"Good and bad in every group."

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The Journal of Cannabis in Clinical Practice

Summer 2010

# Doctors to Study Effectiveness of CBD

**By Fred Gardner**

Tod Mikuriya, MD, did not live to see it, but his dream of investigating the medical potential of compounds in the cannabis plant other than THC is now within the grasp of his successors.

The Society of Cannabis Clinicians, the group Mikuriya founded in 1999, has drafted a "Strain Evaluation Survey" to collect data from patients who medicate with cannabis in which cannabidiol (CBD) is predominant

CBD-rich cannabis will be available at California and Colorado dispensaries by late summer —and soon thereafter, inevitably, in other states where patients can legally use cannabis as medicine.

Twelve strains rich in cannabidiol (CBD) have been identified in the year and a half since an analytic chemistry lab began testing cannabis samples provided by California dispensaries, growers, and edible makers. Buds from five of these strains have been available intermittently at Harborside Health Center in Oakland. Herbal Solutions in Long Beach also has provided CBD-rich cannabis to patients.

Eight of the CBD-rich strains are currently being grown out. The others cannot be reproduced because the growers hadn't saved or couldn't regain access to the genetic material that yielded their buds of interest.

More than 9,000 samples have been tested to date by the Steep Hill lab in Oakland. Other start-up labs in California, Colorado, and Montana have begun testing for the burgeoning industry. The Full Spectrum lab in Denver has tested some 4,500 strains and identified seven CBD-rich strains.

A strain that is roughly 6% CBD and 6% THC, "Cannatonic," has been developed by Resin Seeds in Barcelona and is being grown from seed by several collectives. Its name may be misleading, since CBD supposedly cancels the sedating effects of THC.

For purposes of the data collection being planned by the Society of Cannabis Clinicians, "CBD-rich" cannabis is being defined as more than 4% cannabidiol by weight (without respect to THC content) or more than 2.5% CBD if CBD exceeds THC.

**Potential Usefulness of CBD**

Until testing for cannabinoid content began, it was widely assumed that CBD, which is non-psychoactive, had been bred out of all the cannabis in California by generations of growers seeking maximum THC content.

### *What benefits did G.W. scientists expect a CBD-rich extract to confer?*

Doctors in the SCC have watched with great interest in recent years as a British company, G.W. Pharmaceuticals conducted clinical trials of cannabis-plant extracts. G.W. has a license from the British government and backing from Otsuka, a Tokyo-based multinational.

G.W.'s flagship product, Sativex, is a plant extract that contains approximately equal amounts of CBD and THC. What benefits did G.W. scientists expect a CBD-rich extract to confer?

### *Why is this plant different from all other plants?*

**CBD-RICH CANNABIS PLANT is held lovingly by Ralph Trueblood of the Wo/men's Alliance for Medical Marijuana. It was cloned from a True Blueberry/OG Kush cross found to contain approximately 10% CBD and 6 percent THC by weight. The strain was developed by Wendell Lee of Full Spectrum Genetics.**

Various studies published in the medical and scientific literature suggest that CBD could be effective in easing the symptoms of rheumatoid arthritis, diabetes, nausea, and inflammatory bowel disorders, among other difficult-to-control conditions. CBD also has demonstrated neuroprotective effects, and its anti-cancer potential is being explored at several academic research centers.

An even wider market would emerge if the reduced psychoactivity of CBD-rich cannabis makes it an appealing treatment option for patients seeking anti-inflammatory, anti-pain, anti-anxiety, and/or anti-spasm effects delivered without disconcerting euphoria or lethargy.

**The Blue-Ribbon Plant**

The plant richest in CBD is a "True Blueberry/OG Kush" cross grown in the mountains south of Yreka by Wendell Lee of Full Spectrum Genetics (not to be confused with the lab in Colorado). Dried buds of TB/OGK have been sent for testing on four occasions by Harborside, the dispensary with which Lee is associated. Samples were consistently found to contain about 10% CBD (with THC levels around 6 to 7%). On the only occasion that a crop grown outdoors by Lee was tested by Steep Hill lab, it was found to contain 13.9% CBD.

Two other labs have confirmed the CBD content of Lee's TB/OGK.

Lee is now working to "stabilize the genetics" and produce TB/OGK seeds. Several plants he provided to Project CBD (a nonprofit organized by writer/activist Martin Lee to promote research) are being grown out by experienced hands. Processed medicine and clones will be available at dispensaries in the months ahead. Details will be available on ProjectCBD.com, a website that will be launched by mid-August, according to Martin Lee (no relation to Wendell).

The California strain richest in CBD proportionally, "Women's Collective Stinky Purple," tested at 9.7% CBD and 1.2% THC. It was brought to Harborside

*continued on page 41*

## "Placeholder" Questionnaire

**INTRODUCING PROJECT CBD**

Our collective is involved in a research project to assess the effects of strains relatively rich in cannabidiol (more than 4% CBD). Collective members who medicate with CBD-rich cannabis are encouraged to take part in this research by reporting your observations on the back of this form

**Is CBD-rich Cannabis right for you?**

Research suggests that CBD could be effective in easing the symptoms of rheumatoid arthritis, diabetes, nausea, and inflammatory bowel disorders, among other difficult-to-control conditions. CBD is non-psychoactive and may counter certain effects of THC. *Patients who want the anti-inflammatory, anti-pain, anti-anxiety, or anti-spasm effects of cannabis delivered —possibly— without disconcerting euphoria or sedation might prefer CBD-rich Cannabis.*

**How to conduct an N=1 Trial**

A simple way to collect information about effects is called the "N-of-1" trial, in which one patient is both the test subject and the control. All you have to do is medicate with a CBD-rich strain for a set period of time —say, a week— and then medicate with your regular high-THC strain for the same period. Use this form to describe any differing effects that you notice: "less anxiety," "more stoney than I want," "less sedating," "better sleep," "no difference," etc., etc.

