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Cannabis Use and Oral Health in a National Cohort of Adults

Benjamin W. Chaffee, DDS, MPH, PhD

ABSTRACT

Background: Cannabis use is common and increasing among adults. Evidence connects cannabis use to poor periodontal health, but few prospective studies exist of adults in the United States.

Methods: This investigation examined associations between cannabis use and self-reported adverse oral health conditions among participants (N = 18,872) in the Population Assessment of Tobacco and Health (PATH) Study, a nationally representative cohort. Survey-weighted regression modeling estimated associations between cannabis use and seven self-reported measures of oral health status, adjusted for tobacco use and other disease risk factors.

Results: Reporting past-30-days cannabis use in any of PATH Waves 1–3 was positively and statistically significantly associated at Wave 4 with multiple periodontal disease sequalae and with self-rated fair or poor overall oral health (adjusted odds ratio versus never-users: 1.75; 95% confidence interval: 1.52, 2.01).

Conclusions: These findings provide further evidence that cannabis use is an independent risk factor for poor oral health, although study limitations (self-reported outcomes, limited information on cannabis use frequency and modality) must be considered.

Practical implications: Dental professionals should engage patients in clear, nonjudgmental dialogue about cannabis use to address oral health risks and avoid potential patient safety issues in care delivery. General recommendations for addressing cannabis use in dental practice are presented.

Key words: Cannabis, marijuana, oral health, dental practice

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Cannabis is complex in its chemical composition, consisting of hundreds of compounds and over 60 cannabinoids, the most well-known of which, Δ9-tetrahydrocannabinol (THC), is strongly psychoactive.[1] Cannabis is complex sociopolitically, being classified by the U.S. federal government as a schedule I drug without accepted medical use but regulated in more than 30 states as a medical product and/or legal recreational product for adults.[2] In this publication, the term "cannabis" is used generally to refer to herbal cannabis, marijuana, hemp, cannabinoid-based products and other related substances, whether used with medical or recreational intentions; however, those distinctions merit attention in considering the overall health and societal implications of cannabis use and regulation.[3]

A number of studies have shown associations between cannabis use and clinical measures of periodontal disease.

As a recreational drug, cannabis is the most used worldwide after alcohol and tobacco,[4] and use is increasing. California voters approved Proposition 215 in 1996, becoming the first U.S. state to permit cannabis sales for medical purposes.[5] Twenty years later, passage of Proposition 64 allowed for legal recreational cannabis sales statewide.[6] Nationally, 35% of 12th grade students reported using cannabis within the past year,[7] matching the reported prevalence among young adults aged 18–26.[8] Use among older adults is less common (13% past-year use in 2018) but increasing,[8] particularly in states allowing some form of legal sales.[2,9]

Cannabis use has several known health effects. The National Academies of Sciences, Engineering and Medicine concluded that existing evidence is at least substantial that cannabis and cannabinoids are effective in managing chronic pain, nausea and vomiting associated with chemotherapy and muscle spasticity associated with multiple sclerosis.[10] However, cannabis smoke shares numerous chemical constituents with tobacco smoke[11] and has been associated with adverse cardiovascular[12] and respiratory outcomes.[13]

A number of studies have shown associations between cannabis use and clinical measures of periodontal disease.[14–16] Many of the existing studies have been cross-sectional in design and/or focus on adolescence and earlier adulthood, limiting the evidence base. The present investigation features prospective data on cannabis use behaviors and self-reported oral conditions from a large nationally representative cohort of U.S. adults. This publication has two objectives:

- Assess the associations between cannabis use and self-reported oral health conditions in a national cohort.
- Describe several key implications of patient cannabis use for dental practice.

Methods

Study Data and Design

This study draws data from the Population Assessment of Tobacco and Health (PATH) Study, a prospective cohort study of U.S. youth and adults,

described elsewhere.[17] PATH features an area-probability, four-stage stratified design with oversampling for young adults, tobacco users and African Americans to allow more precise statistical inference in those subgroups. Through sample weighting, PATH findings can be generalized as nationally representative of the U.S. noninstitutionalized civilian population. PATH participants are invited annually to complete a computer-assisted, in-home questionnaire that includes items related to their use of tobacco products and health status, including oral health. The PATH Study is ongoing; to date, fully deidentified public use datafiles have been made available online for four annual waves of adult participants (age ≥ 18) from Wave 1 (data collected September 2013 to December 2014) to Wave 4 (December 2016 to January 2018). The PATH Study gained an NIH certificate of confidentiality and ethical approval from the Westat Institutional Review Board. Adult participants provided informed consent and received $35 for each wave of participation. Adult PATH oral health data have been featured in several previous publications.[18–20] The present longitudinal analysis compares adverse oral health outcomes reported at Wave 4 according to patterns of cannabis use reported at Waves 1, 2 and 3.

