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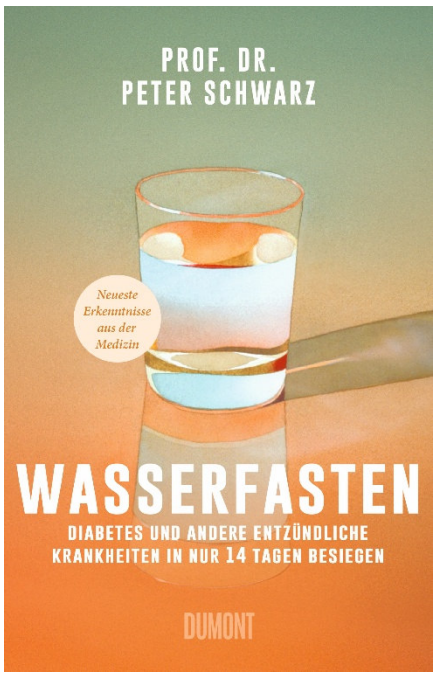

PROF. DR. PETER SCHWARZ
with Stefanie Reinberger
WASSERFASTEN. Diabetes und andere entzündliche Krankheiten in nur 14 Tagen besiegen. Neueste Erkenntnisse aus der Medizin

WATER FASTING. Defeat diabetes and other inflammatory diseases in just 14 days. Latest findings from medicine

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Prologue

IT STARTED WITH A MISUNDERSTANDING

I admit, even a professor is not completely without prejudices. At least, I am not. For a long time, I was among the scientists who would turn their nose up upon hearing the word “fasting.” For me, and presumably for the majority of my colleagues in academic medicine, fasting fell into a realm I’d place somewhere between esoterica and quackery. A field better not to be taken seriously in our profession and that we should ignore or even warn against. On the one hand, this attitude may be born of a certain arrogance or maybe even a dose of narcissism.
You’ve heard it said, doctor knows best … On the other hand, a certain scepticism is also justified. After all, it’s true that alongside good therapists, well-founded knowledge and sensible treatment strategies using complementary medicine, there are also many charlatans out there. Hustlers, who’ll happily take people’s money in return for promises of healing and “therapies,” which have no scientific foundation and in the worst case could even cause great damage to health.

Basically, fasting was not a subject I’d ever thought I would seriously investigate. Then something happened that turned my self-image as a lofty and more or less all-knowing professor on its head. And taught me to take a step back and look at fasting and metabolism in a different light.

You ought to know I am the president of the International Diabetes Federation. I’m not telling you this to show off or out of vanity. Rather, I want to emphasise that I thoroughly understand my specialist area and the illness that afflicts so many people’s lives. But neither my expertise nor my many years’ experience could prepare me for what I witnessed a few years ago during one of my frequent collaborations with colleagues at the university hospital in Dresden on a large international scientific study of diabetes patients.

The study had the following objective: to understand why some people with type 2 diabetes were successful in ridding themselves of the disease through a suitable diet, weight loss and more exercise, while others weren’t. Many of us know type 2 diabetes as the so-called age-related diabetes, although the disease also increasingly affects younger people.

We wanted to investigate which factors decide whether a change of lifestyle could achieve the desired effect or not. Originally, we thought the key to reversing the course of diabetes would be found in the person’s lifestyle, for example, if they focused more on exercise or more on diet. Or if certain types of diet are more conducive than others. But naturally, we also investigated the participants’ physical attributes, such as body fat, which is known to play a part in the genesis and advancement of the disease. We

analysed how much fat was present in each organ of our study participants to the exact gram. Every six months, the patients' hearts and kidneys (and other organs) were examined.

One of the participants was a man who at the start of the study had a large amount of liver fat. He was in his late sixties, of medium height with a large belly. A rather inconspicuous man in a flat cap and a blouson. If I'm honest (and I do hope he will forgive me) I remember less about his appearance and more about his MRT images. They're now burned into my memory forever, and I can still see them in detail today. Like I said, at the beginning of the study, the participant had a large amount of liver fat. The images we took half a year later were a huge shock to me as a scientist. The liver fat was gone. Completely vanished. As if it had never been there. I'd never seen anything like it.