**INFORMATION FOR PATIENTS appears on front page of a form developed to involve dispensaries in data collection. Patients getting CBD-rich strains are asked to describe their dose and use pattern, as well as "Conditions/symptoms used to treat" and "Effects observed." A more detailed and formal questionnaire is being developed by the Society of Cannabis Clinicians.**

## *Inside this issue* ——

## *Project CBD* *from front page*

by Grower #1 who also grows a strain called "Cotton Candy/Diesel" that was found to contain about 6% CBD and 6% THC. Grower #1 gets her starter plants from friends in Northeastern Mendocino County. Is there something in the genome of plants that have been swapped over the years by growers in those hills that encourages expression of CBD?

Another strain containing more than 8% CBD, grown indoors in the East Bay, was brought to Harborside in late April. "Omrita Rx3" is the name the grower has given it after learning that it was of special interest to SCC doctors.

A few weeks later a strain called "Harlequin" was found to contain about 8% CBD. And soon thereafter a pound of "Jamaican Lion" tested at 8.9% CBD. Clones of these strains are being grown out and will be available through Harborside and Project CBD in the months ahead, along with the Soma A+ that was first to be identified.

Pineapple Thai (5% CBD, 2.4% THC) is being grown out by Herbal Solutions in Long Beach.

**Anecdotal Evidence**

To get the ball rolling on data collection, Project CBD developed a form to be given to patients purchasing high-CBD cannabis at participating dispensaries *(see illustration on page 1).* Feedback has also been solicited from a group of physicians who were given a small amount of TB/OGK trim [leaves removed when buds are manicured] for self-testing.

The anecdotal evidence coming from these two sources —about 12 people total— has been generally but not entirely consistent. Frequent reference is made to pain relief, a calming effect, and unimpaired —or improved— ability to concentrate.

Patient G. is an experienced cannabis user age 81 who regularly smokes a high-THC joint in the evening. He tested a CBD edible on three occasions and the results were identical. He experienced no noticeable effect after consuming a brownie in the late afternoon. He experienced "diminished effect" from his subsequent high-THC joint."But the next morning when I went for my walk," he reports, "I went further and faster than I had in a long time."

Several people said they appreciated the relative lack of psychoactivity. As Patient 9 put it after smoking TB/OGK, "CBD-rich cannabis seems relaxing and soothing in regards to pain, anxiety, muscle tension and spasms, and it does not have the typical 'high' that goes with these therapeutic effects."

But patient 10, who has been smoking TB/OGK reported, "I enjoy the herb, enjoy being able to use during the day without getting too spaced out, but have to watch out for memory lapses. I do stupid things like forget where I put stuff because I think I'm not affected, but I am affected."

*"Dose level is going to be very,* very *important."*

Patient Four in the Project CBD database, a 70-year-old man with arthritis, responded in detail: "Definitely anti-pain and anti-inflammatory. I would not call the effect a 'high' but I'm not sure it's non-psychoactive. I would call it a 'balanced effect' or a 'calming effect.' You feel like you're on a more even keel."

For 10 days Patient Four ingested cookies made with trim from TB/OGK. (The trim was 5.1% CBD, 2.5% THC but we don't know the amount used in the butter from which the cookies were made.) He reports being"able to concentrate for hours at a time and get up from my desk without groaning... Once or twice as the effect was coming on, I began to feel sedated, but that passed and I then experienced about three pain-free hours... Once I ate an extra half a cookie and was definitely sedated. Fortunately, it was bedtime... Dose level is going to be very, *very* important."

**Caveat hemptor**

Some caveats as we begin our long march towards collectively identifying the effects of cannabidiol.

1) The amount of CBD present will not be the only factor influencing the effects of a given cannabis-based medicine. The ratio of CBD to THC may be as important, and the terpenoid and flavonoid content may be as important.

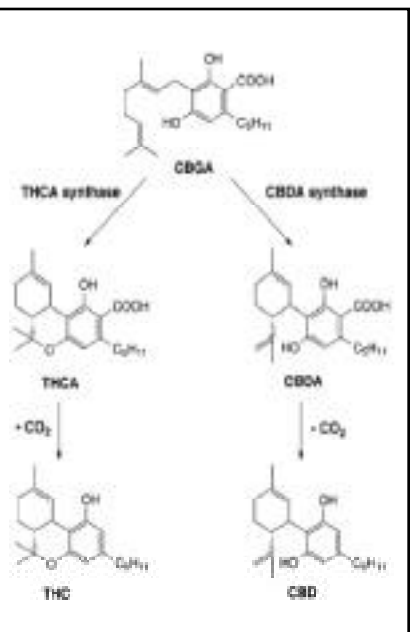
2) We are capable of placebo-effecting ourselves individually and placebo-effecting ourselves collectively. Some may exaggerate the potential benefits of CBD and raise false hopes.

3) The line between physical effect and effect on mood is often indistinct. Improved mood might result, for example, if the man with arthritis experiences reduced inflammation and less of the "background pain" that afflicts older people.

