

DOWNLOAD PDF ADVERSE EFFECTS OF CIGARETTE SMOKING ON THE CARDIOVASCULAR SYSTEM STANTON A. GLANTZ

Chapter 1 : Los Angeles Times - We are currently unavailable in your region

Thus, like passive cigarette smoking, the effects of e-cigarette use are nearly as big as smoking despite the lower dose of toxins. This is more evidence for the nonlinear effects of smoke/aerosol on the cardiovascular system.

Created on Thursday, 12 June The comment is based on the fact that in the letter we cited the original idea for tobacco harm reduction expressed by Michael Russell in *Secondhand Smoke Exposure and Cardiovascular Effects: Making Sense of the Evidence*. Also see Barnoya J, Glantz S. Cardiovascular effects of secondhand smoke: Response Remarkably, in order to present the cardiovascular risk of smoking, he cited a study about second-hand smoking exposure!! I would have thought that he ignores evidence showing that the cardiovascular risk of smoking is pretty linearly associated with cigarette consumption, but I am sure he is aware of the study I mention: The odds of developing myocardial infarction increased by 1. In any case, there is a question on how this argument is related to the letter sent to the WHO or to e-cigarettes and tobacco harm reduction in general. Response The same studies were again cited in the second argument, with the addition of the latest review on e-cigarettes. However, this is a direct mis-presentation of evidence, since there is not even a single study indicating that particles emitted from e-cigarettes represent a risk factor for cardiovascular disease. The review cited co-authored by the writer of the critique is again a mis-presentation of science, making an arbitrary conclusion that the evidence linking environmental pollution or cigarette smoke particles with cardiovascular disease can be applied to e-cigarettes. Safety evaluation and risk assessment of electronic cigarettes as tobacco cigarette substitutes: *Ther Adv Drug Safety* ;5: For example, the smallest-size microparticles are emitted when you boil water Ogulei et al. Analysis of indoor particle size distributions in an occupied townhouse using positive matrix factorization. Common sense, not any citation, is needed to understand that water vapor particles do not contribute to cardiovascular disease. Thus, the discussion about the size of the particles is irrelevant and scientifically flawed. Of course, the composition of the particles emitted from e-cigarettes is completely different from environmental pollution or cigarette smoke, but this is something completely ignored by the author of the critique. The studies cited by him are completely irrelevant and provide no information about e-cigarettes; mentioning e-cigarettes in parentheses is an obvious attempt to misinform by implying that such evidence exists. In fact, if we want e-cigarettes to be as effective substitutes to smoking as possible, we need to improve nicotine delivery to and absorption from the lungs. Right now, e-cigarettes are not comparable to tobacco cigarettes in this aspect Farsalinos et al. Nicotine absorption from electronic cigarette use: Connections of nicotine to cancer. *Nature Reviews Cancer* Second hand smoke stimulates tumor angiogenesis and growth. Response This argument as well as the attached references is based on nothing more than laboratory studies, mostly in cultured cells and few in animals. For example, Grando et al. Obviously, such studies are completely irrelevant to the real clinical practice. There are no clinical studies which have found elevated cancer incidence from nicotine intake. Even if such a study may be published in the future, the risk is expected to be much lower compared to smoking. That is why authorities like the MHRA encourage the long-term use of nicotine in order to quit smoking or reduce cigarette consumption. Evidence from snus use also suggests that there is no carcinogenic potential of nicotine intake in the form smokeless tobacco, with the exception of a slightly elevated risk of pancreatic cancer - still much lower compared to smoking Lee PN. Epidemiological evidence relating snus to health--an updated review based on recent publications. *Harm Reduct J* ; *J Am Coll Cardiol* ; Response The study cited in the critique evaluated the acute effects of nicotine administration on endothelial function. Indeed, they found an immediate decrease in endothelial function; however, the effects of smoking were much more intense compared to nicotine delivery alone. Moreover, this study did not determine the effects of long-term nicotine intake as smoking substitute. There are significant discrepancies between the acute and chronic effects of an intervention on endothelial function. A characteristic example is exercise. Although studies have shown that long-term exercise training is beneficial Pahkala K et al. Association of physical activity with vascular endothelial function and

