Clearing the Air on Marijuana & Athletic Performance

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About Me

• Former student-athlete (diving)
• Administer campus-wide surveys
• 1-on-1 marijuana interventions
• Team conflict resolution workshops
• Train student-athlete and med student peer support programs
• Faculty advisor for a fraternity
• Oversee addiction recovery student community
Does pot make you a better athlete?

In America's mecca for both endurance training and legalized marijuana, one competitive runner is challenging the notion of "recreational" drugs.

Running Stoned? The Effects of Marijuana on Athletic Performance

Pot changes your mental state and athletic performance—but not necessarily for the worst. Here, a look at the effects of marijuana on running stamina, endurance, and rest training.

by the editors of Shape.com | Sep 16, 2015
The Formula

1. Headline contains a question?
2. Anecdote about an athlete who loves marijuana
3. Scientific studies about how marijuana really isn’t good for you, but leaving just enough doubt...
4. Back to the athlete, aren’t they impressive?
5. Back to the science, yep, controversial at best...
6. Obligatory weed pun
7. Story about how the athlete did ‘research’ on themselves
8. Conclusion that it’s probably not safe, possibly just wishful thinking + placebo effect, and not supported by science.
9. #AdRevenue $$$ #Clickbait 🥱
Why do people use and abuse substances?

Research identified correlates:

80's-90's

White, male, single, more time socializing, less time studying, more likely to binge drink, smoke cigarettes, have multiple sex partners, rate parties as important, rate religion and community service as not important.

Today

Connection to mental health:

Correlates with academic difficulty, generalized anxiety, depression, hostility, interpersonal sensitivity, paranoia, social influence, trauma, social anxiety.
Why do people use substances?

**Relief**  
Coping for negative emotional states
- To lessen feelings of distress
- To numb negative emotions
- To detach from life's problems
- To cope with anxiety
- To escape intense feelings
- To deal with depression
- To navigate social anxiety

**Reward**  
Sensation seeking low impulse control
- To feel good
- Sensation of euphoria
- To get high
- To feel relaxed
- To feel satisfied
- To feel energetic
- To feel powerful
- To feel confident
Reported Reasons for Use

The #1 reason for marijuana use reported by NCAA athletes is “social use.”

The #2 reason for marijuana use reported by NCAA athletes is “anxiety or depression.”

The #3 reason for marijuana use reported by NCAA athletes is “to aid sleep.”

NCAA National Study of Substance Use Habits of College Student Athletes Final Report July 2014 (Revised August 2014 – additional sport breakdowns) Report Compiled by: Markie Rexroat, Assistant Director of Research
Only 0.3% of NCAA athletes said performance enhancement was a main reason for using marijuana.
Reported Reasons for Use

- Anxiety or depression
- Difficulty sleeping

Withdrawal Symptoms and Paradoxical Dose Response

- Trouble sleeping
- Irritability
- Loss of focus
- Anxiety
- Headaches
- Depressive states
- Cravings
- Indigestion / loss of appetite

NCAA National Study of Substance Use Habits of College Student Athletes Final Report July 2014 (Revised August 2014 – additional sport breakdowns) Report Compiled by: Markie Rexroat, Assistant Director of Research
- You can change your answer.

- If you see ∅ it means your answer didn’t go through and you should click again.

- The default channel is 41.

- Anonymous responses.
Anonymous Response

Return your clicker at the end.

Do not take it with you.
Main reason for not using marijuana

1. Against beliefs / values
2. Fear of getting drug tested
3. No desire, just not something I want to do
4. Concerned about negative health effects
5. Concerned it would hurt athletic performance
6. Afraid consequences of being caught
7. Other
Monitoring the Future Dataset
Alcohol Use by College Students (30-day Prevalence)
Monitoring the Future Dataset
Marijuana Use by College Students (30-day Prevalence)
Do student-athletes use marijuana more or less often than other college students?

