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# THE DEFINITE

# GUIDE TO CBD

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# **FOREWORD**

Only a few years ago cannabidiol (CBD) was largely unknown. That changed in the last years and CBD has made a name for itself in many countries around the world - for good reason! Science has proven that CBD has health benefits and can help with many diseases. For example, mental health problems, nausea, vomiting, eating disorders, cancer, epilepsy and many other mental and physical illnesses.

In this ebook, we take a look at the wondrous herb. It's a guide that aims to answer all questions on the subject and explain everything you need to know about cannabidiol. We explain the benefits of CBD, how you consume it, whether there are any risks, how to cook with CBD and much more.

Let's start with the history of CBD. Or should we say, with one of the biggest misunderstandings in human history? FEW PLANTS IN THE WORLD ARE AS MI-SUNDERSTOOD AS CANNABIS. THE HISTORY OF THIS PLANT IS THE HISTORY OF AGRI-CULTURE, OF MEDICINE, OF RELIGION. IN FACT, IT IS THE HISTORY OF MANKIND.



# HOW IT ALL BEGAN

The CBD story begins in 1940 with the US chemist Roger Adams. Adams was the first person to successfully isolate the CBD molecule from the plant "Cannabis Sativa L.". His contribution to the discovery of CBD ends here because Adams did not quite realise what he succeeded in doing there.

It was more than 20 years later (1963) that the Israeli chemist Raphael Mechoulam published his groundbreaking work on THC and CBD. In contrast to Adams, Mechoulam isolated not only cannabidiol from the approximately 1,000 substances of the hemp plant – but also tetrahydrocannabinol (THC). He proved in scientific studies that CBD has a therapeutic effect and can cure various diseases – and unlike THC does not influence the consciousness.

With his work, Mechoulam clarified one of the biggest misunderstandings of the 20th century. He proved what ancient medicine has known for thousands of years: cannabis can have a healing effect without intoxication. (Mechoulam is also the reason why Israeli companies now hold more than 80 percent of the world's cannabis patents.)

CBD gained worldwide recognition among the general public for the first time in 2013. A little girl played a decisive role in this.

# THE CASE OF CHARLOTTE FIGI

Charlotte Figi was born in 2006 in Colorado, USA. 30 minutes after her birth, Charlotte had her first epileptic seizure. At the age of two, doctors diagnosed Charlotte with Dravet syndrome. Charlotte regressed cognitively and showed symptoms of autism. Within a year she had stopped talking, could not eat and ended up in a wheelchair. She took seven different types of aggressive medications that strained her tiny body. At only five, Charlotte struggled with up to 300 seizures a week - one seizure could last up to four hours.

Charlotte's parents Matt and Paige tried everything, but nothing helped. Charlotte's condition worsened and doctors put her in an artificial coma. The prognosis was far from good. Matt and Paige signed a non-resuscitation statement.

#### A Glimmer of Hope

It was Charlotte's grandfather who first heard of cannabis for the treatment of children. Modern medicine had no more answers and Charlotte had nothing more to lose. Why not try this strange cannabis oil that Matt and Paige got their hands on? In the first week, Charlotte's seizures were reduced from 300+ to zero.



CBD changed the lives of Charlotte, Matt, and Paige forever within a short time. Matt and Paige contacted local hemp growers and developed a hybrid of industrial hemp and low THC marijuana. They named their cannabis strain Charlottes Web - after that little girl from Colorado whose life CBD had saved.

"Why were we the ones who had to set out to find this cure? Why didn't any of the doctors tell us? Why didn't they tell us about this natural remedy?"

- Matt Figi, Charlotte's father, in an interview with CNN.

#### The Turning Point

Charlotte's story marked the worldwide breakthrough for CBD: People who had failed in the medical system suddenly found hope again. Science conducted new studies. The image of the hemp plant improved abruptly - after a referendum in 2012, Colorado became the first US state to legalise marijuana. Washington, Oregon, Nevada, California, Alaska, Maine, Massachusetts, and Vermont followed quickly. Even countries such as Uruguay, Canada, and Georgia legalised cannabis. And with Luxembourg, the first European country is now on the verge of doing the same.

# MORE THAN A PLANT

Let's answer the most frequently asked question right at the beginning: No, CBD will not intoxicate you.

This is because CBD is not psychoactive. Psychoactive substances influence the way you think and feel - and that can change your behaviour. Legal psychoactive drugs include alcohol, tobacco, and various prescription drugs. THC is also psychoactive. CBD is not and therefore not considered a drug but a dietary supplement (in most countries).

If CBD does NOT affect thinking, feeling, and behaviour, what does it do?

According to the British Journal of Clinical Pharmacology, the most common treatments with CBD are anxiety, schizophrenia, nausea, vomiting, inflammation, and epilepsy.

