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PERSPECTIVE, OPINION, AND COMMENTARY

## What's New in Cigarette Smoking and Hypertension ?

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The use of tobacco in cigarettes is to blame for the epidemic of lung and cardiovascular diseases that prevail in the symptoms of modern diseases related to cigarette smoking. Tobacco smoking and high blood pressure are the leading causes of preventable death worldwide, respectively [1]. The world's number of tobacco users has increased due to population growth, even though the prevalence of age adjusted smoking has declined. According to Great American Smokeout, November 16, 2017, the expected number of tobacco users in the US has decreased from 45.1 million in 2005 to 36.5 million in 2017 as a result of tobacco control activities. However, as the use of tobacco products has decreased, the use of electronic cigarettes, or "e-cigarettes," has increased significantly in the US, while concerns about their potential health risks have intensified. Three factors, how they influence young people's initiation of tobacco use, how they influence adults' cessa-

tion of tobacco use, and how toxic they are in and of themselves, determine whether e-cigarettes are detrimental or advantageous to public health. If adult smokers who convert to electronic cigarettes are able to give up traditional tobacco use for good [2]. Through a variety of possible channels, vaping and tobacco use can increase blood pressure and accelerate atherothrombotic processes. Adverse effects on lipids, thrombosis, inflammation, and endothelial function are among these causes. The acute effects of tobacco smoking are associated with an overactive sympathetic nervous system, which increases heart rate, blood pressure, myocardial contractility, and myocardial oxygen consumption. Regarding the long-term consequences of tobacco smoking, such as a persistent increase in blood pressure or an increased risk of hypertension, there is conflicting information. Despite its unknown long-term effects on blood pressure, tobacco smoking increases the risk of masked hypertension, reno-



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vascular hypertension, severe hypertensive retinopathy, and arteriolar stiffness [3]. To generate an aerosol, or a blend of tiny particles in the air, electronic cigarettes (e-cigarettes) utilize heat to vaporize a liquid. Electronic cigarettes go under many names. Some words used to refer to them are electronic nicotine delivery systems (ENDS), tank systems, e-cigarettes, e-hookahs, mods, vape pens, and vapes. It is customary to refer to using an electronic cigarette as vaping [4]. The laws prohibit the manufacture, distribution, importation, and sale of electronic cigarettes. There are no restrictions on the use of electronic nicotine delivery systems (ENDS), "when used in public transportation, indoor businesses, or indoor public venues Iraq [5].

### CIGARETTES AND BLOOD PRESSURE

Electronic cigarettes, sometimes known as electronic cigarettes, are gadgets that heat a mixture of nicotine, flavourings, and propylene glycol or glycerol (glycerin) to provide users with an aerosol or vapour that contains nicotine. Early in the new millennium, a Chinese chemist named Hon Lik created e-cigarettes in their current configuration. According to research, the vapour from electronic cigarettes still contains nicotine, but it also contains fewer harmful ingredients. The use of electronic cigarettes, or "e-cigarettes," is growing in popularity, but little is known about how they will affect users' long-term health. The short-term effects of e-cigarettes on blood pressure are not entirely consistent. An analysis of data from multiple trials conducted by the National Academy of Medicine found that e-cigarettes had no effect or slightly increased systolic blood pressure [6]. However, additional research has shown that the use of nicotine-containing electronic cigarettes can cause brief elevations in diastolic blood pressure, with consequences similar to those of tobacco smoking in terms of severity. The long-term effects of e-cigarettes on blood pressure are not well understood. In a retrospective case-control study, 89 hypertensive tobacco smokers showed a significant decrease in systolic and diastolic blood pressure 12 months after switching to electronic cigarettes. Smoking EC increased heart rate and blood pressure in hypertensive patients in a statistically significant way. This effect also appears to be clinically significant, since the increase in BP persisted for a long duration (28 minutes) and EC smokers frequently inhale more than 20 times per day [7].

Given that smoking is a major cardiovascular risk factor, giving up is the most effective lifestyle modification to reduce a variety of cardiovascular disorders. The safety of using elec-

tronic cigarettes, or "e-cigarettes," is still debatable, but a growing amount of research shows the harm these devices can cause to the respiratory system, gastrointestinal tract, skin, urogenital tract, neurological and cognitive systems, and cardiovascular system [6].

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- **Ethics Approval and Consent to Participate**

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- **Consent for Publication**

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- **Availability of Data and Material**

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- **Competing Interests**

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### REFERENCES

- [1] Collaborators GRF, et al. Global, regional, and national comparative risk assessment of 79 behavioural, environmental and occupational, and metabolic risks or clusters of risks, 1990–2015: a systematic analysis for the Global Burden of Disease Study 2015. *Lancet* (London, England) 2016;388(10053):1659. [https://doi.org/10.1016/S2530-140-6736\(16\)31679-8](https://doi.org/10.1016/S2530-140-6736(16)31679-8).
- [2] MARTINS BNFL, Normando AGC, Wagner VP, Ruiz BII, Vargas PA, Lopes MA, et al. GLOBAL FREQUENCY AND EPIDEMIOLOGICAL PROFILE OF ELECTRONIC

- CIGARETTE USERS: A SYSTEMATIC REVIEW. *Oral Surgery, Oral Medicine, Oral Pathology and Oral Radiology* 2023;136(1):e34. <https://doi.org/10.1016/j.oooo.2023.03.079>.
- [3] Mohammadi L, Han DD, Xu F, Huang A, Derakhshandeh R, Rao P, et al. Chronic e-cigarette use impairs endothelial function on the physiological and cellular levels. *Arteriosclerosis, Thrombosis, and Vascular Biology* 2022;42(11):1333–1350. <https://doi.org/10.1161/ATVBAHA.121.317749>.
- [4] Keyser BM, Leverette R, Hollings M, Seymour A, Weidman RA, Bequette CJ, et al. Characterization of smoke and aerosol deliveries from combustible cigarettes, heated tobacco products and electronic nicotine delivery systems in the Vitrocell® Mammalian 6/48 exposure module. *Toxicology Reports* 2022;9:1985–1992. <https://doi.org/10.1016/j.toxrep.2022.11.001>.
- [5] Al-Dahhan WH, Kadhom M, Yousif E, Mohammed SA, Alkaim A. Extraction and determination of nicotine in tobacco from selected local cigarettes brands in Iraq 2021; <https://doi.org/10.33263/LIANBS111.32783290>.
- [6] Seiler-Ramadas R, Sandner I, Haider S, Grabovac I, Dorner TE. Health effects of electronic cigarette (e-cigarette) use on organ systems and its implications for public health. *Wiener Klinische Wochenschrift* 2021;133:1020–1027. <https://doi.org/10.1007/s00508-020-01711-z>.
- [7] Polosa R, Morjaria JB, Caponnetto P, Battaglia E, Russo C, Ciampi C, et al. Blood pressure control in smokers with arterial hypertension who switched to electronic cigarettes. *International journal of environmental research and public health* 2016;13(11):1123. <https://doi.org/10.3390/ijerph13111123>.