

The Pyramid of Wellbeing

Optimal Health at Your Fingertips

Ines Vandeputte

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*** Disclaimer: the tips in this book should only be applied when in good health and should not be used instead of medical treatment. When in doubt, please contact your physician before implementing changes to your lifestyle***

Foreword

In August, I turned 50 and suddenly realized that I slowly start to belong to the aging population. It is an age when many of us find that the consequences of inadequate lifestyle choices become physically and mentally apparent. Excesses that used to have no impact, can no longer count on much sympathy from body or mind.

Still, we really can't complain.

Compared to 50 years ago, today's senior citizens generally look very energetic and vital. The biological clock is still ticking steadily but at a much slower pace than before. An important reason for this phenomenon is that the average citizen takes more care of general health and has the means to do so. Some examples include daily facial care, intensive use of sunscreens, a varied diet and excellent medical care.

Yet more and more "modern diseases" are seeing the light of day, causing the increase in expected life span to slow down. Diagnoses such as obesity, type 2 diabetes, burnout, depression, anxiety disorders, cancer and anti-immune diseases have become an integral part of our society. Even young people do not seem to be spared and are plagued by serious physical and mental disorders.

Health care organizations respond with new medications that save many lives and make suffering more bearable. However, these new drugs are not sanctifying and often contribute to new health problems. Prevention still appears to be the best option.

It should come as no surprise that aging makes the body more susceptible to a variety of diseases, and this is especially true for lifestyle diseases.

Years of abuse of body (and mind) leaves its mark and will lead, together with the general deterioration due to aging, to less efficient functioning of the body.

After age 40, it became clear that despite an athletic life and despite much attention to a varied diet, my body began to have more difficulty recovering after stressful or very intense periods. I realized that I have been going through life without a clear "manual" on how to optimize my health. It feels as if life is some kind of contest without stipulated game rules. Every now and then a new guru pops up to give advice on how to tweak one particular health aspect but no-one comes forward with a global approach. As a consequence, we all go back to the competition field day after day without the slightest idea of how to win in this game of life. And the few lucky people that accidentally win are usually left guessing how they managed to beat the field of competitors. There are plenty of examples of centenarians pushing the craziest advice to explain their blessed age when the real reason can usually be found in a collection of strong genes and mere luck.

It seemed high time to take tackle this challenge and look for the general rules that optimize the chances of a long and healthy life for everyone.

During my investigation, I noticed that new research often contradicts or nuances generally accepted health principles. It led me to numerous new findings from leading professors and specialists which I integrated into an overall plan of wellbeing. As a test subject of my own research, I applied the principles. After some fine-tuning, I noticed that my body and mind were getting stronger than ever before. Thanks to these good results, I gradually began to apply more and more principles. Today my body demands healthy foods and no longer craves snacks, pizza and sweets. And when I do suddenly feel like indulging in a less healthy choice, I can enjoy it 100%. After all, my body has regained enough strength to process a sporadic unhealthy choice without problem.

Everyone who passes 50 should realize that the body - now more than ever - should be treated with the same respect as the body of an elite athlete. In the coming decades, this body will face many challenges that cannot be overcome as naturally as before.

I like to share the results of my personal search that can help you to enter this stage of life optimally prepared. I am an epicurean and certainly do not live as a monk.

Therefore, my approach is viable for everybody.

Even with a few small changes in your current lifestyle, the positive effects will soon become visible and your vitality will increase. Chances are that these positive changes will encourage you to implement more principles one step at a time.

The Pyramid of Well-Being is not 'my invention'. It is a puzzle that I have put together over the past few years, always looking for pieces that fit into the bigger picture of optimal health. I am very grateful to role models such as Dr. Andrew Huberman and Dr. Gabrielle Lyon for their valuable insights and their efforts to educate the public about new health trends. I hope that the Pyramid of Well-being can be a contribution in your quest for optimal physical and mental health.

Introduction

Focus on a healthy lifestyle is not a new phenomenon. Already at the time of the Egyptians (around 3300 BC) a period of fasting was imposed after periods of excessive partying. In this way, the body was given the chance to recuperate from excessive alcohol consumption and large roasts.

As early as 400 BC, Hippocrates, Greek physician and founder of Western medicine, exposed the dangers of obesity while his contemporaries Pythagoras and Herodicus promoted moderate food consumption. It were also these Ancient Greeks who placed particular emphasis on sports and focused on the development of a beautiful body (1-2).

Over the centuries, a healthy lifestyle has always been something of a luxury item. Only during times of abundance, when the population has enough food and can meet all its needs a healthy way of life receives adequate attention. During periods of economic crisis or famine, the focus quickly falls into meeting basic needs at the expense of healthy eating and exercise.

People who are struggling to make ends meet are usually not concerned about the sugar content of a particular product. They are happy just to find cheap food and go to bed without hunger. These cheaper foods usually consist of unhealthy processed products that are crammed with refined sugars and starches and only satisfy hunger temporarily. In the long run, they create health problems pushing the underprivileged in a further decline below the poverty line. Escape from this vicious cycle is very difficult and seems only possible through government support and by informing this less fortunate population.

About 55 years ago, the Nutrition Triangle was launched by the government in several European countries. In every doctor's office, school or official institution, this triangle was posted to inform citizens what they should eat. Attention was drawn to the dangers of refined sugars, alcohol and other high-calorie and high-fat foods. The goal was to make us aware that right food choices make for better health.

If you look at the website of the Flemish Institute of Healthy Living today, you will see that while this triangle has been modernized, there is not much change. The placing of some food groups has changed and products were added here and there. But we cannot speak of a modern take on nutritional advice.

The general idea of the "modern nutrition triangle" is certainly valuable but incomplete. A number of important facts are overlooked. The chapter on nutrition will show why the food triangle is inadequate to serve as the basis for a nutritious and healthy diet.

Kris Verburgh was, to my knowledge, the first to formally question the Nutrition Triangle. With his book "The Food Hourglass", he kicked in the old entrenched beliefs and proved his assertions with scientific studies. He gave many readers a real aha-moment and encouraged the population to think more critically about nutrition. The latter is for me the greatest merit of the Food Hourglass; the encouragement to not just accept nutritional advice because it has been proclaimed for years and to become more critical while selecting food products.

