



# GFV

Gesellschaft für Vitalpilzkunde



## MEDICINAL MUSHROOMS for chronic diseases

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# Introduction

The life expectancy of people living in developed countries has increased massively in recent decades, and many illnesses that used to be feared can now be treated with modern medicine. This does not mean, however, that illnesses overall are on the decline. On the contrary: chronic diseases, from diabetes via high blood pressure to arthrosis are affecting more and more people - especially, but not restricted to, the older generation. They are rightly also referred to as lifestyle (or civilisation) diseases, because modern living conditions constitute a major factor in causing them.

In many cases, the possibilities for treatment with orthodox medicine have not been satisfactory; it has been able to reduce the symptoms, but has not provided a lasting cure. An important step on the road to successful treatment involves perceiving this group of diseases in a holistic way. Even if only one organ system appears to be affected, factors such as deficiencies, underlying inflammation processes and physical stress can also play an important role.

This brochure presents the most frequently occurring lifestyle diseases of our time, and demonstrates the possible applications of mycotherapy, namely supporting the body with medicinal mushrooms, as part of holistic treatment. We decided consciously not to deal with cancer, which is also to a certain degree a lifestyle disease. Given the complexity, the great challenges involved with treatment, and the special opportunities that medicinal mushrooms offer as complementary therapy, we plan to bring out a specific brochure to deal with cancer.

The Gesellschaft für Vitalpilzkunde would like wish you great health!

# When prosperity makes us ill



*The achievements of our modern society have considerably improved people's health. Epidemics have been eradicated here, under-nutrition is no longer really an issue, and infections that used to be fatal have lost their terror thanks to targeted drugs.*

Some things, however, which have on the one hand improved our quality of life, also produce negative consequences. Overweight and high blood pressure, type 2 diabetes, burnout syndrome, allergies and autoimmune diseases have now become common conditions in industrial nations. They are often chronic, are difficult to treat, and reduce life expectancy. We mustn't forget that these conditions produce an enormous cost that the health care

system, and ultimately societies have to bear.

Lifestyle diseases has been coined as the collective term for these illnesses, which occur more frequently in industrialised countries than, for example, in developing countries. "Civilisation" alone is, of course, not what makes people ill – a series of changes that results from an increasing standard of living is of greater relevance:

A clear definition of which diseases are considered to be connected with lifestyle does not exist. It is, however, agreed that metabolic diseases,

- The elementary change of diet with regard to nutrient composition and calorie intake
- The huge improvement in hygiene conditions, sometimes with excessive use of disinfectants
- The stemming or even sometimes eradication of infectious diseases through vaccination
- The fight against bacteria with antibiotics
- Pollution of the environment by industrial harmful substances and noise
- The multiple acceleration of the pace of life and methods of communication
- The disengagement of the working world from physical activity and from seasonal rhythms

cardiovascular diseases, and immune system dysfunctions as well as stress-related psychological problems are on the list. For some time now, some types of cancer have been included, in particular lung cancer as a result of smoking, and bowel cancer

that can be closely associated with a long-term incorrect diet. Tooth decay is closely linked with a sugar-rich diet - around 90 % of all children of school age have caries. For many other lifestyle diseases, it is suspected that a mix of different factors are to blame. Diet plays a huge role, for example, in the development of type 2 diabetes, but a lack of exercise and chronic stress can be contributing factors for the pancreas gradually giving out.

It should, of course, not be forgotten that some of these lifestyle diseases also occur more frequently, because people have reached the standard of living necessary for these conditions to occur. Better diagnostics in modern medicine have contributed to certain conditions being recognised as such and given a name. In the first instance, it is, however, an unhealthy lifestyle that opens the door and the gate to lifestyle diseases. Treatment of them, or better still, prevention, are some of the main tasks of the health system - and of course, every member of society - in the 21<sup>st</sup> century.

# Medicinal mushrooms – prevention and counteraction



*Both orthodox medicine and naturopathy attempt with various treatment concepts to deal with lifestyle diseases and their symptoms. It has been acknowledged for some time that prevention is particularly important with this kind of disease.*

It is also generally known that holistic medicine can offer some good opportunities in this field. The attempt to treat just the symptoms of metabolic or cardiovascular problems cannot be successful in the long run - the underlying mechanisms of the disease are too complex.

Mycotherapy is therefore very suitable as preventative and complementary treatment of lifestyle diseases. Many tests have shown that medicinal mushrooms, thanks to the wide range of ingredients, can have a very thorough regulating effect on the various processes taking place in the

body. Indeed, quite a lot of individual substances, ranging from vitamins, minerals and trace elements via amino acids, through to polysaccharides have been found in medicinal mushrooms, which taken together fulfil important tasks in the human organism - some substances have been isolated and used for years with success in drugs prescribed in orthodox medicine. It is, however, primarily the sum of the components working holistically that produces the value of medicinal mushrooms for lifestyle diseases.

### Modulating effect

The balancing capabilities are particularly fascinating: For example, the extract of one and the same mushroom in one patient can lower high blood pressure, while in another patient, it can have an activating effect on low blood pressure - this has been known about in traditional Chinese medicine for centuries, and is used accordingly by therapists. The mushrooms' own survival strategies that have ensured their continued existence on Earth alongside the animal and plant world can clearly be of benefit to humans. How impressive that the unique way in which nature has combined this wide range of individual substances is the source of the real benefits of medicinal mushrooms for human health.

This applies not only to treatment; indeed it also applies to prevention. Medicinal mushrooms are low in nutrients and rich in fibre, and at the same time are brimming with vital

substances, such that deficiencies can be prevented if they are used as a supplement for those who do not eat a healthy, balanced diet, thereby helping to prevent illnesses. Polysaccharides are of particular importance. They stabilise and regulate the immune system and boost the body's overall resistance to stress. They also inhibit inflammation processes, improve circulation and normalise blood sugar and blood fat levels. We should not underestimate the gentle, holistic, side-effect free, balancing action of medicinal mushrooms on the mind.

**Summary:** In certain, particularly stressful periods of our life, it is advisable to use the strengths of medicinal mushrooms before the diseases actually take hold. For existing conditions, medicinal mushrooms can decidedly improve the organism's resistance and set the body's self-healing forces in motion.

# Diabetes mellitus type II - High blood sugar levels and the consequences



*In everyday language, this disease is often still referred to as "maturity onset diabetes". But this term is no longer valid: Even young people - and not so rarely even children - suffer from type 2 diabetes, and endure the many consequences of a high blood sugar level.*

If we had to come up with the absolute classic lifestyle disease, the choice would not be hard: Like no other disease, type 2 diabetes is quite clearly the result of our modern lifestyle. Diet is one of the primary causal factors, although of course it is certainly not the only one: Indeed, it is a diet that is too rich in sugar and carbohydrates that leads to increased production of insulin in the pancreas, and often results in this important organ being weakened, and to the

body's cells no longer responding so well to insulin. But, above all, the combination of this kind of diet with too little physical activity, as well as overweight (that often results from the first two aspects), is what is behind the development of diabetes.