1. Way more often
2. More often
3. About the same
4. Less often  (13.7% Past Month Use by Athletes)
5. Way less often
NCAA
National Study of
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Student
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https://www.ncaa.org/sites/default/files/Substance%20Use%20Final%20Report_FINAL.pdf
**Products / Forms**

- **Spliff** – Marijuana + tobacco in rolling paper
- **Joint** – Marijuana in rolling paper
- **Blunt** – Marijuana in cigar paper
- **Pipe/Bowl** – Marijuana in pipe heated with lighter
- **Bong** – Marijuana smoke cooled in water held in chamber
- **Dab Rig** – Marijuana oil, wax, or resin heated through conduction on quartz, ceramic, or metal nail
Marijuana—also called weed, herb, pot, grass, bud, ganja, Mary Jane, and a vast number of other slang terms—is a greenish-gray mixture of the dried, shredded leaves and flowers of Cannabis sativa—the hemp plant. Some users smoke marijuana in hand-rolled cigarettes called joints; many use pipes, water pipes (sometimes called bongs), or marijuana cigars called blunts (often made by slicing open cigars and replacing some or all of the tobacco with marijuana). Marijuana can also be used to brew tea and, particularly when it is sold or consumed for medicinal purposes, is frequently mixed into foods ("edibles") such as brownies, cookies, or candies. In addition, concentrated resins containing high doses of marijuana’s active ingredients, including honey-like "hash oil," waxy "budder," and hard amber-like "shatter," are increasingly popular among both recreational and medical users.

The main psychoactive (mind-altering) chemical in marijuana, responsible for most of the intoxicating effects sought by recreational users, is delta-9-tetrahydro-cannabinol (THC). The chemical is found in resin produced by the leaves and buds primarily of the female cannabis plant. The plant also contains more than 500 other chemicals, including over 100 compounds that are chemically related to THC, called cannabinoids.

THC is structurally similar to other neurotransmitters, it can imitate these chemicals and bind like a lock and key.

THC stimulates neurons in the reward system to release the signaling chemical dopamine at levels higher than typically observed in response to natural stimuli.

THC also affects the hippocampus (memory and focus) and cerebellum (balance, coordination, reaction time).
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Medical Cannabinoids

- Drugs that target endocannabinoid receptors have the potential to produce beneficial medicinal effects.

- Medications that use purified or derived chemicals are more promising therapeutically than use of the whole plant. (Analogous to aspirin discovery and isolation).

- Risk of acute toxicity is low. Adverse events are plentiful.

- Difficult to blind study – 85-95% identifying treatment group
Medical Cannabinoids

Medical Cannabinoids for Pain:
- Chronic Pain: 39% experience pain reduction vs. 30% in placebo.
- Mean pain improvement is 0.5 on 0-10 scale
- Acute Pain: 1 pos trial, 1 neg trial, 5 showing = placebo

Associated Harms for Medical Cannabinoids:
- Adverse events (side effects) are common regardless of MC product.
- 7-14% of subjects drop out of studies due to adverse events vs. 1-5% for placebo.
- Sedation (1in5), visual blurring (1in3), dizziness (1in5), speech disorder (1in5), muscle twitching (1in6), dysphoria (1in8).

“Patients’ preference for cannabinoids exceeds cannabinoids effectiveness”

Source:
Medical Marijuana: Where is the evidence? https://sciencebasedmedicine.org/medical-marijuana-where-is-the-evidence/
Scott Gavura on January 11, 2018

Primary Source:
Alberta College of Family Physicians (ACFP) Tools for Practice
Marijuana and Driving

Marijuana significantly impairs judgment, motor coordination, and reaction time.

Studies have found a direct relationship between blood THC concentration and impaired driving ability.

States with legalized marijuana saw ~3% increase in collision claims (insurance), but no sig. association between recreational MJ and crash fatality rates.

1. Insurance Institute for Highway Legalizing recreational marijuana is linked to increased crashes  http://www.iihs.org/iihs/news/desktopnews/legalizing-recreational-marijuana-is-linked-to-increased-crashes

Is marijuana a gateway drug?

The majority of people who use marijuana do not go on to use other, "harder" substances.

THC has the ability to "prime" the brain for enhanced responses to other drugs – a phenomenon called cross sensitization.
Co-Occurring Triangle

There’s a lot of overlap!

