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(FORM UPDATED: 08/11/2010)

WISCONSIN STATE LEGISLATURE ...
PUBLIC HEARING - COMMITTEE RECORDS

2009-10
(session year)

Senate
(Assembly, Senate or Joint)

Committee on ... Health, Health Insurance, Privacy, Property Tax Relief, and Revenue (SC-HHIPPTRR)

COMMITTEE NOTICES ...

- Committee Reports ... **CR**
- Executive Sessions ... **ES**
- Public Hearings ... **PH**

INFORMATION COLLECTED BY COMMITTEE FOR AND AGAINST PROPOSAL

- Appointments ... **Appt** (w/Record of Comm. Proceedings)
- Clearinghouse Rules ... **CRule** (w/Record of Comm. Proceedings)
- Hearing Records ... bills and resolutions (w/Record of Comm. Proceedings)
  (**ab** = Assembly Bill) (**ar** = Assembly Resolution) (**ajr** = Assembly Joint Resolution)
  (**sb** = Senate Bill) (**sr** = Senate Resolution) (**sjr** = Senate Joint Resolution)
- Miscellaneous ... **Misc**

* Contents organized for archiving by: Stefanie Rose (LRB) (June 2012)

SB 368

Unofficial Transcript of Testimony of Dr. Michael M. Miller

(This is an unofficial transcript of the testimony of Dr. Michael M. Miller at the Informational Hearing on April 10 2001, transcribed from microcassette recording of testimony.)

COMMITTEE ON: STATE AFFAIRS
Representatives Skindrud, chairperson,
Krawczyk, vice chairperson,
Bies, M. Lehman, Petrowski, Wood, Young, and Travis

Testimony of Dr. Michael M. Miller, representing the State Medical Society, at Informational Hearing on Medical Marijuana of State Affairs Committee on April 10, 2001.

Dr. Miller: Well thank you for ahh inviting me and accommodating my schedule, and ahh thank you for this open hearing on this matter. I'm the president of the Dane County Medical Society and an alternate delegate to the State Medical Society of Wisconsin and the AMA House of Delegates. Ahh, I'm also secretary of the American Society of Addiction Medicine and chair of ACM's public policy committee. I practice just up the street at Meriter Hospital, where I serve as medical director for the New Start drug and alcohol treatment program for twelve years. My wife and I reside in Middleton and I've practiced addiction medicine in Wisconsin for almost 18 years, so my comments today are on behalf of the State Medical Society and the American Society of Addiction Medicine, and on behalf of my patients and my family

I'll go off the record for a moment and say that I just told my secretary as I was leaving that I'm going to go up to the Capitol and help explain that medical marijuana is an oxymoron the two terms together and I'll explain why they don't exactly fit together. And driving in this morning ummm the aahh the ahhh internet quiz on WIBA was are you in favor or not in favor of medical marijuana ahh for the benefit of patients...that's the way it was phrased.

Anyone would say they want anything for the benefit of patients. The problem with the formulation of the question is the presumption that there's demonstrated benefit from smoked marijuana as a therapeutic agent. So, if you presume that marijuana is a therapeutic agent that leads you down a path that leads you to some reasonable conclusions, 'cause no one wants to be an ogre. But we have to check on the evidence of whether smoked marijuana is ahh an effective medication demonstrated by evidence. I believe that the policies adopted by the American Medical Association and the American Society of Addiction Medicine and the State Medical Society express as well as I ever could the opinion that should guide public policy today and I've attached for you copies of those policies. There are many anecdotal reports about the alleged benefits of smoked marijuana. There are definitely evidence-based reports in the scientific literature about the benefits of pharmaceutical THC taken orally in the form of Marinol. Ahhh nausea from chemotherapy and appetite enhancement for malnourished and underweight patients with AIDS and advanced cancer are definitely circumstances where Marinol has been of use. But unless there are studies that are published in the peer-reviewed literature that would provide evidence of the safety and efficacy of smoked marijuana, it would be foolish and dangerous for Wisconsin or any governmental entity to approve the use of smoked marijuana for alleged beneficial purposes. The plight of patients with HIV infection and advanced cancers is surely tragic and patients should be embraced with compassion from family and friends from health care professionals and from the government. But there's no scientific evidence that I'm aware of that offering marijuana cigarettes to these individuals equates to compassion. Marijuana is not a benign drug. Addiction to marijuana can and does occur, disability and dysfunction do result, families can be destroyed by cannabis addiction. The risks of legalizing smoked marijuana are great and the medical evidence of its' benefits is lacking. Until such time that valid and accepted research demonstrates that the benefits of smoked marijuana outweigh the potentially tragic costs, the State Medical Society believes it should not be legalized. Umm, it believes that appropriate medical research should be considered. Umm, control of potentially addictive drugs can affect rates of use and rates of addiction in the population, ahh that control of supplies in isolation is not the best public health strategy to reduce use rates and addiction rates. Many things need to be done to increase the availability of and the access to funding for treatment for cannabis, alcohol, tobacco and other drug addictions. The most important thing the legislature can do is to pass the parity legislation that would make addiction benefits at par with health insurance benefits for other conditions. Despite the relative merits of treatment over supply control, control of access to drug supplies still is an important intervention that is overseen by governments. Loosening controls will predictably result in increased rates of use;

increased rates of use are clearly correlated with increased rates of addiction in the population. The key is to have treatment available for those people who develop addiction. Removing legal barriers to the use of smoked marijuana would result in increased marijuana use in our society. It's clear to me that some, though not all advocates of medically approved smoked marijuana are looking for just that result - increases in use in our society. Removing legal barriers to the use of smoked marijuana will harm the state by increasing the prevalence of cases of marijuana addiction. Removing legal barriers to the use of smoked marijuana will not benefit the state or its citizens. There are assertions that it can, but there's no evidence that that's true. So I say why authorize, as approved medical treatment an approach that does not have proven efficacy?

In conclusion, speaking as an individual physician, I offer for you for your consideration, my professional opinion based on years of training and experience that the term medical marijuana is an oxymoron. It's a seductive oxymoron, but it's an oxymoron nonetheless`. THC has proven medicinal benefits. In the smoked form with all the toxic things that go along with smoking the product it's not so.

So my final comments are a shot of brandy at bedtime comes a lot closer to being grandma's good medicine than a hit of marijuana comes to being good medicine for any condition. Proponents of medical marijuana want to increase the public acceptance of marijuana by lending credibility to use such as by saying that it's medically effective, medically appropriate, medically justified. These proponents have no double blind studies as evidence for their assertions smoked marijuana is (unintelligible) medicine. One can only conclude that proponents of these measures have a political position they are trying to couch as a medical position. Ahh so my suggestion is your considering legislation is wait until the science catches up. There have been some difficulties getting pharmaceutical grade plant marijuana available for researchers, and there have been tragic situations where people attempting to do legitimate medical research on smoked marijuana for patients have been blocked in their efforts to get pharmaceutical grade marijuana to use in studies so you control the dose etc., plus the side effects. Ahh it looks like we're beyond that now and people are able to do research and I think we should await the results of those studies before we authorize smoked marijuana for any supposed therapeutic benefit.

Chairman Skindrud: Thank you sir, Umm, I guess that's ahh a question that came to my mind and you say that they are now in the process of doing studies.

Dr.Miller: Right:

I'm just going to ask you a...I don't want to argue that...I...I told everyone when they came I don't want to argue the bill or argue the point but I want to ask you a question we have morphine, we have cocaine...

Dr.Miller: Right:

Rep. Skindrud: And we use those drugs and people use those drugs today, and I'm sure if they were not legal drugs today prescribed for somebody that has a condition that we would try to legalize cocaine and morphine.

Dr.Miller: Right.

Rep. Skindrud: Would you present a paper that was probably identical to this?

Dr.Miller: No. There's evidence on morphine and cocaine. And, and and morphine is not smoked as opium. Now smoking opium...I don't think smoking opium is in the pharmacopoeia, but taking the active opiates out of opium and then putting them in some sort of form...somebody want to update this? It clicked off. (referring to reporter's microcassette recorder) but ahh there's a difference. So ah the question here isn't do we make THC legal for medicinal use? It already is. The question is do you make the marijuana plant and getting it into the bloodstream by smoking that, do you make that legal? Okay? It's a different issue. And again coca leaf is chewed and it's not a very effective way of getting cocaine into the bloodstream, ahh you refine the product and then you can use it by a variety of means and ahh so it's a different deal. And there's tons of evidence on the benefits of morphine and cocaine and there are studies on the benefits of THC. That's not what we're debating.

Chairman Skindrud: Representative Wood.

Rep. Wood: Thanks Mr. Chairman and my questions are designed to get information (unintelligible) the subject (unintelligible). The testimony by Miss Rickert indicated that she did not view either capsulated or liquid form of THC as a suitable alternative because one could suggest that the entire dose is there whereas smoking she can approach it from the standpoint that once the symptoms are relieved she can stop smoking. Now what is your response as a physician to that?

Dr.Miller: I really don't understand the pharmacology that would be behind such an assertion. You put the drug into the bloodstream, If you put it in through the oral route it passes through the liver, it's metabolized there as a first pass as part of its metabolic pathway. Excuse me. Absorption is slower through the G.I. tract, but once it gets into your bloodstream, then its there until its either excreted or broken down by metabolism. You can get into the bloodstream through the oral route or through an injection route or through a nasal route or through a smoked route, but once its in the bloodstream, nothing.... the route of administration does not affect the route ahh the speed of disposition. Her contention, her contention...yeah okay...

Rep. Wood: My question, I think her testimony is she could adjust the amount that was in the blood better through smoking than through taking capsules or liquid doses.

Dr.Miller: There really is actually sir; some fairly good evidence about that and the fact is that it's not accurate. You can clearly measure the THC content in the pill better, you know how many milligrams or you know the potency of it. Ummm, you know about the absorption rates, and that can be, that can be measured in drug studies. The route, now again, if you had someone testify I don't they're getting it from a place that is measuring the percentage of THC in the leaf, okay? Even places like the San Francisco marijuana co-op will tell you something about the relative strength but I don't really think they are precise about the milligram per milligram in the, in the, leaf, okay? So she has a sense of what's strong marijuana and what's weaker marijuana, and how much you need to inhale and how deep of an inhalation, how long to hold it before exhaling. Those are methods for her to adjust the dosage but they are not anywhere near as precise as measuring the dose in a pill. And and ahh some people are actually suggesting that that marijuana inhalers be developed so that a measured amount of drug put in a appliance can be inhaled through you know through the lungs. That would give a measured amount but would not give the heat, the smoke, the carcinogens, the carbon monoxide, etc. It's the combustion of the leaf that provides a lot of the toxicity. And and, no, this idea that you can titrate the dose better with a smoked vegetable than with, than with ahhh a pharmaceutical product I would disagree with.

Chairman Skindrud: Representative Lehman.

Rep. Lehman: Yes, thank you Mr. Chair. Somewhere along those same lines is in terms of ahh her damages to the stomach lining and inability to be able to ahhh digest certain pills form drugs. Is there anything done like for diabetes are able have ahh ahh an attachment that does a drop, a controlled drop in liquid form or not?

Dr.Miller: Ahh No, I'm not aware of any intravenous delivery systems, I'm not aware of any sublingual systems, under the tongue. I'm aware of the oral product. I'm aware of the fact that people smoke the leaf. And I'm aware that some companies are working on developing an inhalation delivery system ahhh ahh an inhalation delivery system that would be like the nicotine inhaler that the drug, the tobacco companies tried to develop.

Rep. Skindrud: Representative Young.

Rep. Young: Thank you Mr. Chairman. Dr. Miller, at the end of your testimony you talked about ahh we should wait (unintelligible) for legislation on this until we get the results back on the research on ahhhh...

Dr.Miller: smoked marijuana...

Rep. Young: smoked marijuana. How far are we from, getting some some information from that research angle?

Dr.Miller: I would tend to think, I'm not personally familiar with the research, but I would tend to think it's certainly more a matter of years than months, so in order to, you know, run the studies, look at the outcomes, analyze the results etc., I don't think its going to be in the next 12 months, but I'm really not an expert to testify on the status of the research and you know the...

Rep. Young: Okay, the study comes back I don't want to say positive or negative but if it finds we should legalize it, would you support it? Support legislation?

Dr.Miller: With regard to medicinal use, right. I would. But the American Medical Association wrote a report in '97. They're going to present an update of that report ahh ahh in June. And so an updated AMA report on medical marijuana is coming out just this summer. And even that report looks at the state of the research and in the last four years there's not been enough stuff come out to ahh to warrant an opinion of the American Medical Association the approval for the medicinal use of smoked marijuana.

Chairman Skindrud: Representative Wood.

Rep. Wood: Thank you Mr. Chairman. I believe ahh I'm trying to decide how to formulate this question, but as a physician, ahh, do you believe there's any psychological advantage to placebos?

Dr.Miller: Absolutely.

Rep. Wood: So that's in particular cases a smoked marijuana may have a psychological effect that may have some sort of positive effect on the body's functions?

Dr.Miller: Without question.

Rep. Wood: Okay thank you.

Dr.Miller: I would say that with regard to ahh to marijuana...both the use of drugs for medical therapeutic reasons and the use of substances for intoxication and euphoria are accompanied by ahhm ahh effects of the ahh mental state of the patients who use it, their expectations, ahh if people expect to get benefit or expect to get high, they're much more likely to get high or get benefit than if they didn't expect it. And so if you were wondering whether some of the anecdotal reports of patients who smoke marijuana when they have HIV disease or ah wasting from cancer or multiple sclerosis, spasticity problems etc. If you were wondering whether some of those self-reports are based on the expectation of the patient and their wanting to get better, I think that is true, and could they actually get better based on the placebo effects? Without question, and that shouldn't be scorned.

Chairman Skindrud: Representative Petrowski.

Rep. Petrowski: Thank you Mr. Chairman. Dr. Miller, Marinol, am I saying it right?

Dr.Miller: Marinol, I think is what they (unintelligible).

Rep. Petrowski: Is that basically a form of marijuana? It's the narcotic THC, is that what we're talking about?

Dr.Miller: Yes, yes, it's a measured amount of THC.

Rep. Petrowski: Have there been studies done on this?

Dr.Miller: Yes.

Rep. Petrowski: Are the studies to do with its ahhh, its side effects as a (unintelligible) medication? Is that why this drug was developed?

