MICHIGAN MEDICINE
UNIVERSITY OF MICHIGAN

Cannabis (Marijuana) and Cancer

What is Cannabis?

Cannabis goes by many names, including marijuana, CBD, cannabidiol, pot, weed, grass, dope, and others.

When people say “cannabis”, they may be referring to plant parts (flowers or leaves) or preparations made from these plant parts. Some of the forms of cannabis that someone might buy include:

- Flower buds
- Joints
- Vape liquids
- Drinks
- Lozenges
- Candies
- Pills
- Suppositories
- Oils
- Powders
- Resins

How do people take cannabis?

Most people take cannabis by eating it, drinking it, smoking it, vaporizing it, or putting it on their skin. The way that cannabis is taken impacts how quickly it works and how long its effects last. For example, when cannabis is ingested (e.g. eaten) it acts more slowly and over longer periods of time than when it is inhaled (e.g., vaped, smoked).

Sometimes, people take too much cannabis because they do not feel the effects soon enough when they take cannabis by mouth. In these cases, people may feel unwanted side effects such as drowsiness, anxiety, dizziness, and paranoia. If you are new to cannabis, you should start with a very small amount at first and slowly increase your dose to minimize your risk of side effects. We do not have good information comparing how well different cannabis preparations work for different purposes.

Is Cannabis illegal?

To the federal government of the United States, yes cannabis is illegal. It is listed as a **schedule I substance** (a drug or other substance that has a high chance of being abused or causing addiction). However, many states have legalized cannabis for medical or recreational use. Here is a resource to check the legal status of cannabis is your state: https://disa.com/map-of-marijuana-legality-by-state.

What is THC?

THC is short for tetrahydrocannabinol. This is the main compound in cannabis that causes the high that people experience.

What is CBD?

CBD is short for cannabidiol. This is another major chemical in cannabis. It is thought to have **anti-inflammatory effects** (reduces redness, swelling, and pain). It does not cause a "high" feeling.

Potential benefits for patients with cancer

Does cannabis cure cancer?

No. There are no research studies of cannabis use in cancer patients that have shown that cannabis can cure or treat cancer. Specifically, research has not shown that common products made from cannabis such as CBD oil and Rick Simpson Oil can treat cancer. There are some very early studies done in the laboratory (not in patients) that have shown that cannabis may cause cancer cells in a dish to die. There is also laboratory data that tell us that cannabis may cause some cancer cells to grow faster. **Cannabis should not be used to treat cancer. Instead, we recommend that you receive treatments that have been proven to help in the treatment of cancer.**

Does Cannabis help with cancer symptoms or with treating cancer?

Yes. Cannabis may help some people manage cancer symptoms or symptoms from cancer treatment. Patients with cancer sometimes use cannabis for:

- Nausea and vomiting
- Pain
- Poor appetite
- Trouble sleeping
- Anxiety
- Depression

In clinical trials designed to determine whether cannabis can help with these symptoms, the results have been mixed. Using cannabis to manage nausea and vomiting related to **chemotherapy treatments** (drugs to stop the growth of cancer cells or cause cancer cells to die) is best supported by available data. Also, at least some people with cancer appear to benefit from using cannabis for managing the other symptoms listed above.

Potential risks for patients with cancer

Does Cannabis cause any side effects?

Yes. Cannabis can cause a number of side effects. Here are a few of the more common ones:

- Drowsiness or poor concentration
- Memory problems
- “High” feeling
- Hallucinations
- Dizziness or light headedness
- Fast heart rate or low blood pressure
- Worsening of anxiety or depression
- Paranoia
- Nausea/vomiting

- Physical dependence/withdrawal when without cannabis

Does cannabis cause cancer?

The closest relationship that has been found between cannabis and cancer is in testicular cancer. Men who use large amounts of cannabis may be at higher risk of getting testicular cancer.

Some studies suggest that cannabis use may be related to certain behaviors that cause people to have an increased risk of getting some kinds of cancer. For example, people who use cannabis tend to engage in riskier sex practices. This increases their risk for getting **human papillomavirus**, a virus that causes some cancers of the cervix, anus, and head and neck.

In these people, it is difficult to determine whether their higher cancer risk is due to cannabis use or their behaviors.

Can cannabis change how well my cancer treatments work?

Cannabis may impact how well some cancer treatments work, but we do not have high quality studies in patients to confirm this yet.

- Some of the chemicals in cannabis are processed by the body in the liver. Some of the medications used to treat cancer are also processed in the liver. Because of this, chemicals from cannabis can sometimes change the way that the body processes cancer treatment drugs, potentially leaving lower amounts of drugs in the person's system to treat the cancer.
- Many people get **immunotherapy**: drugs that stimulate the immune system to help the body fight cancer. There is some evidence that cannabis may cause immunotherapy to be less effective. More data are needed to determine if this is the case.
- We do not know if cannabis changes how well **radiation therapy** (the use of high energy radiation, like x-rays, to kill cancer cells) or chemotherapy work.

