Rick Simpson (b. 1950?) : Cannabis Cures Cancer

> If children were given tiny doses of [hemp] oil each day like a supplement, diseases like cancer, diabetes, MS, and many other conditions could be eliminated entirely. --Rick Simpson*

Hundreds of scientists around the world are investigating cannabinoids under the blanket organization The International Cannabinoid Research Society.

Rick Simpson is best known for his advocacy of the claim that marijuana cures cancer. More precisely, he claims that hemp oil cures cancer. All cancer. Not just one of the dozens of kinds of cancers. Hemp oil, he says, cures them all and many other diseases as well.

(A point of clarification: what Simpson means by *hemp oil* may not be what others mean by it. For example, he uses buds not seeds to make his oil. In any case, whatever terms we use--hemp oil, cannabis, cannabinoids, marijuana, etc.--we use them as shorthand for the active chemicals in marijuana plants, buds, and seeds.)

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*Cannabinoids are a group of 21 carbon–containing terpenophenolic compounds produced uniquely by Cannabis species (e.g., Cannabis sativa L.) . These plant-derived compounds may be referred to as phytocannabinoids. Although delta-9-tetrahydrocannabinol (THC) is the primary psychoactive ingredient, other known compounds with biologic activity are cannabinol, cannabidiol (CBD), cannabichromene, cannabigerol, tetrahydrocannabivarin, and delta-8-THC.**

What evidence does Simpson provide to support his claim that hemp oil cures cancer and dozens of other diseases? Is he a trained medical expert who has conducted many controlled double-blind studies? Is he a trained statistical analyst who has reviewed all the studies done on marijuana and cancer to prove that the data support with statistical significance the claim that hemp oil cures cancer? No. He is a zealous advocate who bases his passionate beliefs in the miraculous power of marijuana on personal experience and many testimonials. He has numerous supporters. I last wrote about Simpson in my December 2012 Newsletter: "I'm jealous. Rick's Facebook page has more than 16,000 likes. The Skeptic's Dictionary Facebook page has fewer than 10,000 likes." His page now has almost 140,000 likes; the SD page now has almost 20,000. His likes on Facebook have increased about 10-fold in two years, while the SD's likes have merely doubled. Simpson has also been given an award considered prestigious in some circles, an award that The Skeptic's Dictionary will never even get nominated for: Freedom Fighter of the Year at the Cannabis Cup in Amsterdam.

Below I will recount Rick's story of his personal experiences with using and watching others use hemp oil. I'll follow that up with a look at the scientific evidence that others have presented in support of the miraculous medicinal power of marijuana. I wish I could report that everything Rick claims is true. I have cancer and a cure would be nice. I am sorry to report that hemp is not all it is hyped up to be. In their zealous campaign to get marijuana legalized, Rick Simpson and his supporters may be doing great harm.

They not only promote false hope and spread misinformation about the medicinal powers of cannabis, they spread lies and misinformation about chemotherapy, radiation, and other forms of science-based treatments for cancer. It would be foolish to assume that there are no people with cancer who have given up on science-based medicine and are using marijuana to save them. I don't begrudge anyone in his last days using anything that puts a smile, legal or illegal, on his face. But I am not amused by the cannabis advocates who put their own pleasure above the health and well-being of people suffering from diseases that are treatable, if not curable, by good medicine. To do so in the name of helping people only makes the advocacy more pathetic and contemptible.

Rick Simpson's Story

In 1974 Simpson was driving his car in his native Nova Scotia when a radio report came on about a study that found marijuana reduced cancerous tumors in mice. Specifically, researchers at the University of Virginia had found that several chemicals in marijuana acted against both cancerous tissue taken from mice and on cancerous tissue in the mice.* Simpson never read the study: "Antineoplastic activity of cannabinoids." It was published in the *Journal of the National Cancer Institute* (Vol. 55, No. 3, September 1975). The authors of the study wrote, among other things:

> Lewis lung adenocarcinoma growth was retarded by the oral administration of delta-9-tetrahydrocannabinol [THC], delta-8-tetrahydrocannabinol [THC], and cannabinol (CBN), but not cannabidiol (CBD)....
>
> The cannabinoids (delta-9-THC, delta-8-THC, and CBN) active in vivo against the Lewis lung tumor cells are also active in the in vitro systems.
>
> [note: Delta-9-THC and Delta-8-THC are the only compounds in the marijuana plant that produce all the psychoactive effects of marijuana.]

