



Complexities of Cannabis



Housekeeping

- Breaks
- Microphones
- Internet connections
- Confidentiality
- Questions/comments





Course Objectives

By the end of today, you will be able to:

- Understand the history of cannabis use
- Understand the science of the cannabis plant
- Identify harms associated with the use of prohibited cannabis
- Describe how cannabis is used medically
- Identify sources of support



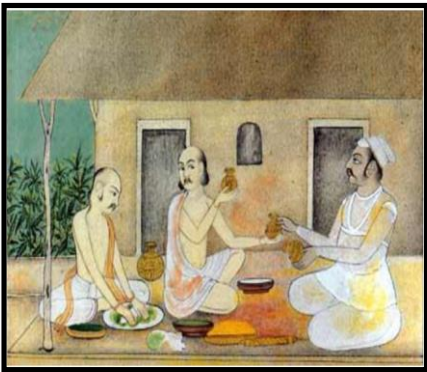
1

The History of Cannabis Use and Current Prevalence

What is the history of cannabis use, and how many people have used cannabis in NI?





What **words** come to mind when you think of cannabis?



History of Cannabis Use

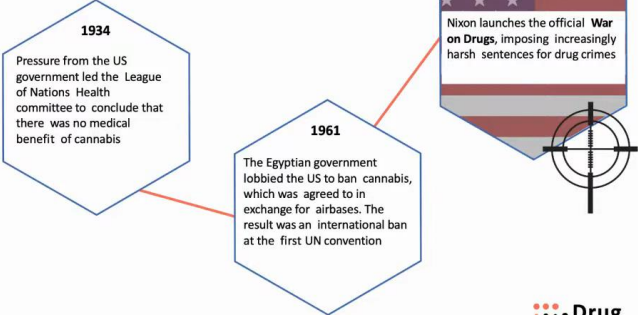






Dave Nutt


Why was Medical Cannabis Banned?




1934
Pressure from the US government led the League of Nations Health committee to conclude that there was no medical benefit of cannabis

1961
The Egyptian government lobbied the US to ban cannabis, which was agreed to in exchange for airbases. The result was an international ban at the first UN convention

1968
Nixon launches the official War on Drugs, imposing increasingly harsh sentences for drug crimes



UK Ban on Cannabis – American **Political** Influence



1600s: Hemp industry

1800s: No regulation

1928: Non-medicinal cannabis made illegal in the UK

1971: Cannabis is a Class B drug under the Misuse of Drugs Act

2004 – 2009: Cannabis is “downgraded” to a Class C drug

2013: Cannabis is again a Class B drug due to fears about “skunk”

2018: Cannabis is made a Schedule 2 medication

Timeline of Cannabis Use in the UK



Current **Prevalence** of Illicit Cannabis Use

- 24.6% of people in NI have used cannabis in their lifetime
- 62% of clients presenting to substance misuse services reported cannabis use in 2021/22
 - WHSCT: 75%
 - SEHSCT: 64.6%
 - SHSCT: 60.9%
 - NHSCT: 56.6%
 - BHSCT: 51.2%



Sources: Substance Misuse Database (2021/22); All Ireland Drug Prevalence Survey 2014/15



2

The Science of the Cannabis Plant

What's involved with the cannabis plant?



The Cannabis Plant: Main Categories of Compounds

Flavonoids

- Phytonutrients found in most fruits and flowers
- 20 types unique to cannabis → mostly contributes to colour
- Examples: kaempferol; quercetin

Terpenes

- Naturally occurring chemicals in plants
- Approx. 100 different types in cannabis → smell and taste
- Examples: myrcene; alpha-pinene; humulene

Cannabinoids

- Over 100 found in cannabis, but cannabidiol (CBD) and tetrahydrocannabinol (THC) are the most well-known
- Work on the body's own internal cannabinoid system
 - Mimic the action of endocannabinoids and bind to the same receptors



The **Endocannabinoid** System



Aurora Europe; <https://youtu.be/1lj6Xojf4e0>



MANY DIFFERENT STRAINS OF CANNABIS

STRAIN IS USED TO DIFFERENTIATE BETWEEN CANNABIS SATIVA AND INDICA. IT REFERS TO THE SPECIFIC BREED OF EACH INDIVIDUAL PLANT. OVER THE YEARS, FAMILIAL STRAINS HAVE DIVIDED INTO SPECIFIC SUBSECTIONS. THOUGH STRAINS MAY LIMAGE, THE DIFFERENCES ARE NUMEROUS.