The imbalance between the amount of energy consumed from food in the form of short-chained carbohydrates, which quickly enter the blood, and the breakdown of this energy by ex-



ercise is what makes people ill. Our organism, over its long evolution, has not adjusted to this imbalance. The few decades over which the variety and the composition of our food have become extremely rich in sugar don't even represent the bat of an eyelid in the history of human development. As a result the body has had no time at all to develop strategies to combat this phenomenon.

### **Why sugar is not the best food**

For many people, muesli, bread, potatoes and pasta are the basic components of their daily diet. Even in nutritional science, carbohydrates - and hence sugars - have long been seen as the best sources of energy. But gradually, we are coming to realise that: This form of diet is responsible to a large extent for the rapidly growing number of people who have become ill with type 2 diabetes in industrialised nations.

For carbohydrates to be converted into energy, the body needs insulin, a hormone that is released by the pancreas as soon as a rise in the blood sugar level is detected. Insulin is, as it were, the means of transport for taking sugar to the cells, because this is where it can be transformed into energy. If, because of our diet, increasing levels of insulin are required, production gradually slows down. On top of that, the sensitivity of cells to insulin in the blood decreases, so that increasing levels of insulin are required to keep the blood sugar level within a safe range for the body. Modern nutritional science is

increasingly expressing the idea that high-value fats are better sources of energy. Vegetables and in smaller quantities, animal fats, do not make us "fat"; rather, they supply a valuable source of fuel for the body without the need for insulin.

### **Insidious process, lasting treatment**

Many people don't even know that they are on a very effective path to becoming diabetic. Chronic hyperglycaemia (having too much sugar in the blood) only causes mild symptoms at the beginning, which are often not even noticed, or are shrugged off as petty matters. Unusually high thirst, frequent itching and a worsening of the sight should set the alarm bells ringing at the very latest, and a blood test should be carried out.

It is recommended that even young people should be checked every year. If there is a particularly high risk of diabetes, for example, because of overweight, or if there are several cases of diabetes in the family, a suitable care plan should be discussed with the family doctor. If the disease is detected early on, the blood sugar level can often be brought back down through a change in diet, more exercise and bringing the weight back to a normal level. Drugs and insulin injections are to be used as a last resort, and are second line treatment options. There is no way of getting around the drug options if the cells that produce insulin in the pancreas start to decay, because the cells can no longer regenerate at that point.

## Regulating blood sugar levels with medicinal mushrooms

Medicinal mushrooms can be used effectively with diabetes for several reasons. Of particular note is the direct blood sugar reducing effect that has been proven in studies, for example, on *coprinus*, *agaricus blazei* Murrill (ABM) and *reishi*. So, when mushrooms are eaten, the blood sugar levels should be checked regularly. Medication prescribed by the doctor should under no circumstances be stopped or the dose changed without first discussing the matter with the doctor.

● **Coprinus** can directly stimulate insulin release in the pancreas. Another benefit worthy of note is that the naturally-occurring bioactive substances in this mushroom help prevent plaques forming in the blood vessels, which in diabetics contribute considerably to the sequelae of the disease, such as atherosclerosis and possibly polyneuropathy. Closely monitored blood sugar tests are important, particularly when taking *coprinus*.

● **Agaricus blazei Murrill** can be used in particular if type 2 diabetes has recently been diagnosed. Attempts should be made first of all to change the diet and exercise habits, to bring the blood sugar levels back within the normal range. Apart from the benefit of lowering the blood sugar level, the effectiveness of ABM in reducing inflammation is of significance.

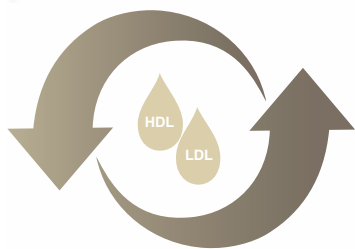
● **Reishi** can be recommended for its positive effect on sugar metabolism as well as for its broad scope for balancing and harmonising the system. **Reishi**, like all medicinal mushrooms, is rich in various important nutrients that can help to counter any signs of deficiencies, and in a particular form, can be used as an aid to losing weight.

● **Maitake** is also a valuable medicinal mushroom, which, among other things, can optimise the processing of sugar in the body's cells and can regulate lipid metabolic disorders in many diabetics.

## Treatment tips and individual initiative

- ✓ Recommended medicinal mushrooms:  
Coprinus, agaricus blazei Murrill, reishi, maitake.
- ✓ Nutrition:  
Reduce the amount of carbohydrate intake in the diet, in particular sugar and white flour, in favour of high-quality fats and proteins; give preference to food that is high in fibre; avoid sugary drinks; and make sure that you consume sufficient vital substances.
- ✓ Exercise:  
Undertake an endurance activity two to three times a week, and wherever possible, walk, cycle or do something similar every day.
- ✓ Weight loss:  
Stick to a strict diet to lose any excess weight.
- ✓ Check blood sugar levels:  
The blood sugar level should be checked by a doctor regularly.
- ✓ Get informed:  
Knowledge about the mechanisms that are behind type 2 diabetes can help considerably in taking action to counter it; information can be obtained from your health authority, via self help groups and from health advisers and dieticians.
- ✓ Orthomolecular medicine:  
It is important for diabetics to avoid the deficiencies in micronutrients that they frequently suffer from; they must pay special attention to ensuring the organism receives enough thiamine (vitamin B1, which plays an important role in metabolising carbohydrates), the B vitamins as a whole, coenzyme Q10, selenium, magnesium, potassium, zinc, vitamin C, vitamin D3 and alpha lipoic acid.
- ✓ Phytotherapy:  
Good results have been obtained with bitter melon extract (can reduce HbA1c) and cinnamon bark extract as complementary treatment for diabetes.

# Lipid metabolic disorders - What should we do if our cholesterol level is too high?



*Orthodox medicine drugs to lower cholesterol are some of the most frequently prescribed medicines of all. A change in the way of thinking is, however, starting to take place, for high blood fat values are less dangerous than was previously thought. So, with laboratory results like this, we should take countermeasures, and in a very gentle way.*

For many years, increased cholesterol and triglyceride levels in the blood were seen as the main causes for the onset of atherosclerosis, and considered responsible for an above average risk of cardiac infarction (heart attack) and cerebrovascular accidents (strokes). But the medication to prevent such events sometimes brought about serious side effects - from an increased risk of cancer, via memory

loss to depression. Medical research has also recognised that these fats are not responsible for arterial damage to the degree that had been previously supposed.