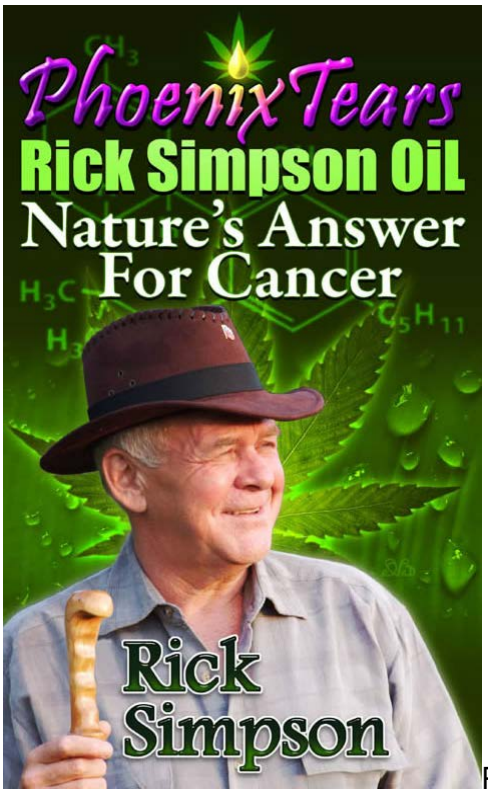
I will not speculate as to why, 40 years later, there has not been any study or set of studies that has proved beyond a reasonable doubt that any of the active ingredients in marijuana stop tumor growth in humans, much less that any of them "cure" cancer in humans. The CCC--Cannabis Cures Cancer--advocates believe otherwise and later in this article I will get to the evidence they provide to support their position. Some, including Simpson, think there has been a Big Government/Big Medicine/Big Pharma conspiracy to suppress research and stifle medical progress. Let's get that nonsensical notion out of the way up front. Big Pharma would not let an opportunity to make billions of dollars producing and selling pharmaceutical grade cannabis products. Big Pharma lobbyists would be all over the politicians they have in their pocket to make it happen *if* it were likely to be profitable. What would make it profitable would be the ability to show in clinical trials that it works, i.e., stops cancerous tumor growth in humans. The evidence so far indicates that it is very unlikely that cannabis is the panacea the CCC advocates believe it is. Furthermore, there isn't a medical doctor alive who wouldn't want a cure for cancer. If cannabis showed as much promise as the CCC advocates claim, there would be labs around the world doing clinical trials on humans. Doing clinical trials on cannabis for cancer is very low on the list of potential drugs to investigate further because it shows little promise compared to other chemicals. Of course, I could be wrong. Maybe there is a conspiracy or maybe fear of potential abuse is driving the meddlers of the world to prevent research on marijuana. I'll leave this topic to others to investigate further. Let's return to Rick Simpson, the man who believes hemp oil is a cure for cancer and many other diseases.

Some twenty years after Simpson heard the radio report about cannabinoids slowing the growth of tumors in mice, he was working in the boiler room at a hospital when he had a head injury. He suffered a concussion and for years afterward had headaches, ringing in the ears, and trouble sleeping. In 1998, he saw the movie *Reefer Madness II* (or was it an episode of Dr. David Suzuki's *The Nature of Things*?) about the promise of marijuana as a medicine. He decided to try marijuana for his medical problems. After all, he reasoned, the prescribed medicine he was taking wasn't working. His doctor wouldn't prescribe marijuana, so he grew his own. He eventually started experimenting with hemp oil that he made from the buds of his plants. After using hemp oil, he says, his headaches went away, the ringing in his ears got tolerable, he slept better, and his arthritis disappeared. "Within a few months," he says, "people saw the difference. The oil controlled the pain, my blood pressure, and it allowed me to sleep. I lost weight and looked 20 years

younger."* Some readers may find it interesting that the man who claims hemp oil cures cancer developed skin cancer after using hemp oil for several years. Anyway, in 2003 Simpson had one facial spot removed and biopsied. Before he got the results of the biopsy, he self-diagnosed himself as having an infection where the spot had been removed. He applied cannabis oil to two other spots that hadn't been surgically removed and a few days later, he says, they were gone. He put the oil on his self-diagnosed infection and it too disappeared. He self-diagnosed that the cancer came back and again he applied cannabis and again he concluded that cannabis had cured his cancer. The biopsy had confirmed, he says, that the removed spot was basal cell skin cancer. The other two spots weren't tested before they disappeared. Simpson seems to have concluded that since the spot removed was skin cancer, the other two spots were also cancerous.

His doctor, of course, rejected Simpson's belief that he had cured his own cancer with hemp oil. Simpson couldn't understand why the doctor didn't believe him. He had this personal experience that proved what he claimed, didn't he? Why wouldn't the doctor admit that removing the skin cancer wasn't what cured him, that it was the rubbing on of hemp oil that cured him? Furthermore, after he used his hemp oil to cure many people of many different ailments, including his mother's psoriasis, he could not understand why neither the medical experts nor those in law enforcement didn't get it. He had his own personal experience with the cure and he now had the testimonials from many others to back him up. He had cured cancers, diabetes, arthritis, glaucoma, and other diseases. What more did these people want by way of proof?

No one should doubt Simpson's sincerity. He passionately believes in the medicinal virtues of hemp oil. He grew his own plants and made his own oil. He gave away his oil to those in need until the police took out his marijuana plants and he had to buy his pot to make his oil. Even now (2014), when he is somewhat of a minor celebrity giving seminars in Europe and author of a book, he does not come across as being in it for the money or the fame. Rick's son, Mike, however, is taking donations by PayPal, credit card, check, or cash. (Scroll to the bottom of any page on http://phoenixtears.ca to donate.)



Rick Simpson may be a brilliant man and I don't think we should hold it against him that he has no medical background or that his education stopped in the 9th grade. But, like many brilliant men, Simpson did not try to back up his personal experience with scientific evidence. He did what most of do most of the time: he set out to confirm what he believed. His reasoning followed his natural instincts. It is unnatural to do what scientists do: try to disprove or falsify beliefs.To him, his belief that cannabis cures cancer was a matter of common sense. It would have seemed weird to him to act as if his belief that *cannabis cures cancer* were a hypothesis to be tested. What would we expect him to do, give fake hemp oil to some of his friends to see if there was some sort of placebo effect going on? Scientists

and experts in cognitive biases know that *confirmation bias added to wishful thinking is a recipe for self-deception*. Rick Simpson is not a scientist. He's a non-scientist who followed his instincts and drew conclusions that seemed obviously true to him and his fellow believers.

