zernikow et al. 2012*).
- 10% of all patients receiving inpatient pain treatment have post-traumatic stress disorder (PTSD) (*Stahlschmidt et al. 2020*).

Continued on page 23



*“We are aware of how much trust, especially at this time, families place in us when they entrust us with their children.”*

– GPPC Team Member –



# SPIDER-MAN THE FANTASTIC FOUR



WELCOME TO THE  
FANTASTIC FOUR

SPIDER-MAN  
IS HERE!

THE FANTASTIC FOUR  
ARE HERE!

THE FANTASTIC FOUR  
ARE HERE!

SPIDER-MAN!  
I DON'T  
WANT TO  
KNOW!

STOP BRAGGING!  
YOU  
HAVE KNOWN  
YOU'RE NOT SMART  
ENOUGH!

HOW DID SPIDER-  
MAN GET HERE?  
HE'S GOT SOME  
NEEDLE CRAWLING  
YOU GET RID  
OF HIM!

JOHNNY CAN'T  
GET RID  
OF HIM!

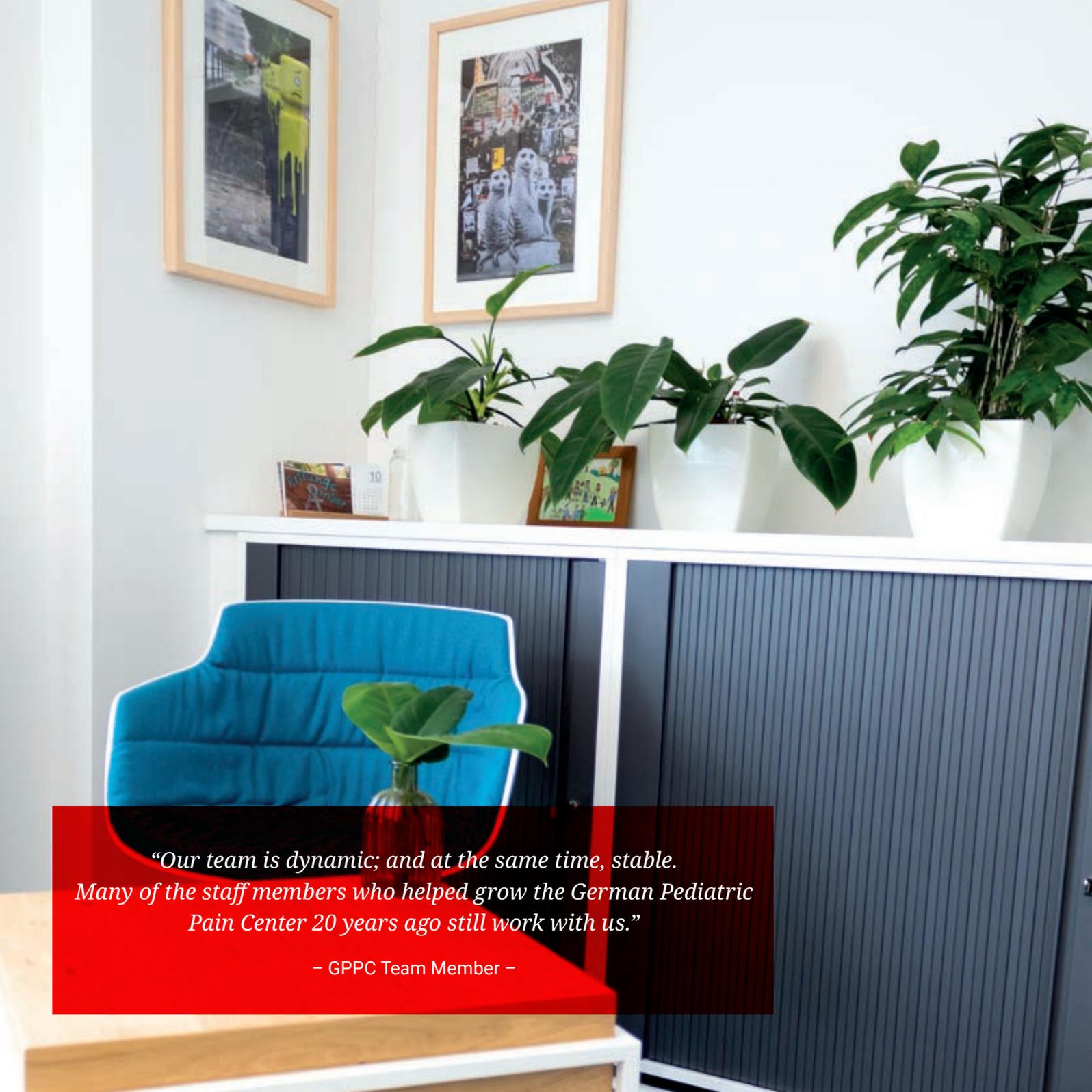
I'LL JUST  
BEAT  
IT WITH THIS  
AND...

