



Flavored Tobacco and Risk of Cardiovascular Disease in the African American Community

**American
Heart
Association®**

Heath Wilt, DO, FACC
AdventHealth-Shawnee Mission Cardiology
Medical Director, Non-invasive Imaging
Medical Director, Cardiac Rehab

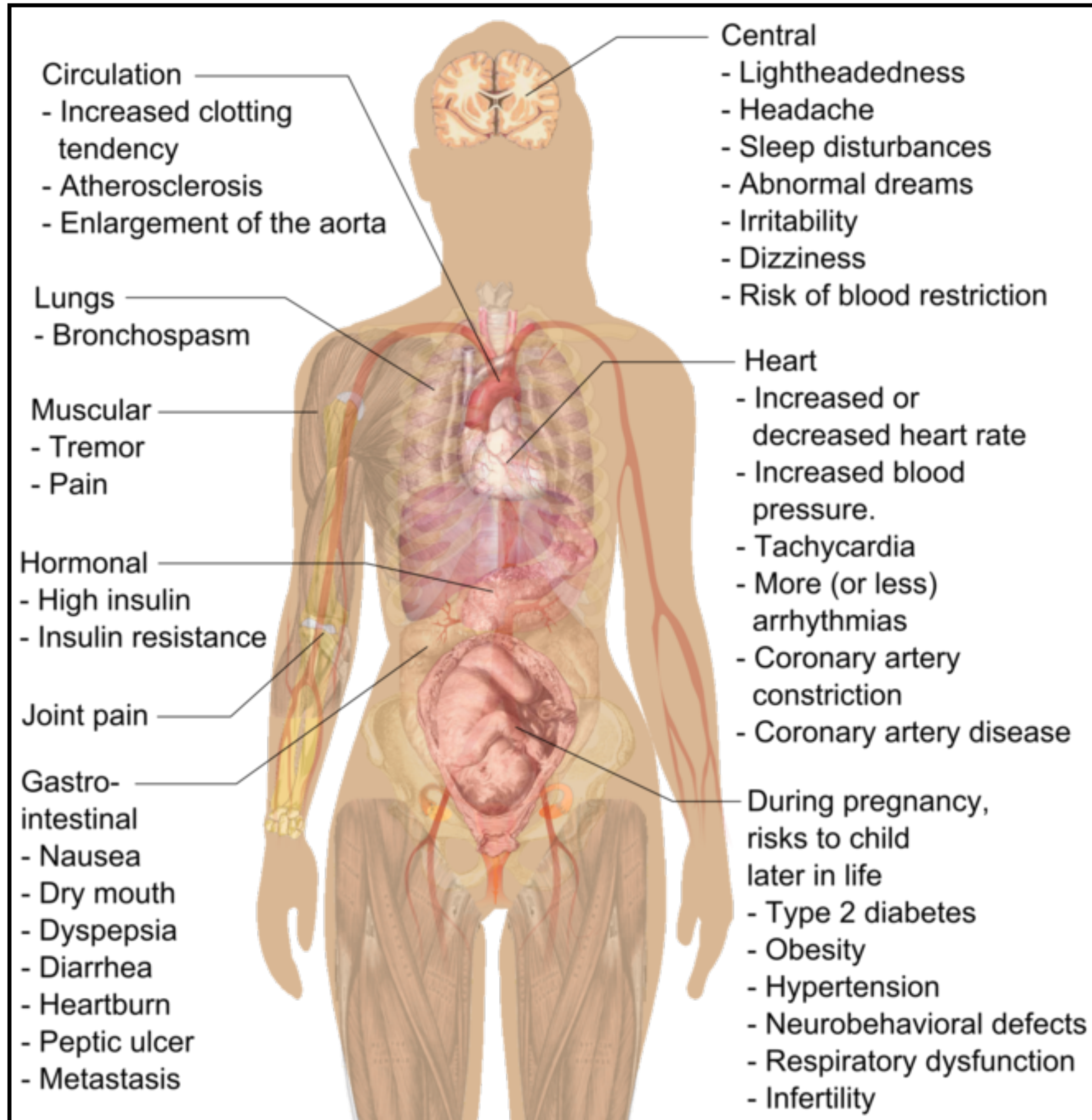
Cardiovascular Impact

- Smoking is the most preventable cause of death in the United States.
- 1/3 of deaths from coronary heart disease are due to smoking and secondhand smoke.
 - About half of U.S. children ages 3-11 are exposed to secondhand smoke
- Smoking is linked to about 90% of lung cancer cases in the United States.
- On average, smokers die more than 10 years earlier than nonsmokers.

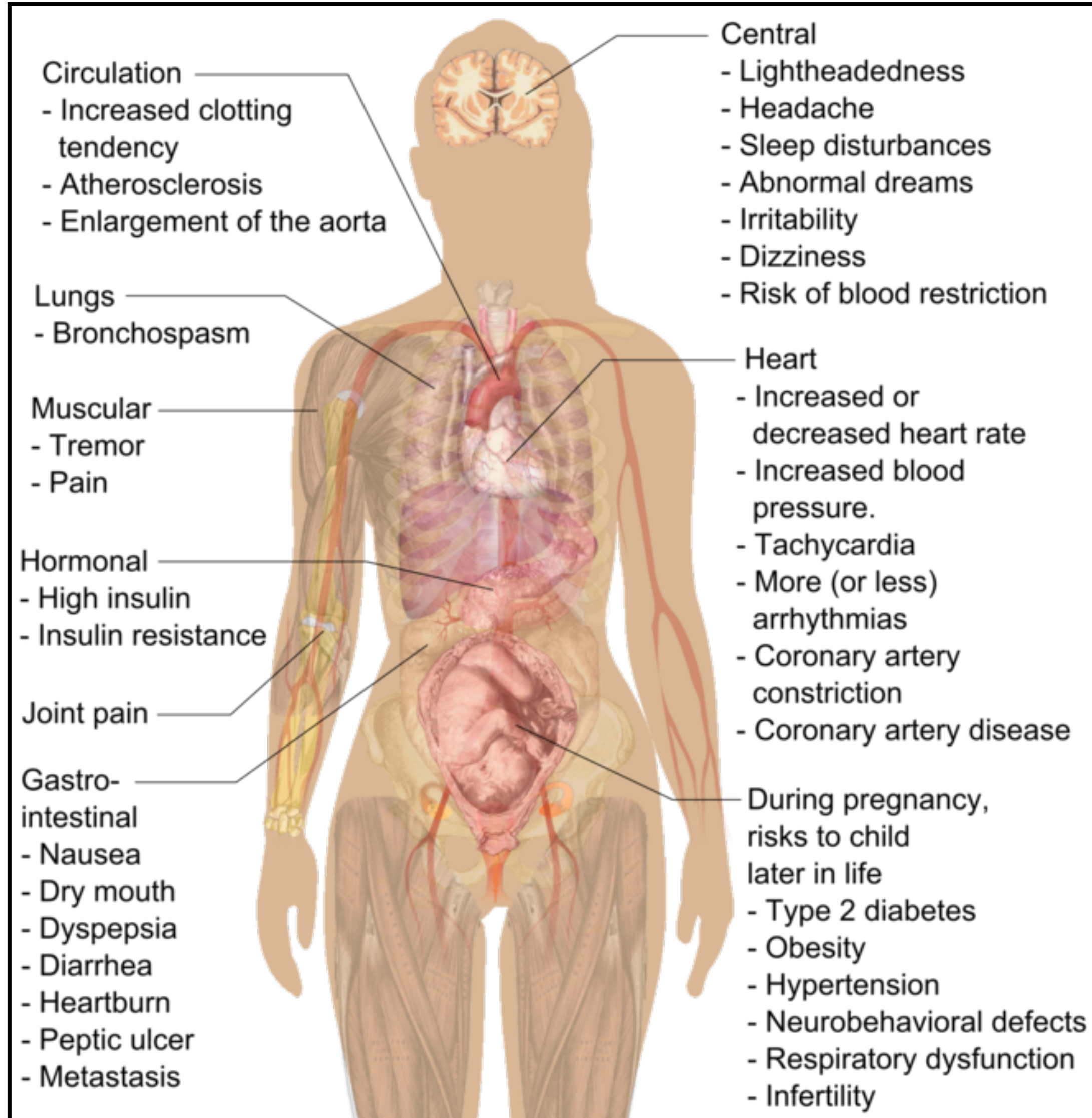
Effects of Tobacco

- Nicotine most active ingredient
 - Approximates 3% of tobacco dry weight
 - Nature's powerful insecticide
 - Biochemically acts as stimulant and anxiolytic
 - Highly addictive, reinforces control behavior in brain
 - Due to body adaptation, eventually leads to physical addiction and withdrawal symptoms with stopped