Dr.Miller: Ah Why was this drug developed? I would like to think that the reason it was developed was because the drug company thought they could make a profit. And the reason they thought that, was that they thought there was a market of the people who would want THC based on the anecdotal reports of marijuana smokers that maybe it was doing something. So ahh uhh I, I am not aware of the history of Marinol with regards to whether it just came up as an idea or results of studies with rodents or the like what have you. I tend to think the hypothesis actually may have actually have come from the fact is marijuana is so widely used and its known so much to be an appetite enhancer,

of course its called the munchies, okay? The fact that Mar... it's...that marijuana enhances appetite sends out a thought what if we could take THC and use it as an appetite enhancer in people who are underweight and and need to ahh eat more. Ahh and clinical trials were done and it's proved effective.

Rep. Petrowski: So people have prescribed Marinol for a number of things?

Dr.Miller: Correct.

Rep. Petrowski: When somebody is going to prescribe this, you know, there are a number of drugs they could also prescribe...

Dr.Miller: Correct.

Rep. Petrowski: Are doctors prescribing (unintelligible) Marinol?

Dr.Miller: Yes, ah some do choose Marinol. Ahhm I ahh I ahh had some stuff here on specific studies that have shown different effects and there's no doubt there are some proven benefits from Marinol.

Rep. Petrowski: Is Marinol a really expensive drug?

Dr.Miller: Ah I do not know.

Chairman Skindrudi: Ah Doctor, umm there is one paragraphs in here that disturbs me a little bit in your testimony, and when you're I'll be honest with you, and that's Dr.Miller: Ah the bottom paragraph on the very first page.

Dr.Miller: Alright.

Chairman Skindrudi: Marijuana is not a benign drug. Addiction to marijuana can and does occur. Dysfunction and disability do result. And I think everybody in this room absolutely agrees with that. But that same thing can happen if you are on cocaine or on morphine. Why do we say this about this particular drug if it can help somebody and because that same thing can happen with legalized drugs for pain and suffering that we have now?

Dr.Miller: I believe you answered your own question. Why should we say if it helps somebody? That's the whole point. We have to have evidence that marijuana in the smoked form is more effective than placebo or more effective than other agents. Again, (unintelligible) today. Do you believe that medical marijuana should be approved for medical purposes to benefit patients? The presumption if you take the argument back is, it works, okay? With morphine, with cocaine, they work, okay? Nobody wants to say we want to keep away from people for political reasons or otherwise something that's helpful. That would be not good sense, not good policy. But there's so many presumptions of evidence that serve as the beginning of the argument, and I believe that most people forget about that that they, they basically said let's just accept that premise that it's beneficial and go from there.

Chairman Skindrud: Again, what do we do with people like Miss Rickert here who has said that she has used it and it has helped her, I mean whether it be placebo effect or whether it be true, if it's if it's working for some people, isn't that in a sense, somewhat of a study?

Dr.Miller: Well, ahh there are provisions in ahh umm in drug control regulations that ahh talk about compassionate use (unintelligible), and ahh there are a number of states that actually have authorized compassionate use protocols, so that individuals ahhh can have their doctor submit an application for a compassionate use protocol, and ahh that is the direction that one should consider and and what I don't know is the status of the FDA or the DEA as to these protocols of smoked marijuana. I believe, I believe that they do exist in some areas, but I cannot testify to ahh (unintelligible) so if you want to do more research on that, that is the term that's applied, compassionate use protocols.

Chairman Skindrud: Representative Wood...

Rep. Wood: This is not to (untelligible) response, but it appears that ahh Miss Rickert has all of those approvals and

yet is not able to get officially, the marijuana for smoking, so I'm not sure what these compassionate use protocols (unintelligible)...

Dr.Miller: Ahhhm, I can't speak to that

Chairman Skindrud: Doctor, thank you very much for you know putting yourself in the hot seat up here,

Dr.Miller: You bet.

Chairman Skindrud: ...and thank you very much for taking time out of your schedule today

Dr.Miller: I'm very happy to be invited. Thank you so much


FORWARD

The Fourth National Clinical Conference on Cannabis Therapeutics

The Mind-Body Connection

April 6–8, 2006

Santa Barbara City College • Santa Barbara, California

The purpose of this conference series is to educate health care professionals and the U.S. public about therapeutic cannabis. In calendar year 2000, Patients Out of Time began a long-term series on biennial conferences and this is the fourth in the series. The need for this education is universal to all U.S. states. There has been no formal education concerning therapeutic cannabis applications since the late 1930s. To fill this void, Patients Out of Time has identified the current worldwide cannabis research being conducted and has invited the scientists and physicians involved to present their findings at a public, accredited forum of peers. Leading health care organizations in the U.S., like the American Public Health Association and the American Nurses Association, have called for more research on medicinal cannabis and the education of its members based on evidence-based practice regarding therapeutic cannabis. Patients Out of Time is proud and honored to be the provider of such education in the U.S.

Educational Objectives

- Develop a working knowledge on how the new research findings on the endogenous cannabinoids and cannabinoid receptors sites have helped in the understanding of the role of cannabis/cannabinoids in symptom management.
- Be able to describe at least five therapeutic applications for cannabis.
- Identify the potential health risks related to the use of whole cannabis.
- Identify the potential health benefits of whole cannabis.
- Discuss the current research on cannabis/cannabinoid product developments that offer alternatives to smoking cannabis.
- Describe how federal, state and local laws affect clinical practice as they relate to the therapeutic use of cannabis.

Sponsors

Patients Out of Time

Agenda

Thursday, April 6

7:00 pm Registered Attendees and Faculty Reception at Val Verde, Santa Barbara, Exhibits, Music.

Friday, April 7

7:30 Registration • Continental Breakfast

8:00 Opening Remarks • *Donald Abrams MD, David Bearman MD, Harriet Miller*

8:30 Staying Safe: The Challenge (What You Don't Know Will Hurt You) • *Mark Miller*

9:00 Cannabinoids and the Physics of Life *Robert Melamede, PhD*

9:40 Cannabis: Synthetic vs. Natural *Daniele Piomelli, PhD, PharmD*

10:00 Efficacy of Smoked Cannabis on Human Experimental Pain • *Mark Wallace, MD*

10:20 Break

10:40 Patients Experience Treating MS with Cannabis *Barbara Douglass and Montel Williams*

11:00 UK Experience With New Cannabis Medicines *Stuart Ratcliffe, MD*

11:30 The Current Status of Cannabinoid Research in Israel *Natalya Kogan, PhD*

12:00 Lunch Buffet: DEA/NIDA and the Obstruction of Privately Funded Research • *Rick Doblin, PhD*

1:30 The Therapeutic Use of a Cannabis Project in Catalonia Spain: Information, Prescription and Research *Marta Duran Delmas, MD*

2:00 Canadian Pain and Cannabis *Mark Ware, MD, MRCP, MSc*

2:30 Pharmacy Grade Cannabis in The Netherlands *Marco van de Velde, PharmD*

2:50 Break

3:10 Federal Patients, Are They Healthy? *Barbara Douglass, Irvin Rosenfeld, George McMahon, Elvy Musikka, Mary Lynn Mathre, RN, MSN, CARN*

3:50 Cannabis Spouses Speak • *Deborah Rosenfeld • Nancy Cavanaugh, RN • Alice O'Leary, LPN • Joan Dangerfield*

4:30 Adjourn

Friday, April 7

6:30 **Patients Out of Time Benefit Dinner**
Robert Randall Tribute • Auction • Live Band • Comedy

Saturday, April 8

7:30 Registration • Continental Breakfast

8:00 Opening Remarks: *Marty Blum, JD • Allan Byrne CA Nurses Association RN*

8:30 Cannabis in Pain and Palliative Care *Donald Abrams, MD*

9:00 Cannabis Use and Pregnancy *Melanie Dreher, RN, PhD, FAAN*

9:20 Therapeutic Cannabis Use During Pregnancy and Its Efficacy Treating "Morning Sickness" • *Philippe Lucas*

9:40 AIDS and Cannabis • *Steven Hosea, MD*

10:00 Break

10:20 Cannabis and Mental Health • *Mitch Earleywine, PhD*

10:40 Clinical Implications of the Endocannabinoid System: PTSD, ADD and Beyond • *David Bearman, MD*

11:00 PTSD Panel *Erin Hildebrandt • Allan Byrne • Christopher Largen*

11:40 Oregon Survey of Cannabis Applications *Edward Glick, RN*

12:00 Lunch Buffet: Patient Empowerment *William Britt • Russell Peterson • Rita Solinas PhD*

1:30 California Doctors, Medical Cannabis and the Medical Board: Safe and Appropriate Recommendations for a Safe and Effective Medicine • *Frank Lucido, MD Arnold Leff, MD • David Bearman, MD*

2:15 Break

2:30 Medical Cannabis and the Public Policy Process *Jon Gettman, PhD*

3:00 Q&A Session, All Presenters *Mary Lynn Mathre, RN, MSN, CARN*

4:30 Adjourn

Disclosures and General Information

The University of California San Francisco School of Medicine, Office of Continuing Medical Education is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education to physicians.

The University of California, San Francisco School of Medicine designates this educational activity for a maximum of 15.75 AMA PRA category 1 credits (TM). Physicians should only claim credit commensurate with the extent of their participation in the activity. The approved credits include 6.5 credits toward meeting the requirement under AB 487. Pain Management and End-of-Life Care. Fees for CME credits will be $25.00 per person and collected on site.

Disclosure
The educational content of the conference and the selection of the faculty are the responsibility of the course planning committee. All faculty and invited speakers participating in a UCSF sponsored CME activity have disclosed any relevant financial relationships with commercial support entities. All potential conflicts of interest have been resolved in accordance with the ACCME's Updated Standards for Commercial Support.

Advance conference registration is advised since seating shall be limited. Full conference registration fees include all

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Registration Form

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Conference Fees

Physicians	$355	$_____
Nurses, Health Care Professionals, other professionals	$255	$_____
Students, patients, public at large	$155	$_____
Late registration fee *(After March 1, 2006)*	$50	$_____
Patients Out of Time Benefit Dinner, Friday evening	$80	$_____
____Additional Dinner Guest(s) x	$80	$_____
Exhibitor Registration		
Commercial	$300–800	$_____
Non-profit	$0–300	$_____
TOTAL ENCLOSED:		$_____

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7394 Calle Real, Suite C Goleta, CA 93117
Fax (805) 961-9966 • Phone (805) 961-9988

Registration form and payment may be made online at www.medicalcannabis.com.

A $50 late fee will be added to the above categories after March 1, 2006. Refunds, less a $25 handling fee, will not be made after March 6, 2006.

program materials, an opening reception, two continental breakfasts, two lunches and all breaks.

Parking is free, handicapped parking provided.

Lodging

Attendees are responsible for making their own lodging arrangements. Blocks of rooms have been reserved at the Best Western Beachside Inn, (805) 965-6556, www.beachsideinn.com and Mason Beach Inn, (800) 446-0444, www.masonbeachinn.com. Participants are encouraged to make early reservations as block rates are limited and expire on February 5, 2006. Santa Barbara is a tourist destination and is popular to visit during April and May. A complete list of hotels and motels in the Santa Barbara area can be found at www.expedia.com or the Santa Barbara "yellow pages" online.

Travel

Santa Barbara has a modern air facility and is easily reached via connections at San Francisco or Los Angeles. It is a pleasant two-hour drive from the LA airport to Santa Barbara.

The Faculty

Donald Abrams, MD. Professor of Clinical Medicine and Head Hematology-Oncology Section, University of California, San Francisco, San Francisco General Hospital. *

Michelle Aldrich. Cannabis Historian, San Francisco, CA. *

David Bearman, MD. Practicing Physician, Santa Barbara, CA. *

Marty Blum, JD. Mayor, Santa Barbara, CA.

William Britt. Patient and Founder, Association of Patient Advocates, Long Beach, CA. California Nurses Association Representative.

Allan Byrne. Co-founder, Patients Out of Time, Howardsville, VA. *

Nancy Cavanaugh, RN. Widow of Cannabis Patient, West Hills, CA.

Joan Dangerfield. Widow of Cannabis Patient, Beverly Hills, CA.

Marta Duran Delmas, MD. Researcher, Fundacio Institut Catala de Farmocoligia, Barcelona, Spain.

Rick Doblin, PhD. Founder, Multidisciplinary Association of Psychedelic Studies, Sarasota, FL.

Barbara Douglass. IND Patient, MS, Lakeside, IA.

Melanie Dreher, RN, PhD. Dean College of Nursing, University of Iowa, Iowa City, IA.

Mitch Earleywine, PhD. Associate Professor, University of Albany, NY. *

Jon Gettman, PhD. Senior Fellow, George Mason University, Fairfax, VA.

Ed Glick, RN. Practicing Nurse, Monmouth, OR.

Erin Hildebrandt. Patient and Executive Director, Parents Ending Prohibition, Lafayette, OR.

Steve Hosea, MD. Infectious Disease Specialist, Hospitalist, Cottage Hospital, Santa Barbara, CA.

Natalya Kogan, PhD. Cannabinoid Researcher, The Hebrew University, Jerusalem, Israel.

Christopher Largen. Patient, Co-author of *Prescription Pot* and Author of *Junk*, Denton, TX.

Arnold Leff, MD. Clinical Faculty Stanford University, HIV Specialist PACE Clinic, San Jose, CA.

Philippe Lucas. Founder and Director Vancouver Island Compassion Society and Legal Canadian Cannabis Patient.

Frank Lucido, MD. Family Practice Physician, Berkeley, CA. Founder of MedicIBoardWatch.com and AIMLegal.org.

M.L. Mathre, RN, MSN, CARN. Executive Director, Pantops Clinic, Co-founder, Patients Out of Time, Howardsville, VA.*

George McMahon. IND Patient, Nail Patella Syndrome; Co-author of *Prescription Pot*, Livermore, IA.

B.J. Miller, MD. Patient.

Harriet Miller. Former Mayor Santa Barbara, Former Executive Director of AARP, Santa Barbara, CA.

Mark A. Miller. Drug Information Consultant, Comprehensive Drug Education Consultants, Oregon City, OR.

Robert Melamede, PhD. Associate Professor and Biology Chairman (ret.), Biology Department, University of Colorado, Colorado Springs, CO. Americans for Safe Access, Medical Advisory Board.

Elvy Musikka. IND Patient, Glaucoma, Eugene, OR.

Alice O'Leary, LPN. Co-founder of Alliance for Cannabis Therapeutics, Sarasota, FL.