Kris Verburgh discovered a number of shortcomings in the Food Triangle. In his book, he fixed these shortcomings and created a substitution model that offers healthy alternatives to less healthy food choices. Some of his views even contributed to modifications of the original Food Triangle such as more emphasis on healthy fats.

Although the Food Hourglass was a great innovation 10 years ago, some of its recommendations have since been questioned by conclusions from recent publications. In particular, Kris Verburgh's vision of minimizing animal dairy products, salt and red meat no longer fit in the new reality.

The biggest change between the traditional models and modern nutritional advice is that experts no longer speak about food groups. Instead, they refer to the macros of food products. Macros are the nutrients the body needs to function properly. By talking about macros instead of food groups, a translation between the foods you consume and the basic nutrients your body needs, being proteins, fats and carbohydrates is no longer necessary.

Talking about nutrients instead of food groups has many advantages in comparison with the models discussed earlier. The advice of the Food Triangle or Food Hourglass, only tells you what foods contain valuable nutrients for your body. Following this advice does not guarantee that you will consume all the necessary nutrients your body needs to function optimally. Specifically, the macro 'Protein' is underrepresented in these traditional models.

The advice of both the Food Triangle and the Food Hourglass emphasizes on optimizing health through a healthy diet. Paying attention to healthy food is indeed indispensable but this is only one part of an optimal lifestyle. The Flemish Institute of Health realized this and made an attempt to complete its advice by offering a Movement Triangle. Although this was a great initiative, the information offered to the citizens in this Movement Triangle appears to be too limited and omits some very important facts.

Firstly, the fact that athletic efforts account for only a small portion of a person's total calorie expenditure should have been taken into consideration. To give complete information about the energy you use during a day, all factors that make up the total energy expenditure of a person need to be summed, not only exercise. This information is missing in the Movement Triangle which makes it a bit misleading. Exercise is not a panacea to tackle the obesity epidemic. It is crucial for your health and provides physical and mental benefits but it should be clear that to increase your energy expenditure there are other factors that have a bigger influence than exercise.

Secondly, the Movement Triangle divides the different sports activities by intensity and not by type of activity (cardio training versus resistance training). The distinction between both types is important because they each serve a specific purpose and a combination of both is indispensable for staying strong and healthy. The chapter on exercise will cover this in detail.

Besides a healthy diet and exercise, there are two other super powers that are not mentioned in the traditional models but that are also crucial to optimize the quality of life and longevity.

One of these is sleep.

Sleep is one of the most extraordinary phenomena of the human body. Basically, a human being sleeps about 1/3rd of his life. This means that a 90-year-old person has slept between 22 and 30 years of his or her life. At first glance, these figures seem to represent a mass of "lost time." But the more scientists study sleep, the clearer the importance of a good night's sleep becomes.

Sleep is extremely important for physical recovery, emotional regulation, learning physical skills, studying, creativity, strong memory and good mood. The number of people with insufficient sleep or with sleep disorders is very high. Not being able to fall asleep, waking up in the middle of the night or staring at the ceiling for hours are phenomena that occur frequently.

What exactly is high-quality sleep and how can you measure it? What are the basic requirements to sleep well and what are the main disruptive factors? These questions will all be unraveled after the chapter on exercise.

Attention to a healthy diet, optimal exercise and quality sleep make a world of difference to a person's health. Yet there is one more pillar or basic strength that needs to be accounted for and this is mental resilience.

Mental well-being is the buzz word of this decade. According to a study in 2023 by IDEWE, 15.5% of employees were at a high risk of burnout. The number of people experiencing 'high emotional exhaustion' in the workplace was estimated at 30.8% (3). These are huge numbers. Despite all the efforts of employers and government to make the workplace a nice place, we apparently feel emotionally bad. Putting the blame entirely on the employer is too easy a solution. Moreover, this mental discomfort does not seem to stop when we leave the workplace. Many people experience too much stress, both on and off the job. Solving mental problems is a difficult exercise which often requires medication. Unfortunately, these drugs cause side effects. Therefore, it is hugely important to focus on prevention. And this is where mental resilience comes in.

Mental resilience is the ability to channel mental overload so that it cannot degenerate into real mental problems such as burnout or contribute to a suicide attempt. Mental overload is a very individual thing. It can be caused by many different factors such as a loud neighbor, bullying behavior, heavy traffic, an overly busy schedule, financial problems or a trivial argument.

People who fail to regain their balance after being mentally triggered will face ever-increasing pressure until at some point the body has no choice but to shut down.

Overcoming a mental disorder requires a great deal of time and effort. Moreover, after a first occurrence, preventing a relapse remains a balancing act; for example, one in four patients experiences a relapse. The same can be said of suicide attempts.... it usually doesn't stop after one attempt.

Being mentally balanced is also very important for your physical health. A body cannot function properly when it experiences mental problems. The big example is stress. Too much stress has a negative effect on practically all processes in your body. In particular, the stress hormone cortisol wreaks havoc and is the cause of many physical and mental problems. The two most important factors in preventing excess stress and mental overload are, without a doubt, being aware of your own body and intervening in time when your stress level increases. Mental resilience will be explained as the last basic strength in this book.

The four health pillars or basic forces are interdependent and in constant contact. A change in one pillar will always affect the other three.

In addition to the four basic forces that greatly influence your health, there is a very important fifth pillar that forms the basis of the entire health system but is almost never discussed, namely your personal basic platform. This basic platform describes who you

are as a person, as a unique genetic combination with individual strengths and weaknesses. It represents your physical and mental characteristics and consists, in addition to your genetic code, of your specific microbiome and your personal character. This basic platform is not static and will improve greatly with a healthy lifestyle. Nevertheless, everyone should be aware that it limits the possibilities and more or less sets the playing field within which everyone's individual health can be optimized.

Therefore, it is pointless to compare yourself to other individuals. This is only pernicious, especially if these individuals are influencers on social media who reinforce their results with filters or photoshop.

The only comparison you can make is with yourself a few weeks, months or years before.

A well-defined basic platform is crucial to creating realistic expectations and making the right choices regarding the four basic forces. Combining this basic platform with the four synergistic basic forces represents the best option to substantially improve your health and generate maximum life energy.

Therefore, we will first go into detail about the composition of this basic platform before tackling the individual basic forces.

The Pyramid of Well-being is a graphic representation of the total life energy available to you.

Each year the pyramid grows and gets a little higher until it finally reaches its top which means the end of this life.