I swore. And doubted our machines. My team felt the same. Because what we were seeing was simply not possible. Where had the liver fat gone? It couldn't just disappear like that! We assumed the technology must have been broken. It was the only reasonable explanation I could think of. I called Siemens, the manufacturer of the MRT machine, and made an appointment with a technician. He was to come out and check the machine. But already on the phone and without even having seen the machine, he made an initial remote diagnosis – and asked an all-deciding question, "Had the patient perhaps been on a strict diet?" "Of course not," I answered with certainty. "He's taking part in a study!" The technician stood his ground. "Ask him. It costs nothing. I've seen it before. Results suddenly improve if somebody eats very little or nothing."

So it had come to this: the technician responsible for the maintenance of my machine was explaining to me, the renowned physician, my job and the miracle of a healing. I was indignant. Shouldn't cobblers just stick to mending shoes, and technicians stick to fixing machines? However, my innate curiosity as a scientist ultimately won out. Furthermore, I wanted to be sure the technician was wrong and not me. So I called the patient, who swiftly told me about a fasting cure his nutritionist had recommended.

That gave me pause for thought. If my test subject had so simply eliminated his liver fat, then it maybe wasn't a unique case? Could there be more to it? The technician had touched on it. I started asking colleagues in other countries who were also participating in the study. And in fact, they'd also seen similar results. And they were just as surprised as I was by these observations.

This scientific shock gave me a wake-up call and was the impetus for my very personal investigation of fasting. I read, researched and talked to other scientists. I fasted myself and personally supported over a thousand people while they fasted. Many others also managed it without my support, after hearing about it from acquaintances who were in treatment. Some of them contacted me later, so that I also knew of their success.

Today, several years after my call to Siemens I am a fierce proponent of fasting. As a scientist I cannot fail to recognise that what I once believed was hocus pocus represents one of the fastest and most effective health interventions for nearly all chronic widespread diseases. Be it diabetes, high blood pressure, dementia, inflammation, lipid metabolic disorders or other complaints. It has now been confirmed by over one hundred scientific studies in the Western world, which is characterised by academic medicine. For example, after two weeks of water fasting the diabetes along with the liver fat completely disappeared in over half of patients who had already suffered type 2 diabetes mellitus for up to ten years.

And why does that happen? Basically, when we fast, we tackle our body's own fat depot, to be more exact the fat deposits in the liver. The simple presence of fat in the liver and in the pancreas represents a huge health risk and accelerates the development of diabetes as well as many other chronic illnesses. Imagine liver fat as your body's own weapon of mass destruction, which bit by bit destroys cell functions and in doing so also destroys our health.

Admittedly, eradicating liver fat is no cure-all. And of course, there are also circumstances under which it is perhaps not advisable to deny ourselves food for two weeks. But for the majority of us, this self-denial has an enormous benefit for our health. A zero-calorie diet is the most effective and fastest way to combat liver fat, which disrupts the healthy functioning of our organism. Fasting puts you metabolism back on the right track, can prevent illnesses and can soothe or even heal other complaints. It holds the chance for a healthier and most likely longer life. In other words, I believe two weeks of water fasting offers the fastest gain possible for an individual in terms of health. I think that is a prospect for which you can easily accept two weeks of denial.

In this book, I want to explain to you why water fasting works and show the unbelievable health benefits of not touching food for a little while. But above all, I want to invite you to do the same as myself and the many people I have had the privilege of supporting. Just stay away from food for two weeks and embrace the water fasting adventure. Your health will thank you for it!

PART 1

Fasting: New Findings

1 THE REDISCOVERY OF FASTING

“To stay strong, healthy and young, be moderate, exercise your body, breathe clean air and heal pain through fasting rather than with medicine.”

This recommendation was given by Hippocrates (460 - 375 BC), the Greek physician considered one of the founding fathers of Western medicine and whose oath of medical ethics we doctor still swear today. Hippocrates didn’t just see fasting as a holistic health strategy but also as a healing method to treat diseases. He is also reported to have said, “When the illness is at its peak, then only the minimum amount should be eaten.”

Doctors in the Middle Ages and the Renaissance followed this thinking and told their patients to fast when suffering from a whole range of illnesses, from fever and syphilis to general age-related complaints. And French surgeon, Guy de Chauliac (1298 - 1368), one of the most distinguished physicians of his time, recommended fasting to prepare for an operation.

Even long before Hippocrates, healers and scholars had noted that moderate diet or even temporary abstinence from food had health benefits and could even heal diseases. According to the oldest accounts of fasting, the method was already being practised over 4,000 years ago. And it’s probably even a lot older. Periods of abstinence were also known in Ancient Egypt. While fasting also plays an important part in Ayurveda, the ancient Indian system of medicine, where it is said it allows the digestive system to rest, cleans the organism and optimises all bodily functions.

