



**CITY OF GARDINER  
MORATORIUM ORDINANCE REGARDING  
ADULT USE RETAIL MARIJUANA AND  
MEDICAL MARIJUANA RETAIL**

**WHEREAS**, the City Council of the City of Gardiner, Maine (the “City”) makes the following findings:

- (1) The Maine Office of Marijuana Policy announced that adult use marijuana retail sales would begin on October 9, 2020; and
- (2) In April 2018, the Maine Legislature passed LD 1719, *An Act to Implement a Regulatory Structure for Adult Use Marijuana*, which established the regulatory framework for cannabis sales in Maine, codified in Title 28-B (the “Marijuana Legalization Act”); and
- (3) The Maine Medical Use of Marijuana Act , codified in the Maine Revised Statutes in Title 22, Chapter 558-C, authorizes registered caregivers to possess, cultivate, and transfer medical marijuana to qualifying patients, as those terms are defined by 22 M.R.S. § 2422; and
- (4) On July 9, 2018, the Maine Legislature enacted P.L. 2017, c. 452 (LD 1539), *An Act to Amend Maine’s Medical Marijuana Law*, which includes authorization for registered caregivers to operate retail stores for the sale of medical marijuana to qualifying patients subject to this Act’s provisions, which expressly recognize and contemplate municipal authorization and regulation of medical marijuana retail stores; and
- (5) The City of Gardiner has initially opted in to certain types of uses or marijuana establishments under the aforementioned Marijuana Legalization Act and Maine Medical Use of Marijuana Act
- (6) The location and operation of adult use and medical marijuana retail stores within the City under the existing Land Use Ordinance and other applicable Codes and Ordinances, combined with unforeseen development pressure for such activities, raises legitimate and substantial questions about the impact of such activity on the City, including questions as to compatibility with existing land uses and developments in the City and the sufficiency of municipal infrastructure to accommodate such activities; and
- (7) As a result of the foregoing issues, the location and operation of adult use and medical marijuana retail stores within the City have potentially serious implications for the health, safety, and welfare of the City and its residents; and
- (8) The City has made initial progress in developing regulations to address adult use marijuana retail stores and medical marijuana retail stores; however, application of the current Land Use Ordinance and other applicable Codes and Ordinances are inadequate to prevent

serious public harm that could result from the development of adult use and medical marijuana retail stores in the City; and

- (9) An overburdening of public facilities and resources, including public safety resources, is a reasonably foreseeable result of the location and operation of adult use and medical marijuana retail stores in the City; and
- (10) Ordinances do not generally become effective until thirty (30) days after approval, unless at least five (5) members of the City Council pass emergency orders; and
- (11) In the judgment of the City Council, the foregoing constitutes an emergency within the meaning of 30-A M.R.S. § 4356 and Article II(7) of the City Charter requiring immediate legislative action.

**NOW THEREFORE**, pursuant to 30-A M.R.S. § 4356, be it ordained by the City as follows:

**Section 1. Moratorium.** The City does hereby enact and declare a moratorium on the location, operation, permitting, approval, or licensing of any and all adult use or medical marijuana retail stores within the City. No person or organization shall develop or operate an adult use marijuana retail store or medical marijuana retail store within the City on or after the effective date of this Ordinance and in accordance with the applicability provision set forth below. During the time this Ordinance is in effect, no officer, official, employee, office, administrative board or agency of the City shall accept, process, approve, deny, or in any other way act upon any application for a license, building permit, any other type of land use approval or permit and/or any other permits or licenses related to a medical marijuana or adult use marijuana retail store.

**Section 2. Definitions.** For purposes of this ordinance, the term “adult use marijuana retail store” and “medical marijuana retail store” means an establishment having the attributes of a typical retail establishment, such as, but not limited to, signage, regular business hours, accessibility to the public, and sales directly to the consumer of the product, including any activities connected with the sale of goods to the ultimate consumer for direct use and consumption and not for trade.

**Section 3. Effective Date; Applicability Date; Pending Proceedings.** This Ordinance shall become effective immediately upon its adoption and, notwithstanding 1 M.R.S. § 302 or any other law to the contrary, this Ordinance shall apply retroactively to and govern any proposed adult use marijuana or medical marijuana retail store for which an application for a building permit, certificate of occupancy, site plan, or any other required approval has been submitted to the City on or after September 2, 2020, the applicability date of this Ordinance, whether or not said application submitted on or after September 2, 2020 has become a pending proceeding upon or after September 2, 2020. This Ordinance shall remain in full force and effect for a period of 180 days thereafter, unless extended pursuant to law or until a new and revised set of regulations is adopted by the City, whichever shall first occur. This Ordinance shall not apply to any application submitted prior to September 2, 2020 or that was a pending proceeding prior to September 2, 2020 for a proposed adult use marijuana retail store or medical marijuana retail store.

**Section 4. Conflicts/Savings Clause.** Any provisions of the City's ordinances that are inconsistent or conflicting with the provisions of this Ordinance are hereby repealed to the extent applicable for the duration of this moratorium. If any section or provision of this Ordinance is declared by any court of competent jurisdiction to be invalid, such a declaration shall not invalidate any other section or provision.

**Section 5. Violations.** If any adult use or medical marijuana retail store is established in violation of this Ordinance, each day of any continuing violation shall constitute a separate violation of this Ordinance and the City shall be entitled to all rights and remedies available to it pursuant to 30-A M.R.S. § 4452, including, but not limited to, fines and penalties, injunctive relief, and its reasonable attorney's fees and costs in prosecuting any such violations.

Adopted 14OCT2020, Effective 02SEP2020, Expires 01MAR2021

## Christine Landes

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**From:** Rusty Greenleaf <Rusty.Greenleaf@oconnorwheels.com>  
**Sent:** Tuesday, August 18, 2020 9:03 AM  
**To:** Christine Landes; Patricia Hart; terry.berry@gardinermaine.com;  
amy.rees@gardinermaine.com; colin.frey@gardinermaine.com;  
maryann.white@gardinermaine.com; jon.ault@gardinermaine.com;  
tim.cusick@gardinermaine.com; marc.rines@gardinermaine.com  
**Cc:** Debby Willis; Kristopher McNeill; Angelia Christopher; markplanme@gmail.com; Louis Sigel; Lester Young; Clare Marron  
**Subject:** moratorium on marijuana

Good morning all, As a member of the Ordinance Review Committee, I am asking you to pass a moratorium on the sale of marijuana in the City of Gardiner. We discussed the issue at our meeting last night and were informed that the City is receiving many applications for new marijuana business'. The downtown is already at its capacity by the standards that are in place and I feel we need to evaluate how many of these business' we want in our City. As I recall, the residents of Gardiner voted not to allow marijuana in Gardiner and I think that needs to be considered. As you drive out route 202 form Augusta into Manchester, that is all you see is one marijuana business after another. I personally don't want Gardiner to be known as the marijuana capital of Maine. I do believe more discussion needs to happen before we get to a place we don't want to be. Please put a moratorium in place and allow us time to figure out how we should proceed. Thank you for your time and consideration.

Rusty Greenleaf

Dear Mayor Hart,

As a resident of Gardiner I urge you to vote in favor of a moratorium on the approval of any additional marijuana stores until after the Covid crisis has passed. Such breathing room would allow our community to calmly review the governing ordinances as well as the overall intent of the marijuana industry. If the marijuana industry has targeted Gardiner to become a stoner destination, the citizens should be given time to consider the effect that an overpopulation of pot shops will have on the community and to formulate an appropriate response.

Before casting your vote on this issue I ask that you reflect upon the principles of good community as resolved by the Heart and Soul project as well as those mentioned in the Mission Statement of Gardiner City Council.

Most Sincerely,  
Michael Gent  
35 Dresden Avenue  
Gardiner, Maine  
207-242-1758

Dear friends and council members,

First let me thank you for your service to our community. During this pandemic period it has been very hard to follow some of the issues facing Gardiner. Business, although not as usual, and government, even virtually, is still happening. I'm sure you would all agree Zoom is a poor excuse for the real exchange of ideas and input we are used to. I sincerely hope council continues to find the safest, most inclusive way forward on that account. Also missing during these times is the foot traffic on Water St, and the flow of friendly information, keeping neighbors abreast of what's happening.

Although I have not been a strong voice of opposition for legalizing marijuana, I have had concerns about how retail sales would affect the culture of our downtown. I counted on the Free Market to contain the number of Medical Marijuana stores, and for the most part that was true. I mistakenly thought (and I believe I am not alone in this regard) that we were still under some moratorium, which would limit retail stores for the time being. I now understand that our ordinance (such as it is) will allow stores every 200 ft, as long as there are no schools or playgrounds close by. By Oct that means there are plans to open 6 such retail operations on or near Water st. '

**I am asking you to please vote for a moratorium on further permits during these economic times.**

**The Ordinance Committee has recommended review of the regulations. I believe residents will be in favor of changes to that ordinance, given our present situations.**

I moved to Gardiner 6 years ago because I had read about the Heart & Soul project, and because it was a walkable community in which I could buy everything from a car to a cupcake. Everything I would need to elder in place was here, and I was so impressed by a community that was actively trying to create something ideal.

The worse case scenario is that we will have flaky pot entrepreneurs, with lots of cash and no business sense, taking up multiple storefronts and parking, discouraging viable business owners opening stores we really want here. There is also the chance that we could become a destination for Pot tourism. I understand the benefit of "branding" but is that really what we want for Gardiner? I

I understand the concern of downtown landlords, and the blight of empty storefronts. I am Co owner of the Milliken Block and am committed to helping create a vibrant town, even at a financial loss. I hope it does not come to that, but the way forward is looking seedy, and echoes the worst of what others say when they speak of Gardiner's past. We can do better.

There are 8 votes. I call on Terry Berry to recuse himself, as he is a financial stakeholder. I truly hope the rest of you will take this step towards a middle ground for review.

Again thank you for your service,

Cheryl Clark  
35 Dresden Ave.  
Gardiner, Me.

10 August 2020

Diane Frederickson  
29 Alexandra Rd  
Gardiner, ME 04345

Dear Gardiner City Council,

I am writing as a concerned citizen to voice my opinion that I wish you would all choose to impose limitations on both the number of marijuana retail stores, and the location. I have been a resident of Gardiner my entire life and have always loved this community. I think that having 6 marijuana retail shops in such a small area is completely unnecessary. I do not want to normalize marijuana for our youth. I do not want my grandchildren growing up in an area that is primarily known for its marijuana retail. What does that say about our community? What message does that put out to the youth? Keeping a healthy community for our youth includes keeping drugs and alcohol in check within that community.

There is a strong misconception of "it's just marijuana". According to the NIH the potency of marijuana has risen consistently since 1995. This increase in potency poses a higher risk of use, particularly among adolescents. Also, these dispensaries do not only sell joints. They sell edibles in the shapes of "fun" candy, such as rainbow stripes and gummy bears. These appeal to the youth and can be very potent. They also sell "dabs" which are 70-90% THC and full of solvents. Dabs have a dramatic effect on brain chemistry and have been associated with increase psychosis especially in adolescents. Please see attached documents for more information.

As a concerned grandparent and citizen of Gardiner I ask that you please consider putting a cap on the number of these facilities that you will allow in our town. We have had one medical dispensary operating here for quite some time, and I really see no need to have more than that. Thank you for reading about my concerns and I hope you will seek other means to bring more businesses to our downtown that can be more family friendly.

Sincerely,

A handwritten signature in cursive script that reads "Diane Frederickson".