The final height of the pyramid is not the focus. It is about creating the maximum volume within the pyramid. This volume contains the life energy and is determined by the size of your base platform (which you are only partially responsible for) and by the strength of the four sides (which you do have great control over).

The Pyramid of Well-being is not a guide to become the oldest person on earth. Its aim is to be a great source of information that will help to fine-tune your daily habits in order to optimize mental and physical health.

The advice is based on recent studies that offer some novelty over traditional guidelines and will put many extreme health gurus back with their feet on the ground. The principles are applicable to everyone and will allow you to take into account your own body and personal abilities.

The ultimate goal of the Pyramid of Wellbeing should be to make life better and more enjoyable. Consequently, adjusting your lifestyle to achieve optimal health should remain an achievable goal. Under no circumstances is it intended to follow a strict doctrine whereby all life habits are upended.

Besides the fact that this does not result in a better well-being, there is little chance that anyone will sustain it for long. The purpose of the Pyramid of Well-being is to provide a tool to benchmark your own life against the principles that lead to optimal health.

You get an essential tool to greatly slow and even reverse the aging process.

The goal is to fine-tune these elements within your capabilities.

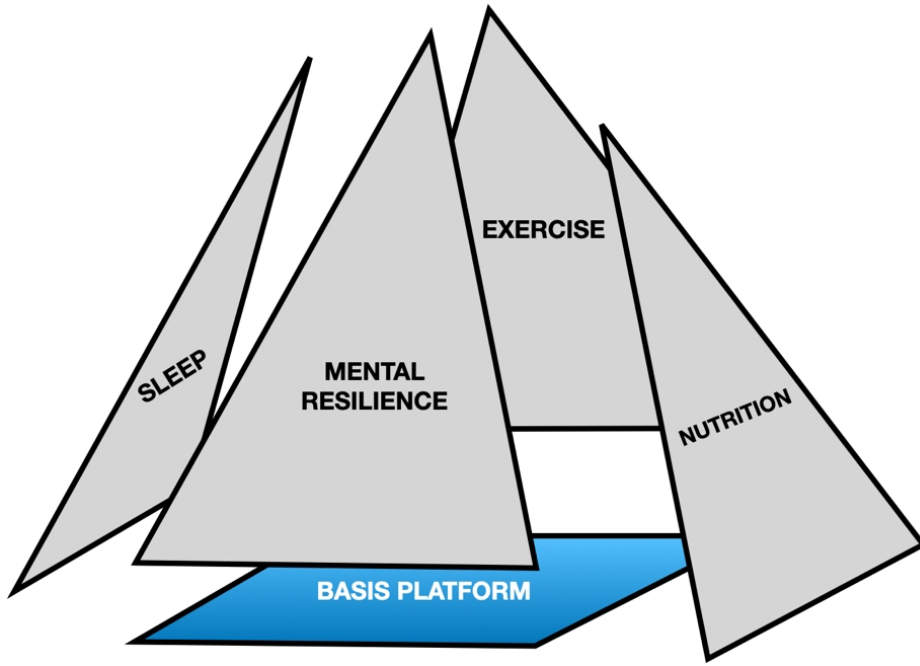
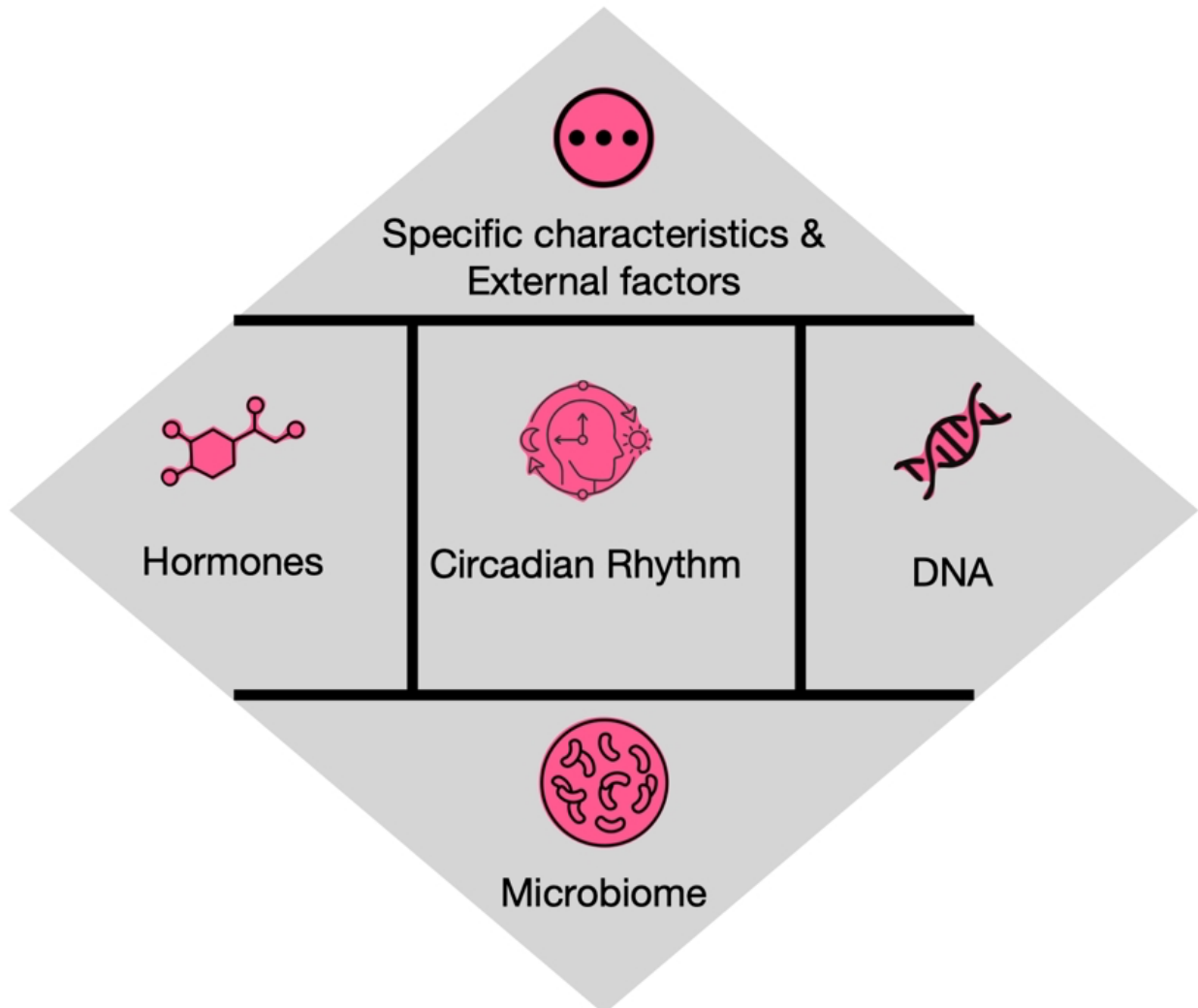