Of course, these days modern medicine has more than just fasting in its toolbox. And yet, we’d do well to remember and benefit from the old knowledge now and again. After all, our lifestyle here in Germany and in other western industrial countries is making us sick: too little exercise and far too much food, providing us with way too many calories – every hour of every day of the year. The consequences weigh heavily on the scales.

We humans are getting fatter. Since the 1970s, obesity has almost trebled worldwide. The World Health Organisation (WHO) speaks of an obesity epidemic. At the end of the nineteenth century in Germany, the average life expectation was 35.6 years for men and 38.5 years for women, as shown in the first general life table dated 1871 - 1881. According to the Federal Statistical Office of Germany, men now live on average 78.2 years and women 83 years. To all intents and purposes that would be a good

development, were it not for the flip side: we live to an older age but we develop more illnesses. Above all too much body fat, a consequence of our modern lifestyle, carries a huge health risk.

The health dangers of being greatly overweight have long since been known. Obesity is considered a trigger and risk factor for over 60 accompanying and secondary diseases, for example type 2 diabetes, high blood pressure, other cardiovascular diseases and joint damage to name just the most obvious. Researchers are finding increasingly more evidence that the risk for a whole range of cancers rises with increased weight. The immune system, your body's own defence mechanism against germs, becomes weakened. The psyche suffers. The risk of neurodegenerative disorders, such as Parkinson's disease or Alzheimer's disease, increases. On the other hand life expectancy drops. According to information from the Deutsche Adipositas-Gesellschaft (German Obesity Society) people with obesity have a life expectation that is five years lower than people of a normal weight.

The list could go on and on. It is clear that constant overconsumption and obesity do not only damage individuals, but they also become a cost and provision problem in the healthcare system and in this way a problem for society in general.

Liver fat: the baddie in a derailed metabolism

According to epidemiological studies, around 40 percent of the population has such a volume of fat stored in their liver and pancreas that it is visible on an ultrasound. We are talking in the region of 300 to 350 grams or more of fat. However, fat content in the liver becomes critical at around the 100 grams mark. There are no reliable figures on how many people are affected because finding and calculating fat volumes of this size involve difficult and above all costly investigations using MRI machines. However, if we project the data that we have about the fat visible on ultrasounds, then we have to assume that a large part of the population is affected. If you are over 35 the likelihood of not having accumulated liver fat is under ten percent, no matter your stature. Even slim people can have fat deposits in their liver. The cause is an unhealthy lifestyle featuring lots of carbohydrates and little exercise.

And it gets worse: once you have approximately 100 grams of liver fat you become a so-called non-responder. That means the body barely responds to diets and sport. Just imagine, you walk 10,000 steps a day, but it affects your body as if it were only 2,000 steps. With the well-trodden and frequently recommended methods, i.e., reduce calorie intake while burning more calories, body weight can no longer be reduced or only over a vary long period.

Liver fat consists of very hard bonds of glucose and fat. These bonds are only broken when the organism has no other choice. And this is exactly the point where water fasting

can help because when the body is no longer provided with food and consequently no energy, it has to draw this energy from the difficult-to-access fat reserves. But as long as fat is located in the liver, the fat metabolism as a whole is blocked.

Then the only effective way to get rid of the fat and to return to a healthy body is water fasting. And if we are to believe epidemiology, then almost all of us need to pay more attention to our liver fat, and eliminate it with the help of water fasting, i.e., my 14 day zero-calorie diet.

Medicine's poor relation

To date, fasting has never really become established in medicine. Although there are people who practise various forms of therapeutic fasting, it appears the method has become stuck in a nook between lifestyle and esoteric, lacking its rightful position in established medicine. Or has your GP ever prescribed you a fast?

I have a few theories why that is so. I think the determining factor is that a full cupboard (and a full stomach) have something reassuring about them. In the history of humanity, there have been more phases of famine than times of plenty. And the fear of having no food, is buried deep in our collective memories. For who knows when the next famine will come? Even today in cities like Hamburg, you witness older people dragging home more food from the supermarket if a flood has been forecast, even though such weather events do not as a rule limit supply. And during the Corona virus pandemic, there was real stockpiling. That too was an expression of our fear of famine and starvation. Whereby stashing away toilet roll doesn't necessarily contribute to securing nutrition in hard times.

