

# The Healing Power of Touch – Guidelines for Nurses and Practitioners

External Applications in  
Pediatrics

Georg Seifert  
Alfred Längler  
*Editors*

 Springer

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*This book is dedicated to the work of nursing staff. Using touch on a daily basis, their tradition, expertise, and knowledge are passed hand-to-hand with tactile methods. We hope we have done this work justice. The ritual of embrocations and attention to the needs and bodies of the infirm affords the necessary space for health, well-being, and care: giving room for healing beyond what normal clinic treatment is able to provide.*

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## Foreword

For humans, who belong to the family of nesting mammals, direct physical, bodily contact with other living beings of the same species is essential in every phase of life. Particularly during the early stages of human maturation, the body organism utilizes the biochemical signals derived from adequate physical contact for growth, relaxation, and healing. Benevolent and sufficient physical human contact is at no time more important than in early childhood. From a biological and psychological perspective, close human contact during this period has the same status as food. It is not only a guarantor for a thriving psychological and physical human development in the earliest phases of life but also facilitates essential processes of social bonding. Finally, adequate touch stimuli promote healing effects in every human being, the biochemical parameters of which we have yet to fully understand. For over a hundred years, we have known that the complexity and effects of interpersonal touch are far more important than just superfluous actions. Since the studies of H. Harlows or the reports of R. Spitz, it is known that humans, as nesting mammals, are essentially dependent on physical contact with other living beings of their kind. It has also long been known that touch stimuli can contribute to healing and recovery in people of all ages. One point has remained constant despite an ever-changing zeitgeist on touch; findings on healing touch stimuli were either ignored or even defamed in favor of technological and pharmacological hopes within medicine. However, in the last 30 years, the phenomenon of interpersonal touch in the medical context has experienced renewed attention and specialized scientific consideration. This is reflected in a growing number of basic scientific findings, but also concrete and clinically relevant findings replicated the world over. Whereas studies on the functioning of the human tactile system and on the effects of social touch stimuli were rather sporadic 30 years ago, publications on this topic fill entire rows of shelves or digital folders today. The increase in knowledge has thus reached a scope to which the extraction of the foundational essence in the form of specialized books is urgently necessary. Against this background, the authors of this book have attempted to summarize founded basic scientific facts, relevant subject-specific information, and, above all, practical aspects of body-oriented applications in the treatment of sick children and adolescents. With this book, the authors aim to close a publishing gap between the enormous number of scientifically based findings and knowledge of practical application. The streamlined and clear presentation of individual chapters are aimed directly at clinical users and also at parents caring for a

sick child. With their texts, the authors not only convey knowledge from the practical spheres of healing professionals to medical laypersons but also assert confidence in the potentially healing effects of adequate and appropriate body stimulation. With their contributions, the authors raise awareness of the clinical possibilities for both children and adolescents, which can often be achieved through few means and with little time requirement. This book thus strengthens the perspective that therapeutically intended body interactions do not present a contradiction to other medical care, but can be a base and harmless part of the medical care of children and adolescents. I wish this book wide readership, attention, and scientific resonance so that not only practical-clinical practice is positively influenced, but also scientific curiosity about the mechanisms of therapeutic touch effects is fostered.

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## Preface

The idea to publish a book on external applications for children arose from a project in which we integrated selected naturopathic external applications from complementary medicine in a pediatric clinic for oncology and hematology at the Charité-Universitätsklinikum Berlin. This project showed that simple external applications can be very beneficial when used to complement/supplement conventional therapies, creating an integrative medicine in practice. We very quickly saw the beneficial effects. The results of our project reflected the experiences of many others as external applications have been used for centuries on children and adults.

What we refer to as “external applications” are therapeutic interventions that apply natural substances to the patient's body, often involving person-to-person skin contact. The effects of these applications unfold through attentive interpersonal touch as well as natural (mostly herbal) substance and temperature influences on the skin. The rhythmic application, the duration, and the post-treatment rest period also play an important role in the beneficial use of external applications.

In the case of children, external applications have a long tradition and are popular worldwide as home remedies, and their effects have been known since time immemorial. They are generally considered a safe alternative or supplement to many medications. Many of the readers will know of external applications from their own childhood. They are part of naturopathic oriented clinics and institutions and are also often used in private and home care.

The book is especially intended to provide nurses with supplemental therapeutic options for their daily care practice and to strengthen the competencies of parents who are caring for ill children.