## PAIN & INFLAMMATION

Natural pain relief is perhaps the most common use of CBD. Both animal and human studies have investigated the relationship between CBD and pain relief. CBD can reduce inflammation, interact with neurotransmitters and improve physical complaints.

For example, according to a study in the <u>Journal of Experimental Medicine</u>, CBD helps to treat chronic pain – especially patients with multiple sclerosis (MS) can improve their life quality with CBD. It works, because cannabidiol **inhibits the neuronal transmission of pain** – after all, pain is a message from the brain to the body that something is wrong. CBD can stop this message.

This may be useful in everyday life when you hurt yourself. For people with chronic pain, however, pain relief with CBD can be a life-changing experience..



# **ANXIETY & DEPRESSION**

A lot of young people today suffer from psychological problems. Many take expensive and potentially harmful drugs such as antidepressants and struggle with side effects - for example, sexual dysfunction, restlessness, headaches, fatigue or insomnia. Others resort to benzodiazepines ("benzos"), which quickly lead to addiction.

CBD can naturally relieve anxiety and psychological problems. This was confirmed in a study by the US specialist journal <u>Neuropsychopharmacology</u>: people with social phobia received 600 milligrams of CBD oil before a public speech - anxiety, and complaints were significantly alleviated.

Other studies investigated the antidepressant effect of CBD. According to an <u>English study</u> from 2010, cannabidiol works even faster in mice than classical antidepressants. According to the <u>Brazilian Journal of Psychiatry</u> CBD can also help with post-traumatic stress disorder (PTSD), obsessive-compulsive disorder and panic attacks.



## CANCER

Cancer is one of the deadliest diseases worldwide. More and more cancer patients are taking CBD - not only to treat cancer itself but also because of the side effects of chemotherapy. According to various studies (for example <a href="here">here</a> and <a href="here">here</a>) cannabidiol can inhibit the growth of leukaemia cells, breast cancer cells, cervical and prostate cancer cells - and alleviate nausea or vomiting during chemotherapy.

These findings have so far come mainly from animal and laboratory experiments. However, an English study published in 2018 examined 110 cancer patients (breast cancer and glioblastomas) who used CBD as a therapeutic aid. Accordingly, doses of 20 milligrams of synthetic cannabidiol already showed positive effects on cancer. **92% of the patients CBD improved their health** after taking CBD. The most spectacular treatment success was a five-year-old child with a rare brain tumour: While conventional therapies were unsuccessful, the boy solely relied on CBD during the study. The **tumour mass decreased by 60%**.

The researchers draw the following conclusion:

"Cannabidiol is a potential candidate for cancer therapy – above all in patients with breast cancer or glioblastomas. Especially when conventional therapy has been unsuccessful. However, CBD is not an alternative to conventional cancer therapy for breast cancer, glioblastomas and all other cancers. Further studies investigating the effect of CBD on cancer patients are desirable to better evaluate the effect of CBD as a potential cancer drug."



## EPILEPSY & SEIZURES

Epilepsy is one of the most common chronic childhood diseases worldwide. In 2014, <u>Standford University</u> investigated the effect of CBD on children's epileptic seizures. The result: CBD can support the treatment of various types of epilepsy - because the oil of the hemp plant can act as a natural anticonvulsant and thus reduce symptoms and seizures.

In the study, the frequency of seizures after the use of CBD decreased by **84% of all examined children**. 11% of the subjects had no seizures at all, 32% reduced their seizures by 25-60% and 42% minimised their seizures by more than 80%.

Side effects included drowsiness and fatigue. This had a positive effect on children's sleep quality and mood.



# NAUSEA, VOMITING & EATING DISORDERS

More than half of all adults in Europe and more than 160 million Americans are obese or overweight. Even young people are becoming fatter and fatter: one in three young people in Europe is overweight.

Nutritional and metabolic diseases such as obesity play an important role in this, as they are accompanied by an increased feeling of hunger.

That's why Cannabidiol can help with obesity. CBD not only stimulates body cells to break down excess proteins and fats in the body. At the same time, CBD blocks CB1 receptors in the endocannabinoid system, which **suppresses the feeling of hunger**. A <u>study with rats</u> has already shown that cannabinol can reduce food intake. CBD can also convert more white fat cells into brown fat cells, which could support the fight against obesity (see <u>study here</u>).

A study from the <u>British Journal of Pharmacology</u> also proved that CBD can help with nausea and vomiting. The condition of various patients improved permanently after the intake of CBD.



### DIABETES

9,4% percent of the U.S. population has diabetes. One in 10 people over 40 in the UK are living with type 2 diabetes. Since 1998, this number has increased by 38 percent; every day about 1,000 new people get diagnosed with diabetes. CBD gives diabetes patients worldwide new hope.