A human programmed this way thinks: more is better, less is worse. Then absolutely nothing, and in honesty water fasting is nothing, must logically be really bad (but it isn't!). Food has a huge significance in our society. You eat at family celebrations and on special occasions, such as business deals, scientific conferences or political meetings. We link food to success, happiness and celebration. A table loaded with food is an expression of having made "it", however you want to define "it" as. In some cultures, voluptuous body forms are still a sign of wealth. In Mauritania, young women are even downright fattened up in order to make them more attractive for their future husbands and to increase their chances of a rich spouse. What that means for their health is a different matter entirely.

Another reason is that in many regards medicine has moved on and can come up with other methods today. Medicines and surgical interventions appear to work faster and more obviously, and at least at first glance they are more understandable. Furthermore, at least in the short term it's considerably easier to take a tablet, inject a substance or have an operation, than to starve yourself for days.

The fact that naturopaths like to talk about detoxifying the body by way of fasting cures does not improve the situation. The German word to purge the body is "*entschlacken"* and is related to "*Schlacken*" or slag (translator's note). The term originates from the steel industry where iron ore is heated to high temperatures in the furnace in order to extract raw iron. A by-product of this procedure is furnace slag. But although there are waste products that arise during the metabolic processes in the body, the organism ensures they are continually excreted via the kidneys, liver, bowel, lungs and skin. The notion of slag hanging around somewhere in the body is not tenable from a medical point of view. It is rather the case that fasting boosts the body's own waste disposal system and cell debris and waste products are disposed of more effectively; a process which we professionally call autophagy. The metabolism in the liver also works at full speed so that any stored poison is washed out. The notion of detoxification is not exactly wrong, just the word choice is a little unfortunate. But I will address that later.

Ultimately, I think there is another very decisive point that ensures fasting is treated like the poor relation of academic medicine in present times: human greed. Water fasting is medication for free. Ultimately, you do nothing but stop eating all food for 14 days. Not only are you not spending any money on your health regime but you are also saving money as you don't need to buy food. A woman, who I supported during her fast, told me she'd convinced her husband of the idea and they'd only consumed water and herbal tea for 14 days. She said everything went well and she felt like new. Her lab results were excellent and confirmed her success. "But Mr Schwarz, the best thing is that in doing so, we also saved 300 euros over the two weeks because we didn't need to go shopping!"

Indeed, no great profit can be made from people who take their health in their own hands like this without even paying a dime. Neither food producers, the pharmaceutical industry nor clinics earn anything if you simply don't eat for a period.

Please don't misunderstand me, I am a licensed doctor and naturally both the drugs and therapies of my craft have their place. But I think the lacking monetary inducement is certainly one reason that so far there have been relatively few academic studies on fasting. The industry would hardly finance such research. In turn, the hitherto sparse study situation means fasting cannot really shake off its rather esoteric image. And that is the vicious circle. Let's be honest, what country and what independent institution would happily spend millions in funding grants to research a method with a questionable reputation.

Fasting for spiritual reasons

Of course, fasting never fully dropped off the radar in society, if only because of fasting for spiritual reasons. For thousands of years, fasting has been an important part of

Hinduism, where it is not a fixed ritualised duty but rather a voluntary act that allows believers to choose from various fasting practices, e.g., from not eating certain foods and fasting on specific days to an extensive water fast.

In Judaism and Buddhism, a purifying effect on body and soul has been associated with fasting from early times. During Ramadan, Muslims refrain from eating, drinking, smoking and sex from sunrise to sunset. And even if it isn't the actual motivation, from a purely medical point of view they are doing a form of interval fasting. However, the positive health effects are cancelled out by the evening feast enjoyed by many. Well, let them enjoy it! Eating together also nourishes the soul.

Fasting is also firmly anchored in Christianity with practices in the 40 days before Easter and actually also in Advent, a period, which today is characterised more by sweet treats, mulled wine and the accompanying extra calories, than by moderation. Christians no longer deny themselves during Lent in the same way as they did long ago. In the Middle Ages, Christians only allowed themselves one meal a day in the run-up to Easter. Consuming alcohol as well as meat and other animal products was prohibited. Already in the mid-sixteenth century, the rules were relaxed and today it's more about consciously refraining from luxury foods or certain things, such as TV and social media. That too can have a purifying effect, but it's not what I as a doctor mean when I talk about fasting and the related benefits for health.

