



# Dispensing Information and Hope

Currently, no other oral medication offers both immediate and effective relief from severe pain as do opioids. It is understandable then that doctors would prescribe opioids rather than risk a patient at home unable to sleep or cope with their pain. Nonetheless, for patients that want to try alternatives and are willing to commit to a multidisciplinary approach, broad categories of prescription-strength pain relievers are listed below. We will ignore medical devices to control pain and adjuvant/complementary techniques such as acupuncture, music therapy and massage therapy.

Medical cannabis is the largest alternative non-opioid, non-narcotic market segment, accounting for a 73% market share. It is most often used to control pain in orthopedic and musculoskeletal conditions. Arthritis and fibromyalgia are the most common individual indications followed by neuropathic pain. Derivatives are currently going through FDA testing. Meanwhile, NJ does have medical marijuana dispensaries.

Menthol-containing treatments are the second-largest alternative non-opioid market segment. They have been shown to be effective in treating neuropathies including diabetes pain. Omega-3 fatty acid-containing treatments are used for orthopedic conditions and injuries. Capsaicin-derived treatments comprise 3% of the global non-opioid pain treatment market. Botulinum toxins prevent the release of a particular neurotransmitter at the neuromuscular junction. These toxins used sparingly to treat various muscle spasms, diseases characterized by overactive muscle tissue and a particular form of neck pain.

**There are alternatives available for chronic pain. More are in the pipeline. NJ's Chromocell has developed a compound using a novel mechanism to block pain receptors.**

Non-steroidal anti-inflammatory drugs (NSAIDs) are used to control mild-to-moderate joint and internal pain. Lesser used options include anticonvulsants, psychotropic drugs (anti-depressants), benzodiazepines (muscle relaxants), COX-2 inhibitors and triptans (anti-migraine drugs). All can have serious side effects in some people.

Patients with cancer or a degenerative disease, who face years or decades of pain management, may want to know that new relief is coming in the foreseeable future. Fortunately, there are many new compounds in the R&D pipeline. Most of the new patents for cannabis-based therapeutics are held by non-US companies. However, Bristol-Myers Squibb owns 21 patents related to formulations for cannabinoid receptor modulators which change signals coming into a cell. Merck owns three patents, directed toward cannabinoid receptor antagonists, which block signals from entering a cell.

New Jersey has a number of boutique life science innovation companies. One, Chromocell, has compound CC8464, which promises an oral, potent, highly selective inhibitor of one particular ion channel in a cell; an ion channel involved in pain transmission. As of the time of this publication, the compound is in phase 1 clinical trials. In 6-8 years when the drug is released by Astellas Pharmaceuticals, it is expected to be used for neuropathic and inflammatory pain.

Curriculum with a focus on utilizing non-opioids for pain management could be the basis of upskilling classes or even specialized credentials for health care workers.