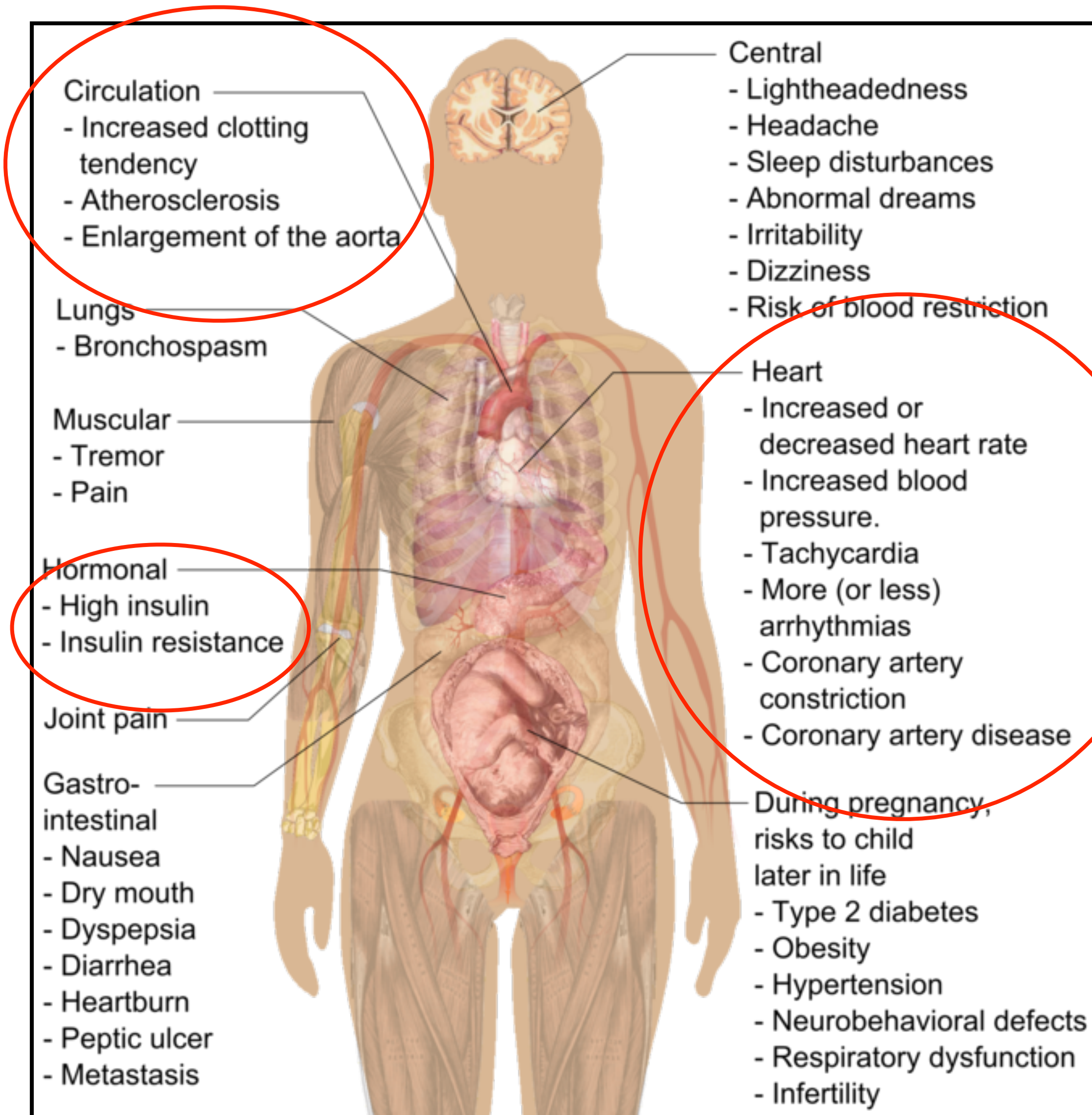
Effects of Tobacco



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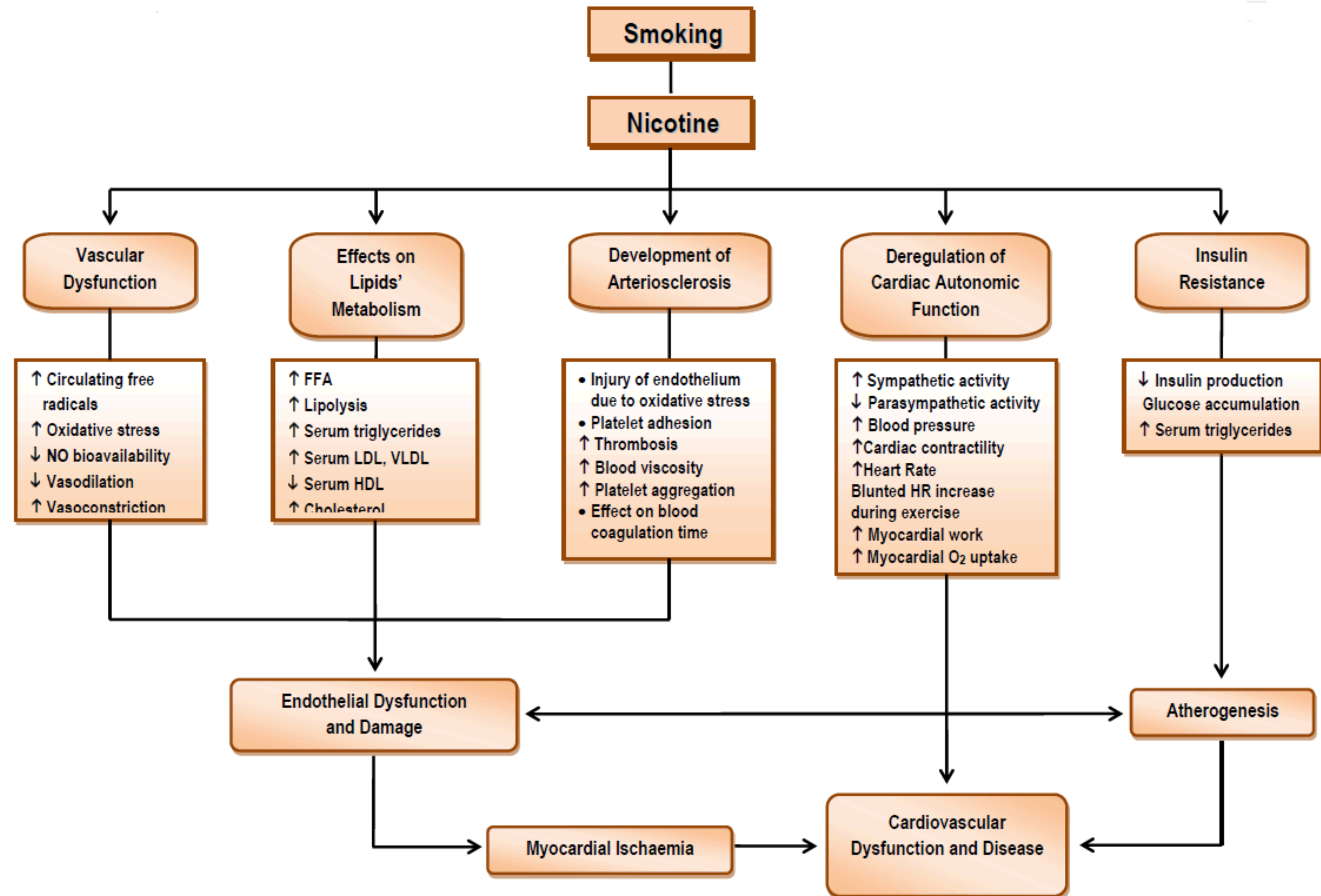


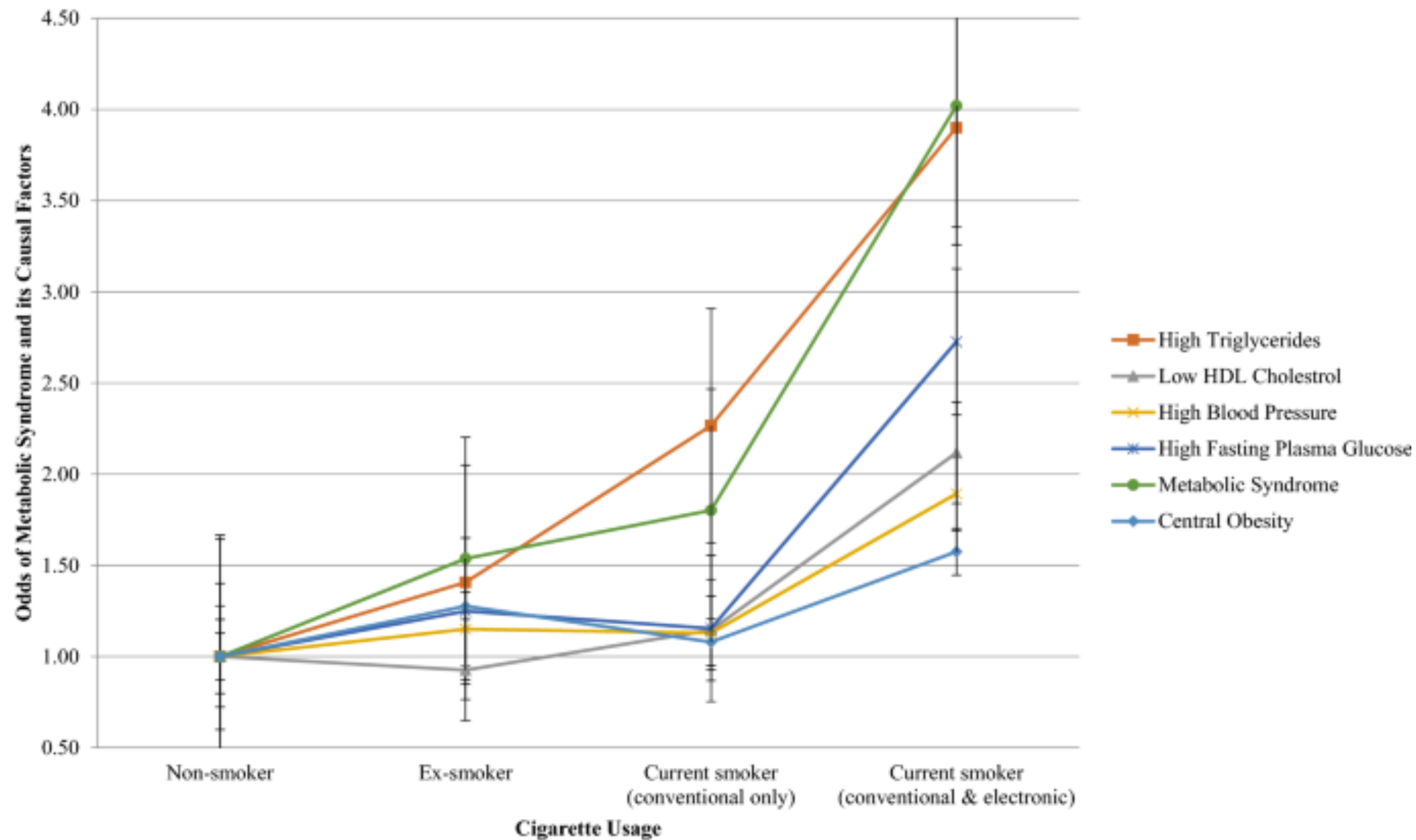
Cardiovascular Risk

- *Direct* effects of stimulant properties
 - Increased myocardial contractility
 - Increased work/demand
 - Increased heart rate
 - Increased risk of arrhythmia
 - Increased blood pressure
 - Increased stress on blood vessels
 - Accelerates atherosclerosis

Cardiovascular Risk

- Indirect effects of tobacco
 - Carbon Monoxide
 - Less oxygen delivery
 - Further increases demand on heart
 - Increases arrhythmia potential
 - Endothelial damage
 - Increased blood pressure, atherosclerosis
 - Insulin Resistance
 - Increases unfavorable lipid patterns





