

August 31, 2018

Cal/OSHA Advisory Committee
Department Of Industrial Relations
Division of Occupational Safety and Health
Attn: Amalia Neidhardt
1515 Clay Street, Suite 1901
Oakland, CA 94612

Re: Advisory committee findings and recommendations on regulations for cannabis establishments

Dear Cal/OSHA Advisory Committee Members,

Americans for Nonsmokers' Rights (ANR) has read the Cal/OSHA draft advisory committee findings and recommendations on regulations for cannabis establishments. We are very appreciative of the research and thought that has gone into developing this report with the goal of better protecting worker health.

Background

ANR is a national, public health advocacy organization established in 1976 to protect nonsmokers' from exposure to the hazards of secondhand tobacco smoke. In recent years, as tobacco products have changed and the science has grown, ANR expanded its mission to prevent nonsmokers' exposure to secondhand tobacco and marijuana smoke and from secondhand aerosol (also known as vapor) from electronic smoking devices.

ANR supports Cal/OSHA's proposal to amend *Section 5148 Prohibition of Smoking in the Workplace* by adding "cannabis or cannabis products" to the current prohibition of smoking tobacco products in enclosed spaces of places of employment, and to add that cannabis or cannabis products cannot be smoked in a location where smoking tobacco is prohibited.

We believe that marijuana should not be smoked or vaped inside workplaces, including those workplaces that are permitted to allow on-site consumption, due to the health risk posed to employees, as well as employees, patrons, and residents in any attached buildings.

Secondhand smoke from combusted marijuana contains fine particulate matter which is a form of indoor air pollution, which can be breathed deeply into the lungs and can cause lung irritation, asthma attacks, and makes respiratory infections more likely.^{1,2} Exposure to fine particulate matter can exacerbate health problems especially for people with respiratory conditions like asthma, bronchitis, or Chronic Obstructive Pulmonary Disease (COPD).^{3,4}

The current body of science shows that both tobacco and marijuana smoke have similar chemical composition and suggests that they may have harmful cardiovascular health effects, such as atherosclerosis (partially blocked arteries), heart attack, and stroke.⁵ In several peer-reviewed research studies, tobacco and marijuana smoke have both been shown to impair blood vessel function⁶ and secondhand marijuana smoke contains many of the same carcinogens and toxic chemicals as secondhand tobacco smoke, including acetaldehyde, ammonia, arsenic, benzene, cadmium, chromium, formaldehyde, hydrogen cyanide, isoprene, lead, mercury, and nickel.⁷ Lastly, THC or THC metabolites show up in blood, urine, and saliva following exposure to marijuana.⁸

In 2009, the California Office of Environmental Health Hazard Assessment added marijuana smoke to its Proposition 65 list of carcinogens and reproductive toxins, also known as the Safe Drinking Water and Toxic Enforcement Act of 1986. It reported that at least 33 individual constituents present in both marijuana smoke and tobacco smoke are Proposition 65 carcinogens.⁹

3.3.1 Employee Exposure to Secondhand Marijuana Smoke

ANR agrees with the concerns cited by TERO and Worksafe about the need to protect workers from secondhand marijuana smoke exposure, and we want to highlight the following concerns.

- 1. Marijuana smoking and vaping should not be allowed inside workplaces**, including cannabis establishments that receive a permit for on-site consumption, even if ventilation systems are required. The report states:

Cannabis industry representatives stated that some establishments should be exempt from smoking prohibitions. They asserted that some cannabis establishments are in the process of obtaining or have already obtained city permits specifically allowing on-site consumption at these establishments. The representatives listed controls that could be used to reduce exposure to secondhand marijuana smoke. Examples included HVAC systems, carbon filters, negative ion generators, and staff training.

Ventilation and air purification systems are not a solution to secondhand smoke exposure. The American Society for Heating, Refrigeration, and Air-Conditioning Engineers (ASHRAE), the standard setting body for the HVAC industry, affirms that mechanical solutions like **ventilation and other air cleaning technologies cannot control for the health hazards of secondhand smoke**. ASHRAE bases its ventilation standard (62.1) for acceptable indoor air quality on an environment that is completely free from secondhand tobacco smoke, secondhand marijuana smoke, and emissions from electronic smoking devices.¹⁰

Regulations that rely on ventilation to protect people from the health hazards of secondhand smoke do not adequately protect health, while giving employees and business owners the false impression that effective steps are being taken to address the health risk.

