



Nibras Naami, Florian Babor

High Five

Growing up healthy

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With illustrations by Lorena Addotto

Staying cool in the fever curve

Is it normal for a child to pick up every virus going round nursery? At what point does fever become dangerous? Which vaccinations really have an effect? And what exactly is 'nest protection'? These are just some of the many questions raised by parents of young children and answered here by paediatricians Florian Babor and Nibras Naami. In so doing, they convey the five essential pillars of children's health: avoiding serious illnesses, supporting and promoting the immune system, a healthy diet, exercise, and mental health. 'High Five' is a comprehensive manual for anyone raising children and aiming to give their off spring a healthy start in life.

- Accessible, practical, sound – experienced paediatric doctors explain children's health
- A holistic approach: five steps to a healthy childhood
- For readers of Nora Imlau and Anna Wahlgren



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Sample Translation “High Five”

By Annette Pollner

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Sample Translation „High Five” (N. Naami, F. Babor)

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INTRODUCTION

Children’s Health – and the Crucial Role of Parents

Children are not little adults. All medical students realise this at some point, mostly after completing their modules in paediatrics. The fallacy that children should be treated like small adults is the result of the fact that the study of medicine first teaches the foundations of anatomy, physiology (the study of how the healthy human body works) and pathology (the study of what happens when the human body gets sick) in adult humans before they touch on the subject of children. Which can quickly lead to the assumption that this basic knowledge could equally be applied to children. A glance at the medical system in other European countries such as the UK or the Netherlands supports this assumption. In these countries, there are no dedicated paediatric practices in primary care. Children are usually treated in general or family practices. Almost a one-size-fits-all approach.

Many of the facts that you, as readers of this book, may have known for a long time, come as a (painful) discovery to medical students. There is so much to learn about the health of children and adolescents. And there is a good reason why the books about paediatrics are among the most voluminous you can borrow from the medical library, as many students can confirm after having had to drag them around.

If you still need more evidence for the fact that children aren’t little adults, let me demonstrate it using the example of the thymus gland. You’ve never heard of this very important organ? Don’t worry – there’s probably very little left of it inside you. The thymus gland is an organ of the lymphatic system located behind the breastbone of a child. An important subgroup of white blood cells, the so-called T-lymphocytes (the T stands for thymus here), grow and

mature in this organ. If you compare the immune system to an army and the lymphocytes to its soldiers, then the thymus gland can be seen as the barracks where these soldiers are trained, equipped and prepared for battle. Once a child reaches puberty, the immune system is sufficiently geared up and the thymus gland shrinks and is mostly converted to fatty tissue. This process is called involution and occurs in a similar way in the remodelling of the mammary glands after breastfeeding.

So children actually have an organ that is not present in adults, and that’s only the tip of the iceberg. The way medical care is provided to children is also very different.

On the one hand, paediatricians must apply different communication methods and approaches for diverse age groups in order to deliver successful treatments for them. You probably won’t be able to convince a three-year old with logical arguments of the advantages of taking a blood sample from their veins. And you’ll rarely be able to conjure up an enchanted smile on a 16-year-old patient’s face by sticking a Princess Elsa plaster on their arm (the operative word here being ‘rarely’). On the other hand, a child’s health is significantly dependent on their parents and/or carers. The younger the child, the more they depend on adults. Babies and toddlers in particular cannot name their health issues or seek medical help themselves. Their health care is in the hands of their closest caregivers and this great responsibility is deeply rooted in our instincts.

Therefore, parents tend to be extremely vigilant and observe the wellbeing of their children carefully. Deep down, they’re actually not so different from physicians. When a mother asks a child suffering from a stomach ache very specific questions about the location of the pain, its intensity and duration, she performs the equivalent of the first steps of medical anamnesis or case history (asking questions to gather potentially relevant medical information). When a father

palpates the child’s stomach in order to check if it is bloated or sensitive to touch, his action is the first medical examination. If he goes on to give the child a stomach massage in order to provide some pain relief, he performs the first therapeutic intervention.