### Continued from page 20

- Children of financially well-off parents are more likely to use our services than children who come from lower income households (even though the treatment is free of charge for all patients!) (*Ruhe et al. 2016*).
- A randomized controlled trial has clearly demonstrated the effectiveness of intensive interdisciplinary pain treatment (*Hechler et al. 2014a*).
- Intensive interdisciplinary pain treatment leads to significantly lower health insurance expenditures in the first two years after treatment (*Hechler et al. 2014a; Lopez Lumbi et al. 2021*).
- Our 3-week inpatient pain therapy causes not only objective clinical improvements, but also significant subjective improvements to our patients' daily lives (*Hechler et al. 2009*).
- Most pain medications can be discontinued during inpatient pain therapy (*Hechler et al. 2010*).
- Patients and their parents are generally satisfied with the treatment. Their satisfaction with the treatment is independent from the treatment outcome, and vice versa (*Stahlschmidt et al. 2018*).
- If inpatient treatment is recommended as part of the initial treatment but patients do not participate, they tend to have poorer outcomes than patients who do complete inpatient treatment (*Hechler et al. 2014b*).
- Socio-medical aftercare following inpatient treatment improves treatment results by 25% (*Dogan et al. 2021*).
- Seven years after treatment, nearly 60% of former pain patients are completely free of chronic pain in young adulthood. Moreover, former pain patients have significantly better resilience strategies than the age-matched general population (*Wager et al. 2021*).
- Chronic pain in childhood and chronic pain in parents are both risk factors for chronic pain in young adults (*Brown et al. 2021c*).



**Mattea, 9 years**



*“Our team is dynamic; and at the same time, stable.  
Many of the staff members who helped grow the German Pediatric  
Pain Center 20 years ago still work with us.”*

*– GPPC Team Member –*

## 8 CONTINUING EDUCATION AND TRAINING IN PAIN THERAPY

With a lot of voluntary commitment from the team and partly in cooperation with the Academy for Continuing Medical Education, the Association of Statutory Health Insurance of Westphalia-Lippe as well as the German Pain Society, we have been offering the following continuing education and advanced training opportunities for years:

- 80-hour course for physicians to obtain additional qualification in “Special Pain Therapy”.
- 80-hour course for child and adolescent psychotherapists to obtain additional qualification in “Special Pain Psychotherapy”.
- 40-hour course for nurses to obtain the title “Pediatric Pain Management Specialist”.

We were particularly pleased to be able to offer a three-day international pain course in 2019 for experts from around the world. We organized it together with the Children’s Hospital Boston (Harvard Medical

School). 42 participants traveled from 10 countries including Lithuania, Canada, Israel and even New Zealand to learn together about the multi-modal pediatric pain management currently implemented in Boston and Datteln.

We are also proud of the “**Datteln Children’s Pain Days**”, an international biennial congress on child pain therapy and pediatric palliative care. We organize the congress on a voluntary basis together with colleagues from Germany, Switzerland, Austria, the Netherlands, Italy and Hungary. In 2019, more than 1,000 nurses, physicians and therapists attended the congress in the Ruhrfestspielhaus Recklinghausen, Germany.

Unfortunately, the COVID-19 pandemic prevented the congress from taking place these last 2 years, but the organization for 2024 is underway!



### THE CONTINUING EDUCATION AND TRAINING TEAM

Our different professional groups can participate in a wide variety of events

Feuer



*"Fire"*  
**Julia**, 10 years

## 9 RESEARCH FOR AND WITH CHILDREN AND ADOLESCENTS SUFFERING FROM CHRONIC PAIN

Research and quality control are necessary components of high-quality, scientific evidence-based tertiary patient care. On a **regional level**, our research activities contribute to strong networking. Two of our large-scale research projects are **CHAP** (Chronic Headache in Adolescents: The Patient perspective on health care utilization), a research group funded by the German Federal Ministry of Education and Research, and **MEMAPS** (Chronic pain in children and adolescents – multidimensional outcome quality measurement and practical stratification strategy),

a project funded by the Innovation Fund. For these projects the German Pediatric Pain Center collaborates with **8 schools**, more than **4,000 students**, and **40 pediatric and adolescent private practices**. Research at the German Pediatric Pain Center is conducted under the **Chair of Pediatric Pain Therapy and Pediatric Palliative Medicine at the Witten/Herdecke University** as well as with **PedScience – Vestische Forschungs-gGmbH**, a non-profit organization that we founded for the benefit of our patients.



### RESEARCH TEAM

Our multiprofessional team has employees from the fields of psychology, nursing science, health sciences, medicine, pedagogy, neuroscience and administration.



