Delivery and Dosage of Cannabis Medicine

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Stoney Girl Gardens
Seed Company USA

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Dispensary

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Methods of Delivery

INHALATION
- Smoked
- Vaporized

SUBLINGUAL
- Tincture
- Spray
- Lozenge

INGESTION
- Edibles
- Butter
- Oil
- Capsules
- Teas

RAW
- Juiced

Suppository
- Traditional Rectal
- Vaginal

Enema
- Traditional Rectal
- Vaginal

TOPICAL
- Alcohol
- Salve
- Lotion
- Oil
- Transdermal Patch
Smoking

- Marijuana is smoked in rolled cigarettes, pipes, or water pipes.
- Smoking provides controllable, readily available effects.
- Reducing the amount of leaf or using increased potency cannabis minimizes the amount of hydrocarbons inhaled.
- Smoked forms of cannabis that are concentrated, include keif, hash and hash oil.
- When cannabis is smoked, peak concentrations are attained in 3-10 minutes, effects peak at 30-60 minutes, and last for several hours. Bioavailability of THC is 1 to 24 percent.
- A recent study of 1200 patients found no association between marijuana smoking and lung cancer.
- Cannabis smoke may be irritating to the throat and lungs and can cause bronchial inflammation and a cough.
- It can also be considered an expectorant and helps remove excess lung mucus and ease extreme emphysema, COPD
Smoking Delivery

“Joint”

Water-pipe
Smoking Benefits/Risks

ADVANTAGES
• most well known
• rapid onset in 0-10 minutes
• convenient, no preparation needed
• portable
• simple method, easy to do
• can select the strain of cannabis desired
• least costly for equipment

DISADVANTAGES
• produces smoke – possible negative health effects
• can cause bronchial inflammation
• can cause cough
• may be too short-acting – 3-4 hours
• not preferable for rapid mood cycling
Types of Cannabis Flowers

- **Indica** – Evening or “sleepy”. Great for severe pain
- **Sativa** – Morning or head high. Better for morning and daytime use. May cause anxiety.
- **Hybrid** – Most common with varied levels of cannabinoids and effects.
- **High THC** – 27%
- **High CBD** – 3% to 30%
- **Average**: 20% THC .02% CBD
- **Multiple Effects, Types, Variable to Each Individual**
Vaporizing

- Vaporizers are devices that heat cannabis, or any dried herb, to a specified temperature, below its ignition point.
- They heat cannabis to a temperature of 180-200°C (356°-392° F), just below the point of combustion where smoke is produced.
- At this point, THC and other medically active cannabinoids are emitted with little or none of the carcinogenic tars and noxious gases found in smoke.
- The wide range of results from tests of different vaporizers suggest that the choice of vaporizer is a major factor in determining extraction and delivery efficiency.
- A recent study showed 54% of the active compounds are extracted by vaporization, similar to efficiencies by smoking cannabis.
- Many vaporizer designs are now available, including portable hand-held models, and the new ultra portable vapor pens.
- The cannabis is inhaled, medicinal compounds pass through the lungs into the bloodstream.
Vaporizers

Volcano with balloon bag

Hand-held vaporizer pen (Battery)

Oil Cartridge
Vaporizing Benefits/Risks

ADVANTAGES
- rapid onset in 5-10 minutes
- no smoke, no health risk
- no irritation to throat and lungs
- can select strain of cannabis desired
- (the only short-acting no risk method available)

DISADVANTAGES
- difficult to transport device
- portable device is not as efficient
- equipment is more costly
- equipment is not easily tried, may have to order on-line
- may be too short-acting -3-4 hours
Sublingual

- Cannabis can be delivered by mucosal absorption in a rapid, dose measured manner as a tincture, or dissolved under the tongue in a lozenge or tablet.
- Tinctures are extracts of cannabis into an organic solvent, such as alcohol or glycerin, a process which retains all the cannabinoids. Tinctures are a classical method of herbal delivery, used for centuries to prepare cannabis medicines. The tincture is best taken sublingually (under the tongue) from a dropper bottle or delivered by a mouth spray via an atomizer bottle. They can be mixed with water and swallowed as well.
- Sativex, delivered as a mouth spray, is an example of a standardized herbal extract made from cannabis plants, only available in the US in research studies.
- Cannabis is absorbed through mucosal surfaces into the bloodstream.
Sublingual

