FOOD FOR AFTERTHOUGHT

Journal of
COMMUNITY SAFETY & WELL-BEING

Psychonautical engineering: Synergizing the magic of mindfulness, mushrooms, and mindsets for police officer well-being

Renae M. Stevenson,* MA, PATGC, CMT-P, RCC

ABSTRACT

The setting of policing exposes its officers to a host of negative health outcomes physiologically, psychologically, and spiritually. Policing mindsets around accessing mental health are far from fixing the epidemic of its mental health crisis or being able to sustain a healthy workforce. Policing is losing the battle with a misguided and a scientifically misinformed war on drugs. Canadian legislators are shifting mindsets from decriminalizing substance use towards applying a public health lens to the mycelium underlying its root causes. So too should its *peace* officers—not just to restore peace in society—but also in their own minds and in their dysregulated nervous systems by synergizing psilocybin's neural benefits with mindfulness-based psychotherapy. Western science's exploration into the healing magic of mushrooms and mindfulness is in its infancy compared with the centuries of wisdom from both Indigenous science and eastern contemplative traditions. Not only does their fusion amplify hope for those suffering but perhaps it offers a scientific key to the neurogenesis of resilience. This is a pracademic *trip* driven by a retired and now reformed agent from Canada's War on Drugs.

Lucy in the Sky with Diamonds

I was born the same year as the *War on Drugs* (Richard Nixon Foundation, 1971) and my older sister, the year that the Beatles recorded *Lucy in the Sky with Diamonds*—believed by some to be an LSD acronym (Dyck, 2007; Shirbon, 2015). Throughout the 1970s, my older brother and I played *John* and *Poncho* riding the mean streets of our hometown with hockey cards in the spokes of our moto-cross bicycles (Rosner, 1977). In addition to re-enacting CHiPs, we dive-bombed the rec room furniture playing S.W.A.T.'s theme song on our 8-track boom box, and once we slid over the hood of our grandma's replica Starsky and Hutch Gran Torino (Hamner & Husky, 1975; Blinn, 1975). Much like these original television series' new era do-overs, psychedelics are also experiencing a resurrection. I grew up to become a police officer working in surveillance, dealing with gangs, and enforcing the *War on Drugs*. Dysregulation, empathetic distress, and post-traumatic stress disorder (PTSD) ended my professional War on Drugs career early after two decades and served as a liminal portal to mindfulness, mind-body science, and advocating for plant medicine. Drug *enforcer* to drug *dealer*. Well, not exactly—but pretty darn close. I practice in mindfulness-based and psychedelic-assisted therapies with those I'm privileged to serve on the sunset side of the blue line. What a *trip!* Now how the heck did that happen?

The Systemic Problem with Drugs

The political agenda of the *War on Drugs* targeted the recreational use of drugs, but for decades, it also stalled the clinical research into the healing potential of novel drugs for a multitude of psychological afflictions crippling society (Nutt et al., 2013). Sadly, the biggest impact of the War on Drugs was marginalizing the marginalized even further (Botschner et al., 2023). And it still is. The purpose of this narrative is to introduce the science of a synergistic effect between mindfulness-based interventions (MBI) and psilocybin-assisted therapy (PAT)—for Canadian police populations, for their leadership, and for their governance. Its purpose is not an exhaustive review, nor a deep dive into the neuroscience—but a bridging of two novel, evidence-based, and logistically feasible interventions potentiating hope and healing in policing's mental health epidemic. It also requires a *shift* in mindset.

This is Not Your Brain on Drugs

As a teenager I was bombarded with commercials about an egg frying on a buttery pan—a public service fear campaign directed at youth to demonstrate the devastatingly permanent effects of using drugs such as LSD (Pytka, 1986). The myth was further perpetuated by my police academy training and strongly reinforced by my police culture's demonizing view

Correspondence to: Renae M. Stevenson, **E-mail:** renae@mindfulbadge.com

To cite: Stevenson, R. M. (2023). Psychonautical engineering: Synergizing the magic of mindfulness, mushrooms, and mindsets for police officer well-being. *Journal of Community Safety and Well-Being, 8*(3), 148–154. https://doi.org/10.35502/jcswb.339

SGPUBLISHING Published by **SG Publishing Inc.** CSKA Official publication of the **Community Safety Knowledge Alliance**.

of drug users. Interestingly, neither my police academy training nor my police culture were informed by science—or a training day with a pharmacologist. That came a year and a half after I retired, and its effects are still mind-manifesting today (Osmond, 1957; Kaplan, 2016). If you surveyed police officers to list the pharmacological safety profiles of several substances from least harmful to the most, how might they sequence these: psilocybin (magic mushrooms); LSD; MDMA (ecstasy); ketamine; cannabis; tobacco; cocaine; heroin; and alcohol? Would it be surprising that tobacco is nearly on par with cocaine at the higher end of the harm scale (Nutt et al., 2010)? How about that LSD is significantly less harmful than heroin (Nutt et al., 2010)? Or—that LSD is effective in treating substance-use disorders (Dyck, 2007; Dyck, 2012; Fuentes et al., 2020; Winkelman, 2014)? In the police culture I worked in, we tailgated after shift using alcohol, dark humour, and othering to maladaptively diffuse the day. [For reference, the substances listed above are ordered from the least to the most harmful (Nutt et al., 2010).] After a day of agenting the War on Drugs agenda, we socialized by drinking the #1 harmful substance on the list—and it was legal. Imagine the backlash if we used the least harmful and illegal one… magic mushrooms? Unfortunately, our maladaptive behaviour didn't diffuse or flush the toxins from our psycho-physiological systems, it just created heavy sediment. Which segues nicely into a trauma-relevant, evidence-informed discussion about mindfulness and magic mushrooms *instead* of alcohol to metabolize the harm police officers experience during their careers. Optimizing their mental health promotes better decision-making in crisis situations, and it makes them healthier humans when they return to their families and to their communities, thus reducing harm for both the police and the public they serve.