Before concluding this article with a review of what the scientific evidence shows regarding cannabis and cancer, I recommend the reader take a look at several essays and a book I've written about the problems that can occur when we blindly follow our natural instincts. Our natural way of thinking works well enough for many matters in daily life, but it is not very reliable when it comes to evaluating complex causal events such as what causes or cures cancer. For that we need well-designed tests that will minimize our natural biases and lessen our chances of self-deception. Collecting anecdotes, which is what Simpson has done, is important but it is not a substitute for controlled studies on humans. One simple and obvious problem with Simpson's method of establishing his claims about hemp oil is that he seems oblivious to the need to isolate the chemical compounds that might be having a medicinal effect. He also seems oblivious to the need for quality control to establish dosage. He mixes what he grows or buys without scientific analysis of how much THC or any other chemical, for example, he is dealing with. He's eyeballing everything and has no idea what dose he is giving to anybody. The dosage of any medicine is absolutely essential to determining its effectiveness and safety. Nor does he keep records. A scientist would note when, where on the body, and how much hemp oil was ingested or applied. Meticulous records would be kept as to how long the treatment went on, what other treatments were given in conjunction to the hemp oil, etc. Otherwise, in the end all you have is a bunch of stories that are of little value to the issue of whether there is a causal connection between hemp oil and any kind of palliative effect.

Also, Simpson knows that not everyone using hemp oil is cured. He and his advocates, like the folks at *High Times*, explain the failures, but their explanations sound like rationalizations:

> Unfortunately, not everyone is saved by the oil. While the HT photographer was taking pictures for this story, Simpson received word that one of his patients had died after only two days of treatment. Simpson estimates that his success rate with terminal-cancer patients is about 70%. “The ones that can’t be saved are usually the ones who’ve had the most chemotherapy and radiation, or wait too long to start the treatment,” he says. “They have to be able to stay alive long enough for the oil to start to work.” In fact, most patients who undergo chemotherapy die from the treatment, not the disease. But because chemotherapy is a multibillion dollar industry that supports some of the biggest pharmaceutical companies in the world, it’s unlikely these corporations will give up this profit stream without a struggle, no matter how many dead bodies pile up.

Simpson provides no evidence for his claimed success rate. Nor does HT provide any evidence for its claims that cancer patients die more frequently from chemotherapy than from cancer and that Big Pharma is preventing the world from enjoying a cheap cure for just about anything that ails anyone. In their fantasy world, Simpson and his advocates seem to think they can just make stuff up as it suits them.

Cannabis: the evidence so far

There are several people who have investigated the scientific evidence for the claim that cannabis cures cancer. In Cannabis Does Not Cure Cancer, Dr. David Gorski, a breast cancer specialist, examines Arjun Walia's web page: 20 Medical Studies That Prove Cannabis Can Cure Cancer. What Dr. Gorski found is identical to what others have found, such as Skeptical Raptor (Marijuana and cancer–what are facts and what’s just smoke), who have looked at the studies put forth by CCC advocates as proof that cannabis cures cancer.

1. Many of the studies put forth aren't even about cancer.
2. Most of the studies were preclinical studies looking at cell culture models and mouse models.
3. Some of the studies found evidence that cannabinoids, under some circumstances, can actually stimulate cancer cell growth and possibly contribute to tumor progression.
4. Many of the studies involve trials of cannabinoids to treat cancer-related symptoms and side effects, not cancer itself.
5. Finally, the studies taken as a whole suggest that some purified cannabinoid agonists might be worth

investigating further, but they do not provide a strong case for cannabis curing any kind of cancer.

Dr. Gorski concludes:

> There's a lot of interesting research about the role of cannabinoid receptors in cancer and whether targeting them with cannabinoid agonists from marijuana or other natural sources, synthetic agonists, or endocannibinoids will be a useful tool to add to the armamentarium of anticancer therapies. *From what we know now, it is quite clear that cannabis does not cure cancer, at least not by itself and certainly not ingested or smoked as marijuana or ingested or applied topically as hemp oil.* Even in purified form, naturally-derived or synthetic cannabinoid agonists show relatively modest antitumor activity in preclinical models, which means that they will have to be combined with existing chemotherapeutic regimens. If they do find their way into the routine clinical treatment of cancer, it will be through rigorous pharmacological studies and rigorous clinical trials, the latter of which, in particular, are painfully lacking. (emphasis added)

Skeptical Raptor writes:

- let's remember that there are 100 to over 200 different types of cancer (the actual number depends on how some researchers subdivide some types) in humans. And each of these different cancers have different pathophysiologies, different genetics, different prognoses, different causes, and different treatments. In other words, it is not one singular disease with one unified course of treatment. Always be skeptical when someone makes some claim that "XYZ cures or prevents cancer", because that's going to be nearly impossible. Every cancer is so different with such different physiology, there is just never going to be a magic pill.
- The first step I take before I investigate any internet claim is check with the Cochrane Reviews, which is my primary research tool to find systematic reviews of primary research in human health care, and to find the best information for evidence based medicine. A search of the Cochrane Reviews shows not one systematic review of THC or cannabis in cancer therapies ...[probably because]...there aren't enough studies of high enough quality to roll up into a systematic review. That's a clue, but it's more a lack of evidence rather than solid evidence. [Michael Kruse of Skeptic North also consulted the Cochrane Reviews and found: "Cochrane has 3 reviews concerning cannabis, three of which are complete and show no evidence to support or refute cannabis in the treatment of Schizophrenia, Tourette's syndrome or Dementia. Cochrane is still studying cannabis for the treatment of nausea in cancer and in symptom relief in HIV/AIDS patients, so conclusions have not been drawn." For more on what the Cochrane Reviews are click here.]
- [SR reviews what evidence there is and concludes:] *There is little evidence that it prevents cancer and a little evidence that it can cure cancer.* But these are very limited in vivo and animal studies, very preliminary and not in controlled clinical trials. (emphasis added)

CancerResearchUK has also investigated the studies cited to support the notion that cannabis cures cancer.