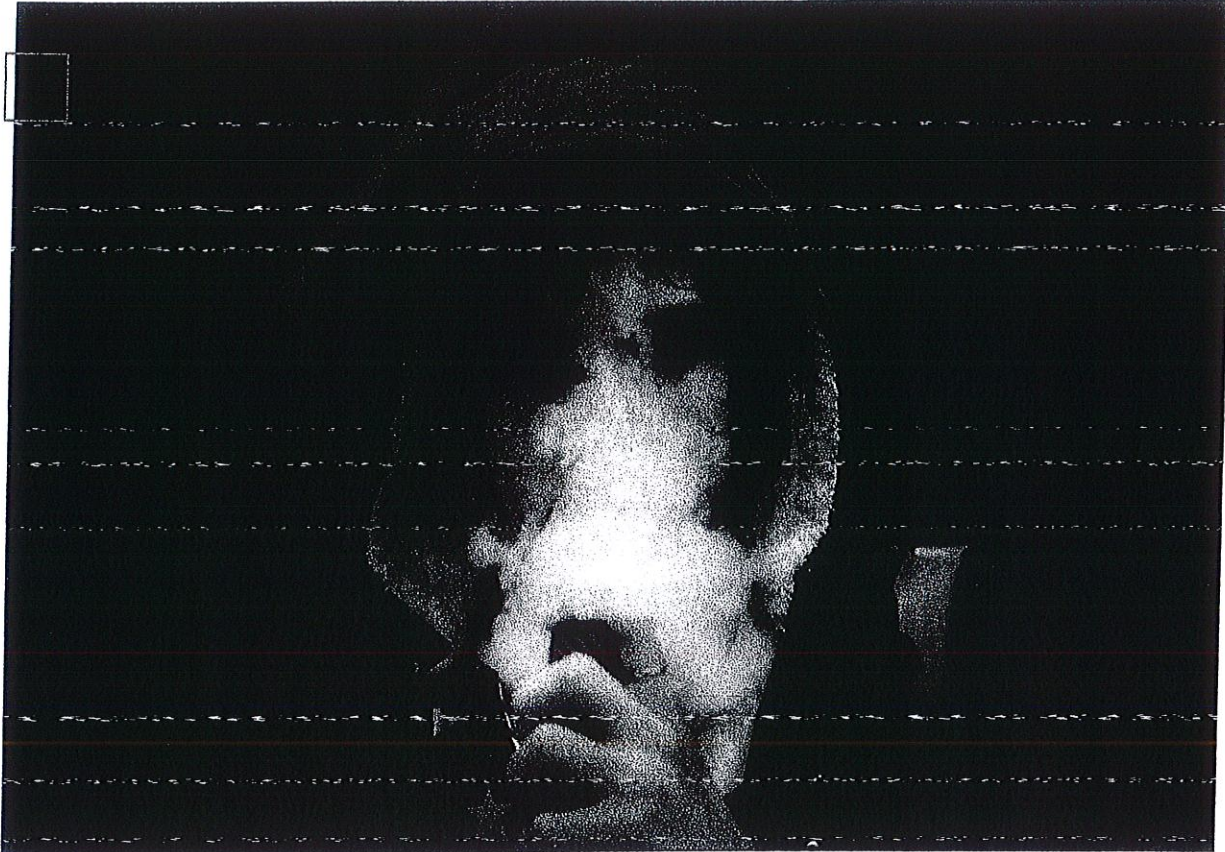
Diane Frederickson



## Dabs, Wax, Vaping Weed, Edibles and the Real Impact of High Potency THC Products: What Parents Need to Know

Posted on September 16, 2019 (<https://www.rtor.org/2019/09/16/dabs-wax-vaping-weed-edibles-what-parents-need-to-know/>) by Elizabeth Driscoll Jorgensen, Director of Insight Counselling (<https://www.rtor.org/author/edriscoll/>)

From  
Diane  
Frederickson



During the month of September [www.rtor.org \(https://www.rtor.org\)](https://www.rtor.org) will be observing National Recovery Month with a guest blog series on addiction and substance use disorders. For our second article in this series, we are featuring a guest post from Elizabeth Driscoll Jorgensen, owner of [Insight Counseling, LLC \(http://insightcounselingllc.com/\)](http://insightcounselingllc.com/), in Ridgefield, CT, and Consultant to Family-Endorsed Provider [Newport Academy \(https://www.rtor.org/directory/newport-academy-outpatient-treatment-program/\)](https://www.rtor.org/directory/newport-academy-outpatient-treatment-program/) at its Outpatient Treatment Center in Darien, CT.

As a local mental health provider based in Fairfield County, CT, Liz has written the first guest post for our new blog, [Close to Home: The Fairfield County Mental Health Blog \(https://www.rtor.org/close-to-home/\)](https://www.rtor.org/close-to-home/), which debuted this month. A big thank you to Liz for helping us launch this new service of [www.rtor.org](https://www.rtor.org) and [Laurel House \(https://www.laurelhouse.net/\)](https://www.laurelhouse.net/), Inc. during National Recovery Month!

In the past three to four years, a higher number of young people have presented at Insight Counseling with paranoia, psychotic thoughts, extreme mood disorders that arrive seemingly overnight. These young people are often extremely agitated or impulsive, or rapidly deteriorate in mood to lethargy and extreme [depression \(https://www.rtor.org/depression/\)](https://www.rtor.org/depression/). In many cases, we have no choice but to hospitalize these young people to get them stabilized.

The common factor in these cases has been the use of either "Dabs" or strong "edibles" with no other drug use. We, and many other providers nationwide have demonstrated this phenomenon, with urine drug screens proving THC levels in the patients' system.

**High Potency Tetrahydrocannabinol (THC) products.** THC is the psychoactive molecule in cannabis and it is found in varying concentrations in the plant form of marijuana as well in progressively higher doses in edible forms and in the most potent product "Dabs" or THC concentrate.

What are Dabs? Dabs, also called 'wax' or 'carts,' refer to a paste created by drug dealers by adding butane to kilos of plant marijuana, mixing it in industrial mixers and extracting the "pure" THC molecules. Dabs are 70-90% THC and full of solvents as well. They have a dramatic effect on brain chemistry and the body in a very strong, rapid, and often dangerous way. Many teens do not even know what they are smoking the first time they smoke 'Dabs' and may feel overwhelmed by being "too high," unable to move or function for hours. Still others will initially enjoy the intense 'high' but then experience severe psychiatric symptoms often resulting in high risk behaviors.

#### EXAMPLES:

*A sweet young man jumped off a college roof and was "saved" by an air conditioning unit after he had psychotic thoughts from a relatively small amount of 'Dabs.' When he was rescued and came to, he described thinking his clothing was on fire and that he needed to jump. It took three weeks of antipsychotic therapy before he was fully back to normal.*

*Another smart and vibrant young woman had strong impulses to hurt herself and perhaps kill herself using odd and violent means after smoking what she thought was a nicotine filled Vape device. She began hyperventilating and screaming and was seen at the local hospital. Almost 36 hours later she was much better, but now needs regular care and medication.*

*A 20-year-old man, no family history of mood disorders and no past history of depression, anxiety or hypomania suddenly exhibits the symptoms of full-blown mania (<https://www.rtor.org/bipolar-disorder/>), driving 100 MPH, talking nonstop, pressured thoughts, akathisia, delusional thinking, and hypersexuality. He tells his therapist 'This is the best I have ever felt, but I know I am insane as well.' The only immediate precursor? High potency THC 'Dabs' "Several times per day." The young man needed hospitalization and is still experiencing substance induced mania, 12 days after treatment began.*

In my work speaking around the country in the Newport Academy Day Conferences for professionals, we are hearing clinicians, emergency room physicians and parents everywhere describing this new and very worrisome phenomena of "Dab" induced psychosis and mood disorders. We know one of the causes of these extreme symptoms are the high-level THC products available to young people.

Although the use of 'Dabs' and wax are causing many of these acute situations, the use of 'edibles' that ARE LEGAL in the states that allow retail cannabis sales are also causing major psychiatric issues. The candies, cookies and other products if not eaten in the recommended doses will give the same overwhelming dose of THC to the nervous system.

Most teens will not eat the recommended 'one gummy bear' dose of edible THC and after three doses taken innocently, they are having similar reactions to what I described above. The extreme psychiatric symptoms are what we call "dose related" to THC levels.

#### WHAT CAN WE DO?

What can parents and professional do? We must very actively educate young teens to the real facts regarding the high potential for both addiction and adverse psychiatric symptoms related to these high-dose THC products.

Parents also have to firm up their 'no use' messages to teens, as many parents are feeling they are not able to impact their children's use of weed at all. Research consistently demonstrates that parents' strong, firm but caring disapproval of any risky behavior has a major impact on teens' actions. It is particularly daunting now as it appears our culture is accepting weed as 'normal' and the latest fantasy cure to medical and financial woes. **No use of cannabis at all is safe for developing teen brains.** To have a strong influence, parents must speak in terms that are caring, knowledgeable and firm to their tweens and teens and describe the science behind the negative short and long-term effects of high potency THC products.

If your child is receiving psychiatric care for any extreme symptoms, please make sure he or she is lab tested for THC as well. Many mental health practitioners are not yet fully aware of the impact and prevalence of high potency THC products on psychiatric illnesses. Many of our clients have a remarkable improvement in symptoms simply by becoming abstinent from cannabis and other drugs. Your child may be greatly helped by dual diagnosis care (<https://www.rtor.org/2018/07/19/when-you-have-more-than-one-diagnosis-integrated-treatment-for-co-occurring-disorders/>) that addresses the use of drugs in the role of psychiatric symptoms.

I have found that young people themselves, when given the data in a reasoned and careful manner agree that high potency THC products have caused them unwanted symptoms, from the simple "I just got way too high" to "I couldn't stop my thoughts." When I speak at schools (a non-clinical population) many teens come up to me afterwards, very concerned about the data on "Dabs" and willing to make changes. **Parents, speak to your children.** Even when they may not have the extreme reactions described above, they do see the risk of high potency THC and they will hear you!

A 17-year-old boy in our practice recently told me, "I thought you guys were exaggerating, but I really feel so much better now that I am not dabbing. My thinking was really dark and selfish, and I did not believe it was the Dabs."

Please send me your questions and concerns: [Liz@Insightcounselingllc.com](mailto:Liz@Insightcounselingllc.com) (<mailto:Liz@Insightcounselingllc.com>)

[www.insightcounselingllc.com](http://www.insightcounselingllc.com) (<http://www.insightcounselingllc.com>)

For more sources of data and talking points try:

- <http://insightcounselingllc.com/2018/10/15/the-parent-teen-weed-wars-what-parents-can-do/>  
(<http://insightcounselingllc.com/2018/10/15/the-parent-teen-weed-wars-what-parents-can-do/>)

- <https://teens.drugabuse.gov/blog/post/dabbing-dangerous> (<https://teens.drugabuse.gov/blog/post/dabbing-dangerous>)
- <https://drugfree.org/article/how-to-talk-about-marijuana/> (<https://drugfree.org/article/how-to-talk-about-marijuana/>)
- <http://powertotheparent.org/be-aware/hidden-in-plain-sight/> (<http://powertotheparent.org/be-aware/hidden-in-plain-sight/>)

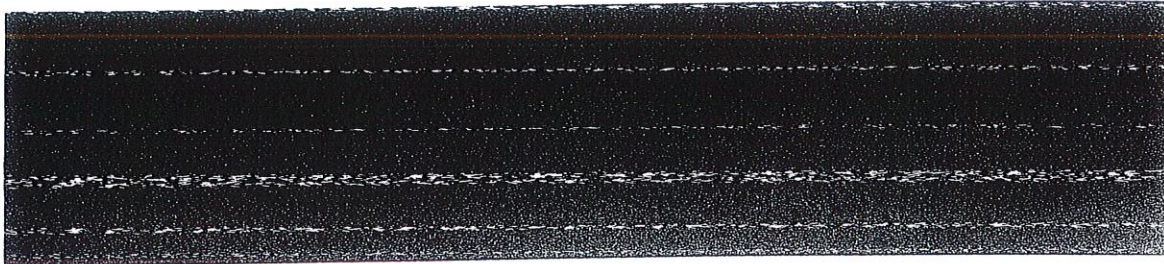
If you or someone you know experiences mental health issues, it is important to seek help from a qualified professional. Our Resource Specialist can help you find expert mental health resources to recover in your community. Contact us now for more information on this free service to our users.