Cigarette Contents

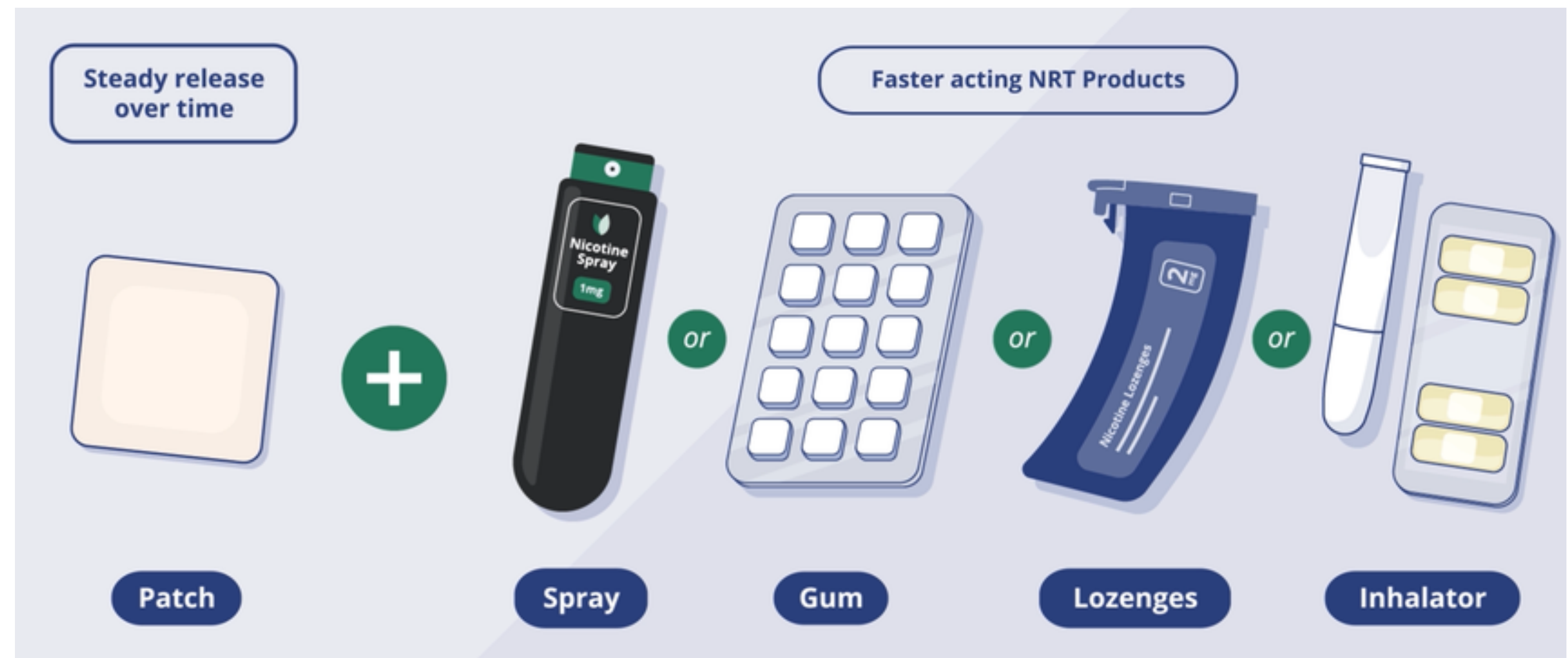
- Roughly 12 mg of nicotine per cigarette (around 2 mg inhaled)
- 1,3-Butadiene: chemical used in rubber manufacturing, considered to be a carcinogenic, causing blood cancers.
- Arsenic is used to preserve wood. Some arsenic compounds have been linked to cancer of the lung, skin, liver, and bladder.
- Benzene is used to manufacture other chemicals. It can cause cancer, particularly leukemia, in humans.
- Cadmium is a metal used to make batteries. Cadmium and cadmium compounds can cause lung cancer and have been associated with kidney and prostate cancer.
- Chromium VI is used to make alloy metals, paint and dyes. Chromium VI compounds cause lung cancer and have been associated with cancer of the nose and nasal sinuses.
- Formaldehyde is used to make other chemicals and resins. It is also used as a preservative. Formaldehyde causes leukemia and cancer in respiratory tissues.
- Polonium-210 is a radioactive element that has been shown to cause cancer in animals.
- Tar is not one single chemical, instead it describes several chemicals that are in tobacco smoke. It leaves a sticky, brown residue on your lungs, teeth and fingernails.

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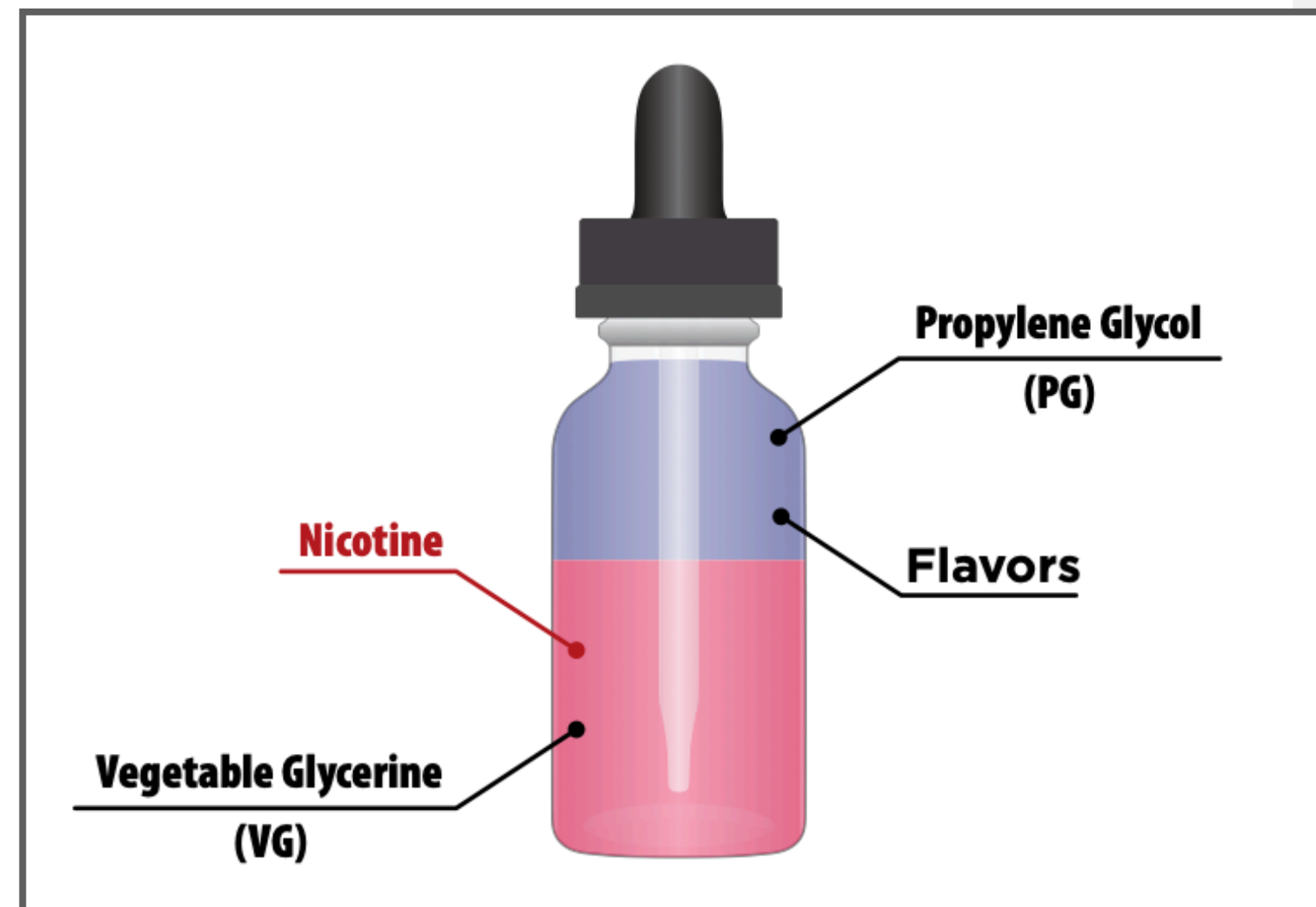
Cigarette Alternatives

- Nicotine Replacement Therapy (NRT)
- Designed as options for smoking cessation
- Lower nicotine amounts in slower-release delivery systems

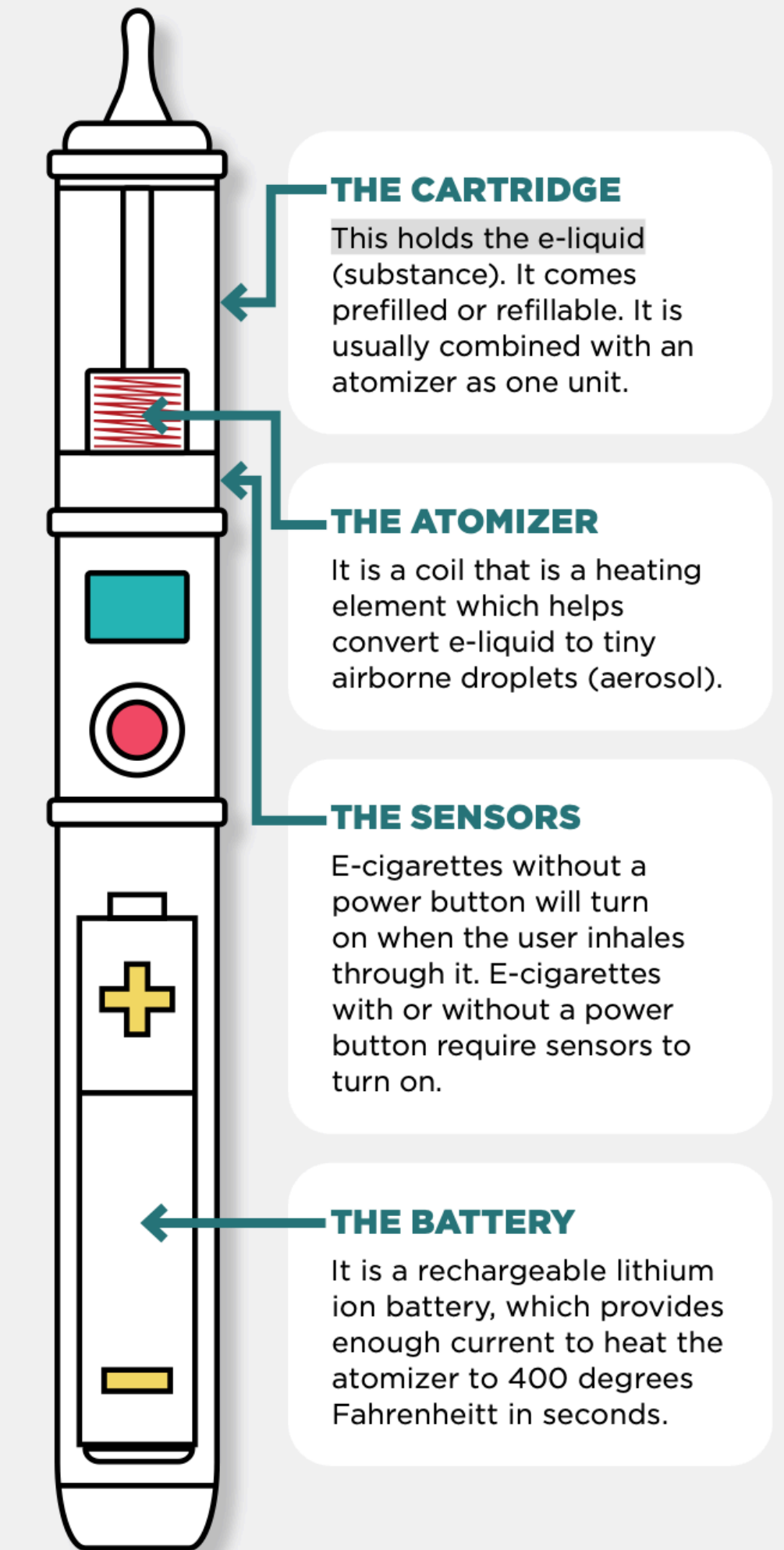


Vaping/E-cigarettes

- *NOT* an endorsed product for NRT
- Nicotine concentration may vary
 - <1 to >15 mg
- May contain flavoring
- Delivery system usually contains glycerols
 - “VAPI”