This is Your Brain

The brain is a complex network of neural pathways and brain regions. Two of those networks are relevant and helpful in a discussion about how trauma, mindfulness, and magic mushrooms intersect. The breadth of research on neuroscience, mindfulness, and psychedelics is exploding, with each its own complexity. Metaphors can be helpful tools in simplifying and understanding this complexity, and in bridging the alignment between them. Imagine a driver choosing a high-performance sports car transmission profile. Do they choose an automatic one or a manual one? For fuel economy, to maximize engine performance, and to regulate power purposefully and sustainably they likely choose a manual transmission. It's no different with the brain's engine and the fuel that enters it as experience. In the brain's engine system, the brain region called the Task Positive Network (TPN) is like a gas pedal. It's the place where brain functions like attention, awareness, and interoception live. The brain region called the Default Mode Network (DMN) is akin to its braking system and it's where functions like mind-wandering, self-referential thinking, and rumination live. The TPN and the DMN are mostly alternating systems and generally negatively correlated (Di & Biswal, 2014; Fox et al., 2005; Fox et al., 2009). When task-oriented, the TPN is active, and the DMN is dampened and vice-versa. Connectivity issues within and between these networks correlate with many brain challenges such as autism, depression, and schizophrenia (Daniels et al., 2010). Brain imaging in patients with PTSD demonstrates the difficulty in switching between the TPN and DMN and reduced connectivity in the DMN (Daniels et al., 2010). Reduced DMN connectivity is also associated with combat exposure to trauma—even absent a PTSD diagnosis (DiGangi et al., 2016). An optimized brain fluidly shifts and balances between these brain regions without grinding its gears, burning its fuel, or wearing out its brake pads. An optimized brain is psychologically flexible.

This is Your Brain on Trauma

The brain is affected by trauma, and it impacts each person individually according to their epigenetic, physiological, and psychological circumstance, influenced by both internal and external environments (set and setting). But despite trauma, the brain is also resilient and incredibly plastic (Bremner, 2006; Merzenich et al., 2014). Emerging research is mapping both trauma and resilience signatures in the brain, guiding interventions to target regions involved such as DMN connectivity (Zhu et al., 2022). Post-traumatic growth (PTG) happens *after* trauma not before. Grit develops at the tension of passion with perseverance, not in a resistance-free environment (Duckworth et al., 2007). This is not a treatise to rationalize discrimination against those with lived experience in suffering because they *might* develop PTSD. The intention is to create salutogenic structures and interventions, both preventive and therapeutic, to maximize thriving and healing regardless of the environment but especially for when operational stress injuries (OSIs) occur. Because it's not a question of *if* OSIs will occur in the span of a policing career, it's a matter of when (Goerling, personal communication, November 12, 2016).

The *body keeps score*, even if the mind is unaware (van der Kolk, 2014). By the time a police officer's brain enters policing, it arrives with a history of experiences and live-wired neural circuitry. A person can store trauma epigenetically, be impacted by adverse childhood experiences (ACEs), or be imprinted through some other developmental experience (Bremner, 2006; Roth et al., 2022; Yehuda, & Lehrner, 2018). And each of these, or their accumulation, can prime OSIs given the right setting, and especially when the operational system is rife with trauma. Roth et al. (2022) examined ACEs within a Canadian and American public safety personnel (PSP) population and found possible mechanisms, such as moral injury and difficulties with emotional regulation, relating to adverse mental health conditions after trauma exposure. Similarly, Papazoglou et al. (2020) found that moral injury was predictive of PTSD in a police sample. Regardless of these prior experiences, the policing environment adds chronic operational and organizational stressors, high exposure to trauma and suffering, maladaptive coping, and a culture of mental health stigma risking subjecting its officers to a host of negative health outcomes (Carleton et al., 2017; Carleton et al., 2020; Grupe, 2023; Lentz et al., 2022; Ricciardelli et al., 2018; Stevenson, 2022; Violanti et al., 2017; Wilson et al., 2016). Not surprisingly, this allostatic load creates unwell officers who make unwise decisions, resulting in damage to their communities, to their families, and to their brains.

This Is Your Brain on Mindfulness

Mindfulness is the brain's metaphorical gear shift. A vehicle can slow down by applying pressure on the brakes, or without