On the contrary, a very low fat diet can even be harmful. Every cell of the body requires fats to form its membrane, and even hormone production and providing energy depend

on a sufficient supply of "good" fats. "Good" in this case means: Mono and polyunsaturated fatty acids. They are to be preferred to saturated fatty acids, which are found mainly in meat, dairy products and hardened vegetable oils (for example, margarine). Eggs have unjustifiably had a bad reputation, because it has been discovered that we would have to eat several hen's eggs every day for this food to have a noticeable effect on our cholesterol level.

### **LDL and HDL cholesterol**

When determining the level of cholesterol in the blood, a distinction should be made between LDL and HDL cholesterol. A high HDL level is not a risk factor for cardiovascular diseases. HDL delivers cholesterol from the body's cells to the liver where it is metabolised. It therefore prevents cholesterol being deposited in the blood vessels and even helps to protect the arteries. The protein compound LDL, on the other hand, delivers the cholesterol in the opposite direction (to the cells), and indicates - especially if the HDL value is low - a certain risk of atherosclerosis. If this happens, and no treatment is prescribed, in the long term, high blood pressure can develop, and many sufferers also have high blood sugar levels (type 2 diabetes) and are overweight - this is a very unhealthy condition to be in, and has found its way into medical terminology as metabolic syndrome. In principle, the following applies: The thresholds contained in the literature need to be interpreted in an agreed way for each

individual case. With only slightly raised values, an overweight smoker is certainly more in need of treatment than a fit person of normal weight.

### **Tackling the causes**

We automatically think of food as the first factor when blood fat values have to be regulated. In fact, a lot can be achieved by changing one's diet (it is particularly important to reduce alcohol intake, because alcohol is mainly turned into fats). We should not forget, however, that cholesterol and triglycerides - as another important group of blood fats - are also produced by the body to carry out the fundamental tasks for the organism, as described above. Via several hormonal regulation mechanisms, stress contributes to boosting cholesterol production. In addition to specifically reducing stress, a regular exercise programme is a good way of counteracting this. Only in relatively few cases, can taking certain drugs such as cortisone or anti-hypertensives lead to lipid metabolic disorders. In these cases, the doctor needs to weigh up whether the medication is required in the long term, or whether there are alternatives with fewer side effects.

### **Prevention and treatment with medicinal mushrooms**

As part of a holistic therapy regime, medicinal mushrooms can be used very effectively for lipid metabolic disorders. They regulate the HDL/ LDL ratio, gently harmonise the physical and mental condition, and

may help prevent food fats from being absorbed via the intestinal mucosa. Some medicinal mushrooms can also specifically regulate cholesterol levels, and in so doing prevent deposits forming in the vessels.

● **Shiitake** should be mentioned first of all. Back in the 1960s, it was known that it could have a positive effect on cholesterol. Eritadine and choline are the substances responsible for this. They promote the transport of fats to the liver, stimulate the breakdown of fats in the liver, and speed up the transformation from LDL to HDL cholesterol. Provitamin D also has a positive effect, because it activates calcium metabolism and can therefore help break down fatty deposits - plaque - on the artery walls. The amino acids also contained in shiitake inhibit inflammation.

● **Pleurotus** is of similar value; its effect on blood fat levels is mainly attributed to its principle component, namely chrysine. Pleurotus extract can demonstrably reduce lipids in the blood.

● In studies, it has been proven that **cordyceps** can reduce LDL cholesterol and increase HDL levels. At the same time, it regulates hepatic metabolism overall, and can, thanks to its antioxidant effect, prevent cell damage.

● A similar mechanism of action has been proven for **maitake**, which should be used particularly if triglyceride levels are increased and if there is a risk of a fatty liver.



## Treatment tips and individual initiative

- ✓ Recommended medicinal mushrooms:  
Shiitake, pleurotus, cordyceps, maitake
- ✓ Nutrition:  
The latest nutritional advice is not to stick to a strict low fat diet, but to consume fats with care, giving preference to vegetable and unhardened fats. The plate should contain as little industrially prepared food as possible.
- ✓ Supporting the liver:  
As the most important organ for metabolism and removing toxins, the liver responds particularly well to a lifestyle free of alcohol and cigarettes.
- ✓ Exercise:  
When we do exercise, fats are burned up to provide energy - it is therefore a mainstay of treatment.
- ✓ Reducing stress:  
It has been proven that a body subject to stress produces higher level of cholesterol. There are various, easy-to-learn relaxation techniques that can counteract this.
- ✓ Drugs are not a long-term solution:  
Drugs to lower the blood fat may be necessary in acute cases, but should not be taken as a pretext for avoiding lifestyle choices. In certain circumstances, they have no more effect after a short while.
- ✓ Orthomolecular medicine:  
It is important to provide the organism with sufficient amounts of omega 3 fatty acids, among other things for cell formation. Care must also be taken to ensure that we consume sufficient levels of vitamin B, vitamin C and magnesium if suffering from lipid metabolic disorders.
- ✓ Phytotherapy:  
Traditionally, the medicinal plants used for lipid metabolic disorders and to support the liver are artichoke, Mary thistle, dandelion and rosemary.

# Cardiovascular diseases - Help for the motor of life



*Diseases of the cardiovascular system are particularly feared - and rightly so, because a heart that does not properly fulfil its task is a life-threatening condition. Hypertension - high blood pressure - which mostly creeps up on us insidiously, is a great danger, because of the complications that ensue. So what can we do about these lifestyle diseases that are increasingly having fatal consequences?*

Whether cardiac arrhythmia or atherosclerosis, coronary heart disease, venous disorders, hypertension or even cardiac infarction or a cerebrovascular accident: all these diseases are lumped together as lifestyle diseases in modern societies and they all stir up fears (of death). The last

two cases mentioned are in fact extremely serious medical emergencies that require immediate medical care to save the patient's life, and to avoid lasting damage. Cardiac infarction (heart attack) and cerebrovascular accidents (stroke) are mostly at the end of a chain of symptoms that are



ignored or trivialised for months or even years. Apart from a few exceptions, the blood vessels are already damaged if a stroke or heart attack occur. Various examinations have confirmed over and over again that many deaths connected with the cardiovascular system can be avoided if they are diagnosed early enough and preventative action is taken.

### **Dangerous plaques**

Atherosclerosis is caused to a large extent by deposits forming on the inner walls of the blood vessels, thereby restricting their elasticity and impeding blood flow. These so-called plaques can lead to narrowing of the vessels, so that the blood has to be pumped through arteries with a higher level of resistance. The consequences are manifold, and range from high blood pressure (hypertension) via coronary heart disease to chronic inflammation, which in turn is suspected of damaging the arteries. In the case of coronary heart disease, the heart muscle itself is no longer supplied with a sufficient amount of oxygen-rich blood, so that in stressful situations, chest pain can occur, lasting a few blinks of the eye. This pain is referred to as angina pectoris, and is seen to be the last alarm signal before a heart attack, and should therefore be investigated medically.