Study Variables

At Wave 1, adult participants were asked, "Have you ever used marijuana, hash, THC, grass, pot or weed?" and, after defining a "blunt," "Have you ever smoked part or all of a cigar, cigarillo or filtered cigar with marijuana in it?" In Waves 2 and 3, near identical questions were posed but referred to marijuana use "in the past 12 months." Participants who responded affirmatively to any of the above questions were asked, "Have you used marijuana, hash, THC, grass, pot or weed within the past 30 days?" For the present analysis, cannabis never-users were defined as participants who reported never-use at Wave 1 and no-use in the past 12 months at waves 2 and 3. Cannabis ever-users reported Wave 1 ever-use and/or past 12-month use at waves 2 and/or 3 but did not report past-30-days use at any wave. The remaining participants reported past-30-days cannabis use at ≥ 1 wave. Daily or monthly frequency and amount of cannabis use were not recorded. As an imperfect proxy for intensity of cannabis use, the category of past-30-days users was further subdivided according to how many of the three waves participants reported past-30-days cannabis use (i.e., 1, 2 or all 3 waves).

The present longitudinal analysis compares adverse oral health outcomes reported at Wave 4 according to patterns of cannabis use reported at Waves 1, 2 and 3.

Analysis included seven measures of oral health assessed at Wave 4. All participants were asked, "Overall, how would you rate the health of your teeth and gums?" — specified in this analysis as fair or poor versus good, very good or excellent. All participants were also asked, "In the past 12 months, how many of your permanent teeth have been removed because of tooth decay or gum disease?" (later specified as ≥ 1 versus none), "In the past 12 months, have you observed any bleeding after brushing or flossing or due to other conditions in your mouth?" and "In the past 12 months, have you ever had any teeth become loose on their own, without an injury?" Additionally, participants who had reported visiting a dentist in the past 12 months were asked, "In the past 12 months, have you been told by a dentist, hygienist or other health professional that you lost bone around your teeth?," "In the past 12 months, have you been told by a dentist, hygienist or other health professional that you have gum disease?" and "In the past 12 months, have you been told by a doctor, dentist or other health professional that you have precancerous oral lesions?"

Covariables were participant characteristics plausibly associated with cannabis use and also potential risk factors for poor oral health in three categories: sociodemographic variables, health variables and substance-use variables. Included sociodemographic variables were age, sex, race/ethnicity, household annual income and educational attainment. Health variables were a lifetime history of diabetes, body mass index, having "your teeth cleaned by a dentist, hygienist or other health professional" in the past 12 months and weekly frequency of interdental cleaning (flossing) reported at Wave 3. Substance-use variables were Wave 3-past-30-days use of alcohol, cigarette smoking (never, former, light: 1–9 cigarettes/day, heavy: ≥ 10 cigarettes/day) and current use ("some days" or "every day") of electronic cigarettes (any type), noncigarette combustible tobacco (cigars, pipes or hookah) or smokeless tobacco (moist snuff, chewing tobacco or snus). The PATH Survey questionnaires are publicly available.[21]

Statistical Analysis

Included in this analysis were PATH Study adults who participated in all four

waves, had a longitudinal survey weight, had nonmissing cannabis use information at Waves 1–3 and reported their status for ≥ one of the seven oral health outcomes at Wave 4 (N = 18,872). Separate survey-weighted multivariable logistic regression models were fitted for cannabis use at Waves 1–3 (independent variable) and each of the seven Wave 4 oral health conditions (dependent variable), with adjustment covariables included as specified in **TABLE 1**. Additionally, for each oral health condition, two models were fitted: One specified cannabis use in three categories (never, ever and any past-30-days use); the other featured five use categories (never, ever and past-30-days use at one, two or all three of Waves 1–3). Missing covariable values (1.1% of covariable data) were multiply imputed (15 iterations) using the mi command suite in Stata 16.1. Adjusted odds ratios were considered statistically significant if 95% confidence intervals excluded the null value (i.e., odds ratio = 1).