Russell Peterson. Patient, San Luis Obispo, CA.

Daniele Piomelli, PhD. Louise Turner Arnold Chair in the Neurosciences; Professor, Departments of Pharmacology and Biological Chemistry; Director, Center for Drug Discovery, University of California, Irvine, CA.

Stuart Ratcliffe, MD. Director, Barts Pain Research Group, Barts and the London NHS Trust, Barts, UK.

Irvin Rosenfeld. IND Patient, Multiple Congenital Cartilaginous Exostoses, Lauderhill, FL.

Deborah Rosenfeld. IND Patient's Wife, Lauderhill, FL.

Rita Solinas, PhD. Patient, Santa Barbara, CA.

M.J. van de Velde, PhD, MBA. Head, Office of Medical Cannabis, Ministry of Health Welfare and Sports, The Netherlands.

Mark S. Wallace, MD. Professor of Clinical Anesthesiology, Director, Center for Pain and Palliative Care, University of California, San Diego.

Mark Ware, MD, MRCP, MSc. Assistant Professor of Family Medicine and Anesthesia, McGill University, Montreal, Canada.

Montel Williams. Patient, New York, NY.

* Planning Committee

Patients Out of Time
1472 Fish Pond Road
Howardsville, VA 24562

The Fifth National Clinical Conference on Cannabis Therapeutics

Cannabis: Re-Entering Mainstream Medicine

April 3–5, 2008

Asilomar Conference Grounds • Pacific Grove, CA

SPONSORED BY

IN ASSOCIATION WITH

California Nurses Association

Department of Health, Human Services and Public Policy, California State University, Monterey Bay

Mothers Against Misuse and Abuse

Financial contributions from Mr. John Sinnott have made this conference and the future of the Patients Out of Time movement a reality. This event is made by volunteers.

The purpose of this conference series is to educate health care professionals and the US public about therapeutic cannabis. In calendar year 2000, Patients Out of Time began a long-term series on biennial conferences and this is the fifth in the series. The need for this education is universal to all US states. There has been no formal education concerning therapeutic cannabis applications since the late 1930s. To fill this void, Patients Out of Time has identified the current world-wide cannabis research being conducted and invited the scientists and health care clinicians involved to present their findings at a public, accredited, forum of peers. Leading health care organizations in the US, such as the American Public Health Association and the American Nurses Association, have called for more research on medicinal cannabis and the education of its members based on evidence-based practice regarding therapeutic cannabis. Patients Out of Time is proud and honored to be the provider of such education in the US.

Educational Objectives

At the conclusion of this educational activity, participants should be able to:

- Discuss the historical significance of therapeutic cannabis
- Distinguish the potential pulmonary risks related to smoking cannabis and how to minimize them
- Describe the international clinical studies on the variety of indications for cannabis/cannabinoids.
- Demonstrate how to appropriately and safely prescribe dosage of cannabis.
- Examine your professional responsibility related to the patient's demand for access to therapeutic cannabis.

Patients Out of Time

Agenda

Thursday, April 3

7:00 pm Reception at Asilomar, Exhibits, Music, Early Registration

Friday, April 4

7:00 am Breakfast • Registration

8:00 Welcoming Remarks, University of California San Francisco School of Medicine • *D. Abrams, MD*

8:20 Welcoming Remarks, California Nurses Association *D. Burger, RN*

8:30 Conceptual Quagmires & Epistemic Privilege • *J. White*

9:00 Cannabis From A Physician's Perspective • *S. Hosea, MD*

9:20 Does Regular Marijuana Smoking Lead to Pulmonary or Pulmonary-Related Disease (COPD, Lung Cancer, Pneumonia)?: Cohort and Population Based Studies *D. Tashkin, MD*

10:00 Break

10:15 Cannabis Yields and Dosage • *C. Conrad*

10:35 Cannabis: When Not Recommended *M.L Mathre, RN, MSN*

10:55 Patients' Experience with Cannabis *M. Krawitz, A Raich, Crow Turnbull*

11:25 Cannabis Use and Pregnancy • *M. Dreher, RN, PhD, FAAN*

11:45 Cannabis (Hemp) Seeds for Nutrition • *G. Leson, D. Env.*

12:00 Lunch

1:30 Clinical and Laboratory Medicinal Cannabis Results from Israel • *N. Kogan, PhD*

2:00 Effects of Smoked Cannabis on Chronic Neuropathic Pain • *M. Ware, MD, MSc, MRCP*

2:30 Cannabis and Brain Tumors • *M. Guzman, PhD*

3:00 Break

3:15 Cannabinoids and Movement Disorders *J. Sanchez-Ramos, PhD, MD*

3:45 Federal Patients and Cannabis *G. McMahon, I. Rosenfeld, E. Musikka*

4:30 Adjourn

6:30 **Patients Out of Time Benefit Dinner**
Mae Nutt Tribute • Auction • Live Band • Comedy

Saturday, April 5

7:30 am Breakfast • Registration

8:00 Opening Remarks • *A. Byrne*

8:20 Cannabis in Pain and Palliative Care • *D. Abrams, MD*

8:50 Cannabidiol and Mental Health • *R. Musty, PhD*

9:10 Nursing, Ethics and Cannabis *L. Badzek, RN, JD, LLM, MS*

9:30 Medical Cannabis: The Challenge of Educating Mainstream Medical Professionals • *D. Ostrow, MD, PhD*

10:00 Break

10:15 Cannabis Tea in The Netherlands • *A. Hazekamp, PhD*

10:35 Compassion Clubs of California • *A. Reiman, PhD*

11:00 Putting Compassion in Compassion Clubs *P. Lucas, J. Braun, P. Fourmy, V. Corral*

11:40 DEA/NIDA and the Obstruction of Privately Funded Research • *R. Doblin, PhD*

12:00 Lunch • "Press Moment"

1:30 Cannabis: Re-entering Mainstream Journalism *F. Gardner, P. Armentano, A. Harrison*

2:15 Break

2:30 Medical Cannabis and the Public Policy Process *J. Gettman, PhD*

3:00 Faculty Q&A Session • *M.L. Mathre, RN, MSN*

4:30 Adjourn

Accreditation, Disclosures and General Information

Accreditation Statement: This activity has been planned and implemented in accordance with the essential areas and policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint sponsorship of the University of California, San Francisco School of Medicine (UCSF) and Patients Out of Time. UCSF is accredited by the ACCME to provide continuing medical education for physicians.

Designation Statement: UCSF designates this educational activity for a maximum of 13 AMA PRA Category 1 Credits™.

Physicians should only claim credit commensurate with the extent of their participation in the activity. The approved credits include 3 credits towards meeting the requirement under California Assembly Bill 487, Pain Management and Care of the Terminally Ill. Fees for CME credits will be $25.00 per person and collected on site.

Continuing Education credits for Registered Nurses and other health care professionals will be issued for attendance.

Disclosures: The educational content of the conference and the selection of the faculty are the responsibility of the course planning committee. All faculty and invited speakers participating in a UCSF sponsored CME activity have disclosed any relevant financial relationships with commercial support entities. All potential

The Fifth National Clinical Conference on Cannabis Therapeutics
Cannabis: Re-Entering Mainstream Medicine (Course #MMJ08005)

April 3–5, 2008 • Asilomar Conference Grounds • Pacific Grove, CA

Registration Form

Name _____

Academic Degree/Title _____

Organization/Institution/Company _____

Address _____

City _____

State _____ Zip _____

Telephone _____

Fax _____

E-mail _____

DOB __ __ /__ __ /__ __ (month/day/year)

Conference Fees

Physicians	$375	$_____
Nurses, Health Care Professionals, other professionals	$275	$_____
Students, patients, public at large	$155	$_____
Late registration fee *(After March 5, 2008)*	$50	$_____
Patients Out of Time Benefit Dinner, Friday evening	$80	$_____
____Additional Dinner Guest(s) x	$80	$_____
Exhibitor Registration		
Commercial	$300–800	$_____
Non-profit	$0–300	$_____
TOTAL ENCLOSED:		$_____

Do you have any dietary restrictions or special needs because of a handicap or disability? If so, please describe:

_____

_____

☐ Vegetarian

Enclosed is my completed form and check made payable to **Patients Out of Time.**

☐ Charge to my credit card account:

☐ MasterCard ☐ Visa

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Signature _____

Return form and payment by mail or fax to
Patients Out of Time
1234 Mayo Creek Lane • Wingina, VA 24599
434-263-4484 • Fax: 434-263-6753

Registration form and payment also may be made online at www.medicalcannabis.com.

***Advance conference registration is advised since seating shall be limited.**

A $50 late fee will be added to the above categories after March 5, 2008. Refunds, less a $25 handling fee, will not be made after March 5, 2008.

Conference registration fee includes conference materials and refreshment breaks. Conference registration does not include lunch.

Meals: Meals are included for those lodging at Asilomar and registering under the group rate. For those conference attendees lodging off Asilomar grounds meal tickets can be purchased through Asilomar in advance (by March 28) or conference attendees are on their own for meals. Cost of meal tickets is $36 for 3 meals per day.

Handicapped parking and facilities are provided. Service dogs are welcome.

conflicts of interest have been resolved in accordance with the ACCME's Updated Standards for Commercial Support.

Lodging: Attendees are responsible for making their own lodging arrangements. For those planning to lodge at Asilomar the Group Rate Room Registration includes a "Standard" room for 3 nights under the "American Plan" (includes 3 meals per day). Room reservation for the Asilomar Conference Grounds must be made by using the written form located at www.medicalcannabis.com or call Asilomar at 866-654-2878 and ask for the Clinical Cannabis Therapeutics Conference #22262R registration form.

Pacific Grove is located on the Monterey peninsula near the towns of Carmel and Pebble Beach and the cities of Seaside and Salinas. A variety of lodging accommodations are available in this area.

Travel: Asilomar Conference Grounds, 800 Asilomar Blvd., Pacific Grove, CA, 93950, is within minutes of Monterey, Carmel and Pebble Beach. Located just 75 miles south of San Jose and 120 miles south of San Francisco, Asilomar is conveniently served by the Monterey Peninsula (15 minutes away), San Jose (75 minutes), San Francisco, and Oakland airports (2 hours). Monterey/Salinas Airbus provides transportation from the San Francisco and San Jose airports; information available at 831-373-7777 or www.montereyairbus.com.

The Faculty

Donald Abrams, MD.* Chief, Hematology-Oncology, San Francisco General Hospital. Professor of Clinical Medicine, University of California San Francisco.

Paul Armentano. Deputy Director, NORML/ NORML Foundation, Washington, DC.

Laurie Badzek, RN, MS, JD, LLM. Director, American Nurses Association Center for Ethics and Human Rights. Professor, West Virginia School of Nursing, Morgantown, WV.

Deborah Burger, RN. President, California Nurses Association, Sacramento, CA.

Joshua Braun. Executive Director, Hortipharm, Santa Barbara, CA. Board of Advisors, Patients Out of Time.

Al Byrne, Lcdr, USN, (ret).* Co-founder and Secretary-Treasurer, Patients Out of Time, Howardsville, VA.

Chris Conrad. Author, *Cannabis Yields and Dosage*, El Cerrito, CA.

Valerie Corral. Director, Wo/Men's Alliance for Medical Marijuana (WAMM), Santa Cruz, CA.

Rick Doblin, PhD. Founder and Director, Multidisciplinary Association for Psychedelic Studies (MAPS), Sarasota, FL.

Melanie Dreher, RN, PhD, FAAN. Dean, School of Nursing, Rush University, Chicago, IL. Founding Director, Patients Out of Time.

Patrick Fourmy. Executive Director, Compassion Center of Santa Barbara County, Santa Barbara, CA. Board of Advisors, Patients Out of Time.

Fred Gardner. Editor, *O'Shaunessy's*, Alameda, CA.

Jon Gettman, PhD. Senior Fellow, George Mason University, Fairfax, VA. Principal Petitioner of The Petition to Reschedule Cannabis.

Manuel Guzman, PhD. Researcher, Department of Biochemistry & Molecular Biology, Complutense University, Madrid, Spain.

Ann Harrison. Journalist.

Arno Hazekamp, PhD. Researcher, Gorlaeus Laboratories, The Netherlands.

Steve Hosea, MD. Infectious Disease Specialist, Hospitalist, Cottage Hospital, Santa Barbara, CA.

Natalya Kogan, PhD. Cannabinoid Researcher, The Hebrew University, Jerusalem, Israel.

Michael Krawitz. Veterans Administration Pain Patient, Disabled US Air Force, Ferrum, VA. Board of Advisors, Patients Out of Time.

Gero Leson, D. Env. Scientific Advisor, Canadian Hemp Trade Alliance, Berkeley, CA.

Philippe Lucas. Founder and Director Vancouver Island Compassion Society, Victoria, BC, Canada. Legal Canadian Cannabis Patient.

Mary Lynn Mathre, RN, MSN, CARN.* Co-founder and President, Patients Out of Time, Howardsville, VA.

George McMahon. Federal Investigative New Drug Program (IND) Cannabis Patient, Livermore, IA. Founding Director, Patients Out of Time.

Elvy Musikka. Federal IND Cannabis Patient, Eugene, OR. National Spokesperson, Patients Out of Time.

Richard (Rik) E. Musty, PhD. Professor Emeritus of Psychology, University of Vermont, Burlington, VT.

David Ostrow, MD, PhD. Founder and Director, The Medical Marijuana Policy Advocacy Project, Chicago, IL.

Angel Raich. California Cannabis Patient, Oakland, CA.

Amanda Reiman, PhD, MSW. Lecturer/Post Doctorate Fellow, University of California, Berkeley.

Irvin Rosenfeld. Federal IND Cannabis Patient, Lauderhill, FL. Director, Patients Out of Time.

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Donald P. Tashkin, MD. Medical Director of the Pulmonary Function Laboratory. Professor of Medicine, University of California, Los Angeles.

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Joe White. Professor and Chair, Department of Philosophy, Santa Barbara City College, Santa Barbara, CA.

* Planning Committee

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FORWARD
E PLURIBUS UNUM

5B 368

Presentation - Marijuana Use and Lung Cancer

Donald P. Tashkin, M.D. et al. presented the study "Marijuana Use and Lung Cancer: Results of a Case-Control Study" at the American Thoracic Society International Conference on 5/24/06. The study was funded by the National Institute on Drug Abuse (NIDA), and involved 1,200 people in Los Angeles who had lung, neck or head cancer and an additional 1,040 people without cancer matched by age, sex and neighborhood. The study's abstract reported:

"Marijuana smoke contains several known carcinogens, heavy habitual use can produce accelerated malignant change in lung explants [removed living tissue]....