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We would like to thank Claudia vom Hoff-Heise for her incredible organizing talent in bringing all people and parts of this book together and without whom this project would not have been possible. For their linguistic expertise, we thank Sarah B. Blakeslee and Leanna Eaton for their English translation and editing of this book. A special note of thanks to the nursing staff at the Gemeinschaftskrankenhaus Herdecke for bringing their extensive and hands-on experience to light and on the page.

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## About this Book

The book is intended for healthcare professionals, therapists, and family caregivers interested in supplementing conventional pediatric care with external applications. It provides important background information meant to support the reader in understanding and contextualizing the potential benefits of integrating external applications into their care practice. The authors describe how children of different developmental stages can benefit from external applications such as rhythmic embrocations, baths, and compresses. The book is especially useful to caregivers because concrete instructions for implementing applications (including illustrations) are provided, specific external applications are recommended according to indication, and effects of substances (such as medicinal plants, oils, etc...) are explored.

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### A Note About Safety and Dosage

Medicine, like any science, is continually developing as research and clinical experiences expand our knowledge base. There has been relatively little scientific research into the treatment of children using natural substances. Knowledge in this area is largely based on the many years of clinical application experience by experts in the field. As far as this book mentions a dosage, a temperature, a duration of application, or age suitability, you as a reader can trust that the authors, the editor, and the publisher have taken great care to ensure the correctness and safety of the information. Care has been taken to ensure that all information is in accordance with the state of knowledge at the time of completion of the work, but the publisher cannot accept any responsibility for information on dosage instructions and forms of application. Each reader and user is urged to determine whether substances are suitable for use or whether there are contraindications by carefully examining the product information and package inserts of the substances and preparations used and, if necessary, after consulting a specialist. An examination of suitability and safety is particularly important when substances are used for the first time or if they are used rarely. Any application and dosage is at the users own risk. The authors and publisher appeal to each reader to notify the publisher of any inaccuracies or references.

## The Structure of the Book

The first four chapters of this book present important background information meant to support the reader in understanding and contextualizing the potential benefits of integrating external applications into their care practice. Whereas Chaps. 5–7 provide more practical, hands-on information, including concrete instructions for implementation, application recommendations based on indications, and an exploration of substances used in external applications.

Chapter 2 provides a conceptual framework for understanding the historical origins of external applications anchored within traditional and complementary medicine, including a definition of health and health promotion according to salutogenetic principles. This chapter provides insights into the broad spectrum of effective factors of external applications used in pediatric care with a special emphasis on interpersonal attention and touch for promoting health, along with the chemical and physical effective factors of the applications themselves.

As almost all of the applications included in this book involve touching a patient's skin, it is essential to fully understand how the skin develops, its structure, and its functions in the human organism. Chapter 3 helps the reader to come to a deeper anatomical and functional understanding of skin. It goes further to elaborate how the peculiarities of children's skin and their stages of development have direct implications for the implementations of external applications.

Chapter 4 is devoted to exploring a phenomenological perspective of the body, moving away from the categorization of the body as an object by introducing readers to the concept of the lived body. The author shows the reader that the therapeutic effects of external applications can only be truly evaluated when the schema begins with the acknowledgment of each individual body as a subject, through which the world is perceived.

Readers will find detailed guidance on application techniques in Chap. 5. This chapter provides concrete instructions for the implementation of external applications, including descriptions, lists of materials needed, and illustrations to help the reader understand and apply each technique.

Chapter 6, Indications is the heart of the book. Indications from a wide spectrum of pediatric care, including pediatric surgery, psychiatry, oncology, intensive care, neonatology, and around child development, are sorted by indication groups. Many typical indications are listed and recommendations for applications, contraindications, age suitability, dosages, and, where applicable, temperature of applications are provided.

External applications generally use teas, oils, essential oils, minerals, and/or other animal substances. The final chapter of this book helps the reader understand more precisely which substances can be used for which indication. Each substance is presented through a fact sheet which includes the classification, origin, composition, a brief overview of its tradition as a remedy, effects, range of use, external forms of application, and contraindications. Finally, various finished preparations and their supply sources are mentioned.

When all chapters are taken together, this book presents the reader with both a comprehensive introduction to the theoretical background and naturopathic origins of external applications while also providing the practical and concrete information necessary to integrate external applications into their daily care practice.