CBD can delay the onset of type 1 diabetes and minimise the symptoms of the disorder. According to a study by the magazine Autoimmunity, this is due to the **anti-autoimmune effect** of CBD: While type 1 diabetes is caused by the body's own antibodies, CBD can protect the affected beta cells in the body and support the metabolism. This improves glucose tolerance and relieves inflammation of the pancreas.

CBD can also help with type 2 diabetes because of its **anti-inflammatory properties** - chronic inflammation is one of the major causes of type 2 diabetes. CBD can regulate blood sugar, improve insulin resistance and prevent obesity caused by diabetes.



## SKIN PROBLEMS

The skin is the largest organ of the human body. It regulates our body temperature, protects us from tiny villains such as bacteria and viruses - and is responsible for our well-being. If our skin is not doing well, neither are we.

How can CBD help? It can supply our skin with **important nutrients** such as vitamin E, potassium and omega-3 fatty acids. This can improve the appearance of the skin and **ensure that our skin can fulfil its functions**. Several studies have shown that CBD can help with a <u>variety of skin problems</u>.

For example, CBD's <u>anti-inflammatory properties</u> can help with skin inflammation and eczema. This was the result of a study published in the <u>Journal of Experimental Dermatology</u>. Another study in the same journal dealt with the <u>effect of CBD on acne</u>. Conclusion: CBD can help in the treatment of acne. This is achieved by CBD regulating the oil production of the skin, healing inflammations and reducing excess sebum.



# A LOOK INTO THE FUTURE

All these studies and effects illustrate the great potential of CBD. Nevertheless, it has to be noted that cannabidiol and its effects on the human body have not been sufficiently researched yet - the science of CBD is still in its infancy. Although there are studies with human volunteers, most studies on CBD are animal studies. Research in this area will have to catch up in the next years.

So what will the future bring? In any case, more tests, field reports, and studies - because the popularity of CBD is growing worldwide. Cannabis and its miraculous cannabinoids are making a big comeback! But what exactly is the difference between CBD and her "evil" sister, THC? Read the answer on the following pages.



# SAME, BUT DIFFERENT

THC and CBD are <u>cannabinoids</u>. These cannabinoids are chemical compounds that occur in the hemp plant - specifically in the **Cannabis Sativa** variety. In total there are over 100 cannabinoids, many of which have hardly been researched. The best-known cannabinoids are **tetrahydrocannabinol (THC)** and **cannabidiol (CBD)**.

Those who hear "cannabis" usually think of THC. This cannabinoid is also known under its synonym marijuana. Most people know it – either from their experience or from friends, movies or books. THC is the molecule of the hemp plant that has a psychoactive effect on consumers. We speak of a feeling of intoxication; after we consume THC, we are feeling high.

CBD is THC's little sister. When you talk about medical cannabis, you usually mean cannabidiol. The **greatest health benefits of the hemp plant come from the CBD molecules** - and not from THC. CBD and THC have the same chemical formula, but the atoms are arranged differently. This tiny difference means that THC is psychoactive and CBD is not. Therefore, THC is an intoxicant and CBD is a dietary supplement.



### HOW DOES CBD WORK?

Mammals can not only produce cannabinoids themselves. We also have so-called **cannabinoid receptors** in our bodies. The two best-known cannabinoid receptors are <u>CB1</u> and <u>CB2</u>, which are located in different parts of the nervous system - and control different functions. Cannabinoids such as THC and CBD can dock to these receptors, who then release **neurotransmitters** (for example dopamine, serotonin or norepinephrine) into the brain. This way, they regulate the signal transmission of the nerves.

THC particularly likes to bind to the CB1 receptor. This receptor is responsible for the interconnected **nervous system**, for our addictive behaviour and the suppression of bad memories - and ensures that the THC consumer comes into an intoxicating state.

CBD prefers the CB2 receptor. This receptor controls the **immune system**, repairs damaged cells and increases cell regeneration. The CB2 registers every pathogen that enters our body - for example, viruses or bacteria - and tries to weaken or completely prevent the intruder.

Imagine you have a severe headache. In that case, the CB1 receptor (responsible for the nervous system) probably does not get enough messenger substances. If you then consume cannabinoids such as CBD, the CB1 will release more neurotransmitters. Within a very short time, your body reacts and throttles the sensation of pain.

The only question that remains: How do you take CBD?

# WHAT'S YOUR PICK?

Are you looking for CBD crystals, pollen, CBD creams or oils? CBD exists in numerous forms and variants that you can consume in different ways. On the following pages, we will introduce the advantages and disadvantages of the various options. From smoking CBD to topical application.

One thing is clear: Only you can find out which method and which dosage works best for you. You have to know, that CBD has <u>biphasic properties</u> - this means that different dosages of CBD have different effects. A low dose can for instance increase your ability to concentrate, while a higher dose can make you sleepy. It is best to **start with a low dose** of two to four grams per day and increase gradually as needed.