We therefore assessed possible associations between MJ use -- including heavy long-term use -- and the risk of lung cancer in middle-aged adults living in Los Angeles County....

Personal interviews were completed in 611 lung cancer cases & 1040 controls. Data were collected on lifetime use of marijuana, tobacco, alcohol & other drugs, SES, diet, occupation & family history of cancer. Logistic regression was used to estimate the effect of MJ use on lung cancer risk, adjusting for age, gender, race/ethnicity, education & cumulative tobacco smoking & alcohol use.

***Conclusion:** We did not observe a positive association of MJ use -- even heavy long-term use -- with lung cancer, controlling for tobacco smoking and other potential confounders."*
5/24/06 Donald Tashkin ☆☆☆☆

Dr. Tashkin additionally noted in a 5/26/06 article in the *Washington Post* titled "Study Finds No Cancer-Marijuana Connection" by Marc Kaufman:

"[The new findings] were against our expectations.

We hypothesized that there would be a positive association between marijuana use and lung cancer, and that the association would be more positive with heavier use. What we found instead was no association at all, and even a suggestion of some protective effect."
5/26/06 Donald Tashkin ☆☆☆☆

The study was previously presented at the June 2005 meeting of the International Cannabinoid Research Society, and published on our site at that time as a response to the question "Does the regular smoking of marijuana cause lung cancer or in any way permanently injure the lungs?


FORWARD
E PLURIBUS UNUM

SB 368

Unofficial transcript of the testimony of Jacki Rickert

Unofficial Transcript of the Testimony of Jacki Rickert before Wisconsin State Assembly State Affairs Committee Informational Hearing on Medical Marijuana April 10, 2001

COMMITTEE ON: STATE AFFAIRS
Representatives Skindrud, chairperson,
Krawczyk, vice chairperson,
Bies, M. Lehman, Petrowski, Wood, Young, and Travis

Chairman Skindrud: ...with that, if we could call Jacki Rickert, please take your position at the ahh well it isn't a podium, at the mikes...And for presenters, if you would give us your name, and ahh where you live and ahh a little bit of a history, and why you are here. And welcome Miss Rickert.

Jacki Rickert: Thank you sir. Ahh Good morning ladies and gentlemen, Ummm I'm here to hopefully convince you there's a very big problem, that being, ahh what Chairman Skindrud said, made me feel very good about the opening, this is a health issue. It is not a drug issue. We're not talking about people going out on streets. We're not talking about buying and selling drugs to children. This is totally for people's quality of life.

I could go back and back, but ummm none of us really have that time, and I don't think we really want to get that bored. I'll tell you at one time I was very athletic; I was into horseback riding, gymnastics. I loved it. Obviously I'm not doing that any longer. Ahhm, by 1990, I was diagnosed with, I have something called Ehlers-Danlos Syndrome, which I believe there is a packet around here which kind of explains it a little easier. Then I was diagnosed with advanced reflex sympathetic dystrophy, which never knew why it wasn't caught earlier. But in essence I was told it was like little Pac-men were going in and eating the bone marrow in my legs at the time and there is no cure. So the best I can do is try to have quality of life. I got to the point in 1990 where I got down to 68 pounds and it was very frightening. My daughter who weighs probably 105, 110, was literally carrying me from room to room, because I could not walk. My body would just completely collapse. I couldn't eat. I asked my doctor about cannabis therapy. Ahhhmm, he just didn't just obviously say oh yes, sure I'll do it. He wanted 6 months, and looked into all the information he could possibly find. His father was a physician, his brother was a physician. So he had all these medical books to draw from. And with all the people he spoke to, the first thing he found out was that it was the safest thing possible with everything I am on.

I have been on morphine, I have been on Demerol, I have been on Dilaudid, and again I would like to say these are medications that I need to use. They are not abused. Ahhm, when we tried to get cannabis my physician went through every channel, in triplicate, and was completely approved. It was to the point where it was being filled. And then it was pulled. Someone was told to just stop. We didn't know why. The papers were saying that the program was being put on hold. We found out that, we kept being told that it had no bearing on my case. Didn't do much for the other people, but I was still told, and my physician was told that it had no bearing on this case because I was approved in December again, of '90.

Things just kept getting worse and worse. But my physician went through every single roadblock in triplicate. I mean he was asked to do things that a physician should never have to do, never in their life. Take pictures of a town, asked him how far exactly do you, is your office from the police station, you need to have a 750 pound double-locking safe to store cannabis. I was just; still I'm completely shocked.

To this day, I have never received one single pre-rolled marijuana joint that my physician fought so hard for, to get. As he said, it was the first time in his life, that someone didn't honor his prescription. That had to have hurt after 35 years. After he saw my weight was still going down, he started to get very frightened. And, I had been someone that was anorexic or bulimic, it would have put up a big danger zone, and something would have done. But because I had something totally different, that it was anorexia, but etiology unknown. I was not doing this to myself. It was happening to me. I tried Marinol. I took it with a very open mind. By the second day I woke up, I was in total fear. It felt like I couldn't breathe. My tongue actually swelled up in my throat. The sides of my throat were totally swollen. My doctor came over to the house, making house call, and had the most horrified look I have ever seen on a doctor. He was, he came right up and said he was terrified. He called the FDA and asked what the antidote to this was. And he had this long silence, and they said, umm, good question doctor.

That's it. They had no idea. Yes I have smoked marijuana. I have been able to maintain between 88 pounds and 92, 95. That seems like an awful lot after you weigh 68 pounds. I have never had any reaction like that whatsoever from smoking a God-given herb. I really don't know what to do anymore so I'm here to just try and tell the story the best I can. I'm just an everyday person, who just happened to get into something that I hope none of you or none of your children ever have to face, because it tears your family apart, it tears you apart. (clears throat) Excuse me.

I never looked at it like I was getting marijuana. To me it was just changing another medication, which I have had changed so many times. It didn't seem like anything any different. It was something that worked. Something that I could titrate. You have a few puffs, when it works, you put it out. That is not something you can do with a pill. That is not something you can do with a liquid, once its in your system its in your system. Ahhmm most of the things I have either allergic reactions to, or from my stomach lining. Ahhmm, the majority of my pain medications have to be injectable, and I just find it unbelievable, actually very scary, because it's easier and it's okay to take morphine or Demerol that people die from every day. It has all kinds of reactions. Luckily I haven't had any reactions like I did with Marinol, thank God.

But it's not something its fun to do. I can cut my medication in half if I'm able to use a medicinal strength of cannabis. I do it when I know that I have met since all this started, I have met some of the most incredible people. Some of them have already passed away. Just since we did a Journey in '97, to try and bring some awareness. Three of those people, and you spend 7 days with someone, especially if you, you get to know something about them, and you find out their fears.

One of the men was in Vietnam, and he told me all about it, as much as he could, it was the first time he actually talked about it, and he finally admitted this whole thing with cannabis, was the most terrifying war he'd ever seen. I didn't know what to do, cry, or hug him. So we did a little bit of each. So I guess, maybe what I'm trying to ask you people is, it is a very big problem and

it's affecting so many people.

I was almost arrested a year ago because I had a theft of morphine, and I reported it. Well, when the police were done taking the report, they came back a day and a half later, and were going to tell me what was going on with the person who had done this, and as they were leaving, they said and by the way, someone said they smoked marijuana with you last night, which no, was a complete fabrication. I don't sit down and smoke marijuana with people who steal medication. I don't sit down to do this to get high, or everything that's been talked about. I do this to get have an appetite, to be able to have a quality of life. When you look into a mirror and you're 68 pounds, and your own daughter says, My God mom, you look like you just walked out of a concentration camp...I never really, I mean I knew something was wrong, but I never realized how bad it looked until I looked in that mirror.

I realized I never looked in it because I was terrified of what I was going to see. Try and explain pain, that's probably one of the hardest things to explain. Excuse me.

I have no fatty tissue around my upper leg and my buttocks area. I'm sure as all of us as children or even adults, at one time or another, we've fallen on our tailbone. You know what that feels like. That's what it's like for me every single day from the minute I'm able to go to sleep. I can't say I go to bed. It's more like when I've reached the point of exhaustion, and I finally get to sleep. As soon as I wake up, in the middle of the night, the same thing is there. I can't tell if I'm sitting on a remote, or I'm just sitting on my tailbone.

I really don't know what more to say. I really don't want to take up your valuable time. I think I've tried to get as much across as possible. I said I don't have any degrees. I'm just a person who's living this. But, right now, I feel like I'm living, not like I'm simply existing, and that's a real good feeling. It feels real good, right here in the heart. But when somebody wants to take you to jail, that's pretty frightening, for something that should never have happened.

William Jefferson Clinton put his arm on my shoulder, looked my daughter and I straight in the eye, and asked exactly what the problem was; we explained what I've explained to you. Ahhh We gave him a packet of every one of the approvals. And he said, Why that's just terrible, and I'm gonna make it right. Well it never has been made right, so I really think right now it needs to be a state issue. And I am begging you ladies and gentlemen to be open-minded. Just think about it. Tomorrow it could be you, your children, your parents, you never know. You could get a disease, a syndrome, you could get hit by a car, anything. And when it happens you hope there is something out there that's going to help you.

Again, there is a very big problem, and I'm looking to you people for help, for the answer. Thank you very much for your time, and thank you for asking me.

(applause) .


FORWARD

SB 368

Sativex - Investigational Cannabis-Based Treatment for Pain and Multiple Sclerosis

Email Article Print Link To Us

Key Data

Drug (Brand / Generic)	Sativex
Company / Licensee	GW Phamaceuticals/Bayer/Otsuka
Therapy Class	Cannabis extract containing THC and CBD
Product Description	Whole plant medicinal cannabis extract
Current Indication	Pain and symptom relief in MS and neuropathic-related cancer pain
Market Sector	CNS - pain
Development Status	Approved Canada; pre-registration in the UK; Phase II/III US to be complete by the end of 2009

Full specifications

Developed by GW Pharmaceuticals, Sativex is a whole plant medicinal cannabis extract indicated for relief of symptoms of multiple sclerosis (MS) and for treatment of severe neuropathic-related cancer pain.

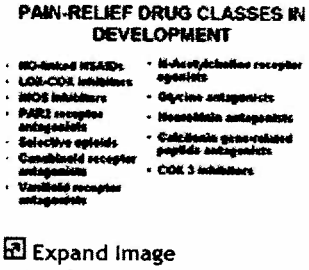
Expand Image
To meet demands for Sativex, GW Pharmaceuticals has increased production of cannabis at its fortified greenhouses to 60t/y. (Source: ABPI)

Bayer has secured exclusive rights to market Sativex in the UK with the option to extend this to other countries in Europe and countries such as Canada, where Sativex received regulatory approval in 2005 for treatment of neuropathic pain associated with MS. In December 2005, GW Pharmaceuticals entered into an agreement with Almirall Prodesfarma, under which Almirall can market Sativex throughout Europe, except for in the UK.

In August 2007, Canadian regulators approved Sativex as adjunctive analgesic treatment in adult patients with advanced cancer pain. Sativex and a related tetrahydrocannabinol (THC) medicine have been investigated in Phase III trials for the relief of cancer pain, an indication for which Bayer also has the option to market the drugs.

In February 2007, GW Pharmaceuticals also entered into a long-term research and development alliance on medicinal cannabinoids with Otsuka Pharmaceutical, which gave Otsuka exclusive rights to develop and market Sativex in the US. The companies will jointly oversee clinical development and regulatory activities in the US.

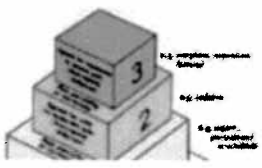
Having secured FDA approval to conduct trials of Sativex in patients with advanced cancer, whose pain is unrelieved by opioids, the companies are conducting the first US efficacy trial of Sativex in neuropathic-related cancer pain, having begun in 2007. The clinical spray trial of Sativex on a large number of volunteers (Phase III) is underway in the US and is scheduled for completion by the end of 2009.



Expand Image
Overview of new classes of pain relieving drugs in development.

On 16 July 2009, GW Pharmaceuticals received a licence for its new in-house Sativex manufacturing facility after passing a Good Manufacturing Practice inspection by the UK regulatory authority.

The company used to sub-contract the manufacturing of Sativex. The facility will be used to produce the drug for European commercial launch. The facility has a production capacity to treat 25,000 patients annually and is expected to increase capacity in line with demand.



Cannabis-based medicines

Expand Image
Neuropathic pain, which is frequently chronic, arises when neurones in the brain or peripheral nervous system become hyper-sensitised and generate abnormal or prolonged impulses. (Source: ABPI)

Estimates suggest that between 10% and 30% of MS patients in Europe smoke cannabis to ease the pain and disabling symptoms of the disease. This activity is illegal and patients run the risk of prosecution. In the UK, cannabis-based medicines were in fact outlawed in 1968 after legislation banned doctors from prescribing tincture of cannabis. This preparation contained high concentrations of the active THC psychotropic ingredient and was popular among recreational cannabis users.

"In Europe alone there are some 500,000 MS patients on top of the 4 million experiencing neuropathic pain."

The UK Government gave GW Pharmaceuticals special permission to investigate medicines derived from cannabis and has indicated that the law will be changed to allow doctors to prescribe them if approved by the MHRA. This would represent a major step forward for MS patients as for the first time they would have access to safe and effective cannabis-derived drugs on prescription.

Sativex is a cannabis extract containing tetranabinex (THC) and nabidiolex (cannabidiol - CBD) as its principal component. It does not contain the active substance found in recreational cannabis and so patients taking Sativex will not become intoxicated.

Sativex is administered by means of a spray into the mouth rather than smoked. A 100µl dose of Sativex spray contains 2.5mg CBD and 2.7mg THC. To meet demands for this innovative drug, GW Pharmaceuticals has increased production of cannabis at its fortified greenhouses to 60t/y.

Clinical trials on Sativex point to efficacy and safety

Phase III placebo-controlled trials in about 350 patients with MS have shown that administration of Sativex as a sublingual spray is a safe and effective treatment for symptom relief. Compared with placebo, significantly more patients in the Sativex treatment arm experienced reduced neuropathic pain, spasticity, and sleep disturbances.