> There is no doubt that cannabinoids – both natural and synthetic – are interesting biological molecules. Hundreds of scientists around the world are investigating their potential in cancer and other diseases – as well as the harms they can cause – brought together under the blanket organisation The International Cannabinoid Research Society.
>
> Researchers first looked at the anticancer properties of cannabinoids back in the 1970s, and many hundreds of scientific papers looking at cannabinoids and cancer have been published since then. This Wellcome Witness seminar is also fascinating reading for aficionados of the history of medical cannabis, including the scientific, political and legal twists.
>
> But *claims that this body of preclinical research is solid "proof" that cannabis or cannabinoids can cure cancer is highly misleading to patients and their families, and builds a false picture of the state of progress in this area*. For example, we've taken a look at more than 30 scientific papers that are often claimed to "prove" that cannabis cures various types of cancer. (emphasis added)

Guess what CancerResearchUK found when they investigated these scientific papers? *There isn't enough evidence to show that cannabinoids can effectively treat cancer in people.*

Does the lack of strong clinical evidence that cannabis cures cancer mean that there is no possible benefit from cannabis for those of us with cancer? Of course not. Many people use marijuana to prevent nausea, anorexia, and vomiting. There are, however, some safer, cheaper drugs that work quite well for these problems. I've found Zofran (ondansetron) has helped me enormously. That said, I have applied for a marijuana card and will use cannabis if the Zofran quits working. I may even try cannabis to help me sleep. I don't have any significant pain right now, so I won't be trying cannabis for pain relief. (I tried cannabis oil and some tablets for a couple of months but quit. It was expensive, did help me sleep better but my ocean wave sound machine seems more effective. I also didn't like the fact that I had no idea how pure the stuff was or whether the doses I was taking would do more good than harm. [new] In one test of 75 cannabis edibles, only 17% were found to be accurately labeled. 60% of the products were overlabeled, claiming to have more THC than they actually did.) Studies are ongoing and someday there may be strong clinical evidence cannabis is not only beneficial for alleviating some of the more irritating side effects of cancer and cancer-treatments, but for treatment of some cancers themselves. But for now, the claims for the miraculous healing powers of cannabis are highly exaggerated and based more on wishful thinking and self-deception than on solid evidence. [/new] You might want to put your miraculous marijuana on the shelf next to your dichloroacetate (DCA).

See also natural cancer cures.

further reading

reader comments

Study: Here's How Cannabis Could Help Your Body Fight Off Cancer by Justin Kander "Researchers tested the effects of CBD, THC, and an endocannabinoid analogue called methanandamide on two lung cancer cell lines, A549 and H460, along with cells from a lung cancer patient. It found these compounds increased expression of intercellular adhesion molecule 1 (ICAM-1) on the cancer cells, which made them more susceptible to white blood cells called lymphokine-activated killer cells (LAK). However, normal cells were not affected this way, showing yet again that cannabinoids can selectively target abnormal cells while leaving healthy tissue alone."

Did you know the government has a patent dated 2003 entitled "Cannabinoids as antioxidants and neuroprotectants." Yes. This patent is assigned to The United States of America, as represented by the Department of Health and Human Services. The patent claims:

> Cannabinoids have been found to have antioxidant properties, unrelated to NMDA receptor antagonism. This new found property makes cannabinoids useful in the treatment and prophylaxis of wide variety of oxidation associated diseases, such as ischemic, age-related, inflammatory and autoimmune diseases.The cannabinoids are found to have particular application as neuroprotectants, for example in limiting neurological damage following ischemic insults, such as stroke and trauma, or in the treatment of neurodegenerative diseases, such as Alzheimer's disease, Parkinson's disease and HIV dementia.

You learn something new every day!

Critical appraisal of the potential use of cannabinoids in cancer management by Belinda J Cridge and Rhonda J Rosengren in *Cancer Management and Research*. 2013; 5: 301–313. "Cannabinoids affect a range of pathways that regulate cell division and viability; however, the knowledge in this area remains incomplete....Overall, the cannabinoids affect multiple cellular signaling pathways, which means they have the potential to decrease cancer development, growth, and metastasis. However, there are likely to be both cancer- and cannabinoid-specific elements to these effects....Cannabinoids show significant potential as antiangiogenic agents, and this may prove key to their success as a clinical therapy, but the role of the cannabinoid receptors in this response is still to be fully elucidated." Due to prejudice and our long history of opposition to the freedom of adults to use drugs like marijuana, it is unlikely that i the near future the

United States will be sponsoring any research on cannabinoids that might lead to beneficial cancer treatments.

CON

Cannabis Does Not Cure Cancer by Dr. David Gorski

Science versus the Politics of Weed by Dr. David Gorski

Hemp Oil Scammers - A Facebook Page devoted to exposing scammers

The American Cancer Society page on Marijuana

Cannabis, cannabinoids and cancer – the evidence so far - Cancer Research UK

Marijuana and cancer–what are facts and what's just smoke posted on Skeptical Raptor's blog

Pot. Marijuana. Cannabis. Misunderstood Motives. by Eric Hall

Cannabinoids and cancer: causation, remediation, and palliation from *The Lancet - "As yet there is no evidence that THC or other cannabinoids have anticancer effects in humans."*

PRO

Rick Simpson Oil (registered to Mr Rick L. Simpson, General Delivery, 344 Little Forks Rd., Springhill NS, B0M1X0, Canada)

Rick Simpson's Story: The man who rediscovered the cure for cancer by Lincoln Horsley

High Times on Rick Simpson's Hemp-Oil "medicine"

Rick Simpson in his own words - Healing Cancer with Cannabis - A YouTube Video

"Miracle" Cannabis Oil: May Treat Cancer, But Money and the Law Stand in the Way of Finding Out By Chris Roberts in SF Weekly

National Cancer Institute at the National Institutes of Health (obviously from the National Center for Complementary and Alternative Medicine) I advise CCC advocates to read more than the first page of the NCI's report. Please read the sections on Cancer Risk and Cancer Treatment. Several studies have found *an increased risk of certain types of cancer from cannabis use*. Furthermore, "*No clinical trials of Cannabis as a treatment for cancer in humans were identified in a PubMed search*; however, a single, small study of intratumoral injection of delta-9-THC in patients with recurrent glioblastoma multiforme reported *potential* antitumoral activity [emphasis added]."

