

Medicinal Cannabis for Children with Special Needs

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Facilitating Learning Objectives

1. Understand the cannabis plant
2. Understand the endocannabinoid system
3. Cannabis for Special Needs Children
4. Barriers to access for children
5. Panel Discussion with Parents and Experts

Recommended Reading

Cannabis Revealed (Dr. Bonni Goldstein)

Medical Cannabis in Canada (Dr. Mark
Kimmins)

The Cannabis Plant

Hundreds of different varieties (chemovars)

Each has different compounds, most > 400

Phytocannabinoids - only in cannabis plants

Terpenoids (terpenes) - essential oils in all plants, trees, and flowers

Flavonoids - anti-inflammatory and antioxidant properties

Fruits and Vegetables vs. Vitamin Pills

Whole cannabis plant vs. Hemp

“Marijuana and hemp are two extremely different strains of the same cannabis sativa plant that have been bred over thousands of years to have entirely different purposes.”

Dr. Peter Grinspoon, Harvard Health Publishing

1. Hemp (industrial plants) are used for fiber and seed oil
 2. “Medicine” plants are used for medicine and recreation
- Primary difference is the content of resin
(phytochemicals, terpenoids and flavonoids)

Why not use low-resin hemp CBD oil?

A large amount is required to produce a small amount of CBD oil

The process may accumulate toxins, pesticides, metals, gasoline and solvents

But, after legalization in Canada, too many legal producers focused on THC (psychoactive tetrahydrocannabinol) and not CBD oil

Okanagan CBD oil Tinctures

okanagancbc.com

“Okanagan CBD Oil tinctures consist of organic broad spectrum hemp oil boosted with pharmaceutical-grade 99 +% CBD Isolate”

Historical Highlights

Isolation of THC and CBD in 1960's
(Dr. R. Mechoulam, Israel, Organic Chemist)

Discovery of receptors in our bodies 1988
and
The Endocannabinoid System and Endogenous
Cannabinoids

(Dr. A. Howlett, St. Louis University, Missouri,
Pharmacologist)

The Endocannabinoid System

The most widespread receptor system in our bodies

Regulates the flow of signals between cells

Goal is to maintain balance (homeostasis)

“What medical conditions are associated with its dysfunction?”

Safety and the (Primitive) Brain Stem

Controls the flow of messages between the brain and the rest of the body

Also controls basic body functions such as breathing, swallowing, heart rate, blood pressure, consciousness, and whether one is awake or sleepy

Cannabis Receptors vs. Opioid Receptors

There are NO Cannabis receptors in the Brainstem
There is NO possibility of a fatal overdose with
phytocannabinoids

There ARE Opioids Receptors in the brainstem
They can slow breathing, stop coughing, and reduce feelings of pain

In Canada, 94% of opioid overdose deaths happen by accident

Two kinds of opioids:

From the poppy plant - heroin (morphine and opium)

Synthetic - Fentanyl

Both may be used as planned or accidental “fillers” in street drugs

Children with Dwarfism

Short stature from a medical or genetic condition

200 varieties, such as Achondroplasia:

A genetic disorder of bone growth that prevents the changing of cartilage to bone

Many individuals with Achondroplasia suffer with spinal stenosis and experience back pain.

This may progress to lower extremity pain and debilitating consequences

13 year old boy with Spondyloepiphyseal Dysplasia (SES)

Inherited from his father

Affects long bones of the spine (spondylo-) and
the growing ends of bones (epiphyseal)

Already had major surgery for C Spine
stabilization, and will need surgery in the future

Prescribed Tramadol for pain

Centrally acting synthetic opioid analgesic and
Serotonin/Norepinephrine Reuptake Inhibitor

Father's story (before legalization)

Had weaned himself from opioids by using
THC/CBD from unlicensed providers

Brought in everything he had tried

Told us of his struggles with “trial and error”

We signed up his son to receive legal CBD Oil

And we signed up his father with a
Licensed Producer

Children with Autism

Study from Israel: Scientific Reports (17 Jan 2019)
American Academy of Pediatrics Daily Briefing

188 children with Autism Spectrum Disorder
Treated with CBD Oil

“Cannabis in ASD Patients appeared to be well-tolerated, safe, and an effective option to relieve symptoms associated with ASD”

My experience with patients with Autism

“If you have met one person with Autism,
you have met one person with Autism”

Dr. Stephen Shore

Autistic Professor of Special Education
Adelphi University (Garden City, New York)

Autism and Co-morbidities

- Genetic Syndromes
- Self-Injurious Behaviors (SIB Clinic, BCCH)
- An "umbrella diagnosis": other labels may include ADHD, Oppositional Defiant Disorder, Conduct Disorder, and other Psychiatric Diagnoses
- Many children have been treated with Psychotropic Medications such as Risperidone (Risperdal), Aripiprazole (Abilify) and Quetiapine (Seroquel)

7 year old female

- Diagnosed with autism at 18 months
- Excellent Health, no medications
- Stereotypic behavior, extreme anxiety, and nonfunctional language
- Most recent report: 2 ml CBD oil twice daily
and “micro dosing” with THC

Her mother's email to me

- I am noticing great things!
- Her language has increased slightly, and is more consistent and frequent.
- She is calmer, more tolerant, and less reactive.

Children with Epilepsy

- Well-established
- BCCH Neurology is doing clinical trials
- Most anti-epileptic medication interacts with CBD Oil
- May increase or decrease metabolism
- Important to work with the child's neurologist

Children with Dystonia and Spasticity

- **Dystonia:** Abnormal muscle tone resulting in muscle spasm and abnormal posture
- **Spasticity:** Increased muscle tone with increased deep tendon reflexes
- Both may be secondary to cerebral palsy OR neurodegenerative disorders

Barriers for children who would benefit from CBD

- Prescribing is complicated
- The Endocannabinoid System is still not taught in Medical School!
- Pediatricians and family physicians are overwhelmed with traditional medicine
- The federal legalization of marijuana, and underproduction of CBD Oil

Responsibilities of Prescribers

- Oct 2019: 194 authorized licensed medical marijuana producers in Canada
- Each has its own application form!
- Products are mailed to the patients' homes
- Cannot take the prescription to a drugstore or licensed dispensary
- The medical prescriber needs to help with individual dosing, and follow closely

Focused Principles of Prescribing

“Cautious exploration”

“Go low and slow”

Be available to parents

Panel Discussion