SATIVA STRAINS

Sativa strains have an uplifting effect and offers cerebral high that includes:

- Laughing uncontrollably
- Engaging in in-depth conversations
- Thinking creativity

Sativa strains grow tall and thin - the plant can grow up to 20 feet in an outside garden. Popular strains include:

AMNESIA HAZE
Beloved for creating a buzz, it offers an uplifting boost.

CHERRY AK
With a sweet, fruity smell and taste, this strain can help elevate a bad mood.

GREEN CRACK
Users are reminded with a blast of exhilarated energy.

SOUL DIESEL
Despite a diesel-like, this strain offers the lightest, freestaring experience.



INDICA STRAINS

Indica strains have a relaxing, sedative effect, often used to:

- Reduce stress
- Relieve pain
- Limit anxiety

Indica strains are a bushy plant that can grow between 3 and 6 feet tall and are suitable for growing indoors. Popular strains include:

BURBA KUSH
With a coffee and chocolate taste, this strain has a heavy tranquilizing effect.

HEROJUANA
To those enjoying this strain induces a heavy, relaxing sleep.

NORTHERN LIGHTS
This pure indica is known to have come from the "mother plant."

SKYWALKER OG
This strain is known for its healing properties for those with PTSD.



HYBRID STRAINS

Hybrid strains offer a mix of effects, combining the traits they inherited from their parent strains. Hybrids are known to:

- offer a relaxing body effect
- Create balance of mind and body
- Limit anxiety

Of the roughly 779 strains, over half of them are hybrids. Popular strains include:

BLUE DREAM
Offers a total relaxation while energizing the mind.

GIRL SCOUT COOKIES
This strain is more sativa version of Blue Dream, so go easy!

HEADBAND
Great for pain relief and a feeling of elation.

PINEAPPLE EXPRESS
This sweet, tropical strain leaves one feeling happy and euphoric.

The Cannabis Plant: **Strains**



3

The Harms of (Illicit) Cannabis

What are the harms associated with illicit cannabis misuse?



What are **your** main concerns with the harms of cannabis?



Examples of Potential Harms of Cannabis Misuse

Physical

- Increased risk of lung disease if smoked
- Injuries/accidents if engaging in risky behaviour while under the influence
- Increased heart rate and blood pressure
- Cannabis Hyperemesis (rare)

Social

- Legal trouble
- Strains on relationships with people who disapprove of use
- Tangible losses (e.g. job)

Mental/Emotional

- Addiction
- Unpleasant feelings while under the influence (e.g. anxiety, paranoia)
- Substance-induced psychosis
- Potential increased risk of schizophrenia?***



Sources: Radhakrishnan, Wilkinson, and D'Souzs (2014); DrugScience (2023); Centers for Disease Control and Prevention (2022)



Cannabis and Schizophrenia?