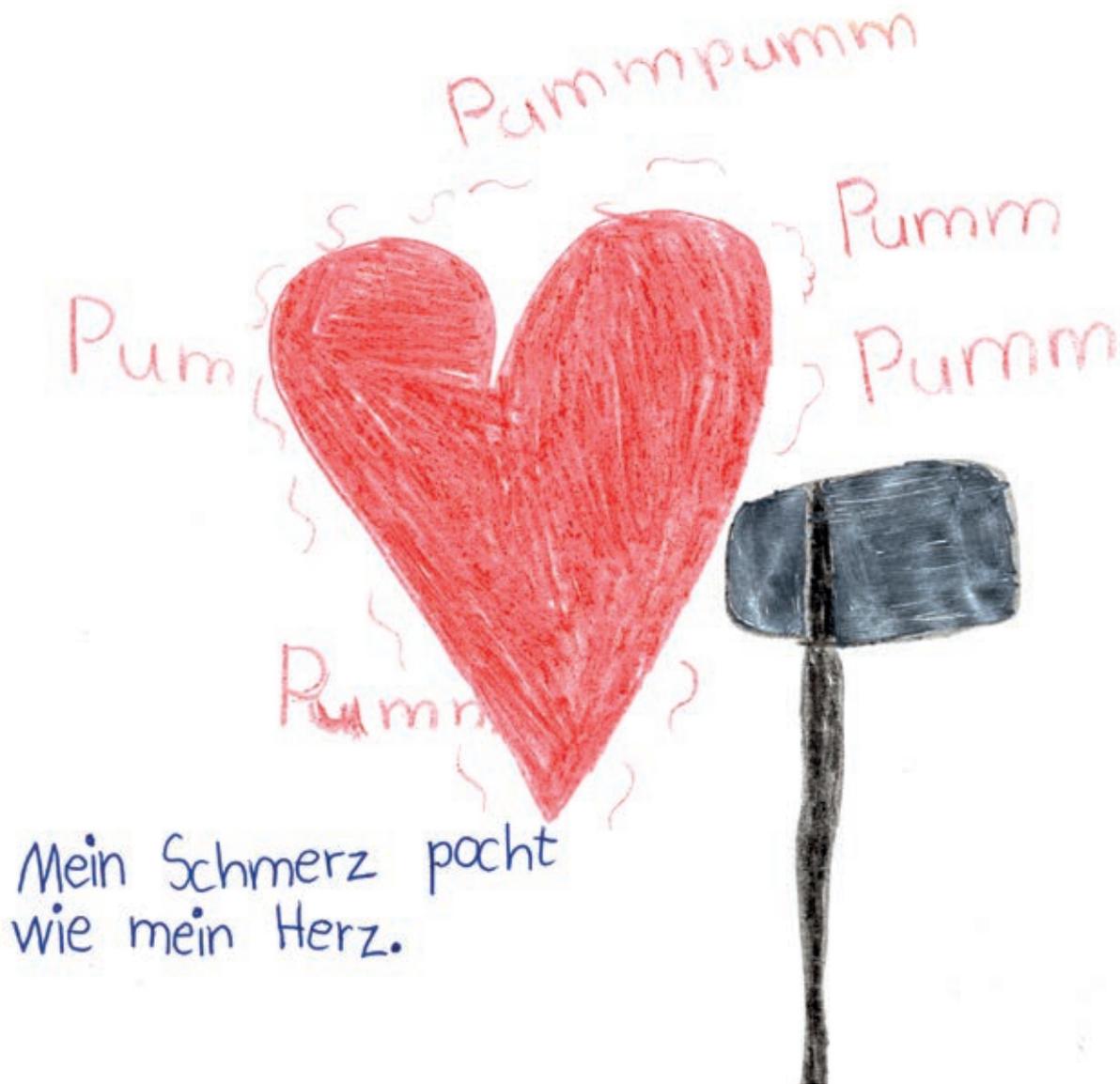
## 10 CHALLENGES TO ADDRESS OVER THE NEXT 20 YEARS

Unfortunately, successful interprofessional, interdisciplinary, and multimodal pain management requires a good understanding of the German language. We have not yet developed **services for young people and their families who do not speak German comfortably.**

We also have considerable difficulty helping children and adolescents with **intelligence impairments** because they cannot receive the attention they need in our group setting. Children and adolescents who have **severe physiological diseases** sometimes suffer more from chronic pain, due not to organ damage but to pain sensitization. Pain management for these patients is a major challenge and we need to create infrastructure that meets the challenges of their care.

*“Improving the health of patients is the primary goal of our research and it’s great how our research results are then implemented in such a practical and visible way.”*

– GPPC Team Member –



*"My heart throbs like my pain."*  
**Mila Sophie**, 8 years



# Urkunde

Deutschland ist das Land der Ideen. Mit Ideen für das Land gestalten wir unsere Zukunft – weltoffen, tolerant und mit Begeisterung.

Die Initiative „Deutschland – Land der Ideen“ verleiht  
**dem Vodafone Stiftungsinstitut für  
Kinderschmerztherapie und Pädiatrische Palliativmedizin**  
die Auszeichnung

## Ausgewählter Ort 2011

A handwritten signature in black ink, appearing to read 'C. Wulff', is positioned above a horizontal line.

Bundespräsident Christian Wulff  
Schirmherr

Deutschland  
Land der Ideen



## 11 RECOGNITIONS AND AWARDS

Over the past 20 years, our team has been honored with a variety of awards. The Vestische Child and Youth Clinic Datteln (The Pediatric Hospital of Witten/Herdecke University) is one of the largest pediatric and adolescent clinics in Germany, but its operation is not supported or subsidized by the state. Therefore, it is important to continually demonstrate our commitment to treating chronic pain in children and adolescents by sharing our successes and innovations, research, and expertise. **Scientific awards and prizes that we receive help expand care to better serve more pediatric patients.**

**We are especially honored to have received the following recognitions:**

**2020**

“Telemedicine Award” from the German Society for Telemedicine for the project “App-supported therapy for long-term implementation of pain therapy strategies for young adults”.