CONTACT A RESOURCE SPECIALIST ([HTTPS://WWW.RTOR.ORG/RESOURCE-SPECIALIST/](https://www.rtor.org/resource-specialist/))

Photo by [Nery Zarate](https://unsplash.com/@neryzd?utm_source=unsplash&utm_medium=referral&utm_content=creditCopyText) ([https://unsplash.com/@neryzd?utm\\_source=unsplash&utm\\_medium=referral&utm\\_content=creditCopyText](https://unsplash.com/@neryzd?utm_source=unsplash&utm_medium=referral&utm_content=creditCopyText)) on [Unsplash](https://unsplash.com/search/photos/vaping?utm_source=unsplash&utm_medium=referral&utm_content=creditCopyText) ([https://unsplash.com/search/photos/vaping?utm\\_source=unsplash&utm\\_medium=referral&utm\\_content=creditCopyText](https://unsplash.com/search/photos/vaping?utm_source=unsplash&utm_medium=referral&utm_content=creditCopyText))

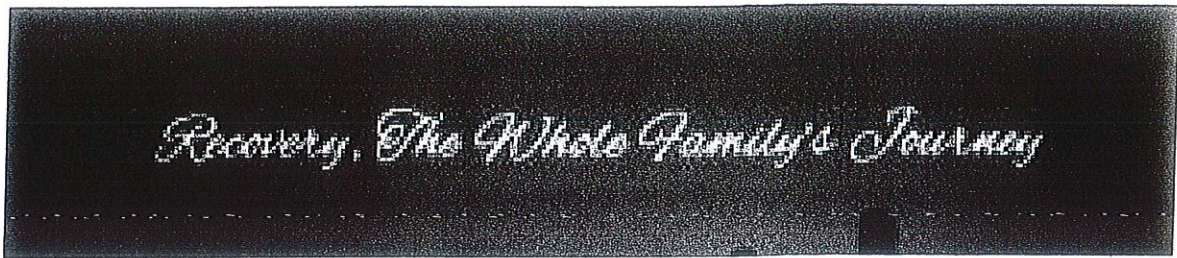
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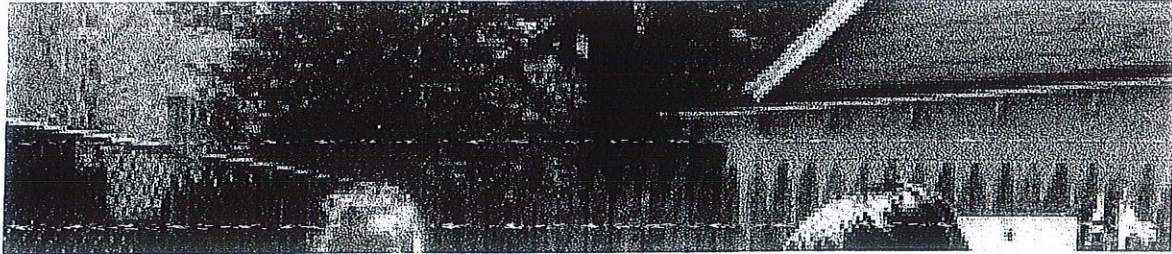
[Darren Town Champion Lily Genovese and Fellow Seniors Graduate as Darien High School Class of 2020!](https://www.rtor.org/2020/06/11/darien-town-champion-lily-genovese-and-fellow-seniors-graduate-as-darien-high-school-class-of-2020/)

(<https://www.rtor.org/2020/06/11/darien-town-champion-lily-genovese-and-fellow-seniors-graduate-as-darien-high-school-class-of-2020/>)



[Recovery, The Whole Family's Journey](#)

[\(https://www.rtor.org/2020/06/09/recovery-the-whole-familys-journey/\)](https://www.rtor.org/2020/06/09/recovery-the-whole-familys-journey/)



[Capital One and Cosi of Stamford Join Laurel House to Deliver Holiday Meals to Adults with Mental Health Conditions During the Pandemic](#)

[\(https://www.rtor.org/2020/05/25/capital-one-and-cosi-join-laurel-house-to-deliver-holiday-meals-to-adults-with-mental-health-conditions-during-the-pandemic/\)](https://www.rtor.org/2020/05/25/capital-one-and-cosi-join-laurel-house-to-deliver-holiday-meals-to-adults-with-mental-health-conditions-during-the-pandemic/)

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**Elizabeth Driscoll Jorgensen, Director Of Insight Counselling (<https://www.rtor.org/author/Edriscoll/>)**

CADC

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# Marijuana Research Report

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## Marijuana Research Report

Explores the latest research on marijuana, including the scope of marijuana use in the U.S., health consequences, its effects on everyday activities, and available treatments.

### Letter From the Director



Photo by NIDA

Changes in marijuana policies across states legalizing marijuana for medical and/or recreational use suggest that marijuana is gaining greater acceptance in our society. Thus, it is particularly important for people to understand what is known about both the adverse health effects and the potential therapeutic benefits linked to marijuana.

Because marijuana impairs short-term memory and judgment and distorts perception, it can impair performance in school or at work and make it dangerous to drive. It also affects brain systems that are still maturing through young adulthood, so regular use by teens may have negative and long-lasting effects on their cognitive development, putting them at a competitive disadvantage and possibly interfering with their well-being in other ways. Also, contrary to popular belief, marijuana can be addictive, and its use during adolescence may make other forms of problem use or addiction more likely.

Whether smoking or otherwise consuming marijuana has therapeutic benefits that outweigh its health risks is still an open question that science has not resolved. Although many states now permit dispensing marijuana for medicinal purposes and there is mounting anecdotal evidence for the

efficacy of marijuana-derived compounds, the U.S. Food and Drug Administration has not approved "medical marijuana." However, safe medicines based on cannabinoid chemicals derived from the marijuana plant have been available for decades and more are being developed.

This Research Report is intended as a useful summary of what the most up-to-date science has to say about marijuana and its effects on those who use it at any age.

**Nora D. Volkow, M.D.**

*Director*

National Institute on Drug Abuse

**See Also:**

- [Message from the NIDA Director - Marijuana's Lasting Effects on the Brain](#), (Archives) (March 2013)

**What is marijuana?**

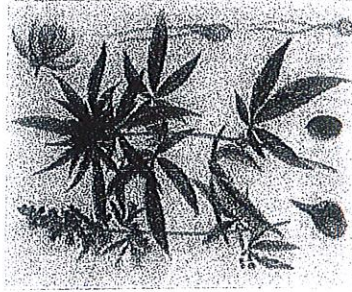


Image by @Stock.com/istockphoto

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 flowers of *Cannabis sativa*. Some people smoke marijuana in hand-rolled cigarettes called *joints*; in pipes, water pipes (sometimes called *bongs*), or in *blunts* (marijuana rolled in cigar wraps).<sup>1</sup> 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. Vaporizers are also increasingly used to consume marijuana. Stronger forms of marijuana include *sensemilla* (from specially tended female plants) and concentrated resins containing high doses of marijuana's active ingredients, including honeylike *hash oil*, *waxy budder*, and hard amberlike *shatter*. These resins are increasingly popular among those who use them both recreationally and medically.

The main *psychoactive* (mind-altering) chemical in marijuana, responsible for most of the intoxicating effects that people seek, is *delta-9-tetrahydrocannabinol* (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 more than 100 compounds that are chemically related to THC, called *cannabinoids*.<sup>2</sup>

**What is the scope of marijuana use in the United States?**

Marijuana is the most commonly used psychotropic drug in the United States, after alcohol. In 2018, more than 11.8 million young adults reported marijuana use in the past year.<sup>3</sup> Its use is more prevalent among men than women.<sup>4</sup>

Marijuana use is widespread among adolescents and young adults. According to the Monitoring the Future survey—an annual survey of drug use and attitudes among the Nation's middle and high school students—most measures of marijuana use by 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> graders peaked in the mid-to-late 1990s and then began a period of gradual decline through the mid-2000s before leveling off. However, in 2019, there was a significant increase in daily use in the younger grades. In addition, teens' perceptions of the risks of marijuana use have steadily declined over the past decade. In 2019, 11.8% of 8<sup>th</sup> graders reported marijuana use in the past year and 6.6% in the past month (current use). Among 10<sup>th</sup> graders, 28.8% had used marijuana in the past year and 18.4% in the past month.

Rates of use among 12<sup>th</sup> graders were higher still: 35.7% had used marijuana during the year prior to the survey and 22.3% used in the past month; 6.4% said they used marijuana daily or near-daily.<sup>5</sup> With the growing popularity of vaping devices, teens have started vaping THC (the ingredient in marijuana that produces the high), with nearly 4% of 12<sup>th</sup> graders saying they vape THC daily.<sup>5</sup>

Medical emergencies possibly related to marijuana use have also increased. The Drug Abuse Warning Network (DAWN), a system for monitoring the health impact of drugs, estimated that in 2011, there were nearly 456,000 drug-related emergency department visits in the United States in which marijuana use was mentioned in the medical record (a 21% increase over 2009). About two-thirds of patients were male and 13% were between the ages of 12 and 17.<sup>6</sup> It is unknown whether this increase is due to increased use, increased potency of marijuana (amount of THC it contains), or other factors. It should be noted, however, that mentions of marijuana in medical records do not necessarily indicate that these emergencies were directly related to marijuana intoxication.

## What are marijuana's effects?

When marijuana is smoked, THC and other chemicals in the plant pass from the lungs into the bloodstream, which rapidly carries them throughout the body to the brain. The person begins to experience effects almost immediately (see "How does marijuana produce its effects?"). Many people experience a pleasant euphoria and sense of relaxation. Other common effects, which may vary dramatically among different people, include heightened sensory perception (e.g., brighter colors), laughter, altered perception of time, and increased appetite.

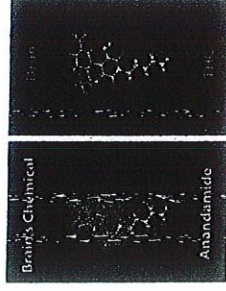
If marijuana is consumed in foods or beverages, these effects are somewhat delayed—usually appearing after 30 minutes to 1 hour—because the drug must first pass through the digestive system. Eating or drinking marijuana delivers significantly less THC into the bloodstream than smoking an equivalent amount of the plant. Because of the delayed effects, people may inadvertently consume more THC than they intend to.

Pleasant experiences with marijuana are by no means universal. Instead of relaxation and euphoria, some people experience anxiety, fear, distrust, or panic. These effects are more common when a person takes too much, the marijuana has an unexpectedly high potency, or the person is

inexperienced. People who have taken large doses of marijuana may experience an acute psychosis, which includes hallucinations, delusions, and a loss of the sense of personal identity. These unpleasant but temporary reactions are distinct from longer-lasting psychotic disorders, such as schizophrenia, that may be associated with the use of marijuana in vulnerable individuals. (See "Is there a link between marijuana use and psychiatric disorders?")

Although detectable amounts of THC may remain in the body for days or even weeks after use, the noticeable effects of smoked marijuana generally last from 1 to 3 hours, and those of marijuana consumed in food or drink may last for many hours.

## How does marijuana produce its effects?



Courtesy of NIDA

THC's chemical structure is similar to the brain chemical anandamide. Similarity in structure allows drugs to be recognized by the body and to alter normal brain communication.

THC's chemical structure is similar to the brain chemical anandamide. Similarity in structure allows the body to recognize THC and to alter normal brain communication.

Endogenous cannabinoids such as anandamide (see figure) function as neurotransmitters because

they send chemical messages between nerve cells (*neurons*) throughout the nervous system. They affect brain areas that influence pleasure, memory, thinking, concentration, movement, coordination, and sensory and time perception. Because of this similarity, THC is able to attach to molecules called *cannabinoid receptors* on neurons in these brain areas and activate them, disrupting various mental and physical functions and causing the effects described earlier. The neural communication network that uses these cannabinoid neurotransmitters, known as the *endocannabinoid system*, plays a critical role in the nervous system's normal functioning, so interfering with it can have profound effects.

For example, THC is able to alter the functioning of the hippocampus (see "Marijuana, Memory, and the Hippocampus") and orbitofrontal cortex, brain areas that enable a person to form new memories and shift his or her attentional focus. As a result, using marijuana causes impaired thinking and interferes with a person's ability to learn and perform complicated tasks. THC also disrupts functioning of the cerebellum and basal ganglia, brain areas that regulate balance, posture, coordination, and reaction time. This is the reason people who have used marijuana may not be able to drive safely (see "Does marijuana use affect driving?") and may have problems playing sports or engaging in other physical activities.

People who have taken large doses of the drug may experience an acute psychosis, which includes hallucinations, delusions, and a loss of the sense of personal identity.

THC, acting through cannabinoid receptors, also activates the brain's reward system, which includes regions that govern the response to healthy pleasurable behaviors such as sex and eating. Like most other drugs that people misuse, THC stimulates neurons in the reward system to release the signaling chemical *dopamine* at levels higher than typically observed in response to natural stimuli. This flood of dopamine contributes to the pleasurable "high" that those who use recreational marijuana seek.