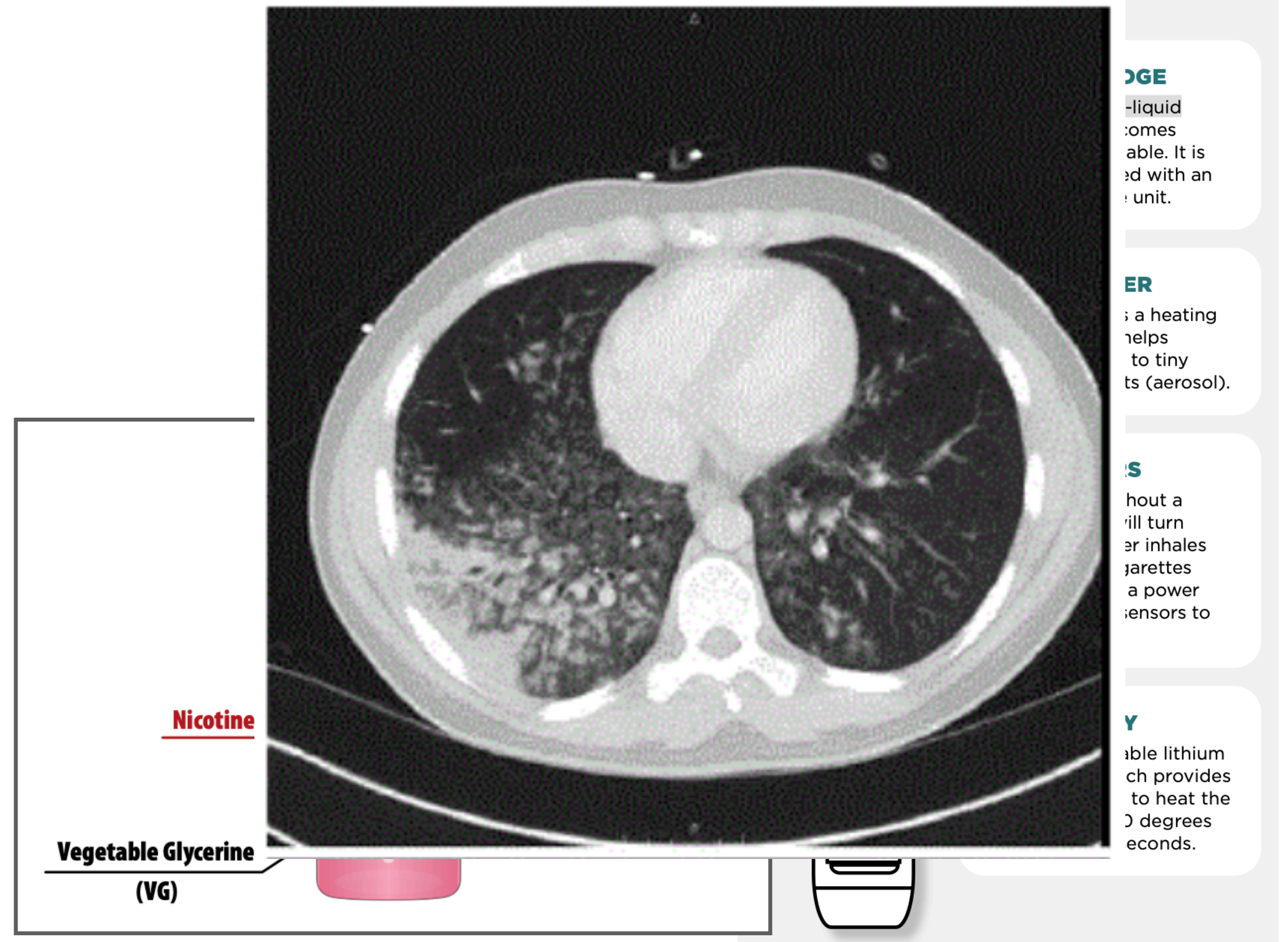
THE E-CIGARETTE



Vaping/E-cigarettes

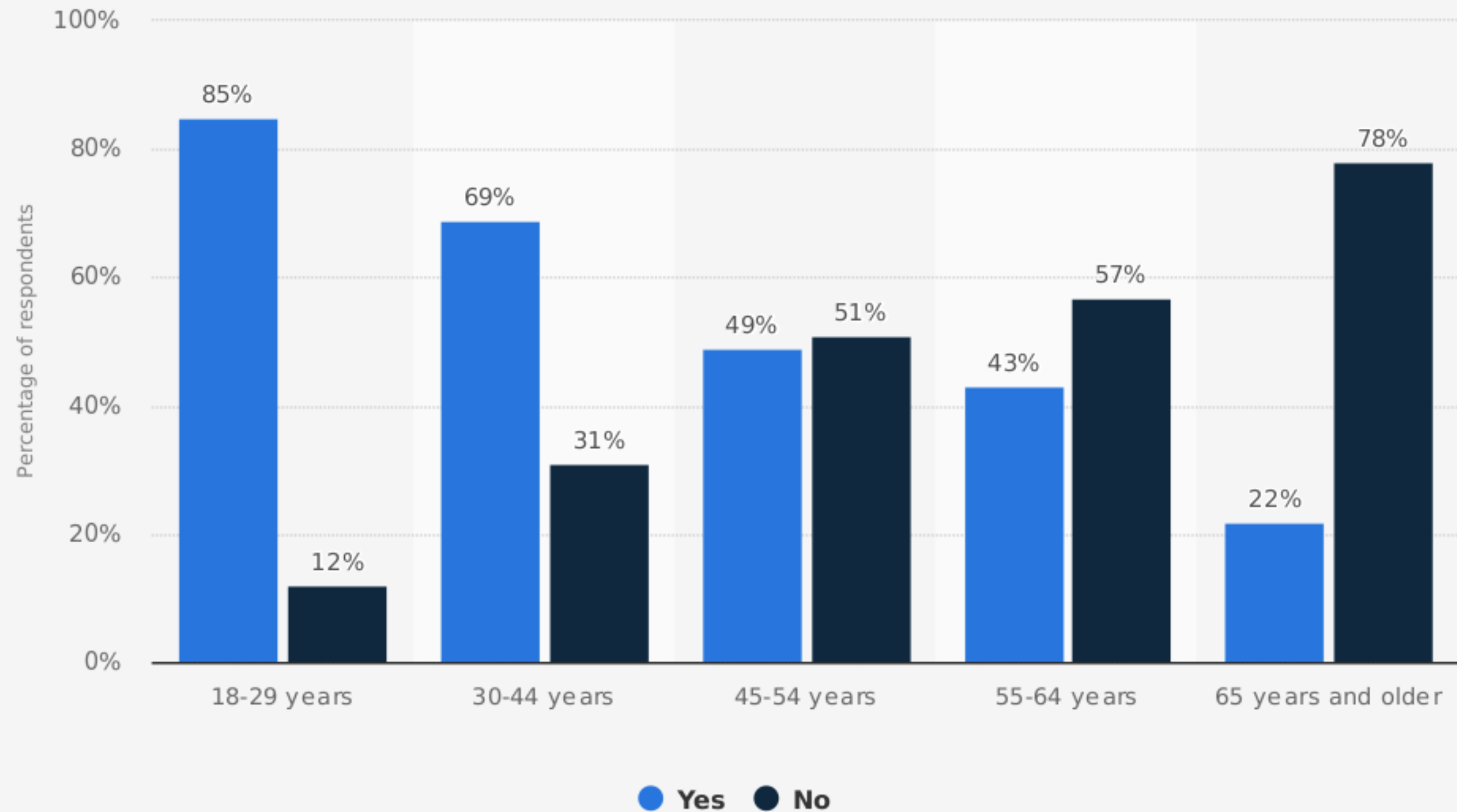
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Vaping/E-cigarettes

Percentage of adults in the U.S. who had tried vaping or using electronic cigarettes as of 2018, by age



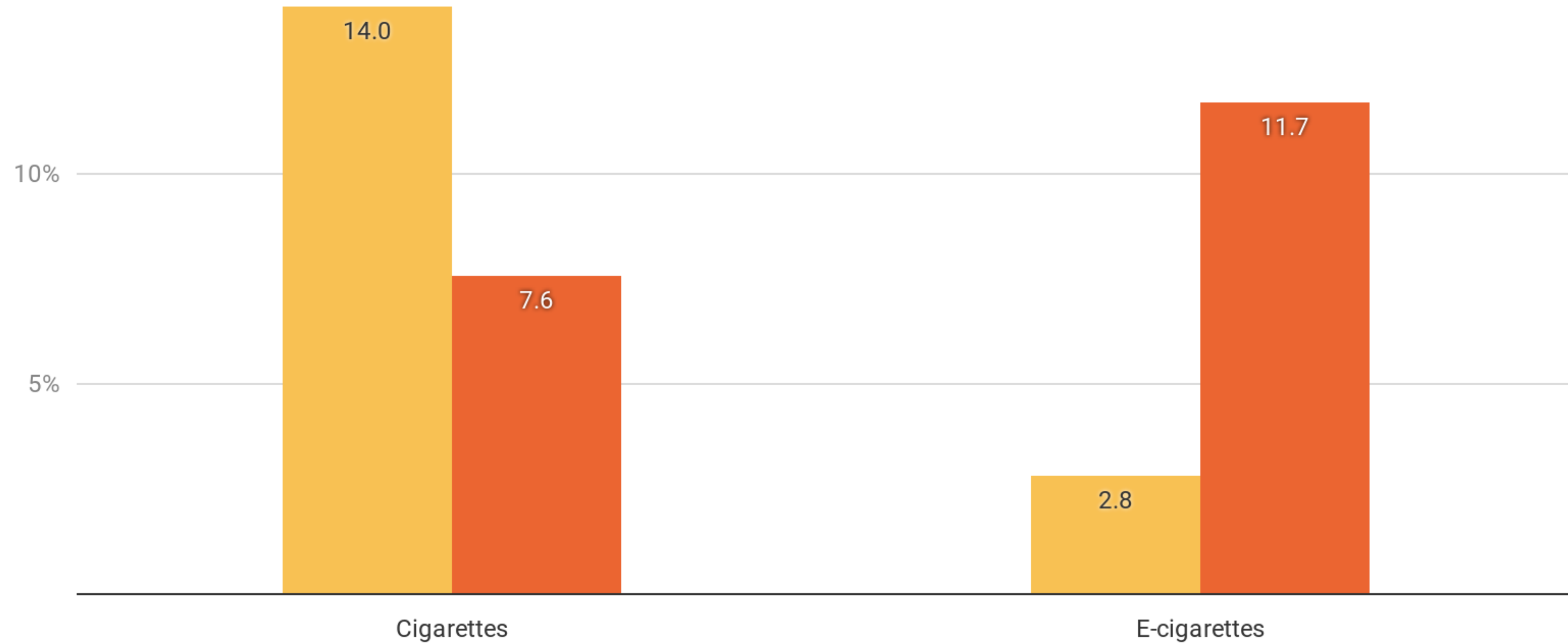
Source
Morning Consult
© Statista 2019

Additional Information:
United States; June 22 to 24, 2018; 2,203 respondents; 18 years and older

