



GLOBAL DRUG SURVEY

GDS2019: Cannabis edibles – booming business and harm reduction?

Professor Adam R Winstock & Dr Larissa J Maier

People have eaten cannabis for as long as it has been smoked. The first documented edibles, or cannabis-infused foods to be more accurate, came from India, where GDS is running for the first time this year. Used in spiritual and ceremonial events, edibles were also offered to soldiers before battles.

Even then, the lipid solubility of THC and other constituents of cannabis was recognised, with Sanskrit recipes advising initial preparation by heating the natural herb with ghee (a kind of cooking oil) before combining with other food. Cannabis-infused ghee was thus the forerunner of ‘cannabutter’, the essential starting point for any modern-day cannabis chef. Oral co-administration of cannabinoids with lipids (fats) leads to far higher absorption and blood plasma levels compared to when consumed alone.

Both cooking and smoking heat cannabis sufficiently to decarboxylate THCA to THC, the precursor to the main psychoactive ingredient in cannabis. **Beyond that, the major difference in the effect between eating and smoking is that smoking leads to rapid drug absorption and onset of effects (minutes) whilst eating is much slower (hours).** In addition, when you eat cannabis, dose for dose you get lower peak blood levels (less intense effect) and a longer duration of action (stoned for longer). This is because of the slower clearance (removal) and wider distribution of THC within the body when eating compared to smoking.

While smoking avoids what is known as first pass metabolism (the breakdown by your liver), eating cannabis enables your liver to breakdown cannabis into over 50 metabolites, some of which are psychoactive. Importantly, almost 100% of THC gets converted to 11-hydroxy-THC compared to only 20% formed after smoking. Overall, 11-hydroxy-THC is more psychoactive than THC, so it gets you more stoned.

Smoking has become the dominant route of consumption in most countries because of four main reasons. First, smoking requires little or no preparation and the preparation that is involved, is often considered joyful for people. Second, people aiming to get high are attracted to both the rapid onset of action offered by smoking but also the ability to titrate consumption to the desired effect.

If you have to wait 2 hours to know how stoned you are of a single dose, taking another dose too soon can leave you being way too stoned. Third, smoking leads to a predictable effect for people who smoke regularly. And finally, sharing a spliff is way more sociable than passing around a hash brownie.

Table 1 – Eating vs. smoking compared

	Oral	Smoke/Vape
Time to onset	30-90 minutes	3-5 minutes
Bioavailability	6-10%	5-50%
Time to peak effect	2-3 hours	15-30 minutes
Duration of effect	4-12 hours	2-4 hours
Ease of titration	Difficult	Relatively easy
Peak levels	Lower	Higher
Predictability of effect	Poor	Good

With worries over the harmful effects of smoking being one of the most commonly raised public health concerns, especially in countries where cannabis is mixed with tobacco, the attraction of a route that bypasses these harms is obvious.

Offering a range of diverse and often delicious edibles within the context of a regulated market is also great for businesses. Between 2015 and 2016 the sales of edibles in states like Colorado have increased by more than 50% - in just one year.

Although edibles are still a small fraction of the overall cannabis market their popularity is growing. For example, GDS data from US participants collected in the last 3 years showed that edibles went from being rarely chosen as the most common form of cannabis used, growing from 2.5% in GDS2016 and 3.7% in GDS2017, to 13.7% in GDS2018.

The potential for growth driven by demand, culinary ingenuity and profit are enormous. It should be noted that edibles do vary widely in their composition and risk profile. For example, CBD products with less than 1% of THC carry very low risk and are marketed as having medical properties while edibles such as chocolates with a high THC content can lead to an overwhelming experience even at moderate levels of consumption.

This year GDS is exploring edibles in all their forms and functions. Do people know what they are eating? Do they know the exact THC content of the products? How long are they high? What are the pros and the cons? Is the labelling sufficient?

So, if you've eaten cannabis in the last year please share your thoughts and take part in the world's largest drug survey GDS2019 at www.globaldrugsurvey.com/GDS2019