Parents and paediatricians are in the same boat. Ideally, they form a team, watching together over the health of the child. Parents play the role of the medical advance guard, enabling the timely intervention of paediatric medicine. We would like to strengthen this valuable teamwork with our book.

COMPREHENSIVE KNOWLEDGE LEADS TO HEALTHIER CHILDREN

Knowledge is the child of experience

LEONARDO DA VINCI

Parents never had so many opportunities before to access information about children’s health, and these opportunities are growing while you are reading this book! In the time of the Internet and smartphones, we believe that thanks to the search engines, we always carry the answers to all our questions in our pockets. Outside observers could make the assumption, based on this abundant supply of information, that the demand for health education would now be declining and parents feel much more secure in dealing with their children’s health than before the invention of the world wide web. But the situation in children’s clinics and medical practices shows a very different picture. Visits to emergency care providers for children are increasing at night or over the weekend. Questions seem to multiply while the space for answers is shrinking. At first glance, that seems like a paradox. What are the causes for this contradictory development? Where does this uncertainty come from?

In spite of all the growing availability of sources and facts, something important has also been lost during the past few decades: the wealth of experience within the family. In former generations, young parents were rarely left to their own devices since they usually raised their offspring within a close-knit family group. When a child had a symptom or an illness for the first time, there was always someone close by who had experience with this problem and could offer assistance. Indeed it was often the grandparents who applied a calf compress for a first fever or made an onion pack for an ear ache. Of course this doesn't mean that children enjoyed better health care in the past. Don't let us forget that child mortality was much higher then and many time-honoured remedies and experiences passed down the generations were simply incorrect. But it did help parents to feel a little more secure when facing new medical challenges.

Today, a Google search can lead to an excellent scientific article that may well offer what is objectively the best available information. However, it may be hard to understand for anyone who is not a medical expert. In addition, scientific insights are difficult to implement without connecting facts to personal experiences. A search can also easily end up on platforms or blogs where the quality of the advice (often offered by people who are not professionals themselves) is at best highly subjective but can also often be factually incorrect or cannot be easily transferred to the case of your child. The growing body of medical information on social media in recent years, in particular, is not subject to any kind of quality control. It is very difficult for people outside the medical profession to even recognize incorrect information. Professional design and personal confidence often mask the missing expertise of influencers.

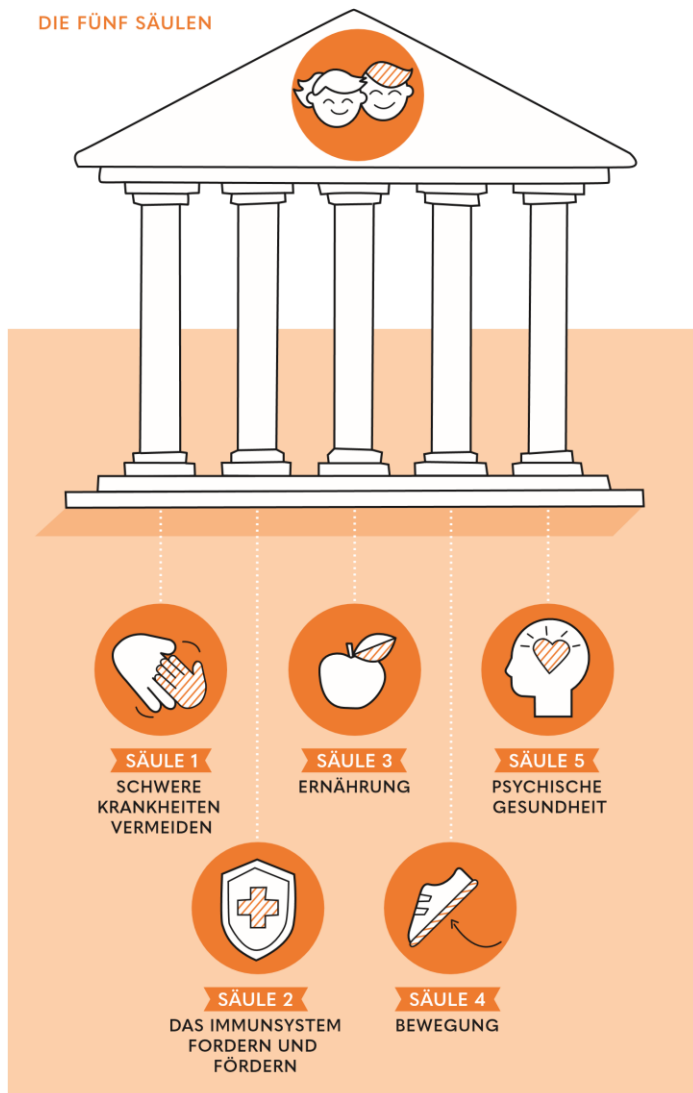
The abundance of information for parents seeking advice today is therefore unfortunately like a jungle with many paths, some of which branch off to lead into maze of thick undergrowth where they will inevitably get lost without a map and clear directions.