its braking system simply by using its gears. Agency is the power to manage the engine system manually as needed, to fluidly toggle between acceleration (TPN) and deceleration (DMN), depending on road conditions, and to optimize peak engine performance, maximizing its resources. The efficacy of MBIs to positively impact Canadian police officer well-being is becoming well established in research (Stevenson, 2022). Acting on the evidence, which includes reducing aggression, alcohol use, and working memory degradation while improving psychological flexibility, resilience, sleep quality, emotional regulation, and distress tolerance, is long overdue (Christopher et al., 2016; Christopher et al., 2018; Christopher et al., 2020; Fitzhugh et al., 2019; Fleischmann et al., 2021; Grupe et al., 2021; Jha et al., 2020; Kaplan et al., 2020; Sylven, 2023). Further, MBIs are shown to both increase grey matter plasticity in executive function brain regions and strengthen connectivity in the DMN (Kral et al., 2022; Tang et al., 2020; Sezer et al., 2022). In MBIs, mindset is a key psycho-educational and experiential learning component which begins with the skill development of making the implicit explicit. "Until you make the unconscious conscious, it will direct your life and you will call it fate (Jung, n.d.)." In *noticing* sensations, emotions, thoughts, and behaviours—the implicit becomes explicit and a person is empowered to respond to stimulus, instead of habitually reacting to it. This builds not only agency but self-efficacy. Learning and building psychological flexibility is foundational in efficacious MBIs such as mindfulness-based stress reduction (MBSR) and mindfulness-based resilience training (MBRT), as well as psycho-therapeutic modalities such as acceptance and commitment therapy (ACT), dialectical behavioural therapy (DBT), and mindfulness-based cognitive therapy (MBCT) (Boyd et al., 2018; Christopher et al., 2016; Gloster et al., 2020; Grossman et al., 2004; Linehan et al., 1991).

This Is Your Brain on Mushrooms

Suggesting police officers use psilocybin is not in the context of recreational use or after-shift tailgating. *Set* and *setting* are core components of safe and effective PAT protocols administered by supportive, interdisciplinary teams of regulated health practitioners (Carhart-Harris & Goodwin, 2017; Carhart-Harris et al., 2018; Griffiths et al., 2016; Griffiths et al., 2018; Krediet et al., 2020; MacCallum et al., 2022). The *set* relates to mindset and the *setting* refers to the therapeutic environment. The assertion is to use psilocybin as a medicinal agent to treat and to mitigate the overexposure to trauma and suffering police officers experience throughout their careers—and to catalyze neuroplasticity and optimized brain functioning in conjunction with mindfulness-based therapeutic interventions.

There is a resurgence in psilocybin clinical research, and its effects are described as a *reset* mechanism within the brain (Carhart-Harris et al., 2017). Psilocybin's therapeutic use spans hundreds if not thousands of years within Indigenous medicinal practices and it is characterized by low toxicity as well as low abuse potential within western biomedical systems (Carhart-Harris & Goodwin, 2017; Johnson & Griffiths, 2017; Krediet et al, 2020). Psilocybin is found in over 100 species of mushrooms and works as a serotonin agonist on some of the brain's receptors, positively influencing behaviour when paired with psychotherapeutic interventions (Johnson & Griffiths, 2017). The use of neural imaging is illuminating psilocybin's effect beyond psychometric measures, showing reduced DMN recruitment and increased global functional connectivity of executive function brain networks (Daws et al., 2022). In keeping with the automotive metaphor, psilocybin is like fuel injector cleaner helping remove harmful deposits and sediment interfering with the combustion system of a brain's engine performance. Early classic psychedelic research in the 1950s and 1960s produced hundreds of scientific publications, involving thousands of patients, examining psychedelics' positive impacts with a variety of psychological conditions, including trauma, but was halted due to psychedelics' scheduling as controlled substances (Griffiths et al., 2016; Krediet et al., 2020). These mid-century research methods were not as rigorous as in the current psychedelic renaissance, but their findings are similar. In their review, Ziff et al. (2022) assessed the safety and the potential of PAT for treating substance use, depression, and mood disorders (in end-of-life populations) and found it efficacious. These are similar comorbidities to those in PTSD's profile. Recent psilocybin research relating to depression, substance use, anxiety, and obsessive-compulsive disorder led to its Food and Drug Administration (FDA) breakthrough designation for depression (Krediet et al., 2020). Psilocybin research demonstrates reduced amygdala reactivity while enhancing mindfulness, creativity, empathy, insight, connectedness, and acceptance—all critical mechanisms in developing psychological flexibility—but also for its therapeutic potential in treating PTSD (Krediet et al., 2020). In evaluating psilocybin use, researchers found it produced mystical experiences that involved a profound sense of spiritual meaning (Griffiths et al., 2006). University of British Columbia researchers conducting an online survey of self-selected micro-dosers (n=8703) found that, across gender, micro-dosing correlated with lower reporting of both depression and anxiety (Rootman et al., 2021). In 85% of their sample, psilocybin was reported by respondents as the substance used. Griffiths et al. (2016) similarly found sustained effects in lowering depression and anxiety in those with end-of-life distress, while demonstrating increases in optimism, acceptance, and quality of life—which were sustained 6 months post-treatment. In depression, PAT is demonstrating substantial and sustained effects lasting up to 12 months post-treatment (Carhart-Harris et al., 2017; Carhart-Harris et al., 2018; Gukasyan et al., 2022). Davis et al. (2023) propose a study protocol for psilocybin's use with PTSD-diagnosed veterans, and Canadian companies Apex and Halucinex are conducting clinical trials examining PAT with PTSD in military veterans and treatment-resistant PTSD (Apex Labs, 2023; NIH, 2022).