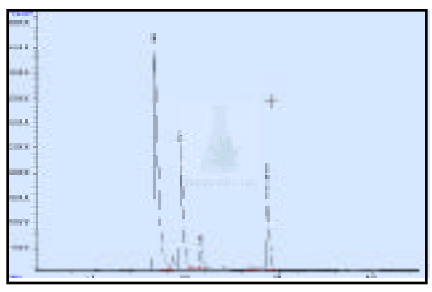
4) When a patient reports the effect of a drug on mood or pain, the report is *inherently* subjective.

5) How CBD in the liver affects the metabolism of other drugs has not been studied thoroughly. The Drug Warriors could argue that Prohibition must remain in effect because "more research is needed."

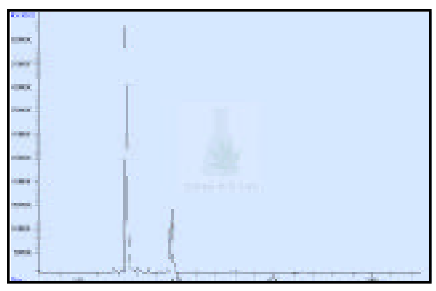
**BIOSYNTHETIC PATHWAY by which THC and CBD are created within the plant from a part of the CBGA (Cannabigerolic acid) molecule is shown at right. THCA synthase and CBDA synthase are enzymes that promote a reaction ("oxidative cyclization") whereby CBGA forms THC acid (THCA) and CBD acid (CBDA). THC and CBD are then generated from THCA and CBDA by non-enzymatic loss of $CO_2$. Several labs are studying the mechanism by which the enzymes promote the reactions. One theory of why the offspring of a plant whose parents contain only trace amounts of CBD may be rich in CBD: a genetic mutation resulting in excess CBDA synthase or deficient THCA synthase.**




## *Yreka!*



**CBD CONTENT of True Blueberry/OG Kush is indicated by large spike at left of chromatogram from Steep Hill lab. Spike to its right shows THC. Small spike shows level of Cannabinol (a breakdown product of THC). Spike at right in both chromatograms is the lab's internal standard.**



**HIGH-THC STRAIN, typical of the >9,000 tested to date in California, has virtually no CBD. Scale at bottom gives amount of time heating in the urn of the gas chromatograph. Vertical scale indicates amount of specific compounds evaporating at known temperatures.**

**The Doctors' Hopes re CBD**

The wide range of variables and "confounding factors" confronting doctors who want to study the effects of CBD-rich strains was discussed at the winter meeting of the Society of Cannabis Clinicians.

UCSF professor Donald Abrams, MD, the featured speaker, recounted the obstacles he faced in conducting clinical trials with government-issued cannabis and getting his results published in peer-reviewed medical journals.

SCC President Jeffrey Hergenrather volunteered to head the committee that will organize the group's data collection effort. Abrams agreed to informally consult on the SCC study design.

The first step, a "Strain Evaluation Survey," will soon be accessible on the SCC's website. It asks, among other things, "What factors limit your use of cannabis at a frequency that affords optimal relief of symptoms?"

The answer options are: "Cost," "Can't perform tasks," "Family or social reasons," "Concern for having use discovered," "Get too sleepy," "Get too altered/ spacey," and "Concern for habitual use."

Hergenrather says that he is beginning to see in his practice, "a growing percentage of patients, especially older patients, who have not used cannabis before, but they have come to understand that it has many medicinal uses and may afford relief from their symptoms with fewer adverse effects than conventional pharmaceuticals.

*Hergenrather hopes that plant breeders will now try to lower THC content.*

"I am seeing many older patients who would like to try cannabis for pain, muscle spasms, insomnia, and management of various cancers. One thing that most of these cannabis-naive patients are not interested in is 'getting high.' My hope is that the CBD-rich strains will enable them to use cannabis and get its benefit without —or with less of— the usual 'high.'"

Hergenrather thinks that patients who "might benefit by maintaining a higher blood level of active cannabinoids include those with inflammatory bowel diseases (Crohn's and ulcerative colitis), the neurodegenerative diseases (multiple sclerosis, ALS, Parkinson's, Huntington's), epilepsy disorders, autoimmune disorder, (Lupus, rheumatoid arthritis, etc.), stroke, concussion, and brain trauma, and cannabis-sensitive cancers — glioblastoma multiforme, thyroid cancer, lymphomas and some leukemias, colon cancers, neuroblastoma, and others)."

*continued on next page*

## GW Pharmaceuticals' "Tale of Two Cannabinoids"

G.W.'s flagship product is Sativex, an oral spray that contains about equal amounts of CBD and THC. The rationale for the combination was set forth in "A Tale of Two Cannabinoids," a 2005 article by doctors Ethan Russo and Geoffrey Guy in the online journal *Medical Hypotheses.* Here's the summary:

"CBD is demonstrated to antagonise some undesirable effects of THC including intoxication, sedation and tachycardia, while contributing analgesic, anti-emetic, and anti-carcinogenic properties in its own right. In modern clinical trials, this has permitted the administration of higher doses of THC, providing evidence for clinical efficacy and safety for cannabis based extracts in treatment of spasticity, central pain and lower urinary tract symptoms in multiple sclerosis, as well as sleep disturbances, peripheral neuropathic pain, brachial plexus avulsion symptoms, rheumatoid arthritis and intractable cancer pain. Prospects for future application of whole cannabis extracts in neuroprotection, drug dependency, and neoplastic disorders are further examined. The hypothesis that the combination of THC and CBD increases clinical efficacy while reducing adverse events is supported."

Sativex has been approved by Health Canada for treating neuropathic pain in multiple sclerosis and cancer. It is obtainable by prescription in 22 countries. After passing an important regulatory hurdle in March, GW expects imminent approval of Sativex as a treatment for MS spasticity in the UK and Spain.