In a perfect world, paediatricians would of course take over the role of guides and provide good advice based on their experience and knowledge. Education is a very important part of our profession, and we enjoy it. No one likes to leave families looking for advice without answers. But reality is unfortunately not perfect. Many paediatricians have to treat more than a hundred patients per day and are under great stress, running from one consultation room to the next. This leaves little time for comprehensive clarification of parental insecurities while providing basic health care. A visit to the paediatrician’s practice often leaves parents with a lot of open questions which then lead to them undertaking their own research. We are familiar with all this from our own work situation and it’s a real dilemma.

This book was written with the intention of leading you out of this dilemma and becoming your go-to guide for all cases. In the pages of this book, facts and experience connect and we can take the time for health education that is often missing in our daily practice. As we walk through the jungle together, the core question that guides us is always: *What can we do to help children grow up in good health?* Our answer to this question lies in the definition of the five pillars that form the foundation of a healthy childhood.

THE FIVE PILLARS

DIE FÜNF SÄULEN



PILLAR 1 – AVOIDING SERIOUS ILLNESS

PILLAR 2 – SUPPORTING AND CHALLENGING THE IMMUNE SYSTEM

PILLAR 3 – NUTRITION

PILLAR 4 – PHYSICAL MOVEMENT

PILLAR 5 – MENTAL HEALTH

The Five Pillars of a Healthy Childhood

As paediatricians, we know that serious illness can occur without warning and with no chance of prevention. Even after the most uneventful pregnancy, a child’s health can, for example, sustain significant damage through an unexpectedly complicated birth. Acute leukaemia, the most common malignant childhood disease, is also nobody’s fault. It is a stroke of fate out of the blue for the child and their family.

When it comes to our health, a certain amount of residual risk is therefore undeniable. But beyond that, modern paediatric medicine has managed to reduce risks in many areas significantly. This is partly due to the revolutionary development of therapeutic methods. But prevention also plays an increasingly important role. And prevention is primarily implemented by parents and families themselves, guided by the information and health education they receive.

However, preventing illness or better treatment are not enough for a healthy childhood. In addition to physical health, mental health plays an equally important role. Progress in the fields of educational science and psychology have helped us to define the elements necessary for growing up in good holistic health.

All these are like regulating screws that you can adjust yourself. In this book, we want to focus and provide advice on the factors that you can influence.

Below you will find a short overview over each of the five pillars to give you an idea of what to expect in the next 400 pages of this book. Remember: knowledge is power.

Pillar 1: Avoiding Serious Illness

Apart from the above-mentioned examples of fateful medical events, there are illnesses that can be prevented or at least alleviated with the right kind of knowledge, combined with good

preparation. In our view, *avoiding serious illness* therefore means minimising risks through prevention and also recognising warning signs and responding in the right way if your child does get sick.

Prevention starts in pregnancy. Problems can be identified through good prenatal care and then be successfully treated during and after birth. In the first few months of life, it is important to minimise the risk of sudden infant death (SIDS). As soon as the child is able to turn over on its own and starts to crawl, the danger of household accidents rises. Here, it is vital to spot potential dangers and childproof your living space. If accidents or poisonings do occur in spite of the best preparation, proficiency in first aid is essential in order to avert harm. A well stocked medicine cupboard including an emergency kit is also indispensable. Throughout childhood, preventative examinations by paediatric physicians, dentists and eye specialists also play a crucial role in identifying and treating any problems, big or small. Early diagnoses of developmental delays in particular often mean they can be successfully treated with physiotherapy, speech therapy or occupational therapy.