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# Introduction

# 1

Georg Seifert and Alfred Längler

Why is touch so important? The sense of touch is the first sense which develops in the unborn child. At as early as 6–8 weeks gestation, an unborn child experiences touch in the womb and even after birth, touch continues to have a tremendous impact on their long-term health and psyche. We need the touch of our parents and our closest relatives to stay healthy. Children receive loving touch from parents, grandparents, and family for granted. The older we get, the less touch happens naturally and even hugs have become increasingly rare in a digitalized world. Yet touch is as important as the air we breathe. A lack of touch not only leads to stress, high blood pressure, or immune deficiency but can also lead to life-threatening conditions, as shown in animal experiments. From many studies with orphaned children, we know how dramatic the effects of a lack of physical and emotional attention can be. The younger the children, the greater the negative repercussions from experiencing a lack of touch. Conversely, this means that the positive effect of touch can also be of great therapeutic importance.

The aim of this book is to open up the therapeutic potential of touch and to present a wide range of external applications suitable for children and youth. From our clinical perspective, the effects of the therapeutic possibilities described in this book are particularly impressive with children who are ill. The authors of this book offer a wide variety of applications, ranging from the most simple—lasting only a few minutes, which can be implemented by laypersons (especially parents) after brief

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instruction, to more elaborate complex rhythmic embrocations that require specific training and expertise.

Experiences in family medicine clearly show how effective even simple external applications can be and point to the importance of touch. Take, for example, the relatively common, complex initial conversation with parents who have received a momentous diagnosis for their child. It is not uncommon for the simple act of placing a hand on their shoulder to provide more peace and security than the actual two-hour educational talk itself. Other examples can be found in pediatric oncology where, in addition to questions about effectiveness of various techniques and substances, the subjective experience of the patient (and practitioner) also plays an important role in the indication and successful implementation of external applications. In day to day clinical practice, it is a regular occurrence for patients to indicate acutely and subjectively an improvement of their symptoms after experiencing external applications. Such was the case for a 14-year-old patient with neutropenic pneumonia after chemotherapy for an Ewing's sarcoma. Despite antibiotic and inhalation therapy, the patient had persistent tachydyspnea (with adequate peripheral oxygen saturation) and intermittent episodes of coughing. It was striking for us to experience the subjectively positive effect of applying a wrapped ginger flour compress to his chest. After performing the chest wrap daily, he regularly reported feeling that he could breathe better and seemed less strained. For several hours afterwards, he had fewer coughing attacks and was able to relax significantly. His breathing frequency usually became calmer. This is not proof of efficacy in an objective sense, but it does show how these and similar nursing applications can be experienced as helpful and relieving by an individual patient in a specific situation. The subjective experiences of patients are a central point that is becoming increasingly important in medical science, in the sense of patient centrality.

We hope that reading this book will provide you with ideas and suggestions to make your everyday therapeutic work more varied and enrich your diagnostic repertoire to the benefit of the young patients you care for. We also see the potential for the information included to help strengthen the competences of parents caring for ill children.



# Conceptual Framework and Effective Factors of External Applications

# 2

Inga Mühlenpfordt and Georg Seifert

## 2.1 Introduction

Interpersonal affection and touch play an essential role in everyday human social interactions from birth. Although their healing capacities are obvious, they have been given surprisingly little importance in pediatric practice in Western countries in recent decades. External applications use natural substances; the effects of temperature; and touch techniques to create a special way of caring for and interacting with patients. Evidence-based medical therapies and nursing techniques can thus be usefully supplemented to provide comprehensive support for the individual healing process in children.

## 2.2 External Applications: Anchored in Traditional Medicine

Modern external applications are inspired by experiential knowledge from various currents of traditional medicine. For thousands of years, they have been part of the repertoire of common remedies in the form of embrocations, massages, wraps, washes, and baths. The first references to the use of compresses can be found around

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1500 years B.C. in Egypt, where heated Nile mud was used as a healing poultice. *Hippocrates* (460–380 BC) described medicine as “the art of touch” handed down from the doctor and teacher. In *Kneipp Therapy* (after the naturopath Sebastian Kneipp, 1821–1897), compress applications occur as a component of hydrotherapy [1]. The founders of *Anthroposophic Medicine*, the spiritual scientist Rudolf Steiner and the physician Ita Wegmann, integrated external applications at the beginning of the twentieth century as a component in their range of methods based on natural science-oriented medicine [2]. Today, external applications are predominantly found in private, domestic use. In complementary systems of naturopathic medicine as well as in integrative medicine, external applications based on experiential knowledge continue to be in use today.

