

Review Article

The Green Mirage: Unmasking the Hidden Harms of Marijuana

Muhammed Jasim Abdul Jalal*

Medical Director and Consultant, Department of Internal Medicine and Rheumatology, Olive Healthcare, Thrissur, Kerala, India

***Corresponding author:** Muhammed Jasim Abdul Jalal, Medical Director and Consultant, Department of Internal Medicine and Rheumatology, Olive Healthcare, Thrissur, Kerala, India

Tel: 9544020621;

Email: jasimabduljalal@yahoo.com

Received: October 04, 2025

Accepted: November 07, 2025

Published: November 10, 2025

Abstract

In the cultural haze that glorifies marijuana as a natural panacea, a darker narrative unfolds—one marred by silent injuries, hidden scars, and consequences that ripple across generations. This review peels back the verdant curtain to reveal marijuana's insidious effects on human physiology, psychology, and society. Like a master illusionist, cannabis entrances the brain while subtly impairing memory, attention, and emotional regulation. It orchestrates a quiet rebellion within the heart, inciting tachycardia, arrhythmias, and vascular chaos. Inhaled under the guise of herbal innocence, its smoke inflicts pulmonary injuries, while its molecular fingerprints betray the immune system, leaving it weakened and vulnerable.

Beneath the surface, an ominous link emerges between cannabis use and oncogenesis, particularly testicular germ cell tumors. Even more chilling is the silent sabotage during pregnancy and adolescence, where marijuana reshapes the architecture of the developing brain, setting trajectories toward lifelong cognitive deficits. Beyond the personal, the societal toll mounts—roadways grow more perilous, workplaces falter, healthcare systems strain under an invisible burden. Through a panoramic synthesis of contemporary evidence, this article reveals marijuana not as a harmless herb, but as a potent disruptor—an agent of subtle destruction cloaked in the comforting guise of nature.

In a world increasingly enamored with the “green rush,” this review serves as a cinematic call for caution, critical thinking, and informed discourse before society steps further into the smoke.

Keywords: Cannabis; Marijuana Smoking; Neurotoxicity Syndromes; Cardiovascular Diseases; Public Health

The Emerald Enigma: Between Herb and Hype

There it stands, swaying in the golden light—*Cannabis sativa*, revered by ancient shamans, celebrated by rebellious youth, and cautiously prescribed by modern physicians. Wrapped in layers of mystique and misconception, marijuana has woven itself into the cultural fabric of humanity. Yet, as clouds of smoke rise from crowded festivals and discreet medical dispensaries alike, a darker story unravels beneath the surface. One where the promises of healing and euphoria collide with harsh biological truths. The world, enamoured by the green glow, risks overlooking the subtle, creeping harm hidden behind marijuana's inviting smile. This is the tale of a Green Mirage—a dazzling illusion that, upon closer inspection, reveals a landscape of silent suffering.

The Neurochemical Betrayal – Brain Under Siege

Imagine the brain as a vast, intricate city—a metropolis of neurons buzzing with synchronized precision. Into this delicate ecosystem seeps Marijuana, the insurgent molecule, masquerading as a friendly agent. It binds to cannabinoid receptors with a sinister mimicry, distorting normal communication.

Highways of thought become traffic-jammed; bridges of memory collapse; the skyline of emotional balance flickers ominously. Chronic exposure, particularly during the critical years of adolescence, does not merely dull the mind—it rewires it. Long-term users face measurable declines in IQ, executive function, and the ability to plan and reason [1,2,3]. Worse still, marijuana can open the gates to psychosis, especially for those genetically predisposed. Hallucinations, paranoia, and schizophrenia may bloom like noxious weeds in fertile neural soil [4]. And in the quieter corners of the mind, shadows of depression, anxiety, and suicidal ideation take root [5]. The brain, once a masterpiece of evolution, becomes a besieged citadel—its defences weakened, its structures subtly deformed by an invisible enemy.

Pulse of Deception: The Heart's Silent Rebellion

The high that accelerates euphoria also accelerates the heart—a frantic drummer suddenly beating out of rhythm. Within minutes of inhalation, heart rate can spike by up to 70% [6], forcing the heart into a precarious sprint it never trained for. The vascular system, strained by marijuana's vasodilatory tricks, struggles to maintain balance, leading to episodes of orthostatic hypotension—a dangerous sudden drop in blood pressure when standing. For some, this temporary chaos becomes catastrophic. Within the first hour of marijuana

use, the risk of myocardial infarction spikes nearly five-fold [6]. The marijuana user, relaxed on the outside, may inside be dancing on the edge of a cardiac knife, the heart silently rebelling against this chemical provocation.