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intima-media thickness. Vascular endothelial function and leisure-time physical activity in adolescents. Vitamin C prevents endothelial dysfunction induced by acute exercise in patients with intermittent claudication. Hemodynamic after-effects of acute dynamic exercise in sedentary normotensive postmenopausal women. The reason for using exercise as an example is because exercise has immediate hemodynamic changes elevation in blood pressure and heart rate, similar to nicotine intake, which may affect endothelial function measurements. In any case, it is important to know if endothelial dysfunction associated with chronic smoking is reversed or at least is not further progressing when smokers switch to e-cigarettes or other cleaner forms of nicotine. Unlike what the author of the critique implies, there is no evidence to support his arguments that there will be any harm from this approach. On the contrary, since it is rather obvious that chronic smoking impairs endothelial function by a variety of mechanisms and exposure to toxins besides nicotine Charakida M et al. Eur Heart J ; Further comments Instead of discussing about other comments mentioned in that critique such as e-cigarette marketing to and adoption by youngsters, which is simply a theoretical and fear-mongering claim rather than evidence-based statements, I find it more important to expose the basic strategy followed in the critique, which is to mis-present science, to make arbitrary conclusions about e-cigarettes based on irrelevant citations, and to characteristically avoid mentioning that the impact on health should be assessed in relation to smoking continuation. I leave it to the readers to decide whether such comments are based on ignorance or represent an effort to deliberately misinform and produce confusion, both to regulators and to smokers. The main results and maybe intentions? To discourage switching from tobacco cigarettes to e-cigarettes. To implement restrictions that will give a huge competitive advantage to tobacco cigarettes.

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Chapter 2 : Vaping's Long-Term Effects: Here's what the experts say

Vaping's damaging effect on the cardiovascular system "My current thinking is that e-cigarettes are going to cause less damage than conventional cigarettes in terms of cancer, but they're probably.

Created on Friday, 13 June They found that similar reductions in FeNO are observed after e-cigarette and tobacco cigarette use. The authors concluded that in the aspect of FeNO , e-cigarettes are not safer than tobacco cigarettes, and mentioned that this finding is indicative that lung function is affected by e-cigarette use. The conclusions of the authors are arbitrary and completely wrong. FeNO is a marker of inflammation to the lungs, most commonly used in asthmatics. However, inflammation is characterized by high levels of FeNO. Reductions in FeNO are observed in asthmatics after corticosteroid therapy, indicating that there is a response to the therapy and inflammation is reduced. Low levels are indicative of either no inflammation at all, or is a false negative finding of non-eosinophilic inflammation in patients with symptoms of respiratory disease. In any case, all participants in the study had normal FeNO levels, while a further reduction means absolutely nothing. By definition, it does not mean that there is a decline in lung function, because FeNO cannot be used as a marker of respiratory function; it just measures inflammation. Moreover, a significant problem in the statistical analysis should be mentioned. I would not expect the journal to accept such an analysis. Finally, it should be mentioned that while this study is inline with findings from Vardavas et al. Schober found elevation in FeNO levels after e-cigarette use. As we explained in a letter to the editor , it is controversial to expect that both a reduction and an elevation of any biomarker mean the same thing!! Of course, FeNO levels have nothing to do with NO production and effects on the endothelium of the arteries and on cardiovascular disease incidence, and, as mentioned above, do not indicate lung dysfunction. Anyone, making such statements , such as Stanton Glantz, is probably confused and is ignoring some basic facts. For the current study he mentions: Amazing statements for a study that did not find any drop in lung function, because they did not measure lung function. Moreover, they did not assess NO production or effects on the endothelium of blood vessels and thus the results are completely irrelevant to the cardiovascular system. Obviously, he is underestimating the intellectual abilities of regulators because he submitted his theories to the FDA as "scientific evidence". In the past Glantz was once again shouting about the adverse effects of e-cigarette use when the Schober et al. In that case he mentioned: In reality the data are completely irrelevant to his arguments. No study evaluated any cardiovascular effects and FeNO is not a marker of systemic inflammation. Still, he jumps from the respiratory to the cardiovascular system and back. Finally, he needs to decide what he considers as problem arising from e-cigarette use? Elevated or reduced FeNO? I must regretfully say that this is not science! Latest Comments.