*GW is close to finishing an extensive study to determine the "therapeutic window" —the dosage level high enough to relieve the pain but low enough to prevent the high.*

The U.S. FDA has given GW approval to conduct a clinical trial in advanced cancer patients whose pain is not adequately controlled by opioids. GW is close to finishing an extensive study to determine the "therapeutic window" —the dosage level high enough to relieve the pain but low enough to prevent the high. The company hopes recruitment of subjects won't take more than a year. When the results are in, assuming they're favorable, GW will apply for marketing approval from the FDA.

## *Project CBD* *from previous page*

Hergenrather hopes that plant breeders will now try to lower THC content. "Having an option to use a CBD-rich strain that is low in THC would not only benefit the patients who don't want to get 'high' but also all of those patients who would benefit with higher blood levels of cannabidiol.

**CBD Helper?**

A simple way to raise the CBD-to-THC ratio of a given batch of medical cannabis is to blend in dried flowers from a CBD-rich hemp plant containing only trace amounts of THC. That's how G.W. Pharmaceuticals produces Sativex —by growing CBD-rich hemp plants outdoors and THC-rich plants in glasshouses, then blending them.

In February a friend in Spain sent Project CBD seeds from a hemp strain whose flowers reportedly contain four to six percent CBD, depending on growing conditions. These were started indoors by a grower affiliated with the Los Angeles-based Cornerstone Research Collective —along with seeds of "Cannatonic" that had been donated by Resin Seeds of Barcelona. According to Project CBD's benefactor, one in four of the Cannatonic seeds —available from resinseeds.com—should contain 6.5% CBD by weight, and the same amount of THC. "The perfect Sativex mix," is how he describes the strain's cannabinoid content.

Project CBD also has a line on industrial hemp seeds reported to contain 10% CBD and almost no THC!

**Overcoming Hesitance**

Stacey Kerr, MD, of Santa Rosa has been doing home visits with cancer patients, "filling in the gaps that all their other doctors can't fill. When you are getting care from several specialists, these gaps will sometimes happen. So I sit by the bedside and take the time to talk about therapy and side effects. Then we problem solve about how to deal with the side effects and how to best communicate with their treating physicians.

"Several of my patients are using cannabis for nausea and vomiting. However, they are hesitant to use it because of the psychoactive effects and we spend time talking about the most effective way to dose, the timing of their doses, and the medication itself."

Kerr offers the example of Linda (not her real name) a patient with metastatic breast cancer in her bones, liver, and possibly her stomach. "She finished three weeks of intensive radiation and just now finished her first three weeks of intensive chemotherapy. She has lost over 30 pounds through the course of treatment. She is bedridden and extremely weak. This woman is a highly educated professional and a triathlete.

"I was at Linda's home this past Saturday and on Easter Sunday discussing options for nausea/vomiting control. Her pain is well treated. The image she described to me when she drinks a glass of water is that of a boiling hot metal cauldron hit with cold water so the water erupts right back up and out because of the heat reaction. She is using several different prescription medications, but the medication that works most effectively for the vomiting is cannabis.

"She was not a regular user prior to her cancer needs. Her only complaint is that it does not seem to last very long when she uses the vaporizer, and she doesn't want to be 'stoned.' She has two small children, an analytical mind, and is already stoned enough on the prescription meds she needs.

"I was able to provide a legal recommendation for her use of medical cannabis. I explained CBD strains to her and her caregivers (all of them are professionals) and Linda's caregivers were able to obtain an ounce of TB/OGK bud from Harborside in early April.

"My hope, says Dr. Kerr, "is that having a CBD-rich strain will allow her to use the medicine as often as needed without extreme side effects but with excellent relief for nausea and vomiting. Oral intake would be beneficial with longer-lasting effects and direct activity on the most inflamed tissue. If she was not afraid of the side effects, she would be more willing to use the medication in amounts that are most effective."

Kerr adds, "My patients who are professionals without a history of using marijuana would be more likely to use it if it was specifically for medical uses and not 'tainted' with a culture of illicit highs. This is a cultural block, I know, but it is real, and I work hard to overcome it every time I counsel on the use of medical

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"You have to start somewhere..."

# Willy Notcutt on Evaluating Cannabis by *N*=1 Trials

Willy Notcutt, MD, is a pain specialist at James Paget Hospital in Great Yarmouth, England. He conducted the phase 2 clinical trials for Sativex in 1999-2000.

Notcutt's first step had been to assess the basic efficacy and optimum dosage range of Sativex (prior to clinical trials) by means of "*N*=1" trials. In N-of-one trials, as they're called, data is collected from individuals as their use pattern changes. The number *N* of patients involved in each study is one, hence the name.

We asked Notcutt if there was any reason why California doctors could not use a similar approach as CBD-rich strains become available to their patients. This interview was conducted in Koln at the 2009 meeting of the International Association for Cannabis Medicine. Notcutt was speaking as an individual and the views expressed may not represent G.W. Pharmaceuticals' position. —*F.G.*

**Notcutt:** The advantages of N-of-1 trials were first described by a chap named Guyatt in Toronto. The fundamental thing is that the patient acts as his own control.

***O'S:*** Is there a standard design?

**Notcutt:** It's very flexible, you can design it any which way you want to. Presumably the patients are currently using a high-THC strain. First you establish the baseline: what's the patient's [self-reported score on a] pain scale or the sleep line, or whatever parameters you want to measure. Then you start them on the current drug for a week. Then you put them on the new one. Then you switch them back to the current one, and so forth.