Figure 1: The pyramid of well-being

The basic platform



The strength of any pyramid hinges on the quality of its base. If the Egyptian master builders were alive today, they would surely agree. You can never realize a masterpiece on an unstable base. Either the lack of stability will cause the entire structure to collapse or you will be obliged to greatly contain the height of your pyramid.

3.1 A good knowledge of the basics, the first requirement for success

When we look at nutritional or general health advice, there is rarely any mention of a ground plane, which is the collection of personal characteristics that identify an individual.

Almost all diet and fitness hypes offer a 'one-size-fits-all' approach. Even when you go to a dietician or hire a personal trainer, you get a program that is more than 80% prefabricated. I have often witnessed personal trainers following the same routine for both an obese client and a client with very little muscle mass. Rarely will the trainer scrutinize a client before starting a program in order to get a better understanding of his or her personal strengths and weaknesses. However, it is these individual differences between people that have a great impact on the expected result. It takes time to understand each individual and time is lacking in the very competitive health industry. Their goal is to sell as many programs, products or applications as possible and minimize personal services. Even the programs that make a strong case for providing personal counseling fall short most of the time.

All this has made the health industry an industry of false promises. It is actually a miracle that the public still believes in the many new diets and fitness hypes and plunges into these unknown adventures with renewed courage time and time again. The intrinsic drive to look good is apparently strong enough to remove doubt and test new hypes, and the health industry is well aware of this.

The Pyramid of Well-being stands in sharp contrast to the standard approach to health. In this new concept, the individual with his (genetic) strengths and weaknesses, shortcomings and unique capacities forms the basis for change. Each individual has a personal backpack that he or she carries around all the time. There are no two identical backpacks. The contents consist of both physical and mental limitations and qualities that define your game rules and playing field. These personal characteristics are not completely static and can evolve in each direction (both positive or negative) depending on the life choices you make regarding the various pillars of health. It is best to think of this basic platform as a restricted area where the boundaries are in a gray zone and can shrink or expand according to your life choices.

Realizing that this basic platform more or less limits your playground has some important advantages.

First of all, it provides a clear picture of what to focus on to improve your quality of life. For example, someone who wants to lose weight and suffers greatly from stress will be better off focusing first on lowering the hormone cortisol. This can be done by reducing the consumption of coffee and alcohol and optimizing personal sleep hygiene. These actions will give better results for stressed out people than engaging in heavy cardio efforts that might raise cortisol levels even more.

In addition, a good knowledge of your basic platform helps create realistic expectations. There is nothing more frustrating than months of hard work without visible results. Especially when you see posts on social media of role models achieving incredible results by applying the same methods

Of course, you should not believe what is published on social media. Most of these publications are pure advertising and the photos are invariably modified by adding filters for enhanced results. The models were specially selected based on their physical characteristics and are not a representation of the average citizen. Remember, we should strive for optimal health and a very slim body is not synonymous with good health. As an example, a person who is very slim might store very little fat subcutaneously but without following a healthy lifestyle he or she has a good chance that fat will accumulate viscerally around the organs. Visceral fat is very unhealthy and often the cause of serious health problems.

Another example is the explosion of mental problems role models face such as eating disorders, uncontrolled stress, depression, anxiety disorders...

In the chapter on nutrition, it will become clear that striving for a low weight or super slim body is not natural and very unhealthy for many of us. Your body needs sufficient nutrients to ensure optimal function, even after age 70.

Comparing yourself to others, especially role models, is never fair to your own body. You are born with your own gene pool, and by definition these genes are not the same as your neighbour's, your best friend's or a role model's.

Indeed, your genes are sometimes a limitation but they also make you unique. You must strive to be the best and healthiest version of yourself, based on your specific DNA. Knowing how this DNA translates into your strengths and weaknesses is therefore the basis. Do you have a fast metabolism but exercise far too little? In that case, a brisk walk every day will greatly improve your overall health. If your metabolism is quite slow although you really do move a lot, then it might be good to scrutinize your diet and possibly check your hormones. In addition, HIIT (high intensity interval training) can be very beneficial for you. There is an ideal approach for everyone.

However, there is a catch. Sound self-knowledge is more than just knowing where your strengths and weaknesses lie. There is one very important question that requires some more introspection, and this is 'why' do I want this result. If you keep asking this 'why' question chances are that for some of us the final answer is 'external validation'. Of course, everyone likes to feel appreciated by those close to them but if this is the main reason for investing in your health it is time to work on self-appreciation and acceptance. The drive needed to create lasting change must come from within yourself. This is a prerequisite for becoming the optimal version of yourself. You must have such respect for your own person that you really want to invest to stay healthy. The body is an incredibly complex set of processes that is constantly working to function optimally, even when we consciously work against it. Unfortunately, we are usually only confronted with this complexity when the body begins to fail and a cascading effect of faltering processes leads to severe medical problems. You have been given your body for free, surely a wonderful gift. You have been given a vehicle that takes you everywhere, allows you to enjoy all that life has to offer AND gives you the ability to make independent decisions. And yet, we are not satisfied. Worse, we usually care more for replaceable material things than for our irreplaceable body.

You will be amazed at what a realistic and patient approach will bring about for your physical and mental health. You will look better than ever before but in addition you will also have more energy, be more positive in life, have a better memory ... in short, simply be happier.

As mentioned in the introduction, the Pyramid of Well-being consists of a complete approach that can be completed by each individual according to their own abilities and desires. Each step in this process improves your overall health. You do not have to turn your life around, and each basic platform is the perfect starting point to guide you as a unique individual to optimal health.

This optimal health will be a combination of the result you want to achieve based on your personal preferences and lifestyle and the result that is achievable for you based on your specific characteristics.