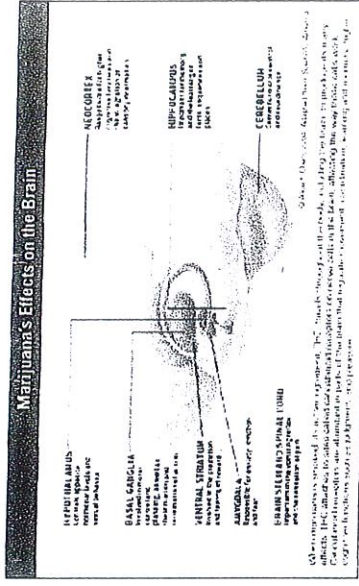


Diagram showing different parts of the brain and describing marijuana's effects on the brain

## Does marijuana use affect driving?



Photo by ©iStock.com/MadCircles

Marijuana significantly impairs judgment, motor coordination, and reaction time, and studies have found a direct relationship between blood THC concentration and impaired driving ability.<sup>7-9</sup>



Marijuana is the illicit drug most frequently found in the blood of drivers who have been involved in vehicle crashes, including fatal ones.<sup>10</sup> Two large European studies found that drivers with THC in their blood were roughly twice as likely to be culpable for a fatal crash than drivers who had not used drugs or alcohol.<sup>11,12</sup> However, the role played by marijuana in crashes is often unclear because it can be detected in body fluids for days or even weeks after intoxication and because people frequently combine it with alcohol. Those involved in vehicle crashes with THC in their blood, particularly higher levels, are three to seven times more likely to be responsible for the incident than drivers who had not used drugs or alcohol. The risk associated with marijuana in combination with alcohol appears to be greater than that for either drug by itself.<sup>8</sup>

Several meta-analyses of multiple studies found that the risk of being involved in a crash significantly increased after marijuana use<sup>13</sup>—in a few cases, the risk doubled or more than doubled.<sup>14-16</sup> However, a large case-control study conducted by the National Highway Traffic Safety Administration found no significant increased crash risk attributable to cannabis after controlling for drivers' age, gender, race, and presence of alcohol.<sup>17</sup>

## Is marijuana addictive?

Marijuana use can lead to the development of problem use, known as a marijuana use disorder, which takes the form of addiction in severe cases. Recent data suggest that 30% of those who use marijuana may have some degree of marijuana use disorder.<sup>18</sup> People who begin using marijuana before the age of 18 are four to seven times more likely to develop a marijuana use disorder than adults.<sup>19</sup>

Marijuana use disorders are often associated with dependence—in which a person feels withdrawal symptoms when not taking the drug. People who use marijuana frequently often report irritability, mood and sleep difficulties, decreased appetite, cravings, restlessness, and/or various forms of physical discomfort that peak within the first week after quitting and last up to 2 weeks.<sup>20,21</sup> Marijuana dependence occurs when the brain adapts to large amounts of the drug by reducing production of and sensitivity to its own endocannabinoid neurotransmitters.<sup>22,23</sup>

Marijuana use disorder becomes addiction when the person cannot stop using the drug even though it

interferes with many aspects of his or her life. Estimates of the number of people addicted to marijuana are controversial, in part because epidemiological studies of substance use often use dependence as a proxy for addiction even though it is possible to be dependent without being addicted. Those studies suggest that 9% of people who use marijuana will become dependent on it,<sup>24,25</sup> rising to about 17% in those who start using in their teens.<sup>26,27</sup>

In 2015, about 4.0 million people in the United States met the diagnostic criteria for a marijuana use disorder;<sup>2</sup> 138,000 voluntarily sought treatment for their marijuana use.<sup>28</sup>

## Rising Potency

Marijuana potency, as detected in confiscated samples, has steadily increased over the past few decades. In the early 1990s, the average THC content in confiscated marijuana samples was less than 4%.<sup>2</sup> In 2018, it was more than 15%.<sup>29</sup> Marijuana concentrates can have much higher levels of THC (see [Marijuana Concentrates DrugFacts](#)). The increasing potency of marijuana, combined with the use of high-THC concentrates, raises concerns that the consequences of marijuana use today could be worse than in the past, particularly among those who are new to marijuana use and in young people, whose brains are still developing (see ["What are marijuana's long-term effects on the brain?"](#)).

Researchers do not yet know the full extent of the consequences when the body and brain (especially the developing brain) are exposed to high concentrations of THC or whether the recent increases in emergency department visits by people testing positive for marijuana are related to rising potency. The extent to which people adjust for increased potency by using less or by smoking it differently is also unknown. Recent studies suggest that experienced people may adjust the amount they smoke and how much they inhale based on the believed strength of the marijuana they are using, but they are not able to fully compensate for variations in potency.<sup>30,31</sup>

## What are marijuana's long-term effects on the brain?

Substantial evidence from animal research and a growing number of studies in humans indicate that marijuana exposure during development can cause long-term or possibly permanent adverse changes in the brain. Rats exposed to THC before birth, soon after birth, or during adolescence show notable problems with specific learning and memory tasks later in life.<sup>32-34</sup> Cognitive impairments in adult rats exposed to THC during adolescence are associated with structural and functional changes in the hippocampus.<sup>35-37</sup> Studies in rats also show that adolescent exposure to THC is associated with an altered reward system, increasing the likelihood that an animal will self-administer other drugs (e.g., heroin) when given an opportunity (see "Is marijuana a gateway drug?").

Imaging studies of marijuana's impact on brain structure in humans have shown conflicting results. Some studies suggest regular marijuana use in adolescence is associated with altered connectivity and reduced volume of specific brain regions involved in a broad range of executive functions such as memory, learning, and impulse control compared to people who do not use.<sup>38,39</sup> Other studies have not found significant structural differences between the brains of people who do and do not use the drug.<sup>40</sup>

Several studies, including two large longitudinal studies, suggest that marijuana use can cause functional impairment in cognitive abilities but that the degree and/or duration of the impairment depends on the age when a person began using and how much and how long he or she used.<sup>41</sup>

Among nearly 4,000 young adults in the Coronary Artery Risk Development in Young Adults study tracked over a 25-year period until mid-adulthood, cumulative lifetime exposure to marijuana was associated with lower scores on a test of verbal memory but did not affect other cognitive abilities such as processing speed or executive function. The effect was sizeable and significant even after eliminating those involved with current use and after adjusting for confounding factors such as demographic factors, other drug and alcohol use, and other psychiatric conditions such as depression.<sup>42</sup>

Some studies have also linked marijuana use to declines in IQ, especially when use starts in adolescence and leads to persistent cannabis use disorder into adulthood. However, not all of the studies on the link between marijuana and IQ have reached the same conclusion, and it is difficult to prove that marijuana causes a decline in IQ when there are multiple factors that can influence the results of such studies, such as genetics, family environment, age of first use, frequency of use, having a cannabis use disorder, duration of use, and duration of the study. Key research in this area to date is described below.

A large longitudinal study in New Zealand found that persistent marijuana use disorder with frequent use starting in adolescence was associated with a loss of an average of 6 or up to 8 IQ points measured in mid-adulthood.<sup>43</sup> Those who used marijuana heavily as teenagers and quit using as adults did not recover the lost IQ points. People who only began using marijuana heavily in adulthood did not lose IQ points. Two shorter-duration prospective longitudinal twin studies found that youth who used marijuana showed significant declines in verbal ability (equivalent to 4 IQ points) and general knowledge between the preteen years (ages 9 to 12, before use) and late adolescence/early adulthood (ages 17 to 20); however those who went on to use marijuana at older ages already had lower scores on these measures at the start of the study, before they started using the drug. Also, no predictable difference was found between twins when one used marijuana and one did not.<sup>44</sup>

More research will be needed to answer definitively whether marijuana use causes long-term IQ losses and whether factors that weren't measured in the prior research, such as the increasing amounts of THC in cannabis and the emergence of new cannabis products, are relevant.

Also, the ability to draw definitive conclusions about marijuana's long-term impact on the human brain from past studies is often limited by the fact that study participants use multiple substances, and there is often limited data about the participants' health or mental functioning prior to the study. Over the next decade, the National Institutes of Health is funding the Adolescent Brain Cognitive Development (ABCD) study—a major longitudinal study that will track a large sample of young Americans from late childhood (before first use of drugs) to early adulthood. The study will use neuroimaging and other advanced tools to clarify precisely how and to what extent marijuana and other substances, alone and in combination, affect adolescent brain development.

## Marijuana, Memory, and the Hippocampus



Image by NIDA

Distribution of cannabinoid receptors in the rat brain. Brain image reveals high levels (shown in orange and yellow) of cannabinoid receptors in many areas, including the cortex, hippocampus, cerebellum, and nucleus accumbens (ventral striatum).

Memory impairment from marijuana use occurs because THC alters how the hippocampus, a brain area responsible for memory formation, processes information. Most of the evidence supporting this assertion comes from animal studies. For example, rats exposed to THC *in utero*, soon after birth, or during adolescence, show notable problems with specific learning/memory tasks later in life. Moreover, cognitive impairment in adult rats is associated with structural and functional changes in the hippocampus from THC exposure during adolescence.

As people age, they lose neurons in the hippocampus, which decreases their ability to learn new information. Chronic THC exposure may hasten age-related loss of hippocampal neurons. In one study, rats exposed to THC every day for 8 months (approximately 30% of their lifespan) showed a level of nerve cell loss at 11 to 12 months of age that equaled that of unexposed animals twice their age.

## Is marijuana a gateway drug?

Some research suggests that marijuana use is likely to precede use of other licit and illicit substances<sup>46</sup>

and the development of addiction to other substances. For instance, a study using longitudinal data from the National Epidemiological Study of Alcohol Use and Related Disorders found that adults who reported marijuana use during the first wave of the survey were more likely than adults who did not use marijuana to develop an alcohol use disorder within 3 years; people who used marijuana and already had an alcohol use disorder at the outset were at greater risk of their alcohol use disorder worsening.<sup>46</sup> Marijuana use is also linked to other substance use disorders including nicotine addiction.

Early exposure to cannabinoids in adolescent rodents decreases the reactivity of brain dopamine reward centers later in adulthood.<sup>47</sup> To the extent that these findings generalize to humans, this could help explain the increased vulnerability for addiction to other substances of misuse later in life that most epidemiological studies have reported for people who begin marijuana use early in life.<sup>48</sup> It is also consistent with animal experiments showing THC's ability to "prime" the brain for enhanced responses to other drugs.<sup>49</sup> For example, rats previously administered THC show heightened behavioral response not only when further exposed to THC but also when exposed to other drugs such as morphine—a phenomenon called *cross-sensitization*.<sup>50</sup>

These findings are consistent with the idea of marijuana as a "gateway drug." However, the majority of people who use marijuana do not go on to use other, "harder" substances. Also, cross-sensitization is not unique to marijuana. Alcohol and nicotine also prime the brain for a heightened response to other drugs<sup>51</sup> and are, like marijuana, also typically used before a person progresses to other, more harmful substances.

It is important to note that other factors besides biological mechanisms, such as a person's social environment, are also critical in a person's risk for drug use. An alternative to the gateway-drug hypothesis is that people who are more vulnerable to drug-taking are simply more likely to start with readily available substances such as marijuana, tobacco, or alcohol, and their subsequent social interactions with others who use drugs increases their chances of trying other drugs. Further research is needed to explore this question.

## How does marijuana use affect school, work, and social life?



Image by [iStock.com/AntonioGullam](https://www.gettyimages.com/detail/stock-photo/1198888888)

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, depending on the person's history with the drug.<sup>52</sup> Consequently, someone who smokes marijuana daily may be functioning at a reduced intellectual level most or all of the time. Considerable evidence suggests that students who smoke marijuana have poorer educational outcomes than their nonsmoking peers. For example, a review of 48 relevant studies found marijuana use to be associated with reduced educational attainment (i.e., reduced chances of graduating).<sup>53</sup> A recent analysis using data from three large studies in Australia and New Zealand found that adolescents who used marijuana regularly were significantly less likely than their non-using peers to finish high school or obtain a degree. They also had a much higher chance of developing dependence, using other drugs, and attempting suicide.<sup>54</sup> Several studies have also linked heavy marijuana use to lower income, greater welfare dependence, unemployment, criminal behavior, and lower life satisfaction.<sup>55,56</sup>

To what degree marijuana use is directly causal in these associations remains an open question requiring further research. It is possible that other factors independently predispose people to both marijuana use and various negative life outcomes such as school dropout.<sup>57</sup> That said, people report a perceived influence of their marijuana use on poor outcomes on a variety of life satisfaction and achievement measures. One study, for example, compared people involved with current and former long-term, heavy use of marijuana with a control group who reported smoking marijuana at least once in their lives but not more than 50 times.<sup>58</sup> All participants had similar education and income backgrounds, but significant differences were found in their educational attainment. Fewer of those

who engaged in heavy cannabis use completed college, and more had yearly household incomes of less than \$30,000. When asked how marijuana affected their cognitive abilities, career achievements, social lives, and physical and mental health, the majority of those who used heavily reported that marijuana had negative effects in all these areas of their lives.

