

HHC and Your Mental Health

Information about Hexahydrocannabinol (HHC) and
how it might affect your mental health

August 2024

Contents

Background Information

1. What is HHC?
2. What are Cannabinoids?
3. How is HHC produced?
4. When did HHC first emerge?

HHC and Its Use in Ireland

5. What are the effects of HHC use?
6. In what form is HHC sold?
7. How is HHC consumed?
8. Why are people attending mental health services for addiction because of HHC?
9. Are there long-term consequences of taking HHC?
10. What are the risks of consuming HHC?
11. If treatment is required for HHC use, what are the options?
12. What are the legislative options for HHC?

Key Messages & Actions

13. What do the public need to know?
14. What can be done immediately to prevent harms of HHC?

References

Background Information

What is HHC?

Hexahydrocannabinol (HHC) is a new semi synthetic cannabinoid product. HHC is chemically like THC. It is designed to imitate the effects of THC, the main psychoactive substance found in cannabis that produces a 'high'.

HHC has been available on the Irish market since 2022. It is currently available to buy in different forms in high-street shops and online. It is not considered safe to consume by health professionals.

What are Cannabinoids?

Naturally occurring cannabinoids

Cannabinoids are the naturally occurring compounds found in the human body as well as inside the cannabis plant. Both have effects on the body and mind.

Cannabinoids affect our body mainly by interacting with a system called the endocannabinoid system. The endocannabinoid system controls our memory, mood, sleep, appetite and fertility.

There are over a hundred different cannabinoids in the cannabis plant, but the two that are most well-known are THC and CBD.

THC is the short name for delta-9-tetrahydrocannabinol, and CBD is short for cannabidiol.

THC and CBD act quite differently in our bodies and with the endocannabinoid system. THC is the psychoactive substance in the cannabis plant that gives you a 'high'. It can make you feel happy or giddy but also suspicious and paranoid. CBD is obtained from hemp, a form of the Cannabis sativa plant.

Synthetic (man-made) Cannabinoids

Synthetic (man-made) cannabinoids are laboratory made chemicals and are either semi-synthetic or synthetic. Many man-made cannabinoids exist. They are mostly designed to act on the endocannabinoid system and imitate the actions of THC.

These synthetic and semi-synthetic substances carry the risk of negative and dangerous effects on our minds and/or bodies but with a higher risk of negative and dangerous effects on our bodies.

How is HHC produced?

HHC is a man-made chemical produced and developed in a lab and from CBD (cannabidiol- a chemical found in cannabis) using a process called hydrogenation.

HHC is chemically like the naturally occurring THC (tetrahydrocannabinol) but is a semisynthetic CBD. Many man-made cannabinoids like HHC are designed to imitate the actions of THC. These synthetic substances carry the risk of negative and dangerous effects on our minds and bodies.

When did HHC first emerge?

HHC was first described in the scientific literature in 1940, but it appears to have first been sold in the United States in September 2021.

HHC was initially identified in Europe in May 2022. According to a report from the European Monitoring Centre for Drugs and Addiction (EMCDDA) in early 2024, HHC has now been identified in over 20 European countries. The number of stores selling these products is increasing continuously.

The EMCDDA has been tracking the substance via the EU Early Warning System (EWS) since October 2022. By December, HHC had been found and identified in 70% of EU member states.

HHC and its Use in Ireland

What are the effects of HHC use?

According to laboratory studies on several animal species, HHC appears to have broadly similar effects to cannabis and THC products.

The pharmacological and behavioural effects of HHC in humans have not been studied, though recent anecdotal reports show that its effects are like that of cannabis.

The effects vary from person to person. Some people will feel elevated mood, happy or euphoric. Some might feel relaxed and have an altered perception.

Anecdotal reports to the Health Service Executive (HSE) also confirm some people have experienced the below effects following the use of HHC:

- A stronger and 'different' type of intoxication compared with cannabis
- General feelings of being unwell
- Confusion
- Depression
- Withdrawal symptoms following frequent use
- Collapse
- Paranoia and delusions

In what form is HHC sold?

HHC can be sold as e-cigarettes, vape pens, herbal mixtures, oils, edibles (jellies and cake) and as tinctures. Some cases have seen HHC sprayed on plant materials which could be confused with cannabis.

How is HHC consumed?

It is inhaled in a similar way to cannabis, taken orally as an oil or eaten in edible products. Based on the products available for sale, the most common form of consumption seems to be vaping products.

Why are people attending mental health services for addiction because of HHC?

As of July 2024, it is estimated that HHC has been taken by 20% of young people who seek the help of addiction services in Ireland in the preceding year. This is typically in combination with cannabis itself. HHC is the main presenting drug in about 5% of cases. It was not present at all in Ireland before 2022.