If your child does get sick after all, the illness will most likely turn out to be harmless. But the signs of a serious illness are unfortunately not always crystal clear. At the beginning, symptoms can be quite subtle and difficult to recognize. Only someone with sufficient knowledge is able to respond early and appropriately. But when are symptoms like fever, cough, diarrhoea, vomiting or pain harmless and when are they cause for serious concern? When can you still approach the issue with the help of the emergency kit from your household medicine cabinet and when do you really need a doctor's appointment or even go to the accident and emergency department? Parents sometimes walk a very fine line here and, with this chapter, we would like to help you to make the right decisions.

Pillar 2: Supporting and Challenging the Immune System

In the drama of symptoms and diseases, the immune system certainly plays one of the principal roles. It is therefore worth taking a closer look at this extremely complex interplay of numerous types of cells and transmitters that identify and fight outside intruders such as bacteria and viruses. The immune system can be imagined as a small army with different kinds of units specialising in and trained to carry out specific tasks. They patrol the body 24 hours a day, seven days a week, guarding its borders. In the process, the immune system is continuously evolving and always gathering new experiences in dealing with disease. This growing body of experience, not pre-determined by genetics, is very important for a healthy childhood and also plays an important part in adult life, for example when passing on maternal passive immunity. We will come back to this later.

Therefore, children must never be swaddled in immunological cocoons. The immune system needs to be activated repeatedly by harmless infections in order to develop further. Active confrontation also plays an important role in the prevention of allergies. The so-called ‘farmyard effect’ proves that a moderate degree of exposure to dirt and pathogens reduces the risk of asthma or neurodermitis.

Another building block in strengthening the immune system is one of the greatest achievements of modern medicine, vaccination. Vaccinations can be compared to a very realistic training exercise in a flight simulator in preparation for a real life crisis. Vaccinations have contributed to the extinction of terrible diseases like smallpox, and others like diphtheria have almost disappeared. Vaccinations are the main reason why child mortality has fallen by more than 95 percent in Germany since the 1950s. Unfortunately, this peace on the former battlefield

of infections also has its downsides. The more our collective memory of dangerous diseases and complications fades, the more regularly the purpose of vaccinations is questioned. “Out of sight, out of mind” seems to be the name of the game. The problem is also exacerbated by the disinformation and conspiracy theories that have been spreading recently through various media. During the most recent wave of infection with measles in 2015, Germany had the sad distinction of ranking first in Europe with a proportion of 63 percent of all cases.

Such a complex subject obviously raises many questions that we, as paediatricians, regularly come across. What is the right mix of confrontation with pathogens and protection against infections? How many infections are alright and when do we need to worry? In this chapter we would like to show you how to support your child in developing a resilient immune system.

Pillar 3: Balanced Nutrition

While we would never want to generalise, we find that child nutrition is sometimes a blind spot in the expertise of some paediatricians. We don't mean to blame our profession but to show that this topic has so far not received the attention it deserves in the training of paediatricians. There is a great need to catch up and therefore this chapter is particularly important to us.

Nutrition of course already plays a vital role for babies and toddlers. At birth, human babies are relatively immature compared to other mammals. Therefore they urgently need the necessary nutrients for their physical and mental development. Major organs like the brain go through crucial maturation processes at this early time that rely on sufficient supply of essential building blocks such as omega 3 fatty acids.

This insight leads to the following central questions: Why are breastfeeding or breast milk

so strongly recommended? Is formula milk enough to meet the baby’s demands and what do the abbreviations on the packets actually mean? Why does a child need supplementary solid food from the fifth to the seventh month onwards, and why is breastfeeding no longer enough at that point? What is the right path here – classic supplementary feeding or baby-led weaning? Which supplements such as vitamin D can help with a healthy growing-up process?