Studies have also suggested specific links between marijuana use and adverse consequences in the workplace, such as increased risk for injury or accidents.<sup>59</sup> One study among postal workers found that employees who tested positive for marijuana on a pre-employment urine drug test had 55% more industrial accidents, 85% more injuries, and 75% greater absenteeism compared with those who tested negative for marijuana use.<sup>60</sup>

## Is there a link between marijuana use and psychiatric disorders?

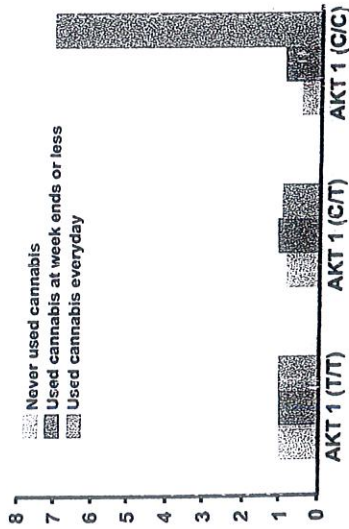
Several studies have linked marijuana use to increased risk for psychiatric disorders, including psychosis (schizophrenia), depression, anxiety, and substance use disorders, but whether and to what extent it actually causes these conditions is not always easy to determine.<sup>32</sup> Recent research suggests that smoking high-potency marijuana every day could increase the chances of developing psychosis by nearly five times compared to people who have never used marijuana.<sup>113</sup> The amount of drug used, the age at first use, and genetic vulnerability have all been shown to influence this relationship. The strongest evidence to date concerns links between marijuana use and psychiatric disorders in those with a preexisting genetic or other vulnerability.<sup>61</sup>

Research using longitudinal data from the National Epidemiological Survey on Alcohol and Related Conditions examined associations between marijuana use, mood and anxiety disorders, and substance use disorders. After adjusting for various confounding factors, no association between marijuana use and mood and anxiety disorders was found. The only significant associations were increased risk of alcohol use disorders, nicotine dependence, marijuana use disorder, and other drug use disorders.<sup>62</sup>

Recent research (see "[AKT1 Gene Variations and Psychosis](#)") has found that people who use marijuana and carry a specific variant of the *AKT1* gene, which codes for an enzyme that affects

dopamine signaling in the *striatum*, are at increased risk of developing psychosis. The *striatum* is an area of the brain that becomes activated and flooded with dopamine when certain stimuli are present. One study found that the risk of psychosis among those with this variant was seven times higher for those who used marijuana daily compared with those who used it infrequently or used none at all.<sup>92</sup>

### AKT1 Gene Variations and Psychosis

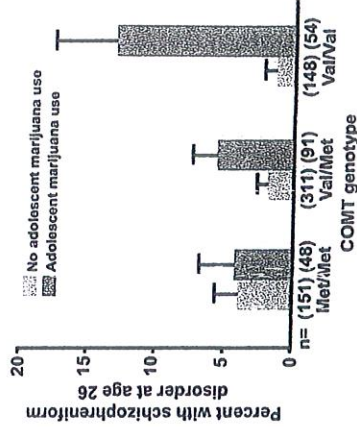


Source: Di Forti et al. Biol Psychiatry, 2012.

Whether adolescent marijuana use can contribute to developing psychosis later in adulthood appears to depend on whether a person already has a genetically based vulnerability to the disorder. The AKT1 gene governs an enzyme that affects brain signaling involving the neurotransmitter dopamine. Altered dopamine signaling is known to be involved in schizophrenia. AKT1 can take one of three forms in a specific region of the gene implicated in susceptibility to schizophrenia: T/T, C/T, and C/C. Those who use marijuana daily (green bars) with the C/C variant have a seven times higher risk of developing psychosis than those who use it infrequently or use none at all. The risk for psychosis among those with the T/T variant was unaffected by whether they used marijuana.

Another study found an increased risk of psychosis among adults who had used marijuana in adolescence and also carried a specific variant of the gene for *catechol-O-methyltransferase* (COMT), an enzyme that degrades neurotransmitters such as dopamine and norepinephrine<sup>94</sup> (see "Genetic Variations in COMT Influences the Harmful Effects of Abused Drugs"). Marijuana use has also been shown to worsen the course of illness in patients who already have schizophrenia. As mentioned previously, marijuana can produce an acute psychotic reaction in non-schizophrenic people who use marijuana, especially at high doses, although this fades as the drug wears off.

### Genetic Variations in COMT Influences the Harmful Effects of Abused Drugs



Source: Di Forti et al. *Biol Psychiatry*, 2012.

The influence of adolescent marijuana use on adult psychosis is affected by genetic variables. This figure shows that variations in a gene can affect the likelihood of developing psychosis in adulthood following exposure to cannabis in adolescence. The COMT gene governs an enzyme that breaks down dopamine, a brain chemical involved in schizophrenia. It comes in two forms: "Met" and "Val." Individuals with one or two copies of the Val variant have a higher risk of developing schizophrenic-type disorders if they used cannabis during adolescence (dark bars). Those with only the Met variant were unaffected by cannabis use.

Inconsistent and modest associations have been reported between marijuana use and suicidal thoughts and attempted suicide among teens.<sup>65,66</sup> Marijuana has also been associated with an *amotivational syndrome*, defined as a diminished or absent drive to engage in typically rewarding activities. Because of the role of the endocannabinoid system in regulating mood and reward, it has been hypothesized that brain changes resulting from early use of marijuana may underlie these associations, but more research is needed to verify that such links exist and better understand them.

## Adverse Consequences of Marijuana Use

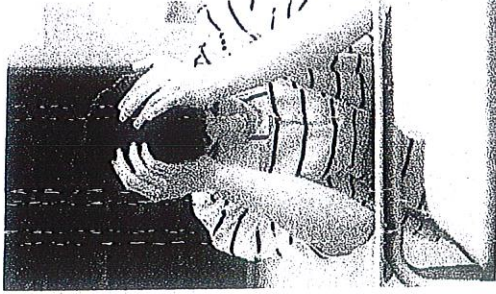


Photo by Gettyimages.com/Filae

### Acute (present during intoxication)

- Impaired short-term memory
- Impaired attention, judgment, and other cognitive functions
- Impaired coordination and balance
- Increased heart rate
- Anxiety, paranoia
- Psychosis (uncommon)

### Persistent (lasting longer than intoxication, but may not be permanent)

- Impaired learning and coordination

- Sleep problems

### Long-term (cumulative effects of repeated use)

- Potential for marijuana addiction
- Impairments in learning and memory with potential loss of IQ\*
- Increased risk of chronic cough, bronchitis
- Increased risk of other drug and alcohol use disorders
- Increased risk of schizophrenia in people with genetic vulnerability\*\*

\**Loss of IQ among individuals with persistent marijuana use disorder who began using heavily during adolescence*

\*\**These are often reported co-occurring symptoms/disorders with chronic marijuana use.*

*However, research has not yet determined whether marijuana is causal or just associated with these mental problems.*

## What are marijuana's effects on lung health?

Like tobacco smoke, marijuana smoke is an irritant to the throat and lungs and can cause a heavy cough during use. It also contains levels of volatile chemicals and tar that are similar to tobacco smoke, raising concerns about risk for cancer and lung disease.<sup>67</sup>

Marijuana smoking is associated with large airway inflammation, increased airway resistance, and lung hyperinflation, and those who smoke marijuana regularly report more symptoms of chronic bronchitis than those who do not smoke.<sup>67,68</sup> One study found that people who frequently smoke marijuana had more outpatient medical visits for respiratory problems than those who do not smoke.<sup>69</sup> Some case studies have suggested that, because of THC's immune-suppressing effects, smoking marijuana might increase susceptibility to lung infections, such as pneumonia, in people with immune deficiencies; however, a large AIDS cohort study did not confirm such an association.<sup>67</sup> Smoking

marijuana may also reduce the respiratory system's immune response, increasing the likelihood of the person acquiring respiratory infections, including pneumonia.<sup>68</sup> Animal and human studies have not found that marijuana increases risk for emphysema.<sup>67</sup>

## Reports of Deaths Related to Vaping Marijuana

The Food and Drug Administration has alerted the public to hundreds of reports of serious lung illnesses associated with vaping, including several deaths. They are working with the Centers for Disease Control and Prevention (CDC) to investigate the cause of these illnesses. Many of the suspect products tested by the states or federal health officials have been identified as vaping products containing THC, the main psychotropic ingredient in marijuana. Some of the patients reported a mixture of THC and nicotine, and some reported vaping nicotine alone. No one substance has been identified in all of the samples tested, and it is unclear if the illnesses are related to one single compound. Until more details are known, FDA officials have warned people not to use any vaping products bought on the street, and they warn against modifying any products purchased in stores. They are also asking people and health professionals to report any adverse effects. The CDC has posted an [information page](#) for consumers.

Whether smoking marijuana causes lung cancer, as cigarette smoking does, remains an open question.<sup>67,70</sup> Marijuana smoke contains carcinogenic combustion products, including about 50% more benzoprene and 75% more benzoanthracene (and more phenols, vinyl chlorides, nitrosamines, reactive oxygen species) than cigarette smoke.<sup>67</sup> Because of how it is typically smoked (deeper inhale, held for longer), marijuana smoking leads to four times the deposition of tar compared to cigarette smoking.<sup>71</sup> However, while a few small, uncontrolled studies have suggested that heavy, regular marijuana smoking could increase risk for respiratory cancers, well-designed population studies have failed to find an increased risk of lung cancer associated with marijuana use.<sup>67</sup>

One complexity in comparing the lung-health risks of marijuana and tobacco concerns the very different ways the two substances are used. While people who smoke marijuana often inhale more deeply and hold the smoke in their lungs for a longer duration than is typical with cigarettes, marijuana's effects last longer, so people who use marijuana may smoke less frequently than those

from 1 minute of secondhand tobacco exposure was recovered within 30 minutes. The effects of marijuana smoke were independent of THC concentration; i.e., when THC was removed, the impairment was still present. This research has not yet been conducted with human subjects, but the toxins and tar levels known to be present in marijuana smoke (see ["What are marijuana's effects on lung health?"](#)) raise concerns about exposure among vulnerable populations, such as children and people with asthma.

## Can marijuana use during and after pregnancy harm the baby?

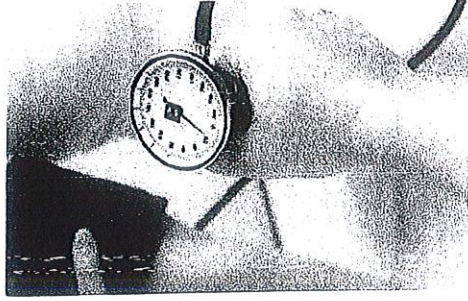


Photo by [iThinstock.com/Creatas Imaggio](#)

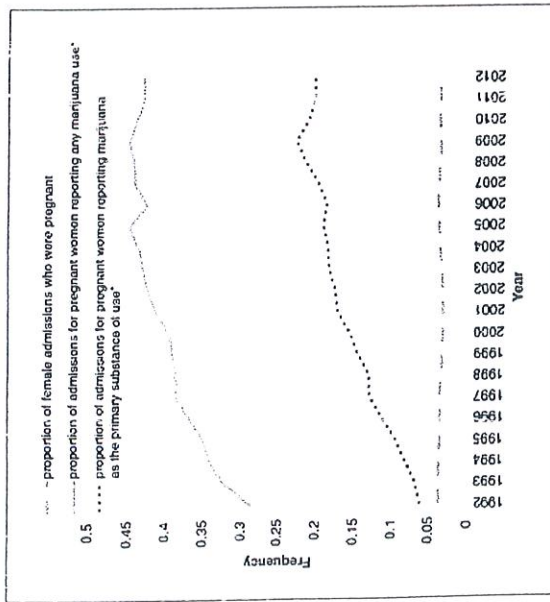
More research is needed on how marijuana use during pregnancy could impact the health and development of infants, given changing policies about access to marijuana, as well as significant increases over the last decade in the number of pregnant women seeking substance use disorder

treatment for marijuana use.<sup>83</sup> One study found that about 20% of pregnant women 24-years-old and younger screened positive for marijuana. However, this study also found that women were about twice as likely to screen positive for marijuana use via a drug test than they state in self-reported measures. This suggests that self-reported rates of marijuana use in pregnant females may not be an accurate measure of marijuana use.<sup>84</sup> Additionally, in one study of dispensaries, nonmedical personnel at marijuana dispensaries were recommending marijuana to pregnant women for nausea, but medical experts warn against it.

There is no human research connecting marijuana use to the chance of miscarriage,<sup>85,86</sup> although animal studies indicate that the risk for miscarriage increases if marijuana is used early in pregnancy.<sup>87</sup>

Some associations have been found between marijuana use during pregnancy and future developmental and hyperactivity disorders in children.<sup>88-91</sup> Evidence is mixed as to whether marijuana use by pregnant women is associated with low birth weight<sup>92-96</sup> or premature birth,<sup>95</sup> although long-term use may elevate these risks.<sup>94</sup> Research has shown that pregnant women who use marijuana have a 2.3 times greater risk of stillbirth.<sup>97</sup> Given the potential of marijuana to negatively impact the developing brain, the American College of Obstetricians and Gynecologists recommends that obstetrician-gynecologists counsel women against using marijuana while trying to get pregnant, during pregnancy, and while they are breastfeeding.<sup>98</sup> It is important to note that despite the growing popularity of using marijuana in vaping devices, the Food and Drug Administration recommends that pregnant women should not use any vaping product, regardless of the substance.