### **Close interconnections**

With coronary heart disease, it is as pointless to wonder about the cause and the consequence as it is to ponder the chicken and egg conundrum.

The various diseases have an effect on each other: Atherosclerosis can promote high blood pressure, which in turn can bring about defects in the arteries. Not without reason does high blood pressure bear the name of the "silent killer". At the beginning, symptoms occur rarely or not at all, which means that this dangerous situation is not discovered at all, or is found by accident during a routine medical check-up. Often, a combination of several factors is responsible for a particular disorder.

This aside, if arterial blood pressure is too high, this can lead to damage to other organ systems, such as the kidneys or the eyes. In principle, the standard blood pressure of 80/120 doesn't just hold for young people. It should endure into our later years, even if many doctors consider higher blood pressure levels to be acceptable because many of their patients deviate from this norm. A long-term and irreversible consequence of many cardiovascular diseases is cardiac insufficiency (heart failure), whereby the heart's performance is impaired. It manifests itself mainly through shortness of breath under physical stress and may lead to a build-up of excess fluid in the legs.

### **Medicinal mushrooms can help**

Many cardiovascular diseases (also) require medical treatment in the first instance - this is partly because it is not diagnosed until late on. It is essential to examine our lifestyle and make any changes that may be required, to keep the blood pressure

under control in the long term, for example. Various medicinal mushrooms can be used, as a complement that is free of side effects, based on a specific indication - the decision on the most suitable mushroom should preferably be taken by an experienced mycotherapist.

● **Shiitake** can lower the blood pressure and also have a regulating effect on cholesterol levels in the blood. This has a positive effect on vascular health and can help prevent atherosclerosis. This medicinal mushroom is also particularly rich in provitamin D, which can break down any deposits on the blood vessel walls. In the event of cardiac or renal insufficiency, shiitake should not be used.

● The benefit of **reishi** lies mainly in its modulatory strength – this is why it can help to keep the blood pressure under check if it is too high or too low. Reishi also helps to supply the cells with oxygen and can be used for cardiac arrhythmia.

● **Auricularia** is an important medicinal mushroom for improving the circulation and preventing inflammation processes. Anticoagulants reduce the risk of arterial occlusion. Auricularia also possesses antioxidant potential, thereby providing protection from cellular damage and inflammation.

● **Maitake** has proven its worth particularly with cardiovascular diseases, especially for high blood

pressure, but with cardiac rhythm disorders too. Its positive effect on blood sugar and blood fat levels also helps to prevent damage to the blood vessels.

● In studies, **coprinus** had a noteworthy effect on the symptoms in patients with narrowing of the coronary vessels right through to angina pectoris.



## Treatment tips and individual initiative

- ✓ Recommended medicinal mushrooms:  
Shiitake, reishi, auricularia, maitake, coprinus
- ✓ Nutrition:  
Care must be taken to have a sufficient intake of vital substances, potassium and magnesium being of particular importance. A predominantly vegetarian diet with high-value vegetable oils can protect and strengthen the heart and the circulatory system. Fish should be on the menu at least twice a week.
- ✓ Exercise:  
Stick to the fundamental principle of being able to "run without wheezing". It's not about achieving high performance, but rather about doing regular, moderate exercise. You should consult your doctor before starting any training if you are already suffering from a particular condition.
- ✓ Mental balance:  
If you are already "under pressure", high blood pressure is very likely to develop. Relaxation techniques can be helpful.
- ✓ Treatment with medication:  
Discuss this regularly with your doctor. The aim should be not to take heart and blood pressure tablets in the long term, and should be instead to improve the physical constitution so that the medication can be reduced or even stopped.
- ✓ Orthomolecular medicine:  
Omega 3 fatty acids, magnesium and potassium are important substances for the cardiovascular system. Care must also be taken to ensure that we consume sufficient levels of vitamin B, C and E.
- ✓ Phytotherapy:  
The most important medicinal plant for heart problems is hawthorn. Also of relevance are motherwort, melissa, lily of the valley and garlic, and especially for low blood pressure, rosemary.

# Overweight – Serious problems caused by being overweight



*The most publicised side effect of life in a modern society is being overweight, which virtually symbolises a whole series of lifestyle diseases. Excessive body weight is part of the metabolic syndrome and is a considerable risk factor for the onset of various diseases with chronic, and often dangerous consequences.*

The list of health problems that can arise as a result of being overweight is long: The cardiovascular system is put under strain, leading to hypertension, venous problems, and in the long term even to cardiac insufficiency. The liver, as the most important organ for metabolism, is weakened, and the risk of gallstones increases. The entire metabolism suffers, and the most frequent consequence is

type 2 diabetes. Diseases such as cancer and Alzheimer's have also been connected with being overweight. In fact, the entire locomotor system, in particular the spinal column and the knee and hip joints, have to battle with the strain placed on the body by excess weight, and the risk of atherosclerosis increases. All these scary scenarios, however, have not led to the weight issue being alleviated - on

the contrary, in industrial countries, there are more people who are too fat than ever before, and children in particular are found increasingly often to have a body mass that is not suitable for their height.

### **What does "too fat" actually mean?**

There are various formulae that can be used to calculate whether a person is overweight, and if so, by how much. Often, the superfluous kilos can be seen at first glance; the body mainly stores fat deposits on the stomach, hips and thighs. The so-called body mass index (BMI) can be used as a rough guide. The value is arrived at by dividing body weight (in kilos) by the square of the height (in metres). The normal range for BMI is between 18.5 and 24.8, and in children the values may vary according to the stage of development. In adults, we talk of pre-obesity if the value is between 25 and 29.9 - an adult who measures 1.80 m and weighs 82 kg already falls into this group. From a value of 30, grade I obesity is reached. There are three grades in all.

An obese person is fundamentally at risk of developing the comorbidities mentioned at some time in the near future. More recent studies have shown, however, that the risk of disease varies according to how the excessive body fat is distributed. For those with the so-called "apple shaped" body type, the fat deposits form mainly around the abdomen, which has a negative effect on carbohydrate metabolism - the metabolic

syndrome is then not far off. Those with a "pear shaped" body type with fat deposits mainly on the hips and thighs are a little less at risk.

### **Treatment: more difficult than thought**

An excessive amount of calorie-rich food combined with a lack of exercise - in most cases, these two factors are the cause of being overweight. Only rarely can other diseases, such as hypothyroidism (an underactive thyroid) or a congenital metabolism disorder be cited as reasons. Genetically, a certain disposition to being overweight has been recognised, but this should be seen as an incentive to actively deal with the problem.