Applications are often performed by trained nurses or other trained caregivers. Particularly when treating children, they offer the opportunity to reduce anxiety and increase wellbeing during other medical treatments. In unsettling situations and unfamiliar clinical environments, they can provide respite. There is evidence that pediatric patients enjoy external applications and find them supportive. In stressful situations, external applications are also particularly valued by parents and found to be calming, relaxing, and pain relieving for their child [3]. After appropriate training, parents and other caregivers can be involved in the applications or perform them themselves.

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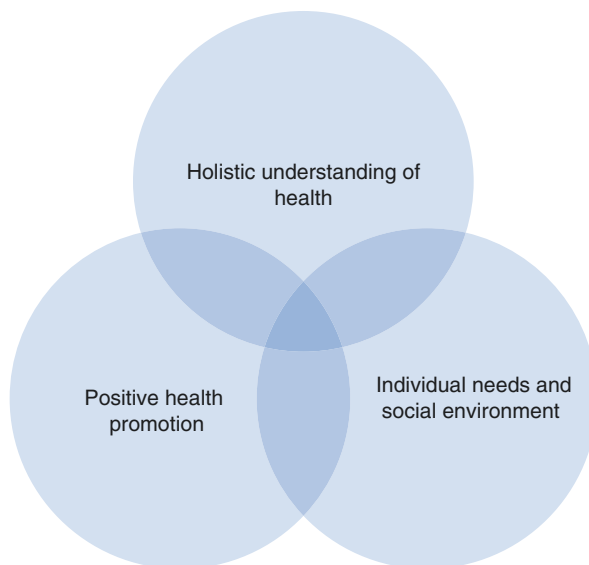
## 2.3 Conceptual Framework of External Applications

External applications can be used in addition to other medical and nursing methods. According to their medical-historical origins, external applications are based on a so-called *holistic understanding of health*. According to this, the human being is not only considered to have a physical level but also a soul and spirit. Each of these parts influences the others; and all parts can be addressed together in medical treatments that promote health and healing [2]. External applications can be aimed at specific symptoms, while also *promoting health* and stimulating healing processes. At the same time, the details of execution can be tailored to the *individual needs of the patient* and their *social environment* (see Fig. 2.1).

### 2.3.1 Holistic Understanding of Health

Whereas science-based medicine often places great emphasis on the established diagnosis and its specific treatment, the theoretical framework and assumptions about the goals of treatment in traditional and complementary medicine often place

**Fig. 2.1** Framework of external applications



attention on the whole person. Medical success is achieved not only with the disappearance of specific symptoms, but also through holistic personal development [4, 5]. According to the approach of holistic medicine, the whole person is considered and treated in the context of his or her life.

A recurring idea in the history of medicine is that equilibrium or balance constitutes health. Different parts and functions of the human body and mind thus intertwine and harmonize with each other. The idea of balance is strongly represented in several non-Western medical traditions. In Western medicine, the idea of balance was systematically developed in the Hippocratic and the Galenic schools (Hippocrates 460–380 BC and Galen 129–216/7 AD). The concept of equilibrium is also used in modern Western thought—especially in physiology. For example, Walter Cannon (1871–1945), in his work on homeostasis (1932), described in detail how the various physiological functions of the body control each other and interact in feedback loops to prevent major disturbances [6]. According to this holistic view, health is the result of successful self-regulating internal activity and the constant (re)establishment of harmony between the functions of body. Illness can be understood as the expression of a system imbalance. The goal in holistic medicine is to restore balance by stimulating different processes in the body. The entire constitution of patients is strengthened by taking into account the emotional, physical, social, mental, and spiritual dimensions [7].

### 2.3.2 Positive Promotion of Health: Focus on Salutogenesis and Consideration of the Context

To support health, it is worthwhile not to focus exclusively on a patient's existing pathology or symptoms of disease. Rather, there is an opportunity to view the human being as a complex system, taking into account health-promoting and preventive as well as curative and rehabilitative ideas and practices [8]. In this sense, *salutogenetically* oriented treatments focus on positive health promotion. The therapeutic goals of health-promoting applications are to recognize and stimulate self-efficacy and self-regeneration by enabling autonomous self-regulation [9] as well as psycho-emotional and spiritual self-regulation. This also means that medical treatment should strengthen a *sense of coherence* by motivating patients and the environment to cope with the disease situation (meaningfulness), enabling understanding the disease and accompanying factors (comprehensibility), and providing resources for coping with the applications (manageability) [8].

