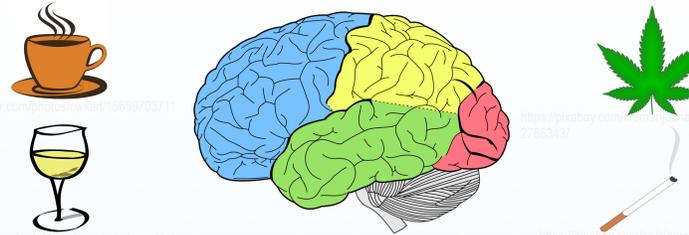


MEASURES OF ALCOHOL, CAFFEINE AND CANNABIS USE AND RISK RELATIONSHIPS TO PARKINSON'S DISEASE

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RATIONALE

- Parkinson's Disease is a neurodegenerative disorder⁴
- Characterized by symptoms including tremor, rigidity and akinesia, and diagnosis increases with age⁴
- Exact cause of degeneration of neurons is unknown⁴
- Addictive behaviours have been shown to be related to decreased risk of Parkinson's disease¹
- Previous research has consistently found smoking is inversely related to the risk of developing Parkinson's disease⁴
- Inconsistent results for the protective effects of caffeine in regard to Parkinson's disease³
- Contradicting information on the protective effect of alcohol consumption and Parkinson's disease^{1,2}
- Little research on risk relationship between cannabis use and Parkinson's disease

METHODS

- Case control study design
- Data collected between 2001 and 2008 by group of BC researchers⁶
- Cases identified based on PharmaCare prescriptions for Parkinson's medications⁶
- Controls identified at same time as cases, and frequency matched to cases⁶
- Participants completed standardized questionnaire⁶
 - Information collected on lifestyle factors was of interest for this study
- Measures of alcohol, caffeine, and cannabis use were established based on results of literature review
- Established cut-off for high, problematic use for each substance
 - There is no established cut-off for coffee addiction in the literature, so distribution-based cut-off was used (see Table 1)
- Analysis of risk relationship between "Ever vs. Never Use" and "High Use vs. All Other Use" and Parkinson's disease

RESULTS

Table 2. Measures of alcohol use, cannabis use, and coffee use and gender

	Men N (%)	Women N (%)
Alcohol (drinks/week)		
Never	122 (15.1)	110 (13.6)
Ever	347 (43.0)	228 (28.3)
High Use ($\geq 35, \geq 28^*$)	25 (3.1)	5 (0.6)
All Other Use ($< 35, < 28^*$)	444 (55.0)	333 (41.3)
	Men N (%)	Women N (%)
Coffee (Caffeine) (3 rd quartile)		
Never	67 (8.3)	67 (8.3)
Ever	403 (49.9)	271 (33.5)
High Use (>105.3)	164 (20.3)	38 (4.7)
All Other Use (≤ 105.3)	306 (37.9)	300 (37.1)
	Men N (%)	Women N (%)
Cannabis (times used/week)		
Never	68 (8.5)	268 (33.4)
Ever	106 (13.2)	361 (45.0)
High Use (≥ 7)	8 (1.0)	4 (0.5)
All Other Use (< 7)	459 (57.2)	332 (41.3)

* men and women, respectively

Table 3. Odds ratios for measures of substance use and Parkinson's disease

	Odds Ratios (95% CI)	
	High Use vs. All Other Use	Never Use vs. Ever Use
Alcohol	0.88 (0.42-1.82)	0.70* (0.52-0.96)
Coffee (Caffeine)	1.46* (1.06-2.01)	0.99 (0.69-1.44)
Cannabis	0.50 (0.15-1.68)	0.56* (0.40-0.79)

* statistically significant

OBJECTIVES

- Establish scientifically supported quantitative cut offs for hazardous alcohol and cannabis use, and caffeine addiction

Table 1. Established cut-off points for high, problematic substance use based on the scientific literature

Substance	High Use
Alcohol (drinks/week)	≥ 35 for men, ≥ 28 for women
Coffee (Caffeine) (3 rd quartile)	> 105.3
Cannabis (times used/week)	≥ 7

- Analyze risk relationships between addiction to these three substances and Parkinson's disease
- Hypothesize that high use of each substance will result in protective effect against development of Parkinson's disease

DISCUSSION

- Inverse association with Parkinson's disease in those who have ever consumed alcohol compared to those who have never consumed alcohol
- Inverse association with Parkinson's disease in those who have ever used cannabis compared to those who have never used cannabis
- Coffee was found to be a risk factor for developing Parkinson's disease in the high use category compared to all other use groups
- Greater protective effect seen for cannabis use, compared to alcohol and coffee consumption

CONCLUSION & RECOMMENDATIONS

- High use, or use that can be interpreted as an addiction or problematic, does not appear to have a greater protective effect compared to ever-users of these three substances
- Numerous recent studies are considering quantity of cannabis used instead of frequency of use to look at relationship with addiction, and this requires further study⁵
- Future analyses will use regression techniques to isolate relationships from possible confounders (age, sex, smoking)

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