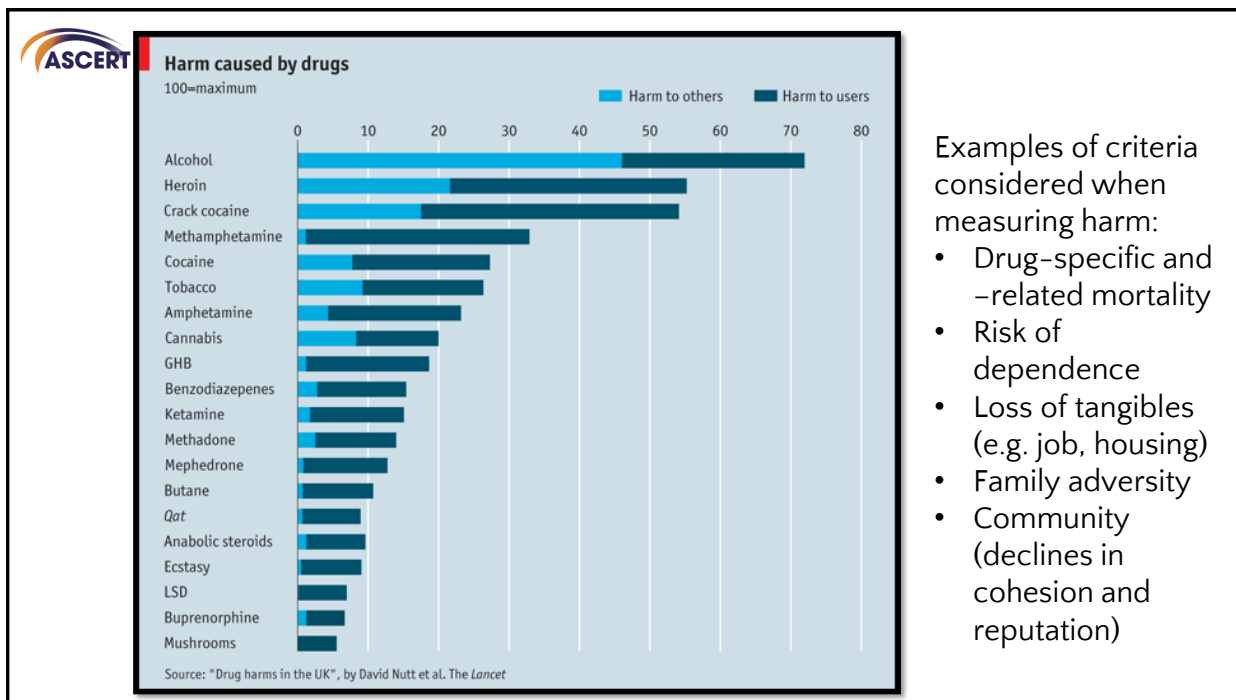
- Increased risk of schizophrenia?
 - People who have used cannabis at least once in their lifetime are 2.4x more likely to develop schizophrenia
 - People who smoke cigarettes are 15-30x more likely to get or die from lung cancer
- Heavy use of high-THC cannabis appears to increase the risk in people who are already predisposed/are at higher risk of developing schizophrenia
- In people with established psychotic conditions like schizophrenia, cannabinoids can exacerbate symptoms



Cannabis and Schizophrenia?

- Media reporting has skewed the perception of the risk of schizophrenia with cannabis use
- 2011 Daily Mail article “won” the “Orwellian Prize” from a professor at Oxford University for misleading reporting
 - Study was looking at using an artificial compound not found in cannabis that was injected into rats to look at changes in brain waves





- Examples of criteria considered when measuring harm:
- Drug-specific and -related mortality
 - Risk of dependence
 - Loss of tangibles (e.g. job, housing)
 - Family adversity
 - Community (declines in cohesion and reputation)

	Illicit Cannabis	Alcohol
Drug-Specific Mortality	0	50
Drug-Related Mortality	20	60
Drug-Specific Damage	20	80
Drug-Related Damage	40	80
Dependence	30	30
Drug-Specific Impairment of Mental Functioning	30	65
Drug-Related Impairment of Mental Functioning	35	60
Loss of Tangibles	25	30
Loss of Relationships	30	60
Total Score	230	515

Harm to **Self**: Illicit Cannabis vs. Alcohol

Nutt et al., 2010

	Illicit Cannabis	Alcohol
Crime	20	50
Environmental Damage	10	100
Family Adversity	15	100
International Damage	15	20
Economic Cost	20	100
Community	10	100
Total Score	90	470

Harm to **Others**: Illicit Cannabis vs. Alcohol



Nutt et al., 2010



Levels of Drug **Regulation**

Consider the following levels of drug regulation. Which one should apply to cannabis, in your opinion?