ANR strongly recommends that if cannabis establishments receive a permit for on-site consumption, that consumption does not include smoking or vaping in order to protect worker health. If it is determined that on-site consumption does permit smoking or vaping, then we recommend these businesses be required to be located in freestanding buildings and not in mixed-use buildings so that workers, residents, and patrons in attached businesses and residences are not exposed to secondhand smoke.

- 2. Specify that vaping marijuana and marijuana products is included in Cal/OSHA regulations**

Electronic smoking devices (ESD) are not specifically mentioned in the Cal/OSHA draft report. ANR recommends that Cal/OSHA specify in its regulations that exposure to marijuana via electronic smoking devices is an employee health concern and that the vaping of marijuana and marijuana products should be included in worksite protections.

Secondhand aerosol (also known as vapor) is exhaled by the user of electronic smoking devices, such as e-cigarettes, vape pens, e-marijuana products, and other devices that allow the vaping of THC oils. ESDs can contain nicotine-laced liquids, as well as natural or synthetic marijuana or marijuana products.

Secondhand aerosol from ESDs is not harmless water vapor. The scientific evidence indicates there are health risks associated with both ESD use and exposure to ESD secondhand aerosol. ESD aerosol is made up of a high concentration of ultrafine particles, and the particle concentration is higher than in tobacco smoke.¹¹ ESD aerosol is a source of high doses of particles being deposited in the human

respiratory system¹² and exposure to fine and ultrafine particles may exacerbate respiratory ailments like asthma, and constrict arteries which could trigger a heart attack.¹³

Many of the elements identified in ESD aerosol are known to cause respiratory distress and disease.¹⁴ ESD exposure damages lung tissues; human lung cells that are exposed to ESD aerosol and flavorings—especially cinnamon—are show increased oxidative stress and inflammatory responses.¹⁵

August 2018 research indicates that particle concentrations from dabbing and vaporizing marijuana can create levels of indoor air pollution that are hazardous to human health, in the absence of combustion.¹⁶

ESD aerosol is a new source of pollution and toxins being emitted into the environment, and these products should not be used in indoor environments in order to protect worker health.

3. Employees should not be allowed to sign a waiver or opt-out of worksite protections. The report states:

Another [cannabis industry] suggestion was made to allow employee exposure to secondhand pollution if the employee signed a waiver. However, Worksafe opposed such a worker “opt-out” as problematic. Worksafe argued that such a provision would place workers at significant risk of exposure to secondhand marijuana smoke, which would set a dangerous precedent for other industries.

ANR strongly opposes employee waivers or “opt-outs” and agrees with Worksafe that such measures put employees at risk for exposure to secondhand smoke. Every employee has a right to a safe workplace and that includes being protected from the dangers of secondhand smoke. In fact, employee waivers and other consent provisions are a longstanding tobacco industry strategy. Employees can be pressured into “consenting” to work in smoke-filled areas either voluntarily or contractually (by signing a contract as a condition of employment).

Employees should never be put in a position where they must sign away their rights and potentially provide legal immunity to employers if they get sick. Employees should never have to choose between jeopardizing their health or keeping their job.

To protect health and safety, ANR encourages Cal/OSHA to amend *Section 5148 Prohibition of Smoking in the Workplace* to **not allow marijuana smoking and vaping in workplaces** and public places where the secondhand smoke and emissions pose a health risk to workers and others in the buildings, including in workplaces that are permitted to allow on-site consumption.

Thank you for your leadership and work to promote safe and healthy workplaces in California. Please feel free to contact me at 510-841-3045 if you have any questions, comments, or feedback.

Sincerely,



Cynthia Hallett, MPH
President and CEO

Americans for Nonsmokers' Rights is a national, member-based, not-for-profit organization based in Berkeley, CA that is dedicated to helping nonsmokers breathe smokefree air since 1976.