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Chapter 3 : Heart Attack Risk Doubles for Daily E-cigarette Users

51 Farsalinos K, Tsiapras D, Kyrzopoulos S, Stefopoulos C, Spyrou A, Tsakalou M, Avramidou E, Vasilopoulou D, Romagna G, Voudris V. Immediate effects of electronic cigarette use on coronary circulation and blood carboxyhemoglobin levels: comparison with cigarette smoking.

There is a dose-response relationship for cigarette smoking and lung cancer, with no evidence of a threshold. The risks for light smokers, while lower, are still substantial. The risk of low-level smoking is greater among certain ethnic and racial populations. African Americans and Native Hawaiians who smoke no more than 10 and between 11 and 20 cigarettes per day are more susceptible to lung cancer than Caucasians, Japanese Americans, and Latinos who smoke the same amount of tobacco. When adjusting for sex and duration of smoking, the relative risk of developing lung cancer among African Americans and Native Hawaiians is nearly twice that of Caucasians despite consuming the same number of cigarettes. Consistent with this data, the incidence of lung cancer has been found to be substantially higher among African Americans, Native Hawaiians, and other Pacific Islanders when compared to Caucasians in the United States. Light smoking also results in an increased risk of gastrointestinal esophagus, stomach, pancreas cancers 32 – 34 Table 1. Other Diseases Light smoking is associated with lower respiratory tract infections, including a prolonged duration of respiratory symptoms particularly cough 35 , cataracts 40 , compromised reproductive health 36 , an increased risk for ectopic pregnancy 38 as well as placenta previa 37 , and poor bone mineral density leading to frequent ankle fractures in older women 39 Table 1. Light smokers report lower health-related quality of life than nonsmokers on all 8 dimensions of the SF health status questionnaire physical functioning, physical roles, bodily pain, general health, vitality, social functioning, emotional roles, and mental health. Specifically, standardized scores for light smokers on the SF ranged from the 43rd and 50th percentile when assessing general health, physical functioning, social functioning, and vitality, while standardized scores for the same variables among never smokers were consistently above the 50th percentile. Light smoking has also been associated with the development of physical disability following a musculoskeletal injury or disorder. Menisci are especially vulnerable because they have a limited blood supply that may be easily compromised by the physiological effects of smoking: Light smoking has an impact on frailty and survival in older adults. Among adults age 65 years and older, light smoking leads to poorer outcomes in the elderly population as measured by a frailty index, a variable that was created to assess 40 self-reported health deficits excluding symptoms that could be directly related to smoking. Overall, light smokers between the ages of 66 and 75 had a frailty index that was halfway between heavier smokers and never smokers. Higher frailty indices correlated with higher mortality rates that persisted into older age among all smokers. Among women, light smoking resulted in a 4 – 6 year median loss of life when compared to nonsmoking women. The data from these studies indicate that there are substantial risks associated with these patterns of tobacco use that warrant immediate clinical attention. To improve our understanding of the risks associated with light and intermittent smoking, more large-scale cohort studies explicitly comparing heavy smokers, light smokers, intermittent smokers, and nonsmokers are needed to better identify outcomes among these patterns of tobacco use. The published cohort studies lack a specific focus on intermittent smoking and tend to under-represent minority populations where this type of tobacco use is most prevalent. The long-term risks of light and intermittent tobacco use for important medical conditions such as obstructive lung disease, cerebrovascular disease, peripheral vascular disease and breast cancer have not been discussed in this review due to the lack of available evidence. In addition to specific disease outcomes, research is needed to examine if chronic low-level or occasional tobacco use causes a poorer quality of life or leads to a greater frequency of health related symptoms. The risks associated with passive smoking 50 , 51 also support the conclusion that there are clinically important risks associated with light and intermittent smoking. Although there are differences in the composition of secondhand and mainstream cigarette smoke 50 , 51 with doses that passive smokers receive being much