- Absolute prohibition
- Decriminalisation
- State control
- Free market



Levels of Drug Regulation

Absolute Prohibition

- Production, distribution, possession, and use are illegal under criminal law
- Laws are actively enforced, but there may be variation in relative emphasis of enforcement efforts
- Penalties may vary for different drugs

Decriminalisation

- Production and distribution are illegal
- Use and possession (small/personal amounts) are civil offenses
- Penalties for use/ possession may include education, drug treatment, or fines

Rogeberg et al., 2018



Levels of Drug Regulation

State Control

- Legal options available for people to access, possess, and use a substance
- More government regulations in place
- Age limits; limits on where/when consumption is legal; marketing restrictions; state-controlled production and sales

Free Market

- Production, distribution, possession, and use aren't subject to any specific regulatory policies, taxes, or restrictions beyond the usual ones that apply to consumer goods (e.g. VAT)
- Age limits may apply

Rogeberg et al., 2018

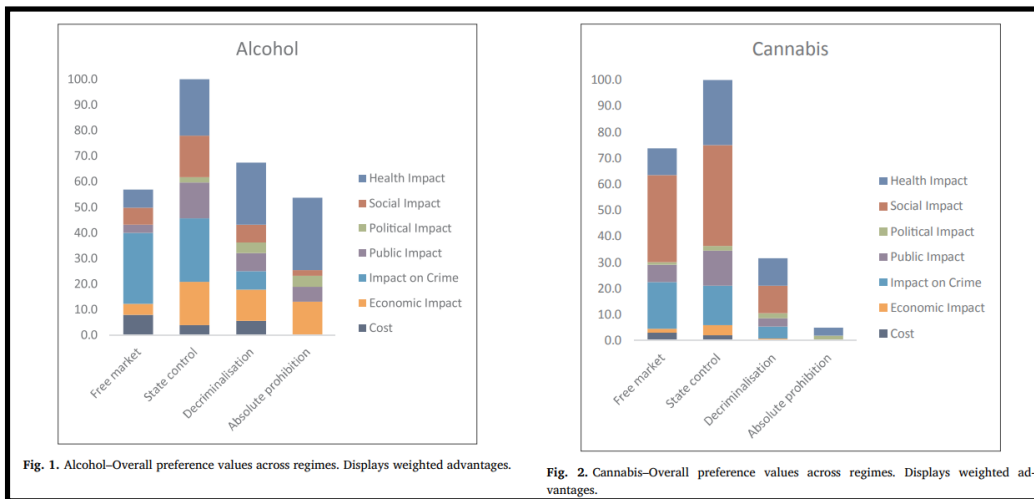


Fig. 1. Alcohol-Overall preference values across regimes. Displays weighted advantages.

Fig. 2. Cannabis-Overall preference values across regimes. Displays weighted advantages.

Drug **Regulation** – Alcohol and Cannabis



Rogeberg et al., 2018, p. 5



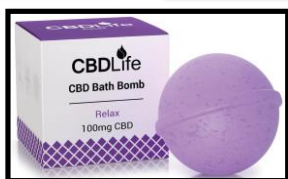
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Medicinal Use of Cannabis

How popular is CBD use in the UK, and what's the deal with medicinal cannabis (THC and CBD)?



CBD Sales in the UK



- CBD products have enjoyed a growing popularity in the UK
 - UK's CBD market valued at £690 million (2021) – up from £314 million since 2019
 - UK is the second largest consumer CBD market in the world
 - USA is first

Association for the Cannabinoid Industry & The Centre for Medicinal Cannabis (2021)



CBD Sales in the UK - Regulation

- If you market something by making health claims (e.g. “this product helps with pain”, it must be licensed as a medicine
- CBD has been marketed as a food or “novel food supplement” – not subject to medical licensing laws
 - Marketing/product descriptions – CBD products vs. medical products





Product details

900mg per bottle. Food Supplement.

Dragonfly Biosciences Premium Cannabidiol Oil is extracted from organically grown Cannabis Sativa L.