Results

Cannabis ever-use was common among participants. The prevalence of having ever used cannabis, inclusive of blunts, was nearly 40%, equaling the prevalence of ever cigarette smoking (**TABLE 1**). Thirteen percent of participants reported past-30-days cannabis use in at least one of PATH Waves 1–3, including 5% who reported past-30-days use at all three waves. Among factors associated with cannabis use were current light or heavy cigarette smoking (46% smoking prevalence among any-wave, past-30-days cannabis users versus 9% among cannabis never-users), socioeconomic position (23% prevalence of holding a college degree among any-wave past-30-days cannabis users versus 32% among cannabis never-users) and age (30% prevalence of any-wave, past-30-days cannabis users among participants aged 18 to 24 versus 2% among participants aged 65 or older). Overall, the population characteristics of the analytic sample were broadly representative of the U.S. population (**TABLE 1**).

Of the oral health outcomes included in this analysis, the most commonly reported conditions at Wave 4 were bleeding after brushing or flossing (26% prevalence) and fair/poor self-rated oral health (20%). Among all participants, the next most common conditions were having a tooth extracted (11%) and loose teeth (5%). Among participants who had seen a dentist in the previous 12 months, being informed of bone loss around teeth (8%) and gum disease (7%) were more common than being informed of a precancerous oral lesion (< 1%).

Thirteen percent of participants reported past-30-days cannabis use in at least one of PATH Waves 1–3.

Past-30-days cannabis use in any of Waves 1–3 was positively and statistically significantly associated at Wave 4 with six of the seven adverse oral health conditions included in the analysis (**TABLE 2**). Precancerous oral lesion was the only outcome not statistically significantly associated with cannabis use, but the direction of the association was also positive, and the small number of events limited statistical power. The associations with self-rated oral health, gum bleeding, loose teeth and precancerous lesions were numerically strongest among participants who reported past-30-days cannabis use in all three of Waves 1–3, suggesting a stronger association with greater cannabis use intensity (**TABLE 2**).

Discussion

In this nationally representative population, reported cannabis use was positively and prospectively associated with multiple measures of poor oral health, including a number of conditions (gum bleeding, loose teeth, alveolar bone loss and gum disease) indicative of periodontitis. Compared to participants who had never used cannabis, those who consistently reported recent cannabis use over a three-year period had nearly double the odds of subsequently reporting poor or fair overall oral health, gum bleeding and loose teeth, including after statistical adjustment for sociodemographic, socioeconomic and behavioral risk factors such as tobacco smoking. For dental practice, these results suggest that clinicians can expect a higher prevalence of poor oral health among cannabis-using patients and should consider cannabis use alongside tobacco use as modifiable risk factors central to managing oral health and key topics on which to advise patients.

The associations identified in the present analysis are consistent with several findings reported previously. In a national cross-sectional study of U.S. adults, frequent cannabis use was associated with more deep pockets and greater clinical attachment loss compared to nonuse.[15] Similarly, frequent cannabis use was associated with severe periodontitis among adults in Puerto Rico,[16] but an association was not observed with clinical attachment loss among adolescents in Chile.[22] In a prospective investigation in New Zealand, cannabis use during adolescence and young adulthood was associated with worsening periodontal

TABLE 1

Participant Characteristics

Characteristic	N	Weighted Percent
Cannabis use		
Never	8,699	60.3
Ever (Not past 30 days)[1]	5,858	27.1
Past 30 days (any wave)[2]	4,315	12.5
1 wave[3]	1,440	4.4
2 waves[3]	1,248	3.6
3 waves[3]	1,627	4.5
Age		
18–24 years	3,590	9.2
25–34 years	4,655	19.2
35–44 years	3,168	17.3
45–54 years	3,057	18.3
55–64 years	2,544	17.9
≥ 65 years	1,857	18.2
Sex		
Male	8,984	47.6
Female	9,873	52.4
Race/ethnicity		
Non-Hispanic white	11,314	65.5
Non-Hispanic Black	2,781	11.2
Non-Hispanic other	1,404	8.0
Hispanic/Latinx	3,331	15.3
Annual income		
< $10,000	2,685	10.0
$10,000–$24,999	3,740	17.8
$25,000–$49,999	4,243	22.9
$50,000–$99,999	4,363	28.4
≥ $100,000	2,832	20.9
Education		
Below high school	2,016	9.5
High school or GED	4,993	26.5
Some college	6,780	32.0
College degree	5,054	31.9
Diabetes history		
Never	15,877	81.8
Ever	2,974	18.2
Body mass index		
< 18.5	362	1.6
18.5–24.99	5,991	31.8
25–29.99	5,930	33.9
≥ 30	6,180	33.1