lower than active smokers, the health risks associated with secondhand smoke are substantial and well documented. Passive smoking has effects on many biological mediators of cardiovascular disease that are nearly as large as active smoking, including changes in platelet activation and endothelial cell dysfunction, factors that are recognized as key mediators of cardiovascular disease. Passive smoking causes cardiovascular disease, lung cancer, head and neck cancers, obstructive lung disease COPD, asthma, vascular disease, lower respiratory tract infections 50, 51 and breast cancer in younger women. There are few studies that have examined the role of nicotine dependence among light and intermittent smokers. While there are data that indicate that these groups can abstain from tobacco use for days, even weeks without exhibiting signs of withdrawal 53, there are also studies that suggest that intermittent tobacco users, despite their low level of exposure, may experience sudden urges to smoke and difficulties with achieving cessation as a result of a physiologic addiction. The authors of another study examining the effect of intermittent, low dose exposure to nicotine on the brain suggest that this type of tobacco use may trigger up-regulation of nicotinic acetylcholine receptors, resulting in a heightened physiologic response to an occasional cigarette. The authors argue that intermittent smokers are just as vulnerable to nicotine dependence as daily smokers. Additional research is needed to address whether nicotine addiction occurs among light and intermittent smokers. Part of the responsibility in helping patients to become tobacco free rests in having established therapies to assist patients in quitting. Currently, public health guidelines 1 do not provide formal recommendations for the treatment of light and intermittent smoking, other than informing clinicians that they should advise their patients to stop. It is unclear whether pharmacotherapy has a role in the treatment of light and intermittent smoking as these tobacco users are not typically enrolled in clinical trials and questions remain regarding their level of nicotine addiction. Clinicians need to understand better what treatment options are effective to help these patients quit.

Limitations The available literature on the health effects of light and intermittent smoking is limited; for example, the risks of developing obstructive lung disease, asthma, and cerebrovascular disease have not been studied in this population. There are currently no published data on the health effects of intermittent smoking in pregnant women.

Conclusions There is a widespread belief, based in part on truth. The fact remains, however, that even stable light smoking carries substantial health risks. While a reduction in cigarette consumption can be an intermediate stage before a total stop and may increase the motivation of daily, heavier smokers without intention to quit to achieve eventual cessation 57, 58, chronic light and intermittent smoking should not be presented to patients as a healthy long term choice. Complete cessation is one of the most cost-effective interventions and provides a benefit nearly as large, if not greater, than other widely used forms of treatment for the secondary prevention of cardiovascular disease. Cessation is the only known primary therapy that can significantly reduce the risk of cancer 60 and obstructive lung disease. Light and intermittent smokers often go undetected because many of them do not view themselves as smokers and will deny their habit when asked by family, friends, and health care providers 11. Clinical screening for light and intermittent smoking should be improved. Consequently, health care providers might capture many tobacco users who otherwise may not consider themselves smokers. Once identified, clinicians should work aggressively to encourage these patients to quit smoking completely. The funding agencies played no role in the selection of the research topic or preparation of the manuscript. This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

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Contributor Information Rebecca E. Treating Tobacco Use and Dependence: Centers for Disease Control and Prevention. Cigarette Smoking among adults--United States. Morbidity and Mortality Weekly Report. Changing age-specific patterns of cigarette consumption in the United States, " Association with smoke-free homes and state-level tobacco control activity. Am J Public Health. Fagan P, Rigotti NA. Light and intermittent smoking: The road less