Dragonfly Biosciences controls the process from seed to shelf, to ensure the highest quality.

Providing for a fuller flavour, this broad-spectrum oil retains naturally occurring terpenes and plant material.

Dragonfly CBD can be taken as part of a daily routine.

- Non GMO
- Gluten Free
- **Vegan Friendly**
- THC Free
- Organic Farming

Suitable for

Suitable for adults

How to use

Using the pipette, administer oil under the tongue. Hold for 2 minutes to maximise absorption before swallowing.

We recommend starting with a 3 drop serving then varying as required.

Do not exceed 44 drops per day.

Hazards and Cautions

Food Supplements are intended to supplement the diet and should not be substituted for a varied diet or healthy lifestyle.

Product details

Please note that you must be in to sign for this delivery.

For the relief of mild to moderate pain including headache, migraine, neuralgia, toothache, sore throat and period pain. Also for the symptomatic relief of rheumatic and muscular aches and pains: sciatica, fibrositis, lumbago, joint swelling and stiffness, influenza, feverish colds and feverishness.

Suitable for

Adults and children aged 6 years and over

Age Restriction

You must be at least 16 years old to purchase this product.

How to use

Please read the enclosed leaflet carefully before use.

Patient Information Leaflets are updated periodically by the manufacturer.

Swallow the tablets, preferably with a drink of water.

Adults and children 16 years and over: 1 or 2 tablets every 4-6 hours, as required to a maximum of 8 tablets (4 doses) in any 24 hours.

Children 12 – 15 years: 1 to 1½ tablets every 4-6 hours, as required to a maximum of 6 tablets (4 doses) in any 24 hours.

Children 10 – 12 years: 1 tablet every 4-6 hours, as required to a maximum of 4 tablets (4 doses) in any 24 hours.

Children 6 – 10 years: Half a tablet every 4-6 hours, as required to a maximum of 2 tablets (4 doses) in any 24 hours.

Do not give to children under 6 years.

Do not take more often than every 4 hours.

Do not take for more than 3 days unless instructed by your doctor.

Hazards and Cautions

Do not take more medicine than the label tells you to.

If you do not get better, talk to your doctor.

Do not take anything else containing paracetamol while taking this medicine.

Talk to a doctor at once if you take too much of this medicine, even if you feel well.



How do you feel about the medicinal use of cannabis?

- Completely in favour
- Open to the idea
- Unsure
- Somewhat opposed
- Completely against



Medical vs Street Cannabis

- Prescribed on basis of relevant medical authority and expertise
- Quality control/consistency of content
- Legal to acquire
- Packaging
 - Quality
 - Information available



The Fight for Legal Medicinal Cannabis On NI's Doorstep: **Billy Caldwell**





Medical Cannabis in the UK: Overview



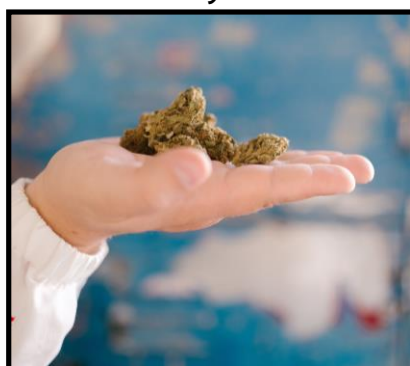
- Approved for medical use in November 2018
- Medicinal cannabis overview
 - Medical conditions
 - Licensed and unlicensed medications
 - Differences in NHS versus private prescribing
 - Project Twenty21 (T21)



Cancer-related conditions (e.g. nausea caused by chemo)

Gastrointestinal conditions (e.g. IBS)

Pain conditions (e.g. arthritis, endometriosis)



Psychiatric conditions (e.g. anxiety disorders, depression)

Examples of **Conditions** Cannabis Can Be Prescribed For

Neurological conditions (e.g. epilepsy, Multiple Sclerosis)

Palliative care





Medical Cannabis in the UK: Licensed Medications

Sativex (nabiximols)