3.2 The building blocks of the basic platform

3.2.1 DNA

DNA, short for Deoxyribonucleic Acid, is the molecule that contains all the hereditary material of an organism. DNA consists of genes (a series of nucleotides), each of which describes a piece of code for a personal characteristic such as the color of your eyes. In addition, genes determine how your body works and how likely you are to get a particular disease. The genome describes the entire DNA set of an organism and is thus the collection of all genetic information. Already at conception this complete set is determined and you will more or less have to make do with what you have.

This genome with its DNA undoubtedly has an important influence on the content of the basic platform. It determines external characteristics, athletic ability, predisposition to physical and mental disorders et al.

A. Predisposition to obesity

Genetics largely determine the likelihood of developing obesity. Research shows that the heritability of obesity is between 40% and 70% (4-5). The most common form is polygenic obesity. Polygenic obesity is caused by a number of specific gene variants that you are born with and which have a cumulative effect on the development of obesity. There are hundreds of gene variants that can be part of polygenic obesity. Individuals with these gene variants are genetically at high risk of becoming obese. This does not mean that they will effectively become obese, but it does mean that they are more prone to weight gain in an obesity-prone environment (4-5).

Only when individuals with these genes follow a lifestyle that promotes obesity will obesity actually occur. Thus, in polygenic obesity, the genetic impact is limited and it is mainly environmental factors that play a very important role. In this case, a healthy lifestyle is the best option to avoid obesity.

In addition to polygenic obesity, monogenic obesity can also occur, although it is very rare.

Monogenic obesity is the result of a mutation or error in a single gene. This mutation will occur in one of the genes that control the leptin-melanocortin circuitry in the hypothalamus, a part of the brain. Due to a mutation in a specific gene, the action of the hormone leptin becomes disrupted. The consequence is that impulses of satiety become absent and the feeling of hunger remains present.

Although this form of genetic obesity is very rare, it almost always results in obesity. Environmental factors unfortunately do not play a role here. Typical features of monogenic obesity are insatiable hunger, very rapid weight gain and obesity at a young age (4-5).

Have you been very obese since childhood and have insatiable hunger? In this case, it is possible that you are suffering from monogenic obesity. But know that this is rather exceptional.

If your body is very prone to weight gain and you are already gaining weight just by looking at food, then chances are you are suffering from polygenic obesity. Know that in

this case, environmental factors are crucial. Avoiding processed products such as cookies, candy, pizza and fast food will greatly reduce weight gain.

B. Body stature and weight versus body composition

There is some genetic influence on individual body composition but it is not as great as is often thought. Although stature and overall weight are largely determined by hereditary factors, the growth process during childhood and adolescence depends on both genetic and environmental factors. Hereditary factors related to body composition appear to exist only during childhood but no longer during adolescence suggesting that environmental factors have much more influence during the teenage years

This was demonstrated through a study in which body composition was scientifically measured using bioimpedance. During this measurement, the amount of muscle and fat is measured for the entire body on the one hand and for certain segments of the body (trunk, upper limbs and lower limbs) on the other hand (6).

The findings of this study show that body composition is not necessarily passed on from mother to daughter or father to son. Of course, there are typical body characteristics that can be passed on genetically, such as long legs, narrow hips and big eyes. But the relationship between your fat mass, muscle mass and bone mass and their evolution do not appear to be genetically determined.

This means that you have a lot of influence on your body composition.

Of course, realistic expectations remain very important

Although the presence of body fat - as such - does not appear to have a significant hereditary influence, the distribution of body fat is genetically determined. This means that to efficiently lose weight, and more precisely fat, specific programs based on the individual's genetic background can be very helpful (7). Note in your basic platform where fat easily clings: is it around the abdomen, around the buttocks or on the upper arms or thighs?

C. Behavioral characteristics

Genes have a significant influence on behavioral and psychological characteristics such as intellectual ability, personality and the risk of developing mental disorders. Although environmental factors obviously play an important role, genes are thought to contribute about 50% to 75% to an individual's specific character. Another interesting discovery is that certain social cues cause epigenetic modifications of genes. An epigenetic modification does not change the code of DNA like a mutation. It only changes the way in which a gene is read. Epigenetic modifications can therefore be temporary unlike mutations. In many cases, epigenetic changes are passed from the parents to the child. Therefore, the fact that athletic parents often have athletic children has a lot to do with genetics. Of course, children will also copy their parents' behavior, yet the genetic factor should certainly not be forgotten. If you come from a family with an aversion to sports, chances are that you will not be a fan of too much exercise, and this is something you should take into account. The chance that you will suddenly change and become an avid sporter is quite small. Set achievable goals and understand that your fitness frequency will not be the same as that of your gym buddy.

Are you very active by nature or do you fall more into the "coach potato" category? Are you 100% up for challenges and is saying no to temptations your second nature? Is it easy for you to turn down a glass of wine? And what about that tasty piece of cake? All these traits are in part genetically predisposed.

Unfortunately, there aren't many diet or health programs that take individual characteristics into account. And that is really sad because let's face it, someone who enjoys exercise and does not suffer from "sugar cravings" or never longs for a glass of wine in the evening to wash down the day has an immense advantage, right?

The good news is that improving your diet will greatly reduce your cravings for sugar, but even so, there is little chance that these cravings will never resurface.

Factors such as susceptibility to depression or anxiety disorders and optimism are also partly determined by your genetic profile.

Describe how you see yourself right now. What traits identify you as a person and are part of your individuality? What characteristics will make adapting your lifestyle easier and what are the traits that create challenges?

(8)

Besides your individuality, the effort you are willing to invest in this program is also part of your basic platform. Scientists can spend hours debating whether or not perseverance is largely explained by your DNA. It is safe to say that DNA plays a certain role in determining your perseverance but good discipline can take you very far regardless of genetic preference.

3.2.2. Microbiome

Until recently, your gut microbiome was foremost associated with optimal digestion. However, recent studies show that its role is more far-reaching and crucial to overall health. The gut microbiome counts millions of microorganisms that in turn consist of thousands of different types of bacteria, fungi, parasites and viruses. This collection of microorganisms is not static; its composition constantly varies based on external and personal factors.

The gut microbiome is part of the body microbiome. This body microbiome is distributed in 4 different locations in the human body: in the skin, mouth, urinary tract and intestines. The intestinal microbiome is considered the most important because it is larger and more densely populated than the other three.

