Problems with Vaping

An overview of current scientific evidence
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Among teens:

1) **Colorado has the highest teen vaping rate** in the national epidemic. In 2013, 15% of Colorado teens had tried an e-cigarette, but the rate tripled just two years later, to 46%. In fall 2017, one in four Colorado high school students was a current vaper.[1]
2) **Teens easily get vaping products,** according to more than half of them (58.4%) in Colorado. Nearly a quarter (23.6%) of teen vapers say they usually buy their own vaping products and refills in gas stations, convenience stores, grocery stores or drug stores.[2]
3) **Teen vaping leads to cigarette smoking.** This gateway effect has been found in at least 10 studies.[3] The largest gateway effect is among teens who are at low risk of smoking until they start vaping.
4) **Allowing vaping in public tells teens it's OK and not the same as smoking.**

Among cigarette smokers:

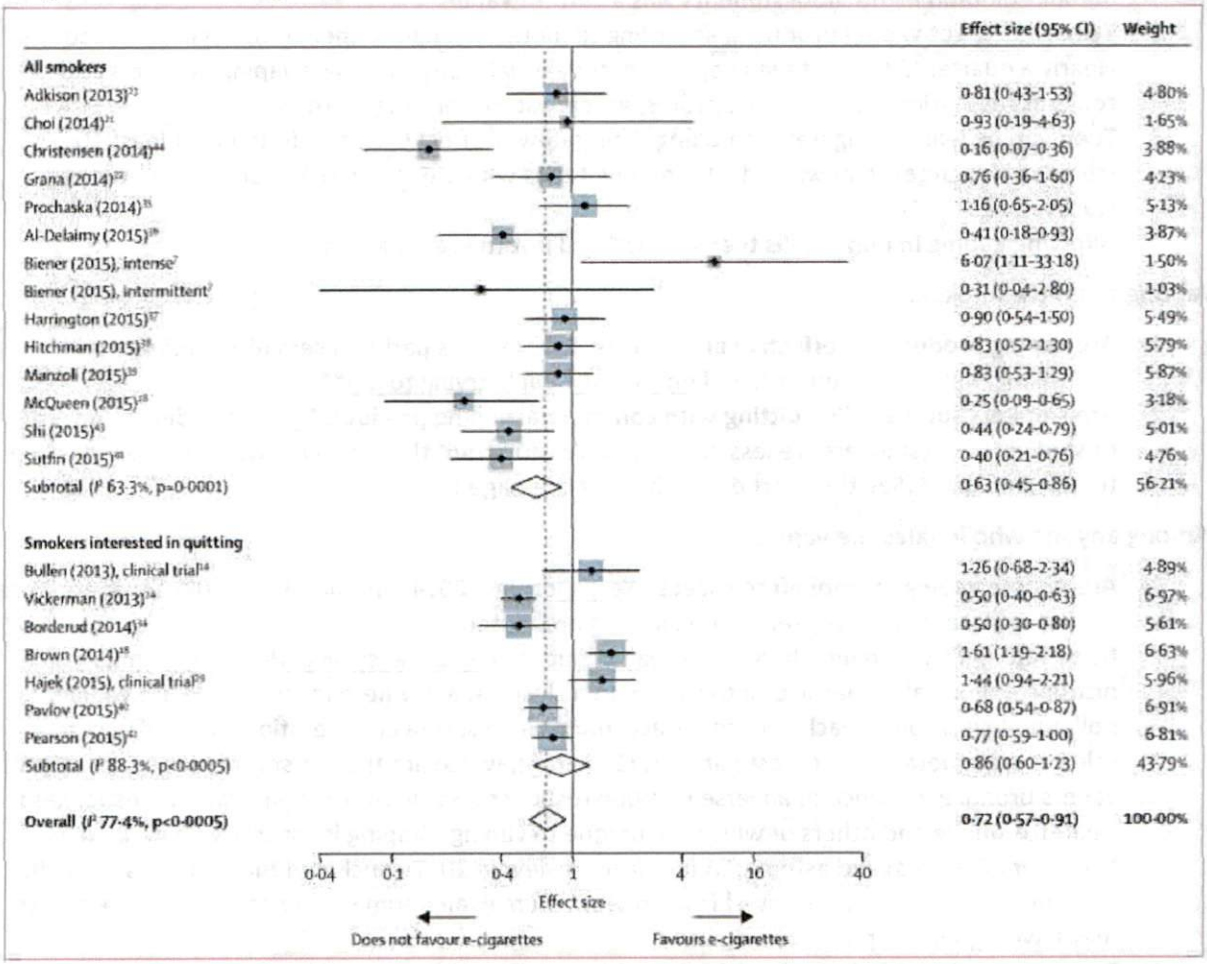
1) **Are vaping products an effective aid to cessation?** Only as part of a cessation program with counseling, behavioral support, and no smoking while trying to quit.[4]
2) **Are smokers successfully quitting with commercial vaping products?** No. According to dozens of studies, these smokers are less likely to successfully quit than smokers who vape when trying to quit smoking.[5] (See the chart on the back of this page.)

Among anyone who inhales the vapors:

1) **Are people vaping in smokefree spaces?** Yes, a lot! In a 2014 national study, 60% of vapers were vaping in places where cigarette smoking was prohibited.[6]
2) **Does vaping threaten lung health?** Probably, but the evidence is still early. Vaping emits nicotine and ultrafine particles into the air. In a closed space where many people are vaping, pollution levels could reach 5-10 times acceptable levels. Newer generation vaping devices release even more of the tiniest particles (1 micron), which are the worst for lungs.[7] The lungs of vapers produce evidence of adverse immune responses, some of which are like the responses to cigarette smoke and others of which are unique to vaping.[8] Vaping is associated with increased COPD (emphysema) and asthma.[9] A literature review in 2017 concluded that "there is a rapidly growing body of evidence derived from in vitro, animal, and human studies that e-cigarette use may have significant pulmonary toxicity."[10]
3) **Does vaping threaten heart health?** Probably, but the evidence is still early. Vaping a single e-cigarette negatively affects your arteries and blood flow as much as smoking one cigarette does.[11] These changes are associated with increased heart disease risk. Animal studies show the changes persist long-term.[12] People who regularly vape show markers of increased risk for heart attacks.[13] A recent large study found that regular vapers, compared to nonsmoking non-vapers, were nearly twice as likely to have a heart attack, and people who both smoked and vaped had five times the risk.[14] Another recent study found that vapers had nearly double the risk of stroke compared to non-vapers, adjusted for cigarette smoking.[15]
4) **Does vaping cause cancer?** This question will take years to answer, but human cell studies have found that e-cigarette vapor changes cell DNA, a possible indicator of future cancer risk. Some of the DNA changes from vaping are like the ones from cigarette smoke, and others are unique to the chemicals in vaping. Research is needed to determine whether vapor exposure contributes to human lung and bladder cancer.[16]

5) **In summary:** "The harm of E-cigarettes cannot be underestimated ... the components contained are harmful to the respiratory system and the cardiovascular system. Moreover, the levels of harmful components, which include volatile organic compounds, tobacco-specific nitrosamines, and heavy metals, in E-cigarettes are higher than those in traditional cigarettes."[17]

E-cigarettes and smoking cessation in real-world and clinical settings: a systematic review and meta-analysis.



Source: Kalkhoran S, Glantz SA. Lancet Respiratory Medicine, 2016

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