Further Phase III data on 189 MS patients supports the earlier registration trial data. Again, treatment with Sativex produced a statistically significant improvement over placebo in spasticity, the primary endpoint, (p lt;0.05). Other secondary endpoints, such as the Ashworth scale, also favoured Sativex over placebo. Overall, these data have shown that Sativex produces treatment effects over and above those achieved with existing medications, which patients were allowed to continue while taking part in the Sativex trial.

Additional trials have been conducted to assess the effectiveness of Sativex in treating neuropathic pain and spinal cord injury. Results from three Phase III trials in patients with neuropathic pain showed that the addition of Sativex to standard therapy produced improvements over and above those obtained with existing medication. Patients in these trials had all failed to response to standard therapy and constituted a population with high clinical need.

GW Pharmaceuticals announced positive results of the Sativex Phase III MS study in patients with spasticity. The Phase III study was conducted on 573 patients in the UK. In May 2009, GW Pharmaceuticals filed a regulatory submission for spasticity treatment in the UK and Spain. The outcome is expected by the end of 2009 or early 2010. If approved in the UK and Spain, the drug's approval in all European countries can be expected by early 2010.

Treatment of severe neuropathic pain

Neuropathic pain, which is frequently chronic, arises when neurones in the brain or peripheral nervous system become hyper-sensitised and generate abnormal or prolonged impulses. There are many causes of neuropathic pain including diabetic neuropathy, post-herpetic neuralgia, fibromyalgia, multiple sclerosis and cancer. Around 40% of cancer patients suffer some degree of neuropathic pain.

Severe neuropathic pain has proved difficult to treat and evidence suggests that none of the available drugs, mainly opioids, is effective in more than 50% of patients. Thus, it represents an area of significant unmet clinical need.

The encouraging data from the Sativex Phase III registration trials in multiple sclerosis patients suggest cannabis-derived medicines may have a valuable place in this sector of the pain market.

Marketing commentary

In Europe alone there are some 500,000 MS patients on top of the 4 million experiencing neuropathic pain. This fact, together with a market poorly served by currently available drugs, presents an excellent opportunity for Sativex if the encouraging results seen in multiple sclerosis are reproduced in other patient groups.

"Other countries including the UK and the US are conducting clinical trials of Sativex."

Now that Sativex has been approved for clinical use in Canada, for treatment of MS neuropathic pain and cancer pain, other countries including the UK and the US are conducting clinical trials of Sativex.

Sativex is not licensed in the UK but is prescribed to patients on a special basis. It is exported to about 22 countries across the globe.

On 16 July 2009, GW Pharmaceuticals received a licence for its new in-house Sativex manufacturing facility after passing a Good Manufacturing Practice inspection by the UK regulatory authority.

The company used to sub-contract the manufacturing of Sativex. The facility will be used to produce the drug for European commercial launch. The facility has a production capacity to treat 25,000 patients annually and is expected to increase capacity in line with demand.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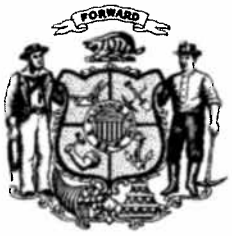
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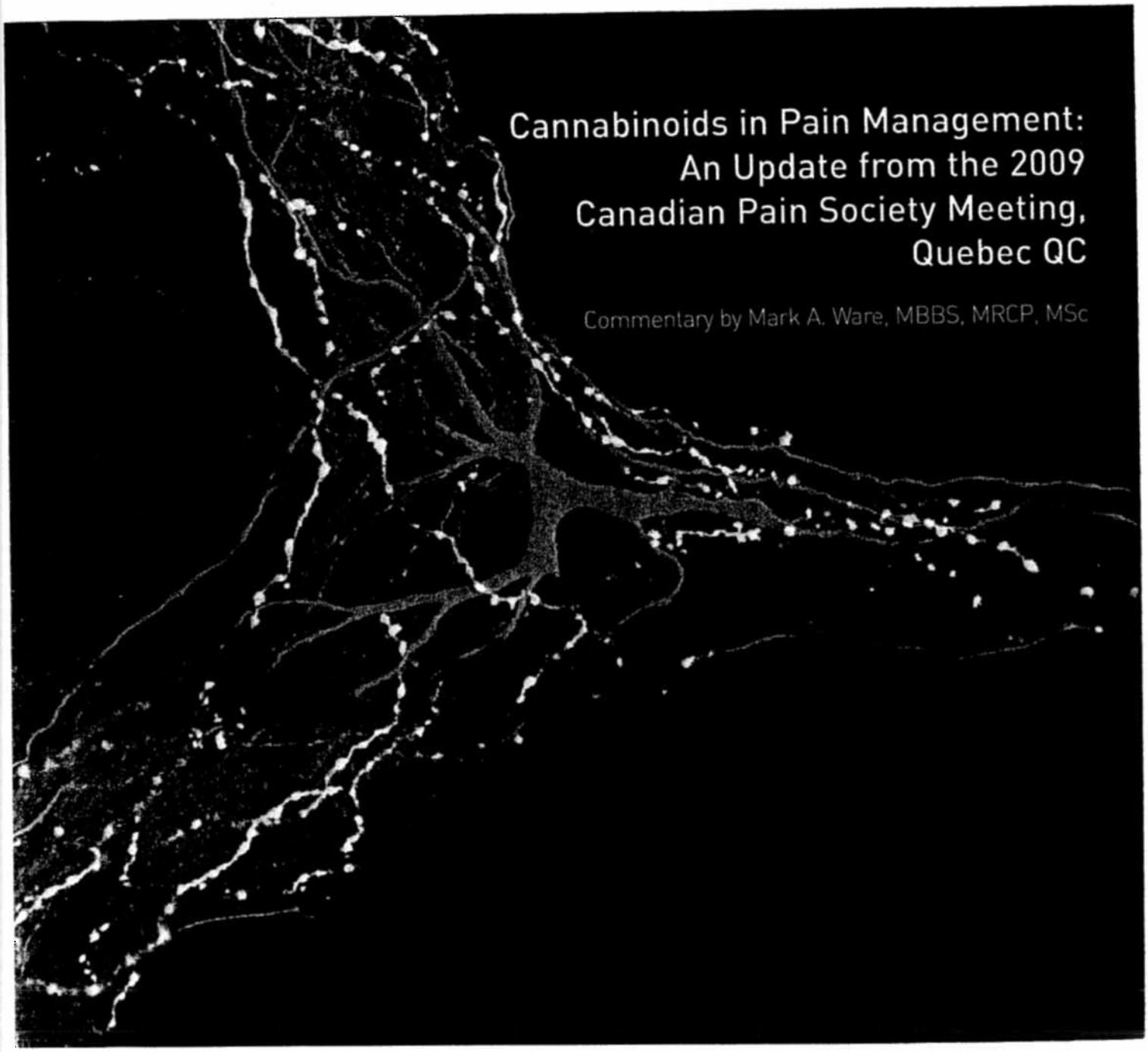

Cannabinoids in Pain Management: An Update from the 2009 Canadian Pain Society Meeting, Quebec QC

Commentary by Mark A. Ware, MBBS, MRCP, MSc

Viewpoints
in Pain Management

Cannabinoids in Pain Management: An Update from the 2009 Canadian Pain Society Meeting, Quebec QC

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The purpose of the Canadian Consortium for the Investigation of Cannabinoids (CCIC) is to advance our understanding of the role of cannabinoids in health and disease through research and education.

All correspondence should be directed to:

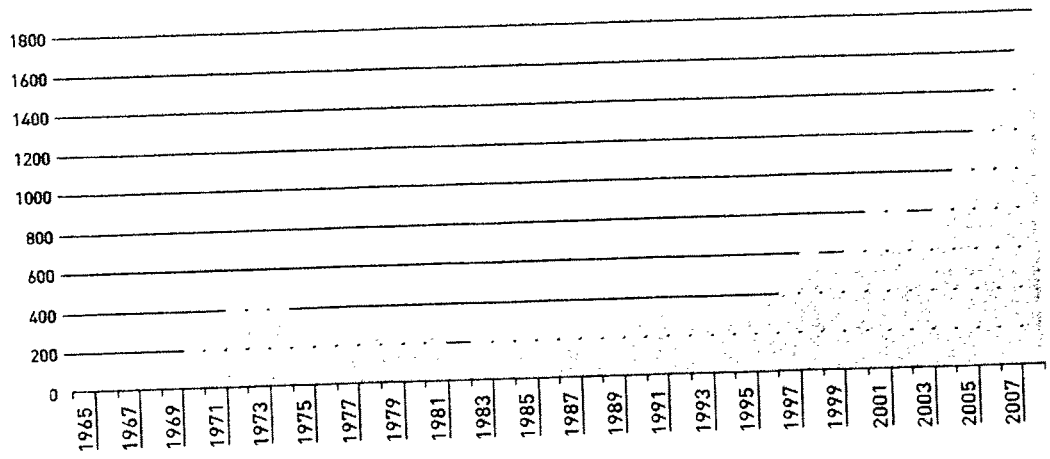
Viewpoints
in Pain Management

Cannabinoids in Pain Management: An Update from the 2009 Canadian Pain Society Meeting, Quebec QC

The therapeutic use of cannabis has a long history dating back thousands of years. In the last 10 years, there have been tremendous developments in the clinical application of cannabis and its derivatives (cannabinoids), including work on mechanisms of action, new drug development, examination of safety issues and clinical trials (*see Figure 1*). Much of this work is being done by Canadian scientists and clinicians in a wide range of therapeutic areas including gastrointestinal function, nausea and vomiting, pain relief and depression.

This overview of findings reported at the 2009 Annual Scientific Meeting of the Canadian Pain Society (CPS) provides an opportunity to examine some of our perceived notions about cannabis and cannabinoids, particularly when used in pain management. The Canadian Consortium for the Investigation of Cannabinoids, a federal non-profit organisation aimed at improving research and education on cannabinoids, has commissioned this report to disseminate these findings to Canadian physicians in a clear and evidence-based manner. The report is structured around several themes which emerged from the conference presentations.

The association between cannabis as a source of medicine and cannabis as a recreational drug gives rise to important safety concerns. It is important, however, to distinguish between these two approaches as not all risks of recreational use may apply to medical users and vice versa. Recreational cannabis users seek altered consciousness, euphoria, and dose themselves accordingly, and tend to use cannabis in a more social context. Medical cannabis users, on the other hand, tend to be more personal in their use, often very shy about it, and they seek symptom



relief rather than a 'high' in order to function normally. Medical users also tend to be on other medications, which gives rise to possible interactions, both direct (e.g., drug-drug interactions) and indirect (e.g., exacerbation of somnolence). Users of prescribed cannabinoids are often concerned about risks that they have heard of through well-publicised studies on recreational cannabis use, such as psychosis and driving effects, and it is important to be careful in how we extrapolate safety data from one population to another.

Some of the safety issues mentioned above were articulated in a needs assessment study in 2008 in which Canadian physicians identified their concerns about cannabinoids (*see Table 1*) (Ware and Maida 2009). Issues concerning safety, efficacy and some of the long term effects were addressed at CPS '09 in several presentations and these are summarised below, with additional commentary from the principal investigators.

This report does not pretend to give the whole story of medical uses of cannabinoids, but aims to serve as a reminder that there is emerging support from basic science and clinical trials perspectives on the safety and efficacy of cannabinoids. Additional resources and educational opportunities exist, and a dialogue can now begin which is informed by evidence and increasing clinical experience. We invite you to join us in the conversation and help shape the future of therapeutic cannabinoid use, in pain management particularly, but in medical practice in general.

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Director of Clinical Research, Pain Clinic
McGill University Health Centre (MUHC)
Assistant Professor, Departments of Family Medicine and Anesthesia
McGill University, Montreal QC

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Reference: Ware MA, Maida V. What are the needs of physicians considering medical cannabinoids? *Pain Res Manag*;14(2):165.

Cannabinoids have a wide range of potential medical uses in conditions as varied as glaucoma, osteoporosis, anorexia and Alzheimer's disease (Kogan and Mechoulam 2007). However, their potential as analgesics is the most well developed area and received significant attention at the CPS meeting.

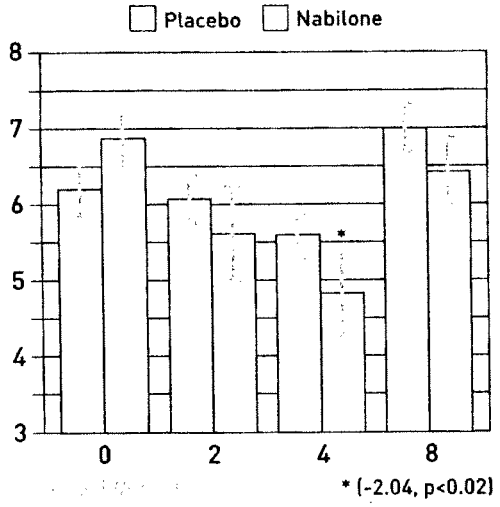
Fibromyalgia

Lena Galimova, assistant professor of physical medicine and rehabilitation at the University of Manitoba in Winnipeg, reported the results of the first randomized, controlled trial published on the use of a cannabinoid in fibromyalgia patients (Skrabek 2008).

"Everybody who deals with fibromyalgia knows that it's a challenge," she said. "Many people with fibromyalgia are very sensitive to different pharmacologic agents, which is why it was important to find another effective agent." Nabilone was investigated after a case series (Ko and Wiñe 2005) suggested that it was useful as an adjunct pain medication in certain fibromyalgia patients.

Forty fibromyalgia patients were randomized to receive an escalating dose of nabilone, beginning at 0.5 mg hs and increasing weekly up to 1 mg BID, or placebo. After four weeks, there was a four-week wash-out period. Patients were assessed at baseline and after two, four and eight weeks.

"We found a significant improvement in the visual analogue scale (VAS) for pain at week 4," Dr. Galimova said (*Figure 2*). "We also found a significant improvement in FIQ (Fibromyalgia Impact Questionnaire) scores, which came back to the previous level after the wash-out period, and an improvement at weeks 2 and 4 in anxiety subscores on the FIQ." (*See page 7 for safety results.*)



A six-month follow-up of those patients who continued to use nabilone after the trial did not produce statistically significant results due to its small sample size. However, Dr. Galimova reported anecdotally that most of those who discontinued nabilone experienced increases in pain and FIQ scores, while those who continued it were more likely to report reductions. There were no reports of the development of tolerance to the analgesic effects of nabilone.

