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“Nicotine and Vascular Dysfunction”

Cigarette smoking is the single most important risk factor for the development of cardiovascular diseases (CVD). However, the role of nicotine, the addictive component of all tobacco products, in the development of CVD is incompletely understood. Although increased public awareness of the harms of cigarette smoking has successfully led to a decline in cigarette smoking, the use of electronic cigarettes (e-cig) or electronic nicotine delivery system has increased significantly in recent years due to the perception that these products are safe. This review summarizes our current knowledge of the expression and function of the nicotinic acetylcholine receptors in the cardiovascular system and the impact of nicotine exposure on cardiovascular health, with a focus on nicotine-induced vascular dysfunction. Nicotine alters vasoreactivity through both endothelium-dependent and endothelium-independent mechanisms, leading to vascular abnormalities in both cigarette smokers and e-cig users. The purpose of the current review is to raise the public awareness of the harmful effects of nicotine on the cardiovascular system as well as identify future directions of nicotine research.