This Is Your Bionic Brain

It won't cost the public healthcare system $6 million to build—or rebuild—a bionic brain, nor does it need to be Steve Austin's (Caiden, 1970). The per participant cost to cultivate a *metta*-human in a group-based PAT (including introductory mindfulness skills) in Canada is approximately $2800 (Roots to Thrive, 2023). And its intervention is weeks-long not years. A culturally-informed, evidence-based MBI such as MBRT, combined with PAT offers the potential of an accelerated, sustained, and economically viable psychotherapeutic option to stem the tidal wave of mental unwellness in Canadian police

populations. Griffiths et al., (2018) examined the synergy of a secular MBI with PAT using a double-blind design, showing enduring changes but also "robust interactive positive effects" between dosing of psilocybin with added meditation practice supports (p. 67). In an experienced population of meditators, Smigielski et al. (2019) found psilocybin enhanced the depth of meditation and noted greater positive effect in psychosocial functioning 4-months post-MBI in the psilocybin group compared with the placebo (2019). Mindfulness-based interventions and PAT are complementary, correlate to increased trait mindfulness, and demonstrate that fusing the neurogenic and anxiolytic benefits of MBIs with PATs amplifies their impacts (Eleftheriou & Thomas, 2021). This creates traction for its human drivers, but also cleaner operating systems using plant-based fuels already formatted to work with human neural receptors. Mixing PAT with an MBI is like adding a non-toxic, environmentally friendly, *dilithium crystal* warp drive to your brain's combustion system (Star Trek, 2023). Said differently, it's "cerebral harmony" (Álvarez de Lorenzana, 2023, 19:19). Practicing mindfulness and PAT increases both psychological flexibility and ego dissolution, contributing to changes in neurophysiology, connectedness, and meaning making (Hendricks, 2018). It's a magic-making mindset.

Future Directions

A significant barrier for police officers in accessing mental health support is their own culture. The attitudes of the *War on Drugs* mindset still strongly permeate this culture, as does mental health stigma. The psychedelic renaissance is in its infancy, and there is no published research involving Canadian police officers and PAT… yet. This void does not mean a lack of evidence. Since psilocybin is a controlled substance in Canada, its access is either through the unregulated underground or through Health Canada exemption typically for end-of-life distress.

Although its implementation has been delayed, the Canadian government amended legislation authorizing medical assistance in dying (MAID) for those with prolonged and treatment-resistant mental health conditions. Accessing plant medicines such as psilocybin for the same afflictions is still very tightly restricted (DOJ, 2023). Those at the frontlines of Canada's health system are pushing back against this barrier as doctors, nurses, and therapists are filing for emergency Health Canada special access to allow this novel treatment (Fraser, 2023). Wider availability could help buffer the epidemic of mental health crises in this country. The Canadian Association of Chiefs of Police (CACP) recommends a public health perspective in decriminalizing personal possession for civilian Canadian citizens (CACP, 2020). This same public health perspective needs to be applied to its own membership—in both training and availability of varied psychological support systems. Police governance must take greater action not only in normalizing access to mental health supports but in mitigating its operational and cultural barriers. Leaders must better inform themselves and their members on novel, evidence-based treatments such as meditation and psychedelics, as their members are at significantly higher risk for developing negative mental health conditions than civilian Canadians (Carleton et al., 2017; Lentz et al., 2022). Synergizing the evidence-based magic of mindfulness with efficacious psycho-therapeutic interventions using psilocybin potentiates peace, ending an outdated war on drugs for all populations involved.

ACKNOWLEDGEMENTS

Dr. Shannon Dames Ph.D., Vancouver Island University; Dr. Pam Kryskow M.D., Vancouver Island University; Dr. Jeff Morley (Police S/Sgt., ret., R. Psych.), Guardian Psychedelics; Dr. John Lilley M.D. (Police Commissioner, ret.), Coalition for Canadian Police Reform; Dave Cassels (Police Chief, ret.), Coalition for Canadian Police Reform.

CONFLICT OF INTEREST DISCLOSURES

Renae Stevenson is a retired British Columbia municipal police officer, a registered clinician, and a certified mindfulness teacher who consults for Jill Parker Counselling Inc., Mindful Badge Initiative, and Pacific University's Mindful Health and Resilience Lab. She is also a Board Member with the Canadian Mental Health Association in the Cowichan Valley.

AUTHOR AFFILIATIONS

*BC Municipal Police Officer (ret.), Vancouver Island, BC, Canada.

REFERENCES

Álvarez de Lorenzana, J. (2023, June 1). *The synergistic effects of Psychedelic-assisted Therapy + mindfulness-based interventions*. [Unpublished video]. Faculty of Graduate Studies, Vancouver Island University.

Apex Labs. (2023, January 18). *Apex Labs doses first patient in take home psilocybin clinical trial.* https://www.prnewswire.com/news-releases/apex-labs-doses-first-patient-in-take-home-psilocybin-clinical-trial-301725090.html

Blinn, W. (1975). *Starsky & Hutch*. IMDB. https://www.imdb.com/title/tt0072567/?ref_=fn_al_tt_1

Botschner, J., Somers, J. M., & Corley, C. (2023). Decriminalization of the possession of illicit substances for personal use: A proposed theory of change to improve community safety and well-being outcomes in Canada. *Journal of Community Safety and Well-Being, 8*(1), 6–17. https://doi.org/10.35502/jcswb.312

Boyd, J. E., Lanius, R. A., & McKinnon, M. C. (2018). Mindfulness-based treatments for posttraumatic stress disorder: A review of the treatment literature and neurobiological evidence. *Journal of Psychiatry & Neuroscience, 43*(1), 7–25. https://doi.org/10.1503/jpn.170021

Bremner, J. D. (2006). Traumatic stress: Effects on the brain. *Dialogues in Clinical Neuroscience, 8*(4), 445–461. https://doi.org/10.31887/DCNS.2006.8.4/jbremner

Caiden, M. (1970). *Cyborg.* Mass Market Paperback.