**2016**

- “Fast Forward Science” competition, 1st place winner (Substance category) for the educational film “Migraine? Get it under control!”
- “MSD Health Award” (1st prize) for outstanding innovative care solutions

**2015**

“Communicator Award” Science Award from the Donors’ Association for German Science and the German Research Foundation (DFG), awarded to Prof. Dr. Boris Zernikow.

The “Communicator Award” is announced by the DFG. This personal award is presented to researchers or teams from all fields of research who make their work accessible to a wider audience in a particularly innovative, diverse and effective way and engage in a dialogue between the research community and the public.

**2011**

“Selected Landmark 2011” in the “Land of Ideas” Our project was chosen from 2.600 applications as one of 365 landmarks in Germany representing future-oriented, innovative, creative and diverse ideas. “Germany – land of ideas” is an initiative of the German federal government and the German economy.

**2010**

Science Award of the German Society for Psychological Pain Therapy and Research (DGPSF)

**2008**

“Live Pure Sponsorship Award” from the Live Pure Foundation for the project “Quality assurance agreement pain therapy (according to §135 Abs. 2 SGB V): This is how children with multiple disabilities and chronic pain benefit!”

**2007**

“Sertürner Award” from the Sertürner Society Einbeck Registered Association.

**2006**

- “Stefan Engel Science Award” from the German Society for Social Pediatrics and Adolescent Medicine
- “Pain research award” from the German Society for the Study of Pain (Clinical Research Category).

## 12 COLLABORATIVE PARTNERS

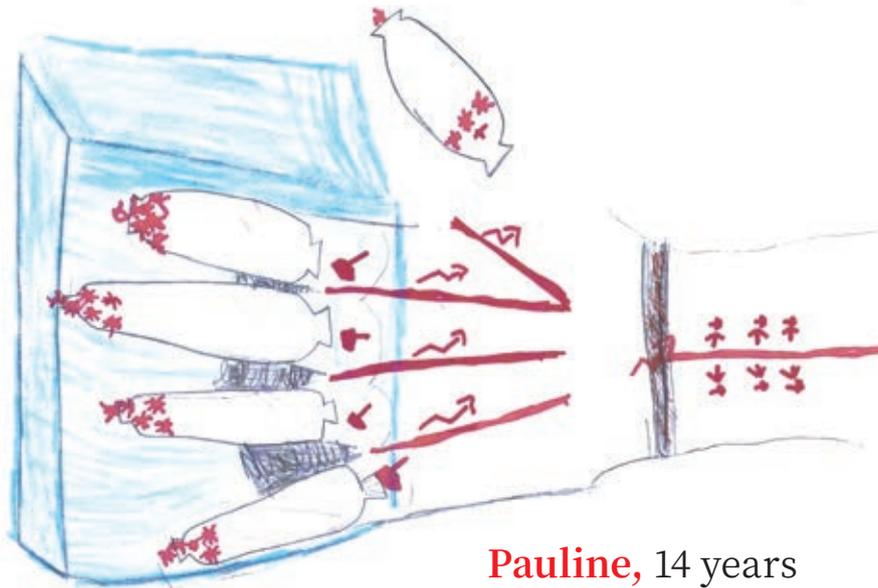
We feel particularly connected to three institutions similarly dedicated to the interprofessional treatment of children and adolescents with chronic pain:

- the **Baden-Württemberg Pediatric Pain Center** (Director Prof. Dr. Markus Blankenburg),
- the **Bavarian Pediatric Pain Center** (director Prof. Dr. Dr. Michael Frühwald) and
- the **Pain Treatment Center of the Children's Hospital Boston** (USA), Harvard Medical School (directors Prof. Dr. Navil Sethna and Prof. Dr. Charles Berde).

With all three institutions we have had long-lasting, creative and fruitful collaborations, for which we express our sincere gratitude.



We would also like to acknowledge **Bone Buddrus**, the last chief cartoonist of the legendary comic “**Fix und Foxi**”, who has been designing educational materials and videos with us for many years.



**Pauline**, 14 years



**Boris**  
Zetnikow

**Navil**  
Sethna

*“There is nothing better than working together with people who are so different but share a common goal.”*

– GPPC Team Member –



*“Those who work here in the pain ward  
consciously open their hearts and minds to be  
with people every day and to continue to learn.”*

– GPPC Team Member –

## 13 FUTURE PLANS

In 2022, we would like to remodel the **physiotherapy department** so that it can better meet the needs of children with pain.

If you would like to support this “Give Space” initiative, you can make a donation to:  
 Vestische Caritas Kliniken GmbH; Volksbank eG Waltrop; IBAN: DE14 4266 1717 0100 2681 07; BIC-Swift: GENODEM1WLW. Purpose: “Raum Geben”.

Some of our current **digitalization** projects are supported by the Innovation Fund. We would like to present two here:

### Feed-bApp

As part of a research project, together with the pediatric pain clinics in Stuttgart, Augsburg and Garmisch-Partenkirchen, we are investigating which type of app-based post-inpatient feedback pediatric pain patients benefit from most, and which type of feedback is most cost-effective. A **multicenter randomized efficacy trial with 400 patients** and their parents will be conducted to analyze different feedback intensities in relation to pain-related impairment and treatment satisfaction. Collaborative partners are the **University of Witten/Herdecke** and the health insurance companies **Techniker** and **Barmer**.