The context of the medical treatment [10] as well as the meaning attributed to the application [4] may have an influence on the effect of treatments themselves. These nonspecific influences are usually referred to as *placebo effects* in medical research and practice. They operate in all age-groups via the same mechanisms, the effectiveness of treatments can be enhanced by: the presence of realistic expectations of an effect; practitioners who invest time in the relationship with the patient; and respond to individual needs and the presence of conditioning mechanisms. Children and adolescents also show high response rates to placebo effects [11].

Despite the establishment of evidence-based practice, elements of health care today can still allow for cultural practice and rituals. Through the use of certain touch and movement techniques, substances, and temperatures, as well as the post treatment rest periods associated with the applications, external applications harbor certain treatment procedures that can make them a ritual. Health care practice can be complemented by effective rituals that have a reinforcing placebo effects [10, 12].

External applications exhibit a wide range of nonspecific effects, which depend upon the patient-practitioner relationship and the patient's belief in their effectiveness. The overall effectiveness of external applications is increased through the establishment of rituals, interpersonal attention and sympathy, detailed diagnostic measures, and explicit reflection on the complaints related to the applications. In addition, when the external applications are based upon and are tailored to the patient's complaints, it can change the patient's view of their own illness and symptomatology as well as of their fears and expectations.

### 2.3.3 Individual Needs and Social Environment

In the medical care and treatment of children, the simultaneous collection of information in two areas is required. One is the *disease itself*, which includes symptoms, indicators, examinations, and clinical management. The other is the *subjective view*

on the disease, that is, the patient's concerns, expectations, feelings, and thoughts. It is not only the somatic indicators of health that are important, but also the subjective health and health-related quality of life of the patient. The patient's social environment also determines the way the patient is treated: treatment providers, parents, and other people involved in the care-giving influence the handling of diseases. How a patient gets along with other people and copes with everyday life is also relevant [13–15].

Illness and symptoms of illness often place pediatric patients and their parents and caregivers in stressful situations, triggering stress and negative emotions. Research in recent years points to the importance of strengthening personal family and other social resources to manage children's health risks and impairments. By means of medical-therapeutic treatments, patients and those surrounding them can be empowered to do things for themselves, bringing some sense of relief. In terms of family-centered care, the family environment of pediatric patients is considered an important constant, whose inclusion in the care processes, especially in children, leads to the patient receiving a higher quality of care, better accepting of applications and gaining confidence in the effectiveness of treatments [16].

In addition to the well-being of the patient, the well-being of the parents and other caregivers also plays a central role in the healing process. The family members often have to take care of the child full-time during the time of therapy, in the clinic setting or at home. If the child's illness is prolonged, emotional uncertainty, pressure, and despair characterize daily life, and helplessness and hope can rise and fall. In this situation, moments of hope, relaxation, and stress relief are very valuable for the parents and care-givers as well. A first impulse in response to stress is often seeking attention and a desire to be cared for, but there is also an impulse on the opposite side to care for those in need of help (*Tend and Befriend Model*) [17]. Parents and caregivers of pediatric patients may feel a desire to contribute in helping to manage a condition and symptoms of illness [3]. To address these impulses, family members can be involved in implementing external applications. After appropriate training, it is also possible for the applications to be used outside of a clinical setting, e.g. at home.

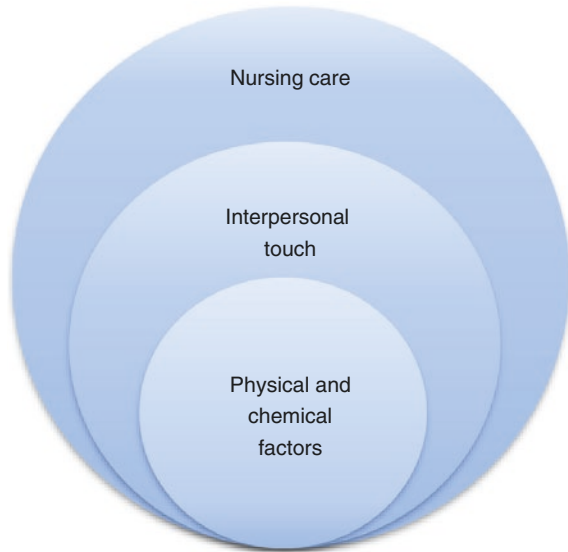
External applications provide an opportunity to address both the illness and symptoms as well as the context of the illness in a patient-centered manner. They provide a framework for incorporating individual patient needs and preferences into the selection of applications and for fine-tuning applications to meet the needs of the child patient. As parents and caregivers can also be involved in the implementation of external applications, they can also contribute to activating a patient's social resources.