The Rick Simpson Process of Producing Hemp Oil

clinical trials

Cannabis, pain, and sleep: lessons from therapeutic clinical trials of Sativex, a cannabis-based medicine.

Cannabinoid action induces autophagy-mediated cell death through stimulation of ER stress in human glioma cells

In response to Dr. Gorski's post on Science-Based Medicine that Marijuana Does Not Cure Cancer, JD wrote:

Cannabis DOES cure cancer. I dunno how much more evidence you want/need. We know how & why it works, we have lab study's [sic], chemical study's [sic], animals study's [sic], human study's [sic] & pseudo

human trials [?].
http://www.ncbi.nlm.nih.gov/pubmed/12648025
http://www.ncbi.nlm.nih.gov/pubmed/19914218
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To which, Dr. Gorski replied:

> I bet you haven't read even half (or a quarter) of those articles and studies. More importantly, I challenge you to show me a study from that list that isn't just like the twenty or so I discussed; i.e., preclinical cell culture and animal studies that show a fairly high IC50 even using purified cannabinoid extracts. That will require actually reading at least the abstracts (possibly more) of all of those studies.

IC50 is how much drug you need to inhibit the thing you are trying to inhibit by 50%.

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Medical marijuana as the new herbalism, part 3: A “cannabis cures cancer” testimonial

Posted by David Gorski on March 16, 2015 195 Comments

It’s been a while since I discussed medical marijuana, even though it’s a topic I’ve been meaning to come back to since I first dubbed medical marijuana to be the equivalent of herbalism and discussed how the potential of cannabinoids to treat cancer has been, thus far, unimpressive, with relatively modest antitumor effects. The reason I refer to medical marijuana as the “new herbalism” is because the arguments made in favor of medical marijuana are very much like arguments for herbalism, including arguments that using the natural plant is superior to using specific purified cannabinoids, appeals to how “natural” marijuana is, and claims of incredible effectiveness against all manner of diseases, including deadly diseases like cancer, based on anecdotes and testimonials. Now, as I pointed out before, not only am I not opposed to the legalization and regulation of marijuana for recreational use, even though I’ve never tried it myself, but I support it. What I do not support are claims for medical effects that are not backed up with good scientific evidence, and for medical marijuana most claims fall into that category. That’s why I tend to view medical marijuana as a backdoor way to get marijuana legalized. Personally I’d rather advocates of marijuana legalization drop the charade, argue for legalization, and stop with the medical nonsense.

The last time around, I discussed the evidence supporting claims that “cannabis cures cancer” and found them to be wanting based on science. I didn’t however, discuss the “cannabis cures cancer” testimonial machine that drives the claim that marijuana is useful for treating cancer; at least, I only touched on it by discussing briefly Rick Simpson, who claims that his hash oil cures approximately 70% of patients with terminal cancer and a published anecdote in which it was claimed that hemp oil was effective in treating acute lymphoblastic leukemia. (It wasn’t. At least, the evidence presented was not convincing.) Since then, I’ve wanted to revisit the topic of “cannabis cures cancer” testimonials, and, for whatever reason, now seems like a good time to do it.

Stephanie LaRue

Last week, I discovered the “cannabis cures cancer” testimonial of a young woman named Stephanie LaRue. Hers is a sad story in that she was diagnosed at a young age (30 years old) after her boyfriend found a lump in her breast and misdiagnoses by three different doctors. In many ways, her story is an inspiring one based on her will to fight and her activism, which have led her to have served on the Board of Directors for the Los Angeles Susan G. Komen for the Cure, Southern California’s Breast Cancer Network of Strength, and the USC Norris Cancer Center’s Cancer Survivorship Advisory Council. Near and dear to my heart, she also is very much into rescuing and fostering many wounded, mistreated and special needs dogs. Indeed, I approach this particular testimonial with more than a little trepidation because there’s an incredible amount to admire about LaRue and, more importantly, her involvement with Komen and other breast cancer charities means that people I respect and admire (who might read this) very well might know her—or even be friends with her. Still, given the direction her story has taken, I feel obligated to discuss it.

Here’s a video of her from 2007 when she was still undergoing chemotherapy:

Notice the themes we see so often in cancer patients, particularly young cancer patients: *Why me?* There *must* be a reason. It can't have "just happened". Breast cancer is a disease of older women. (Indeed, the mean age at diagnosis is around 61.) There *must* have been something in the environment. Possibly. As I've pointed out before, for breast cancer, environment- and lifestyle-attributable causes account for a much smaller fraction of cancer diagnoses than most people believe, and 1.8% of cases of breast cancer occur in women 34 and under. Given that there are approximately 233,000 new cases of breast cancer diagnosed every year in the U.S., that means that close to 4,200 women under 34 are diagnosed each year with breast cancer. Still, being diagnosed with breast cancer at age 30 is unusual; so it's understandable that LaRue would wonder why it happened to her.

Worse, LaRue was diagnosed with Stage IV disease, as described in an article by Sonja Renea published on the *Medical Jane* website entitled "Meet Stefanie LaRue: Cancer Survivor and Medical Marijuana Advocate":

> Stefanie was sent home several times with several rounds of antibiotics, which is quite telling of younger folks being misdiagnosed. By the time she could be tested thoroughly, the cancer had spread to her bones. Doctors diagnosed her with Stage 4 Metastatic Breast Cancer, which is cancer that has spread beyond the breast to other organs in the body. The prognosis was grim: she was given a year to live, at most.
>
> Three weeks later, Stefanie began her first round of chemotherapy. To make matters worse, she had to to [*sic*] cope with her employer, who showed little sympathy for her situation. Despite her job in commercial real estate being very stressful, she was expected to work through her cancer treatment.