Medical fasting in the twenty-first century

To be fair, there are still people today who fast for health reasons. Or more correctly, they are doing it again.

Medically motivated fasting experienced a renaissance as part of the life reform movement, which arose from different groups in Germany and Switzerland from the mid nineteenth century. Their followers criticised industrialisation, materialism and urbanisation, arguing they would lead to lifestyle illnesses and diseases. A return to a lifestyle bound to nature was said to counteract these disease-inducing developments. Moderation, denial and even fasting fitted wonderfully well with this approach.

Doctor Otto Hermann Ferdinand Buchinger was the trailblazer of therapeutic fasting in Germany at the start of the twentieth century. Buchinger initially worked as an army doctor but in 1917, he retired as an invalid suffering from a serious rheumatic disease and a barely functioning liver. Desperate, he turned to the Freiburger naturopath Dr Gustav Riedlin. Influenced by the American neuropaths and fasting doctors, Riedlin prescribed him a 19 day therapeutic fast. It was a complete success: Buchinger regained his health and was able to heal his rheumatism. Inspired by his experience, Buchinger established his own fasting methods.

Today Buchinger's therapeutic fast remains one of the most well-known and most popular methods. For two to four weeks (nowadays usually seven to ten days), a maximum of 250 to 500 kilocalories are allowed per day. 250 millilitres of vegetable broth, 250 millilitres of fruit or vegetable juice and 30 grams of honey are allowed and are accompanied by 2.5 litres of water or herbal tea. Those who fast for a longer period or do lots of exercise can also add 200 grams of dairy products per day.

Today, there are so many variations of therapeutic fasting: juice fasting, whey fasting or gruel fasting, where you eat a thin porridge, to name but a few. Currently, the "fasting mimicking diet" is on trend. It is a form of fasting that has come over from the USA. This method was originally developed by cell biologist and gerontologist Prof. Valter Longo from the University of California in Los Angeles. My very dear colleague Dr Andreas Michalsen, who holds an endowed professorship in natural medicine at the Charité in Berlin, picked up the idea, developed it and popularised it in the German speaking region. This diet permits around 800 calories to be split over three meals. However, no animal products or sugar are allowed.

I want to make it clear that I am not trying to malign any of these fasting methods in any way. I really appreciate the very respectful and collegial relationship we enjoy with each other in the fasting research community. At a guess, it is thanks to our universally shared passion to achieve the biggest possible health benefits for those people who place their trust in us and our methods. And we all know that we can best achieve this objective when we facilitate a good exchange of information with each other and are ready to learn from each other. Once at a fasting congress, I ate breakfast with the whole Buchinger/Wilhelmi family. The descendants of Otto Buchinger are still dedicated to fasting with their own fasting programmes, the Buchinger clinics and also through research.

I often talk with Professor Andreas Michalsen and we also work together at various levels. Currently, we are working on big plans to place fasting and fasting research on better footing in Germany.

And I got to know Dr Nicolai Worm, the spiritual father of "liver fasting" during a break at a congress. In the men's loos of all places, as we both visited it at the same time. He greeted me with the words, "Mr Schwarz, it's fantastic what you're doing!" – a compliment that I could return with pleasure and conviction. Worm's liver fasting is a two-week therapy based on vegetables and a protein shake he developed. It aims to reduce fat in the liver and to achieve a restart for the metabolism. The fascinating thing is that he, as a nutrition scientist, developed his liver fasting method over ten years ago, at a time when the connections between liver fat and diabetes still could not be explained as precisely as now. He had intuitively thought in that direction and for that reason alone I owe him respect.

Unfortunately, we now know that a partial reduction of liver fat is not sufficient. The true health effect only comes about once the liver is completely free of fat, a state that can be achieved with water fasting.

The supreme discipline of water fasting

What makes my fasting method different to those of my colleagues? I am more radical! None of the afore-mentioned fasting therapies does without food altogether, they only reduce it more or less drastically. Sometimes there is broth and vegetables, sometimes low carb food with few calories or sometimes a special fasting shake. I can't deny these methods also mean a bitter self-denial. And I am sure that all these methods have their use, lead to positive health outcomes and can reduce liver fat to a certain extent … but not fully. Therefore, I want to give this advice: if you want to do something, do it properly and attempt the supreme discipline of water fasting, that means no food at all, and in doing so, you'll achieve the quickest and most intense benefit for health possible. I'd like to tell you why that is so.