### Wissen(s)Star – Knowledge makes you strong!

Empowering parents and children with functional abdominal pain, **Wissen(s)Star** (“Knowledge(s)Star” in English) consists of two projects. First, an evidence-based, educational multimedia website will be created with the help of our patients. In the second stage, the benefits of the website will be evaluated in a **randomised controlled trial** with a total of **192 patients and their parents** participating over three months. We will investigate how the website influences interactions between physicians and patients and their parents. We are collaborating with **GFO clinics in Bonn, Gesundheit Nord gGmbH – Klinikumverbund Bremen, Klinikum Dortmund**, and the **Techniker health insurance company**.



*“A plant. One that helps me.”*

**Paula, 7 years**

## 14 ACKNOWLEDGEMENTS

We would like to thank the long-time medical director of the Vestische Child and Youth Clinic, **Prof. Werner Andler**. Without his powerful, wise and warm-hearted support the German Pediatric Pain Center would not have come to be. Together with his wife Dorothea, we have created the **Werner Andler Garden** in front of the main building of the German Pediatric Pain Center in his honour. Visitors can find his favourite flowers there, and taste his favourite apples in the Fall!

The experts on our advisory board provide us with advice and support (<https://www.deutsches-kinderschmerzszentrum.de/ueber-uns/beirat/>). We would like to thank the active and retired members of the advisory board for volunteering their time!

### Current advisory board members of the German Pediatric Pain Center:

- **Dr. Jens Baas**, Chairman of the Board of the Technical Medical Insurance Company (Substitute: Prof. Dr. Roland Linder; Dr. Andreas Meusch)
- **PD Dr. med Michael Böswald**, Chairman of the administrative district Münster of the State Medical Association of Westphalia-Lippe
- **Prof. Dr. Martin Butzlaff**, President of the University Witten/Herdecke
- **Dr. Bernd Maltaner**, Professional Association of Pediatricians in private practice
- **Heike Norda**, Chairwoman of the German patient association of pain patients

- **Dr. Joan Elisabeth Panke**, Medical Service Federation, Policy Advice Medicine
- **Dr. Uta Polak**, German Social Accident Insurance, Head of Division
- **Dr. Thorsten Ruppert**, German Association of Research-based Pharmaceutical Companies, Senior Manager Research/Development/Innovation
- **Dr. Dirk Spelmeyer**, Association of Statutory Health Insurance of Westphalia-Lippe, Chairman of the Board of Management (Substitute: Ms. **Marion Henkel**)
- **Karin Schwartzenberger**, Parent Representative

### Former members of the advisory board of the German Pediatric Pain Center:

- **Dr. Stefan Gronemeyer**, Medical Service Federation, Managing Director
- **Dr. Burkhard Lawrenz**, Professional Association of Pediatricians



- **Dr. Gerhard Nordmann**, Association of Statutory Health Insurance Physicians of Westphalia-Lippe, Chairman of the Executive Board
- **Markus Oberscheven**, German Social Accident Insurance, Head of Insurance and Benefits Department, Healthcare/Rehabilitation Division
- **Dr. Siegfried Throm**, German Association of Research-based Pharmaceutical Companies, Managing Director Research/Development/Innovation
- **Dr. Theodor Windhorst**, Westphalia-Lippe Medical Association, President

**We highlight the following organizations who have supported us since the beginning:**

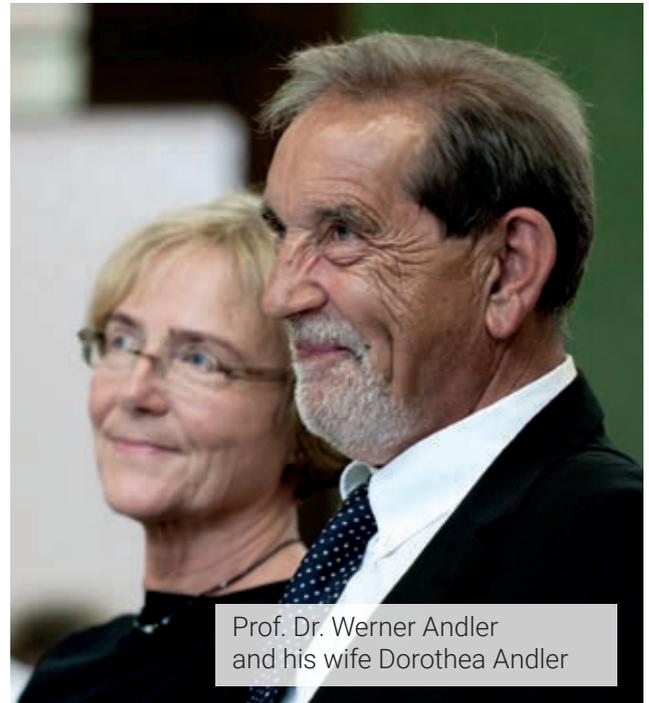
- Commission for the perception of the interests of children (“Children’s Commission”) of the Lower House of German Parliament

*“All professional groups work with each other ‘at eye level.’”*

– GPPC Team Member –

- German Society for Psychological Pain Therapy and Research
- **Ulla Schmidt**, Federal Minister of Health
- German Pain Society (German branch of the IASP)
- Pediatricians of the district of Recklinghausen

We are also very grateful for the many years of support we have received from the Vodafone Foundation Germany, the Rudolf Augstein Foundation, and the entrepreneur Stephan Kohorst and his family business, Dr. Ausbüttel & Co. GmbH.