It can be done as many times as you want and for any period —one week, two weeks, six weeks. You can leave it open, you can do it single-blinded [not letting the patient know what he's taking], you can do it double-blinded [neither doctor nor patient knowing which strain is being used]. But by far the easiest way to start out is to do a straight observational study: open observation and open label [both doctor and patient know what's being used].

*You're using the patient as his own control.*

The patients are going to tell you pretty quickly whether they prefer current drug or new drug. The advantage of going from current drug to new drug is, that is what a clinician actually does. That's how medicine is practiced.

I say, " Try this."

"Not much help."

"Now let's try you on this new drug."

"Yeah, well I think that drug has helped me."

I appreciate that you have a problem with standardization, but a lot of people [medical cannabis users] say, "I always get this type, I know how to work it, I fine tune it, if it's a little weak or strong I smoke a little more or smoke a little less." Call that the current drug, which we assume is high-THC, and then compare it with high-CBD.

**Willy Notcutt and Tod Mikuriya at Asilomar, June 2002.**

That's what you're testing: the comparative efficacy of high-THC and high-CBD cannabis. You're using the patient as his own control and you plot it out: How many times do they smoke each day? What effects are they getting?

It's close to what you normally would do as a clinician. That's how I evaluate a drug anyway. If you define your parameters, and get reports from 20 patients, you can then get a feel for whether it works.

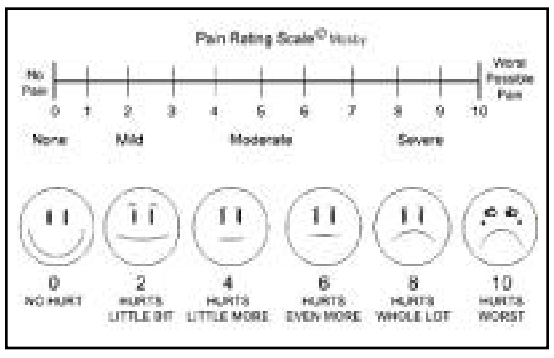
I would suggest that it be done completely open-label at first.

Guyatt's is not the only paper on N-of-1 trials. I have one from the *BMJ [British Medical Journal]* from a few years ago saying that this is the way we should be studying chronic disease. It's a well-recognized, acceptable clinical approach. But people have gotten so fixated in the last 20 years on the randomized, placebo-controlled trial, *(sarcastically)* 'the only way you can do it,' 'the gold standard.'

I think the N-of-1 trial is the only way you study this cohort at this time, because of your problems with standardization. You have people doing it different ways... But your individual patient becomes your study. And then you can aggregate your studies. You can do some simple statistics on it: of 20 patients that started, five found it didn't work for them at all. Now let's look at the 15 that reported effect...

Then you can go on and blind your subjects and not tell them which is which. Or blind the physician.

Guyatt wrote about building in a placebo, but you needn't go to that extent. That's not how we do medicine. The RCT [randomized, controlled trial] is furthest from normal clinical practice.




*"An observational study has the force of common sense. "*

The N-of-1 trial is a good way of generating some data where no data exists. The first two or three studies were all N-of-1, until we knew that it worked. If nine of the first ten patients had said, "This doesn't work," then you don't go further.

You have to start somewhere. An observational study has the force of common sense. It may be best suited when you have a long-term chronic illness and you need some information about whether a drug works...

Do we give an orthopedic surgeon and an eye surgeon the same tools? No. So should we statistically evaluate every medical problem by the same technique? If we're evaluating a drug where the blood pressure goes up or down, or the sugar level goes up or down in diabetes, we use one technique.

Why use the same technique for a drug that has a completely different spectrum of activity, in an area where you don't get nice, number data, where you get much softer data, you get subjective opinion? There's a whole difference in the quality of the data — why use the same statistical tools?

People are now starting to say that evidence-based medicine is becoming a tyranny that's killing off research. I'm very interested in this because I'm the lead for research in our district I'm also the lead for research in my own field.

If you start insisting on these big multi-center big studies, all randomized, and you don't nurture the small studies -the little ones that come along, the N-of-1s that come along where the guy sits down and works on an idea, "Try this out, try that out" in a few patients, and generates a little bit more information that then leads to a bit of a better study...

I still regard as one of the best studies ever, the guy who treated pain after shingles with amtriptyline or nortriptyline. All he did was he found out that when he used the amitriptyline, 60 percent of the patients hated it. When he used nortriptyline only about 30 percent of the patients hated it.

A simple trial —but it changed our practice. We stopped using amitriptyline, we use nortriptyline. And now we know the reasons why. That was 10, 15 years ago. I've never seen that simple study replicated as a clinical trial of amitriptyline versus nortriptyline because there's no money in it for the drug companies.

## ***Project CBD*** *from previous page*

marijuana. CBD-rich strains that are effective will support our efforts to legitimize cannabis as powerful, authentic medicine."

**Possible mechanisms of action**

Martin Lee explains that based on published studies, CBD should provide "an enhanced endocannabinoid effect even though it does not bind to a cannabinoid receptor. CBD indirectly stimulates both CB1 and CB2 receptor signaling in at least two key ways:

"First, CBD inhibits the production of FAAH, the enzyme that breaks down anandamide, and this results in higher anandamide levels (think runner's high) and heightened CB1 receptor signaling, given that anandamide activates the CB-1 receptor (but not CB2.) At the same time, CBD buffers the psychoactivity of THC by preventing THC from binding with the CB1 receptor.

"Also, it appears that CBD amplifies THC's activation of the CB2 receptor. Several studies show that CBD and THC augment each other's analgesic and anti-inflammatory properties. A combination of THC and CBD is much better than THC alone in providing pain relief."

