

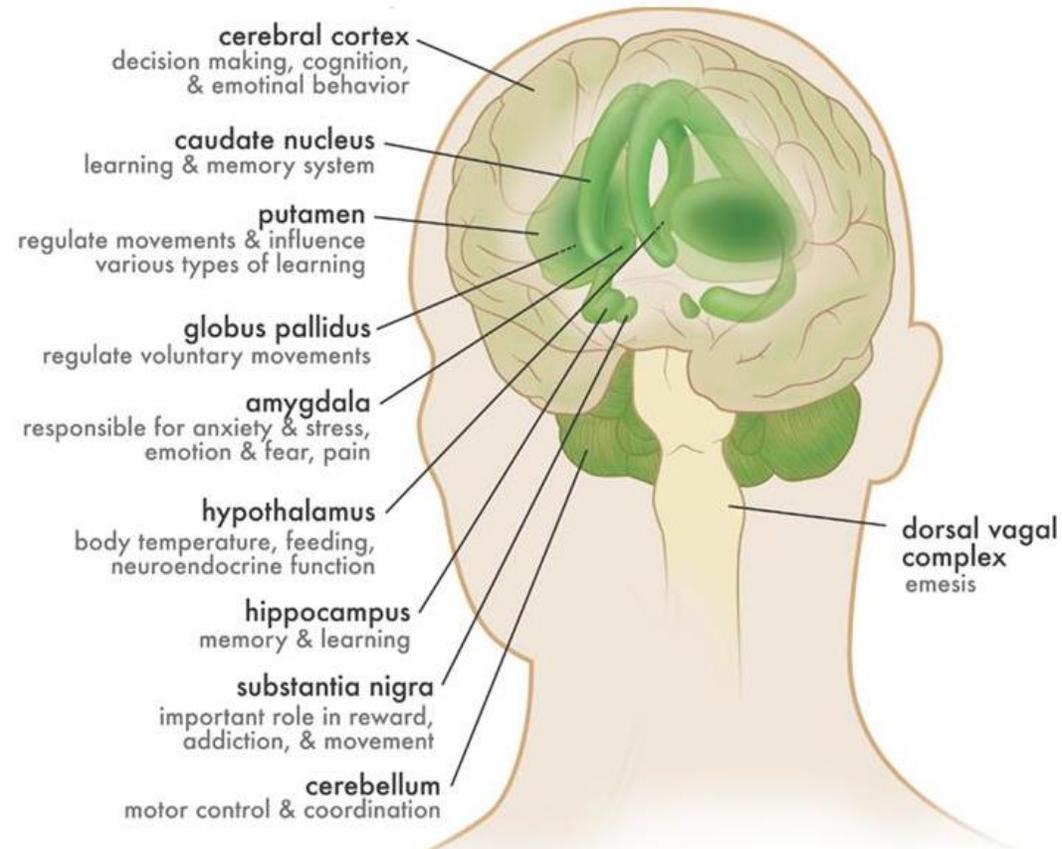
CANNIBAS: Workplace Implications

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Cannabis 101

Cannabinoids are a class of compounds that act on cannabinoid receptors in the human body.



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Endocannabinoids

- Naturally produced in body
- Endogenous

Phytocannabinoids

- Naturally produced in cannabis plant
- Exogenous
- THC / CBD

Synthetic Cannabinoids

- Laboratory-synthesized compounds
- Pharmaceuticals
- Street drugs

Onset / Duration of Effect

Smoking / Vaporization

- Rapid onset
 - Within minutes
- Duration of acute effects
 - 1 - 4 hours

Oral Ingestion

- Slow onset
 - 30 – 90 minutes
- Duration of acute effects
 - 6 - 8 hours



Dried Herbal Cannabis / Hashish

- Smoked / Vapourized
- Cooked / Baked
- Eaten Raw



Cannabis Oil

- CBD-Only???
- Cooking / Baking
- With a dropper



Fresh Plant

- Turned into Salves
- Eaten Raw



Seeds / Starter Materials



Edibles



Shatter

- Smoked



Synthetic Cannabinoids

- Street Drugs

Cannabis Products

Getting Cannabis in Canada: Present-Day

Illegal
Growers /
Dealers

Licensed
Producers

Home Grown

“Dispensaries”

Getting Cannabis in Canada: Post-Legalization

Licensed
Producers
(Federal)

Authorized
Retailers
(Provincial)

Home
Grown

Illegal
Growers/
Dealers

Prices and Taxes

- In 2015-16, the average price of illicit cannabis was \$8.84 / gram.
- The average pre-tax price of legal cannabis is projected to be \$7.50 / gram.
- Legalization will likely put downward pressure on prices of illicit cannabis.
- However, when legalization occurs, the government may have little fiscal space to apply tax without pushing the price of legal cannabis significantly above the illegal market price.
 - Proposed tax - \$1 for sales up to \$10 and 10% on sales above \$10.
- Even with only a sales tax, legal cannabis prices in 2018 will likely be as high as illicit market prices in 2015/16.

Conclusion: there will be strong competition from the illegal market.