## CBD VAPORIZER

Yes, you can simply smoke CBD. But if you want to go easy on your lungs, it's better to use a vaporizer.

With a vaporizer, you don't smoke CBD, but inhale the healthy ingredients by vaporising. That way you avoid inhaling burnt carbon monoxide, which is harmful to your health - not only for the lungs but also for your throat!

What kind of CBD products can you evaporate? For example, CBD pollen, CBD flowers, CBD-E liquids or CBD crystals. The vaporizer heats the CBD evenly and you get the healthy ingredients in pure and cool steam. The CBD passes through the lungs directly into the bloodstream and works faster - without having to pass through the liver.

Anyone who buys a vaporizer should pay attention to high-quality workmanship. Above all, the vaporisation chamber should be made of stainless steel or ceramic. Both materials are particularly heat-resistant and guarantee reliable service for years to come.



### CBD OILS

CBD oils are one of the most popular CBD products. You can dribble a few drops under your tongue, hold the CBD in your mouth for a few moments and then swallow. Mucous membranes and blood vessels under the tongue absorb the oil within a few minutes and you get an optimal effect. Or you can mix the droplets with water, smoothies, coffee or other drinks and foods.

Normally CBD oil is available in dropper bottles of various sizes that allow exact dosage. The oils themselves differ in ingredients and carrier oil - hemp seed or olive oil are especially useful since they offer many additional vitamins, minerals, and amino acids. Anyone buying a CBD oil should also pay attention to pure and natural ingredients: CBD from plants treated with pesticides can be harmful to health.

CBD sprays have a similar effect to oils. Both are referred to as sublingual use.



# **CBD CREAMS**

The topical application of CBD is another popular option. CBD hand cream, CBD soap, face cream, body lotion, body butter, lip balm, CBD gel, shampoo, CBD mouthwash, and many other cosmetic products with CBD are available.

With topical products, you absorb the CBD active ingredients directly through the skin. This is not only suitable for skincare - CBD creams are also an excellent choice because of their pain-relieving effect. You can simply apply the creams and gels to the aching body part and expect a quick improvement.

The best CBD cosmetic is produced by **CO2 extraction**: the CBD is separated from other plant components by using CO2 gas and under special pressure and temperature conditions. What remains is a crystalline powder that is then processed into a cream - in combination with other active ingredients.



# CBD CAPSULES

Not everyone gets the taste of CBD. Capsules filled with CBD oil are a tasteless alternative and still offer the same CBD health benefits.

Oral use is simple: place a capsule in your mouth and rinse it down with a non-alcoholic liquid. It takes a little longer for the CBD capsules to take effect, but capsules make the dosage easier. You always know exactly how much CBD you have taken!

What should you keep in mind when buying CBD capsules? Make sure you buy capsules with a sufficient CBD dosage so that any losses in the stomach can be absorbed. The capsules should also contain as few additives as possible and CO2-extracted CBD.



# **CBD FOOD ITEMS**

Almost everyone knows hash brownies. But did you know that just like with THC you can also mix CBD with your food and eat it? Especially with CBD oil you can cook numerous delicious dishes (in chapter 6 we present you 3 of our favourite CBD recipes). There are also many ready to eat foods that are enriched with CBD. From sweets such as chocolate to small snacks to morning muesli.

If you mix CBD with your food and eat it, the effects are not immediately noticeable. It can take up to 60 minutes for the CBD effect to set in - after all, the CBD must first pass through the digestive tract before the cannabinoid reaches the CBD receptors.



# WHAT YOU NEED TO KNOW

#### Is CBD legal?

Sale, consumption, and possession of cannabidiol (CBD) is legal in a lot of countries. But different countries have different rules – in Germany and the UK for example, legal CBD products can **not contain more than 0,2% THC**. Even for professional athletes, legal CBD is no risk: In 2018 the World Anti-Doping Agency (WADA) has <u>removed CBD from the list of prohibited substances</u>. Only the psychoactive component of marijuana (THC) remains banned, as do synthetic cannabinoids.

#### Are there side effects?

Side effects of CBD are **very rare**. In some cases or if you have a CBD intolerance, nausea, vomiting, diarrhoea, flatulence or dizziness may occur. Start with a small dose and see how your body reacts. If you are taking any prescription medication, check with your doctor or health care professional before taking CBD.



#### Is an overdose of CBD dangerous?

According to current knowledge, an overdose with CBD is **not possible**. Even if the recommended amount of CBD was exceeded, no negative effects have been observed in studies so far. Therefore, the World Health Organization (WHO) declared that CBD is safe for humans and animals. There is no possibility of addiction or psychosis!

#### Can I take CBD before driving?

In contrast to THC, CBD has no impact on perception. That is why **CBD is compatible** with driving - however, CBD newbies should not get into the car immediately after first use. Very high doses of CBD can lead to effects such as fatigue or drowsiness.