Canadian Association of Chiefs of Police (CACP). (2020). *Decriminalization for simple possession of illicit drugs: Exploring impacts on public safety & policing.* Special Purpose Committee on the Decriminalization of Illicit Drugs. https://www.cacp.ca/index.html?asst_id=2189

Carhart-Harris R., & Goodwin, G. (2017). The therapeutic potential of psychedelic drugs: Past, present, and future. *Neuropsychopharmacology, 42,* 2105–2113. https://doi.org/10.1038/npp.2017.84

Carhart-Harris, R. L., Roseman, L., Bolstridge, M., Demetriou, L., Pannekoek, J. N., Wall, M. B., Tanner, M., Kaelen, M., McGonigle, J., Murphy, K., Leech, R., Curran, H. V., & Nutt, D. J. (2017). Psilocybin for treatment-resistant depression: fMRI-measured brain mechanisms. *Scientific Reports, 7*(1), 13187. https://doi.org/10.1038/s41598-017-13282-7

Carhart-Harris, R. L., Bolstridge, M., Day, C. M. J., Rucker, J., Watts, R., Erritzoe, D. E., Kaelen, M., Giribaldi, B., Bloomfield, M., Pilling, S., Rickard, J. A., Forbes, B., Feilding, A., Taylor, D., Curran, H. V., & Nutt, D. J. (2018). Psilocybin with psychological support for treatment-resistant depression: Six-month follow-up. *Psychopharmacology, 235*(2), 399–408. https://doi.org/10.1007/s00213-017-4771-x

Carleton, R. N., Afifi, T. O., Turner, S., Taillieu, T., Duranceau, S., LeBouthillier, D. M., Sareen, J., Ricciardelli, R., MacPhee, R. S., Groll, D., Hozempa, K., Brunet, A., Weekes, J. R., Griffiths, C. T., Abrams, K. J., Jones, N. A., Beshai, S., Cramm, H. A., Dobson, K. S., … Asmundson, G. J. G. (2017). Mental disorder symptoms among public safety personnel in Canada. *The Canadian Journal of Psychiatry, 63*(1), 54–64. https://doi.org/10.1177/0706743717723825

Carleton, R. N., Afifi, T. O., Taillieu, T., Turner, S., Mason, J. E., Ricciardelli, R., McCreary, D. R., Vaughan, A., Anderson, G. S., Krakauer, R., Donnelly, E. A., Camp, R. D. II., Groll, D., Cramm, H. A., MacPhee, R. S., & Griffiths, C. T. (2020). Assessing the relative impact of diverse stressors among public safety personnel. *International Journal of Environmental Research and Public Health, 17.* doi: 10.3390/ijerph17041234

Christopher, M. S., Goerling, R. J., Rogers, B. S., Hunsinger, M., Baron, G., Bergman, A., & Zava, D. T. (2016). A pilot study evaluating the effectiveness of a mindfulness-based intervention on cortisol awakening response and health outcomes among law enforcement officers. *Journal of Police and Criminal Psychology, 31,* 15–28. https://doi.org/10.1007/s11896-015-9161-x

Christopher, M., Hunsinger, M., Goerling, L., Bowen, S., Rogers, B., Gross, C., Dapolonia, E., & Pruessner, J. (2018). Mindfulness-based resilience training to reduce health risk, stress reactivity, and aggression among law enforcement officers: A feasibility and preliminary efficacy trial. *Psychiatry Research, 264,* 104–115. https://doi.org/10.1016/j.psychres.2018.03.059

Christopher, M., Bowen, S., & Witkiewitz, K. (2020). Mindfulness-based resilience training for aggression, stress and health in law enforcement officers: Study protocol for a multisite, randomized, single-blind clinical feasibility trial. *Trials, 21,* 236. https://trialsjournal.biomedcentral.com/articles/10.1186/s13063-020-4165-y

Daniels, J. K., McFarlane, A. C., Bluhm, R. L., Moores, K. A., Clark, C. R., Shaw, M. E., Williamson, P. C., Densmore, M., & Lanius, R. A. (2010). Switching between executive and default mode networks in posttraumatic stress disorder: Alterations in functional connectivity. *Journal of Psychiatry & Neuroscience, 35*(4), 258–266. https://doi.org/10.1503/jpn.090175

Davis, A. K., Levin, A. W., Nagib, P. B., Armstrong, S. B., & Lancelotta, R. L. (2023). Study protocol of an open-label proof-of-concept trial examining the safety and clinical efficacy of psilocybin-assisted therapy for veterans with PTSD. *BMJ Open, 13*(5), e068884. https://doi.org/10.1136/bmjopen-2022-068884

Daws, R. E., Timmermann, C., Giribaldi, B., Sexton, J. D., Wall, M. B., Erritzoe, D., Roseman, L., Nutt, D., & Carhart-Harris, R. (2022). Increased global integration in the brain after psilocybin therapy for depression. *Nature Medicine, 28*(4), 844–851. https://doi.org/10.1038/s41591-022-01744-zDavis 2023

Department of Justice (DOJ). (2023). *Delay of eligibility for medical assistance in dying for persons suffering solely from mental illness proposed by Ministers of Justice and Health.* https://www.canada.ca/en/department-justice/news/2023/02/delay-of-eligibility-for-medical-assistance-in-dying-for-persons-suffering-solely-from-mental-illness-proposed-by-ministers-of-justice-and-health.html

Di, X., & Biswal, B. B. (2014). Modulatory interactions between the default mode network and task positive networks in resting-state. *PeerJ, 2,* e367. https://doi.org/10.7717/peerj.367