Projected Cannabis Use Trends (2018)

- An estimated 4.6 million individuals aged 15 and over will use cannabis at least once in 2018.
 - Up by more than 1 million from 2015
- Canadians aged 15+ will consume an estimated 1.5 million pounds of cannabis in 2018.
- Of the 4.6 million projected cannabis users in 2018, roughly 651,000 or 14.0 per cent are projected to use cannabis daily.
 - 25% - 50% of daily users will develop a cannabis use disorder.
 - Approximately, 325,000 people will have a cannabis use disorder in 2018.
 - More than 1% of Canadians aged 15+

Workplace Implications



Safety and Performance

Acute
Impairment

Residual
Impairment

CBD???

Acute

Why would a worker think it's OK to be high at work?

Cannabis Use Disorder

DSM-V: Cannabis Use Disorder

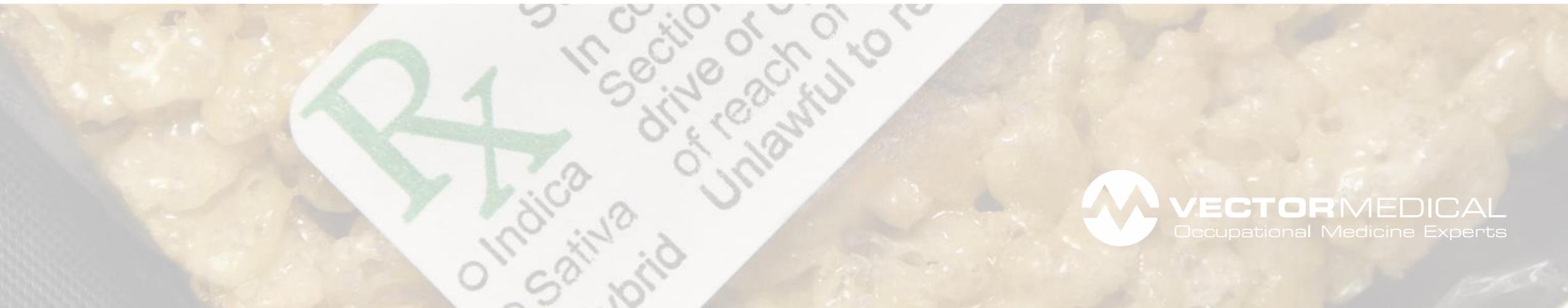
- Craving or a strong desire to use the substance
- **Continued use despite negative personal consequences**
- **Repeatedly unable to carry out major role obligations due to use**
- **Recurrent use in physically hazardous situations**
- Continued use despite recurring social or interpersonal problems
- **Persistent desire or unsuccessful efforts to control/cut down use**
- Spending a lot of time obtaining, using, or recovering from use
- Using greater amounts or over a longer time period than intended
- Stopping or reducing important activities due to use
- Consistent use despite difficulties from using substance
- **Tolerance/Withdrawal or the substance is used to avoid withdrawal**

Tolerance



Scenario:

A worker with medical authorization to use 5 grams / day, eats edibles (~10% - 20% THC) at lunch every day.



Why the worker might think this was OK...

“I use this every day. I developed tolerance. I don’t get high.”



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What the science says...

- Acute impairment after inhaling cannabis is generally 1 - 4 hours and 6 - 8 hours after oral ingestion.
- Different variables affect the duration of impairment, such as the amount of cannabis used, potency, method of consumption, age, sex, complexity of task, etc.
- Neurocognitive and psychomotor performance is impacted regardless of cannabis use history.
 - Tolerance does not prevent impairment.

What the science says...

- Acute impairment impacts psychomotor and cognitive performance:
 - Impaired hand eye coordination
 - Slowed reaction time
 - Dizziness
 - Distortion of time and distance
 - Impaired decision making
 - Decrements in concentration, attention, and retention of information

Conclusion

Workers using edible cannabis with moderate to high levels of THC while at work will likely experience impairment that affects their safety and performance regardless of the development of tolerance.

Residual

Why would a worker think it's OK to use cannabis outside of working hours?