This is a big problem with health care in the U.S. besides the difficulty many people have affording health insurance, a problem only partially alleviated by the Affordable Care Act (a.k.a. Obamacare), which didn't exist in 2005. You can be diagnosed with metastatic breast cancer and still be screwed as far as work goes. It happens far too often in this country.

So LaRue ended up quitting her job and filing for disability. She underwent six rounds of chemotherapy and then a mastectomy. At this point reading her story I had a question. If LaRue had bone metastases, it's not clear to me why her surgeon and oncologist would recommend that she undergo a mastectomy. Three possible reasons suggest themselves to me as a breast surgeon. One is that it was done to prevent the primary tumor from growing through the skin and turning into *en cuirasse* disease, although usually such surgery is not done right after chemotherapy but when the tumor has started to grow again. Another is that she had a complete radiologic response to the chemotherapy, meaning that all her breast and bone disease disappeared. When that happens and the patient has been rendered "no evaluable disease" (NED),

we will often treat her as though she were not stage IV and undertake surgery with curative intent. The final possibility is that surgery was done with the intent of prolonging survival even though metastases were still present. It's been an ongoing controversy in breast cancer over whether removing the primary tumor prolongs survival in stage IV disease or whether the apparent improvement in survival due to surgery is due to selection bias; that is, bias towards healthier patients with less aggressive disease who are chosen to undergo surgery preferentially. More recent evidence suggests that removing the primary probably doesn't improve survival, but that was not at all clear back in 2005. (To be honest, it still isn't quite clear.)

On her website, LaRue reports that her tumor was 8 cm in diameter (which is big). Apparently her tumor didn't shrink enough to be removed in a lumpectomy; so she needed a mastectomy:

> After chemo she had surgery to remove the cancer. But her margins were not clear, so another surgery followed. She was left with only skin and a nipple on the right side of her chest. Her breast surgeon had scraped all the way down to the chest wall removing all the breast tissue possible but sparing the skin. Despite the advanced stage of her cancer, she got to keep the outside of her breast because she had a skin-sparing mastectomy. A plastic surgeon was later able to reconstruct her breast, restoring her shape, her femininity and her sexuality.

At this point in my reading, I was unclear as to why a surgeon would do a skin-sparing mastectomy in a patient with stage IV disease. Most plastic surgeons are reluctant to do reconstruction in such a patient because reconstruction can be a big operation, and if the patient isn't expected to live more than a year it just doesn't make a lot of sense to have the patient spend a significant chunk of her remaining time recovering from surgery, having additional surgeries to "touch up" the reconstruction. The willingness of her surgeon and plastic surgeon to undertake a skin sparing mastectomy and reconstruction suggests to me that she had a very good response to the chemotherapy and/or that her prognosis as a stage IV patient was viewed as being considerably more favorable than usual.

Whatever the case, during the chemotherapy that she underwent before her surgery, LaRue looked to alternative medicine to ease her symptoms:

> She found help with an integrative oncologist at UCLA, where she learned how to make changes to her diet, use natural supplements, get acupuncture, and work on personal fitness; all of which are integrative, complementary, and alternative treatments to go along with chemotherapy.

Now here's the thing. As a patient with stage IV disease, LaRue did *really* well for eight years. It's hard to find a good detailed description of what happened between November 2005 (when she was diagnosed with breast cancer) and 2013, but she didn't start using cannabis oil until 2013, which means that conventional oncology is what got her through nearly eight out of the nine and a half years she's survived with her stage IV cancer. It's important to remember that when looking at a lot of the articles about LaRue, because before 2013, although she had gone all in for "integrative oncology," she hadn't yet discovered cannabis and was still being treated with mostly conventional medicine. So, between 2006, when she finished her initial treatment, and at least September 2013, when she posted a series of images to Instagram of her hospitalization for thoracoscopic surgery, conventional medicine is what kept LaRue alive. So when Sonja Renea of the *Medical Jane* website writes that "Stefanie LaRue was 30 years old when she was diagnosed with Stage 4 Metastatic Breast Cancer and given the dismal prognosis of less than a year to live" and follows it up with, "That was nine years ago," she is being deceptive.

This is how it's described in the *Medical Jane*:

> In 2013 Stefanie had a Video-Assisted Thoracoscopic Surgery (VATS) and the results were not good. This was now her third reoccurrence of cancer. The chemo sensitivity testing concluded there were five lines of chemo treatments that would work on the tumors.
>
> Stefanie declined the treatment. "I did my homework. I researched as much as I could. I watched. I listened. I read. I contacted. I prayed. Most of all, I believed. I weighed my options, which were essentially chemotherapy or cannabis oil, and I decided to take the natural route

> this time…" she says.
>
> Stefanie followed the Rick Simpson Oil (RSO) protocol until she was cancer-free. "Cannabis oil killed all of the tumors in my body. My monthly lab and quarterly scan results are proof that the cannabis oil treatment worked," she says. Her doctor, who had previously been skeptical, now credits these "alternative" treatments as the reason for her speedy recovery.

On Instagram, LaRue described it thusly in a posting dated October 2, 2013:

> Dear cancer, as we both know, yesterday was a big day of news. And sadly for you, you lost. You lost your "upper hand" you tried to claim in that you were potentially showing up again (unwelcomed in my body) not as a metastatic reoccurrence, but as a possible new primary cancer. Which would have been a much more challenging ass kickin match between you and I. None the less, I would have enjoyed. But since you are now known as the same initial metastatic breast cancer reoccurring, I hope you are preparing for what is coming to you. Because now I have the upper hand. When the chemo sensitivity tests are complete on my biopsy tissue at Caris Labs we will know exactly what to come after you and all your little friends with! Poor you. I know your still cowardly hiding in my body but you have pissed off some pretty important people that care a lot about me and guess what… Now they too are coming in to whip your ass!!!