A Cardiac Crime In Slow Motion

Cardiovascular effects of marijuana includes:

1. Tachycardia (up to 70% increase in heart rate)
2. Elevated risk of myocardial infarction
3. Arrhythmias including atrial fibrillation
4. Vascular inflammation and endothelial dysfunction

Breathless Illusion: The Lung's Smoky Descent

The image of marijuana as a “healthier alternative” to tobacco crumbles under scrutiny. The truth is more sinister: marijuana smoke contains many of the same carcinogens as tobacco smoke—sometimes in higher concentrations [7]. Because users tend to inhale deeply and hold their breath longer, the lungs endure an extended assault of tar, carbon monoxide, and volatile organic compounds.

The consequences soon manifest: chronic bronchitis symptoms plague users—persistent cough, sputum production, wheezing—all painted against a backdrop of inflamed, compromised airways [8,9]. Repeated exposure can even lead to the formation of large air sacs (bullae) within the lungs, prone to sudden rupture, collapsing the lung like a deflating balloon [10]. The lungs, vital, resilient organs, suffer in silence until breathlessness, infections, and irreversible damage steal the narrative.

The Crumbling Fortress – Immune Suppression and Cancer Risk

The human immune system, a silent guardian against disease, finds itself weakened under marijuana's prolonged influence. T-cells, lymphocytes, and cytokine networks falter in the haze, leaving the body vulnerable to infections it might otherwise defeat with ease [11]. But even more chilling is the emerging evidence linking marijuana use to cancer.

Testicular germ cell tumors—rare but aggressive—have shown an increased incidence among heavy marijuana users [12]. Investigations into oral, lung, and head-and-neck cancers add further cause for concern, suggesting that the same pathways exploited by marijuana to dampen inflammation may inadvertently permit malignant cells to thrive [13]. The fortress crumbles not with a dramatic explosion, but with a slow, quiet surrender—one immune cell at a time.

Immune Eclipse: The Silent Fall of the Body's Defenders

Immune and oncologic concerns linked to marijuana includes

1. Decreased lymphocyte function
2. Impaired cytokine production
3. Increased vulnerability to infections
4. Potential oncogenic effects (testicular cancer risk elevated)

The Next Generation – Fetal and Adolescent Fallout

In the soft, unguarded realm of the womb, marijuana's shadow falls with devastating subtlety. Marijuana crosses the placental barrier with ease, infiltrating the developing fetal brain [14].

Babies are born smaller, frailer, and at greater risk for lifelong cognitive and behavioral challenges. As these children grow, studies reveal deficits in attention, impulsivity, and problem-solving—the invisible scars of an exposure they never chose [14,15].

Adolescents who indulge find their own developing brains reshaped: gray matter thins, connectivity frays, and critical regions governing judgment and emotion show alarming alterations. The future, embodied in the next generation, finds itself rewritten by choices made today—choices steeped in smoke and fleeting pleasure.

Society in the Smoke – Public Health at a Crossroads

Beyond the individual body lies the broader canvas of society, where marijuana's consequences ripple outward like smoke on the wind. Roads once travelled safely become treacherous when impaired drivers take the wheel; accident rates climb alarmingly in states and countries post-legalization [16]. In workplaces, marijuana use correlates with higher rates of absenteeism, injuries, and decreased productivity [17]. Educational institutions, too, bear witness to marijuana's quiet sabotage—users consistently underperform, setting the stage for reduced lifetime earnings and diminished socioeconomic mobility [18]. Healthcare systems strain under the mounting burden of marijuana-related admissions: psychosis, cardiovascular crises, injuries. The promise of liberation, marketed by advocates of legalization, collides with the stark costs of care, loss, and regret.

The Great Drift: Society Through the Veil of Smoke

Societal costs of marijuana use include:

1. Increased road traffic accidents
2. Decreased workplace productivity
3. Escalated health care costs
4. Burden on mental health services

Beneath the Green Glow, A Reckoning: A Call for Caution

As the credits roll on this complex story, one truth stands clear: marijuana is neither the villain it was once demonized to be, nor the benign herb it is now often portrayed as. It is a potent chemical actor, capable of both healing and harm, depending on the script we allow it to follow. In our rush to embrace its benefits, let us not turn a blind eye to the costs. Let us navigate this green mirage with wisdom, humility, and scientific vigilance—lest we find ourselves lost in the smoke, wondering when the dream became a nightmare.