By "simply" eating less and exercising more, the kilos would soon start to fall off. But, it's not as easy as all that. Changing everyday habits is one of the most difficult tasks. Many of those affected find it helpful to be part of group to gain the necessary motivation to lose weight. The theme of diet is also often closely linked with psychological states - many get into the habit of eating out of boredom or frustration or learn as children to see eating as a form of reward. In these cases, it may be necessary to provide specific professional support, because losing weight in the long term requires a lot of perseverance and the ability not to become discouraged when faced with difficulties at the beginning or when small setbacks are encountered. The most important thing of all, however, is the realisation that obesity is a disease to be

taken seriously. Only then does the readiness to change become strong enough to take the arduous route to a healthy ideal weight.

### **Medicinal mushrooms as support for losing weight**

There are several reasons why using medicinal mushrooms can be used very effectively as a complement for losing weight. Their naturally high content in minerals, vitamins and other vital substances that the organism needs in sufficient quantity, including during the weight loss phase, is very important. Generally, medicinal mushrooms activate the emunctories - provided that fluid intake is sufficient - so that the metabolism is stimulated as effectively as possible.

● **Maitake** can reduce deposits of fat and glucose in the liver. Clinical studies have shown a clear effect of taking maitake as a powder or extract on reducing the body weight.

● **Hericium** protects the mucous membranes of the digestive organs, thereby helping the body to cleanse itself. Some of the ingredients of these mushrooms also help to reduce blood fat levels, which are markedly higher in people who are overweight.

● **Cordyceps** increases the basic metabolic rate which can facilitate the weight loss process. It also has an antioxidant protective effect for diabetes, and can have a direct effect on lowering the blood sugar level.

● **Reishi** also stimulates the metabolism generally, and regulates the blood sugar level. In addition, it has an inhibitory effect on the feeling of hunger, and can promote psychological stability.



## Treatment tips and individual initiative

- ✓ Recommended medicinal mushrooms:  
Maitake, hericium, cordyceps, reishi
- ✓ Losing weight with a system:  
Keep well away from crash diets. Instead, aim to lose weight over a longer period. Classes offered by your health authority or at adult education centres can pass on sound, trustworthy information on nutrition. In principle, the following applies: If you consume fewer calories than you need, you will lose weight.
- ✓ Pay attention to what you eat:  
Regular meals, eaten in peace and quiet, can help you to lose weight.
- ✓ Drink plenty of fluids:  
The body requires at least 1.5 to 2 litres of water every day for metabolism to take place correctly. Avoid sugary drinks.
- ✓ Exercise:  
Even long walks burn up a lot of the body's calories.
- ✓ Be kind to yourself:  
Often, psychological stresses trigger unhealthy eating habits. To get to the reasons, it may be a good idea to seek professional help in the form of psychological counselling.
- ✓ Medical help:  
For those who are seriously overweight (obese), the advice of a doctor should be sought.
- ✓ Phytotherapy:  
Green tea, maté and pineapple, as herbal medicine extracts, can help the weight loss process. They stimulate, among other things, the digestion of fat and metabolism, and help to detoxify the organism.

# Burnout syndrome – When your life force comes crashing down



*Burnt out - this is how more and more people are feeling. The burnout syndrome has turned into a lifestyle disease that brings a lot of suffering to people, and places a huge cost on society, if the people affected are unable to work for months or even in some cases for years. We urgently need to counter this, and the sooner the better.*

Stress alone is actually not a problem. But lasting psychological pressure and the constant feeling of frantically trying to keep up - like a hamster in a wheel - are what make us ill. A combination of several factors - from increasingly fast modern communications via high expectations from some companies, through to the notion of performance, which determines the last re-

cess of our freedom - is responsible for the burnout syndrome marching forward at a breathtaking pace, as a lifestyle disease. The symptoms are varied and can differ greatly from one person to another. Great similarities, however, always crop up when seeking out the causes. They can be traced back to people's breakneck pace of life in the industrialised nations.



## Early diagnosis is half of the treatment

Nobody is suddenly burnt-out overnight. There are early "warning symptoms", which, if they are recognised then, can be treated effectively, so that full psychological meltdown is not reached. The most important thing is to question the person's friends and family, because the person affected does not have the feeling at first that something is not right. The alarm bells should ring loudly if somebody throws himself or herself with "burning" enthusiasm into his or her work, places very high demands on himself or herself, and commits himself or herself massively to his or her job - all these things are not a sign of healthy ambition; they point clearly to the burnout syndrome. At this stage, the person's own needs have often already been pushed into the background: breaks are shortened; there is hardly any time left for the person's hobbies; and holidays are put off.

Nobody can keep going for long like this, and so soon feelings of frustration, dejection and a lack of drive start to manifest themselves. Many people shy away from personal contact, turn down invitations and cannot be reached by telephone. On the physical level, headaches, high blood pressure and constant tiredness are typical symptoms. With a fully-fledged burnout, performance is so badly impeded that the person can no longer think of work or leisure pursuits. Those affected can no longer concentrate. They sometimes

develop speech impediments. Their mood swings vary strongly between irritation, sadness and heavy exhaustion.

## Creating a balance

The media attention paid to the issue of burnout has helped to raise people's awareness of the problem. There is now much greater awareness that constantly exceeding one's own performance thresholds cannot be good. Everyone should try to find a way to compensate for the stressful challenges of daily life - both at a psychological and at a physical level. Those who spend all day sitting in the office should get some exercise in the open air at least three to four times a week. Even consciously deciding to switch off the media and do without the constant barrage of messages are important ways of preventing burnout. Slowly a change in thinking is starting to be seen in this direction - for example, some companies are now ensuring that their employees don't have to receive and deal with e-mails once the working day is over. We should not forget that other factors that mainly cause stress at a physical level can favour the onset of the burnout syndrome. These include chronic inflammation, stress caused by toxins, for example in the home, as well as long term deficiencies in vital substances. A fundamental diagnosis has to be made so that treatment can be initiated at all the relevant levels.

In principle, the following applies: If the symptoms are already clearly

evident, burnout treatment needs to be dealt with by professionals. This is the only way to ensure that the person returns quickly, and more importantly, lastingly, to a feeling of well-being, strength and enjoyment of life.

### **Medicinal mushrooms to fend off the burnout syndrome**

In addition to a specific improvement in the psychological condition, in the case of burnout and the steps leading up to it, it is important to support the body as effectively as possible, for example by boosting the immune system, helping the body to remove toxins, and taking proper care of the body with important nutrients. At both levels - both physical and mental - medicinal mushrooms can make an important contribution.