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## 2.4 Effective Factors of External Applications

External applications combine interpersonal attention and touch, pressure and rhythmic movements with temperature, and fragrance effects of substances on the skin, through the use of tempered water, essential oils, and natural substances. External

**Fig. 2.2** Impact factors of external applications



applications are thus characterized by a spectrum of effective factors that can vary and contribute to the effect of the applications. Influencing the effect of external applications are, on the one hand, the social factors of *nursing care* and social support as well as interpersonal *touch*. Haptic-tactile stimuli on the skin have an effect through the use of certain movement sequences and the locality of the application. Temperature works as a *physical stimulus* and substances work through their *chemical influences* and develop their effect during external applications (see Fig. 2.2).

The choice of application depends on the indication and any diagnosis that may be present. The physical as well as the psychological condition of the patient provide additional indications as to which application is appropriate. The individual constitution, as well as one's own wishes and goals with regard to a therapeutic intervention, should be considered in advance of any application. In the case of medical care treatment and support of children, applications should also be coordinated with the parents and other caregivers.

#### 2.4.1 The Potentials of Social Proximity in Nursing Care

Modern western medicine offers numerous successful treatment options in pediatrics. At the same time, modern western medicine is often criticized for having lost much of its human touch. Treatment concepts are perceived as increasingly impersonal [14]. Attention and social closeness can help reduce the risk of developing physical and mental illness and promote health and longevity. Interpersonal affection is therefore considered important for promoting health, for example, to regulate emotions in the social environment and thus conserve somatic and neural resources (*Social Baseline Theory*) [18].

A child who is treated by external applications is in close contact with the person performing the treatment. During the applications, children often experience special attention and loving care. Established medical and nursing practices can be supplemented by the valuable actions and social aspects of external applications as an important part of general pediatric patient care in the clinical setting. The applications create space for attention to be paid to the patient's concerns and worries in the context of physical experiences. At the same time, external applications hold the potential to increase patient trust in those administering the treatments and foster the patient-caregiver relationship. In this way, young patients can experience support, gather strength and energy.

### 2.4.2 Health Promotion Via Interpersonal Touch

The sense of touch is the first of the senses to develop in the human body before birth. Experienced through a complex system of nerve fibers on the skin, the sense of touch is of great importance to perception and social interaction [19]. Touching the skin with a certain rhythm and pressure stimulates pressure receptors, which can lead to positive affective valence by stimulating C-tactile fibers in the skin, in particular via haptic-tactile perception. This may lead to activation of the vagus nerve, through which the positive effects of touch may be mediated [20, 21]. At the hormonal level, touch may inhibit the release of cortisol, whereas touch may promote the release of dopamine, serotonin, and oxytocin. Oxytocin, in particular, has been associated with modulating pain, increasing wound healing, and reducing stress [22–25]. In summary, touch can thus have healing effects on the body.

The potential of touch interventions is well known in research. Interpersonal touch is associated with healthy development and with promoting health and immune function in general. Positive psychological effects of touch are evident in improved emotion regulation, increased attention, and reduced levels of stress, depression, and anxiety [20, 26]. The literature also suggests that massage therapies have positive effects on various childhood conditions [27]. Touch can create and strengthen the emotional regulatory capacity of the receiving patient. This reduces the need to invest one's own regulatory resources, which can reduce anxiety in particular [18]. Touch can therefore be of great importance in situations where individuals need social support and protection.

Touch-based external applications offer an opportunity to enter into targeted interpersonal contact via touch. Particularly in embrocations and massages, special importance is attached to the movement sequences as well as the rhythm and the speed of execution. Likewise, the intensity of pressure and duration of treatment and appropriate post-treatment rest periods are considered carefully. In some applications, specific rhythms are used to stimulate nerve fibers and regulate the bodily functions, such as metabolism, blood circulation, peristalsis, and respiration [28].