Statement and Declarations

Ethical Statement: The authors are accountable for all aspects of the work (if applied, including full data access, integrity of the data and

the accuracy of the data analysis) in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

Financial interests: The authors have no relevant financial interests to disclose.

Non-financial interests: The authors have no relevant non-financial interests to disclose

Availability of data and material: No data available

Compliance with Ethical standards: Compliant.

Author contributions: The author have contributed to the study conception and design.

References

- Meier MH, Caspi A, Ambler A, Harrington H, Houts R, Keefe RS, et al. Persistent cannabis users show neuropsychological decline from childhood to midlife. *Proc Natl Acad Sci U S A*. 2012; 109: E2657–64.
- Chadwick B, Miller ML, Hurd YL. Cannabis use during adolescent development: susceptibility to psychiatric illness. *Front Psychiatry*. 2013; 4: 129.
- Volkow ND, Swanson JM, Evins AE, DeLisi LE, Meier MH, Gonzalez R, et al. Effects of cannabis use on human behavior, including cognition, motivation, and psychosis: a review. *JAMA Psychiatry*. 2016; 73: 292–7.
- Di Forti M, Quattrone D, Freeman TP, Tripoli G, Gayer-Anderson C, Quigley H, et al. The contribution of cannabis use to variation in the incidence of psychotic disorder across Europe (EU-GEI): a multicentre case-control study. *Lancet Psychiatry*. 2019; 6: 427–36.
- Kedzior KK, Laeber LT. A positive association between anxiety disorders and cannabis use or cannabis use disorders in the general population: a meta-analysis of 31 studies. *BMC Psychiatry*. 2014; 14: 136.
- Thomas G, Kloner RA, Rezkalla S. Adverse cardiovascular, cerebrovascular, and peripheral vascular effects of marijuana inhalation: what cardiologists need to know. *Am J Cardiol*. 2014; 113: 187–90.
- Moir D, Rickert WS, Levasseur G, Larose Y, Maertens R, White P, et al. A comparison of mainstream and sidestream marijuana and tobacco cigarette smoke produced under two machine smoking conditions. *Chem Res Toxicol*. 2008; 21: 494–502.
- Ribeiro LI, Ind PW. Effect of cannabis smoking on the lung function and respiratory symptoms: a structured literature review. *NPJ Prim Care Respir Med*. 2016; 26: 16071.
- Tashkin DP. Effects of marijuana smoking on the lung. *Ann Am Thorac Soc*. 2013; 10: 239–47.
- Johnson MK, Smith RP, Morrison D, Laszlo G, White RJ. Large lung bullae in marijuana smokers. *Thorax*. 2000; 55: 340–2.
- Cabral GA. Marijuana and cannabinoids: effects on infections and immunity. *J Neuroimmune Pharmacol*. 2005; 1: 93–104.
- Lacson JC, Carroll JD, Tuazon E, Castela EJ, Bernstein L, Cortessis VK. Population-based case-control study of recreational cannabis use and testicular germ cell tumors. *Cancer*. 2012; 118: 5374–83.
- Ghasemiesfe M, Barrow B, Leonard S, Keyhani S, Korenstein D. Association between marijuana use and risk of cancer: a systematic review and meta-analysis. *JAMA Netw Open*. 2019; 2: e1916318.
- Paul SE, Hatoum AS, Fine JD, Johnson EC, Hansen I, Karcher NR, et al. Prenatal cannabis exposure and childhood outcomes: results from the ABCD study. *JAMA Psychiatry*. 2021; 78: 64–76.
- Wu CS, Jew CP, Lu HC. Lasting impacts of prenatal cannabis exposure and the role of endogenous cannabinoids in the developing brain. *Future Neurol*. 2011; 6: 459–80.
- Santaella-Tenorio J, Mauro CM, Wall MM, Kim JH, Cerdá M, Keyes KM, et al. US traffic fatalities involving marijuana use: recent trends and associated factors. *Am J Public Health*. 2020; 110: 244–51.
- Macleod J, Oakes R, Copello A, Crome I, Egger M, Hickman M, et al. Psychological and social sequelae of cannabis and other illicit drug use by young people: a systematic review of longitudinal, general population studies. *Lancet*. 2004; 363: 1579–88.
- Silins E, Fergusson DM, Patton GC, Horwood LJ, Olsson CA, Hutchinson DM, et al. Young adult sequelae of adolescent cannabis use: an integrative analysis. *Lancet Psychiatry*. 2014; 1: 286–93.