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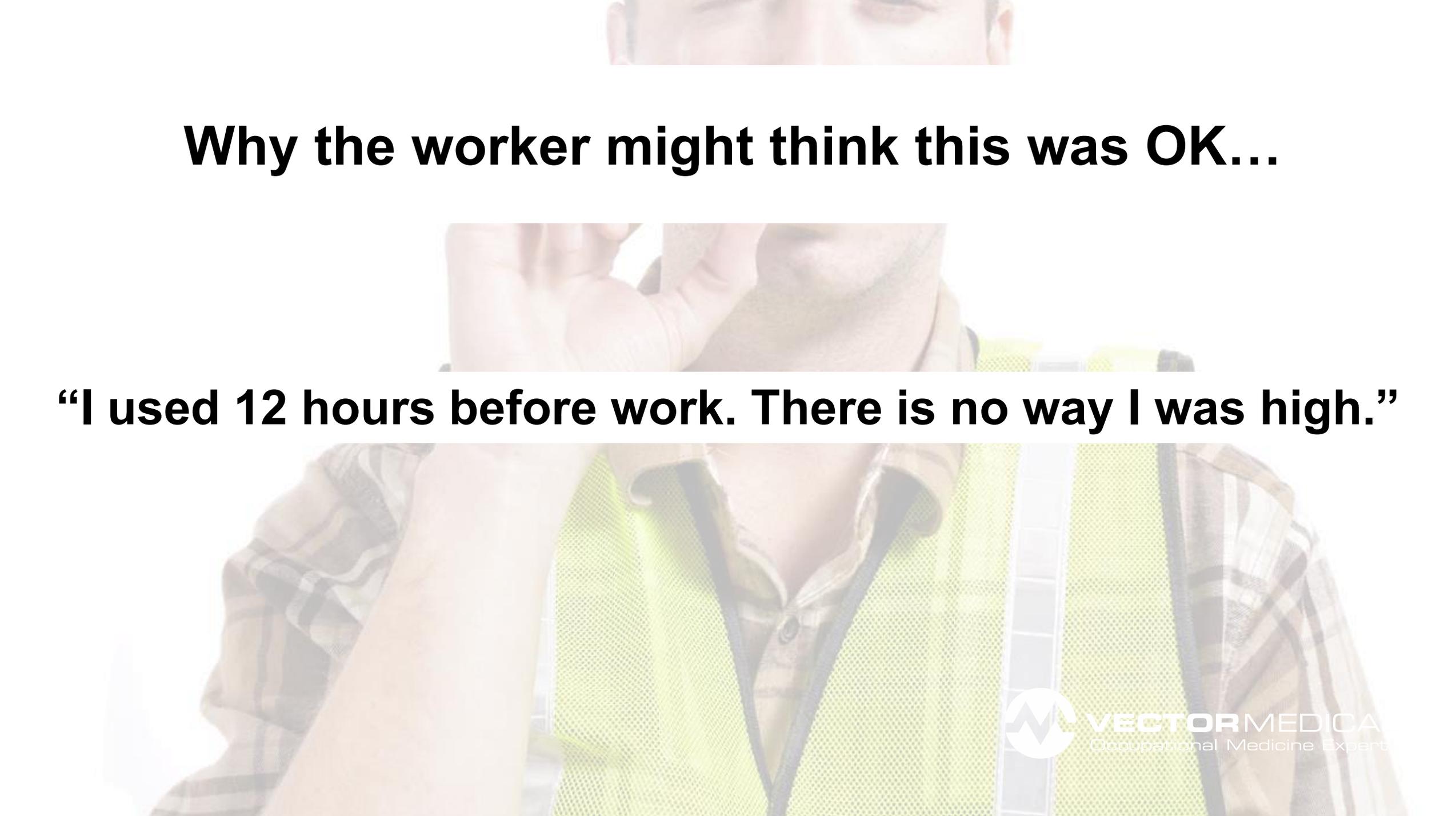


Scenario:

A worker smokes 1 gram of dried herbal cannabis (3% - 9% THC) at 9 p.m. on a Sunday night. The worker's shift start on Monday at 9 a.m.



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A man wearing a plaid shirt and a high-visibility yellow safety vest is covering his eyes with both hands. The image is semi-transparent, serving as a background for the text.

Why the worker might think this was OK...

“I used 12 hours before work. There is no way I was high.”

What the science says...

- Non-acute (residual impairment) can last 24 hours or longer after last cannabis use.
 - Studies have shown impairment can last up to 28 days.
 - **Even low doses of THC can result in performance deficits days after use.**

What the science says...

- Non-acute impairment is demonstrated in deficits in:
 - Episodic memory
 - Attention
 - Concentration
 - Abstract reasoning
 - Decision making
- Individuals experience residual impairment in neurocognitive functions despite their (subjective) perception that they have returned to baseline mental status.

Conclusion

Workers who use cannabis with low to moderate THC levels outside of working hours are still likely to experience residual impairment that can affect their safety and performance at work.

CBD???

**Why would a worker think it's OK to use
“CBD-only” cannabis oil at work.**

No Psychoactive Effects





Scenario:

A worker who uses 1 ml of “CBD-only” oil (1 mg/ml THC: 25 mg/ml CBD) 3 times per day, as per physician instructions.



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Why the worker might think this was OK...

“There is no THC and I don’t get high from it.”



What we know

- There is no such thing as “CBD-only oil” (legally available in Canada).
 - All cannabis oils have some THC in them
- The accumulation of THC from the continual administration of CBD oil, increases THC-COOH concentrations in the body.
 - Workers will likely test positive on urine tests.
- Anecdotally, CBD is said to not cause euphoria.
 - There is currently no conclusive research to say that CBD does not cause any impairment.
- CBD has known side-effects (i.e. drowsiness, dizziness, euphoria, etc.).
- Additional research is required.

Conclusion

While CBD is said to not cause euphoria, it has known side-effects that may affect a worker's safety at work.

In the absence of conclusive research, employers often err on the side of caution and investigate the matter further.

Acute
Impairment

Residual
Impairment

CBD???