E-Cigarette Use By Age

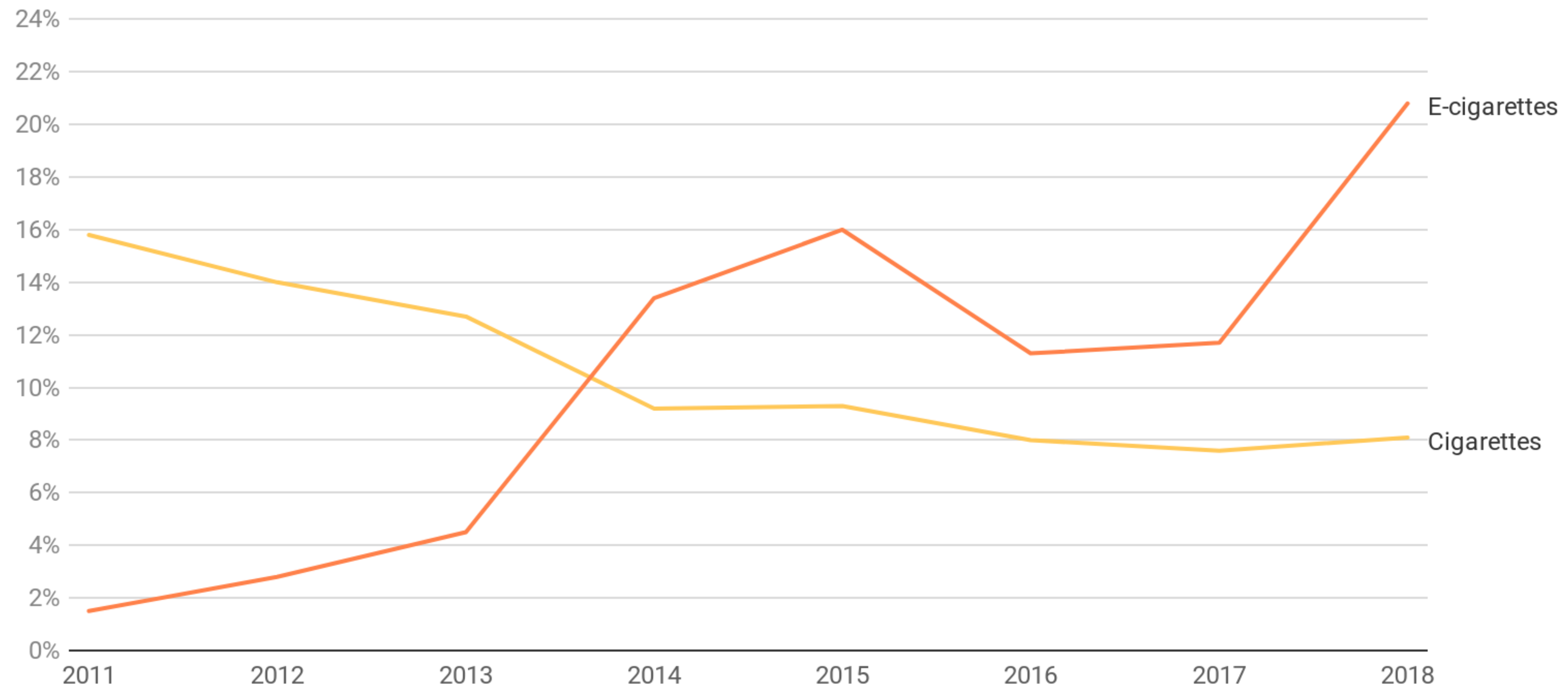
E-cigarette use is more prevalent among high school students in the United States than among adults, but a higher percentage of adults continue to smoke cigarettes, according to 2017 data from the Centers for Disease Control and Prevention.

Adults High school students



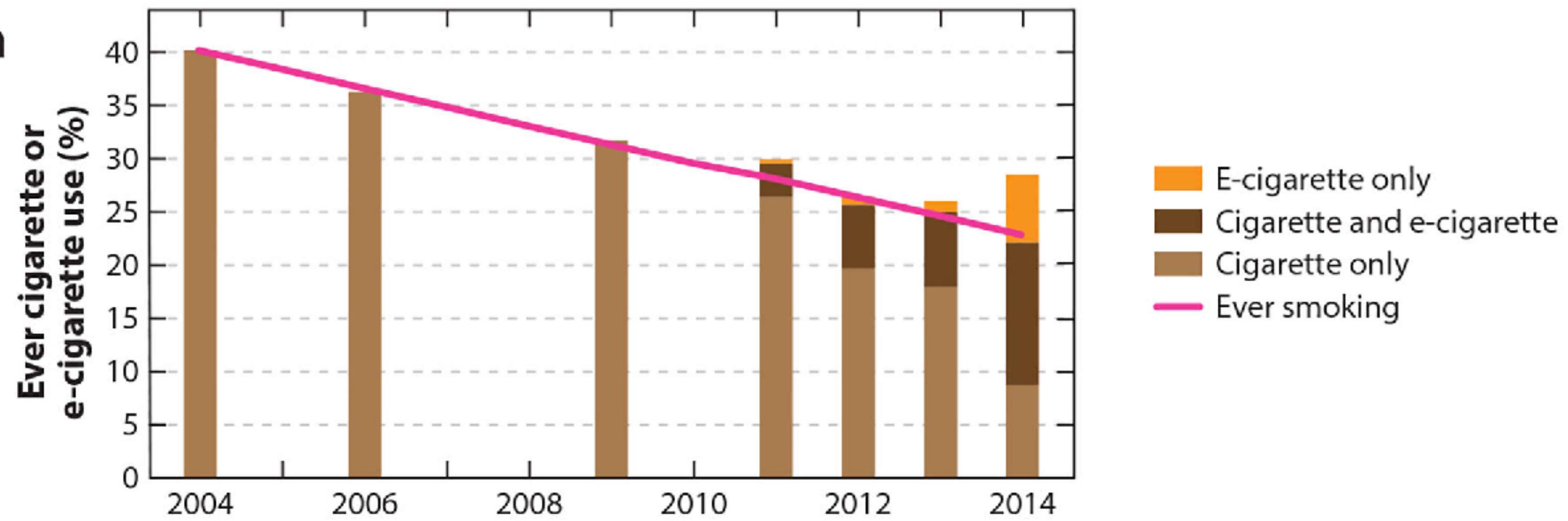
Vaping/E-cigarettes

The National Youth Tobacco Survey, published by the Centers for Disease Control and Prevention, quantified the surging popularity of e-cigarettes among high school students.

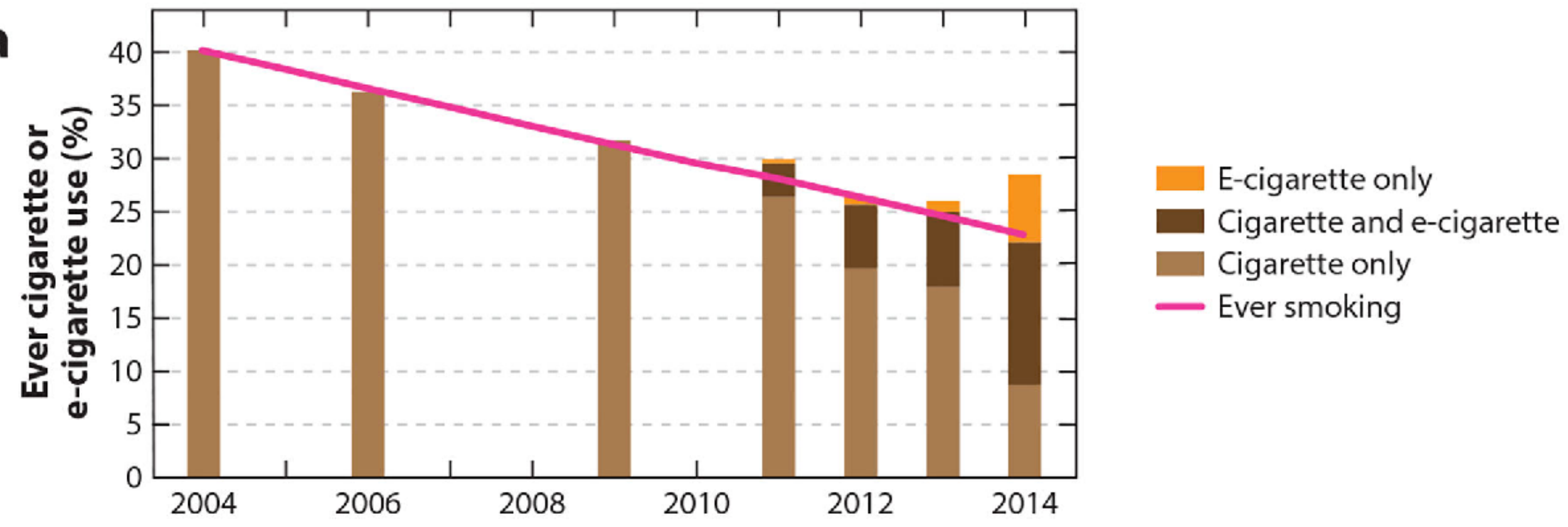


These numbers represent the percentage of high school students who reported having used cigarettes or e-cigarettes within the previous 30 days.