Although the microbiome is genetically predisposed, humans are still born as more or less "sterile" creatures. It is through contact with the microbes of the world that the specific gut microbiota is developed along with the immune system.

This development goes through three phases: the developmental phase (3-14 months), the transitional phase (15-30 months) and the stable phase (31-46 months). This means that during the first 14 months, the environment babies are in and the things they come into contact with are very important (9). This area of study is still fairly new but there is already consensus on a few facts worth noting.

Cesarean section, for example, has been shown to have a pernicious effect on the development of the microbiome because the baby does not pass through the birth canal and therefore does not come into contact with important bacteria (10).

Bottle feeding instead of breastfeeding also negatively affects the variety of the microbiome, as does administering antibiotics to small babies.

In addition to these pernicious factors, there are a number of environmental factors that are opportune for the development of a balanced and diverse gut microbiota. In particular, early exposure to pets and farm animals, living in a large family (or attending daycare regularly) and growing up in a geographically healthy environment with good air quality appear to strengthen a young child's microbiome (10).

Functions of the gut microbiome

The organisms in the intestinal microbiome live in peaceful symbiosis with the human body. The human body provides a good breeding ground for the foreign microorganisms, and these organisms in turn help "their host" with the smooth running of daily body processes.

Recent research has shown that the gut microbiome is truly vital to fundamental biological processes in the human body. In addition to extracting necessary nutrients from foods, the microbiome regulates metabolism and immunity.

There are several ways in which the gut microbiota influences and directs biological processes. It provides unique enzymes and biochemical processes for the extraction of nutrients and energy from food and helps synthesize bioactive molecules such as vitamins, amino acids and fats. In relation to the immune system, it protects us from external pathogens by producing antibacterial substances and serves an important role in the development of intestinal mucosa. Thanks to its important role in directing biological processes, a balanced gut microbiome will also help in better weight control, efficient cholesterol management (and healthier heart) and better blood sugar control.

The peaceful coexistence between human and intestinal microbiota can be disturbed by various factors that originate from the individual himself (genetic background, inflammation and lifestyle) or from environmental factors (diet, medication and hygiene). These disturbances lead to the weakening of the immune system, the disruption of the metabolic system and the disruption of the intestinal barrier which causes harmful microorganisms to settle in the body (11).

This lack of protection increases the risk of infections because the germs can spread more easily.

Sufficient attention to your gut microbiota is therefore crucial to maintaining good health.

Recently, the great importance of the intestinal microbiome as a regulator of the gut-brain axis has also been highlighted. This direct two-way communication between gut and brain is made possible by a direct connection between the central nervous system and the enteric nervous system. The latter is an extensive network of neurons located in the intestinal wall that requires a strong intestinal tract to function efficiently. This enteric nervous system interacts directly with the central nervous system to regulate brain chemistry. In this way, it also affects the neuroendocrine system which consists of nerve cells that are associated with stress responses, anxiety disorders and memory

function. This means that gut microbiota can be an important tool to fight certain neurological disorders.

The University of Ghent conducted a groundbreaking study in 2024 in which a stool transplant of healthy gut bacteria was performed on patients with Parkinson's disease. Parkinson's disease is a neurodegenerative disease, which is a disease in which the nerve cells in the brain age prematurely and die. According to the University of Ghent, as many as 40,000 people suffer from Parkinson's disease in Belgium.

During the clinical trial, subjects received a transplant of healthy intestinal bacteria into the small intestine through a nasogastric tube. Over a 12-month period, it was found that the subjects who received transplants showed significant improvement in their motor abilities.

This improvement served as a sign that Parkinson's disease starts in the gut (and not in the brain). Researchers were able to clarify this finding. Apparently in a very early phase of the disease, the neural protein alpha-synuclein forms clumps in the intestinal wall due to an error. These clumps reach the brain via the connection between the central nervous system and the enteric nervous system. Gut bacteria appear to have a major influence on preventing this from happening as they are responsible for a healthy gut wall and strong immunity. When the intestinal microbiota of Parkinson's patients was examined, researchers concluded that there were indeed regular disturbances (12).

Many mental disorders also appear to be related to a disturbed microbiome. In children with ASD (Autism Spectrum Disorder), relevant differences in the composition of the gut microbiome were found compared to children without ASD

There is also a relationship between gut microbiota and conditions such as anxiety disorders, bipolar disorder and schizophrenia. PTSD (post-traumatic stress syndrome), ADHD and anorexia are also linked to the presence or absence of certain microorganisms in the gut.

Researchers were able to define which individual organisms create specific disorders due to their presence or absence in the gut microbiota. They were also able to identify the foods that can stimulate or antagonize these specific bacteria, thereby reducing or eliminating disorders.

