

# Smoking, Vaping and SNUS! The Hot Debate

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NO FUNDING OR CONFLICT OF INTERESTS

# Smoking

- ▶ Cigarette smoke contains over 7,000 chemicals, with at least 69 known carcinogens that can cause cancer.
- ▶ A single cigarette contains an average of 10 to 12 mg of nicotine, though this can change depending on the brand.
- ▶ However, the amount nicotine smoker absorbs is much lower, typically around 1-2mg per cigarette.



# Vaping

- ▶ Vapes contain nearly 2,000 chemicals that we know of! Poor regulation and a high volume of counterfeit products available.
- ▶ An average vape contains 20/40mg of nicotine, a person vaping absorbs approximately 50% of the nicotine which equates to 10/20 mg per vape.
- ▶ This means a person vaping absorbs about the same amount of nicotine as 10/20 cigarettes.

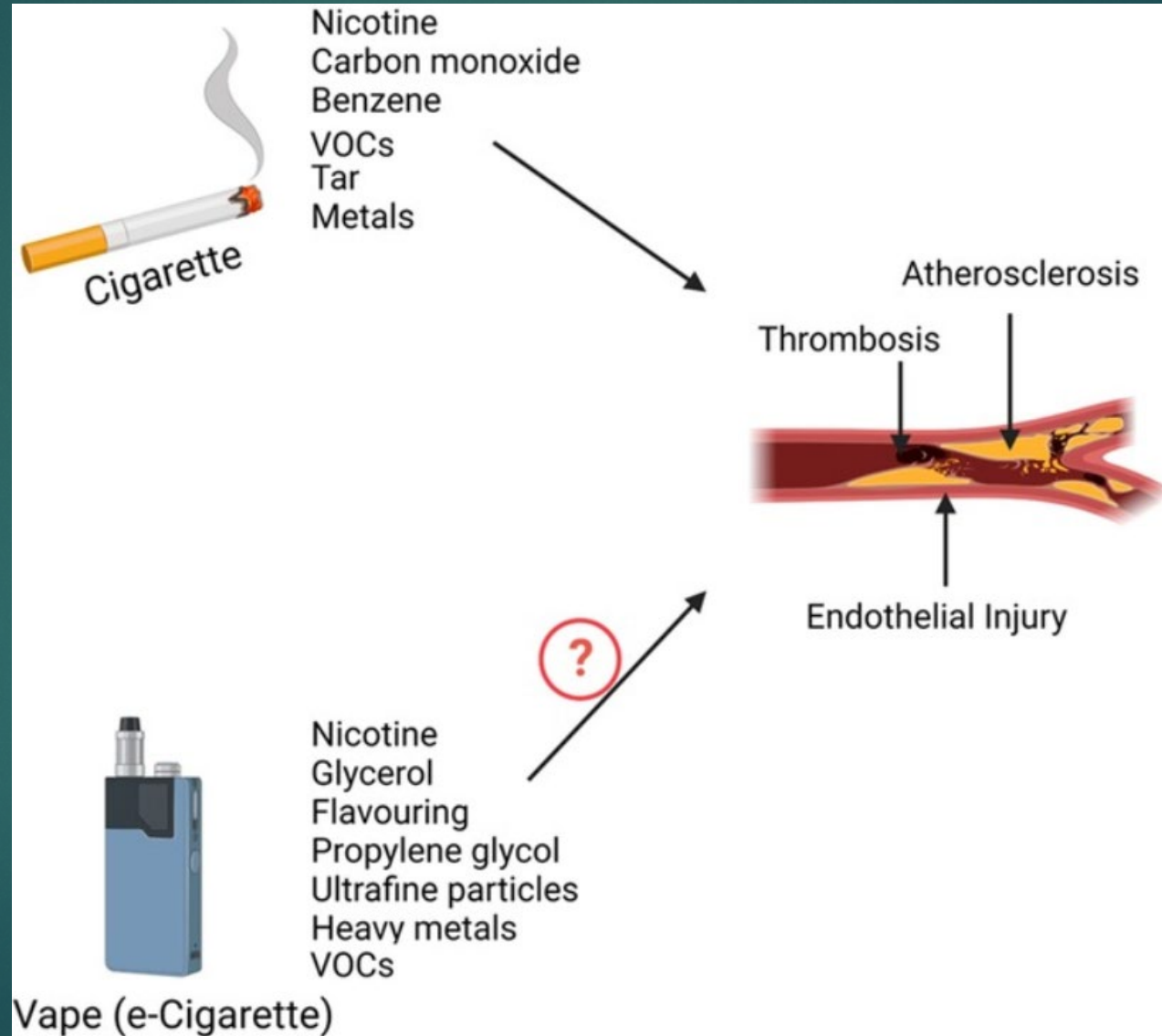


# SNUS

- ▶ SNUS products vary but most on average contain 19 chemicals but the main component is Nicotine.
- ▶ Nicotine dose ranges from 5mg-50mg.
- ▶ Very high subungual delivery of nicotine but slower release, a snus user typically absorbs 25–30% of the nicotine available in a pouch.
- ▶ This results in 6-8mg of nicotine per snus which equates to 6-8 cigarettes.



# Combustion related issues



# NICOTINE

Nicotine is the highly addictive component, some studies show it has the **same level of addiction as cocaine and heroin.**

- ▶ **Vasoconstriction:** Nicotine causes blood vessels to constrict, reducing blood flow by up to 25% of their normal diameter.
- ▶ **Osteoblasts:** High concentrations of nicotine suppress the proliferation and differentiation of osteoblasts, slowing down new bone formation.
- ▶ **Osteoclasts:** Nicotine has a complex and dual effect on osteoclasts: low concentrations can stimulate osteoclast activity, while high concentrations can be inhibitory and toxic.
- ▶ Nicotine also reduces the production of essential proteins like Type I collagen and alkaline phosphatase. Thus inhibiting both soft tissue and bone healing.

# What should we advise our patients

- ▶ Offer all smoking patients cessation advice and subsequent onward referral.
- ▶ Education and honesty.
- ▶ Smoking is the worst due to 7,000 chemicals, with at least 69 of them being known carcinogens. It is synonymous with peripheral arterial disease. However it overall has the lowest nicotine content 1-2mg nicotine per cigarette.
- ▶ Public Health England suggests that E-cigarettes are 95% safer than cigarettes as they do not contain tar or as many carcinogens. But they still contain 2,000 chemicals that we know of! They deliver 10/20 mg of nicotine per disposable vape and still result in systemic exposure to numerous harmful vapour constituents.
- ▶ SNUS have no combustion related side effects but on average contain 19 chemicals, and deliver the highest dose of nicotine averaging 6/8mg of nicotine per snus.

# Summary

- ▶ The relative systemic impact of SNUS and e-cigarette's compared to cigarette smoking remains poorly understood and more research is needed.
- ▶ All three products are highly addictive and adversely effect bone and soft tissue healing.
- ▶ At this moment Vaping appears the best alternative to smoking.
- ▶ SNUS appears to be a healthier option but could we risk making the addiction worse?



Any Questions?

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