We've encountered Caris Labs before in the context of discussing Stanislaw Burzynski's incompetent "personalized gene-targeted cancer therapy." Basically, Caris is a company that will do various genomic tests and immunohistochemistry on a tumor sample to try to identify which targeted agents it might be sensitive to. I've basically discussed how the routine use of such a test is premature, given that there isn't any good evidence that using a test like the one from Caris or other competing tests results in better response rates or prolonged survival, but such tests have still proliferated and their use is not uncommon, even in academic medical centers.

In any case, at this point in the fall of 2013, LaRue was facing her third recurrence of cancer. Unfortunately, this is a story very much like the many alternative cancer cure testimonials I've deconstructed over the years in that we lack a lot of key information, which means that I can only speculate. First, we don't know how extensive a cancer recurrence LaRue had. Given that she underwent thoracoscopic lung surgery (a thoracoscope is like a laparoscope, except that instead of letting a surgeon operate in the abdomen it allows the thoracic surgeon to operate in the chest with minimal incisions), presumably she had a lung nodule. In a patient with stage IV disease, most such lesions would be biopsied using a core needle under CT scan guidance, rather than excised surgically through a laparoscope. Why did the surgeon choose this course?

A couple of possible reasons suggest themselves from the story. First, perhaps she did undergo a CT-guided core needle biopsy and the diagnosis was uncertain. Certainly LaRue's Instagram posting, in which she gloats over her tumor for not being a new primary tumor but just the same as the other recurrences of her original tumor, suggests that this could be the case. After all, a new suspicious lung nodule in a breast cancer patient is usually considered a new metastasis until proven otherwise. In any case, in patients with metastatic disease, a tissue diagnosis is always imperative before beginning treatment if at all feasible. Another possibility is that this tumor, whatever doctors thought it was before surgery, was the only site of disease detectable. In such a case, particularly in a young patient who had been doing well for nearly eight years even if she did have stage IV disease, strong consideration would be given for excising the cancer and eliminating the only known site of disease even though the evidence that metastasectomy (removing the metastasis) will prolong survival in breast cancer is mostly without controls and thus prone to selection bias. (Metastasectomy of liver and lung metastases can definitely prolong survival in colorectal cancer.) Still, there is evidence that in select patients removing pulmonary metastases can result in significant survival benefit. Whether LaRue is one of those select patients is unclear.

So here's what I think probably happened. After surgery LaRue (understandably) did not want to undergo further chemotherapy. For whatever reason, she latched on to Rick Simpson's hemp oil as the treatment that would control her cancer. How she found out about it and why she became convinced it would cure

her, it's hard to say from publicly available information. In the *Medical Jane* story, LaRue proclaims that "cannabis oil killed all the tumors in my body" and that her "monthly lab and quarterly scan results are proof that the cannabis oil treatment worked." It is, of course, impossible to confirm or dispute this assessment without knowing what all her scans showed.

There is, however, a photo on Instagram of LaRue receiving a shot, which she identifies as Xgeva, which LaRue described as "bone mets maintenance." And so it is. It's a monoclonal antibody against the RANK ligand, a protein that acts as the primary signal for bone removal, and it prevents fractures in patients with bone metastases. So this implies that LaRue still has bone metastases. It also makes one wonder what other non-chemotherapy conventional therapy she might be taking. There's also a post by her on Twitter asking about Afinitor (everolimus):

Afinitor is a drug that inhibits an enzyme called mTOR and is used in cancer that is positive for the estrogen receptor after it develops resistance to anti-estrogen therapy. Apparently she did not take Afinitor, because on March 14, 2014 LaRue posted a photo on Twitter:

In the photo, LaRue is receiving an injection of Zoladex (goserelin), a drug used to suppress production of sex hormones. In other words, six months after her thoracoscopy, LaRue was receiving conventional medical therapy, specifically a treatment to shut down her ovaries' production of estrogen. Thus, LaRue appears to be the case of a cancer patient who chose unproven alternative medicine but at the same time continued to receive conventional medical therapy for her cancer and did very well. As is the case with most such patients, she attributes her excellent outcome, at least after her most recent relapse, far more to the alternative treatments (in this case, Rick Simpson's hemp oil) than she does to the conventional therapy

she is also taking, even after her discovery of hemp oil. I also can't help but point out that the very fact that LaRue survived nearly eight years with stage IV cancer before discovering hemp oil is a pretty strong argument that from a biological standpoint her tumor is pretty indolent, as some tumors positive for the estrogen receptor are; so it's not surprising that she would still be alive a year and a half after her thoracoscopy on Zoladex and Xgeva alone (plus whatever other conventional medical therapy she is receiving). Only LaRue and her oncologist know for sure, though, and her oncologist can't tell anyone without her permission.

Cannabis versus breast cancer

As much as I admire the grace and determination with which Stefanie LaRue has endured over 9 years after her cancer diagnosis, as a cancer doctor it bothers me profoundly that she has allowed herself to fall under the spell of the "cannabis cures cancer" alternative medicine crowd, in particular Rick Simpson. I discussed Simpson the last time I wrote about cannabis and cancer. As I said at the time, Rick Simpson is just like cancer quacks the world over, who have no firm evidence to back up their miraculous-sounding cure rates and excuse their failures by blaming the treatment patients had before they started the quackery. Quacks like Rick Simpson do those who think that cannabinoids have promise in treating cancer no favors.

I also discussed how the vast majority of studies touted by the "cannabis cures cancer" advocates tend to be preclinical studies in cell culture or animal models that show relatively modest antitumor effects due to various cannabinoids. Indeed, this article on *Medical Jane*, "Studies Show Cannabinoids May Help Fight Triple-Negative Breast Cancer", fails to provide particularly convincing evidence that they do. Before I look at the studies, I can't help but note that triple negative breast cancer is breast cancer that makes neither the estrogen receptor (ER), the progesterone receptor (PR), nor overexpressed HER2. Yet the article invokes Stefanie LaRue, who clearly has ER(+) breast cancer.