Prof. Dr. Werner Andler  
and his wife Dorothea Andler

## 15 BIBLIOGRAPHY

**Brown D**, Schenk S, Genent D, Zernikow B, Wager J. (2021a) A review of chronic pain in adults. PAIN Reports 6:e920

**Brown D**, Rosenthal N, Kupitz A, Wager J (2021b) Intergenerational transmission of chronic pain-related disability: the explanatory effects of depressive symptoms. Pain 162:653-662

**Brown D**, Claus B, Könning A, Wager J (2021c) Unified Multifactorial Model of parental factors in Based Pediatric Chronic Pain. J Pediatr Psychol 47:121-131

**Dogan M**, Hirschfeld G, Blankenburg M, Frühwald MC, Ahnert R, Braun S, Marschall U, Pfenning I, Zernikow B, Wager J (2021) Effectiveness of a psychosocial follow-up program for adolescents aged 8 to 17 years with severe Chronic Pain: A Randomized Clinical Trial. JAMA Netw Open 4:e2127024

**Frosch M**, Mauritz M, Bielack S, Blödt S, Dirksen U, Dobe M, Geiger F, Häfner R, Höfel L, Hübner-Möhler B, Kalle T von, Lawrenz B, Leutner A, Mecher F, Mladenov K, Norda H, Stahlschmidt L, Steinborn M, Stücker R, Trauzeddel R, Trollmann R, Wager J, Zernikow B (2022) Etiology, risk factors and diagnosis of pain in children and adolescents: Evidence- and Consensus-Based Interdisciplinary Recommendations. Children 9:192

**Hechler T**, Dobe M, Kosfelder J, Damschen U, Hübner B, Blankenburg M, Sauer C, Zernikow B (2009)

Effectiveness of a 3-week multimodal inpatient pain treatment in adolescents with chronic pain: statistical and clinical significance. Clin J Pain 25:156-166

**Hechler T**, Blankenburg M, Dobe M, Kosfelder J, Hübner B, Zernikow B (2010) Effectiveness of a multimodal inpatient treatment of pediatric chronic pain: A comparison between children and adolescents. Eur J Pain 14:97.e1-97.e9

**Hechler T**, Wager J, Zernikow B (2014a) Chronic pain. Treatment in children and adolescents: less is good, more is sometimes better. BMC Pediatrics 14:262

**Hechler T**, Ruhe A-K, Schmidt P, Hirsch J, Wager J, Dobe M, Krummenauer F, Zernikow B (2014b) Inpatient intensive interdisciplinary pain management for highly impaired children with severe chronic pain: Randomized controlled trial of efficacy and economic effects. Pain 155:118-128

**Könning A**, Rosenthal N, Friese M, Hirschfeld G, Brown D, Wager J (2021a) Factors associated with physician consultations and medication use in children and adolescents with chronic pain: a scoping review. And original data. Eur J Pain 25:88-106

**Könning A**, Rosenthal N, Wager J (2021b) Pediatric primary care for recurrent Pain: What do adolescents and parents expect and how do they perceive treatment? Der Schmerz. 36 (2):89-98

**Könning A**, Rosenthal N, Brown D, Stahlschmidt L, adolescent schoolchildren: a cross-sectional study. Clin J Pain 37:118-125

**Lopez Lumbi S**, Ruhe A-K, Pfenning I, Wager J, Zernikow B (2021) Long-term economic effects of intensive interdisciplinary pain treatment in pediatric patients with severe chronic pain: analysis of claims data. Eur J Pain 25:2129-2139

**Ruhe A-K**, Wager J, Hirschfeld G, Zernikow B (2016) Household income determines access to specialized pediatric pain treatment in Germany. BMC Health Services Research 16:1-8

**Stahlschmidt L**, Zernikow B, Wager J (2016) Specialized rehabilitation programs for children and adolescents with severe chronic pain: indications, treatment and outcomes. Children 3:33

**Stahlschmidt L**, Zernikow B, Wager J (2018) Satisfaction with intensive interdisciplinary pain management for children and adolescents: An independent outcome measure? Clin J Pain 34:795-803

**Stahlschmidt L**, Rosenkranz F, Dobe M, Wager J (2020) Posttraumatic stress disorder in children and adolescents with chronic pain. Health Psychol. 39:463-470

**Wager J**, Szybalski K, Schenk S, Frosch M, Zernikow B (2019) Predictors of treatment outcome in children

with medically unexplained pain who seek primary care care: a prospective cohort study. Eur J Pain 23:1507-1518

**Wager J**, Brown D, Kupitz A, Rosenthal N, Zernikow B (2020) Prevalence and associated psychosocial and health determinants of chronic pain in adolescents: Differences by sex and age. Eur J Pain 24:761-772

**Wager J**, Ruhe A-K, Stahlschmidt L, Leitsch K, Claus B, Häuser W, Brähler E, Dinkel A, Kocalevent R, Zernikow B (2021) Long-term outcomes of children with severe chronic pain: comparison of former patients with a community sample. Eur J Pain 25:1329-1341

