

Pain and Marijuana

**Chelsea Michigan
September 27, 2011**

Special Thanks

- Herb Malinoff, MD
- Carl Christensen, MD, PhD
- Edward Covington, MD
- Doug Gourlay, MD
- Howard Heit, MD
- Donald Kurth, MD
- Edwin Salsitz, MD

- Michigan Pain Specialists
- The Medical Staff at St. Joseph Mercy Hospital

- The many patients who have entrusted us with their care



Declarations

- I do not work for or receive money from a company that:
 - produces pharmaceuticals
 - is in the business of dispensing medical marijuana cards or medical marijuana
- I am not a member of a group that supports marijuana users
- I am not a member of a group that rejects marijuana users

Objectives

- Briefly describe how cannabinoids might work to reduce pain
- Briefly describe apparent risks and benefits using marijuana
- Share my experience with patients using medical marijuana to treat chronic pain
- Discuss some general shortcomings with current Michigan Medical Marijuana Program

Caveats

- This presentation is based solely on my personal experience with patients as well as attending numerous lectures on medical marijuana. Other doctors may have other experiences. YMMV.
- There are NO conclusive large scale double-blinded studies lasting 6 or more months evaluating marijuana for anything.

So lets learn about.....



History

- **2737 BC. Chinese Emperor Shen Neng used marijuana tea for the treatment of gout, rheumatism, malaria.**
- **1000 BC Hindu description of cannabis use for pain of childbirth, insomnia, headaches**
- **500 Heroditus described the Scythians burning hemp for intoxication and religious trance**
- **200 AD Cannabis described in Chinese Pharmacopoeia**