DiGangi, J. A., Tadayyon, A., Fitzgerald, D. A., Rabinak, C. A., Kennedy, A., Klumpp, H., Rauch, S. A., & Phan, K. L. (2016). Reduced default mode network connectivity following combat trauma. *Neuroscience Letters, 615,* 37–43. https://doi.org/10.1016/j.neulet.2016.01.010

Duckworth, A., Peterson, C., Matthews, M., & Kelly, D. (2007). Grit: Perseverance and passion for long-term goals. *Journal of Personality and Social Psychology, 92*(6), 1087–1101. https://doi.org/10.1037/0022-3514.92.6.1087

Dyck, E. (2007). Land of the living sky with diamonds: A place for radical psychiatry? *Journal of Canadian Studies/Revue d'études canadiennes 41*(3), 42-66. https://www.muse.jhu.edu/article/238672.

Dyck, E. (2012). *Psychedelic Psychiatry: LSD on the Canadian Prairies*. University of Manitoba Press.

Eleftheriou, M. E., & Thomas, E. (2021). Examining the potential synergistic effects between mindfulness training and psychedelic-assisted therapy. *Frontiers in Psychiatry, 12, 70757.* https://doi.org/10.3389/fpsyt.2021.707057

Fitzhugh, H., Michaelides, G., Connolly, S., & Daniels, K. (2019). Mindfulness in policing. A randomized controlled trial of two online mindfulness resources across five forces in England and Wales. https://whatworks.college.police.uk/Research/Documents/Mindfulness_RCT_report.pdf

Fleischmann, M. H., Manova, V., Wisener, M., & Khoury, B. (2021). Mindfulness facets and self-compassion as moderators of the relationship between occupational stressors and mental health symptoms in Canadian police officers. *Canadian Journal of Behavioural Science / Revue canadienne des sciences du comportement, 54*(4), 347–353. https://doi.org/10.1037/cbs0000290

Fox, M. D., Snyder, A. Z., Vincent, J. L., Corbetta, M., Van Essen, D. C., & Raichle, M. E. (2005). The human brain is intrinsically organized into dynamic, anticorrelated functional networks. *Proceedings of the National Academy of Sciences of the United States of America, 102*(27), 9673–9678. https://doi.org/10.1073/pnas.0504136102

Fox, M. D., Zhang, D., Snyder, A. Z., & Raichle, M. E. (2009). The global signal and observed anticorrelated resting state brain networks. *Journal of Neurophysiology, 101*(6), 3270–3283. https://doi.org/10.1152/jn.90777.2008

Fraser, D. (2023, February 14). Advocates, MPs call on feds to expand access to psychedelic treatment. *CTV News.* https://www.ctvnews.ca/politics/advocates-mps-call-on-feds-to-expand-access-to-psychedelic-treatment-1.6273433

Fuentes, J., Fonseca, F., Elices, M., Farré, M., & Torrens, M. (2020). Therapeutic use of LSD in psychiatry: A systematic review of randomized-controlled clinical trials. *Frontiers in Psychiatry, 10*(943). https://doi.org/10.3389/fpsyt.2019.00943

Gloster, A. T., Walder, N., Levin, M. E., Twohig, M. P., & Karekla, M. (2020). The empirical status of acceptance and commitment therapy: A review of meta-analyses. *Journal of Contextual Behavioral Science, 18,* 181–192. https://doi.org/10.1016/j.jcbs.2020.09.009

Griffiths, R. R., Richards, W. A., McCann, U., & Jesse, R. (2006). Psilocybin can occasion mystical-type experiences having substantial and sustained personal meaning and spiritual significance. *Psychopharmacology, 187*(3), 268–292. https://doi.org/10.1007/s00213-006-0457-5

Griffiths, R. R., Johnson, M. W., Carducci, M. A., Umbricht, A., Richards, W. A., Richards, B. D., Cosimano, M. P., & Klinedinst, M. A. (2016). Psilocybin produces substantial and sustained decreases in depression and anxiety in patients with life-threatening cancer: A randomized double-blind trial. *Journal of Psychopharmacology (Oxford, England), 30*(12), 1181–1197. https://doi.org/10.1177/0269881116675513

Griffiths R. R., Johnson, M. W., Richards, W. A., Richards, B. D., Jesse, R., MacLean, K. A., Barrett, F., Cosimano, M., Klinedinst, M. (2018). Psilocybin-occasioned mystical-type experience in combination with meditation and other spiritual practices produces enduring positive changes in psychological functioning and in trait measures of prosocial attitudes and behaviors. *Journal of Psychopharmacology, 32,* 49–69. https://doi.org/10.1177/0269881117731279

Grossman, P., Niemann, L., Schmidt, S., & Walach, H. (2004). Mindfulness-based stress reduction and health benefits. A meta-analysis. *Journal of Psychosomatic Research, 57*(1), 35–43. https://doi.org/10.1016/S0022-3999(03)00573-7

Grupe, D., McGehee, C., Smith, C., Francis, A., Mumford, J., & Davidson, R. (2021). Mindfulness training reduces PTSD symptoms and improves stress-related health outcomes in police officers. *Journal of Police and Criminal Psychology, 36*(1), 72–85. https://doi.org/10.1007/s11896-019-09351-4

Grupe, D. W. (2023). Mental health stigma and help-seeking intentions in police employees. *Journal of Community Safety and Well-Being, 8*(Suppl_1), S32–S39. https://doi.org/10.35502/jcswb.290