a



a



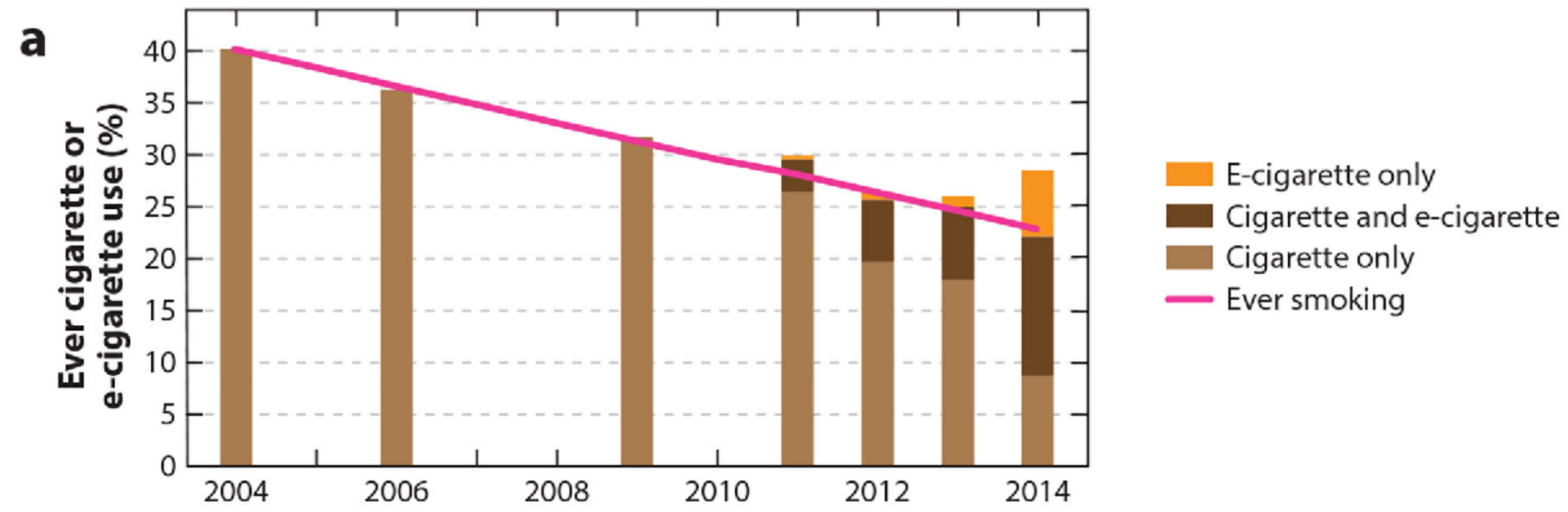
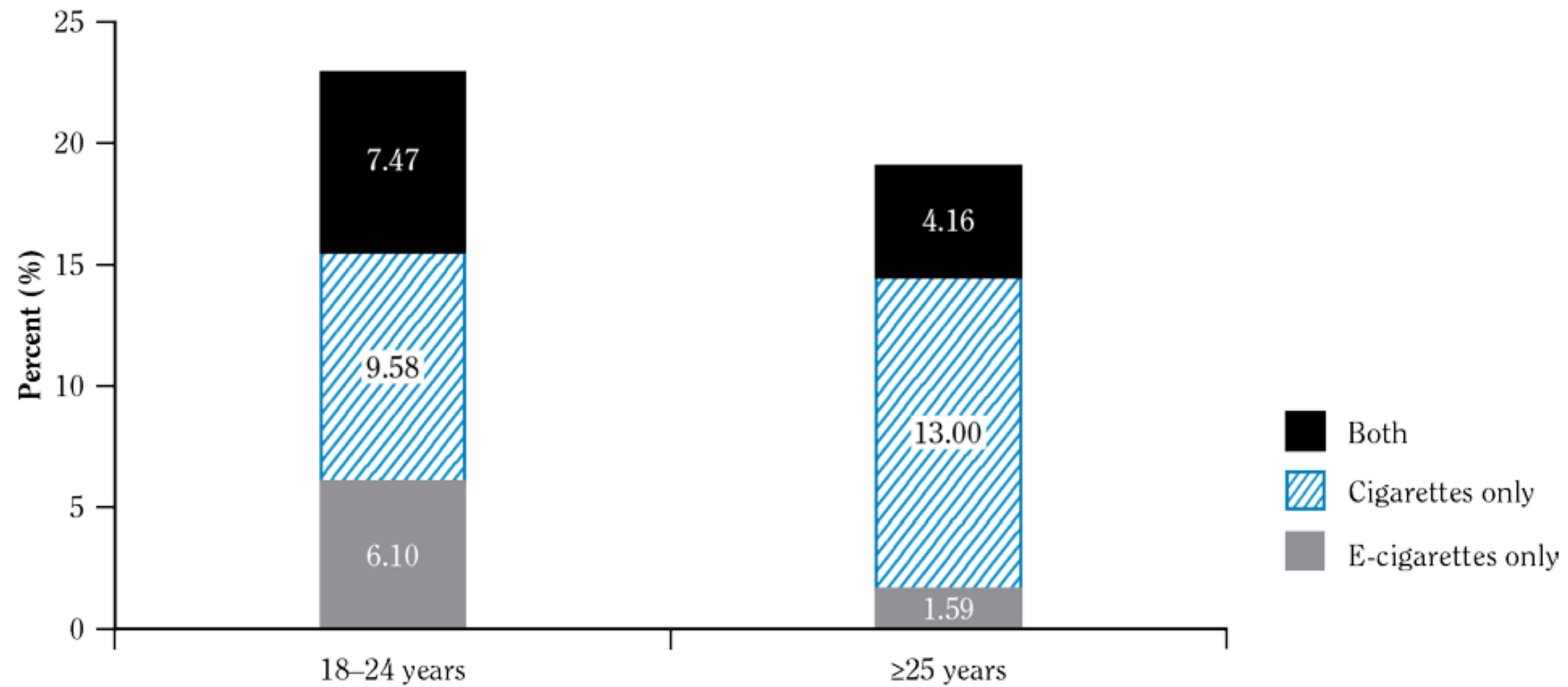


Figure 3 Percentage of young adults who currently use e-cigarettes^a and conventional cigarettes; National Adult Tobacco Survey (NATS) 2013–2014



Source: Centers for Disease Control and Prevention, unpublished data (data: NATS 2013–2014).





E-liquid

Food product



7 out of 10 middle and high school students who currently use tobacco have used a **FLAVORED** product.

63%

of students who currently use e-cigarettes have used **flavored** e-cigarettes.
(1.6 million)

61%

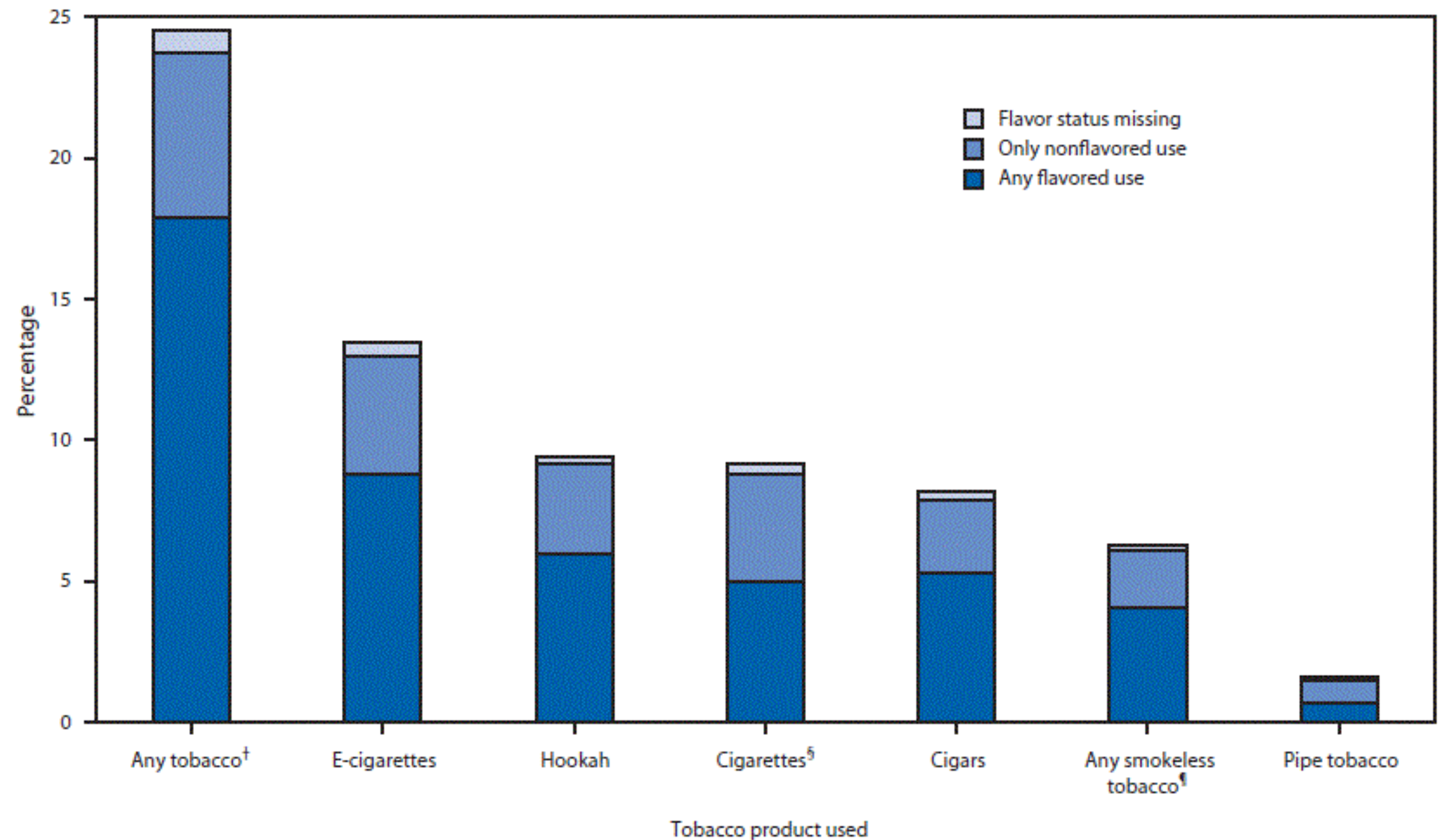
of students who currently use hookah have used **flavored** hookah.
(1 million)

64%

of students who currently use cigars have used **flavored** cigars.
(910,000)