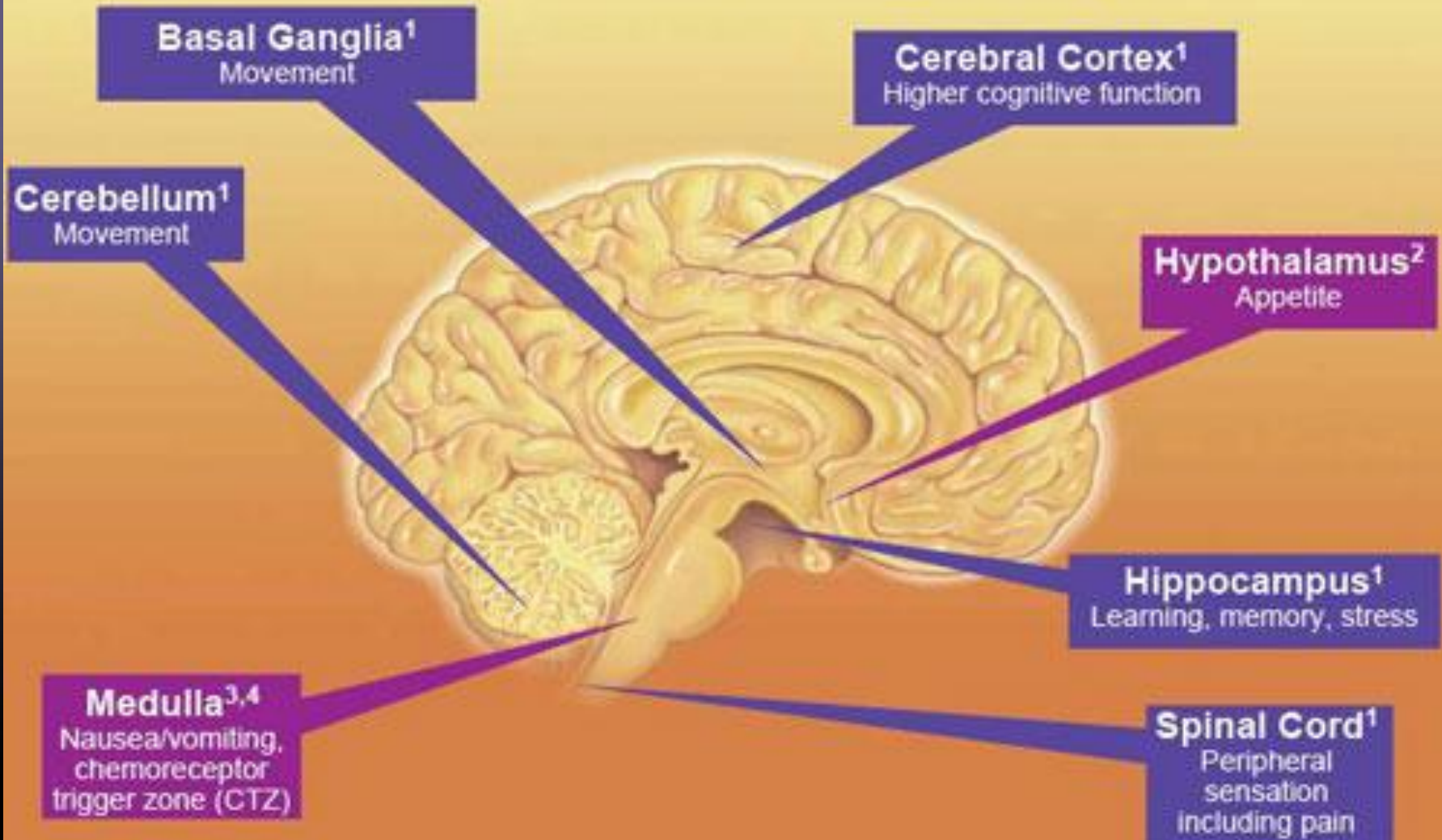
Cannabinoid Research

- **1840 - Sir William B. O'Shaughnessy , MD , FRS .
Published methodical assessment of cannabis potential in medicine. Evidence that he successfully treated pain of rheumatism**
- **1899 – Wood et al. isolate cannabitol from cannabis resin**
- **1932 – Cahn identifies structure of cannabitol**
- **1960 – Mechoulam identifies THC as principle psychoactive component to cannabis**
- **1986 – Gardner proves THC is addictive and activates brain reward center**
- **1988 – Howlett identifies THC binding sites in the brain**