**Project CBD**

The goals of Project CBD are educational, according to Lee, but they can also be seen as political and/or public relations for the Society of Cannabis Clinicians (whose studies the site will be facilitating and publicizing). Some of the messages Project CBD hopes to get across to the American people:

• A non-psychoactive component of the plant may have important medical benefits.

• Pro-cannabis doctors and their patients want to see if this non-psychoactive component is effective in treating various conditions.

• An honest data collection effort by SCC doctors and the medical marijuana community is more trustworthy than the "rigorous" but corrupt clinical trials conducted by pharmaceutical corporations.

• Cannabis dispensaries, while competing for market share on one level, are unified in their commitment to researching the medical potential of the plant.

• Although pro-cannabis MDs are derided in the media as "potdocs" and profiteers, some are serious specialists whose understanding of human physiology is superior to that of their colleagues (who did not learn about the endocannabinoid system in med school and to this day may not have heard of it).

• SCC doctors, by keeping abreast of the data, will be better able to help patients formulate their treatment plans. (The advent of CBD-rich cannabis will raise questions of efficacy and appropriate strain and dosage for every patient who tries it.)

**As we go to press**...

The Werc Shop, a new Los Angeles based analytical testing lab, reports that in early July a strain called "Poison OG" was found to contain approximately equal amounts of CBD and THC. Dr. Jeff Reber of The Werc Shop verified the finding using two complementary analytical techniques.

Full Spectrum lab in Denver, which uses high-pressure liquid chromatography to measure cannabinoid levels, is reporting slightly higher numbers than Steep Hill, with three strains in the 10% CBD range. This may be a function of the different technology.

Lester Grinspoon, MD, has been dismayed by some videos suggesting that

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The "First-Ever 'Medical' Cannabis Cup"

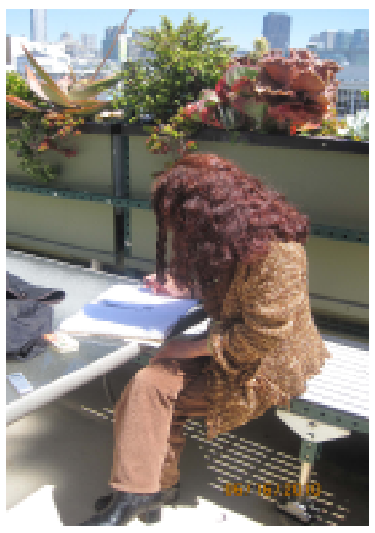
# *High Times* puts on a White Coat

*High Times* magazine organized the original "Cannabis Cup" in Amsterdam in 1987. The event inspired plant breeders, publicized their strains and seed companies, and strengthened their sense of community. It has been held annually ever since —a fine excuse for a trade show and an extended party at harvest time.

The pretext of a cannabis cup is that discerning judges will sample various strains and determine the best (to be announced at the climactic awards ceremony). The truth is, it's impossible for judges, soon after sampling strain #1, to distinguish the effects of sample #2. The body needs an interval of at least three or four hours for a return to baseline cannabinoid levels. Lester Grinspoon, MD, thinks that evaluating only one sample a day would make the most sense.

*High Times* recently launched a glossy quarterly called *High Times Medical Marijuana News and Reviews*, edited in San Francisco. To celebrate their arrival on the scene, the magazine staff organized a "medical" cannabis cup. They billed it as the "first ever," although similar contests with medical themes have been held in Portand and at Area 101 north of Laytonville for several years.

The third-ever medical cannabis cup was held June 19-20 at Terra, an events center —an erstwhile factory with a large side-yard— on Harrison St., kitty corner from the Sailors and Seamen's Union hall. The weather was okay on Saturday, perfect on Sunday, and a whompin'good time was had by about 2,000 medical cannabis users each day. Tickets cost $50, vendors paid $1,500 for tables. It was not the standard *High Times* demographic —there were more middle-aged people and senior citizens. I figured maybe half the mature hipsters had done time; and for sure, all had lived in fear of the cops and endured social contempt. Now they were passing joints in the sunshine, ignoring the "no tobacco smoking" signs, enjoying a sliver of freedom.



EVALUATING STRAIN 32.

Valerie Corral, the leader of WAMM, had been assigned to judge the strains classified as Sativas. She was given 42 samples to evaluate six days prior to the event. I saw her one day that week at a meeting —she was sampling #32 and conscientiously recording her impressions in a notebook.

> *"We have potency down. That is unquestionable. Unfortunately, potency does not equal* character. *A good comparison is the wine industry, where you have fortified wines and then you have fine Merlots. My advice is: focus on producing the fine bottle of Merlot." —DJ Short*

DJ Short, the renowned plant breeder and seed merchant, had to judge 38 Indica samples. He and Val each managed to select a top five (in consultation with *High Times* editors), and then Jorge Cervantes, the best-selling author of cultivation guides, made the final call.

Valerie Corral is a very positive woman. She said that every bud she evaluated was "a jewel grown with the best intentions." But the chemical residue on some made her cough, and one gave her a headache. DJ Short, who is not partial to Indicas in general, didn't find any he especially liked among the cup entrants. But the show must go on, and Cervantes made executive decisions based on appearance and aroma.

**"NO TOBACCO SMOKING" signs did not deter mature hipsters from mixing some in with their cannabis at the *High Times* event in San Francisco.**

And the winners were... Best Sativa: "God's Pussy," from GreenBicycles up in Crescent City... Best Indica: "Cali Gold," from Mr. Natural, Inc.... Best concentrate (chosen by Chris Conrad and Mikki Norris from among 16 entrants): Ingrid, by the Leonard Moore collective, Mendocino... Best edible: biscotti from Greenway in Santa Cruz.