Alcohol Tincture

Capsules

Lozenges

Spray
Tincture Delivery

- 1-2 dropperfuls every 8 hours or tid
- Cannabis can be delivered by mucosal absorption in a rapid, dose measured manner as a tincture.
- Tinctures contain all 80 of the essential cannabinoids.
- Best taken sublingually (under the tongue) from a dropper bottle or delivered by a mouth spray via an atomizer bottle. Tinctures can be mixed with water and swallowed as well.
Capsule Delivery

- 1 capsule every 8 hours or tid
- Open capsule and squeeze contents under tongue.
- Cannabis can be delivered by mucosal absorption in a rapid, dose measured manner.
- Capsules contain all 600 of the essential cannabinoids.
- May be taken sublingually (under the tongue)
  - Excellent for patients who cannot swallow capsules or have difficulty eating.
- Rapid Onset
Sublingual Benefits/Risks

ADVANTAGES
• rapid onset in 15 minutes
• easily transportable
• no cannabis odor
• measured dosing, easy to repeat
• long shelf-life
• moderately long-acting – 5-6 hours
• usually sedating, helps sleep and anxiety
• Can be administered when swallowing or smoking or eating is not available.

DISADVANTAGES
• cannot select strain if not home-made
• may be hard to find, especially as a spray
• variable range of potency
• available tinctures may not have stimulating qualities
Ingestion

- For patients who require a maximum dose of medicinal compounds, oral ingestion is preferred over inhalation.
- Greater amounts must be used in a preparation in order to make the product effective - up to three times as much cannabis is required when taken orally compared to smoking.
- THC is lipophilic and stored in fatty tissue with subsequent slow release into the bloodstream.
- The cannabis or its extract must be sufficiently heated or dehydrated to change its most abundant cannabinoid, tetrahydrocannabinolic acid, into psychoactive THC.
- When ingested orally the onset of the psychoactive effects is delayed by about an hour, with peak concentrations and effects available for 1 to 6 hours. Bioavailability is 5 to 20 percent.
- It can be cooked directly into edibles with cannabis in herbal or resin form as an ingredient, or made into butter or oil that is used to prepare foods, or packaged into capsules.
Oral Delivery

Capsules

Edibles

Cannabis Oil
Ingestion Benefits/Risks

ADVANTAGES
- no smoke
- long-acting – 8 hours
- lasts through the night
- food as medicine
- foods can be stored frozen for months
- can dose as other oral medicines, 3x/day

DISADVANTAGES
- slow onset up to 1 hour
- may be too long-acting, can’t turn it off
- more product required
- may cause stomach irritation
- dosing is difficult due to variability of digestion and product
Cannabis can be applied topically for treatment of local symptoms such as muscle spasm, inflammation or pain. Skin disorders or peripheral pain conditions in particular, do well with topical cannabis.

Cannabis Oil stimulates localized cannabinoid receptors. It also acts as an anti-inflammatory and promotes pain relief. Applying a cannabis preparation to the skin does not affect central receptors, eliminating psychoactive effects.

Cannabis is most often extracted into alcohol, oil or petroleum jelly for topical application. Preparations containing DMSO or emu oil are absorbed through the skin more effectively.

Cannabis salves and lotions may be used anywhere you would use a first-aid ointment, for cuts, scrapes, bruises and skin infections -has analgesic, disinfectant and emollient effects.

Cannabis topical alcohol – for joint pain, muscle spasms, headaches, any localized pain.

Decoctions/poultice – to treat burns, arthritis in joints, stings, wounds.