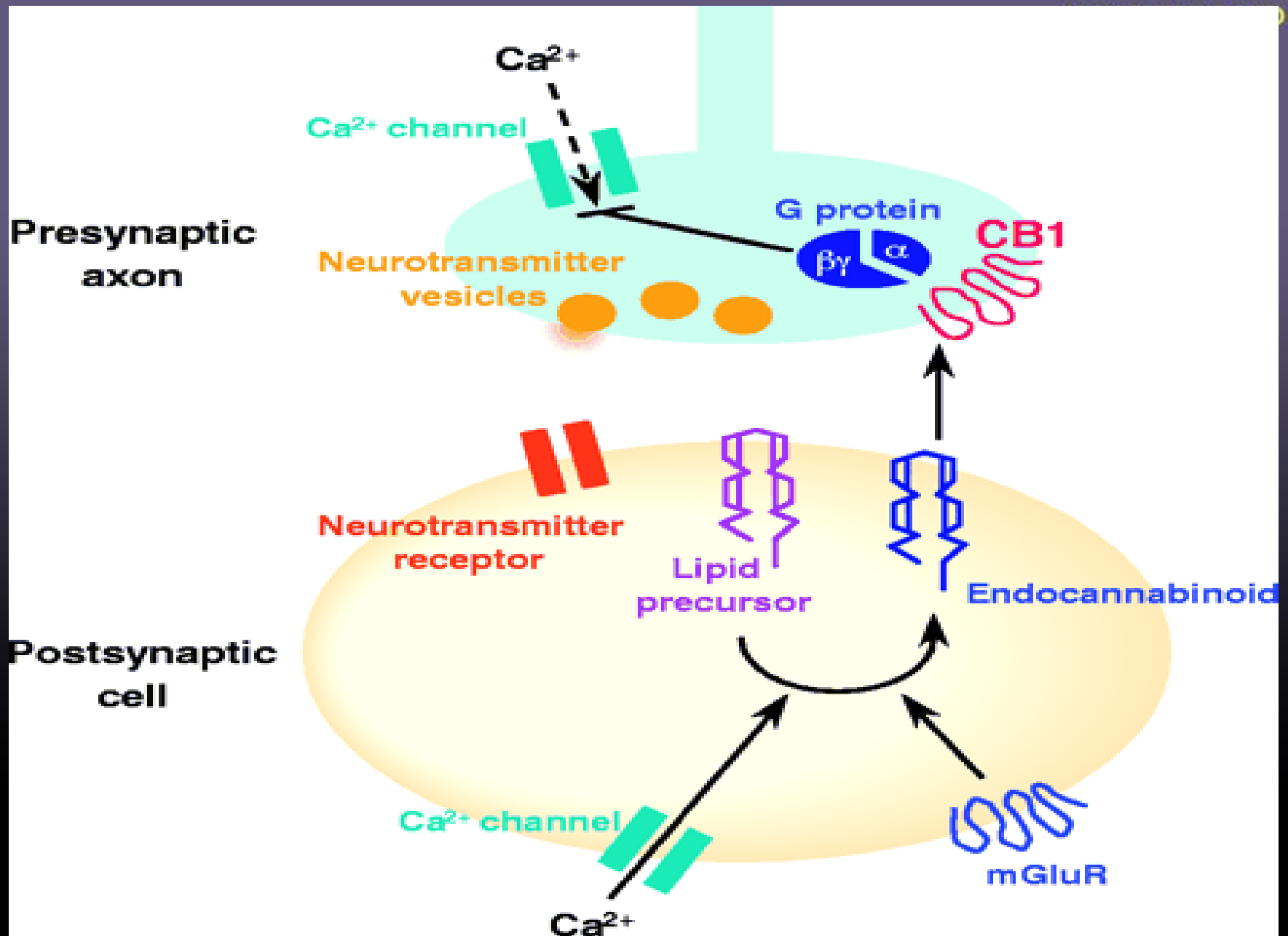
Endocannabinoid Research

- 1990 – Matsuda et al., clone CB1 receptor
- 1992 - Mechoulam's group and Pertwee's group simultaneously indentify first endocannabinoid, *anandamide*
- 1993 – Munro clones CB2 receptor
- 1994 – CB1 receptor anatagonist developed, SR141716A, *Rimonabant*
- 1995 – second endocannabinoid identified, 2-AG

Concentrations of CB₁ receptors



1. Joy JE, et al, eds. *Marijuana and Medicine: Assessing the Science Base*. Washington, DC: National Academy Press; 1998:33-81. 2. Martin BR, et al. *J Support Oncol*. 2004;2(4):305-316. 3. Grotenhermen F. *Curr Drug Targets CNS Neurol Disord*. 2005;4(5):507-530. 4. Navari RM, et al. *Expert Opin Emerg Drugs*. 2006;11(1):137-151.



CB1 Receptors

- **Inhibits nerve function (i.e. firing)**
- **Expressed very densely in:**
 - **Hippocampus: memory**
 - **Cortex: reasoning**
 - **Basal ganglia: motor control and motivation**
- **Proven to activate the VTA and Nucleus accumbens, the reward center responsible for addiction**
- **Likely do many different things based on location**
- **Wide distribution = very important to “mother**

Exogenous Cannabinoids (THC, etc)

- **Ingested in massive amounts from a neurobiologic standpoint**
- **Alter endocannabinoid- mediated processes in brain and periphery in unknown and/or unexpected ways**
- **Marijuana has 66 known constituents with a cannabioid-like structure. The function of these chemicals may be excitatory, inhibitory or varied depending on tissue**

Take Home Messages

- **Endocannabinoids are neurotransmitters**
- **Endocannabinoids are involved in synaptic re-modeling (learning)**
- **Cannabinoids (such as THC) interfere with endocannabinoid system affecting nerve function and synaptic remodeling**

Cannabinoids and Pain

- **Endocannabinoid receptors in:**
 - **nerve endings:** Stander, et al. J of Dermat. Science, 2005
 - **Dorsal root ganglia:** Bridges et al, Neuroscience 119:3, 2003
 - **Spinal Cord:** Farquar-Smith et al Mol Cell Neuroscience 2000
 - **Thalamus:** Tsou et al., Neuroscience 1997
- **Endocannabinoids have anti-nociceptive (anti-pain) effects** - Guindon et al 2006
- **CB1 and CB2 antagonists can block anti-nociceptive effects of anadamide** - Guindon et al 2006
- **Some science behind the concept of cannabinoids aiding in pain relief**

What Are The Risks to Marijuana Use

Is Marijuana Addictive?

Summary of Evidence

- **THC stimulates both the Nuc. Acc and the VTA**
- **Animals will self-administer THC**
- **Rimonobant infusion will lead to extinction of behavior**

******* Cannabinoids ARE addictive *******

Marijuana Dependence

- 9% of people who use marijuana will become dependent
- The risk increases to 16% in people who start using in their teens
- Cannabis accounts for 60% of people who suffer from illicit substance use disorders (4.2 out of 7 million in USA).