● **Cordyceps** possesses an overall balancing effect on the mind. Its ability to create hormone balance, and in particular its capacity to regulate the release of the stress hormone, adrenalin, are responsible for this. It has also been shown that cordyceps can inhibit enzymes that have been considered a cause of depression.

● One of the most important mushrooms in mycotherapy, **reishi**, should not be neglected in the treatment of burnout. It possesses a modulating effect on the immune system and helps the body to remain more in control in stress situations. Reishi relaxes and calms the autonomic nervous system and can compensate for any vital substance deficiencies. It is also important for its pain-relieving potential.

● **Hericium** can be used if there is a threat of burnout or the symptoms are starting to manifest themselves, since it has an antidepressant and calming effect, among other things. This is also an important factor for relieving any physical symptoms.



## Treatment tips and individual initiative

- ✓ Recommended medicinal mushrooms: Cordyceps, reishi, hericium
- ✓ Foods rich in vital substances:  
A chronic vitamin or mineral deficiency can contribute considerably to the risk of a burnout.
- ✓ Physical balance:  
People who spend most of their time sitting should really do some exercise after work. Exercise and sport reduce stress and release happiness hormones.
- ✓ Check self management:  
How much stress is "home-made"? Where do the personal influences lie, and what can be done to positively change the stressful situation that is currently being experienced?
- ✓ Have a social life:  
Nobody is an island. Many studies have shown that loneliness makes us ill: and spending time relaxing with others promotes good health.
- ✓ There's no need to be perfect:  
It is useful to remember that everyone makes mistakes and not everything in life has to be one hundred percent perfect.
- ✓ Seek help in good time:  
Somebody who is about to suffer burnout needs to seek help. Just clenching your teeth or "closing your eyes and soldiering on" is the wrong way of thinking, and can just make the situation worse.
- ✓ Orthomolecular medicine:  
Magnesium and selenium are particularly important for an intact nervous system, as are the B vitamins and vitamins A, C, D and E.
- ✓ Phytotherapy:  
Passiflora, melissa, valerian and St. John's wort are important medicinal plants for regulating mental health and promoting relaxation.

# All about the immune system - Risks caused by allergies, inflammation and autoimmune diseases



*A functioning immune system is an important factor for our body's health. It's not just about protecting ourselves from pathogens that cause infections, but about diseases that are accompanied by an overreaction of the body's own defence mechanisms: allergies and the large group of autoimmune diseases.*

A lot of speculation has been made about the causes, and there are various theses, which sound plausible to a greater or lesser extent. It is certain, however, that allergies, autoimmune diseases and chronic inflammation have made considerable headway in

industrialised nations. Autoimmune diseases include rheumatic diseases as well as type 1 diabetes, Crohn's disease, multiple sclerosis, cystic fibrosis and a few more besides – what they have in common is that the body's immune system attacks

healthy body tissue by mistake. In many cases, from an orthodox medicine point of view, the only way is to deal with the symptoms using treatment that produces unsatisfactory results, and which has to be taken for life. While the problem is mostly acknowledged, many chronic inflammation processes smoulder undetected in the background and can in the long term sometimes produce serious consequences.

### Chronic stress in the body

An immune system that is always set to alert mode, because of an allergy or an autoimmune disease, finds it difficult to carry out its own job reliably. Chronic inflammation also inflicts lasting stress on the body, although sometimes it may produce barely detectable symptoms. This applies to gum inflammation (periodontitis), which is not noticed by many people until the gums start to bleed. It is suspected that chronic inflammation, which includes, among others, atherosclerosis, increases the risk, for example, of type 2 diabetes, heart attack, stroke, dementia and cancer.

One of the possible causes is too high a level of homocysteine in the blood. This amino acid occurs in normal protein metabolism and is broken down quickly in a healthy organism via various mechanisms. If there is a vitamin B deficiency, which occurs frequently with today's eating patterns, this ability is restricted. In addition, medication that is often prescribed to lower blood pressure,

or statins, inhibit the body's uptake of these vitamins.

Another important point: Fatty tissue is metabolically-active and produces substances that promote inflammation, such that severe obesity and in particular fat stored around the abdominal belt constitute a considerable risk factor.

### Regulating and modulating

When possible, the original cause should be dealt with to treat this group of lifestyle diseases - losing weight, for example. In particular, with autoimmune diseases and allergies, the aim is not to further stimulate an immune system that is already reacting excessively. Instead, it needs to be regulated. Special polysaccharides, so-called beta-glucans, which occur in medicinal mushrooms in particularly high concentrations, and which have a good level of bioavailability for humans, are especially useful. Depending on need, they can produce both a stimulating or depressant effect on the immune system. Medicinal mushrooms are therefore described as "biological response modifiers" so that the body can react appropriately to these pathogens on the one hand, and to harmless allergens on the other. It is interesting that these particular polysaccharides simultaneously have a regulating effect at multiple levels on various specific and non-specific defence mechanisms - these mechanisms range from increased release of immune messengers to an actual increase in the production of antibodies. In general, it is important to note that

patients with autoimmune diseases require good medical care, and especially when taking immunosuppressants, additional treatments need to be taken care of by a therapist.

### **Prevention and treatment with medicinal mushrooms**

It is fundamental that an organism suffering from chronic inflammation or a misdirected immune response is provided with sufficiently available bioactive substances, such as those that are found in medicinal mushrooms. Some of them possess a particularly high potential for regulating the immune system, thanks to their ingredients.

● The first one worthy of mention is **agaricus blazei Murrill (ABM)**, which contains a notably high concentration of polysaccharides, which are vital for good regulation of the immune system. ABM is considered the best “biological response modifier” and can moderate the immune system particularly well. Depending on the need, it can have either a stimulating or a depressant effect.

● Another important medicinal mushroom, especially for allergies, is **reishi**. It inhibits the release of the tissue hormone, histamine, which is responsible for many allergic symptoms such as inflammation of the mucosa and itching. Reishi is an adaptogen, and can also have a modulating effect on the immune system, preventing an already excessive immune reaction from getting even more out of control.

● The **medicinal mushrooms maitake and shiitake** are worthy of recommendation, since they inhibit inflammation, have an anti-toxic effect, and are also very rich in vital substances. Shiitake, for example, has been proven to promote the healing of chronic gum inflammation.



