



Long-Term Marijuana Use Is Associated with Health Problems Later in Life

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This study found that:

- Marijuana users exhibited six different patterns of marijuana use from ages 18 to 50.
- Longer-term marijuana use (extending from age 18 into the late

20s or beyond) was associated with increased risk of self-reported health problems at age 50.

Attitudes and policies regarding recreational marijuana use are becoming increasingly permissive. To effectively address the implications of these developments, researchers and policy makers need to understand how much and how long people use marijuana during the lifespan, and the degree to which different use patterns are associated with long-term issues such as health status.

To this end, [Yvonne Terry-McElrath](#) of the University of Michigan and her colleagues applied the statistical technique of latent class analysis to identify distinct patterns of marijuana use from age 18 to 50 among nearly 10,000 participants in the [Monitoring the Future](#) (MTF) study. The participants had reported their past-year marijuana use when they were high school seniors in 1976–1983, at 2-year intervals through age 30, and then at 5-year intervals until they reached age 50.

Altogether, the researchers' analysis placed roughly 56 percent of the participants in one or another of six different patterns of marijuana use from age 18 to 50. Three patterns, comprising 71 percent of the marijuana users, were characterized by moderate use (1 to 39 occasions in the past year, or an average of 1 to 3 occasions per month) at age 18. These patterns diverged into: (1) decreasing and discontinuing use by age 21/22; (2) decreasing and discontinuing use by age 27/28; or (3) persistent use up to age 45 (see [Table](#)). The other three patterns, comprising 29 percent of the marijuana users, were characterized by heavy use of the drug (40 or more occasions in the past year, or an average of more than 3 occasions per month) at age 18. These patterns diverged into: (1) decreased and discontinued use by age 29/30; (2) decreased and discontinued use by age 45; or (3) continued heavy use at age 50.

The participants' use patterns influenced their risks for self-reported health problems later in life. Compared to nonuse of the drug:

- All the use patterns were associated with more recent psychological visits and lifetime psychiatric problems at age 50.
- Most of the use patterns were associated with a higher prevalence of lifetime drug problems.
- Persistent use patterns were associated with more cognitive difficulties, physical illnesses, and lifetime alcohol problems at age 50.

In addition, patterns characterized by longer moderate or heavy use were associated with greater risk for certain health problems than patterns of shorter use with the same intensity.

The researchers emphasize that their results do not necessarily indicate that marijuana caused the users' health problems. "Our findings do not confirm causality," Ms. Terry-McElrath says. "We can say that, among these participants, those who reported longer use patterns also reported higher levels of negative health outcomes, even after we controlled for numerous demographic and behavioral characteristics." She notes that other research has also linked cannabis use to poor health.

The researchers also identified several demographic and other factors associated with greater frequency and longer duration of marijuana use, including binge drinking and cigarette use at age 18, male gender, higher parent education, income from welfare or unemployment compensation at ages 35 to 45, and increased alcohol and cigarette use frequency at ages 35 to 45. Conversely, lower frequencies and durations of marijuana use were associated with high religious commitment at age 18 and marriage between ages 19 and 30.

Ms. Terry-McElrath says that her study should be interpreted with caution. She explains, "The primary strength of our analyses, being able to follow samples of U.S. respondents from age 18 through 50, is also a limitation." Findings based on data from particular high school classes may not apply to other groups of people, such as those who did not complete high school or who graduated in earlier or later years. The evolution of marijuana laws, perceptions of risk, and the potency of the drug further complicate interpretation.

Ms. Terry-McElrath suggests that marijuana users today are likely, by and large, to be experiencing use patterns similar to those that she and her colleagues identified. "As long as historical or geographic differences in the initial prevalence of marijuana use are accounted for, the patterns that we observed would likely be similar—at least in environments characterized primarily by consistent marijuana prohibition policy," she says. "However, because of the rapidly changing policy and broader social context related to marijuana use, it is important to continue examining long-term use patterns and possible health consequences by following current teens and young adults into middle adulthood. To the degree that marijuana use becomes normative—similar to alcohol use—we may find there is a larger class of individuals who either begin or continue to use marijuana moderately across the lifespan."

Table. Latent Classes of Marijuana Use From MTF Data on U.S. 12th Grade Students From Classes 1976-1983

Class	Estimated Class Membership	Characteristics
Nonusers	44%	

Moderate Users

Early Young Adult Moderate Users	22%	High probability of: <ul style="list-style-type: none"> Moderate use from ages 18 to 22 No use subsequently
Young Adult Moderate Users	12%	High probability of: <ul style="list-style-type: none"> Moderate use from ages 18 to 28 No use subsequently
Persistent Moderate Users	6%	High probability of moderate use from ages 18 to 45

Heavy Users

Early Young Adult Heavy Users	6%	High probability of: <ul style="list-style-type: none"> Heavy use from ages 18 to 22 Moderate use from ages 23 to 28 No use subsequently
Young Adult Heavy Users	5%	High probability of: <ul style="list-style-type: none"> Heavy use from ages 18 to 30 Moderate use at age 35 No use at age 45 and beyond
Persistent Heavy Users	5%	High probability of heavy use from ages 18 to 50

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Source:

Terry-McElrath, Y.M., O'Malley, P.M., Johnston, L.D., et al. [Longitudinal patterns of marijuana use across ages 18-50 in a U.S. national sample: A descriptive examination of predictors and health correlates of repeated measures latent class membership.](#) *Drug Alcohol Depend* 171:70-83, 2017.