- Used to treat muscle stiffness and spasms associated with multiple sclerosis
- CBD and THC oral spray
- 2.7mg THC and 2.5mg CBD per spray

Epidyolex

- Used to treat seizures associated with certain rare forms of epilepsy (e.g. Lennox-Gastaut syndrome)
- CBD only (no THC)
- 100mg/ml CBD oral solution

Nabilone

- Used to treat severe nausea and vomiting caused by chemotherapy
- Synthetic form of THC
- 1-2mg pill



Medical Cannabis in the UK: Unlicensed Medications

- Tend to be oils, flower (herbal cannabis), vapes, or capsules
- Varying* THC and CBD amounts based on specific product prescribed





Medical Cannabis in the UK: Examples of **Unlicensed** Medications

Unlicensed medical cannabis products can be prescribed for various conditions

Khiron 5/7 Caramel

- Flower
- Indica-dominant hybrid
- 5% THC and 7% CBD

Spectrum Therapeutics Canopy THC 25 Oil

- Sublingual oil
- Sativa
- 25mg/ml THC, 1mg/ml CBD

Columbia Care ClaraCeed Oral Tablets

- Tablets
- .5mg THC, 10mg CBD



89,239

unlicensed cannabis medications prescribed privately

140

licensed cannabis medications prescribed privately

11,976

licensed cannabis medications prescribed by the NHS

Fewer than 5

unlicensed cannabis medications prescribed by the NHS

Number of Cannabis **Prescriptions** in England, Nov 2018 – July 2022



Source: Will Quince, Minister of State (Department of Health and Social Care, England, 2023)



Medical Cannabis in the UK: (Lack of) Accessibility



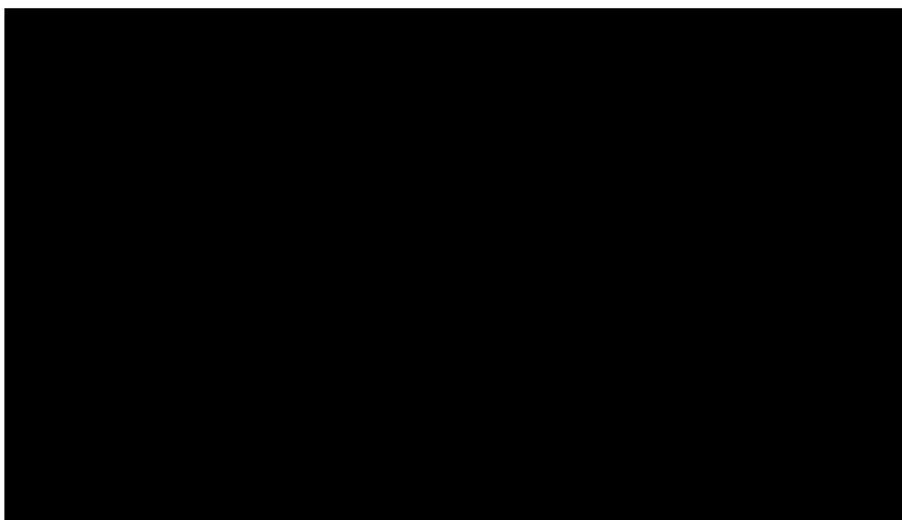
- NHS reluctance to prescribe medicinal cannabis
 - Lack of evidence from randomised controlled trials
 - Expensive and time-consuming to carry out
 - UK is reluctant to license plant-based medicines
 - NICE has labelled some cannabis-based medicines as not being cost-effective enough
 - Stigma associated with cannabis use – e.g. fears of psychosis



Medical Cannabis in the UK: (Lack of) Accessibility

- Private clinics can be expensive*
 - Initial consultation fees tend to range £80-£400
 - Follow up consultation fees: £45-£110
 - Prescription fees: Average £30 + price of medication itself (about £65 - £250+ per month)
- Stigma makes people reluctant to try to access medicinal cannabis
 - 84% of Sapphire Medical Clinics patients surveyed said they were subject to stigma
 - Anecdotes from individuals regarding poor treatment from other medical professionals and police

