

Topicals For Pain Management

Topical medications are rubbed or sprayed onto the skin. Some are only absorbed into the very surface layers, while others can be absorbed into the bloodstream. Topicals that are only absorbed into the surface layers can be helpful if you are sensitive to medications because little or no medication gets into the bloodstream. Those that are absorbed deeper generally enter the bloodstream and would have the same precautions as medications taken by mouth, except that they do not affect the stomach as much. Overall, the research support for topicals is variable, but they generally have fewer side effects than oral medication and may be a good addition to your pain management toolbox. Some are available unscented if you react to odors.

There are several categories of topical medications: The name brands listed here are just examples and not recommendations to use those particular brands.

- **Counter-stimulants** work by providing normal sensory input, which can help decrease transmission of pain signals to the brain. These are kind of like lightly brushing your skin after bumping into something. Menthol, evergreen oil and camphor are examples. Many topicals include this effect in addition to other benefits.
- **Anti-inflammatory** topicals work by decreasing inflammation. Some are absorbed into the tissues to affect superficial structures, so they work best over joints or muscles near the surface. They may also decrease pain from 'neurogenic inflammation' where a sensitive nervous system makes sensory nerves fire backwards and release inflammatory chemicals near the skin. Some topicals are absorbed more deeply and may enter the bloodstream; if this occurs, the topical medication adds to your total 'dose', so be careful if you are taking similar medications by mouth. Be aware that absorbed NSAID adds to any oral NSAIDs you may be taking. Examples include:
 - Menthol-based topicals such as Biofreeze or Icy-Hot, as menthol is a mild anti-inflammatory. Generally good for trigger points and muscle spasm.
 - Non-steroidal anti-inflammatories (NSAIDs). This includes salicylates (the active ingredient in aspirin) such as Aspercreme, or diclofenac, such as Voltaren. Often good for joints just under the skin, such as the fingers, kneecap, and sternocostal joints. Some of the medication may get into the blood supply, so talk to your doctor if you have been advised to avoid aspirin or NSAIDs.
- **Topicals with capsaicin** (hot chili peppers), which causes a burning sensation. Capzasin is one example. These can be helpful for neurogenic pain because they force nerves to release neurotransmitters. However, they must be used daily for a few days or weeks before this effect is achieved. Some people find the hot sensation soothing for arthritis pain.
- **Lidocaine** topicals numb pain. This can affect superficial structures or calm nerves irritated by neurogenic inflammation. Some people with HSD have decreased response to lidocaine and novocaine.
- **CBD creams** act by blocking receptors that normally transmit pain. There is not enough research to say if or how they work, but patients sometimes find them helpful.
- **Prescription medications** are often a combination of the above, sometimes in a stronger form. Some of these medications work on surface tissues while others are absorbed into the bloodstream. For example, fentanyl applied through the skin gets into the bloodstream.
- **Magnesium cream:** While not specifically for pain, magnesium creams can improve sleep, which can improve pain, and it can decrease painful muscle spasm. Mg⁺⁺ is absorbed well through the skin and topicals do not cause GI upset that some oral Mg⁺⁺ preparations may cause. In addition to topical creams, Epsom salts contain Mg⁺⁺.

General precautions with topicals.

Do not apply to wounds or damaged skin. Do not use under a heating pad because they may increase chance of burns. Do not apply them under a tight bandage as this can cause skin irritation. Wash your hands after using and avoid touching your eyes or genitals with topicals on your hands. If you take blood thinners, do not use aspirin based or NSAID based topicals without MD consent.

- Maloney J, Pew S, Wie C, Gupta R, Freeman J, Strand N. 2021. Comprehensive Review of Topical Analgesics for Chronic Pain. *Curr Pain Headache Rep.* 25(2):7.
- Gudín JA, Brennan MJ, Harris ED, Hurwitz PL, Dietze DT, Strader JD. 2018. Reduction of opioid use and improvement in chronic pain in opioid-experienced patients after topical analgesic treatment: an exploratory analysis. *Postgrad Med.* 130(1):42-51.