Source: Martin et al., 2015

#### Recent Trends in Treatment Admissions for Marijuana Use During Pregnancy

Some women report using marijuana to treat severe nausea associated with their pregnancy,<sup>89,100</sup> however, there is no research confirming that this is a safe practice, and it is generally not recommended. Women considering using medical marijuana while pregnant should not do so without checking with their health care providers. Animal studies have shown that moderate concentrations of THC, when administered to mothers while pregnant or nursing, could have long-lasting effects on the child, including increasing stress responsiveness and abnormal patterns of social interactions.<sup>101</sup> Animal studies also show learning deficits in prenatally exposed individuals.<sup>33,102</sup>

Human research has shown that some babies born to women who used marijuana during their

pregnancies display altered responses to visual stimuli, increased trembling, and a high-pitched cry,<sup>103</sup> which could indicate problems with neurological development.<sup>104</sup> In school, marijuana-exposed children are more likely to show gaps in problem-solving skills, memory,<sup>105</sup> and the ability to remain attentive.<sup>106</sup> More research is needed, however, to disentangle marijuana-specific effects from those of other environmental factors that could be associated with a mother's marijuana use, such as an impoverished home environment or the mother's use of other drugs.<sup>96</sup> Prenatal marijuana exposure is also associated with an increased likelihood of a person using marijuana as a young adult, even when other factors that influence drug use are considered.<sup>107</sup> More information on marijuana use during pregnancy can be found in the NIDA's *Substance Use in Women Research Report*.

Very little is known about marijuana use and breastfeeding. One study suggests that moderate amounts of THC find their way into breast milk when a nursing mother uses marijuana.<sup>108</sup> Some evidence shows that exposure to THC through breast milk in the first month of life could result in decreased motor development at 1 year of age.<sup>109</sup> There have been no studies to determine if exposure to THC during nursing is linked to effects later in the child's life. With regular use, THC can accumulate in human breast milk to high concentrations.<sup>92</sup> Because a baby's brain is still forming, THC consumed in breast milk could affect brain development. Given all these uncertainties, nursing mothers are discouraged from using marijuana.<sup>96,110</sup> New mothers using medical marijuana should be vigilant about coordinating care between the doctor recommending their marijuana use and the pediatrician caring for their baby.

#### Available Treatments for Marijuana Use Disorders

Marijuana use disorders appear to be very similar to other substance use disorders, although the long-term clinical outcomes may be less severe. On average, adults seeking treatment for marijuana use disorders have used marijuana nearly every day for more than 10 years and have attempted to quit more than six times.<sup>111</sup> People with marijuana use disorders, especially adolescents, often also suffer from other psychiatric disorders (comorbidity).<sup>112</sup> They may also use or be addicted to other substances, such as cocaine or alcohol. Available studies indicate that effectively treating the mental health disorder with standard treatments involving medications and behavioral therapies may help reduce marijuana use, particularly among those involved with heavy use and those with more chronic

mental disorders. The following behavioral treatments have shown promise:

- **Cognitive-behavioral therapy:** A form of psychotherapy that teaches people strategies to identify and correct problematic behaviors in order to enhance self-control, stop drug use, and address a range of other problems that often co-occur with them.
- **Contingency management:** A therapeutic management approach based on frequent monitoring of the target behavior and the provision (or removal) of tangible, positive rewards when the target behavior occurs (or does not).
- **Motivational enhancement therapy:** A systematic form of intervention designed to produce rapid, internally motivated change; the therapy does not attempt to treat the person, but rather mobilize his or her own internal resources for change and engagement in treatment.

Currently, the FDA has not approved any medications for the treatment of marijuana use disorder, but research is active in this area. Because sleep problems feature prominently in marijuana withdrawal, some studies are examining the effectiveness of medications that aid in sleep. Medications that have shown promise in early studies or small clinical trials include the sleep aid zolpidem (Ambien<sup>®</sup>), an anti-anxiety/anti-stress medication called buspirone (BuSpar<sup>®</sup>), and an anti-epileptic drug called gabapentin (Horizant<sup>®</sup>, Neurontin<sup>®</sup>) that may improve sleep and, possibly, executive function. Other agents being studied include the nutritional supplement N-acetylcysteine and chemicals called FAAH inhibitors, which may reduce withdrawal by inhibiting the breakdown of the body's own cannabinoids. Future directions include the study of substances called *allosteric modulators* that interact with cannabinoid receptors to inhibit THC's rewarding effects.

## Where can I get further information about marijuana?

To learn more about marijuana and other drugs, visit the NIDA website at [drugabuse.gov](http://drugabuse.gov) or contact the DrugPubs Research Dissemination Center at 877-NIDA-NIH (877-643-2644; TTY/TDD: 240-645-0228).

### The NIDA website includes:

- information about drugs and related health consequences

- NIDA publications, news, and events
- resources for health care professionals
- funding information (including program announcements and deadlines)
- international activities
- links to related websites (access to websites of many other organizations in the field)
- information in Spanish (en español)

## NIDA websites and webpages

- [drugabuse.gov](http://drugabuse.gov)
- [teens.drugabuse.gov](http://teens.drugabuse.gov)
- [easyread.drugabuse.gov](http://easyread.drugabuse.gov)
- [drugabuse.gov/drugs-abuse/marijuana](http://drugabuse.gov/drugs-abuse/marijuana)
- [drugabuse.gov/related-topics/hiv/aids](http://drugabuse.gov/related-topics/hiv/aids)
- [researchstudies.drugabuse.gov](http://researchstudies.drugabuse.gov)
- [irp.drugabuse.gov](http://irp.drugabuse.gov)

## For physician information

- NIDAMED: [drugabuse.gov/nidamed](http://drugabuse.gov/nidamed)

## Other websites

Information about marijuana is also available through the following websites:

- [Substance Abuse and Mental Health Services Administration \(SAMHSA\)](http://www.samhsa.gov)
- [Drug Enforcement Administration \(DEA\)](http://www.dea.gov)
- [Monitoring the Future](http://www.monitoringthefuture.com)
- [Partnership for Drug-Free Kids](http://www.drug-free-kids.com)

## Christine Landes

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**From:** Patricia Hart  
**Sent:** Wednesday, August 5, 2020 10:27 AM  
**To:** CityCouncil; Kelly Gooldrup; Christine Landes; Terry Berry; Amy Rees Personal; Colin Frey Personal; Marc Rines; Maryann White Personal; Timothy Cusick; Jon Ault (jault5000@gmail.com)  
**Subject:** Fw: [Gardiner ME] Marijuana (Sent by Barbara Estabrook, bnestabrook@gmail.com)

Councilors,

Please see resident input for our agenda this evening.

Thank you, Pat

---

**From:** cmsmailer@civicplus.com <cmsmailer@civicplus.com> on behalf of Contact form at Gardiner ME <cmsmailer@civicplus.com>  
**Sent:** Tuesday, August 4, 2020 3:34 PM  
**To:** Patricia Hart  
**Subject:** [Gardiner ME] Marijuana (Sent by Barbara Estabrook, bnestabrook@gmail.com)

Hello phart,

Barbara Estabrook (bnestabrook@gmail.com) has sent you a message via your contact form (<https://www.gardinermaine.com/user/70/contact>) at Gardiner ME.

If you don't want to receive such e-mails, you can change your settings at <https://www.gardinermaine.com/user/70/edit>.

Message:

Hi Pat,

I agree that we have enough Marijuana shops in town. 7 is more than enough, actually that is too many!

I would like the council to set a total limit on the number allowed. With 5 more pending, too much! Hallowell is the restaurant town are we to become the pot town??? Can the pending ones be rejected? Planning board will vote them in if their application is correct and it meets the ordinances, so the decision must come from the council. So council must set a number for the town, if one goes out then another would be considered. Also the applicants need to be residents.

Having so many of these stores is setting a wrong message of what we are about as a city.

Thanks for listening.

Barb

## Christine Landes

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**From:** Patricia Hart  
**Sent:** Wednesday, August 5, 2020 10:29 AM  
**To:** CityCouncil; Kelly Gooldrup; Christine Landes; Terry Berry; Amy Rees Personal; Colin Frey Personal; Marc Rines Personal; Maryann White Personal; Timothy Cusick; Jon Ault (jault5000@gmail.com)  
**Subject:** Fw: [Gardiner ME] marijuana (Sent by annie cough, acough60@aol.com)

Councilors,

Please see input from resident on marijuana agenda item this evening.  
THank you, Pat

---

**From:** cmsmailer@civicplus.com <cmsmailer@civicplus.com> on behalf of Contact form at Gardiner ME <cmsmailer@civicplus.com>  
**Sent:** Tuesday, August 4, 2020 4:34 PM  
**To:** Patricia Hart  
**Subject:** [Gardiner ME] marijuana (Sent by annie cough, acough60@aol.com)

Hello phart,

annie cough (acough60@aol.com) has sent you a message via your contact form (<https://www.gardinermaine.com/user/70/contact>) at Gardiner ME.

If you don't want to receive such e-mails, you can change your settings at <https://www.gardinermaine.com/user/70/edit>.

Message:

Pat,  
Hi! This is Annie Cough. I read in the kj today that the council is thinking of limiting the number of pot businesses. I think that is a good idea. It seems as if we (Gardiner) have enough of those types of businesses. We don't want all the store fronts to be a pot related business.

Thank you,  
Annie

<randolphpolice@roadrunner.com>, "townofwestgardiner@gmail.com"  
<townofwestgardiner@gmail.com>, "emannl@une.edu" <emannl@une.edu>,  
"kerrymansir@gmail.com" <kerrymansir@gmail.com>, "Emily.Manter@mail.house.gov"  
<Emily.Manter@mail.house.gov>, "cmarkos1@gmail.com" <cmarkos1@gmail.com>,  
"townofrandolph@roadrunner.com" <townofrandolph@roadrunner.com>,  
"julianamontell11@gmail.com" <julianamontell11@gmail.com>, "kmoody@msad11.org"  
<kmoody@msad11.org>, "Bob.moody@ejprescott.com" <Bob.moody@ejprescott.com>,  
"robert.w.moodey.mil@mail.mil" <robert.w.moodey.mil@mail.mil>,  
"Elizabeth.m.morin7.mil@mail.mil" <Elizabeth.m.morin7.mil@mail.mil>,  
"rob@munzingmedia.com" <rob@munzingmedia.com>, "bnewman@msad11.org"  
<bnewman@msad11.org>, "coneal@msad11.org" <coneal@msad11.org>, "tlogard@aol.com"  
<tlogard@aol.com>, "rpatkus@spurwink.org" <rpatkus@spurwink.org>,  
"Julie.plummer@skcdc.org" <Julie.plummer@skcdc.org>, Sam Quintana  
<SQuintana@gardinermaine.com>, "squintana@msad11.org" <squintana@msad11.org>,  
"debrar@kvcap.org" <debrar@kvcap.org>, "selectmanroberts@gmail.com"  
<selectmanroberts@gmail.com>, "Cristina.salois@skcdc.org" <Cristina.salois@skcdc.org>,  
"sue.sidelinger@skcdc.org" <sue.sidelinger@skcdc.org>, "mae@bbbsmidmaine.org"  
<mae@bbbsmidmaine.org>, "istanchfield@bgckv.org" <istanchfield@bgckv.org>,  
"stroutjan2@gmail.com" <stroutjan2@gmail.com>, "kwsart@aol.com" <kwsart@aol.com>,  
"kwsart@aol.com" <kwsart@aol.com>, Carolyn Taylor <CTaylor@gardinermaine.com>, Jim  
Toman <JToman@gardinermaine.com>, "3turtlecove@gmail.com" <3turtlecove@gmail.com>,  
"sarahschultznielsen@gmail.com" <sarahschultznielsen@gmail.com>,  
"brandre023@gmail.com" <brandre023@gmail.com>

Cc: Joanne Joy <j.joy@hccame.org>

**Subject: Re: Please respond ASAP! CALL TO ACTION: City of Gardiner Council Meeting August 5th @6pm regarding Marijuana Retail in Downtown Gardiner**

Hi All,

Thank you to those who attended and spoke at last night's Gardiner City Council meeting. There was a lengthy discussion about the allowance of retail cannabis in downtown Gardiner, with an overall tone among council members that Gardiner needs to be business friendly, keep storefronts occupied, and that the market demand will dictate how many retailers the downtown can support, therefore the city doesn't need to cap the number of cannabis retailers. Though GAT members did a great job of letting council members know about the uptick in cannabis use among MSAD#11 students, including reduced perception of harm, I think the support for business is prevailing over protecting kids. There was a lot of comparison to retail alcohol and how this shouldn't be treated any differently. *I would tend to agree, in that, we should be limiting those establishments too, but that of course, wasn't the point being made.* There was even an analogy that the city doesn't limit the number of other businesses like hair salons, so why should they limit retail cannabis? I think this may be where we need to emphasize the research around accessibility and community norms and the impact it has on substance use. If council members don't see the difference between say, a clothing retailer and a cannabis retailer, then perhaps that's where GAT can offer some education.

