CANNABIS vs. PAIN:
Strategies to Combat CRPS

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Cannabis as a Panacea
Medical Conditions

Acne
ADD and ADHD
Addiction
AIDS
ALS
Alzheimer’s Disease
Anorexia
Antibiotic Resistance
Anxiety
Atherosclerosis
Arthritis
Asthma
Autism
Bipolar
Cancer
Colitis and Crohn’s
Depression
Diabetes
Endocrine Disorders
Epilepsy and Seizures
Fibromyalgia
Glaucoma
Heart Disease
Huntington’s Disease
Inflammation
Irritable Bowel Syndrome
Kidney Disease
Liver Disease
Metabolic Syndrome
Migraine
Mood Disorders
Motion Sickness
Multiple Sclerosis (MS)
Nausea
Neurodegeneration
Neuropathic Pain
Obesity
OCD
Osteoporosis/Bone Health
Parkinson’s Disease
Prion/Mad Cow disease
PTSD
Rheumatism
Schizophrenia
Sickle Cell Anemia
Skin Conditions
Sleep Disorders
Spinal Cord Injury
Stress
Stroke and TBI

List courtesy ProjectCBD.org
State Approved Conditions

- Acne
- ADD and ADHD
- Alcohol Dependence
- ALS
- Alzheimer's disease and Dementia
- Anorexia/Cachexia (wasting syndrome)
- Anxiety and Panic Attacks
- Arnold-Chiari malformation and Syringomyelia
- Osteoarthritis
- Autism
- Auto-immune Diseases
- Causalgia
- Chronic inflammatory demyelinating polyneuropathy (CIDP)
- Crohn's disease and Ulcerative Colitis
- CRPS (Complex Regional Pain Syndrome Type I & II)
- Cirrhosis ( Decompensated)
- Dravet syndrome
- Dystonia
- Fibromyalgia
- Fibrous dysplasia
- Glaucma
- Hepatitis C
- HIV/AIDS
- Hospice patients
- Huntington's disease
- Hydrocephalus
- Inflammatory autoimmune-mediated arthritis
- Inflammatory Diseases
- Interstitial cystitis
- Irritable Bowel Syndrome (IBS)
- Lennox-Gastaut syndrome
- Migraines and other types of Headaches
- Mitochondrial disease
- Multiple sclerosis
- Muscle spasms
- Muscular dystrophy
- Myasthenia gravis
- Myoclonus (adult)
- Nail-patella syndrome (NPS)
- Nausea/vomiting
- Neurofibromatosis
- Neuropathies and Neuropathic pain
- Opioid Dependence
- Osteoporosis
- Pain
- Parkinson's Disease (PD)
- Peripheral neuropathy
- Post-concussion syndrome/Post traumatic brain injury (TBI)
- PTSD
- Residual limb pain
- Rheumatoid arthritis (RA)
- Schizophrenia
- Seizures (adult)
- Severe myoclonic epilepsy of infancy
- Sickle Cell Disease and Anemia
- SJogren's syndrome
- Skin Conditions (non-cancer)
- Sleep Disorders
- Spasticity disorders, including Spastic Quadriplegia
- Spinal cord disease (including but not limited to arachnoiditis, Tarlov cysts, hydromyelia & Syringomyelia) and Spinal Cord Injury
- Spinocerebellar ataxia (SCA)
- Stress
- Systemic Lupus Erythematosus (SLE)
- Terminal illness
- Tourette syndrome (TS)
- Traumatic brain injury (TBI)
California, Since 1996
Compassionate Use Act – Prop 215

Sec. (1) a-b The people of the State of California hereby find and declare that the purposes of the Compassionate Use Act of 1996 are as follows:

(A) To ensure that seriously ill Californians* have the right to obtain and use marijuana for medical purposes where the medical use is deemed appropriate and has been recommended by a physician who has determined that the person’s health would benefit from the use of marijuana in the treatment of cancer, anorexia, AIDS, chronic pain, spasticity, glaucoma, arthritis, migraine, or any other illness for which marijuana provides relief.

(B) To ensure that patients and their primary caregivers who obtain and use marijuana for medical purposes upon the recommendation of a physician are not subject to criminal prosecution or sanction.

(C) To encourage the federal and state governments to implement a plan to provide for the safe and affordable distribution of marijuana to all patients in medical need of marijuana.

*BOLD added by me
Common Symptoms of CPRS

- The key symptom is, **chronic, intense pain** that is out of proportion to the severity of the injury (if an injury occurred) and which gets worse over time rather than better. It most often affects the arms, legs, hands or feet and is accompanied by:
  - burning pain
  - increased skin sensitivity to touch
  - changes in skin temperature: warmer or cooler compared to the opposite extremity
  - changes in skin color: often blotchy, purple, pale or red
  - changes in skin texture: shiny and thin, sometimes excessively sweaty
  - changes in nail and hair growth patterns
  - swelling and stiffness in affected joint
  - motor disability, with decreased ability to move affected body part

Cycle of Pain

- Injury
- Pain
- Sleep
- Stress

The cycle shows how stress can lead to pain, which affects sleep, causing more stress, and so on.
Cycle of Pain

- Injury
- Pain
- Sleep
- Stress

Pain cycle: Injury → Stress → Sleep → Pain → Injury
Cycle of Pain

Stress → Injury → Pain → Sleep → Stress
Marijuana Rated Most Effective Alternative Treatment for Pain

Posted on September 18, 2014 in Alternative Pain Therap

Which alternative treatments have helped relieve your pain?