Firstly, I understand very well that it appears easier to eat a little food spread out over the day. When I first approached fasting, I also thought it would make the matter more bearable. My plan was to eat a little coleslaw everyday and on an evening, to allow myself a glass of wine after the hardships of fasting. That was actually pure madness. A colleague, who I shared a shift with in A&E back then, commented on my plan with the words, "You're crazy. Either you fast properly or just leave it."

That was fairly brave of the colleague for at the time she was only an assistant doctor and I was already a professor. And you probably know that in the field of medicine the hierarchies still count for something. But my young colleague was so convinced of what she was saying that even the academic pecking order didn't stop her from setting me straight. And I am truly thankful for her frankness. Since, by drinking the alcohol I would have to a large extent ruined the positive effect of the fasting. For the organism, alcohol is a poison that has to be made harmless and disposed of as quickly as possible. They are processes, which occupy the liver as it metabolises the alcohol with the highest priority in order to detoxify it, but during which the fat reduction is stopped. Furthermore, fatty acids are produced while breaking down the alcohol and in turn, they are stored in the liver.

And on top of that, I would have been making my life unnecessarily difficult with the coleslaw. For I would have been causing my bowels to be permanently at work. Whereby if the bowel is completely empty, the bowel movement calms. That is an important reason why actually all fasting methods include a purge beforehand. As a result less messengers that signalise hunger are sent out. Namely, the majority of

hormones that signal hunger and appetite come from the intestinal wall and are released when the bowel moves.

From a psychological point of view, it may appear easier to at least eat a little. As you know, we all hold a deep-seated fear of starving. And for that reason many people are more prepared to try a method of fasting in which they may still eat a small amount of food, even if it's just tiny portions of 100 to 200 kilocalories. Valter Longo, the Californian trailblazer of fasting, already experienced this effect when he suggested that cancer patients prepared for chemotherapy with therapeutic fasting (with great success incidentally). Originally he wanted to put his patients on a zero calorie diet, as I am advocating today, and was met with resistance. Nobody at all wanted to do the therapy without even a teeny tiny meal each day. That was essentially the foundation of the afore-mentioned fast-mimicking diet.

The problem is even tiny amounts of food stimulate the digestive tract leading to feelings of hunger and appetite. I do not want to claim that both these feelings don't occur during water fasting. But I am absolutely convinced that it's actually easier to not eat anything at all than to be repeatedly providing the digestive tract with a little top up. And that's exactly what I experienced myself.

However, what is much more serious: the fat reduction in the liver works best when nothing is eaten. When fasting, after a few days, the metabolism switches to another mode: the ketose. The body uses this metabolic pathway when available nutrients have been used up and there are no top-ups coming from outside. Just like during water fasting. Ketose is a metabolic state, in which the body digs into its stored reserves for energy. It uses the fat from the liver, which is otherwise hard to access. In doing so, very energy-rich chemical compounds, the eponymous ketone bodies, develop. They flood the body and as energy-carriers supply distant organs and tissues. But like I said, the prerequisite is that the body is not provided with more energy from outside.

You can probably already imagine what happens if during a therapeutic fast you keep having something to eat, even just a tiny morsel. Exactly! The ketose is interrupted each time because the body can again access easily available energy. As a result the fat in the liver is reduced but not completely. And that is exactly what can be achieved with water fasting. Alternatively, you can "win back lost time" with other fasting methods. It is estimated you would then have to fast for six times longer in order to achieve the same effect on liver fat. Do you really want that?

So much for the theory. With my colleagues Prof. Andreas Michalsen and Dr Daniela Koppold, who also works with me in the institute, I am currently investigating how well the individual methods of fasting work in real life in regard to liver fat. However, it will take a good while before we can publish the first tangible results. As I already

mentioned, it is hard to access funding for studies on fasting. Therefore, we are currently developing a fasting register, in order to collect and evaluate data from people who fast. So that we can better understand what happens in the body during fasting.

Personally, I swear by water fasting. For me, it's certain that it's time to rediscover fasting on a large scale and to establish it in our society. It has nothing to do with irrationality, esoteric and secrets. There are clear explanations about what happens in the body during fasting and how it promotes good health. I will address that in more detail in the following chapters. Because I want you to understand why a temporary fast is good for your body. And if you want to try it yourself, you should do so out of conviction, and not because the professor from Dresden told you to.