#### Is CBD detectable by a drug test?

Cannabidiol is generally **not detectable** by a drug test. Whether CBD oil, CBD flowers or CBD extracts: Those who consume pure and legal CBD do not have to fear a drug test. Even with CBD products containing 0.2% THC, the drug tests usually remain negative - but if you consume CBD products with more than 0,2% THC, the THC can be detected up to three weeks after consumption.

**Tip:** A blood test is the better choice for most drug tests. In contrast to on-site rapid tests, blood tests are more accurate and can distinguish between different cannabinoids. Thus it can, for example, be proven that the THC present in the body was only part of a legally approved CBD product.

#### Can anyone consume CBD?

For the vast majority of people, the consumption of CBD is harmless. However, people with a **serious or chronic illness should always consult their doctor** before taking CBD. **Pregnant women should generally avoid CBD** because the cannabinoid may interfere with the protective function of the placenta.

#### Is buying CBD online safe?

Yes, you can buy CBD online. As with all other products, there are differences in quality depending on the seller. Choose **reputable suppliers** with real ratings, secure payment methods, and EU-certified cannabis plants. Make sure that you consume pure CBD in high quality – without pesticides, heavy metals, and other harmful substances. In the last chapter, we will tell you how to identify high-quality CBD products.

#### Will CBD make me feel high?

No. CBD is **not psychoactive** and does not lead to any mental or physical impairment or intoxication.

Do you have any further questions? Just <u>ask us</u>. We look forward to hearing from you and are happy to help!

# CBD THE ALLROUNDER

What about CBD cooking? Do you want to treat your pets with CBD or push yourself to new sporting heights? You can do all of that! In this chapter, we will introduce three popular uses of CBD.



## CBD FOR COOKING

Those who love tasty food and CBD can combine both - and adding CBD to drinks or food is easier than you think! Here are our 3 favourite recipes with CBD. For breakfast, lunch, and dessert.

#### CBD Smoothie with Spinach and Strawberries

Whether in coffee, tea or smoothie: CBD can be a great booster for the morning or a quick lunch. Our CBD Strawberry Spinach Smoothie tastes delicious and offers you lots of healthy iron, vitamin C and antioxidants (apart from CBD).

#### Ingredients:

- 1 cup fresh spinach
- 1 cup fresh strawberries
- 1/2 cup yogurt
- 1/2 cup milk
- 1/4 cup ice cream
- CBD oil
- 1 teaspoon honey

#### Preparation:

Pour all the ingredients into a blender and mix it to the desired consistency. If you like it less thick, add more milk. You can also add additional hemp protein to get a real power smoothie. Enjoy it and have a healthy start to the day!

#### Chicken Salad with CBD and Lemon Dressing

CBD is also suitable for hearty dishes. Our chicken salad with lemon dressing delights with a light taste and a special note by the strong CBD aroma.

#### Ingredients for four people:

- 1 salad of your choice
- 4 chicken legs
- 1 avocado
- 1/2 cucumber
- 100g radish
- 2 cloves of garlic
- 1/4 cup mayonnaise
- 2 tablespoons olive oil
- 1 tablespoon Dijon mustard
- 150 ml of lemon juice
- CBD Oil

#### Preparation:

Slice the chicken legs and season with 2 tablespoons of olive oil, salt, and pepper. Then heat it in a pan (approx. 10 minutes), turning the chicken regularly. Put the chicken aside to cool.

Mix one tablespoon of Dijon mustard with lemon juice in a small bowl. Add mayonnaise, garlic and CBD oil to the dressing. Use the CBD oil as desired and season with salt and pepper. Then add avocado, radish, and cucumber and, if desired, additional vegetables of your choice. Mix the vegetables and the salad dressing, add the chicken and serve. Enjoy your meal!

#### **CBD** Honey Balls

Fancy a tasty snack? Our CBD honey balls are a sweet temptation - and still healthy!

#### Ingredients:

- 1 cup honey
- CBD Oil
- 1 cup peanut butter
- 3 cups oat flakes
- 1 cup of dried fruit and nuts
- 1/4 cup grated coconut
- 1 cup muesli

#### Preparation:

Mix the honey, peanut butter, CBD oil, oat flakes, muesli, and dried fruit in a bowl. Form small balls with your hands and sprinkle each ball with grated coconut. Let the balls cool down and serve. But don't nibble too much!

# **CBD FOR ATHLETES**

CBD is becoming increasingly popular for athletes around the world. What are the advantages of CBD for athletes? How can CBD improve your recovery and help you to perform better? Here is the answer!

#### 1. Anti-Inflammatory Effect

Too many inflammations in the body hinder regeneration and weaken performance. CBD can inhibit the production of cellular messengers (cytokines) and ensure that inflammation subsides faster. That helps the body to recover better!