Gukasyan, N., Davis, A. K., Barrett, F. S., Cosimano, M. P., Sepeda, N. D., Johnson, M. W., & Griffiths, R. R. (2022). Efficacy and safety of psilocybin-assisted treatment for major depressive disorder: Prospective 12-month follow-up. *Journal of psychopharmacology (Oxford, England), 36*(2), 151–158. https://doi.org/10.1177/02698811211073759

Hamner, R., & Husky, R. (1975). *S.W.A.T.* IMDB. https://www.imdb.com/title/tt0072560/

Hendricks P. S. (2018). Awe: A putative mechanism underlying the effects of classic psychedelic-assisted psychotherapy. *International Review of Psychiatry (Abingdon, England), 30*(4), 331–342. https://doi.org/10.1080/09540261.2018.1474185

Jha, A., Zanesco, A., Denkova, E., Rooks, J., Morrison, A., & Stanley, E. (2020). Comparing mindfulness and positivity trainings in high-demand cohorts. *Cognitive Therapy & Research, 44*(2), 311–326. https://doi.org/10.1007/s10608-020-10076-6

Johnson, M. W., & Griffiths, R. R. (2017). Potential therapeutic effects of psilocybin. *Neurotherapeutics: The Journal of the American Society for Experimental NeuroTherapeutics, 14*(3), 734–740. https://doi.org/10.1007/s13311-017-0542-y

Jung, C. (n.d.). *Quotes*. Goodreads. https://www.goodreads.com/quotes/44379-until-you-make-the-unconscious-conscious-it-will-direct-your

Kaplan, R. (2016). Humphry Osmond: The psychedelic psychiatrist. *International Journal of Humanities Social Sciences and Education, 3*(2), 82–87. https://www.arcjournals.org/pdfs/ijhsse/v3-i2/10.pdf

Kaplan, J., Bergman, A. L., Green, K., Dapolonia, E., & Christopher, M. (2020). Relative impact of mindfulness, self-compassion, and psychological flexibility on alcohol use and burnout among law enforcement officers. *Journal of Alternative and Complementary Medicine (NY), 26*(12), 1190–1194. https://doi.org/10.1089/acm.2020.0178

Kral, T. R. A., Lapate, R. C., Imhoff-Smith, T., Patsenko, E., Grupe, D. W., Goldman, R., Rosenkranz, M. A., & Davidson, R. J. (2022). Long-term meditation training is associated with enhanced subjective attention and stronger posterior cingulate-rostrolateral prefrontal cortex resting connectivity. *Journal of Cognitive Neuroscience, 34*(9), 1576–1589. https://doi.org/10.1162/jocn_a_01881

Krediet, E., Bostoen, T., Breeksema, J., van Schagen, A., Passie, T., & Vermetten, E. (2020). Reviewing the potential of psychedelics for the treatment of PTSD. *The International Journal of Neuropsychopharmacology, 23*(6), 385–400. https://doi.org/10.1093/ijnp/pyaa018

Lentz, L., Smith-MacDonald, L., Malloy, D. C., Anderson, G. S., Beshai, S., Ricciardelli, R., Brémault-Phillips, S., & Carleton, R. N. (2022). A qualitative analysis of the mental health training and educational needs of firefighters, paramedics, and public safety communicators in Canada. *International Journal of Environmental Research and Public Health, 19*, 6972. https://doi.org/10.3390/ijerph19126972

Linehan, M. M., Armstrong, H. E., Suarez, A., Allmon, D., & Heard, H. L. (1991). Cognitive-behavioral treatment of chronically parasuicidal borderline patients. *Archive of General Psychiatry, 48*, 1060–1064.

MacCallum, C. A., Lo, L. A., Pistawka, C. A., & Deol, J. K. (2022). Therapeutic use of psilocybin: Practical considerations for dosing and administration. *Frontiers in Psychiatry, 13*, 1040217. https://doi.org/10.3389/fpsyt.2022.1040217

Merzenich, M. M., Van Vleet, T. M., & Nahum, M. (2014). Brain plasticity-based therapeutics. *Frontiers in Human Neuroscience, 8*(385), 2–16 https://doi.org/10.3389/fnhum.2014.00385

National Institutes of Health (NIH). (2022). *Investigating the therapeutic effects of psilocybin in treatment-resistant Post-Traumatic Stress Disorder.* https://clinicaltrials.gov/ct2/show/NCT05243329?term=psilocybin&cond=PTSD&cntry=CA&draw=2&rank=1

Nutt, D. J., King, L. A., Phillips, L. D., & Independent Scientific Committee on Drugs. (2010). Drug harms in the UK: A multicriteria decision analysis. *Lancet (London, England), 376*(9752), 1558–1565. https://doi.org/10.1016/S0140-6736(10)61462-6

Nutt, D. J., King, L. A., & Nichols, D. E. (2013). Effects of Schedule I drug laws on neuroscience research and treatment innovation. *Nature Reviews. Neuroscience, 14*(8), 577–585. https://doi.org/10.1038/nrn3530

Osmond, H. (1957). A review of the clinical effects of psychotomimetic agents. *Annals of the New York Academy of Sciences, 66*(3), 418–434.

Papazoglou, K., Blumberg, D. M., Chiongbian, V. B., Tuttle, B. M., Kamkar, K., Chopko, B., Milliard, B., Aukhojee, P., & Koskelainen, M. (2020). The role of moral injury in PTSD among law enforcement officers: A brief report. *Frontiers in Psychology, 11*, 310.