• Levonis, 2010

Marijuana Withdrawal

- Irritability
- Restlessness
- Aggression
- Insomnia / disrupted sleep patterns
- Anorexia
- Depression
- Lasts up to 14 days or more depending on intensity of use

304.3 Marijuana Dependence

- **DSM-IV-TR**

Any 3 or more in last 12 months:

- **Tolerance**
- **Withdrawal**
- **Uses more or longer than intended**
- **Persistent desire to use / unable to cut down**
- **Increase time spent in using**
- **Occupation, social or recreational activities reduced because of substance**
- **Continued use despite negative consequences**

Cognitive Impairment

- Learning and reasoning disrupted
- May last long after discontinuation (debate exists)
- Resistance to corrective feedback
- Worse if marijuana is started at early age (16 or earlier=worst outcome)
- Evidence of significant reduced reaction time in lab driving tests

Solowij et al 2002

Gruber et al 2010

Cyclic Vomiting Syndrome

- Found in chronic marijuana users
- Patient who initially used marijuana to treat nausea and pain
- Cannabis use causes the syndrome and the syndrome ceased only after prolonged discontinuation
- The syndrome was refractory to anti-nausea meds

Experience with Patients Using Medical Marijuana

- Patients with chronic pain frequently will try marijuana out of frustration
- Many times patients are discharged from their pain doctors or controlled substances are no longer given
- Some patients have marijuana dependence and/or addiction and deserve treatment, compassion and dignity.

Experience with Patients Using Medical Marijuana

- Some patients do report improvement in sleep**
- Frequently patients report pain improvement for a day or so followed by poorly controlled pain several weeks even after discontinuation.**
- Most of these patients do not become addicted to marijuana**

Experience with Patients Using Medical Marijuana

- Patients who have used marijuana for a long time, upon discontinuing generally report improvement in mental clarity, motivation, depression.
- Some patients do openly admit that they enjoy being “high” even though it does not improve their pain.

Mark A. Weiner, MD

What The *Michigan Medical Marijuana* Program Does **NOT** Do

- Does not provide for a distribution system for standardized medical marijuana
- Does not allow for the sale of marijuana
- Does not allow physicians to write prescriptions for medical marijuana (DEA Schedule I)
- Does not protect a physician from malpractice, criminal or civil lawsuits resulting from poor outcomes for patients who have been attested by that physician
- Does not imply that marijuana is safe to use or is good medicine

Other Problems With MMMP

- Does not require a long-standing doctor-patient relationship
- Does not require patients fail medically approved regimens
- Does not protect our youth or young adults
- Allows for much more than the implied approval for seriously ill patients.
- The “qualifying conditions” are very broad and could allow approval for chronic back ache in a healthy young adult.
- Creates a business for simply certifying patients



1-866-375-CERT

- Pre-Qualify
- About
- Laws
- FAQ's
- Media
- Contact

- ✓ Secure & Confidential
- ✓ Physician Signed Recommendation
- ✓ Physician Certified
- ✓ 24 Hour Qualification
- ✓ **ONLY \$199!**




Congratulations for taking the first step to qualifying for your Michigan Medical Card!

You must be 18 years of age and have a copy of your drivers license or state ID. We abide by state law and are 100% safe and confidential. Simply fill out the pre-qualification form below. Once you are qualified, you must submit a copy of your drivers license or picture ID and pay only \$199 for your doctor's certification. Once we receive your documents, they are reviewed by our doctors and you will receive your written certification

▶ **Ann Arbor Dispensary**
 Over 14 Varieties by Gram or Ounce No Appt Needed, Discreet Atm
 + [Show map of 321 E Liberty St, Ann Arbor, MI 48104](#)
[AnnArborMedicalDispensary.com](#)

Michigan Medical Card
 \$99 Doctor Certification & Renewals Call Today! 248-932-6400
[www.michiganmedicalcard.com](#)



Medical Marijuana and Decriminalization

- Groups like NORML openly report that Medical Marijuana Programs are a step toward decriminalization
- This pulls politics into medical decision making where it does not belong
- Doctor become polarized
- Some doctors and institutions take political stance against marijuana
- Some doctors become vehement supporters of marijuana
- It is my opinion that doctors should make safe, well-balance decisions based on medical facts that are always in the best interest of their patient's life.

Summary

- **Patients using or requesting marijuana deserve respect, compassion, understanding and best medical judgment of their doctor**
- **Cannabinoids offer great potential to treat many conditions including chronic pain**
- **Cannabis does not treat pain very well, compared to conventional treatments**

**Thanks for taking the time to
listen to me!**