## Treatment tips and individual initiative

- ✓ Recommended medicinal mushrooms:  
Agaricus blazei Murrill, reishi, maitake, shiitake
- ✓ Purifying the digestive system:  
It has been shown over and over that once the microflora in the digestive system have been regulated, the problems of patients suffering from allergies and/or autoimmune diseases clearly subside.
- ✓ Regular dental checkups:  
A professional dental cleaning should be carried out at least every six months by a dentist. During this visit, any chronic inflammatory foci will be detected early on, and appropriate treatment can be prescribed.
- ✓ Avoid amplifying factors:  
A high level of sugar consumption, a lot of animal products in the diet, chronic stress and a lack of exercise have been proven to promote inflammatory processes.
- ✓ Weight loss:  
Many studies have provided evidence that normalising body weight results in a marked fall in the number of inflammatory mediators.
- ✓ Orthomolecular medicine:  
Vitamins B6, B12 and folic acid promote the breakdown of the amino acid, homocysteine, which among other things is considered a factor that promotes inflammation.
- ✓ Phytotherapy:  
Purging and detoxifying medicinal plants such as nettle, birch, dandelion and Mary thistle can be used effectively here. The enzyme bromelain, found in pineapple, has a good inflammatory inhibiting effect.

## Diseases of the locomotor system - pain in the back and joints



*Our modern lifestyle does not do our locomotor system any good either. Most people spend too much time sitting, don't do enough exercise, have too rich a diet, and have tense muscles because of permanent stress. The long-term consequences include changes to the joints, which are often painful and are not at all easy to treat.*

Admittedly: The increasing number of people suffering from joint and back problems can also be attributed to the considerable increase in life expectancy over the past few decades. To overstate the case somewhat, you could say: We now live long enough

to suffer from these diseases. But this is not the only reason - and would not explain why so many young people are now being diagnosed with arthritis, herniated discs, carpal tunnel syndrome and other similar conditions.



Those who undertake physically strenuous work, such as construction workers, have an above average risk. In practice, however, it is those working at desks who are going in droves to consult orthopaedic specialists. Our skeletal system cannot bear years or even decades of a lack of exercise. To this must be added modern diseases that can be directly attributed to the conditions of today's office world. An example that is well-known is the mouse arm syndrome; and recently, medical professionals have come up with the term "smartphone thumb".

### **The most frequent case: Arthrosis**

Rheumatism is a topic in its own right within the group of painful joint diseases, and is one of the autoimmune diseases (see page 28 and following). Rheumatoid arthritis occurs most frequently, manifesting itself mainly in the hand and finger joints, followed by fibromyalgia that affects the muscles. The classic degenerative joint disease that is not connected with rheumatism is arthrosis. In a way, it can be described as natural joint wear, which the ageing process is solely responsible for. Inappropriate physical strain, overweight and chronic vital substance deficiencies in the joints can lead to excessive and irreparable wear to the bone substance, even in younger people. The knees, hips and shoulders are the joints most frequently affected - but the spinal column is too, for the individual vertebrae are nothing more than joints which are also subject to wear.

First of all, the sufferer notices that he or she needs a little time to warm up: After a break, the joints feel stiff and inflexible, and sometimes even painful. The cause for this is a depletion of bone tissue, which usually possesses a buffer function. In the worst cases, the ends of two bones can rub together, which can be extremely painful. The joint reacts by causing inflammation and converting bony structure, so that the joints become gradually stiffer.

### **Dealing with pain**

The normal reaction to pain is to protect the joint and to move it as little as possible. This is sensible in the short term, but is fatal in the long term. This is because an inactive joint is supplied with fewer and fewer nutrients, thereby speeding up the wear process. Instead, sufferers should, from the very beginning, start physiotherapy, so that the mobility of the joint is promoted and the surrounding muscles are strengthened. In some cases, pain therapy - as short as possible - may be useful to allow the joints to move and to prevent the so-called pain memory response from kicking in. Chemical transformation processes in the cells and nerve fibres may occur if pain irritation has lasted for a long time. In this case, the "pain" information sent to the brain can continue even after the cause has been removed by treatment. The patients suffer from chronic pain syndrome that then becomes a condition in its own right. The treatment is challenging, and should always include psychological counselling to

break the vicious circle of actual pain, the feeling of hopelessness and the fear of the pain returning.

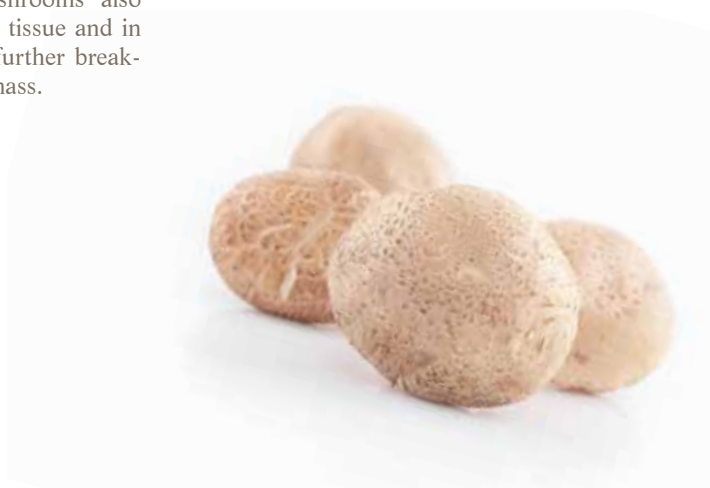
### **Taking care of the joints with medicinal mushrooms**

● **Reishi** has acquired a very good reputation with regard to holistic pain therapy. Some of its ingredients promote the formation of the body's own messengers, which have a pain-relief effect. The circulation-promoting effect of this vital substance has been proven in diseases of the locomotor system. Reishi can also inhibit inflammation processes, and have a balancing and relaxing effect on the psychological level.

● Alongside **reishi**, **shiitake** contains an excellent level of nutrients and is particularly rich in vital substances. This is important because diseased joints are particularly dependent on a good supply of high quality substances. The amino acids contained in the mushrooms also firm up the connective tissue and in so doing impede any further breakdown of the cartilage mass.

● **Maitake** can promote detoxification thanks to its close connection with liver metabolism, and the skeletal muscles gain greatly from this. Strong muscles are particularly important in the event of degenerative joint diseases, since they can actually take away some of the strain on the joints.

● If these locomotor system diseases are accompanied by chronic inflammatory processes, the medicinal mushrooms **cordyceps** and **coriolus** can be very useful. Their use is preferred for rheumatic joint diseases.