#### 2. Improved Sleep Quality

Good sleep is an important factor for every athlete. CBD can make it easier to fall asleep and provide a more restful night's sleep - this is done by stimulating <u>adenosine</u>. CBD can also have a calming effect and relieve anxiety, which increases sleep quality and regeneration as well.

#### 3. Improved Regeneration

Due to its anti-inflammatory effect, CBD can increase cell protection and muscle regeneration. At the same time, <u>cannabidiol influences the release of cortisol and estrogen</u>, which supports muscle mass and slows down the loss of muscle tissue.

#### 4. Pain-Relieving Effect

Many athletes use CBD as an alternative to painkillers (analgesics). Through its calming and anti-inflammatory effects, CBD can relieve physical pain in sports and prevent addiction or possible side effects of conventional painkillers.

#### Why can CBD help after exercise?

It is due to the **cannabinoid receptors in the body**. These CB receptors belong to the so-called endocannabinoid system (ECS). The importance of that system in the human body is not fully researched yet - but it is believed that the endocannabinoid system influences various body functions related to pain perception and inflammation inhibition and regulates the immune system.

# CBD FOR PETS

CBD for pets sounds strange but can make sense. The plant extract contains many important nutrients and can provide great health benefits for dogs, cats, hamsters and other fluffy friends. It can strengthen the heart, muscles, connective tissue and immune system, lower blood pressure and support bone growth!

#### How does CBD work for pets?

Cannabidiol can relieve anxiety and stress reactions, heal chronic pain or calm hyperactive animals. CBD can also improve neurological functions and support the digestive and immune systems. Because of its many valuable nutrients, CBD can even be used as a dietary supplement for healthy animals! CBD oil is usually the best choice for that.

#### What nutrients does CBD offer that are useful for animals?

For example, vitamin B1, B2, and Vitamin E; iron, potassium, calcium, copper, and magnesium. Zinc and magnesium in CBD ensure an optimal supply of nutrients to the immune and nervous system - and prevent plaque or deposits in the blood vessels. The B vitamins are also important for the nervous system and reduce the risk of inflammations. CBD also provides a large number of antioxidants!

**Tip:** We also recommend mixing hemp protein into your pet's food. The proteins of the hemp plant offer the essential fatty acids Omega 3,6 and 9 in an optimal ratio so that the body can absorb them well. In addition, it contains essential amino acids that strengthen muscles and the cardiovascular system. Amino acids even make the coat of your fluffy friend shine!

#### What are the risks and side effects?

Since CBD is a purely natural product, there are rarely any side effects. The "biggest" risk is a CBD overdose, which can lead to **short-term stomach problems** and a **weak digestive system**. In very rare cases **allergic reactions** are possible.

#### What conditions can CBD be used for?

- Many animals, especially cats and dogs, suffer from a separation anxiety disorder (SAD). Especially when their owners leave the house, it becomes a torture for the animals. Dogs can bark for hours and cats often scream or destroy furniture. The regular intake of CBD oil can significantly reduce that anxiety.
- An increasing number of dogs and cats suffer from **epilepsy**. Some pet owners report that epileptic seizures stopped after mixing CBD to their pet's food. This benefit is already known from human patients but is too often ignored in the media.
- Many sick animals suffer from **physical pain**. They then retreat, stop eating and live miserably. CBD can relieve that pain and increase your pet's appetite. The improved eating behaviour and reduced pain can positively influence the course of the disease.

#### How much CBD should I give my pet?

This depends on the size of your pet. Use the following information for dogs as a rule of thumb:

- **Small dogs** (up to 12 kilograms) can get between 2 and 5 millilitres of CBD oil per week.
- **Medium-sized dogs** (up to 25 kilograms) can get a weekly dose of 5 to 10 millilitres of CBD.
- Large dogs (above 25 kilograms) can get 10 to 15 millilitres of CBD oil per week.

**Tip:** It is best to mix the CBD oil for your pet into the food or put it into the drinking bowl. Start with a low dosage and observe how your pet reacts to CBD. If there are no complications, you can gradually increase the dose according to the above recommendations. However, these are only rough guidelines! If you are unsure, consult a veterinarian.

#### What does science say?

There are already studies on the effects of CBD on dogs. For example, a <u>clinical study</u> <u>conducted by Cornell University</u> in the US suggests that 2 mg of CBD oil per body weight and twice a day can help increase comfort and activity in dogs with osteoarthritis.

# HOW TO BUY QUALITY CBD

There are many CBD products and suppliers - not all keep what they promise. The good news: it's not difficult to find high-quality CBD products from reputable sellers. Here are five questions and answers that help you to choose the right CBD products.