**Zernikow B**, Wager J, Hechler T, Hasan C, Rohr U, Dobe M, Meyer A, Hübner-Möhler B, Wamsler C, Blankenburg M (2012) Characteristics of highly impaired children with severe chronic pain: a 5-year retrospective study on 2,249 pediatric pain patients. BMC pediatrics 12:1-12

**A complete list of publications can be found on the German Pediatric Pain Center website:**  
[www.deutsches-kinderschmerzzentrum.de](http://www.deutsches-kinderschmerzzentrum.de)

## 16 FILMS

The following educational films are available free of charge. Simply scan the QR code to watch on YouTube:

### Chronic pain in children and adolescents



Understanding pain – and what to do – in 10 minutes!

### Chronic pain in adolescents and young adults



Pain processing in the brain –  
What is different in chronic pain

### Headaches in children and adolescents



Headache 1x1



The Biopsychosocial Model –  
Explanation of chronic pain  
disorders



Tension headache?  
I've got it under control!



Migraine? I've got it under control!

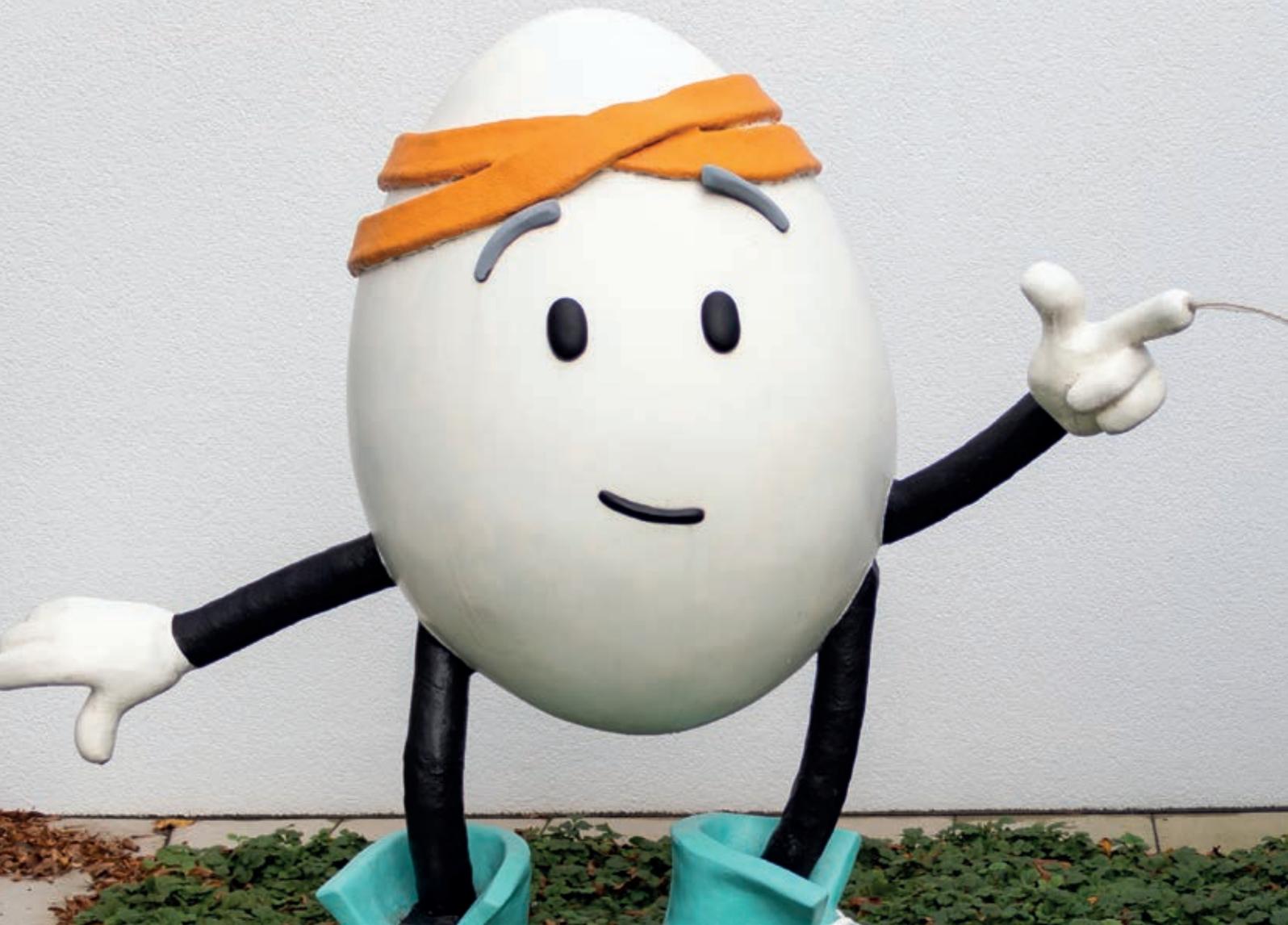
### More films can be found on our Youtube channel