It is worth noting that there were a couple of council members who did seem concerned about the density of cannabis establishments in downtown Gardiner if there were no limits in place on the number of establishments. A couple of them did emphasize the fact that Gardiner did vote against recreational marijuana back in 2016. Also, there were a couple of comments about not wanting downtown Gardiner to turn into a pot Mecca. Again, I'm not convinced that limiting access to kids is a huge driver with them at this time. There is also an opportunity here to educate them on "today's marijuana" in terms of potency and impacts on health (especially

vaping), as compared to what many of them think of as pot/grass/weed from their own experiences as youth.

**In the meantime, council members did ask for community members to reach out to them with their thoughts and opinions. Attached is the list of council members with their contact information. If you are a Gardiner resident, your council member wants to hear from you!**

The meeting was recorded and will probably be posted here: <https://www.gardinermaine.com/video-streaming/pages/video-demand>

Others who attended the meeting, feel free to chime in.

Best, Renee

**Renee Page MPH, CLC, PS-C** | *she, her, Mrs.*  
Executive Director

Healthy Communities of the Capital Area  
11 Mechanic Street, Suite 101 | Gardiner, ME 04345  
[hccame.org](http://hccame.org) | [r.page@hccame.org](mailto:r.page@hccame.org) | (o) 207.588.5347 | (c) 207.446.9444



HCCA is home to Gardiner Area Thrives and the Alliance for Substance Abuse Prevention coalitions, the Maine Farm to Institution and Maine Farm to School Networks, as well as local projects of Let's Go!, Tobacco Prevention, SNAP-Ed, Youth Empowerment, and more.

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**From:** Patricia Buck-Welton <patriciab@hccame.org>

**Sent:** Wednesday, August 5, 2020 7:51 AM

**To:** 'sarahadkins625@gmail.com' <sarahadkins625@gmail.com>; 'pittstonseleboard@roadrunner.com' <pittstonseleboard@roadrunner.com>; 'carrie@johnsonhall.org' <carrie@johnsonhall.org>; 'RevBetancourt@gmail.com' <RevBetancourt@gmail.com>; 'jboudreau@msad11.org' <jboudreau@msad11.org>; 'roger.a.brawn.mil@mail.mil' <roger.a.brawn.mil@mail.mil>; 'sherry.brown-spaulding@skcdc.org' <sherry.brown-spaulding@skcdc.org>; 'ebuckhalter@kvcap.org' <ebuckhalter@kvcap.org>; 'dbutterfield@msad11.org' <dbutterfield@msad11.org>; 'scochrane@spurwink.org' <scochrane@spurwink.org>; 'petertown99@gmail.com' <petertown99@gmail.com>; 'townofwestgardiner@gmail.com' <townofwestgardiner@gmail.com>; 'timothycusick@yahoo.com' <timothycusick@yahoo.com>; 'adavis@gardinermaine.com' <adavis@gardinermaine.com>; 'ndiversi@msad11.org' <ndiversi@msad11.org>; 'vduguay@msad11.org' <vduguay@msad11.org>; 'pwtownofrandolph@gmail.com' <pwtownofrandolph@gmail.com>; 'Nicolle.Godbout@maine.gov' <Nicolle.Godbout@maine.gov>; 'kgould@msad11.org' <kgould@msad11.org>; 'ngove@gardinermaine.com' <ngove@gardinermaine.com>; 'fccgardiner@gmail.com' <fccgardiner@gmail.com>; 'pat@hartconsultinginc.com' <pat@hartconsultinginc.com>; 'CS1Hembree@gmail.com' <CS1Hembree@gmail.com>; 'selectmanbh@gmail.com' <selectmanbh@gmail.com>; 'teresbfree@gmail.com' <teresbfree@gmail.com>; 'townofwestgardiner@gmail.com' <townofwestgardiner@gmail.com>; 'phopkins@msad11.org'



To: Gardiner City Council

Gardiner Area Thrives is a coalition of 54 diverse stakeholders working to reduce youth substance use and its harmful effects in Gardiner, Randolph, Pittston and West Gardiner. These stakeholders are our community members who represent youth, parents, media, business, schools, public safety, healthcare, faith community, youth serving organizations, and civic organizations. In preparing for this council meeting the Gardiner Area Thrives Coalition has developed a position statement regarding marijuana. The statement has been made available to the council.

Our concerns to address retail density in Gardiner is based on the following data, our youth have indicated through Maine Integrated Youth Health Survey that **60%** of High School Students believe that Marijuana is Easy to get (MIYHS 2019) and **17%** of Middle School Students believe that Marijuana is *Easy to get* (MIYHS 2019). Additionally, our concern is that **72%** High School Students and **45%** of Middle School Students report that there is no risk in using marijuana. **25%** of our 640 High School Students stated that they have used marijuana in the past 30 days that is **1 in 4 or 192 students**. In contrast a statewide Parent survey was also completed in 2019 and **5% of Parents** believed that their kids smoked marijuana.

Negative health risks to youth include decreased brain development specifically in the frontal lobe that control motivation, memory loss, decision making, risk taking and has been proven that early use lowers IQ. This all leads to low school performance, ambition to work, and consequences at school include expulsion and loss of privileges like sports and the music program.

To limit marijuana access to our youth, we would like the council to consider;

- Limiting retail density in Gardiner, the only community that opted in to have Marijuana retail stores in our school district.
- Distancing retail marijuana from already existing youth serving establishments such as Ampersand, Boys and Girls Club, the Library, and community parks.
- Awareness of the laws around advertising and marketing that is clearly indicated through the state marijuana rules state  
<https://www.mainelegislature.org/legis/statutes/22/title22sec2429-B.html>.

Thank you for your consideration in support of our youth thriving in our community.

***Gardiner Area Thrives Coalition***

## Underage Marijuana Use Position Paper



On November 8, 2016<sup>i</sup>, Maine, legalized adult use marijuana for adults over 21. Gardiner Area Thrives is a coalition of diverse stakeholders working to reduce youth substance use and its harmful effects in Gardiner, Randolph, Pittston and West Gardiner. After alcohol, Marijuana is the most commonly used drug among Gardiner area youth, with 25% of Gardiner High School Students report using marijuana in the past 30 days, 72% High School Students and 45% of Middle School Students report that there is no risk in using marijuana<sup>ii</sup>. Gardiner Area Thrives prevention work is shaped by the following principles:

1. Marijuana is illegal for youth under 21 years old<sup>iii</sup>
2. Marijuana is harmful and addictive for underage users<sup>iv</sup>
3. Marijuana leads to negative health consequences for underage users<sup>v</sup>
4. Marijuana use leads to other drug or alcohol use<sup>vi</sup>

### Action Statements:

1. Educate youth, parents, schools and communities on the negative effects of youth marijuana use.
  - o Ensure that education strategies are effective and culturally relevant.
2. Reduce promotion of marijuana to minors
  - o Restrict youth friendly products and marketing to youth
3. Reduce underage access to marijuana
  - o **60%** of High School Students believe that Marijuana is Easy to get (MIYHS 2019)
  - o **17%** of Middle School Students believe that Marijuana is *Easy to get* (MIYHS 2019)
  - o **Reduce retail availability through price, density, hours of sales, and retailer training**
  - o Reduce youth access to marijuana from social sources (i.e. family and friends)
4. Ensure fair and appropriate consequences for underage marijuana users and enabling adults
  - o Implement effective minor in possession strategy
  - o Develop appropriate and consistent school policies regarding marijuana use
  - o Develop consistent and visible consequences for public smoking and providing to minors

**NOTE:** New data from the Colorado Healthy kids survey shows notable increases in use of highly concentrated cannabis forms such as a **doubling in vaping** and **quintupling of dabbing** between 2015 and 2019, these products will be available in Adult Use Stores. In 2019, **20.6%** of youth said they use marijuana compared to **19.4%** in 2017. More youth are now **vaping marijuana** -- **10.6%** in 2019 compared to **5.1%** in 2015. **Dabbing rose from 4.3% in 2015 to 20.4% in 2019. (there is no potency cap for THC)**<sup>vii</sup>

<sup>i</sup> Maine Legalized Marijuana: <https://legislature.maine.gov/9419>

<sup>ii</sup> MIYHS 2019 Data

<sup>iii</sup> Title 28-B: ADULT USE MARIJUANA, Chapter 1: MARIJUANA LEGALIZATION ACT; <https://legislature.maine.gov/statutes/28-B/title28-Bsec108.html>

<sup>iv</sup> Cannabis: the Current State of Affairs <https://www.cadca.org/news/new-practical-theorist-available>

<sup>v</sup> Marijuana's effect on teen brain development <https://teens.drugabuse.gov/drug-facts/marijuana>

<sup>vi</sup> Is Marijuana a gateway drug <https://www.drugabuse.gov/publications/research-reports/marijuana/marijuana-gateway-drug>

<sup>vii</sup> <https://www.colorado.gov/pacific/cdphe/news/cdphe-releases-latest-healthy-kids-colorado-survey-data>



## Christine Landes

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**From:** Patricia Hart <pat@hartconsultinginc.com>  
**Sent:** Wednesday, August 5, 2020 4:43 PM  
**To:** CityCouncil; Christine Landes; Terry Berry (tlbreb@aol.com); Amy Rees; Colin Frey; MarcRines (personal); Maryann White; Tim Cusick; J Ault; Kelly Gooldrup  
**Subject:** Fwd: Supporting Gardiner Area Thrives Underage Marijuana Use Positions Statement

Additional input on marijuana from the GAHS School Nurse

----- Forwarded message -----

**From:** **Nora Diversi** <[ndiversi@msad11.org](mailto:ndiversi@msad11.org)>  
**Date:** Wed, Aug 5, 2020 at 12:09 PM  
**Subject:** Supporting Gardiner Area Thrives Underage Marijuana Use Positions Statement  
**To:** <[pat@hartconsultinginc.com](mailto:pat@hartconsultinginc.com)>

Good Morning,

I am writing to share my support of Gardiner Area Thrives Underage Marijuana Use Positions Statement. As a parent of both a high school student and middle school student and the nurse at Gardiner Area High School, I have a vested interest in the effects of licensed marijuana establishments have on our community. I believe that increased availability and attitudes of normalizing marijuana use have negatively affected youth in our area. Marijuana use is illegal for our students and I have seen an increase in both use and possession. There have been devastating consequences for some of our local students. Again, I support the position of Gardiner Area Thrives Underage Marijuana Use Positions Statement and I will continue to actively participate in their action statements.

Please let me know if there is anything else I can do. Thank you,  
Nora Diversi

*Nora Diversi RN,BS  
Gardiner Area High School  
582-3150*

--

Patricia Hart, MS, CPH  
Hart Consulting, Inc.  
P.O. Box 62  
Gardiner ME 04345  
[pat@hartconsultinginc.com](mailto:pat@hartconsultinginc.com)  
m.207 462-3819

## Christine Landes

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**From:** Patricia Hart  
**Sent:** Tuesday, September 1, 2020 10:53 AM  
**To:** Christine Landes; CityCouncil  
**Subject:** Fw: [Gardiner ME] Marijuana (Sent by Barbara Estabrook, bnestabrook@gmail.com)

For the meeting record, thank you

---

**From:** cmsmailer@civicplus.com <cmsmailer@civicplus.com> on behalf of Contact form at Gardiner ME <cmsmailer@civicplus.com>  
**Sent:** Tuesday, September 1, 2020 8:20 AM  
**To:** Patricia Hart  
**Subject:** [Gardiner ME] Marijuana (Sent by Barbara Estabrook, bnestabrook@gmail.com)

Hello phart,

Barbara Estabrook (bnestabrook@gmail.com) has sent you a message via your contact form (<https://www.gardinermaine.com/user/70/contact>) at Gardiner ME.

If you don't want to receive such e-mails, you can change your settings at <https://www.gardinermaine.com/user/70/edit>.

Message:

Hi Pat,  
I know that I have sent you something before on this topic. No more marijuana. The citizens voted not to have any, but between the city, planning board and the council we are growing in number of stores and grow sites. Recreational drugs are big health issue and the city should not be condoning it. I realize medical marijuana has its benefits but recreational does not. So if the council thinks we need more stores, etc. then make them pay for the benefit of operating here. Permits should be more. Make this beneficial to the citizens by increasing fees then you can lower our city taxes, which are way too high.  
Barbara Estabrook

Re: Moratorium on Marijuana

Dear Mayor Hart and City Councilors:

Please forgive my late letter requesting a moratorium on marijuana sales in Gardiner. Life got in the way.