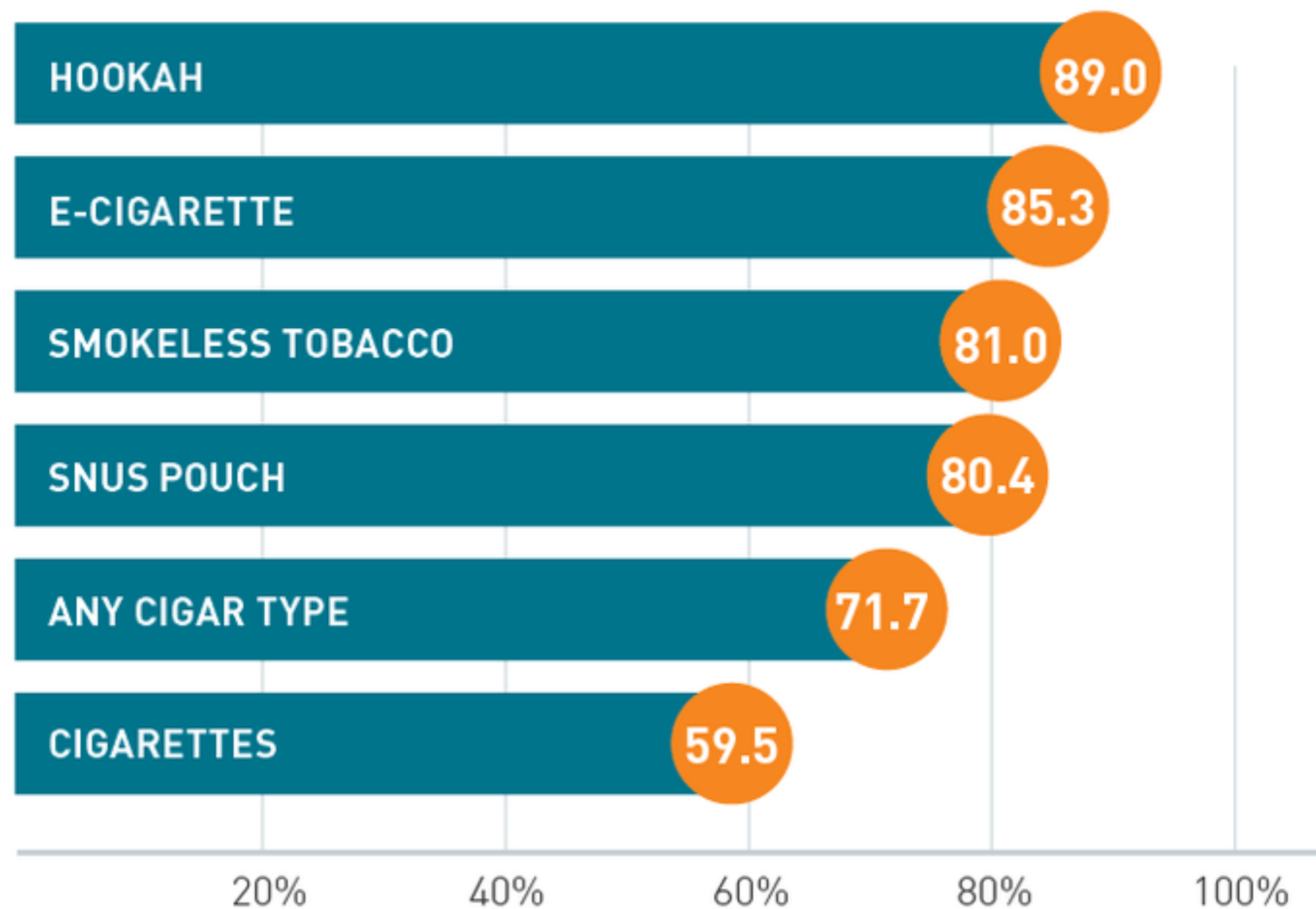


Source: Morbidity and Mortality Weekly Report (MMWR)

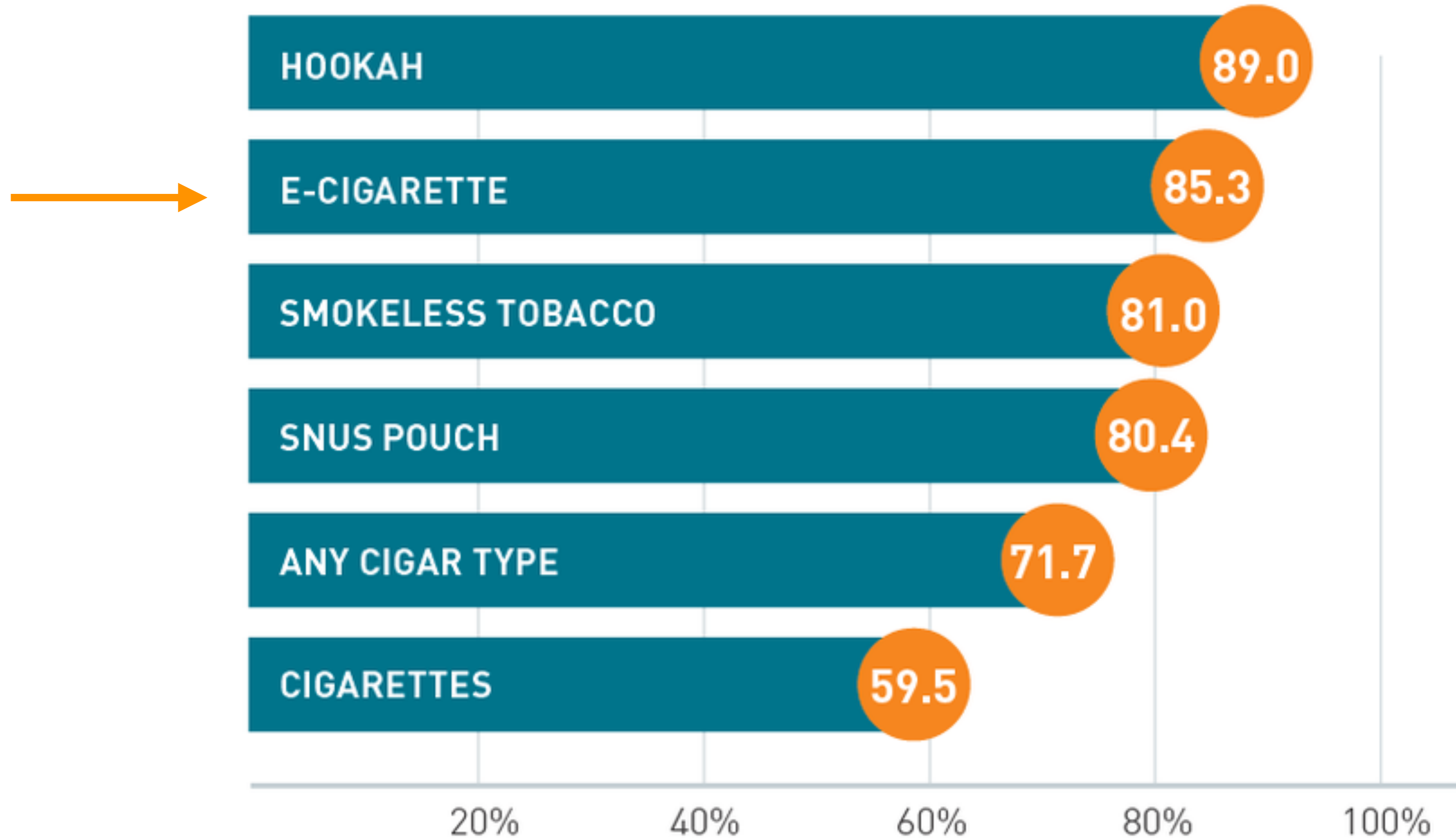


Tobacco Use, Middle and High School (2014)

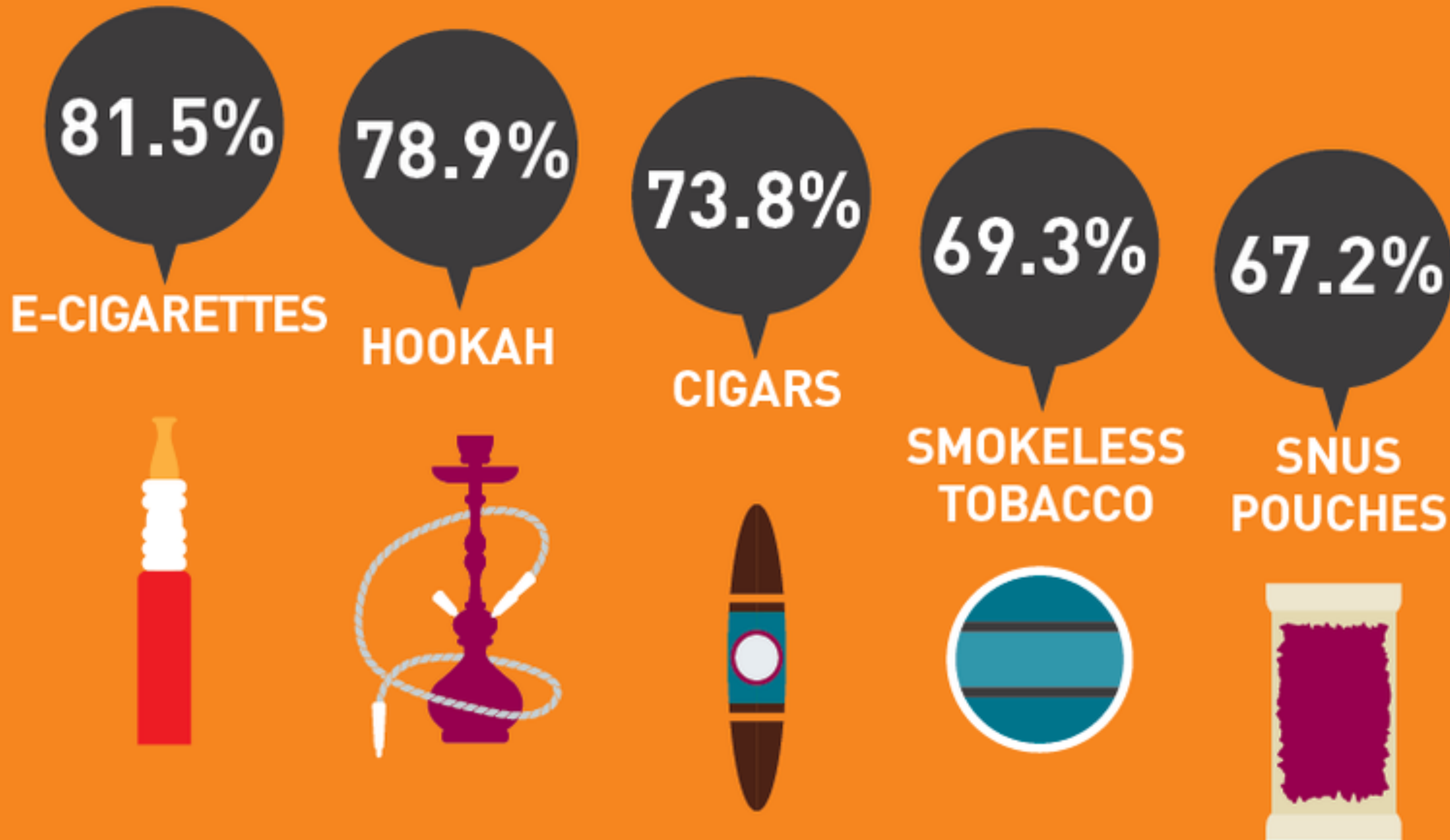
Flavored Tobacco Product Use Among Youth Current Tobacco Users (ages 12-17)⁸