Recent research by William Redmond, a doctoral candidate in physiology at Centre de recherche clinique du centre hospitalier de l'université de Sherbrooke, suggests that the analgesic effects of nabilone in fibromyalgia are at least partly due to its effects on "wind-up" (temporal summation of pain). "Normally when we give noxious stimulations repetitively, the effect of central sensitization will create an increase in

pain even though we are not increasing the stimulation," he explained. "With fibromyalgia, the windup pain scores are higher and last longer." (Staud et al. 2001) Underlying dysfunctions that may be responsible include a loss of diffuse noxious inhibitory control (DNIC), a descending, opioid-based pain control system that appears to function normally in patients with other kinds of chronic pain but not in fibromyalgia patients.

Redmond studied the effects of nabilone 1 mg on wind-up in healthy volunteers with functional DNIC. He discovered that while nabilone appeared to increase the analgesic effects of DNIC on wind-up, it did so significantly more effectively in women than in men. Given the sex differences in the prevalence of fibromyalgia, further studies on this effect may prove fruitful.

Cancer pain

Vincent Maida of the William Osler Health Centre in Toronto presented the results of a recent prospective, observational study in advanced cancer patients, which examined the effect of nabilone on pain scores, other Edmonton Symptom Assessment System (ESAS) parameters, and use of other medication, including opioids (Maida et al. 2008). A hundred and twelve patients, 47 of whom took nabilone, were followed for a mean of 23 days.

"Nabilone usage was associated with improvements in pain scores, nausea, anxiety and global distress and borderline improvement in appetite," Dr Maida reported. "It was also associated with lower utilization of opioids and reduced overall polypharmacy."

Chronic non-cancer pain (CNCP)

A small pilot study recently looked at nabilone's effects on sleep in CNCP patients. The poster, presented by Sharon Chung of Toronto Western Hospital, reported on 11 CNCP patients with insomnia who underwent a four-week, double-blinded, randomized, crossover comparison of nabilone and placebo. All patients had significant reductions in pain scores on the McGill Pain Questionnaire and a VAS for pain while taking nabilone; there were no serious adverse events or side effects requiring withdrawal of nabilone and no reports of daytime sleepiness. Five patients experienced consistent sleep improvements and chose to remain on nabilone. A year later, all five reported continued pain relief, good sleep and improved quality of life.

In a retrospective review of nabilone use in 46 CNCP hospital inpatients, 16 patients reported subjective overall improvement and reduced pain intensity with nabilone (0.5 mg hs to 2.0 mg BID). The poster, presented by Judy Boyd of the Chronic Pain Consult Service in Calgary, described a 30% overall reduction in pain intensity in addition to reports of reduced nausea, increased appetite, improved sleep, reduced opioid use and decreased anxiety.

Neuropathic pain

Small randomized controlled trials of medical cannabis in neuropathic pain have had positive results (Abrams et al. 2007; Wilsey et al. 2008) and synthetic cannabinoids are also being investigated in neuropathic pain patients. In a poster, Jennifer Bestard of the University of Calgary presented the results of a trial comparing nabilone with gabapentin, both as either monotherapy or adjunct therapy. After

three and six months of treatment, all treatment groups had experienced significant improvements in VAS pain and SF-36 scores, suggesting that nabilone's efficacy in neuropathic pain is comparable to that of gabapentin, a first-line agent. In addition, patients on nabilone monotherapy reported improved sleep scores.

A larger trial has been examining the efficacy and tolerability of Sativex (delta-9-THC/cannabidiol) in 339 patients with central neuropathic pain due to multiple sclerosis. After a 12-week randomized, double-blind, placebo-controlled, parallel-group trial in which patients self-titrated their medication to a maximum dosage, a subset of patients continued into a 12-week, open-label, follow-on study followed by a 4-week randomized withdrawal period. As reported on a poster presented by Dr. Stuart Ratcliffe, director of pain research at MAC UK Neuroscience in Blackpool, Lancashire, during the withdrawal period significantly more patients experienced treatment failure (defined as a ≥20% increase in pain on an 11-point numerical scale) in the group taking placebo than in the Sativex group, demonstrating that Sativex withdrawal leads to worsening outcomes.

References

Abrams DI, Jay CA, Shade SB, et al. Cannabis in painful HIV-associated sensory neuropathy: a randomized placebo-controlled trial. *Neurology* 2007;68(7):515-521.

Ko G, Wine W. Chronic pain and cannabinoids. *Practical Pain Manag* 2005;5(4).

Kogan NM, Mechoulam R. Cannabinoids in health and disease. *Dialogues Clin Neurosci* 2007;9(4):413-30.

Maida V, Ennis M, Irani S, et al. Adjunctive nabilone in cancer pain and symptom management: a prospective observational study using propensity scoring. *J Support Oncol* 2008;6(3):119-124.

Skrabek RQ, Galimova L, Ethans K, Perry D. Nabilone for the treatment of pain in fibromyalgia. *J Pain* 2008;9(2):164-173.

Staud R, Vierck CJ, Cannon RL, et al. Abnormal sensitization and temporal summation of second pain (wind-up) in patients with fibromyalgia syndrome. *Pain* 2001;91(1-2):165-175.

Wilsey B, Marcotte T, Tsodikov A, et al. A randomized, placebo-controlled, crossover trial of cannabis cigarettes in neuropathic pain. *J Pain* 2008;9(6):506-21.

Despite decades of use of medicinal cannabinoid compounds, the risks associated with currently available pharmaceutical cannabinoids are frequently assumed to be the same as those seen with the recreational use of herbal cannabis.

"If we go abroad – or even to the United States – we still see people who view cannabis as a dangerous substance," said Lena Galimova, assistant professor of physical medicine and rehabilitation at the University of Manitoba in Winnipeg. "The regular use of cannabis is known to cause harmful health effects, including dependency with its associated consequences, but all the reports focus on recreational cannabis."

Fortunately, recent studies have made a distinction, focussing on the safety of medical cannabis or pharmaceutical cannabinoids used for pain management under the care of a physician. As Mark Ware, director of research at the McGill University Health Centre Pain Clinic in Montreal noted, "It's very important when considering cannabinoids in clinical practice that we separate what we know about adverse events in recreational users from those

in medical users. We cannot assume that because patients are using cannabinoids they're susceptible to the same risks. It is also important to recognise that the recreational user is seeking a 'high', but the true medical user is seeking symptom relief and improved functionality. The side effects are always balanced against the beneficial effects, and this risk-benefit ratio must be addressed for each individual patient."

Effects of medical cannabis

Dr. Galimova reviewed a recent examination of the safety of medical cannabis (Wang et al. 2008), which examined the results of 31 studies, including 23 randomized controlled trials, ranging in duration from 8 hours to 12 months. The incidence of serious adverse events following medical cannabis use was not statistically different from the incidence in the control groups receiving placebo or standard care. The mortality rate also did not significantly differ between the two groups. Although the overall incidence of nonserious adverse events was higher in participants receiving cannabis therapy than in controls (10.37 vs. 6.87 events per person-year), the rate ratios varied widely among the trials reviewed. In total, nonserious adverse events represented 96.6% of all adverse events reported, Dr. Galimova noted.

Longer-term data were gathered in the COMPASS trial, which involved a year of follow-up (*see page 13*). Among the 431 pain patients participating, there was no difference in the rate of serious adverse events between those receiving medical cannabis and the control group, reported Tongtong Wang, a doctoral candidate in epidemiology, biostatistics and occupational health at McGill University. There were significantly more nonserious adverse events among the cannabis users than among the controls (4.16 vs. 2.85 events per person-year of use), although these events were more common among ex-users or non-users of marijuana or cannabis, compared with current users. The most commonly reported events in the cannabis group were headache, nasopharyngitis, nausea, somnolence and dizziness; most adverse events were graded as mild (54%) or moderate (45%) in severity.

The acute toxicity of cannabis is extremely low, Dr. Galimova noted, since unlike opioids, cannabis does not cause central respiratory depression. "Studies have shown that it's virtually impossible to die from the acute administration of THC alone," she said (Ashton 1999; Beaulieu 2005).

Effects of pharmaceutical cannabinoids

Few studies have been done on the safety of the pharmaceutical cannabinoids available in Canada (nabilone and dronabinol). Dr. Galimova's group was the first worldwide to publish a randomized controlled trial on a cannabinoid in fibromyalgia (Skrabek et al. 2008).

"Because a case series found that nabilone appears helpful as an adjunct pain medication for carefully pre-screened fibromyalgia patients, we decided to get more data," she said. Her group treated 40 fibromyalgia patients with an escalating dose of nabilone, beginning at 0.5 mg hs and increasing weekly to 1 mg BID. (*See page 5 for efficacy results.*)

"Our treatment group experienced more side effects per person at weeks 2 and 4," she reported, with rate ratios of 1.58 ($p<0.02$) and 1.54 ($p<0.05$) respectively. The most common

side effects among patients taking nabilone were drowsiness, dry mouth, vertigo and ataxia; no serious adverse effects and no drug interactions were observed.

Similar results were reported by Vincent Maida of the William Osler Health Centre in Toronto, who presented the results of a prospective observational study of nabilone in advanced cancer patients (Maida et al. 2008). Among the 125 patients observed, only eight discontinued nabilone therapy during the first 24 hours due to adverse events, all of which abated within 24 hours of discontinuation. The most common side effects reported were dizziness, confusion, drowsiness and dry mouth.

Side effects of recreational cannabis

Recreational cannabis most commonly causes CNS effects, including dizziness, somnolence, anxiety, euphoria, perceptual alterations, time distortion and impairment of motor skills, reaction time and short-term memory and attention. Cardiovascular effects may include postural hypotension, tachycardia, peripheral vasodilation (causing the characteristic reddened eyes) and an increased risk of non-fatal myocardial infarction in the first hour following cannabis smoking. Chronic heavy cannabis smoking is associated with chronic cough, increased sputum production, wheezing and reduced lung function.

Repeated use induces tolerance within days or weeks to the effects of cannabis on mood, memory, psychomotor performance, sleep, EEG, heart rate, blood pressure and body temperature; the degree of tolerance depends on the dose and frequency of administration.

(For reviews see: Hall and Solowij 1998; Ashton 1999; Kalant 2004; Ware and Tawfik 2005)

Appropriate patients for cannabinoid therapy

Gordon D. Ko, medical director of the Physiatry Pain Clinic at Sunnybrook Health Sciences Centre in Toronto, reviewed the "red flags" to look for during the assessment of chronic pain patients (*Table 2*). He noted that asking patients about their previous experiences with any form of cannabis was useful, since patients who experienced psychotic or paranoid reactions may have similar experiences with pharmaceutical cannabinoids.

- Unexplained weight loss
- Fever
- Severe night pain
- Neurological symptoms
- Loss of bowel/ bladder control
- Unstable psychiatric history (major depression, borderline personality disorder)
- Stressful disability, litigation claims
- Drug contraindications (specific for cannabis/cannabinoids):
  - previous adverse cannabis/ cannabinoid reactions
  - excessive use of benzodiazepines, barbiturates, alcohol

References

Ashton CH. Adverse effects of cannabis and cannabinoids. *Br J Anaesth* 1999;83(4):637-649.

Beaulieu P. Toxic effects of cannabis and cannabinoids: Animal data. *Pain Res Manag* 2005;10 Suppl A:23A-6A.

Hall W, Solowij N. Adverse effects of cannabis. *Lancet* 1998;352(9140):1611-1616.

Kalant H. Adverse effects of cannabis on health: an update of the literature since 1996. *Prog Neuropsychopharmacol Biol Psychiatry* 2004;28(5):849-863.

Maida V, Ennis M, Irani S, et al. Adjunctive nabilone in cancer pain and symptom management: a prospective observational study using propensity scoring. *J Support Oncol* 2008;6(3):119-124.

Skrabek RQ, Galimova L, Ethans K, Perry D. Nabilone for the treatment of pain in fibromyalgia. *J Pain* 2008;9(2):164-173.

Wang T, Collet JP, Shapiro S, Ware MA. Adverse effects of medical cannabinoids: a systematic review. *CMAJ* 2008;178(13):1669-1678.

Ware MA, Tawfik VL. Safety issues concerning the medical use of cannabis and cannabinoids. *Pain Res Manag* 2005;10 Suppl A: 31A-37A.

As our understanding of the development of addiction grows, it is clear that exposure to an addicting substance is not the only factor required for its occurrence. Individual psychosocial and genetic characteristics, as well as environmental factors, play a role in determining which individual will experience dysregulation of endogenous reward centres in response to which substances.

"Like opioids and other pharmaceutical agents, cannabis is known to have addictive potential in recreational users", said Lena Galimova, assistant professor of physical medicine and rehabilitation at the University of Manitoba in Winnipeg. Current DSM-IV criteria for cannabis dependence (see sidebar) may include withdrawal, although the manual notes that the clinical significance of possible cannabis withdrawal symptoms is uncertain. However, Dr. Galimova pointed out that the addictive potential of cannabis is less than that of alcohol or tobacco; the relative potential for dependence on cannabis, expressed as the risk of developing dependence among those who have ever used the substance, is about 9% – lower than that of alcohol (15%), cocaine (17%), heroin (23%) or tobacco (32%) (Gourlay 2005).

Pharmaceutical and recreational cannabis users also appear to be at different risk levels, a point which is consistent with other drug experiences since a number of studies have found low risks of addiction to potentially addictive pharmaceutical substances when they are used for pain management (Fishbain et al. 2008).

The DSM-IV-TR (2000) does not use the term "addiction" but defines substance dependence as "a maladaptive pattern of substance use leading to clinically significant impairment or distress," as manifested by at least three of the following occurring during a 12-month period:

- **Tolerance (either a need for markedly increased amounts of the substance to achieve intoxication or desired effect, or a markedly diminished effect with continued use of the same amount)**
- **Withdrawal, as manifested by either the characteristic withdrawal syndrome for the substance* or taking the same (or a closely related) substance to relieve or avoid withdrawal symptoms**
- **Frequently taking the substance in larger amounts or over a longer period than was intended**
- **A persistent desire or unsuccessful efforts to cut down or control substance use**
- **A great deal of time spent in activities necessary to obtain, use or recover from the effects of the substance**
- **Giving up or reducing important social, occupational, or recreational activities because of substance use**
- **Continuing the substance use despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by the substance**

In contrast, the Liaison Committee for Pain and Addiction, created by the American Academy of Pain Medicine, the American Pain Society and the American Society of Addiction Medicine, defines addiction without the use of the terms dependence, tolerance or withdrawal: "a primary, chronic, neurobiologic disease with genetic, psychosocial and environmental factors influencing its development and manifestations. It is characterized by behaviours that include one or more of the following: impaired control over drug use, compulsive use, continued use despite harm, and craving." (Savage et al. 2003)

* The DSM-IV-TR also notes, "Symptoms of possible cannabis withdrawal have been described in association with the use of very high doses, but their clinical significance is uncertain. For these reasons, the diagnosis of cannabis withdrawal is not included in this manual."

