

Art, Pain, & Cannabinoids: Results from Research

Four hours

Presenters: Bill Griesar, Ph.D. , Jeff Leake, M.F.A. , Ram Kandasamy

How do cannabinoids, chemicals found in marijuana, act in the brain, and what are the effects on behavior? How have artists, approached (and sometimes used) these drugs to develop works that compel, move, influence, inspire, or incite..? What does current research suggest about the potential therapeutic benefits of cannabinoids?

Learning Objectives

- Participants will understand the complexity, and variability of drug content in sources of marijuana.
- Participants will have a clear grasp of where cannabinoids act in the brain, and how drug action might relate to various therapeutic effects, including pain reduction.
- Participants will gain an understanding of the long history of cultivation, artistic inspiration, and use, including medical use, of marijuana.

SYLLABUS/TIME OUTLINE

PART ONE: Bill Griesar, Ph.D.

Instructor and Outreach Coordinator, Neuroscience, WSU Vancouver

Instructor, Psychology, Portland State University

Affiliate Graduate Faculty, Behavioral Neuroscience, Oregon Health & Science University

Neuroscience Coordinator, nwnoggin.org

Introduction to marijuana/cannabis, drug actions and effects of cannabinoids, research methods involved in the study of cannabinoid receptors, and behavioral effects...

Welcome and introductions!
(10 minutes)

Marijuana prevalence, attitudes, brief history, Schedule 1 status, psychopharmacology, phytocannabinoid drug actions and effects, methods of administration, endocannabinoids and receptor targets (CB1 and CB2), role in anxiety, pain, appetite stimulation, nausea relief, multiple sclerosis, epilepsy, memory impairment, and additional cognitive effects, risks to adolescent brain development, summary of latest reports from NIH summit on marijuana (2016)
(50 minutes)

Questions and break
(30 minutes)

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FAAH genetic variation enhances fronto-amygdala function in mouse and human, Iva Dincheva et al, *Nature Communications* (2015)

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Effects of smoked marijuana on food intake and body weight of humans living in a residential laboratory, Foltin RW et al, *Appetite*. 1988 Aug;11(1):1-14

The Therapeutic Potential of Cannabis and Cannabinoids, Grotenhermen F et al, *Dtsch Arztebl Int*. 2012 Jul; 109(29-30): 495–501

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The cannabis hyperemesis syndrome characterized by persistent nausea and vomiting, abdominal pain, and compulsive bathing associated with chronic marijuana use: a report of eight cases in the United States, Soriano-Co M, *Dig Dis Sci*. 2010 Nov;55(11):3113-9

Current status of cannabis treatment of multiple sclerosis, Deutsch et al *CNS Spectr*. 2008 May;13(5):393-403

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The effect of cannabis compared with alcohol on driving, Sewell RA et al, *Am J Addict*. 2009 May-Jun;18(3):185-93

Neuropsychological functioning in adolescent marijuana users: Subtle deficits detectable after a month of abstinence, Medina KL et al, *J Int Neuropsychol Soc*. 2007 Sep; 13(5): 807–820

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Cannabis use is quantitatively associated with nucleus accumbens and amygdala abnormalities in young adult recreational users, Gilman JM1, Kuster JK, Lee S, Lee MJ, Kim BW, Makris N, van der Kouwe A, Blood AJ, Breiter HC., *J Neurosci.* 2014 Apr 16;34(16):5529-38 (2014)

Daily Marijuana Use Is Not Associated with Brain Morphometric Measures in Adolescents or Adults, Barbara J. Weiland, Rachel Thayer, Brendan E. Depue, Amithrupa Sabbineni, Angela Bryan, Kent E. Hutchison, *The Journal of Neuroscience*, 28 January 2015

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PART TWO: Jeff Leake, M.F.A.

Instructor and Outreach Coordinator, Neuroscience, WSU Vancouver
Arts Coordinator, nwnoggin.org

Visual culture and social attitudes towards marijuana use from antiquity to modernity. How has visual culture influenced the choices of policy makers, patients, the public and clinical practitioners, and the availability of marijuana for treatment and research?

The history of marijuana use, laws, and policies that have impacted the psychology of pain, user perceptions, and scientific inquiry into the mental health effects of cannabinoids.

(40 minutes)

Visualizing the effects of marijuana with a brain map; clarifying the links between structure and behavioral consequences of cannabinoids, and the psychology of pain (and additional therapeutic and side effects - including effects on memory, and learning)

(20 minutes)

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PART THREE: Ram Kandasamy
Ph.D. graduate student, Neuroscience, WSU Vancouver

New evidence from the lab for cannabinoids and pain reduction, and additional therapeutic effects of cannabis

Definition of pain, the protective and damaging effects of pain, worldwide prevalence of chronic pain, the neural pathway of pain transmission, cannabinoids and opioid prescriptions, arguments against the use of marijuana, overview of cannabinoids, clinical pharmacology of marijuana, mechanisms of cannabinoid analgesia, cannabinoid-based therapies, cannabinoid efficacy for pain conditions, cannabinoids and migraine, sex differences in cannabinoid analgesia, cannabinoids vs. opioids
(50 minutes)

Questions and brain viewing! Assistance from Cole Dawson, Neuroscience undergraduate, WSU Vancouver, who currently studies opioid dependence and withdrawal in Mike Morgan's lab.
(30 minutes)

Assessment
(10 minutes)

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