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traveled. Nondaily smokers should be asked and advised to quit. *Am J Prev Med*. Transitions to cigarette smoking during adolescence. *American Journal of Preventative Medicine*. An Increasingly Prevalent Pattern. *Archives of Internal Medicine*. Light and intermittent smokers: How should we define light or intermittent smoking? Progression of college-age cigarette smokers: Regular smokers, lifetime very light smokers, and reduced smokers: Smoking topography in tobacco chippers and dependent smokers. The natural history of light smokers: A population-based cohort study. Symptoms of tobacco dependence after brief intermittent use: *Arch Pediatr Adolesc Med*. Individual change amid stable smoking patterns in polydrug users over 3 years. Duration of smoking abstinence and success in quitting. *J Natl Cancer Inst*. Adult smokers who do not smoke daily. Transitions into and out of light and intermittent smoking during emerging adulthood. Nondaily smoking and alcohol use, hazardous drinking, and alcohol diagnoses among young adults: *Alcohol Clin Exp Res*. Office of Applied Studies. The Health Consequences of Smoking. Bjartveit K, Tverdal A. Health consequences of smoking 1-4 cigarettes per day. Cardiovascular mortality and exposure to airborne fine particulate matter and cigarette smoke: Rogot E, Murray JL. Smoking and causes of death among U.S. Occasional smoking increases total and cardiovascular mortality among men. Mortality in relation to smoking: Tobacco smoking and alcohol drinking as risk factors for stomach cancer: Predictors of pancreatic cancer mortality among a large cohort of United States adults. The Tecumseh study of respiratory illness. Relation of acute infections to smoking, lung function and chronic symptoms. Smoking does affect fecundity.

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Chapter 4 : cigarette smoking | The Skeptical Cardiologist

Chapter Adverse Effects of Cigarette Smoking on the Cardiovascular System, Stanton A. Glantz, Ph.D. Part IV - Vascular Toxicity.

This time, I avoided the mysterious path less traveled. He was clearly very irritated by the fact that I was not wearing a bike helmet and kept gesticulating at his helmet to indicate that this was the proper choice of head gear. There can only be two reasons for an educated person not to wear a helmet: Not wearing a bike helmet lacks the addictive element that cigarette smoking contains but otherwise I think it is a reasonable analogy. I was prepared to regularly wear one if the data supported it. For an exhaustive critique of these data see here. The writers note that this contradicts previous observational studies which have suggested a benefit from helmet wearing. If the controls are cyclists presenting with other injuries in the emergency department, then analyses are conditional on having an accident and therefore assume that wearing a helmet does not change the overall accident risk. Observational studies cannot account for confounding variables that are unmeasured. A single study has also reported that car drivers give a larger clearance to cyclists without a helmet. I have concluded that my not wearing a bike helmet is due to lack of evidence to support the health consequences of that behavior. This happens to perfectly align with my disdain for bike helmets which chafe my forehead, make my head sweat and reduce my ability to hear both charming and lethal things. Do Cigarettes Cause Death? Cigarette smokers, on the other hand, can find no serious scientist or physician who is not convinced of the danger of this lethal habit because the scientific data are overwhelming. The only possible explanation for continuing is the element of addiction combined with the pleasure obtained from smoking. Bike Helmets and Cigarette smoking Australia and New Zealand are the only countries to have mandatory helmet laws. In the US, according to helmets. Louis County, they are mandatory for children under the age of Louis municipalities Creve Couer for one they are mandatory for all are groups. To date, there is no evidence that mandatory bike helmet laws reduce head injuries so why are they being passed? On the other hand, the dangers of cigarette smoking are clear and there are no countries or states which make it illegal. To those who would shame we non helmet wearers I say: In the cycling world, the bias and influence comes from the manufacturers of bike helmets. Helmet free and loving it -ACP.

Chapter 5 : Smoking E-cigarettes daily doubles risk of heart attacks

But there's some evidence that e-cigarettes can have a substantial effect on blood vessels, and may increase people's heart attack risk in that way, Glantz said.

Chapter 6 : Stanton Glantz - Wikipedia

e-cigarettes as a gateway to cigarette smoking A national cross-sectional study of Korean adolescents based on data was the first evidence that e-cigarette use was associated with higher cigarette use in youth (77).

Chapter 7 : Health Effects of Light and Intermittent Smoking: A Review

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Chapter 8 : Effects of e-cigarette use on exhaled nitric oxide

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" The ultrafine particles that cigarettes (and e-cigarettes) deliver have substantial adverse effects on the cardiovascular system. " (reference: Institute of Medicine. Secondhand Smoke Exposure and Cardiovascular Effects: Making Sense of the Evidence.