In the case of cannabinoids, recreational and medical products also differ in their degree of formulation complexity. "Smoked marijuana contains 400 chemical compounds, including 66 cannabinoids," noted Gordon D. Ko, medical director of the Physiatry Pain Clinic at Sunnybrook Health Sciences Centre in Toronto. Any of these compounds may affect the product's addictive as well as therapeutic potential. Medical marijuana from Health Canada is grown under highly standardized conditions to limit contamination and variability in THC levels, and synthetic cannabinoid products contain well characterized compounds in known quantities.

"During my career in Canada, I haven't seen a single patient who got addicted to nabilone," observed Dr. Galimova. This may be due to nabilone's relatively slow onset of action, few metabolites and lack of reinforcing effects, she said. At last year's CPS meeting, Emmanuelle St. Arnaud-Trempe presented results from a review of a wide range of sources including scientific literature, media, Internet searches and interviews with key stakeholders, suggesting that abuse of nabilone was very rare (St. Arnaud-Trempe and Ware 2008).

Since addiction is always at least a theoretical risk with cannabinoids, prospective users should be screened in the same way potential users of opioids and other agents with addictive potential. Universal precautions in pain medicine (Gourlay et al. 2005) include a complete assessment of patient and family histories of substance abuse, a consideration of patient-centred urine drug testing, a treatment agreement, regular reassessment and comprehensive documentation. Prospective studies addressing the addictive risks of specific cannabinoid agents would also help physicians making pain management decisions.

Despite concerns about the interactions between cannabinoids and other drugs, cannabinoid agents available in Canada are associated with fewer potential interactions than many other commonly used pharmaceutical products.

The Canadian product monograph for Sativex (delta-9-THC/cannabidiol) states that its metabolism by the cytochrome P450 enzyme system indicates a possible risk of drug-drug interactions, although clinical trials in which Sativex was taken concomitantly with other drugs metabolized by this system have found no clinically apparent drug-drug interactions at clinical doses. The product monograph for nabilone notes only that its depressant effects

References

American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders*, Fourth Edition, Text Revision. Washington (DC): American Psychiatric Association, 2000.

Fishbain DA, Cole B, Lewis J, Rosomoff HL, Rosomoff RS. What percentage of chronic nonmalignant pain patients exposed to chronic opioid analgesic therapy develop abuse/addiction and/or aberrant drug-related behaviors? A structured evidence-based review. *Pain Med* 2008;9:444-459.

Gourlay D. Addiction and pain medicine. *Pain Res Manage* 2005;10(Suppl A):38A-43A.

Gourlay DL, Heit HA, Almahrezi A. Universal precautions in pain medicine: a rational approach to the treatment of chronic pain. *Pain Med* 2005;6:107-112.

Savage SR, Joranson DE, Covington EC, et al. Definitions related to the medical use of opioids: evolution towards universal agreement. *J Pain Symptom Manage* 2003;26:655-667.

St. Arnaud-Trempe E, Ware MA. Retrospective evaluation of the abuse potential of nabilone (REASON). *J Pain Sympt Manage* 2008;13(2):148.

are additive with those of diazepam, sodium secobarbital, alcohol and codeine. Potential drug interactions with dronabinol (synthetic THC) are listed in Table 3.

Recently published clinical trials involving nabilone (Maida et al. 2008; Skrabek et al. 2008) have reported no negative drug-drug interactions, but have observed that nabilone use reduced the need for other analgesic agents, thus potentially reducing polypharmacy and drug interactions among other medications. In a prospective study of nabilone in advanced cancer patients, "the nabilone-treated group used less NSAIDs, less TCAs, less gabapentinoids, less dexamethasone, less metoclopramide and less ondansetron while still achieving improvements in symptom control," said Vincent Maida of the William Osler Health Centre in Toronto.

Gordon D. Ko, medical director of the Physiatry Pain Clinic at Sunnybrook Health Sciences Centre in Toronto, discussed the results of an Ottawa case series of post-traumatic stress disorder patients, which found that cannabinoids had synergy with opioids, acetaminophen, NSAIDs, bupivacaine and possibly gabapentinoids and probiotics. In fibromyalgia, he said, "we're definitely minimizing high doses of opioids by using cannabinoids with the opioids."

References

Maida V, Ennis M, Irani S, et al. Adjunctive nabilone in cancer pain and symptom management: a prospective observational study using propensity scoring. J Support Oncol 2008;6(3):119-124.

Skrabek RQ, Galimova L, Ethans K, Perry D. Nabilone for the treatment of pain in fibromyalgia. J Pain 2008;9(2):164-173.

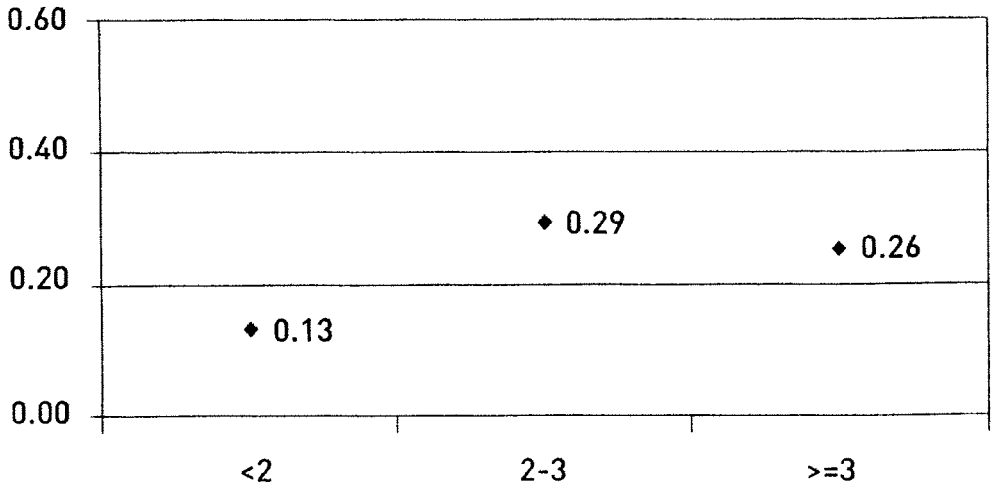
Amitriptyline, amoxapine, desipramine, other tricyclic antidepressants	Additive tachycardia, hypertension, drowsiness
Amphetamines, cocaine, other sympathomimetic agents	Additive hypertension, tachycardia, possible cardiotoxicity
Antipyrine, barbiturates	Decreased clearance of these agents, presumably via competitive inhibition of metabolism
Atropine, scopolamine, antihistamines, other anticholinergic agents	Additive or super-additive tachycardia, drowsiness
Disulfiram	A reversible hypomanic reaction was reported in a 28 year old man who smoked marijuana; confirmed by dechallenge and rechallenge
Fluoxetine	A 21 year old female with depression and bulimia receiving 20 mg/day fluoxetine for 4 weeks became hypomanic after smoking marijuana; symptoms resolved after 4 days
Theophylline	Increased theophylline metabolism reported with smoking of marijuana; effect similar to that following smoking tobacco

Until recently, there were no long-term data and almost no clinical trial data at all on the use of medical cannabis for the management of pain. Two small phase II trials have studied smoked cannabis in neuropathic pain (Abrams et al. 2007; Wilsey et al. 2008) and another is pending publication, but there has never been a long-term safety study of medical cannabis in chronic pain, said Dr. Mark Ware, director of research at the McGill University Health Centre Pain Clinic and assistant professor of anaesthesia and family medicine at McGill University in Montreal.

COMPASS (Cannabis for the Management of Pain: Assessment of Safety Study) has just filled that gap. The one-year, prospective cohort study was designed to collect standardized safety data on the medical use of herbal cannabis for chronic pain, as well as to gather information about dosage patterns, patient satisfaction and predisposing factors for adverse events. The cannabis treatment group included 215 adult Canadians with chronic non-cancer pain for at least six months in whom conventional treatments were medically inappropriate or inadequate. The control group included 216 adult Canadians with chronic non-cancer pain for at least six months who were not currently using cannabis.

Serious and non-serious adverse events

"The incidence of serious adverse events was 23 events per 100 person-years in the cannabis group, which is not different from the 27 events per 100 person-years in the control group," said Tongtong Wang, a doctoral candidate in epidemiology, biostatistics and occupational health at McGill University. "No dose response was observed (*Figure 3*) and none of the 40 serious adverse events in the cannabis group was considered to be certainly or very likely related to the study cannabis. One event – convulsion – was considered probably related to the study drug."



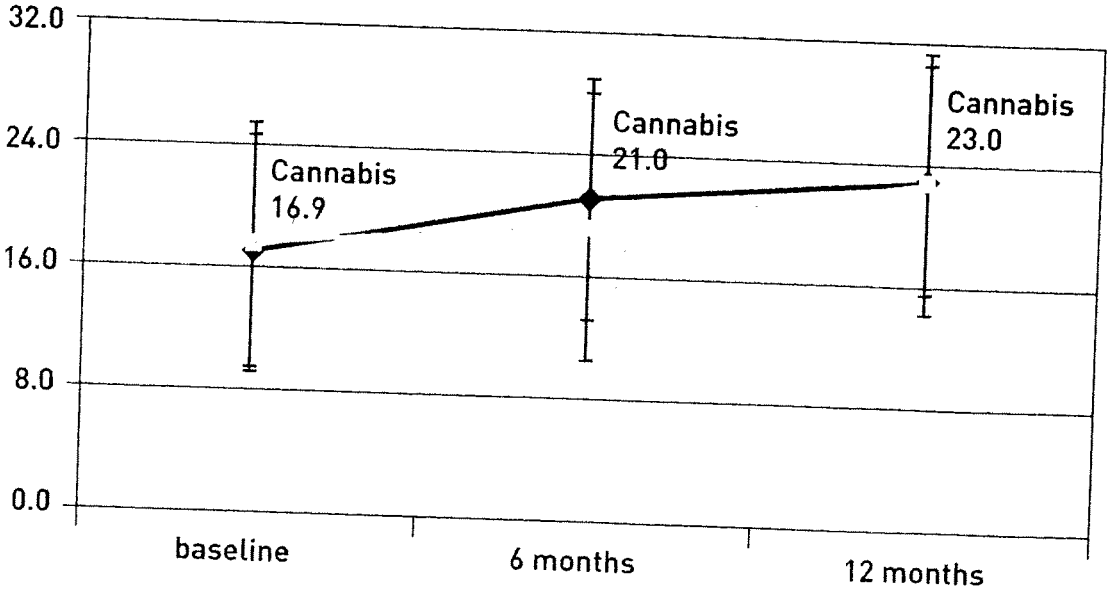
Non-serious adverse events were reported by 88.8% of cannabis users and 86.1% of controls, but the two groups differed in the incidence rates of these events (4.62 vs. 2.85 events/patient-year). Current cannabis or marijuana users experienced fewer events than naïve or ex-users, but no dose response was seen. The most common non-serious adverse events by category affected the nervous system (20%), gastrointestinal system (13%) and respiratory system (13%); only 40 of the 880 non-serious events reported by the cannabis users were considered certainly or very likely related to the study cannabis.

Safety parameters

Blood tests at baseline and after one year of cannabis use (at a mean dosage of 2.49 g/day) showed no differences for any biochemical, liver, renal or endocrine function parameters.

However, pulmonary function testing in cannabis users found slight but statistically significant decreases in residual volume, forced expiratory volume (FEV_1) and forced expiratory flow rate ($FEF_{25-75\%}$) after one year. "Discussion with a pulmonary physician suggests that the changes in residual volume and FEV_1 are not clinically meaningful changes," Dr. Ware said. "However, the change in the $FEF_{25-75\%}$ is meaningful, since it's a 1% drop in the ability of your lungs to move air out." The majority of the COMPASS cannabis users also used tobacco, making it difficult to separate out the pulmonary effects of cannabis use alone.

Neurocognitive function (measured in tests of recall memory, processing speed and visual analysis) was found to improve on all four tests in both treatment groups over the course of the trial (*Figure 4*). There was no difference in the extent of improvement.



Conclusions

"The adverse events in this population using this drug were modest and very compatible with what we see in pharmaceutical grade cannabinoids in clinical trials," Dr. Ware said. "We need to do more studies to characterize safety issues among new users, we need longer-term studies to look at effects on lung function – adjusting for tobacco – and I think we need to continue to look at cognitive function."

NOTES

References

Abrams DI, Jay CA, Shade SB, et al. Cannabis in painful HIV-associated sensory neuropathy: a randomized placebo-controlled trial. *Neurology* 2007;68(7):515-521.

Wilsey B, Marcotte T, Tsodikov A, et al. A randomized, placebo-controlled, crossover trial of cannabis cigarettes in neuropathic pain. *J Pain* 2008;9(6):506-21.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SB 368

Wisconsin Medical Society

Your Doctor. Your Health.