- Vitamins/Supplements: 24%
- Exercise: 33%
- Massage: 53%
- Prayer: 36%
- Physical Therapy: 35%
- Meditation: 34%
- Yoga: 34%
- Chiropractic: 46%
- Acupuncture: 36%
- Medical Marijuana: 80%
- Hypnosis: 31%
- None have helped: 29%

Common Non-Surgical Treatments

- **Bisphosphonates** – Reduce bone loss
- **Non-steroidal anti-inflammatory drugs (NSAIDs)** to treat moderate pain, including over-the-counter aspirin, ibuprofen, and naproxen
- **Corticosteroids** that treat inflammation/swelling and edema, such as prednisolone and methylprednisolone (used mostly in the early stages of CRPS)
- Drugs initially developed to treat seizures or depression but now shown to be effective for neuropathic pain, such as **gabapentin**, pregabalin, amitriptyline, nortriptyline, and duloxetine
- **Botulinum** toxin injections
- **Opioids** such as oxycodone, morphine, hydrocodone, and fentanyl. These drugs must be prescribed and monitored under close supervision of a physician, as these drugs may be addictive.
- **N-methyl-D-aspartate (NMDA) receptor antagonists** such as dextromethorphan and **ketamine**, and
- Topical local anesthetic creams and patches such as **lidocaine**.

Source: National Institute of Neurological Disorders and Stroke: Home » Disorders » Patient Caregiver Education » Fact Sheets
Reduction in Pain Drugs Prescribed in Legal Cannabis States

EXHIBIT 3

Average numbers of daily doses filled for prescription drugs annually per physician in states with a medical marijuana law, by condition categories studied, compared to the average numbers in states without a law.

- Anxiety: 562
- Depression: 265
- Glaucoma: 35
- Nausea: 541
- Pain: -1,826
- Psychosis: -519
- Seizures: 100
- Sleep disorders: 362
- Spasticity: 32

Change in daily doses filled annually per physician.
Chronic pain, unlike acute pain, serves NO protective biological function.
The Health Effects of Cannabis and Cannabinoids: Current State of Evidence and Recommendations for Research

CONCLUSION 4-1 There is substantial evidence that cannabis is an effective treatment for chronic pain in adults.

“A study using a synthetic selective CB2 agonist reduced symptoms of CRPS in an animal model, mainly the increased sensitivity to physical stimuli. The agonist exhibited several anti-inflammatory and neuroprotective actions which likely resulted in the improvement. It is likely THC would share at least some of these effects since it also activates CB2.”
“… our study has shown for the first time that the peripheral ECS is activated in highly stressed individuals with CRPS. With respect to the pain-limiting and anti-inflammatory actions of the endocannabinoid anandamide, it is suggested that the elevated anandamide level is probably autoprotective and CRPS patients might therefore benefit from pharmacologic manipulation of cannabinoid receptor-dependent signaling.”
Activation of CB1 Receptors BLOCK the Neurotransmitters from sending the PAIN signal

Activation of CB2 Receptors CONTROLS the pain response by BLOCKING inflammation

Courtesy Dr. Cristina Sanchez, Complutense University
3. EUPHORIA  Mood control areas

4. SHORT TERM MEMORY REDUCTION  Memory control areas

Epithelial cells (kidneys, skin, lungs, etc.)

Joints

GI tract

1. REDUCED PAIN PERCEPTION

2. REDUCED INFLAMMATION

Pain perception areas

Dorsal root ganglia

Euphoria

Mood control areas

Peripheral

CB1

CB2

Microglia

Brain

BRAIN

Courtesy Dr. Cristina Sanchez, Complutense University
What to look for in a medicine

- Tetrahydrocannabinol (THC)
- Cannabidiol (CBD)
- Cannabichromene (CBC)
- Cannabigerol (CBG)
- Terpinolene – Anti-inflammatory and analgesic synergy observed with an NSAID
- Geraniol – Promotes functional recovery and attenuates neuropathic pain in rats with spinal cord injury
- Pinene – Appeared to synergize with linalool and octanol to exhibit significant anti-inflammatory and analgesic effects
- Limonene – Reduced pain signaling in chemical and thermal models
- Myrcene – Reduced neuropathic pain
- Bisabolol – Anti-inflammatory action and blocks pain signaling
- Linalool – Reduced hyperalgesia in chronic non-inflammatory muscle pain model
- Beta-caryophyllene – Analgesic effects in models of inflammatory and neuropathic pain
How Much to Take?

Chronic Pain

THC - 15mg x 2 per day

CBD - 20mg x 1 per day

TOPICAL - 10mg x 3 per day
Conclusions

- Cannabis has numerous medical benefits
- State laws make it unequally available to patients
- Cannabis is proven to be effective against pain
- There’s more to cannabis than THC and CBD.
- We need more research
Thank you.

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