Pytka, J. (1986). *This is your brain on drugs*. [Television Commercial]. Partnership for a Drug Free America. https://www.paleycenter.org/collection/item/?item=AT:23829.016

Ricciardelli, R., Carleton, R., Groll, D., & Cramm, H. (2018). Qualitatively unpacking Canadian public safety personnel experiences of trauma and their well-being. *Canadian Journal of Criminology and Criminal Justice, 60*(4), 566–577. https://doi.org/10.3138/cjccj.2017-0053.r2

Richard Nixon Foundation. (1971, June 17). *President Nixon Declares Drug Abuse "Public Enemy Number One."* YouTube. https://youtu.be/y8TGLLQlD9M

Rootman, J. M., Kryskow, P., Harvey, K., Stamets, P., Santos-Brault, E., Kuypers, K., Polito, V., Bourzat, F., & Walsh, Z. (2021). Adults who microdose psychedelics report health related motivations and lower levels of anxiety and depression compared to non-microdosers. *Scientific Reports, 11*, 22479. https://doi.org/10.1038/s41598-021-01811-4

Roots to Thrive. (2023). *Programs: Roots to Thrive Psilocybin (group).* https://rootstothrive.com/programs/psilocybin/

Rosner, R. (1977). *CHiPs*. IMDB. https://www.imdb.com/title/tt0075488/fullcredits?ref_=ttloc_ql_1

Roth, S. L., Andrews, K., Protopopescu, A., Lloyd, C., O'Connor, C., Losier, B. J., Lanius, R. A., & McKinnon, M. C. (2022). Mental health symptoms in public safety personnel: Examining the effects of adverse childhood experiences and moral injury. *Child Abuse & Neglect, 123*, 105394. https://doi.org/10.1016/j.chiabu.2021.105394

Sezer, I., Pizzagalli, D. A., & Sacchet, M. D. (2022). Resting-state fMRI functional connectivity and mindfulness in clinical and non-clinical contexts: A review and synthesis. *Neuroscience and Biobehavioral Reviews, 135*, 104583. https://doi.org/10.1016/j.neubiorev.2022.104583

Shirbon, E. (2015, May 14). For 10 points: What is the meaning of "Lucy in the Sky with Diamonds"? *Reuters*. https://www.reuters.com/article/britain-beatles-idUSL5N0Y52Y220150514

Smigielski, L., Kometer, M., Scheidegger, M., Krähenmann, R., Huber, T., & Vollenweider, F. X. (2019). Characterization and prediction of acute and sustained response to psychedelic psilocybin in a mindfulness group retreat. *Scientific Reports, 9*(1), 14914. https://doi.org/10.1038/s41598-019-50612-3

Star Trek. (2023). *Dilithium*. https://ca.startrek.com/database_article/dilithium

Stevenson, R. M. (2022). Brief mindfulness training for Canadian public

safety personnel well-being. *Journal of Community Safety and Well-Being, 7*(3), 88–92. https://doi.org/10.35502/jcswb.263

Sylven, L. (2023). Mindful of authority: A snapshot of the meditation and contemplative practices of some Canadian commissioned police officers. *Journal of Community Safety and Well-Being, 8*(Suppl_1), S40–S45. https://doi.org/10.35502/jcswb.291

Tang, R., Friston, K. J., & Tang, Y. Y. (2020). Brief mindfulness meditation induces gray matter changes in a brain hub. *Neural plasticity, 2020,* 8830005. https://doi.org/10.1155/2020/8830005

van der Kolk, B. (2014). *The body keeps the score: Brain, mind, and body in the healing of trauma.* Penguin Books.

Violanti, J. M., Charles, L. E., McCanlies, E., Hartley, T. A., Baughman, P., Andrew, M. E., Fekedulegn, D., Ma, C. C., Mnatsakanova, A., & Burchfiel, C. M. (2017). Police stressors and health: A state-of-the-art review. *Policing (Bradford, England), 40*(4), 642–656. https://doi.org/10.1108/PIJPSM-06-2016-0097

Wilson, S., Guliani, H., & Boichev, G. (2016). On the economics of post-traumatic stress disorder among first responders in Canada. *Journal of Community Safety & Wellbeing, 1*(20), 26–31. https://doi.org/10.35502/jcswb.6

Winkelman, M. J. (2014). Psychedelics as medicines for substance abuse rehabilitation: Evaluating treatments with LSD, peyote, ibogaine and ayahuasca. *Current Drug Abuse Reviews, 7*(2), 101–116.

Yehuda, R., & Lehrner, A. (2018). Intergenerational transmission of trauma effects: Putative role of epigenetic mechanisms. *World Psychiatry: Official Journal of the World Psychiatric Association (WPA), 17*(3), 243–257. https://doi.org/10.1002/wps.20568

Zhu, X., Suarez-Jimenez, B., Lazarov, A., Such, S., Marohasy, C., Small, S. S., Wager, T. D., Lindquist, M. A., Lissek, S., & Neria, Y. (2022). Sequential fear generalization and network connectivity in trauma exposed humans with and without psychopathology. *Communications Biology, 5*(1), Article 1275. https://doi.org/10.1038/s42003-022-04228-5

Ziff, S., Stern, B., Lewis, G., Majeed, M., & Gorantla, V. R. (2022). Analysis of psilocybin-assisted therapy in medicine: A narrative review. *Cureus, 14*(2), Article e21944. https://doi.org/10.7759/cureus.21944