Steep Hill lab in Oakland tested the entrants for THC content. Steep Hill's David Lampach says that the cup entrants averaged 15-16% THC, whereas the buds the lab ordinarily tests average 10-12% THC.

"The winners all had high THC levels," according to Lampach, "but not necessarily the highest." God's Pussy was found to contain 18.2%; Cali Gold 18.4%; and Ingrid hash 45.5% THC.

*The taxonomy of cannabis is very loose, to put it mildly.*

Lampach points out that Cali Gold, though classified as an Indica by the Cup organizers, might actually be a sativa-dominant strain, based on its lineage. The taxonomy of cannabis is very loose, to put it mildly. Sativas are said to have longer, narrower leaves; to take longer to reach maturity (very important for growers); and to have a more cerebral effect (as opposed to sedating Indicas). DJ Short says there is no clear dividing line, almost every plant nowadays is a hybrid. He cites the example of Flo, a strain he developed that is "a quick finisher but has narrower leaves and a Sativa effect."

*Valerie Corral, DJ Short, and Jorge Cervantes felt impelled to extol the virtues of the sun.*

Both Valerie Corral and DJ Short were struck by the predominance of cannabis grown indoors and felt impelled to extol the virtues of the sun. So did Jorge Cervantes, who gave a talk on cultivation to a rapt SRO audience. Note that the Amsterdam cannabis cup is held in November, when the natural harvest has come in. In California, where most cultivation goes on indoors, the cup was held in June.

Mikki Norris said that her group eliminated from consideration those concentrates that had been produced —detectably— by solvent extraction. (Like you could smell the butane.) She was pleased to learn from the producer of Ingrid hash, Gabriel Martin of Mendocino, that he had used the Ice-o-lator method, in which trichomes are washed off the flowers by cold water.

*High Times Medical News and Reviews* gave an award to Lester Grinspoon, MD, for his enduring service to the cause. Grinspoon winced when he learned the name of the winning Sativa, and *High Times* promptly took the offensive term down from its website.

Grinspoon has an idea to promote more dignified nomenclature in the future: judges should give weight to the name of a strain when evaluating its worth as a medicinal product. (At this year's cup the judges were "blinded" as to the names of the strains and their cannabinoid profiles. They knew the entries only by numbers affixed to the bags they'd been given to sample.)

Grinspoon's brief acceptance speech had been taped at his home in Wellesley, Mass. and was broadcast to the cannabis cup crowd. In it he expressed strong support for Tax and Regulate 2010, Project CBD, and the people of California, who have been in the forefront of the medical marijuana movement all these years. Applause kept drowning out his words.

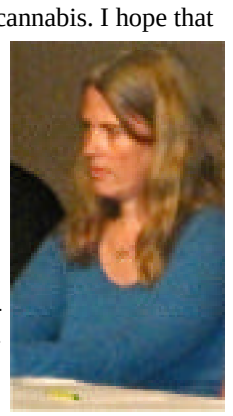
photo by Ken Krayeske

LESTER GRINSPOON, MD

### La Pasionaria

During one panel discussion a member of the audience asked why women were in the obvious minority at events such as the Cannabis Cup. (Membership in California collectives is typically 70% male.) Debby Goldsberry of the Berkeley Patients Group had the answer and she didn't mince words:

"Women are concerned about losing their kids. I have a daughter and every day I wonder what is going to happen to her if I go to jail. I'm a solo parent. The thought of losing your kids is a heartbreaker. Like people in low-income neighborhoods, women are more vulnerable and fearful. Every day —almost every minute— I worry about my child. I told her, 'I might be going to jail for cannabis. I hope that it'll be okay. You'll stay with grandma and you'll be okay and then I'll be in a halfway house and we'll be okay…' Every parent, especially a solo parent, has this fear."



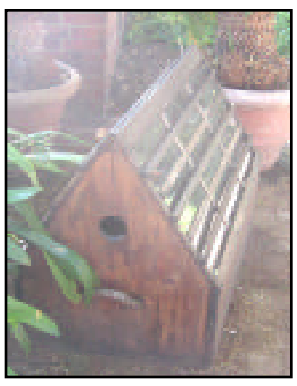
## *Correspondence* *from previous page*

1848; resigned 1861. Knighted 1856. Changed his name to O'Shaughnessy-Brooke in 1861. Professor of Chemistry at Calcutta. Director General of Indian telegraphs 1853, and laid down first telegraphs in India. Died at Southsea. Published 'Manual of Chemistry' 1837; 'Report on Poisoning' 1841; 'Galvanic Electricity' 1841; 'Bengal Pharmacopoeia' 1844; 'Electric-Telegraph Manual' 1853, etc."

Why William Brooke O'Shaughnessy legally changed his last name is a mystery. A falling out with his father? An offer he couldn't refuse from the Brooke family? W.B.O. deserves a full-fledged biography —too bad the book publishing industry is moribund. It's a life made for the Ivory-Merchant treatment.

Another mystery is why the cannabis that O'Shaughnessy sent back to his alma mater c. 1841 could not be made into effective potions. It is not known whether he sent seeds or seedlings. The latter would have been possible thanks to the Wardian case, a mini-greenhouse in which plants could withstand salt spray and extreme jostling on the deck of a ship, while requiring minimal fresh water. These artfully designed, sturdily constructed environments enabled the Brits to ship tea seedlings from China to India and rubber seedlings from Brazil to Malaya and orchids from everywhere to collectors in England.