As Chair of the Ordinance Review Committee (ORC), Chair of the Planning Board, Member of the Comprehensive Plan Committee and a resident of Gardiner, I am asking for a moratorium on adding more marijuana shops. I would appreciate the opportunity as Chair of the ORC to see if we can review the ordinance regarding:

The zones where retail shops are permitted;

The distance between retail shops;

Where retail shops should not be located (thinking of where children congregate);

The number of shops within the City of Gardiner;

and whatever other considerations arise as we review the issue.

I think I have reviewed 7 applications in the last 2 months with more to come I am sure. I am not sure this is the what the City of Gardiner expected. This explosion in growth causes me concern. I would appreciate the opportunity to revisit the Ordinances with the assistance of our committee members, our Planner Mark Eyerman, the residents of Gardiner, the Mayor and City Council.

Thank you.

Sincerely,

Debby Willis

Title 30-A: MUNICIPALITIES AND COUNTIES  
**Part 2: MUNICIPALITIES**  
 Subpart 6-A: PLANNING AND LAND USE REGULATION  
**Chapter 187: PLANNING AND LAND USE REGULATION**  
 Subchapter 3: LAND USE REGULATION

## §4356. Moratoria

Any moratorium adopted by a municipality on the processing or issuance of development permits or licenses must meet the following requirements. [PL 1989, c. 104, Pt. A, §45 (NEW); PL 1989, c. 104, Pt. C, §10 (NEW).]

1. Necessity. The moratorium must be needed:

A. To prevent a shortage or an overburden of public facilities that would otherwise occur during the effective period of the moratorium or that is reasonably foreseeable as a result of any proposed or anticipated development; or [PL 1989, c. 104, Pt. A, §45 (NEW); PL 1989, c. 104, Pt. C, §10 (NEW).]

B. Because the application of existing comprehensive plans, land use ordinances or regulations or other applicable laws, if any, is inadequate to prevent serious public harm from residential, commercial or industrial development in the affected geographic area. [PL 1989, c. 104, Pt. A, §45 (NEW); PL 1989, c. 104, Pt. C, §10 (NEW).]

[PL 1989, c. 104, Pt. A, §45 (NEW); PL 1989, c. 104, Pt. C, §10 (NEW).]

2. Definite term. The moratorium must be of a definite term of not more than 180 days. The moratorium may be extended for additional 180-day periods if the municipality adopting the moratorium finds that:

A. The problem giving rise to the need for the moratorium still exists; and [PL 1989, c. 104, Pt. A, §45 (NEW); PL 1989, c. 104, Pt. C, §10 (NEW).]

B. Reasonable progress is being made to alleviate the problem giving rise to the need for the moratorium. [PL 1989, c. 104, Pt. A, §45 (NEW); PL 1989, c. 104, Pt. C, §10 (NEW).]

[PL 1989, c. 104, Pt. A, §45 (NEW); PL 1989, c. 104, Pt. C, §10 (NEW).]

3. Extension by selectmen. In municipalities where the municipal legislative body is the town meeting, the selectmen may extend the moratorium in compliance with subsection 2 after notice and hearing.

[PL 1989, c. 104, Pt. A, §45 (NEW); PL 1989, c. 104, Pt. C, §10 (NEW).]

### SECTION HISTORY

PL 1989, c. 104, §§A45,C10 (NEW).

The Revisor's Office cannot provide legal advice or interpretation of Maine law to the public.  
 If you need legal advice, please consult a qualified attorney.

## **Moratoriums on Marijuana**

(*Maine Townsman*, Legal Notes, January 2017)

As we noted here last month, Maine's new "recreational" marijuana law will, whenever it takes effect, legalize the personal use, possession and cultivation of marijuana by persons at least 21 years of age and the operation of "retail marijuana establishments," including retail stores, cultivation, manufacturing and testing facilities, and social clubs (see "Legal Marijuana & Municipalities," *Maine Townsman*, Legal Notes, December 2016).

Many municipalities have responded to the new law by either enacting a moratorium on retail marijuana establishments or at least considering one. We'd like to take this opportunity to clear up some of the apparent misconceptions now circulating about moratoriums on marijuana.

To begin, a moratorium is an ordinance, and as such it must be enacted by the municipal legislative body (town meeting or town or city council). The municipal officers (selectmen or councilors) have no authority to adopt a moratorium – not even an interim one – unless they are also the municipal legislative body.

But a moratorium is not a permanent ordinance. Instead it temporarily defers land use activities until a more permanent ordinance can be prepared and enacted. By law a moratorium is limited to 180 days, subject to additional 180-day extensions if the problem still exists and reasonable progress is being made to resolve it. (Municipal officers do have authority to extend moratoriums.)

Also, a moratorium on retail marijuana establishments does not require a comprehensive plan or a zoning ordinance. It merely prohibits these uses from being permitted or operated for the duration of the moratorium.

Finally, since a moratorium is not a zoning ordinance, neither a planning board public hearing nor any special notices are required, as they are for zoning ordinances under State law. (A public hearing before the municipal officers is required, though, if enactment will be by secret ballot referendum.)

For a sample moratorium on retail marijuana establishments, see: <https://goo.gl/louCjG>

For more on moratoriums generally, see our "Information Packet" on the subject, available free to members at [www.memun.org](http://www.memun.org). (By R.P.F.)

# Legal Marijuana & Municipalities

**December, 2016**

Last month Maine voters narrowly approved a ballot measure legalizing the personal use, possession and cultivation of marijuana by persons 21 years of age and older and the operation of retail marijuana stores, marijuana cultivation, manufacturing and testing facilities, and marijuana social clubs for on-premises sale and consumption.

Barring other developments (for instance, a recount resulting in reversal of the vote), the new law will take effect either 30 days after the Governor proclaims the results of the vote or, if additional funds are required to implement the new law (as appears likely), 45 days after the next regular session of the Legislature convenes. In any event, the effective date of the new law will almost certainly be no earlier than sometime in January 2017, but it could be considerably later depending on a number of as-yet-unknowns.

As of the effective date – whenever it may be – it will be legal for adults to use, possess and cultivate “recreational” amounts of marijuana. However, retail marijuana stores and social clubs and commercial-scale cultivation, manufacturing and testing facilities will require annual State licenses under the new law. And the Department of Agriculture, Conservation and Forestry has up to nine months to adopt rules for licensing and operation of these establishments. So as a practical matter they will not be able to obtain licenses or operate legally until at least late 2017.

Under the new law, all required State licenses apparently require local approval as well, though it is not yet clear who on the local level decides or on what basis. Municipalities are also authorized, by ordinance, to regulate the number, location and operation of retail marijuana stores, marijuana cultivation, manufacturing and testing facilities, and marijuana social clubs, and to impose a separate local licensing requirement. In the alternative, municipalities may, by ordinance, entirely prohibit any or all of these establishments.

For municipalities that may want to allow but regulate retail marijuana stores, marijuana cultivation, manufacturing and testing facilities, and marijuana social clubs, it will be difficult to calculate how best to do so until after final rulemaking by the department and perhaps corrective or at least clarifying legislation. This will all probably take many months. To prevent unwanted developments in the meantime, we recommend adopting a moratorium ordinance. For a sample, download attachment 1 below.

For general information and advice on moratorium ordinances, see our “Information Packet” on the subject, available free to members at [www.memun.org](http://www.memun.org).

For municipalities that want to prohibit retail marijuana stores, marijuana cultivation, manufacturing and testing facilities, and marijuana social clubs entirely, there is no need to wait for rulemaking or more legislation. An ordinance prohibiting these establishments can be enacted any time (but probably

the sooner the better) before State licensing begins, probably in late 2017. For a sample, download attachment 2 below.

For more on the legal as well as the practical implications of the new law, be sure and watch for two full-length articles planned for the February 2017 issue of the Maine Townsman.

Also, MMA is sponsoring a workshop on the new law on Feb. 28, 2017, in Freeport. Presenters will be attorneys from the Portland law firm of Drummond Woodsum. Watch for details and registration information on our website ([www.memun.org](http://www.memun.org)). (By R.P.F.)

**Attachment 1:**

[https://www.memun.org/Documents.aspx?Command=Core\\_Download&EntryId=10137](https://www.memun.org/Documents.aspx?Command=Core_Download&EntryId=10137)

**Attachment 2:**

[https://www.memun.org/Documents.aspx?Command=Core\\_Download&EntryId=10138](https://www.memun.org/Documents.aspx?Command=Core_Download&EntryId=10138)

Re: Moratorium on Marijuana

Dear Mayor Hart and City Councilors:

Please forgive my late letter requesting a moratorium on marijuana sales in Gardiner. Life got in the way.

As Chair of the Ordinance Review Committee (ORC), Chair of the Planning Board, Member of the Comprehensive Plan Committee and a resident of Gardiner, I am asking for a moratorium on adding more marijuana shops. I would appreciate the opportunity as Chair of the ORC to see if we can review the ordinance regarding:

The zones where retail shops are permitted;

The distance between retail shops;

Where retail shops should not be located (thinking of where children congregate);

The number of shops within the City of Gardiner;

and whatever other considerations arise as we review the issue.

I think I have reviewed 7 applications in the last 2 months with more to come I am sure. I am not sure this is the what the City of Gardiner expected. This explosion in growth causes me concern. I would appreciate the opportunity to revisit the Ordinances with the assistance of our committee members, our Planner Mark Eyerman, the residents of Gardiner, the Mayor and City Council.

Thank you.

Sincerely,

Debby Willis



City of Gardiner, 6 Church Street, Gardiner, ME 04345

Re: Permitting Recreational Marijuana Retailers in Gardiner

September 2, 2020

Dear Mayor Hart, City Manager Landes, and City Council Members,

I'm writing to express my concerns for the permitting of marijuana shops in Gardiner. My husband and I have lived in Gardiner for 19 years, and are raising our two children here (one in 5<sup>th</sup> grade at Riverview Community School and one entering his freshman year at GAHS). When we moved to Gardiner we saw great potential in this community and were excited to be a part of it. The downtown in particular has been through quite a transformation over these past two decades. I am so proud of the great progress made to bring in new businesses, foster a thriving downtown, and include the community in the process.

I would like to start by saying I am not against including recreational marijuana retail stores in Gardiner. Although I am a believer in medicinal use, I am personally not in favor of recreational use of marijuana. I believe it sends a negative and dangerous message, especially to our youth, when we normalize the use of a medical substance for recreational purposes. That said, I recognize the citizens of Maine voted to make recreational marijuana legal. It is my strong belief that every measure should be taken to make sure products, especially "edibles" are not marketed to children. Products such as candy-like edibles (i.e. gummy bears) should not be permitted and thoughtful placement of these shops (i.e. locations that are NOT near spaces where children might be present) should be taken into consideration. I believe the economic sustainability of Gardiner hinges on thoughtful planning which includes businesses that appeal to a variety of people and maintain the "character of our community". To quote our 2014 Comprehensive Plan, describing the Community Vision from the Heart & Soul project: "People do more and spend more in Gardiner. But our growth is done thoughtfully – it maintains the character of our community while creating new opportunities." Additionally, the vision for "Family Friendliness" within the City of Gardiner is one that would create opportunities for families to take advantage of a safe walking environment and stores, restaurants, and services within walking distance downtown. A vibrant business community downtown should not only be walkable, but should also include businesses that provide services for more than the adult, minority of the population.

There are already several marijuana businesses in Gardiner. Several of the marijuana caregiver establishments will transition to sell adult use marijuana once the state gives the green light this Fall. The majority of the local population has already been excluded from enjoying one of Gardiner's "unique physical assets", the old Train Station. It would be a great error if the City did not treat the permitting of adult use marijuana facilities with more forethought and consideration than "just letting the market work itself out". It may be true that not all marijuana establishments that open will remain in Gardiner, but the opening and closing of businesses, particularly downtown, hurts the rest of the business community and the City of Gardiner in return. There should be more strategy deployed for the sustainability of our business economy in Gardiner, and that includes limiting too much of any particular type of business. I would not like to see a dozen hair salons in Gardiner, or coffee shops, or a bar in every other storefront. Diversity is important. It will bring more people to our downtown, will attract more visitors to our City, and will foster the "growing, prosperous community, strong local economy, sense of community, and family friendliness" that is the "heart and soul" of Gardiner.

Please limit the number of permits given out for marijuana facilities. Please restrict where they can be located in our City. Please provide an opportunity for the community to weigh in on this decision.

Thank you for your public service to our City, and thank you for your consideration.

Sincerely,

Toni Pied

20 Cherry Street, Gardiner  
[tpied@myfairpoint.net](mailto:tpied@myfairpoint.net)  
(207) 512-2588