<https://www.youtube.com/channel/UCnhSJzaka3B66uve3M-mUpiQ/videos>

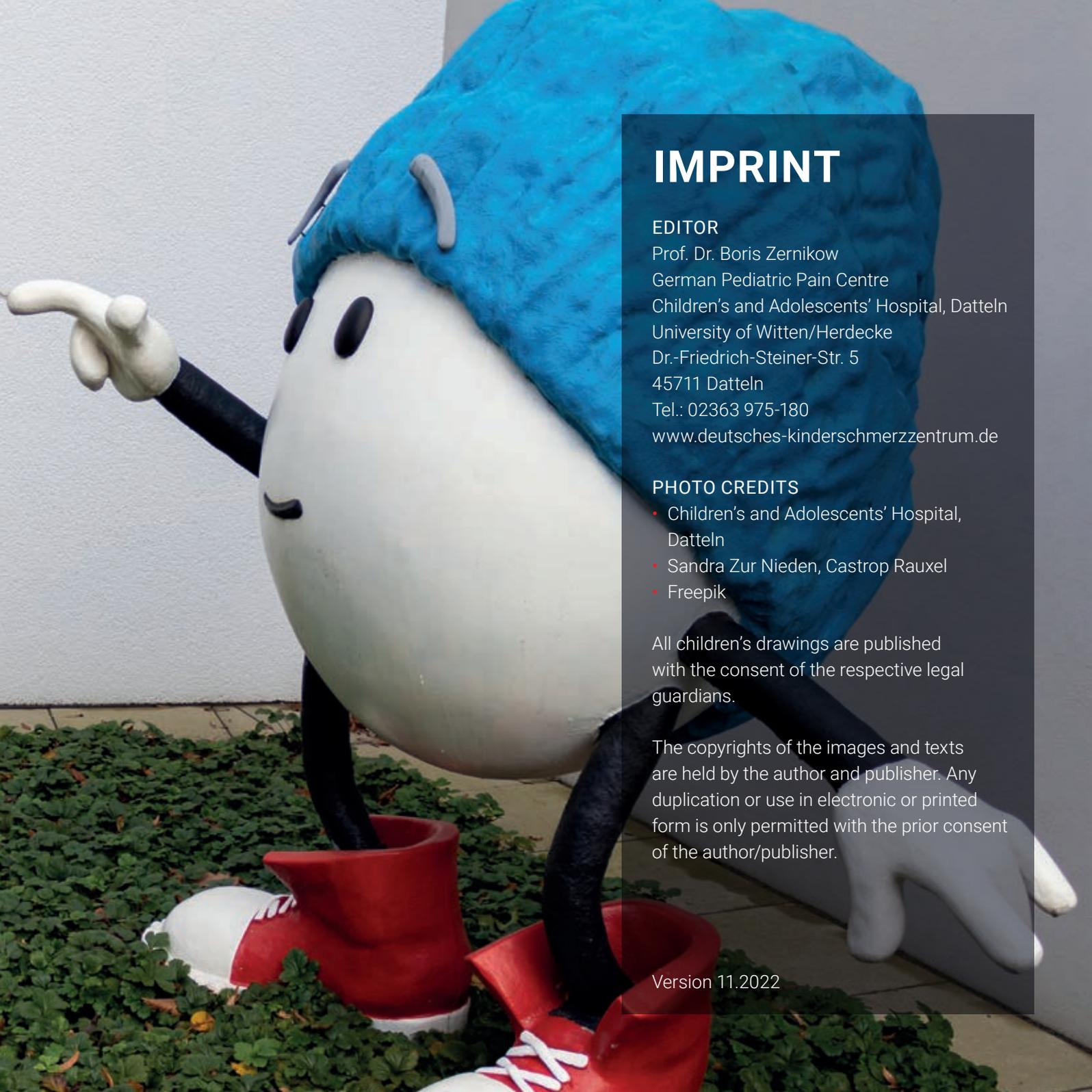


**Lara-Sophie, 8 years**



*“I am particularly happy to receive positive feedback  
from satisfied patients on the day of discharge;  
I go home feeling totally elated”.*

– GPPC Team Member –



# IMPRINT

## EDITOR

Prof. Dr. Boris Zernikow  
German Pediatric Pain Centre  
Children's and Adolescents' Hospital, Datteln  
University of Witten/Herdecke  
Dr.-Friedrich-Steiner-Str. 5  
45711 Datteln  
Tel.: 02363 975-180  
[www.deutsches-kinderschmerzzentrum.de](http://www.deutsches-kinderschmerzzentrum.de)

## PHOTO CREDITS

- Children's and Adolescents' Hospital, Datteln
- Sandra Zur Nieden, Castrop Rauxel
- Freepik

All children's drawings are published with the consent of the respective legal guardians.

The copyrights of the images and texts are held by the author and publisher. Any duplication or use in electronic or printed form is only permitted with the prior consent of the author/publisher.

Version 11.2022



Deutsches  
Kinderschmerzzentrum



Vestische Kinder- und  
Jugendklinik Datteln  
UNIVERSITÄT WITTEN/HERDECKE

75<sup>+1</sup>  
INNOVATION  
ANS TRADITION

[WWW.DEUTSCHES-KINDERSCHMERZZENTRUM.DE](http://WWW.DEUTSCHES-KINDERSCHMERZZENTRUM.DE)