Proportional Venn chart produced with Spring 2016 ICSUS data

Size shows relative number of users, overlap shows use of multiple substances

https://academo.org/demos/venn-diagram-generator/
Indiana Collegiate Substance Abuse Survey – Spring 2016
Abcdstudy.org Adolescent Brain Cognitive Development Study will follow 10,000 children through early adulthood.
Research has shown that marijuana’s negative effects on attention, memory, and learning can last for days or weeks after the acute effects of the drug wear off.

Marijuana users are less likely to graduate, earn less money at their first job out of college, and are more likely to be unemployed.

Pre-screen study of 2537 postal workers showed 55% more accidents, 85% more injuries, and 75% more absences compared to nonusers.
NCAA
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Marijuana weakens the pumping power of your heart.

Icon credit: heartbeat
By Pravin Unagar, IN
Heart Collection

Image: Creative Commons License from StockSnap.io


5x increase in heart attack risk 1 hour after use.

Increased resting HR from $55_{bpm}$ to $120_{bpm}$

Reduces the blood’s capacity to carry oxygen.

Marijuana interferes with quick reactions and timing.

Delayed reaction to simple and complex visual and auditory cues

Icon credit: Snail
By parkjisun
Insects Collection

Image: Creative Commons License from StockSnap.io

Marijuana caps aerobic performance below your true potential.

Decreased workload, decreased peak output, and decreased maximal duration

Icon credit: tired
By Gan Khoon Lay
Man Collection

Image: Creative Commons License from StockSnap.io

Marijuana makes your sure-footing flimsy.

Decreased standing steadiness for eyes-open and eyes-closed conditions

Icon credit: Work Balance
By Ayub Irawan, ID
Business : Glyph Vol. 01 Collection

Image: Creative Commons License from StockSnap.io

THC sticks around for days or weeks after use.

Measurable physical decrement at 24 to 36 hours, cognitive effects last longer

Icon credit: heartbeat
By Pravin Unagar, IN
Heart Collection

Image: Creative Commons License from StockSnap.io

Marijuana makes injuries more common, and slows recovery.

Statistical increase in frequency of injuries and duration of recovery

Icon credit: broken arm
By Gan Khoon Lay
Emergency and Injury Collection

Image: Creative Commons License from StockSnap.io
Which of these are most important for you? (Pick 2)

1. Physical decrement for 24-36 hours after using
2. Effect on standing steadiness
3. Decreased peak aerobic capacity and peak duration
4. Delayed reaction to simple and complex cues
5. Spike in blood pressure & HR
6. Decrease oxygen in the blood
Social Loafing

1/3 1/3 1/3

No one notices when I just go through the motions.

[Stressed]
Social Drift

They don’t get me!

They don’t get me!
I’ve noticed these social forces at work on my own team.

A. I agree
B. I disagree
Alcohol / drugs have caused drama and conflicts on my team.

A. I agree
B. I disagree
Alcohol / drugs hold my team back from reaching its true athletic potential.

A. I agree
B. I disagree
Some people on my team are not contributing to team success because of their drinking / drug use.

A. I agree
B. I disagree
If someone on my team is drinking more than they should or using drugs...

A. I should say something because their choices affect the team’s health, safety, and success.
B. I should ignore it because everyone on the team is an adult making their own choices.
Anyone on the team can be a leader and a role model.

What opportunities do you have to be proactive, to support and shape your team?

And how do you get the bottom 1/3 to rise up?
Clearing the Air

Insight from Interventions
• Student: “I’m concerned about my friend…”
• Coach: “How do I get them to stop?”

• Motivation is NOT like a pitcher of water. Motivation to change comes from within.

• Ambivalence and status quo
  • People are at different stages of behavior change, and information alone is not enough
  • People are naturally resourceful, and use a variety of strategies to reduce risk

• Behavior is a function of (the individual) x (the environment)
  • Clear expectations, with social role models, and access to support (relief/reward)
Carl Rogers, unconditional positive regard assumes that everyone is naturally creative, resourceful, and whole – that they are the experts on themselves, and can grow and change if they have hope and self-esteem.
Invite, don’t shame!

Relief
Coping for negative emotional states

- To lessen feelings of distress
- To numb negative emotions
- To detach from life’s problems
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