#### 1. Where does the hemp grow?

The hemp plant is a so-called bioaccumulator. That means: hemp not only absorbs important nutrients from the soil, water and air but also any toxins that may be present. If you do not want to consume these harmful substances, you must choose CBD products from **hemp plants in the European Union or Switzerland**. This ensures that no heavy metals, herbicides or pesticides end up in your CBD.

#### 2. How is the CBD extracted?

The manufacturing process influences the quality, purity, and efficacy of CBD products. An **extraction process with CO2**, as we use it with CBDNOL®, is particularly gentle and safe. Such production enables a pure end product because the substances are obtained in their natural form – and the risk of solvent residues is minimised. The environmentally friendly CO2 extraction also prevents oxidation and increases the overall quality of the CBD product!

**Important:** Avoid CBD seller that use extraction processes with hydrocarbons (e.g. propane, hexane, and butane). Such production often leaves traces of harmful chemicals in the CBD products!

#### 3. How is quality assured?

Quality assurance is almost as important as the extraction process. When you buy CBD, the product should be **checked for quality and purity throughout the manufacturing process**. This minimises the risk of foreign substances, bacteria or fungi in the CBD and increases the probability of obtaining high-quality CBD.

#### 4. How much THC does the CBD product contain?

Depending on the country, CBD without prescription may have a **maximum THC content of 0.2%** - products with more THC are illegal in a lot of countries. Avoid dubious suppliers and make sure that the CBD oil does not exceed the legal limits in your country!

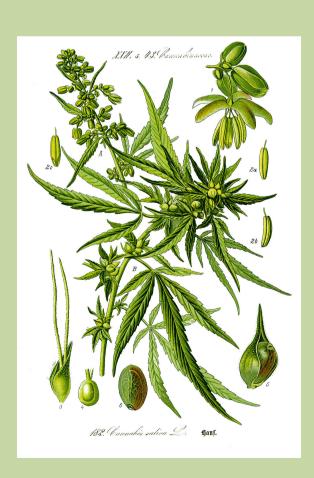
#### 5. How much CBD does the product contain?

Legally speaking, CBD products can contain as much or as little CBD as possible. Nevertheless, it is important to choose the right CBD concentration for your purposes. For CBD newbies or the treatment of sleep disorders, mild pain or anxiety, CBD oil with up to 5% CBD is advisable. For experienced CBD users and a stronger effect, we recommend products that contain at least 10% CBD.

# THE DIFFERENCE

It's already hard enough to tell the difference between THC and CBD - what on earth is then the difference between cannabis, hemp, and marijuana? It is quite simple:

- **Hemp** is a plant genus of the hemp family (Cannabaceae). When people talk about hemp, it is mostly about the legal crop without psychoactive effect.
- **Cannabis** is the Latin word for hemp. In common usage, cannabis refers to either legal products or psychoactive and illegal cannabis products.
- Marijuana refers to the dried flowers of the female hemp plant. Consumers are expecting a state of intoxication. Marijuana is also known as "weed" or "ganja".



# FROM REMEDY TO ILLEGALITY AND BACK

It is no coincidence that people confuse cannabis, hemp, and marijuana. It's the result of greed, influential industrialists, targeted lobbying and years of campaigning and criminalising all forms of cannabis – including hemp. How did one of the oldest crops and remedies become a global object of hatred? We rewind 12,000 years and begin the history of cannabis in ancient China.

#### The Discovery of Cannabis

The first archaeological evidence of cannabis can be found in ancient hemp ropes from China over 12,000 years ago. People in ancient China used hemp for paper, clothing and even warfare - they made bowstrings of hemp! Due to the legendary emperor Shennong, the Chinese also used Hemp as medicine...



Shennong is considered the most important figure in Chinese medicine. He examined numerous plants for their medical effects and is credited with the discovery of tea. Shennong collected his knowledge in an encyclopaedia known as <a href="Shennong Bencao-jing">Shennong Bencao-jing</a>, which is still regarded as the most comprehensive book in the history of traditional Chinese medicine.

One of the most documented plants in Shennong Bencaojing is cannabis or "ma" in Chinese. According to Shennong Ma was remarkable because the plant contained both the female "yin" energy and the male "yang" energy. This combination provides balance and harmony, which is important for healthy minds and bodies, the book says. The ancient Chinese used Ma to treat malaria, rheumatism, menstrual pains, gout, and many other illnesses and ailments.

#### Cannabis Conquers the World

Even before the Chinese traded hemp on the Silk Road, the herb spread through nomadic tribes. From ancient Egypt to ancient Greece, from Christianity to Islam, cannabis was admired as a sacred medicine. Religious sects of the Gnostics and Sufis worshipped the abilities of the plant. Warriors like the Scythians or the Nihang used cannabis for mediation. Some scholars even believed that the miracles of Jesus happened due to the use of cannabis oil. Hemp also had a great influence on the **emergence of Buddhism**: The Buddha is said to have lived on only one cannabis seed per day - while meditating for years. The plant traveled from India to Africa. From Africa to South America.