Participant Characteristics, continued

Characteristic	N	Weighted Percent
Past 12 months dental cleaning		
No	7,031	31.1
Yes	11,700	68.9
Interdental cleaning		
None	5,316	24.7
1–6 times/week	8,174	43.5
≥ 7 times/week	5,324	31.9
Alcohol use[4]		
None	7,774	44.9
Light	5,781	31.4
Moderate	3,273	15.2
Heavy	1,976	8.5
Cigarette smoking		
Never	8,560	59.3
Former	3,949	23.2
Current light	3,607	10.1
Current heavy	2,623	7.4
E-cigarette use		
Not currently	17,762	97.0
Currently	1,077	3.0
Other combustible use		
Not currently	17,368	93.4
Currently	1,221	6.6
Smokeless tobacco use		
Not currently	18,018	97.4
Currently	825	2.6

The analytic sample incudes Population Assessment of Tobacco and Health (PATH) Study adult (age ≥ 18) participants who were part of all four waves, had a longitudinal survey weight, had nonmissing cannabis use information at Waves 1–3 and reported their status for ≥ 1 of the seven oral health outcomes at Wave 4 (N = 18,872). Number of participants for some variables may be less than the total sample population due to missing data. Characteristics in the table were calculated as of Wave 3 and weighted using Wave 3 cross-sectional weights with balanced repeated replication.

1. Reported having ever used cannabis but reported no use in the past 30 days at PATH Waves 1, 2 and 3.
2. Participants who had reported using cannabis in the past 30 days at any of PATH Waves 1, 2 or 3.
3. Subcategories of the participants who reported past 30-day cannabis use at any of PATH Waves 1, 2 or 3, specifically, those who reported past 30-day cannabis use in exactly 1, 2 or all 3 of those waves.
4. The number of drinks categorized as none, light, moderate or heavy alcohol use differed by sex; for women, the number of drinks in the past 30 days defining these categories were 0, 1–9, 10–29, ≥ 30; for men, the categories were 0, 1–19, 20–59, ≥ 60 drinks in the past 30 days.

TABLE 2

Associations Between Cannabis Use and Self-Reported Oral Health Conditions

Oral Health Outcomes[1]

	Fair or Poor Oral Health N = 18,830		Tooth Extraction N = 18,741		Gum Bleeding N = 18,860		Loose Teeth N = 18,837	
Cannabis use category	% with outcome[2]	Adjusted OR[2,3] (95% CI)	% with outcome	Adjusted OR (95% CI)	% with outcome	Adjusted OR (95% CI)	% with outcome	Adjusted OR (95% CI)
Never	16.9	reference	11.1	reference	22.3	reference	4.2	reference
Ever (not past 30 days)[4]	21.7	1.40 (1.23, 1.60)	11.3	1.13 (0.96, 1.33)	30.0	1.37 (1.22, 1.53)	6.2	1.45 (1.16, 1.81)
Past 30 days (any wave)[5]	31.9	1.75 (1.52, 2.01)	13.6	1.20 (1.01, 1.43)	37.9	1.60 (1.42, 1.81)	9.7	1.87 (1.50, 2.34)
1 wave[6]	30.8	1.73 (1.41, 2.12)	12.7	1.12 (0.88, 1.43)	33.2	1.30 (1.09, 1.55)	9.3	1.86 (1.37, 2.52)
2 waves[6]	31.0	1.66 (1.37, 2.02)	14.8	1.34 (1.06, 1.68)	38.7	1.66 (1.39, 1.98)	9.0	1.73 (1.31, 2.30)
3 waves[6]	33.6	1.83 (1.53, 2.19)	13.5	1.18 (0.94, 1.48)	41.8	1.92 (1.64, 2.25)	10.6	2.01 (1.54, 2.62)

Oral Health Outcomes, Continued[1,7]