Are there long-term consequences of taking HHC?

This is not yet known. It generally takes decades for the medical community to figure out long-term consequences of new substances. In the absence of certainty, it seems reasonable to predict that the long-term effects are likely to be similar to those of cannabis. Regular use could impact on both physical and mental health. [Learn more about how cannabis is associated with mental illness here.](#)

Is there a risk of psychosis?

Psychosis is a condition where people lose touch with reality with symptoms often involving delusions or hallucinations. Psychosis can be a short or long-term condition. Irish cases of HHC use include reports of extreme distress, delusions, auditory hallucinations, paranoia, detachment from reality and self-harm.

Emerging information from Irish hospitals has highlighted two case studies of regular cannabis smokers who experienced psychotic episodes as a possible result of vaping HHC. There are anecdotal reports of many other cases of HHC-induced psychosis from psychiatrists in Ireland.

If treatment is required for HHC use, what are the options?

Treatment options in addiction services are like approaches for managing mental health harms related to cannabis consumption. Treatment plans are provided on an individual needs focussed basis.

What are the legislative options for HHC?

HHC could be added to the [Misuse of Drugs Act](#) (1977). This is the current legislation used to ban the sale and possession of substances such as cocaine and heroin.

However, the problem with this option is that the shops (currently profiting from sale of HHC) could simply switch to importing and selling a similar but not yet banned drug.

Ireland enacted novel legislation in 2010 to address this very problem - the [Criminal Justice \(Psychoactive Substances\) Act 2010](#). Under this Act it is a criminal offence to sell any psychoactive drug.

It led to the closure of the network of head shops in Ireland. Other countries followed Ireland's lead, enacting similar legislation over the following years.

HHC is being actively and publicly advertised by shops as having psychoactive effects. Doctors are also hearing direct evidence from patients of its psychoactive effects. Therefore, it seems obvious that HHC falls under this Act.

Enforcement of this legislation would result in removal and HHC from Irish shops and would also serve to deter businesses from similar escapades in the future.

Ireland could theoretically decide to regulate HHC availability, enacting a substantial number of new laws to govern its production, distribution, sale and consumption.

Key Messages & Actions

What do the public need to know?

The public need to be aware of the potential serious harms to mental health of HHC, whether taken in vapes or edibles.

A substance sold in a shop, in attractive packaging and claiming to be “for human consumption” does not ensure that it is regulated, safe or tested in any meaningful way. Buyers need to be aware of what they are purchasing and of the impacts it may have on their physical and mental health.

Unfortunately, the burden of proof lies with society and health professionals to confirm the presence of harm from HHC products, before action is taken.

What can be done immediately to prevent harms of HHC?

By Law

1. The Irish government needs to urgently enforce the laws we currently have in place:
 - a. Under the Psychoactive Substances Act (2010) it is a criminal offence to sell psychoactive drugs. As HHC is a psychoactive product, those who distribute or /and sell it should face criminal sanctions.
 - b. Under the Misuse of Drugs Act (1977) it is a criminal offence to sell and possess prohibited (illegal) substances. HHC could also be added to the list of prohibited (illegal) substances to ban the sale and possession of it.

In Retail/Wholesale Business

2. Products containing HHC or similar synthetic products that can be harmful should be banned. Those who produce, distribute or sell HHC should be held responsible and prosecuted under either or both current laws (above).

The Public

3. The public need to be informed and aware of the potential serious harms of HHC to their health. Consuming HHC can have extremely harmful effects both physically and mentally. Incidences of severe psychosis have been noticed in some services as a direct result of taking HHC.

References

O'Mahony, B., O'Malley, A., Kerrigan, O., & McDonald, C. (2024). HHC-induced psychosis: a case series of psychotic illness triggered by a widely available semisynthetic cannabinoid. *Irish Journal of Psychological Medicine*, 1–4. doi:10.1017/ipm.2024.3

Criminal Justice (Psychoactive Substances) Act 2010
<https://www.irishstatutebook.ie/eli/2010/act/22/enacted/en/html>

Hexahydrocannabinol (HHC) - Drug and Alcohol Information and Support in Ireland - [Drugs.ie](https://www.drugs.ie)

Hexahydrocannabinol (HHC) and related substances | www.euda.europa.eu

The Effects of Cannabis on Mental Health – The College of Psychiatrists of Ireland (irishpsychiatry.ie)

EU Drug Market: New psychoactive substances — Distribution and supply in Europe: Semi-synthetic cannabinoids | www.euda.europa.eu

Smyth, B. P. (2023). Head shops and new psychoactive substances: a public health perspective. *Irish journal of psychological medicine*, 40(1), 89-96. DOI: <https://doi.org/10.1017/ipm.2020.131>