

IS ANECDOTAL EVIDENCE REALLY EVIDENCE?

For the past 50 or 60 years America has been conducting a vast uncontrolled experiment.

Tens of millions of Americans have used cannabis recreationally and medicinally, with little or no systematic data collection or medical oversight.

This has generated a huge amount of information, but how do we extract meaningful data from it? How do we obtain a signal from all this noise?

Opponents of medicinal cannabis (MC) charge that this anecdotal information is useless at best, and misleading at worst. Only the gold-standard, double-blind controlled study is reliable, they maintain (this is the traditional “scientific” paradigm, which forms a legitimate basis for modern medicine, at least in principle. It’s also a standard which drug companies have subverted and exploited to justify marketing money-making drugs which are minimally effective or even dangerous; so much for the solid reliability of the gold standard).

Critics are partially correct. On an individual basis, anecdotes *are* notoriously unreliable.

A guy has cancer, and the docs are not optimistic. On a friend’s recommendation, he begins to use cannabis. He certainly feels better right away, and in time, his cancer goes into remission. He is absolutely convinced that cannabis cures cancer!

Trouble is, it’s fairly common for cancer to unexpectedly enter *spontaneous* remission without cannabis or other “approved” drugs. He simply has no way of knowing whether, in his case, cannabis acted as a curative agent.

In the same neighborhood lives a woman whose husband died of cancer despite using cannabis in exactly the same fashion as the guy who survived. She is absolutely convinced that cannabis is useless for cancer treatment!

Does this mean that cannabis offers no benefits in cancer treatment? Not at all.

Larger numbers of anecdotes still don’t guarantee that they reflect a genuine discovery. A case in point is the laetrile debacle.

Laetrile, an apricot-pit extract, was touted for a while as a remarkable cancer cure; wipes out the cancer without making the patient sick! Unsubstantiated anecdotes abounded. As it turned out, some of these “cured” patients never had cancer in the first place; some used other standard treatments as well as taking laetrile; and spontaneous remissions were still possible.

But there was a dark side. Some people elected to forego standard medical treatment, and just take laetrile on their own, or go to Mexico to get it. Many of these people died unnecessarily of curable cancers, because laetrile was in fact worthless.

Were there red flags? The medical community was skeptical from the outset, for good reason. There was simply no plausible physiologic mechanism proposed to suggest any avenue by which laetrile could alter cancerous processes. There were confident assertions that laetrile generated biologically-active cyanide compounds, and that these somehow selectively killed cancer cells. While drupe pits do contain cyanide compounds in small amounts, the supposed exclusive targeting of cancer cells simply isn’t the way cyanide works in the body.

Fortunately, the human physiologic pathways with which cannabis interacts *have* been extensively documented. CB1 and CB2 cannabinoid receptors have been characterized, leading to the discovery of endocannabinoids like anandamide. Much remains to be learned about exactly how these pathways influence bodily functions; one should certainly not assume that manipulating them with plant cannabinoids will necessarily have a beneficial effect. But the underlying principles are known, and have explanatory power with regard to claims about cannabis' therapeutic actions.

We have a firm scientific basis supporting the plausibility of MC anecdotes.

In the late 1970's, anecdotes began to pour in regarding a strange wasting condition appearing in the population. Those affected also seemed prone to other strange diseases – opportunistic pneumonias like pneumocystis; a formerly-rare skin cancer, Kaposi's sarcoma. The sheer volume and consistency of these reports led to further investigation. It turned out that young males were most likely to be afflicted, and then that these males were predominantly homosexual.

When these widespread, consistent anecdotes finally triggered detailed exploration, Acquired Immune Deficiency Syndrome was characterized, which led to the discovery of a new retrovirus, HIV.

Anecdotes opened the path to discovery.

Opium resin had been used for thousands of years, based on “unscientific” methodologies, as a remedy for pain and diarrhea. Its potential to cause dependence was also known on an anecdotal basis. Opium did not suddenly become a “real” therapy only when someone broke it down into its alkaloid constituents, or purified those elements enough to determine relative potencies and milligram dosages, or discovered opiate receptors and endorphins.

Tens of millions of Americans have drawn their own conclusions about cannabis. Sometimes their conclusions are unwarranted – for example, when a person is experiencing life disruptions due to cannabis abuse, “addictive thinking” leads to rationalizations and false justifications. (Fortunately, true cannabis addiction is relatively rare – certainly occurring less frequently than addiction to alcohol and tobacco, or to many opiates, stimulants, sedatives, and hypnotics routinely prescribed for medical reasons.)

But there is strength in numbers, whether we're talking about anecdotes, or the statistical significance of a formal experiment. When thousands of anecdotes consistently identify therapeutic effects of cannabis use for specific conditions, we should pay attention. When the beneficial effects disappear upon discontinuation of cannabis, and reappear when the cannabis is resumed, we should pay attention. When specific strains of cannabis consistently show disease-specific effects, we should pay attention.

Both opponents and proponents of MC endorse “further research” on cannabis. Where does such research start? What, specifically, is there about cannabis upon which we should focus such research?

We don't have to reinvent the wheel. We have a wealth of compelling anecdotal data to guide research. Just as importantly, this data can also serve the needs of patients who need help *now* – people for whom currently-available therapies are ineffective or too toxic.