The Vikings used hemp for ropes around 850 AD. The Italians built their sails from hemp in 1000 AD, and in 1553 King Henry ordered all farmers in England to cultivate hemp. Queen Elizabeth 1563 went a step further and threatened landowners with a fine of £5 if they did not grow hemp.

It was the Irish physician William Brooke O'Shaughnessy, who finally introduced cannabis into Western medicine. He learned about the miraculous properties of the plant on a trip to Calcutta, India – the Indians had cultivated cannabis for recreational and medicinal purposes. Even Queen Victoria (1837-1901) used medicinal marijuana to treat menstrual pain.

#### Cannabis in the Modern Age

In the 19th century hemp spread in the western world. Cannabis was easy to grow, produced large quantities of raw materials, and required 50% less water than cotton. In times of industrial growth, cannabis was indispensable for many countries.

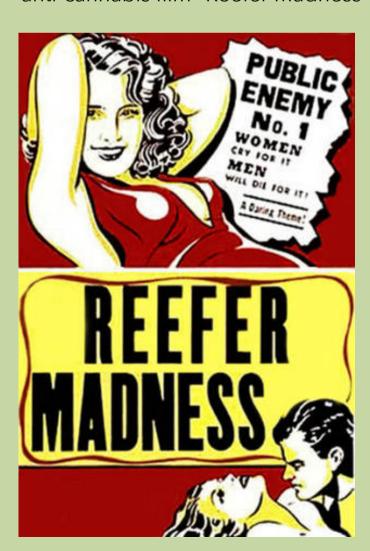
People in the West also used cannabis for a variety of medical problems - there were over 2000 cannabis drugs and more than 280 different manufacturers. In many countries, Cannabis was one of the **most prescribed drugs in the 19th century**! And then... it stopped.

#### Malicious Campaigns, Scaremongering, and Prohibitions

The <u>Geneva Convention</u> of 1925 was the first step towards a worldwide ban on cannabis. But cannabis had already been associated with the lower social class in Egypt and Turkey since the end of the 19th century. This stigmatization of the underclass worsened the reputation of cannabis in these two countries significantly.

This is important - because on the <u>second International Opium Convention</u> in The Hague on 19 February 1925, Egypt urged to **add cannabis to the list of opiates**. India contradicted for religious and cultural reasons; Germany also contradicted. As a result, Egypt threatened Germany with import restrictions on cocaine and heroin - two opioids that played a major role for the German pharmaceutical companies Merck KGaA and Bayer AG. Bayer intervened with the German government, which then agreed to ban cannabis.

Meanwhile, **racist propaganda campaigns** in the United States began to damage the reputation of cannabis in the West as well. Media mogul William Randolph Hearst claimed that under the influence of cannabis, Mexicans and African Americans would turn into vicious rapists and murderers. Hearst owned several newspapers, where marijuana was regularly associated with terrible crimes. The highlight of the campaign was the anti-cannabis film "Reefer Madness".



Why did Hearst do this? Well, Hearst was a forest and paper mill owner and had numerous contacts in the textile industry. Hearst and his influential friends would have suffered great losses from hemp - after all, hemp was an excellent alternative to paper and cotton.

These campaigns and many misconceptions and false associations with the opium trade damaged the reputation of cannabis almost everywhere in the world. From India to Greece, from South Africa to Brazil, from America to Germany. From the 1960s, the once miraculous plant was illegal in almost every country.

#### The Cannabis Comeback

Despite the ban, cannabis remained popular - the illegal cannabis trade flourished. Science did not lose interest in cannabis either: In the 1970s and 1980s, scientists studied the effects of the plant on cancer and AIDS patients. The results were promising! The negative image of cannabis slowly began to improve again. **As early as the late 1990s, some states in America legalised medical marijuana**.

The world took note. The popularity of cannabis steadily increased - and **by 2018 half** of the states in the USA had legalised marijuana. Other countries followed! To date, medical marijuana is legal in 22 countries worldwide, in many countries also as a stimulant. Marijuana is on its way to triumph. And this time, it's here to stay!

"The illegality of cannabis is outrageous, an impediment to full utilisation of a drug which helps produce the serenity and insight, sensitivity and fellowship so desperately needed in this increasingly mad and dangerous world."

- Carl Sagan (1934-1996), US astronomer, astrophysicist, exobiologist



Thanks for reading. The world of cannabis is beautiful, diverse and fascinating. CBD can heal diseases, change lives, improve athletes or simply be a healthy food supplement. If you have any questions write to us at any time.

#### **About CBDNOL®**

CBDNOL from Austria offers the highest quality CBD for daily use. Our products are hand-picked, free of harmful substances and made from EU-certified hemp.

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