Mike Aldrich and Jerry Mandel have looked into why the cannabis O'Shaughnessy sent to his colleagues in Edinburgh didn't yield blockbuster extracts. "This topic was discussed in detail in the US Dispensatories of 1868 and 1899," according to Aldrich. "Footnotes in both editions say George B. Wood (Wood & Bache compiled the 1868 post-Civil-War edition of USD) went to Edinburgh and found the cannabis plant(s) there to be like European hemp —only 4 feet tall, not resinous or sticky at all.



**Wardian Case, a portable greenhouse, made possible the shipment of seedlings across the high seas.**

"At that point, in footnotes quoted in both editions, Sir Robert Christison [renowned Edinburgh toxicology professor, a teacher of O'Shaughnessy] said to Wood that the cannabis useful for medicine in India was grown in the hilly regions, not in the plains... a remarkably accurate comment for the time, pointing up the differences between Himalayan charas plants (C. indica) and the hemp type C. sativa, thinking that the growing of the (small) plant in the British climate may have caused it not to produce resin."

Aldrich believes that the failure to grow potent offspring and/or make effective extracts from O'Shaughnessy's plants "killed the medical marijuana movement" all those years ago. "Neither the British nor the American chemists," he adds, "figured out that sinsemilla [the flowers of female plants shielded from pollen] should be used, until Wood and others learned the sinsemilla-growing technique from India in about 1906."

If things had worked out differently in Edinburgh in the 1840s, resinous cannabis grown for medical purposes may well have taken its place alongside tea and rubber as major commodities controlled by British companies.

## *CBD* *from page 43*

cannabis concentrates can cure cancer. (One of the videos refers to an "all-CBD oil.") Grinspoon e-mailed *O'Shaughnessy's:* "Many people are taking this notion of the cancer curative powers of cannabis uncritically and I believe that this is fraught with danger for patients and for medical marijuana.

"Yes, the work of Guzman and others clearly demonstrates that cannabinoids can shrink tumor cells of some cancers and generally facilitate apoptosis. But it has never been demonstrated that any cannabinoid can cure any cancer. While the effects that have been described are encouraging and suggest that eventually something may come of this approach to some cancers, patients who interpret them as suggesting that cannabis can cure their cancer and ignore the generally more difficult and uncomfortable allopathic approaches to those cancers (which, depending on the type of cancer and its stage), may, if they delay too long, miss the opportunity of a genuine cure or at least the prolongation of life."

**Tod Mikuriya with Aidan Hampson in front of Hampson's poster, "Cannabidiol as a Selective Inhibitor of Inflammatory Lipoxygenases," at ICRS '99. Hampson's study was funded by the National Institute of Mental Health. He was subsequently lead author on a patent, "Cannabinoids as Antioxidants and Neuroprotectants." The assignee on the patent was Hampson's employer, "The United States of America as represented by the Department of Health and Human Services."**

# FAQs

**By The Managing Editor**

• *What are O'Shaughnessy's goals?*

*O'S* was launched in 2003 at the urging of Tod Mikuriya, who essentially had created a new specialty —"cannabis clinician"— after Prop 215 passed. Tod was well aware that a medical specialty is defined by having a journal in which the practitioners can publish their findings and observations and keep up with developments in the field. One goal was to establish the credibility of the field itself — Cannabis Therapeutics.

• *Then why doesn't* O'Shaughnessy's *try to look like a medical journal?*

Prop 215 created this unique semi-legal status for cannabis —usable under California law but not under federal law. Which is not to say that California law was being implemented. The state medical board —which licenses physicians— accused Tod of violating a vague, arbitrarily applied "standard of care." The complaints against him were lodged not by patients or their loved ones, but by sheriffs, cops and DAs who resented his willingness to approve cannabis use by people they used to bust. So *O'S* was conceived as a cross between a medical journal and a defense committee leaflet. And it came out as a tabloid.

Tod said, "I'm a townie, not a gownie. I care about reaching rank-and-file patients and my fellow clinicians —my real peers. I don't care about the so-called prestige of appearing in a peer-reviewed journal. Some prestige! Recent events have exposed them as hot-beds of favoritism and outlets for ghostwriters in the employ of drug companies."

• *Does* O'Shaughnessy's *have a website?*

We hereby renew our pledge to create a strong web presence for O'Shaughnessy's News Service at pcmd4u.org. This time we have help. We're going to work in concert with Martin Lee and webmaster Noah Biavaschi of ProjectCBD.com.

• *What is* O'Shaughnessy's *publishing schedule?*

Since our main distribution point is the pro-cannabis doctor's office, and since most patients come in once a year, there's a logic to being an annual. On the other hand, developments that doctors and patients should know about are occurring at great frequency. Lester Grinspoon wants us to appear quarterly. No matter how we decide the print schedule, we'll be reporting regularly online.

*Are you for legalization of marijuana?*

We are for much more than legalization of marijuana. We want our country to stop waging war in the name of "national security." Our infrastructure needs rebuilding— that would be a mission worthy of our men and women in uniform. Americans who need work should be able to get land and training to become small farmers. Growing our own —not just marijuana—seems like the logical way out of the eco-crisis. The *only* way out.

*Wouldn't that require a big government program?*

We're not against government of the people, by the people, for the people. That's what America is supposed to stand for. We're against government controlled by the corporations.

*What do you think of Barack Obama?*

We don't want to see our well-intentioned young president go down in history as a tragic figure.

# Contents



*Hell, man, I got to tell it like it was. I can't go around changing history."*

*—Louis Armstrong*