Are there other risks of using cannabis?

- If smoked or vaped, there is a risk of damage to the lungs, so healthcare providers frequently recommend other ways of taking cannabis.
- Smoking/vaping cannabis can cause effects similar to the hormone estrogen (other ways of using cannabis do not have this effect).
- Cannabis can decrease fertility in men and women.
- The risk for developing a Cannabis Use Disorder (see definition below) has not been studied in people with cancer. However, in the general United States' population approximately 10% of people that used cannabis in the past year had a Cannabis Use Disorder.
- Other non-cancer drugs may also be changed by cannabis use. Drugs like warfarin (a blood thinner) can also be impacted by cannabis in a way that could increase risk of bleeding.
- Cannabis can cause you to eat more, potentially causing you to gain weight. Sometimes, this may be undesirable.

Other things to consider when using Cannabis:

- **Be mindful of state laws when you travel with cannabis.** Be careful if you travel with your cannabis from a state where cannabis is legal to a state with different laws. It is possible that you could be arrested and convicted of a drug-related offense.
- **Do not drive while under the influence of cannabis.** Some of the compounds in cannabis may make it more dangerous to operate a vehicle, so do not drive while using or while experiencing the effects of cannabis products.
- **Watch for problematic cannabis use (Cannabis Use Disorder).** Some people who use cannabis develop cannabis use habits that are problematic and interfere with their daily lives. They may find it difficult to cut back or stop using, need to use more cannabis to get the desired effects, or notice an

increased desire to use. If you notice signs of possible problematic use, discuss it with your healthcare providers.

- **Inform your healthcare providers.** You should make sure that everyone on your medical team, including your cancer providers and your primary care provider, knows that you are using cannabis and how you use it.
- **Product variability.** Cannabis and products made from cannabis that you might purchase can vary widely in their potency. This can make your experience with cannabis hard to predict. Also, sometimes the label may not match the actual product contents.
- **Avoid accidental consumption.** Cannabis is often added to candies and foods. Sometimes children, pets, or others may consume these foods and suffer side effects.
- **Your job:** If you have a job, check your employer's policy on cannabis before you use it.
- **Ongoing research.** There are many research studies going on right now, so we will likely get more information about cannabis and cancer in the coming years. This information sheet might be out of date because of the speed of this research.
- **Cost**. Cannabis can be costly. Consider the cost of cannabis products that you may purchase. It may be possible to save on taxes if you get a medical cannabis card. The cost of a medical cannabis card varies by state.
- **Cannabis is not safe for pregnant women, children, and adolescents.**

Why don't we know more about cannabis?

The short answer is that studying cannabis is complex. The same laws that made it illegal for people to use cannabis have made studying cannabis difficult. Multiple levels of federal approval are needed to do this type of research. Also, there are many different types of cannabis and many different ways that people take cannabis. Simply put, there are barriers to studying this

very complex topic. Many scientists are now working to help healthcare providers catch up.

Has the U.S. Government approved any drugs made from cannabis?

Yes. There are three FDA-approved medications related to cannabis:

1. Dronabinol (Marinol) is approved for chemotherapy-induced nausea, and anorexia in those with AIDS. It is a form of tetrahydrocannabinol (THC).
2. Nabilone (Cesamet) is approved for nausea from chemotherapy. It mimics the effects of tetrahydrocannabinol (THC).
3. Cannabidiol (Epidiolex) is approved for some seizure disorders. Cannabidiol is also called CBD.

Where can I get more information about Cannabis?

Many healthcare providers have not received formal training about cannabis. Many patients get information from other patients, the internet, and dispensary (provisioning center) staff. Be advised that many dispensary staff have received very little training and that some websites make claims about cannabis that are not true.

Cannabis information from trusted web sources:

- **American Cancer Society**
  https://www.cancer.org/treatment/treatments-and-side-effects/complementary-and-alternative-medicine/marijuana-and-cancer.html
- **National Cancer Institute**
  https://www.cancer.gov/about-cancer/treatment/cam/patient/cannabis-pdq
- **Memorial Sloan Kettering Cancer Center**
  https://www.mskcc.org/cancer-care/integrative-medicine/herbs/cannabis

Closing note

The authors of this information sheet would like to note specifically that we **have not** recommended that any form of cannabis be used to treat any medical condition. The purpose of this sheet is to provide information about cannabis and to encourage discussions between patients with cancer and their medical providers. People with cancer **should not** use cannabis unless they have first discussed it with their healthcare providers.

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