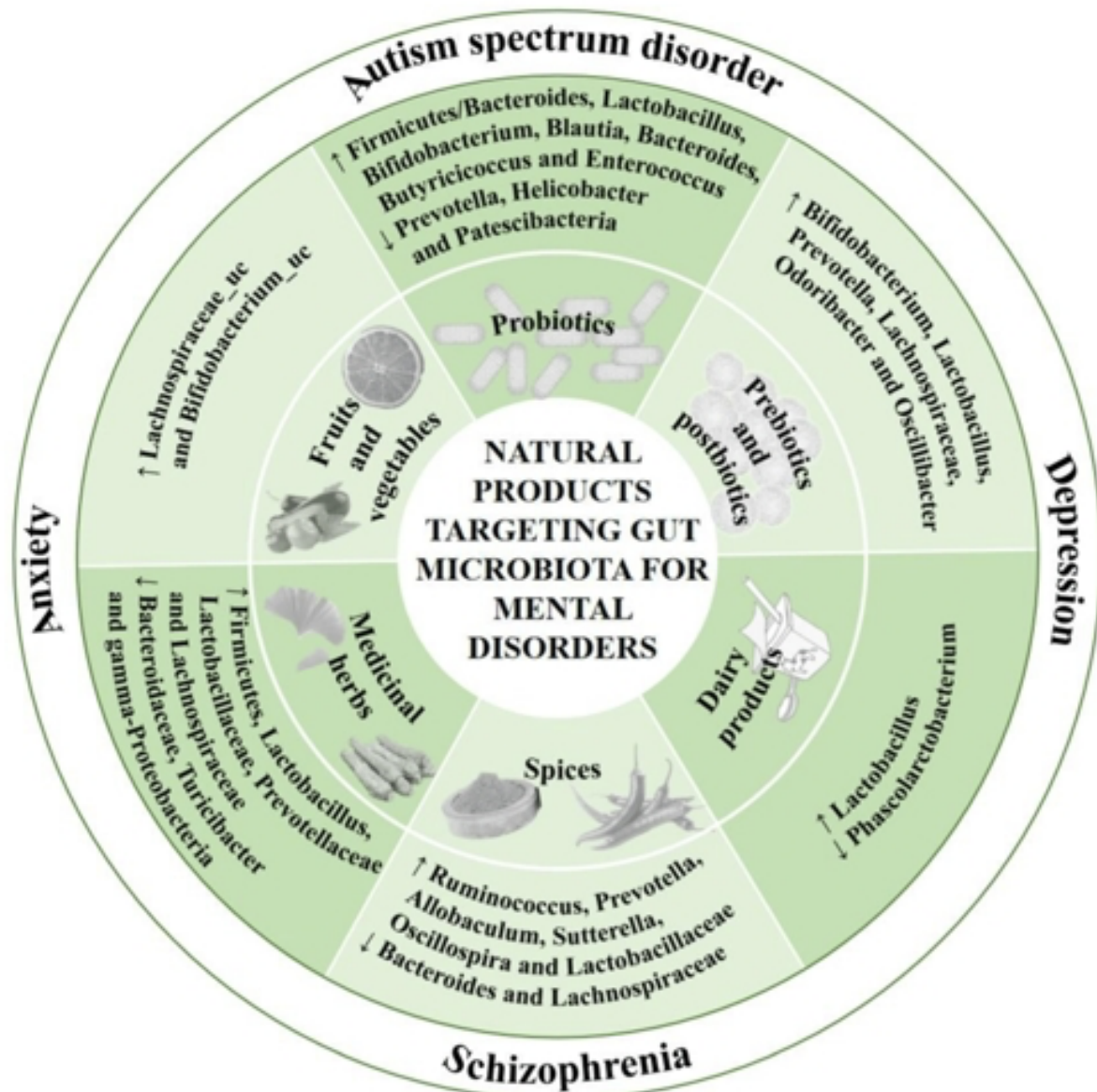


Figure 2: microbiota for mental disorders - MDPI and ACS Style

Xiong, R.-G.; Li, J.; Cheng, J.; Zhou, D.-D.; Wu, S.-X.; Huang, S.-Y.; Saimaiti, A.; Yang, Z.-J.; Gan, R.-Y.; Li, H.-B. The Role of Gut Microbiota in Anxiety, Depression, and Other Mental Disorders as Well as the Protective Effects of Dietary Components. *Nutrients* **2023**, *15*, 3258. <https://doi.org/10.3390/nu15143258>

These examples again demonstrate the relationship between gut microbiome and neurophysiology.

Lifestyle, primarily diet, is a critical factor in modulating the gut-brain axis. A diet consisting primarily of animal fats causes a significant negative change in gut microbiota. In contrast, a Mediterranean diet consisting of whole grains, nuts, vegetables, fruits, fish and poultry showed a positive effect. Attention to proper nutrition results in reduced risk of disorders of the autonomic nervous system, psychiatric disorders, cancer and heart disease.

Next to a healthy diet, the intake of probiotic supplements also appears to boost the population of the essential organisms and keep germs at bay.

3.2.3 Hormone balance

Hormones are chemicals produced in the endocrine glands. They are the messengers in our body and are transported via the bloodstream to the various organs where they control and support body processes.

The word hormone automatically makes most of us think of estrogen and testosterone and conjures up images of pregnancy, sex drive and menopause.

But hormones have far more functions than this. Our body's endocrine system consists of many different hormones and influences numerous different body functions. It is responsible for regulating blood sugar, determining fertility, influencing the growth process and supporting sleep.

An excessive or deficient production of certain hormones can cause diseases such as diabetes type 2, thyroid disorders and obesity.

Age-related hormonal and metabolic changes are major contributors to a host of chronic diseases such as arteriosclerosis, high blood pressure, osteoporosis, chronic inflammation and lowered immunity. Disruptions of the hormone Cortisol, in turn, cause stress-related disorders (13). Hormone disorders are also responsible for the development of degenerative brain diseases. This cognitive decline is especially common in people with metabolic problems. The aging process has a negative effect not only on the secretion itself of hormones but also on their bioavailability (i.e., their degree of absorption) and their effect on specific organs (e.g., becoming resistant to insulin) (14).

Taking good care of one's health will contribute to a general improvement in hormone levels but cannot perform miracles. Therefore, in case of unexplained symptoms, it is important to test hormone levels through a blood test.

3.2.4. Biological clock - circadian rhythm

The biological or circadian clock regulates the various 24h cycles in our body.

This master clock controls numerous smaller peripheral circadian clocks in cells and tissues.

The central clock located in the hypothalamus coordinates all physical and mental functions in the body during a 24h cycle together with the peripheral clocks. In this way, it influences both directly and indirectly numerous processes such as sleep, nutrition, body temperature, endocrine activity and metabolism.

A good knowledge of the biological clock is a great help in dividing your day as efficiently as possible and determining the best time to go to sleep, to get up, to eat and to work.

The circadian rhythm is determined by 22 genes. These create a personal genetic sleep code that is more or less fixed from birth. Not everyone has the same sleep-wake cycle. Based on how the 22 genes are regulated, we distinguish 5 different sleep-wake cycles, each representing a chronotype (15).

The different chronotypes are: extreme morning type, morning type, neutral type, evening type and extreme evening type. Each type has a different 'ideal' time to go to

sleep and to get up (15). And each type will therefore be most productive at different times.




 Chronotype	 Bedtime	 Wake up time
Extreme Morning Type	8.00 PM	4.30 AM
Morning Type	9.30 PM	5.30 AM
Neutral Type	11.00 PM	7.30 AM
Evening Type	1.00 AM	9.30 AM
Extreme Evening Type	2.30 AM	11.00 AM

Figure 3: The different chronotypes

Ignoring your specific chronotype and ignoring the ideal sleep and wake times will lead to a disruption of your circadian rhythm. In the short term, the body can cope with a deviation from the ideal rhythm but in the long term it will lead to health problems.