	Bone Loss Around Teeth N = 10,389		Gum Disease N = 10,396		Precancerous Oral Lesion N = 10,402	
Cannabis use category	% with outcome	Adjusted OR (95% CI)	% with outcome	Adjusted OR (95% CI)	% with outcome	Adjusted OR (95% CI)
Never	7.1	reference	5.9	reference	0.4	reference
Ever (not past 30 days)[4]	10.5	1.43 (1.13, 1.79)	8.4	1.38 (1.06, 1.79)	0.3	0.81 (0.36, 1.84)
Past 30 days (any wave)[5]	10.3	1.36 (1.01, 1.84)	9.2	1.41 (1.06, 1.86)	0.9	1.58 (0.75, 3.33)
1 wave[6]	9.4	1.29 (0.87, 1.91)	7.9	1.22 (0.79, 1.87)	1.0	1.42 (0.53, 3.80)
2 waves[6]	11.7	1.62 (1.01, 2.60)	11.6	1.86 (1.26, 2.76)	0.9	1.66 (0.49, 5.58)
3 waves[6]	10.1	1.24 (0.82, 1.87)	8.4	1.25 (0.87, 1.80)	0.8	1.73 (0.70, 4.28)

1. Reported at PATH Wave 4 in reference to events in the past 12 months.
2. All percentages and odds ratios survey weighted to be nationally representative using Wave 4 all-wave longitudinal weights.
3. Models adjusted for the following covariables (as specified in Table 1): age, sex, race/ethnicity, household annual income, educational attainment, diabetes (ever), body mass index, past 12 months professional tooth cleaning, interdental cleaning, alcohol use, cigarette smoking and current use of electronic cigarettes, noncigarette combustible tobacco and smokeless tobacco; missing covariable data multiply imputed.
4. Reported having ever used cannabis but reported no use in the past 30 days at PATH Waves 1, 2 and 3.
5. Participants who had reported using cannabis in the past 30 days at any of PATH Waves 1, 2 or 3.
6. Subcategories of the participants who reported past 30-day cannabis use at any of PATH Waves 1, 2 or 3; specifically, those who reported past 30-day cannabis use in exactly 1, 2 or all 3 of those waves.
7. Outcomes of bone loss, gum disease and precancerous lesions only asked of participants who reported a past 12-month dental visit at PATH Wave 4.

Abbreviations and notation: CI = confidence interval; PATH = Population Assessment of Tobacco and Health Study; OR = odds ratio; % = weighted percent.

condition over the next decade of life.[14,23] Relationships between cannabis use and oral conditions other than periodontal diseases have been less frequently studied. Xerostomia, dental caries and leukoedema have been reported as possible adverse outcomes.[24] Cannabis use has been associated with head and neck cancer in some studies.[25] However, this association has not persisted in meta-analyses,[26,27] with the caveat that most existing studies have only considered cancer risks associated with relatively low levels of cannabis use. In the present study, cannabis use was positively associated with self-reported recent experience of precancerous oral lesions, but not statistically significantly given the small number of reported events.

Tobacco use, including use of cigarettes, other combustible products and smokeless tobacco, is an unquestioned contributor to poor oral health, particularly periodontal disease.[28–30] Tobacco and cannabis products are often used in combination, such as in marijuana-filled cigars (blunts), or at different times by the same individuals[31] with potential additive health risks.[32] In this analysis, cannabis use remained associated with adverse oral health conditions after statistical adjustment for cigarette smoking and use of other tobacco products and alcohol, although the specific contributions of cannabis and tobacco use may be difficult to untangle completely. Given the potential for independent impacts of cannabis use, clinicians should ask and counsel patients specifically about each product type, avoiding ambiguous language like "do you smoke?" that could apply to either.[33] Tobacco and cannabis regulation and control policies should consider the health implications of separate and combined use.

Some key limitations of the present analysis should be considered. Cannabis-use behaviors and oral health outcomes were self-reported, which could lead to underreporting. Research suggests that self-reported oral health measures have high specificity but much lower sensitivity, resulting in undetected cases.[34] The direction of any subsequent bias in the present associations would depend on the nature of underreporting; for example, the true associations could be stronger than observed if cannabis users were more likely than nonusers to overlook adverse oral health conditions. The follow-up period from Wave 3 to Wave 4 was brief (one year); therefore, the number of adverse oral health events occurring that period was relatively small and may not reflect long-term impacts of cannabis use. Those with past history of oral health problems were not excluded from analysis; thus, events reported at Wave 4 may not be incident occurrences but instead related to chronically poor oral health, potentially driven by use of tobacco, cannabis and other behaviors in years preceding this analysis. While the set of adjustment covariables was extensive, as with any observational study, residual confounding by factors not accounted for in adjustment is possible, such as dietary behaviors or secondhand tobacco exposure.