Wisconsin Medical Society and American Medical Association Policies: Marijuana

Society Policy:

ALT-001

Medical Marijuana:

1. The Wisconsin Medical Society (Society) recommends that adequate and well-controlled studies of smoked marijuana be conducted in patients who have serious conditions for which pre-clinical, anecdotal or controlled evidence suggests possible efficacy including AIDS wasting syndrome, severe acute or delayed emesis induced by chemotherapy, multiple sclerosis, spinal cord injury, dystonia and neuropathic pain, and that marijuana be retained in Schedule I of the Controlled Substances Act pending the outcome of such studies. Smoked marijuana should not be used for therapeutic reasons without scientific data regarding its safety and efficacy for specific indications.
2. The Society urges the National Institutes of Health (NIH) to implement administrative procedures to facilitate grant applications and the conduct of well-designed clinical research into the medical utility of marijuana. This effort should include
   a. Disseminating specific information for researchers on the development of safeguards for marijuana clinical research protocols and the development of a model of informed consent on marijuana for institutional review board evaluation.
   b. Sufficient funding to support such clinical research and access for qualified investigators to adequate supplies of marijuana for clinical research purposes.
   c. Confirming that marijuana of various and consistent strengths and/or placebo will be supplied by the National Institute on Drug Abuse to investigators registered with the Drug Enforcement Agency who are conducting bona fide clinical research studies that receive Food and Drug Administration approval, regardless of whether or not the NIH is the primary source of grant support.
3. The Society believes that the NIH should use its resources and influence to support the development of a smoke-free inhaled delivery system for marijuana or delta-9-tetrahydrocannabinol (THC) to reduce the health hazards associated with the combustion and inhalation of marijuana.
4. The Society does not support reinstitution of the Single Patient Investigational New Drug program for smoked marijuana at this time, because the program would likely be unable to meet the needs of individual patients in a timely fashion due to procurement difficulties associated with regulatory oversight and because this approach will not provide the scientific data needed to guide the public debate on the utility of medical marijuana.
5. The Society believes that effective patient care requires the free and unfettered exchange of information on treatment alternatives and that discussion of these alternatives between physicians and patients should not subject either party to criminal sanctions. (HOD, 0405)

AMA Policy:

Medical Marijuana

(1) Our AMA calls for further adequate and well-controlled studies of marijuana and related cannabinoids in patients who have serious conditions for which preclinical, anecdotal, or controlled evidence suggests possible efficacy and the application of such results to the understanding and treatment of disease.

(2) Our AMA urges that marijuana's status as a federal Schedule I controlled substance be reviewed with the goal of facilitating the conduct of clinical research and development of cannabinoid-based medicines, and alternate delivery methods. This should not be viewed as an endorsement of state-based medical cannabis programs, the legalization of marijuana, or that scientific evidence on the therapeutic use of cannabis meets the current standards for a prescription drug product. (New HOD Policy)

(3) Our AMA urges the National Institutes of Health (NIH) to implement administrative procedures to facilitate grant applications and the conduct of well-designed clinical research into the medical utility of marijuana. This effort should include: a) disseminating specific information for researchers on the development of safeguards for marijuana clinical research protocols and the development of a model informed consent on marijuana for institutional review board evaluation; b) sufficient funding to support such clinical research and access for qualified investigators to adequate supplies of marijuana for clinical research purposes; c) confirming that marijuana of various and consistent strengths and/or placebo will be supplied by the National Institute on Drug Abuse to investigators registered with the Drug Enforcement Agency who are conducting bona fide clinical research studies that receive Food and Drug Administration approval, regardless of whether or not the NIH is the primary source of grant support.

(4)Our AMA believes that effective patient care requires the free and unfettered exchange of information on treatment alternatives and that discussion of these alternatives between physicians and patients should not subject either party to criminal sanctions. (CSA Rep. 10, I-97; Modified: CSA Rep. 6, A-01)

Wisconsin Medical Society

Your Doctor. Your Health.

TO: Senate Committee on Health, Health Insurance, Privacy Property Tax Relief, and Revenue
Assembly Committee on Public Health

FROM: Michael Miller, MD

DATE: December 15, 2009

RE: Opposition to Senate Bill 368/Assembly Bill 554

> **"It's pretty hard to say that a doctor actually thinks marijuana would be helpful and the doctor can't prescribe it, whereas [he] could prescribe morphine," said Governor Jim Doyle. "We prescribe much more dangerous drugs."** (*Washington Post*, October 25, 2009, page 4B)

These are the kinds of things you hear said in the debate about 'medical marijuana':

- Why wouldn't you want to be compassionate?
- Why wouldn't you want to make available something that works for people who need it?
- This stuff really isn't harmful.

Public policy changes addressing marijuana use have been called the "medical marijuana issue" based on the premise that marijuana should be allowed to be a "medicine" that people can use, with or without a doctor's prescription. The basic assumptions behind "medical marijuana" initiatives are that marijuana is an **acceptably safe** and a **reasonably effective** product to relieve human suffering. Everyone wants to relieve human suffering – especially professionals such as physicians and nurses. "Medical marijuana" advocates add a layer of emotion by saying that their opponents want to prevent people in misery from being able to relieve their misery. Some states have approved "medical marijuana" not through a legislative process, but through a ballot initiative process – a referendum of the general citizenry. Whenever there is a legislative process, hearings are held and patients are brought forth to describe their misery and to make emotional pleas for relief. I've attended these hearings before – anyone who would say anything against "medical marijuana" is made to feel guilty for doing so, especially in front of sincere people who may be confined to wheelchairs or otherwise clearly impaired by a health condition.

But these are the facts:

Marijuana is illegal to possess, use, manufacture (grow), distribute, or sell. A major exception to this illegal status has arisen through various state "medical marijuana" policies.

Virtually all marijuana consumed by both persons with addiction to cannabis, 'recreational users' of cannabis, and 'medical marijuana patients', is consumed via smoking: a vegetable product is combusted. Combustion volatilizes chemicals that can then be inhaled, and produces a range of other combustion products, including particulates and carcinogens and carbon monoxide and other gasses and heat, which produces its own damage to the respiratory tree when combustibles are inhaled. 'Recreational users' and others can ingest marijuana (e.g., in baked goods such as brownies), but most of them don't eat it, they smoke it.

Truly medicinal cannabis is the legal product, pharmaceutical tetra-hydro-cannabinol (THC). The FDA-approved product, which is the subject of safe manufacture and distribution, is a capsule with the trade name Marinol®. This is a capsule of THC taken by patients by mouth.

Marijuana "works" because of its major active ingredient, THC. THC works on the brain because the brain contains naturally occurring receptors to chemicals called cannabinoids. The human nervous system contains two well-known receptors for THC and some other compounds – the CB1 and the CB2 cannabinoid receptors. The brain also makes naturally occurring compounds that act on these receptors. Scientists in laboratories can also develop novel chemical compounds that turn on these receptors (cannabinoid agonists) and chemical compounds that turn off these receptors (cannabinoid antagonists).

The naturally occurring *cannabis sativa* plant contains a wide range of cannabinoids and other chemicals.

Pharmaceutical grade THC is already available and legal in the United States through a prescription medication called Marinol® that is taken in an oral capsule. Marinol® works. It is FDA-approved based on usual FDA processes that investigate both efficacy and safety for pharmaceuticals. It appears in federal Controlled Substances schedules.

Cannabinoids have been alleged to be effective for a wide range of medical conditions. But Marinol®, pure THC, does not "work" for every condition that marijuana is alleged to be a "medicine" for. The only three indications for Marinol® that have withstood the scrutiny of the FDA drug approval process, are nausea in certain patients, low appetite/low weight in certain patients, and elevated intra-ocular pressure in certain patients.

Marinol® is a considered a 'dangerous drug' by the US agency formerly known as the Bureau of Narcotics and Dangerous Drugs (the predecessor agency to the DEA). Marinol® appears under Schedule II of the schedules created by the Controlled Substances Act. The definition of a Schedule II drug is a "drug or other substance [which] has a high potential for abuse; [which] has a currently accepted medical use in treatment in the United States or a currently accepted medical use with severe restrictions" and a drug or other substance for which "abuse of the drug or other substances may lead to severe psychological or physical dependence." This scheduling is because THC is a dangerous drug. THC is addictive. There's no debate about this, no controversy – no controversy within the fields of medicine and science.

[The whole topic of the addictive nature of marijuana is something of a side track argument I can certainly answer questions about, but would rather not focus on. The few points about it that I can make are that addiction is actually not about drugs but is about brains; the brains of persons with addiction are different than the brains of persons without addiction; addiction is a result of an interaction of genetic and environmental and socio-cultural factors just as much as it is dependent on the chemical properties of certain addictive drugs. Most people can use addictive drugs without developing problems, and the vast majority of people who smoke marijuana can do so without developing addiction. But this doesn't mean that there are not persons with vulnerabilities to addiction who will develop addiction, including loss of control over substance use, continued compulsive use despite adverse consequences, preoccupation, a detriment in education, occupational, or family functioning, and even a disabling addiction to cannabis. Just because the majority of drinkers and the majority of pot smokers can engage in these behaviors "recreationally" and not become addicted to the substance, doesn't mean that the substance itself is not associated with addiction.

How often do cannabis users develop cannabis dependence? The 2008 National Survey on Drug Use and Health of the U.S. Department of Health and Human Services shows that past-year use rates for marijuana and hashish for persons aged 12 and older are 10.1 percent, and that the 12-month prevalence rate for cannabis dependence (according to the criteria in the DSM-IV [new footnote]) in the same age segment is 1.1 percent.

The prevalence rate for cannabis dependence is higher than for any other single illicit drug or drug class. **The rate of cannabis dependence among users of cannabis is 10.4 percent**; per this analysis, cannabis is 'twice as addictive' as ethanol (where 5.3 percent of users meet diagnostic criteria for alcohol dependence). These rates are comparable to the rates of substance dependence among users of prescription stimulants, prescription sedatives, and prescription opioids. As is the case for other classes of drugs, cannabis dependence is more likely to occur in individuals with co-morbid psychiatric conditions.]

But back to my main points:

THC is effective, but its effects are limited. And there's a very important point to be made here. One can hear experts talk about the difference between the CB1 receptor and the CB2 receptor, how the CB1 receptor is related to the psychoactive effects of THC and its ability to produce hallucinations, delusions, euphoria, a reduction of anxiety, etc.; and how the CB2 receptor is involved in the peripheral nervous system in inflammatory processes and is the receptor involved in cannabinoids working as analgesics. But it's important to know that the pain-relieving potential of THC is the equivalent of about 30 mg of codeine – nothing more. The idea that someone with severe pain, unresponsive to other analgesics at high doses, will get significant pain relief if marijuana is approved as a "medicine" for analgesia, simply doesn't stand up to any scientific scrutiny. It is an effective analgesic, but it is a relatively weak analgesic. It can work for minor pain. But there are many safe and effective alternatives for minor pain. It is not a "big gun" to be taken out when all of the things fail – because it's not that potent of an analgesic.

Marijuana definitely has anxiety-reducing effects when taken at low doses by experienced users. The therapeutic effects for many patients, I'm certain, are "non-specific," deriving from the psychoactive effects on anxiety in experienced users, and not due to some specific pharmacological effect on pain, spasticity, nausea, etc. We have very safe and effective alternatives for pain, spasticity, nausea, and anxiety.

Next, we get to the issue of harm. Other than its psychoactive effects and its potential to produce addiction, marijuana is indeed relatively – I emphasize relatively – harmless. Most "inexperienced users" develop dysphoria when they use marijuana – they just don't like the feeling, the impairments in concentration and coordination that it causes, and so doses people take are limited, except in heavy regular users. But THC is not really that toxic of a compound. What is toxic is smoking – smoking marijuana, tobacco, or any other drug. I would like to emphasize that smoking is an unsafe drug delivery system and there is no reason to approve if for any drug. Smoke marijuana is dangerous, because of the smoke.

Because of this, pharmaceutical companies have been developing non-smoked routes of administration for potentially therapeutic cannabinoids. Beyond the oral capsule (Marinol®, which is pure THC) there are nasal sprays and patches and just a variety of safe drug delivery devices that do not involve smoking. It's very important to note that the pharmaceutical researchers are looking at other psychoactive compounds in the marijuana plant that can be therapeutic, besides THC itself: newer agents under development sometimes contain a variety of cannabinoids other than THC, in specific mixtures. In England there are companies with big greenhouses that genetically select marijuana plants for a certain percentage of one cannabinoid versus another, trying to maximize the beneficial effects and minimize the negative effects including, unpleasant psychoactive effects.

Research on cannabinoids found in the marijuana plant, and able to be synthesized in a chemistry laboratory, is ongoing and important. There certainly is the promise of therapeutics to come from medications that work on the CB1 and CB2 cannabinoid receptors in the brain. I think in the next 10 years we will see fascinating developments of treatments for a wide range of health conditions including obesity, using chemicals that work on the CB1 or CB2 receptor. But these will not be smoked marijuana.

The Wisconsin Medical Society has policy that supports research on cannabinoids and the development of save and effective medications, and the American Medical Association recently revised its policies with the aim of facilitating such research, including the development of safe delivery systems for THC and other cannabinoids.

The Wisconsin Medical Society does not support smoking as a delivery device for THC, other cannabinoids, or any compound considered to be "therapeutic."

Finally, let's get down to the technical ideas here. Would a physician prescribe "medical marijuana"? If so, how would the physician write the prescription? What is the dose? How does one know the dose of the "therapeutic agent" in a joint? Would this all be laboratory grade marijuana where the percentage of different cannabinoids would be well known? The marijuana buyers clubs in California aren't this way at all – it's almost a free market, almost complete legalization, where just a whole range of connoisseur-level euphoriants are available in different humidors available for sale. And then there are some liability issues. The adverse effects of cannabinoids on coordination, reaction time, alertness, and therefore operation of a motor vehicle, are well known. Let's say a physician writes a prescription for "medical marijuana," let's say the patient gets into a car crash. What's the liability for the physician? Did the physician prescribe an unsafe amount of drug – akin to several handfuls of Valium®, for the person who would be driving?

The Medical/Scientific Committee of the National Council on Alcoholism and Other Drug Dependencies has adopted a statement on "Medical Marijuana," stating that NCADD "is not in favor of wholesale, broad availability of smoked marijuana; if it is for legal medical use, it should be in same context of how other dangerous drugs are prescribed including warnings, labeling, appropriate forms of dispensing, scheduled and monitored and administered in same way as other drugs under FDA oversight."

So the problems are many. One is knowing the dose that the patient is using and that the doctor is "prescribing." The other is smoke as a delivery vehicle – one of the most important issues here. And the other is efficacy.

I sincerely believe that P.T. Barnum and W.C. Fields would be delighted to watch what's happening in America with regard to the topic of so-called "medical marijuana." The extent to which people are being fooled is just dramatic. The original premises are very understandable – who would want to see anyone suffer unnecessarily? But the leaps that are taken between a suffering human being and the legal authorization for someone to smoke marijuana to relieve their ills, is just a wild leap. All the benefits can be obtained without passing this legislation. Wisconsin joining the ranks of other states that approve the use of 'joints' as 'medicine' would be a boon to marijuana growers, marijuana sellers, and marijuana users. We need the researchers to give us better products that involve cannabinoids and other chemicals that act on cannabinoid receptors. But smoked marijuana is not the path to Nirvana from a public policy standpoint. It is wrong for Wisconsin.

Thank you for your attention.