Source: Troup et al., 2022



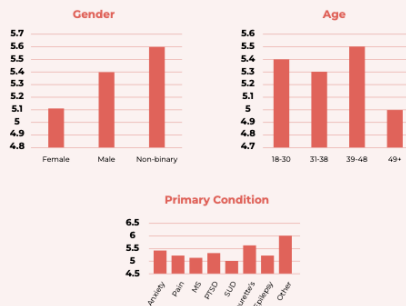
Project Twenty21 (T21)



At 3 month follow-up, the mean rating on this scale was 2.6, indicating **substantial improvement after only three months of being prescribed medical cannabis:**

 Just over a third (35.3%) reported that treatment had made a real and worthwhile difference	 A fifth (20%) reported considerable improvement	 Most others reported some degree of improvement	 Only 3.4% of the sample reported no improvement
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The Figures below report mean ratings on this scale by gender, age and primary condition. Similar levels of improvement were reported across all primary conditions, while there was some evidence that male and non-binary individuals and younger people reported higher mean improvement.



T21 Findings: Degree of Health **Improvement** Following Medical Cannabis (Aug 2022)





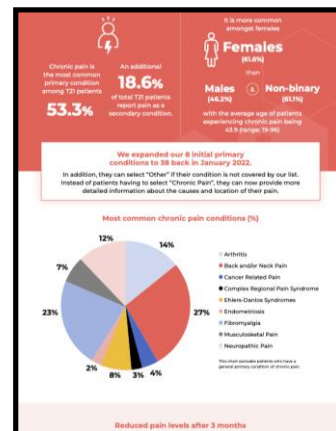
Examples of Other T21 Findings

Chronic pain

- Statistically significant decrease in pain levels after 3 months of medical cannabis treatment (Brief Pain Inventory scores)
 - Average pain severity: 5.9 → 4.9
 - Average pain interference: 7.0 → 5.7

Insomnia

- Statistically significant improvement in sleep quality after 3 months of treatment: 12.7 → 10.0
 - Higher score = more problems in daily life caused by insomnia



www.drugscience.org.uk/t21data



5

Signposting

Where can I get help?



Cannabis and You

Self-help website for cutting down or quitting cannabis

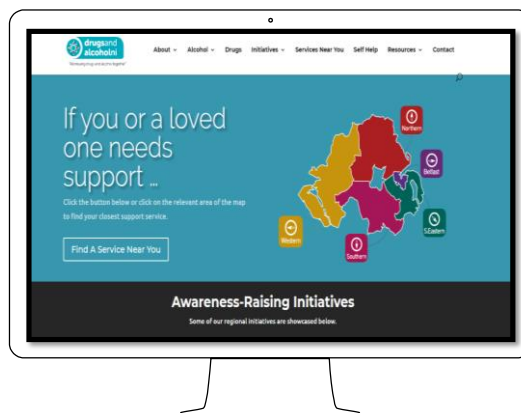
cannabisandyou.ie



NIDACTS

Northern Ireland Drug and Alcohol Coordination Teams

drugsandalcoholni.info

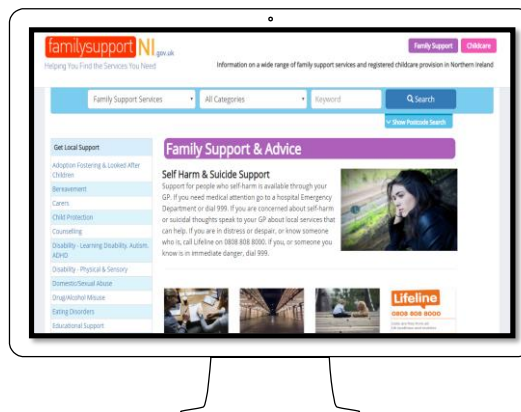




Family Support NI

familysupportni.gov.uk

A directory of various support services (e.g. mental health, finances) and registered childcare services in NI



Thanks!

Any **questions?**

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