Another thing that needs to be pointed out. Every single one of the studies invoked by *Medical Jane* has nothing to do with hemp oil, be it Rick Simpson's hemp oil or some other type. Each of the studies examines either purified cannabinoids or, in the case of this study, a chemically modified cannabinoid. This study cited in *Molecular Cancer*, for instance, looks Δ9-tetrahydrocannabinol, the most abundant and potent cannabinoid in marijuana, and JWH-133, a non-psychotropic CB2 receptor-selective agonist. Both inhibit the growth of HER2(+) breast cancer cells in cell culture and in mice, but the concentrations needed are pretty high, with an IC50 (concentration that is 50% of maximum inhibition) in the range of 5 to 10 μM, concentrations achievable with injection of purified compound but certainly not by smoking pot

You are also unlikely to achieve these levels by drinking hemp oil, which, by the way, usually contains so little THC that it is below the limit of detection for common assays and manufacturers brag that it's impossible to fail a drug test if you're consuming hemp seed oil because "THC levels in our products are barely measurable." Of course, I do realize that Rick Simpson calls his oil hemp oil even though it's really cannabis oil derived from the buds rather than the seeds, but even he brags that "following the dosage previously described, many people can take the full treatment and never get high," which implies that his oil achieves nowhere near the concentration of THC in the blood necessary to be active against cancer. Moreover, oral bioavailability of THC from such oils is notoriously low, between 4-20%, making it unlikely that concentrations well above the 10 μM necessary to inhibit or kill more than 50% of the cancer cells are achievable with oral dosing.

Thus, the various studies cited, such as this one, which shows inhibition of the epidermal growth factor pathway by purified cannabidiol (CBD), a non-psychotropic cannabinoid; this one, the aforementioned study that examines purified Δ^9-THC and JWH-133 against HER2(+) breast cancer; and this one, which also examines CBD in breast cancer, are interesting and very preliminary. Moreover, they all examine cannabinoids purified from cannabis, and one even examines a chemically modified cannabinoid. In other words, even if cannabinoids make the jump from preclinical models to humans, these studies do not support the use of medical marijuana, either smoked as the plant or ingested as an oil, to treat breast cancer. They also do not suggest sufficient activity to produce miracle cures of stage IV cancer as described by Rick Simpson. Indeed, a recent review concludes that "current preclinical data does not yet provide robust evidence that systemically administered Δ^9-THC will be useful for the curative treatment of cancer,"

although CBD might have a role based on preclinical data.

Neither cannabinoid, however, is likely to be curative for advanced cancer. It's possible that specific cannabinoids might have a role to play in the multimodality treatment of cancer, but, given what we know about them from preclinical studies, it's highly unlikely that cannabinoids, medical marijuana, or Rick Simpson's hemp oil can cure stage IV cancer of any kind.

Hope versus hype

I have no doubt that Stefanie LaRue honestly believes that Rick Simpson's hemp oil is the reason why she's still alive today and doing so well. I can't help but point out that Stanislaw Burzynski's patients, for example, also honestly believe that his antineoplastons are what saved their lives, even though even Burzynski can't produce good evidence that they have antitumor activity. Depressingly, it just goes to show how even such an accomplished woman can fall prey to the same human cognitive shortcomings that we all share and confuse correlation with causation. If it were just her, I wouldn't have felt obligated to write this post, but LaRue makes it very clear that not only does she believe that Rick Simpson's hemp oil allowed her to heal herself of her longstanding metastatic cancer:

But she plans on becoming an evangelist for Rick Simpson's hemp oil and medical marijuana:

In this video she notes that she's had multiple recurrences and they're all gone, after which she challenges the viewer to "explain that." Believe it or not, personally, I'd be overjoyed if something as simple as hemp oil could treat stage IV cancer so effectively. I really would, as it would mean that I'd rarely have to see a breast cancer patient die. However, although I can't be sure without a lot more information (which is highly unlikely to be forthcoming) and I do have to concede the possibility, albeit remote, that Rick Simpson's hemp oil is the reason why LaRue has survived a year and a half since her last new metastasis, I nonetheless suspect that it is far more likely than not that it is the Zoladex and the Xgeva (not to mention whatever other conventional treatments that LaRue may be taking that she hasn't mentioned on social media) that are keeping her going now, combined with her disease's already-demonstrated indolent biology.

And long may they continue to do so!

For nearly eight years, Stefanie LaRue fought a battle with courage, inspiring intelligence, and grace. Her story was (and still is) a story of hope for women with stage IV cancer that they can live a long time with the disease with good quality of life. Unfortunately, a year and a half ago her story took a turn into pseudoscience, becoming a cautionary tale of how even the most intelligent, ambitious, and determined person can be subject to magical thinking. This would not be an issue with me were it not that, inadvertently, and with the best of intentions, LaRue has declared her determination to promote Rick Simpson's hemp oil as a cancer cure, using her own story as an example of what it can do. Given her proven history of advocacy and her numerous accomplishments with organizations like the Komen Los Angeles County Affiliate from 2008 to 2010 (before she discovered hemp oil), I can't help but be worried that she will in her quest to save women from stage IV breast cancer end up doing exactly the opposite for some women.

I still hold out hope that, given her history, LaRue will eventually realize that her true story is a cause for hope for women with stage IV disease. Thanks to advances in breast cancer care, more and more women with stage IV disease are living a lot longer than expected, even ten years, all with no need to resort to unproven treatments promoted with testimonials, like Rick Simpson's hemp oil.

That's the real reason for hope.