## Treatment tips and individual initiative

- ✓ Recommended medicinal mushrooms:  
Reishi, shiitake, maitake, cordyceps, coriolus
- ✓ Losing excess weight:  
The locomotor system benefits greatly if excessive weight is lost. Pain diminishes noticeably for every kilo lost that was putting a strain on the joints.
- ✓ Basic food:  
Many people with joint diseases say that their condition worsens if they eat more acidic food, while basic food (lots of fruit and vegetables, few animal products) alleviates the symptoms.
- ✓ Keep exercising nonetheless:  
Regular physical activity, adapted to the individual's abilities, is important for those suffering with chronic diseases of the locomotor system - swimming is particularly recommended. Physiotherapy should also be used if necessary.
- ✓ Attention should be paid to the mental aspects:  
The pain phenomenon is closely linked with the mind. Good psychological counselling and relaxation techniques can contribute considerably to alleviating the symptoms.
- ✓ Orthomolecular medicine:  
Vitamin C, magnesium and omega 3 fatty acids are particularly important substances for the health of the locomotor system. Glucosamine, methylsulfonylmethane (MSM) and chondroitin have proven to be particularly beneficial for maintaining healthy joints and for impeding progressive degeneration processes.
- ✓ Phytotherapy:  
For pain relief, willow bark, liquorice and frankincense have also proven their worth. Phyteuma can also be used to reduce pain problems in the long term.

# Support for the immune system – Medicinal mushrooms as good defence

*A well-operating immune system does much more than just protect us from a cold. It is therefore important to support the body's own defences as effectively as possible and to avoid factors that weaken it. Peter Elster, natural health practitioner, qualified preventative medicine expert and 1<sup>st</sup> board member of the Gesellschaft für Vitalpilzkunde e. V., answers frequently asked questions on the immune system.*

## **What is the job of the immune system in the human body?**

The immune system protects our organism from viruses, bacteria, fungi, foreign proteins, parasites and even from our own damaged cells, such as cancerous cells.

## **Which factors can weaken the immune system?**

Physical and mental stress, chronic diseases, the lack of a balanced diet, and an unhealthy lifestyle, such as too little exercise and a lack of sleep, can have a negative impact on the immune system.

## **Which symptoms manifest themselves as signs of a weakened im-**



## **mune system, and when should specific help be sought?**

Signs of a weakened immune system are frequent infections that last for a long time. Help is indicated if they are not fully cured, and the body's regeneration phase lasts a very long time.

## **Can a weakened immune system lead to permanent damage to the health, and what role does it play, for example, in serious diseases**

### **such as chronic complaints and cancer?**

A weakened immune system considerably increases the risk of chronic infections such as bronchitis and inflammation of the paranasal sinuses and the tonsils. In the field of tumour diseases, oncogenic viruses such as EBV, cytomegaly and herpes play a role that should not be underestimated, as laboratory tests have shown. A weakened immune system cannot successfully fight off these viruses and can foster the development of cancer or make it more difficult to treat it effectively.

### **What effect does the mental condition or stress have on the immune system?**

The hormonal, nervous and immune system form a functional unit. Physical strain and permanent stress damage this unit, thereby weakening the immune system at the same time. A stable mental state, on the other hand, strengthens the body's immunity.

### **Is there a link between the immune system and allergies?**

In short, in the case of allergies, the immune system reacts to a substance, an allergen, triggering an inflammatory reaction in the body to fend off the foreign body. The immune system is almost hyperactive. This means that it reacts too quickly and categorises too many harmless substances as allergens. This can result in an allergic reaction.

### **How can the body's defence mechanism be boosted or stimulated with natural products and a healthier lifestyle?**

The immune system is regulated by a lot of different substances and messengers. Beta-1.3 and beta-1.6 glucans from medicinal mushrooms play an important role in this. In herbal medicine, many plants are used that strengthen the immune system. In addition, substances like selenium, vitamins C and E, glutathione, amino acids and antioxidants are generally of importance. These substances should be carefully introduced into an organic-based diet. Sufficient exercise and relaxation should also be introduced into the lifestyle.

### **How can medicinal mushrooms support the immune system? Which ingredients are particularly beneficial?**

Medicinal mushrooms constitute a very good way of supporting the immune system. Laboratory analyses have shown that mushrooms contain significantly more vital substances than fruit and vegetables. They are also very rich in fibre which has been attributed with many positive effects on the health, and they contain pharmacologically important substances such as terpenes and polysaccharides (beta glucans) that can modulate the immune system.

### **How does the health of the digestive system affect the immune system?**

### **How can medicinal mushrooms be used in this context?**

The digestive system is one of the most important organs and protects the body from pathogens. The medicinal mushroom shiitake with its antiviral effects and coriolus versicolor with its antibacterial effect can support the intestinal mucosa, thereby reinforcing the immune system.

### **What can we do to specifically support the immune system during the cold season, to prevent lots of colds?**

During the cold season, Kneipp cures and regular exercise in the fresh air have proven their effectiveness in preventing colds. Herbal infusions and taking medicinal mushrooms in powder or extract form offer effective support. *Agaricus blazei* Murrill can increase the cells' defences. It can render harmless cells that have been infected with a virus. *Coriolus versicolor* on the other hand has an antibacterial effect and can have a positive effect on the non-cellular, antibody-mediated immune system, circulating in the blood and lymph.

### **What can seniors do to have a healthy immune system and why must they be so proactive in this area?**

When we get older, the effectiveness and the adaptability of the immune system deteriorates. A good diet, mental activity and regular exercise are particularly important here. In

Asian naturopathy, *ganoderma lucidum* (reishi), also called the mushroom of longevity, plays an important role. Reishi can activate the vital forces, slow down the ageing process and reduce the problems associated with it. This has been confirmed over and over thanks to the large number of times it has been used in practice. With regard to the higher risks of cancer, preventative measures with medicinal mushrooms are recommended.

### **What experience have we gained with medicinal mushrooms in preventing cancer and providing treatment?**

In Asia, medicinal mushrooms have been successfully used for a long time as accompanying treatment for cancer. Thanks to the high proportion of vital and pharmacological substances, they can be used to help patients in a targeted way. The choice and recommended dose of medicinal mushrooms must be made by an experienced doctor or natural health practitioner. In my practice, I successfully use medicinal mushrooms as complementary therapy for cancer. They contain beta glucans which boost the immune system so that it can better fight the cancer cells. It is also noteworthy that patients who take medicinal mushrooms cope better with radiotherapy and chemotherapy. The actual mushrooms have no side effects.

Issued by:



Represented by:

Detlef Stöver

Plaza Nova de la Ferreria 5

ES 07002 Palma

E-Mail: [info@vitalpilze.de](mailto:info@vitalpilze.de)

Internet: [www.vitalpilze.de](http://www.vitalpilze.de)

Free phone number: 0800 7788990

*Please note the following:*

The information in this brochure reflects current knowledge and has been thoroughly researched. No liability may, however, be assumed for the statements and treatment recommendations made here. Please consult a therapist or doctor with experience in medicinal mushrooms. He or she will be able to judge which mushrooms and which dose are suitable for you.

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DIABETES MELLITUS TYPE II  
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AND JOINTS  
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DISEASES OF THE  
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Submitted by:



Represented by:  
Detlef Stöver  
Plaza Nova de la Ferreria 5  
ES 07002 Palma