Additionally, the available questionnaire items did not allow separation by mode of cannabis delivery. Smoked, vaped and edible cannabis products are likely to feature different risk profiles for oral health, which could not be explored in this analysis. Similarly, the frequency and amount of cannabis use in the past 30 days were not available. While this analysis presumes that reporting past-30-days cannabis use in three consecutive survey waves would correlate with heavier use, this approach is inferior to specific measures of use frequency and intensity. Finally, outcomes of cannabis dual-use together with tobacco or other nicotine products merit specific attention in future analyses.

As with tobacco, the topic of cannabis should be addressed directly and nonjudgmentally without lecturing or undue pressure to quit.

Cannabis and Dentistry: Practical Considerations

Dental professionals will regularly encounter patients who use cannabis products. In practice, dental professionals should anticipate greater prevalence of oral diseases, notably periodontal disease, among their cannabis-using patients. That alone is sufficient reason to ask all patients about cannabis and to advise those using cannabis of the oral health risks.

However, cannabis is uncommonly discussed during dental visits. In a statewide survey of California dentists and dental hygienists, only 1 in 4 reported asking patients about cannabis, in contrast to the approximately 60% who asked specifically about tobacco cigarettes.[35] While many dental professionals may be uncomfortable raising this topic, providers should assure patients of its relevance to oral health and the confidentiality of their health information.

As with tobacco, the topic of cannabis should be addressed directly and nonjudgmentally without lecturing or undue pressure to quit. In contrast to tobacco use, for which dentists and dental hygienists have a professional responsibility to encourage cessation and connect patients with evidence-based support to quit,[36] consensus practice guidelines and cessation

resources specific to cannabis are sparse. For heavy users seeking support to reduce or eliminate cannabis consumption, dental professionals can recommend resources from the Substance Abuse and Mental Health Services Administration, which includes the National Helpline (1.800.662-HELP) and an online locator to find nearby behavioral health treatment services (www.samhsa.gov/marijuana). Notably, over three-fourths of cannabis users also use tobacco products,[31] and motivation to quit tobacco use among cannabis-tobacco dual-users may be high.[37] Thus, many cannabis-using patients may be receptive to tobacco cessation support from dental providers.

Given the strong similarity between cannabis smoke and tobacco smoke,[11] it is highly plausible that cannabis smoke, like tobacco smoke, may impair postsurgical healing after common dental procedures, such as tooth extractions, implant placement and periodontal surgery. Postoperative instructions for patients, written and verbal, should include all forms of smoking, with abstaining from both tobacco and cannabis explicitly emphasized. Mentioning cannabis smoke by name is important, as some patients may associate "smoking" only with tobacco.

Dental professionals may encounter patients with dental anxiety and/or oral pain who choose to self-medicate with cannabis products in advance of a dental visit. However, patients under the influence of THC during dental care may suffer from enhanced anxiety and agitation, may lack the capacity to make health care decisions and provide informed consent and may be too impaired to drive safely to and from their visit.[24,38,39] All of these symptoms are serious threats to patient safety and treatment success. A recommendation is to create a practice policy regarding cannabis use that is clearly communicated to all patients and all members of the dental care team. Under a proactive policy, patients are informed not to arrive under the influence of psychoactive drugs, and any patients who do are identified and reappointed for a later date when they can be treated safely.[40]

THC can elevate heart rate, and this tachycardia may be more pronounced during the stress of a dental surgical procedure.[41] For the routine cannabis user, particularly in the presence of other underlying cardiovascular risks, local anesthetics containing epinephrine, if not entirely avoided, should be administered with considerable caution given the risk of a serious cardiovascular event.[42]

Conclusions

This analysis identified associations between cannabis use and multiple adverse oral health conditions, most related to periodontal disease. Results were longitudinal, from a large generalizable sample, and adjusted for multiple confounding variables, including tobacco use. While the self-reported nature of the survey measures is a clear limitation, internal consistency across reported outcomes and external consistency with prior investigations further justify that dental practitioners consider cannabis use a plausible risk factor for periodontal disease. Clear, nonjudgmental patient communication about cannabis use is recommended not only to address long-term risks to oral health but to avoid potential patient safety issues in dental practice. ■

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