Nutrition can also become an exercise in delicate manoeuvring when your child gets older. Not all children are instantly models of balanced nutrition. Many parents fear that their child will become a picky eater during the time when tastebuds develop. The right amount of food containing salt or sugar can also become a headache. Many worries are focused around healthy development which is observed by paediatricians using so-called percentiles (if you’ve never been quite sure what this actually means, don’t worry, we’ll explain it as well). Unfortunately, these curves have had a tendency to rise far too much in terms of weight, particularly in Western countries. Overnutrition is an increasing issue for paediatric medicine and needs early expert intervention. Doctors and parents both have the responsibility to teach children sensible eating patterns and lead by example.

Another important subject is a vegetarian or vegan diet for children. Very few things are stigmatised in paediatric practices as badly as these diets. However, by now, we live on an ideological island here in Germany. Other medically developed countries like the US, the UK, Canada or Australia recommend a vegetarian and vegan diet for children of all ages, if implemented correctly. So, instead of demonising them, modern paediatricians should support and accompany families with their expertise in the desire for a plant-based diet.

Pillar 4: Movement is Key

The need for movement is anchored in our children’s genes. We don’t have to actively teach them to turn over, crawl, pull themselves up or take their first steps. A healthy child will reach all these milestones of development sooner or later on their own. Neurological and motor skill development is a fascinating process. A certain level of maturity in the brain is necessary for the child to start crawling. Crawling, in turn, is important for further brain development. Therefore, children should be supported in their urge to move at an early stage.

This can be quite exhausting, particularly when your offspring starts to run, jump, climb – and fall over. You may well ask what nature was thinking of! But don’t worry. When children romp around, it’s not in order to annoy their parents but to learn important life lessons. Not so long ago, humans had to survive in the wilderness, to run away from attackers, jump over obstacles and climb trees for their own protection. Physically active children are just doing the homework set by their genetic curriculum.

Of course, we are rarely attacked by wildlife now. But we also know from many studies that movement and exercise are very important for the development of social competence. Children can learn many lessons about rules, boundaries, cooperation, consideration, fairness and interactions based on mutual trust. This shapes their personality and supports their confidence.

In an increasingly digital world where we can do almost everything without physical effort, it is particularly important to establish movement patterns for your child as early as possible. Lack of exercise can lead to depression, obesity, cardiovascular disease as well as diabetes, even in childhood. When children are habituated to a lifestyle without much movement, this negative pattern of behaviour will usually become even more pronounced in

later life. So, if you wish for a healthy future for your child, you should be very much aware of the importance of movement and exercise. In this chapter, we would like to give you a few tips on how to support your child in this.

Pillar 5: Mental Health

The best nutrition, the most up-to-date vaccination status, the most active engagement in sports – all of these do not automatically ensure a happy childhood. In addition to carefully watching over a child’s physical health, their mental health must not be overlooked. But unfortunately, mental instabilities and even mental illness in children are still not taken seriously enough even today, in spite of ample scientific data on mental health.

During the first few months and years of life, the development of a stable attachment through empathetic education is paramount. Moving from the crib in the parental bedroom to a separate sleeping space, the first time at the nursery or in day care without the presence of their parents, are key moments relevant to a child’s attachment development when the foundations of a trusting parent-child relationship are forged and the child’s personality and value system are formed. Caregivers need to be aware of the ramifications of such situations and engage in them with mindfulness. Love is at the core of these experiences, unconditional love from the very beginning.

Acceptance and patience help to create enough of the free space needed for the unfolding of a healthy development of your child’s personality. Structures and rules, conveyed empathically by the parents, also play a central role. The natural frustration experienced by children is a normal and healthy response to encountering a structured worldview. Children can overcome these conflicts with the help of their parents and thus strengthen their confidence and independence. In this, it is essential to communicate in a respectful and non-violent manner, both

physically as well as verbally. The impact of verbal violence, in particular, is still underestimated far too often.

These elements help children to develop their very own resilient personality. Particularly today, when the incidence of mental illness is rapidly rising in older children and adolescents, resilience becomes increasingly important. But it can only develop with the necessary level of trust – trust in yourself but also trust that your closest attachment figures will always be there for you. Only children who know that their parents are still there even if they occasionally vanish from view can explore and encounter their environment appropriately.