If you are not sure which chronotype you belong to, you can fill out a questionnaire online that immediately determines the most likely type.

Taking your personal chronotype into account is a fairly simple and efficient way to improve your sleep and plan your day optimally.

Although a number of external factors can affect circadian rhythms, this clock is still primarily genetic.

Genes determine how fast your biological clock ticks and will determine whether you are more of a morning person or an evening person. Ignoring your circadian rhythm will cause sleep disorders like restless leg syndrome and narcolepsy. These disorders have a clear genetic predisposition. Obstructive sleep apnea has also been found to be about 40% caused by hereditary factors (16).

3.2.5. Specific characteristics & external factors

In addition to the above traits, there are many other personal characteristics that impact your unique profile.

An example are specific food preferences.

What foods do you absolutely hate and what foods do you particularly like to eat? What are your "guilty food pleasures"? List the foods that you do not want to give up even though they are not healthy. Also list the products you don't like. Forcing yourself to eat things you don't like will not sustain you in the long run. Moreover, I am convinced that not liking a food is often a signal from your body that it does not want it or cannot process it.

The effects that external factors such as family situation and work situation have on your Pyramid of Well-Being should also not be underestimated.

Small children at home make it more difficult to find enough free time to exercise. In this case, an hour at the gym can better be replaced by an hour of active play with the kids. In case of a busy job, you will probably need more discipline to cook fresh food, to go for a walk or to go to the gym after a hard day's work. A stressful job also impacts sleep quality.

Pets or farm animals, on the other hand, require you to get up on time every day and automatically give you more exercise. Getting up on time gives the body a chance to take advantage of the first rays of the sun, and these have a significant impact on your circadian rhythm.

Also, the presence of certain diseases, allergies and sensitivities such as migraines, irritable bowel syndrome or diabetes may not be forgotten in this list, as well as symptoms due to menopause or PMS as they also affect your well-being.

All these factors create constraints that you have to consider when you want to start your own health journey.

A healthier lifestyle will probably lead to a reduction of many of your symptoms, but they will probably not disappear all-together, so it is better to keep them in mind.

After you have made an overview of all these factors, you need to identify for each trait which part of your pyramid they will influence.

3.2.6. Getting started with the basic platform

Now it is your turn to shape your own basic platform.

This is an exercise that will probably require some introspection.

Start with a basic version and add to it later as you implement the various basic forces and encounter even more features. You will find that your basic platform will evolve positively as you pay more attention to your overall health.

Some questions that can help you fill in the different categories are the following:

DNA

Obesity:

1. Am I naturally slim, chubby or obese?
2. When I was a child, was I slim, chubby or obese?
3. Are there many cases of obesity in my family?
4. Do I gain weight quickly during vacation periods or holidays? Do these kilos stick?
5. Am I satisfied with my fat percentage/weight?

Body build:

1. Am I generally skinny?
2. Am I rather chubby?
3. Am I obese?
4. Am I slim?
5. Am I slim but with some problem areas:
 - upper arms
 - legs
 - abdomen
 - buttocks
 - other (please specify)
6. Is my body in good proportion?
7. If no, which body part is shorter/longer than desired
8. Am I muscular?
9. Am I evenly muscled or mainly in certain areas:
 - Arms
 - Legs
 - Abdomen/back
 - Shoulders/chest
10. Am I satisfied with my physique?

Behavioral characteristics:

1. Did I grow up in an athletic family?
2. What beautiful quality is most characteristic of me?
3. Which shortcoming is most typical for me?
4. List your 5 most important traits in the following situations:
 - While working
 - During exercise/sports
 - While relaxing

- During a stressful moment

5. What basic values did my parents try to instill in me? List three.

Gut Microbiome

1. How is my bowel movement

- Mostly stable
- Very varied: from constipation to diarrhea
- Mainly constipated
- A lot of diarrheas

2. Do I suffer from intestinal problems? (Irritable bowel syndrome, gluten intolerance, ...)

3. How is my family's gut health

- Do intestinal diseases and problems run in my family?
- Did I interact a lot with animals and other small children as a child?
- Was I born by cesarean section or naturally?

If you are in doubt about whether your gut microbiome is varied and healthy, you can easily have it tested. These tests are even available online. However, they are not cheap. Initially, a varied diet with a wide variety of vegetables can provide a great improvement. Taking probiotics is also recommended. If you don't notice any improvement after a few weeks, it may be useful to have your gut microbiome tested. Talk to your doctor about this.

Hormones

1. Am I pre-menopausal or menopausal and what symptoms do I face?

2. Do I suffer a lot from hormonal fluctuations during menstruation and what are these symptoms?

3. Am I experiencing a lot of sugar spikes and drops? This may indicate future insulin resistance

4. Do I suddenly suffer from unexplained symptoms such as a very low libido, dry or just oily skin, mood swings, fluid retention or low blood pressure, bloating, ...?

Hormone levels can be examined via a blood test by your doctor. If you think you are pre-menopausal or menopausal, it is a good idea to test your hormones. If you still take a pill as a contraceptive, you will obviously get a distorted picture because the hormones of your pill will be picked up in the result.

Biological clock

1. What is my personal chronotype?

2. Am I living largely according to this chronotype or am I sinning against my ideal hours?
3. Am I often tired during the day?
4. Do I get to sleep smoothly at night?

Specific features

External factors

1. What is my family composition (partner, small children, big children, pets, ...)
2. How is my living situation (apartment, house with garden, house without garden, ...)
3. What is my work situation (sedentary work, active work, full-time/part-time, longer hours, ...)
4. Can I make time to exercise, cook fresh food, get enough sleep and mentally relax?
5. Are there other external factors that determine my life situation?

Food

1. Do I follow a specific dietary regime (vegetarian, vegan, etc.)?
2. What vegetables do I not like?
3. What meat or fish do I not like?
4. What other foods do I dislike?
5. What foods will I be unable or unwilling to give up?
6. How attached am I to alcohol? How many glasses do I drink per week?
7. Do I often eat processed foods such as frozen pizza, snacks, chips, cookies, ...

Diseases or sensitivities

1. Do I suffer from a chronic disease
2. Do I suffer from allergies
 - Food
 - House fabrics
 - Animals
 - Other:
3. What am I very sensitive to? (For example, indigestion, colds, ...)
4. Do I have other symptoms related to menopause, stress, ...