Cannabis must be absorbed through the layers of the skin.
Topical Delivery

Cannabis Salve

Cannabis Cream/Lotion
Topical Benefits/Risks

ADVANTAGES
• no psychoactive effect
• helps peripheral symptoms
• easily portable
• often no cannabis odor
• moderately long-acting – 6-8 hours
• long shelf-life in alcohol

DISADVANTAGES
• can be oily or messy
• variable range of potency
• not good for internal symptoms
• cannot select strain unless home-made
• requires a large amount of material, can be costly
• takes time to prepare
Rectal and Vaginal Delivery

- Cannabis can be delivered by intestinal wall absorption in a rapid, dose measured manner as a tincture.
- Applying a cannabis preparation to the skin does not affect central receptors, eliminating psychoactive effects.
- Cannabis is most often extracted into alcohol, oil or petroleum jelly for topical application. Preparations containing DMSO or emu oil are absorbed through the skin more effectively.
Rectal and Vaginal Delivery
Rectal/Vaginal Benefits/Risks

ADVANTAGES
- Little psychoactive effect
- Advanced treatment option
- Easily portable
- No cannabis odor
- Moderately long-acting – 6-8 hours
- Cannabis can be delivered by intestinal absorption in a rapid, dose measured manner

DISADVANTAGES
- Can be oily or messy
- Variable range of potency
- Cannot select strain unless home-made
- Requires a large amount of material, can be costly
- Takes time to prepare
Cannabis can be eaten raw, but it is problematic due to the stalactites (tiny leaf hairs) that may irritate the mouth, throat, and stomach. The flowering tips are full of a sticky resin which sticks to the mouth.

One can avoid these problems by eating tender young leaves right off the plant or juicing leaves and buds.

It is usually juiced with other fresh vegetables, making a “super-green” food, high in chlorophyll, oxygen, vitamins, minerals, antioxidants, and cannabinoids.

It is thought that raw cannabis has medicinal activity due to the presence of cannabinoid-acids, the non-psychoactive precursor available in the live plant.

Cannabis is easily absorbed through the intestinal tract into the bloodstream.
Raw Delivery

Tender Young Leaves

Cannabis Vegetable Juice
Raw Benefits/Risks

ADVANTAGES
- superfood, high in chlorophyll, vitamins and minerals
- rapid onset in 15 minutes
- success with chronic disease
- no health risk
- moderately long-acting – 6-8 hours
- food as medicine

DISADVANTAGES
- may cause stomach irritation
- can have mold or other contaminants, such as pesticides
- cost for equipment if juicing
- much daily preparation time, cannot store it
- requires large fresh plant supply, hard to find
Cannabis is an herb, not a pharmaceutical drug!
Our bodies can change and heal with the help of herbs.
Frequency of use depends upon the frequency of symptoms.
Tolerance does develop to cannabis use due to filling of receptor sites and feedback regulation.
Studies have shown that smaller amounts of cannabis may be more beneficial for mood management, i.e. small amounts raise serotonin levels, while larger amounts seem to lower them.
Medicinal cannabis should be used at the correct dosage for each patient, more is not necessarily better.
Application

- Maintenance – small daily doses orally (usually 50mg)
- Full Immersion – work up to 1 gram per day oral (1000 mg)
- Advanced Treatment – Oral, Topical, Rectal/Vaginal in combination
- Flax Oil instead of Coconut Oil
  - Perishable – must be kept refrigerated
  - Highest form of Bio Availability
  - Increased absorption and effect
Finding your Tolerance Level

- Every individual is different
- Tolerance level will build as you go
- Start with 20:1 (50 mg)
- Take one capsule and wait 2 hours
- Look for effects
  - Blood shot eyes
  - Couch lock
  - Sleeping
  - Drunken or dizzy
- If no effects after 2 hours take another capsule.
- Repeat until you feel effects
## Creating Your Dosage

1 ML = 1 CC = 1 Gram  NO CONVERSION!

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<th>Dosage/Gram ML/MG</th>
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5 ml or 5 gram syringe shown

1 gram cannabis oil = 1000 mg dose

20:1 50mg dose
20 grams Coconut Oil
1 gram Cannabis Oil
Avoiding Anxiety, Fear and Panic

- Citicoline (CDP) Powder
  - Natural Supplement
  - Used for trauma in the ER
  - 5000 mg = 5 grams on kitchen scale
    - Mix with 6 oz glass of water
    - Add lemon for flavor if desired
    - Drink one hour prior to dosing in morning
Find Out More

- [www.gro4me.com](http://www.gro4me.com)
  - New User Manual
  - Strain Guide
  - Grow Lessons primer
  - Making your oil
- Stoney Girl Gardens
  - Patient Resource Center and Clinic
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