

Topical Cannabis: Does it Live Up to its Presumed *Potential*?

WHAT IS TOPICAL CANNABIS? WHY WOULD SOMEONE USE IT?

The cannabis plant contains over 100 cannabinoids, including the phytocannabinoids CBD and THC. Topical cannabis products (e.g. cream, ointment, gel, etc...) contain cannabis as an ingredient and are intended to be used on external body surfaces (i.e. skin, hair and nails) for a localized effect.¹ A scan of thirty web sites across Canada²⁰¹⁸ revealed the following purported uses for topical cannabis despite its illegal status: arthritis, inflammation, pain, eczema, psoriasis and “various skin conditions”.²

Since cannabinoid receptors (CB1 & CB2) are found throughout the body, including on the skin, and since cannabinoids are lipophilic and likely absorbed, there is a theoretical mechanism for effect. Interest lies predominantly in *proposed* immunosuppressive, analgesic, and anti-inflammatory actions of topical cannabinoids.

HAS TOPICAL CANNABIS BEEN PROVEN TO WORK?

The short answer is no. Topical cannabis currently cannot be described as evidence-based therapy.

- No well-designed RCTs exist to inform about the effectiveness and safety of topical cannabis products.³
- The few existing studies tend to be unblinded, lack a control group, report only subjective outcomes, and do not report adverse effects data.⁴⁻⁷
- Regarding percutaneous absorption, no clinical studies have been published on cannabis-containing ointments, creams, or lotions.³ Data tends to be pre-clinical (i.e. *in vitro* and animal models).
- In addition, areas of research do not typically match commercial availability and common use (e.g. n-PEA ^{palmitoylethanolamide} studied for post-herpetic neuralgia⁸ & atopic dermatitis⁹). n-PEA is structurally similar to the endogenous cannabinoid anandamide.
- Guidelines either do not assess topical cannabis or cite it as an understudied area.^{10-CFP'18 11-National Sciences}

WHY MIGHT MY PATIENT REPORT IMPROVEMENT WITH TOPICAL CANNABIS IF THE EVIDENCE FOR BENEFIT IS SO WEAK?

Consider:

- **The likelihood of a placebo effect.** For example, in arthritis studies comparing topical NSAID vs. placebo, 25 to 57% of patients in the placebo group experienced improvement of pain by 50%.¹²
- **The ingredient list.** Sometimes THC or CBD may be formulated with other ingredients, e.g. camphor or menthol for muscle aches – and it may be these ingredients, as opposed to the cannabinoid(s), providing the benefit.
- **The possibility** that these products really do work, and one day research will prove it.

IS TOPICAL CANNABIS DANGEROUS? WHAT ARE THE SAFETY CONSIDERATIONS AND POTENTIAL ADVERSE EFFECTS?

Adverse effects are unstudied and under-reported; however, topical cannabis appears unlikely to cause serious harm. There are reports of rash (contact dermatitis/urticaria) and itching.^{3,13} Concerns related to purchasing from a non-regulated (i.e. illegal) source include potential exposure to pesticides, as well as other contaminants, and uncertain potency.

As well, concern has been expressed with topical cannabinoid product use prior to dermatological procedures as it may increase the risk of infection, jeopardize the success of a planned procedure, lead to systemic absorption and/or change healing capacity.¹⁴ If patients use topical cannabis over evidence-based products, there is a risk of undertreatment and resulting implications (e.g. untreated acne → may lead to scarring). In the medical literature (and online public forums), there is a lack of reports citing THC-containing topical products causing euphoria. Topical application to compromised skin (e.g. cracks, wounds) or via transdermal lotions/patches however may result in high enough blood concentrations to induce psychoactivity. While not available in Canada yet, be aware of real-world exposure to/availability of patches (e.g. <https://marysmedicinals.com/product/transdermal-patch/>).^{13,15}

HOW DO MY PATIENTS ACCESS THESE PRODUCTS?

Access to, and interest in, topical cannabis is increasing despite the lack of evidence validating its use. Buyer beware! Pre-mixed topical cannabis products currently available on the market are illegal & unregulated. Wellness and lifestyle circles are heavily marketing topical cannabis and sifting through the hype is challenging. **Screen/ask patients regarding their use of all types of cannabis products.** The market is filled with THC/CBD infused products, such as: bath bombs, massage oils, lip balms, lotions, creams, shampoos, personal lubricants, etc... People have access to, and are buying these products online and in stores. As well, it is legal to make one's own product using cannabis purchased from a legal, regulated source. There is no shortage of do-it-yourself recipes!

The Canadian government indicates that pre-mixed cannabis topicals will be available for sale legally no later than October 17th, 2019. Despite regulations, it is unlikely that Health Canada will approve or endorse topical cannabis as a therapeutic product.¹⁶ Note: Cannabis topicals will be regulated under the Cannabis Act, and as such these products will clearly label THC/CBD content and will not be allowed to make any health or cosmetic claims.¹

See **ONLINE EXTRAS** for further considerations, references, and a list of reviewers.

RxFiles Newsletter, Chart, Q&A: <https://www.rxfiles.ca/rxfiles/uploads/documents/CANNABINOIDS-Newsletter-CHT-QandA-RxFiles.pdf>

AE=adverse events; CBD=cannabidiol; LPs= licensed producers;pts=patients; RCTs=randomized controlled trials; SLGA=Saskatchewan Liquor and Gaming Authority; THC=delta-9-tetrahydrocannabinol; UDS=urine drug screen; vs.=versus

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OTHER CONSIDERATIONS

- Current knowledge gaps include: efficacy, safety, dosing, time to onset, peak and duration of effect for topical cannabis products.¹⁷
- Out-of-pocket costs for patients can compromise budgets. Currently, topical cannabis kits are available for sale through medical authorization and are approximately \$150 for 120 mL. When it comes to choice of product, the inexpensive, tried, tested and true products likely reign supreme over new, unproven cannabis products.
- Topical products containing hemp seed oil are regulated differently because this oil is extracted from the parts of the cannabis plant that contain little (<0.3%) to no amount of THC (e.g. Hempz®).
- It is unknown but appears unlikely that the use of topical cannabis products {transdermal patch excluded} would trigger a positive roadside saliva or UDS. A small case-study published results suggesting that topical application of THC-containing product does not produce a positive result in blood or urine sampling.¹⁸
- If traveling with topical cannabis products, it is best to confirm current rules before traveling {potential for possession to be illegal in other countries}: <https://www.canada.ca/en/services/health/campaigns/cannabis/border.html>.
- Report incidents and adverse effects.
 - Patients, consumers and healthcare professionals are encouraged to report adverse events. <https://www.canada.ca/en/health-canada/services/drugs-medication/cannabis/recalls-adverse-reactions-reporting/report-side-effects-cannabis-products.html>
 - Packaging and labelling concerns, as well as storage, dosing, dispensing, administration issues, and accidental ingestion or consumption are of particular interest as well. https://www.ismp-canada.org/err_ipr.htm

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