- ¹ Hillier, FC.; et al. "Concentration and particle size distribution in smoke from marijuana cigarettes with different Δ9-tetrahydrocannabinol content." *Fundamental and Applied Toxicology*. Volume 4, Issue 3, Part 1, June 1984, Pages 451-454. <http://www.sciencedirect.com/science/article/pii/0272059084902021>
- ² "Air and Health: Particulate Matter." National Environmental Public Health Tracking Network, U. S. Environmental Protection Agency. <http://ephracking.cdc.gov/showAirHealth.action#ParticulateMatter>
- ³ Grana, R; Benowitz, N; Glantz, S. "[Background Paper on E-cigarettes](#)," Center for Tobacco Control Research and Education, University of California, San Francisco and WHO Collaborating Center on Tobacco Control. December 2013.
- ⁴ Brook, R.D.; et al. Particulate matter air pollution and cardiovascular disease: An update to the scientific statement from the American Heart Association. *Circulation*. 2010; 121: 2331-78. <https://www.ncbi.nlm.nih.gov/pubmed/20458016>
- ⁵ Springer, M.L.; Glantz, S.A." Marijuana Use and Heart Disease: Potential Effects of Public Exposure to Smoke," University of California at San Francisco. April 13, 2015. <https://tobacco.ucsf.edu/sites/tobacco.ucsf.edu/files/u9/MSHS%20fact%20sheet%20for%20CA%204-13-15.pdf>
- ⁶ Wang, X., et al., "Brief exposure to marijuana secondhand smoke impairs vascular endothelial function" (conference abstract). *Circulation* 2014; 130: A19538. http://circ.ahajournals.org/content/130/Suppl_2/A19538.abstract
- ⁷ Moir, D., et al., A comparison of mainstream and sidestream marijuana and tobacco cigarette smoke produced under two machine smoking conditions. *Chem Res Toxicol* 21: 494-502. (2008). <http://www.ncbi.nlm.nih.gov/pubmed/18062674>
- ⁸ Holitski, et al. Health effects of exposure to secondhand and thirdhand marijuana smoke: a systematic review, *CMAK Open*, 2017.
- ⁹ "Evidence on the Carcinogenicity of Marijuana Smoke." Reproductive and Cancer Hazard Assessment Branch, Office of Environmental Health Hazard Assessment, California Environmental Protection Agency. August 2009. http://oehha.ca.gov/prop65/hazard_ident/pdf_zip/FinalMJsSmokeHID.pdf
- ¹⁰ ANSI/ASHRAE Standard 62.1-2013, Addenda 2015 - Ventilation for Acceptable Indoor Air Quality. American Society of Heating, Refrigerating, and Air-Conditioning Engineers, Inc. https://ashrae.iwrapper.com/ViewOnline/Standard_62.1-2016
- ¹¹ Fuoco, F.C.; Buonanno, G.; Stabile, L.; Vigo, P., "[Influential parameters on particle concentration and size distribution in the mainstream of e-cigarettes](#)," *Environmental Pollution* 184: 523-529, January 2014.
- ¹² Manigrasso, M.; Buonanno, G.; Fuoco, F.C.; Stabile, L.; Avino, P., "[Aerosol deposition doses in the human respiratory tree of electronic cigarette smokers](#)," *Environmental Pollution* 196: 257-267, January 2015.
- ¹³ Grana, R; Benowitz, N; Glantz, S. "[Background Paper on E-cigarettes](#)," Center for Tobacco Control Research and Education, University of California, San Francisco and WHO Collaborating Center on Tobacco Control. December 2013.
- ¹⁴ Williams, M.; Villarreal, A.; Bozhilov, K.; Lin, S.; Talbot, P., "[Metal and silicate particles including nanoparticles are present in electronic cigarette cartomizer fluid and aerosol](#)," *PLoS ONE* 8(3): e57987, March 20, 2013.
- ¹⁵ Lerner CA, Sundar IK, Yao H, Gerloff J, Ossip DJ, McIntosh S, et al. "[Vapors Produced by Electronic Cigarettes and E-Juices with Flavorings Induce Toxicity, Oxidative Stress, and Inflammatory Response in Lung Epithelial Cells and in Mouse Lung](#)," *PLoS ONE* 10(2): e0116732, February 6, 2015.
- ¹⁶ Jaques, P, Zalay, M, Huang, A, Jee, K, Schick, SF "Measuring Aerosol Particle Emissions from Cannabis Vaporization and Dabbing", Proceedings of the 15th Meeting of the International Society for Indoor Air Quality and Climate. July 22-27, 2018. Philadelphia, PA.