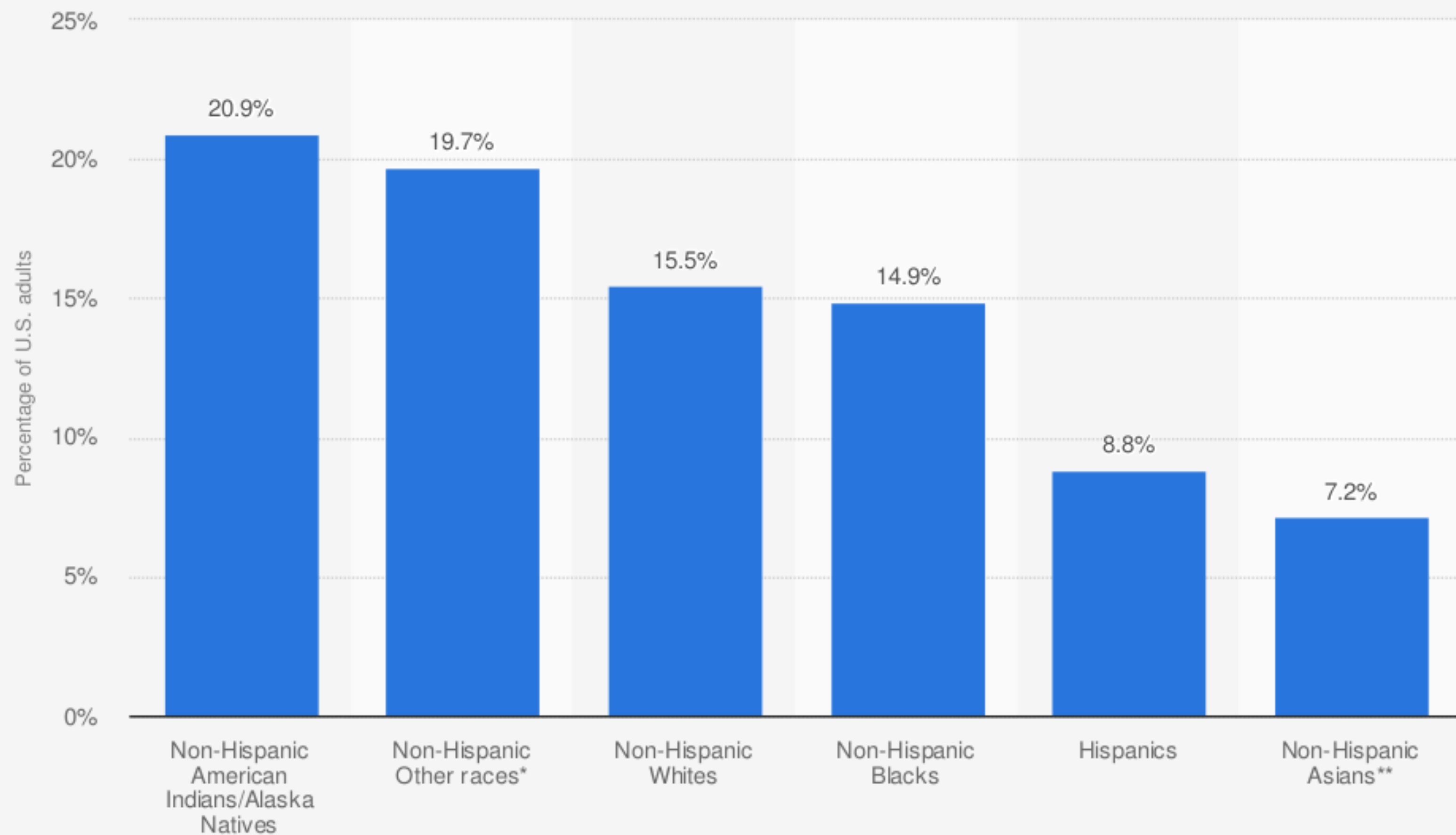
Flavored Tobacco Product Use Among Youth Current Tobacco Users (ages 12-17)⁸



Youth Ages 12 to 17 Who Report **Flavoring is a Primary Reason** for Using a Tobacco Product⁸

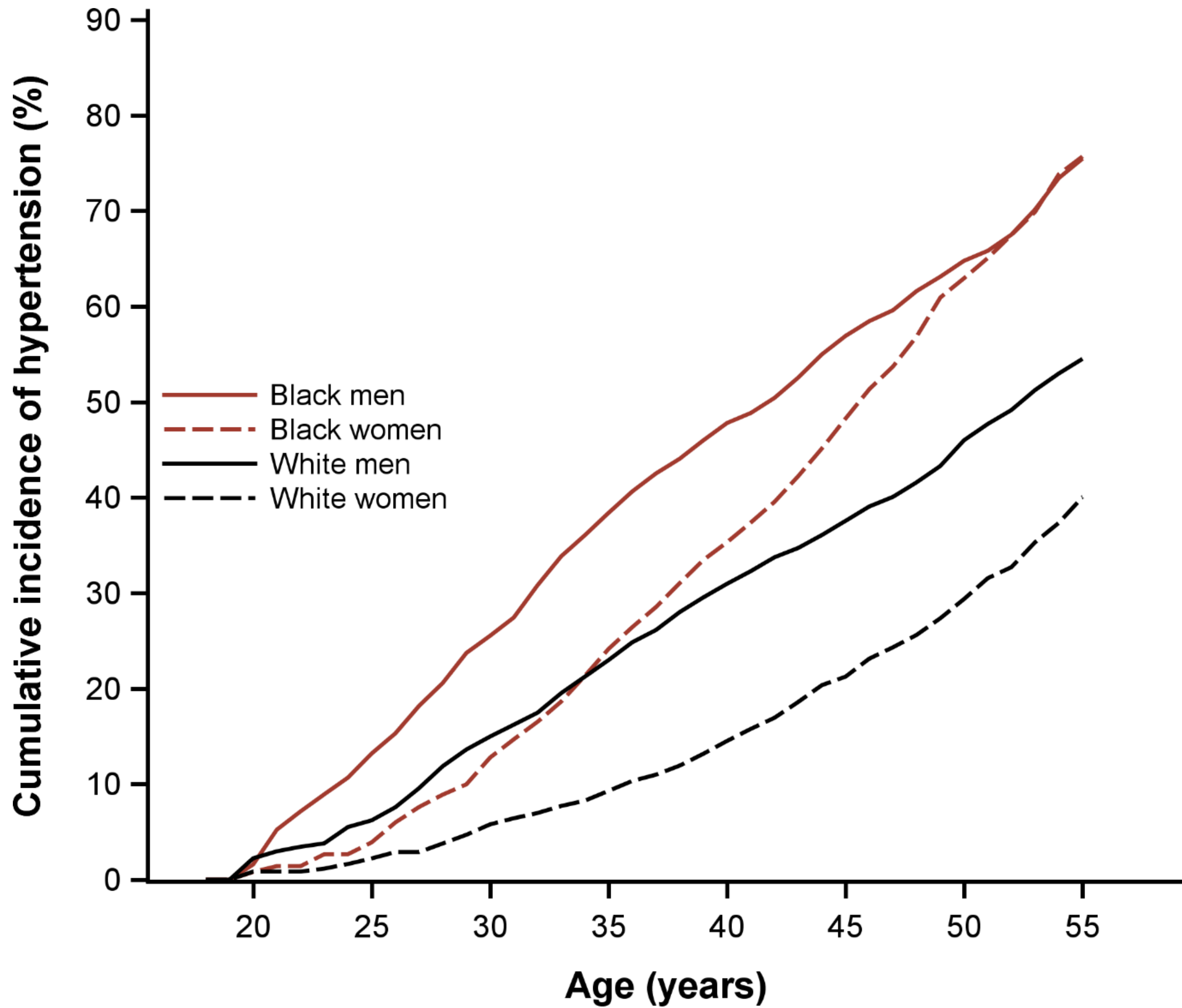


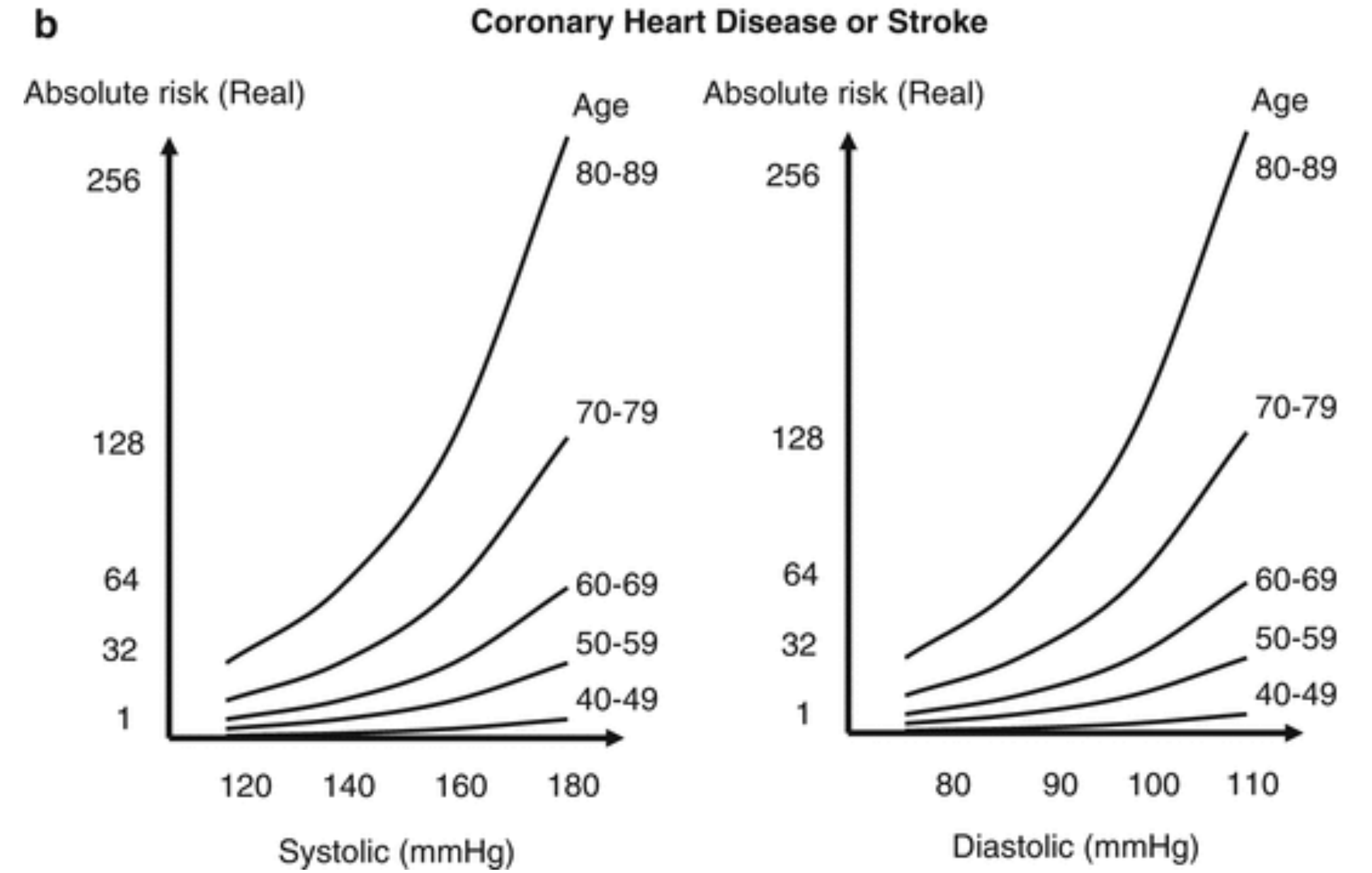
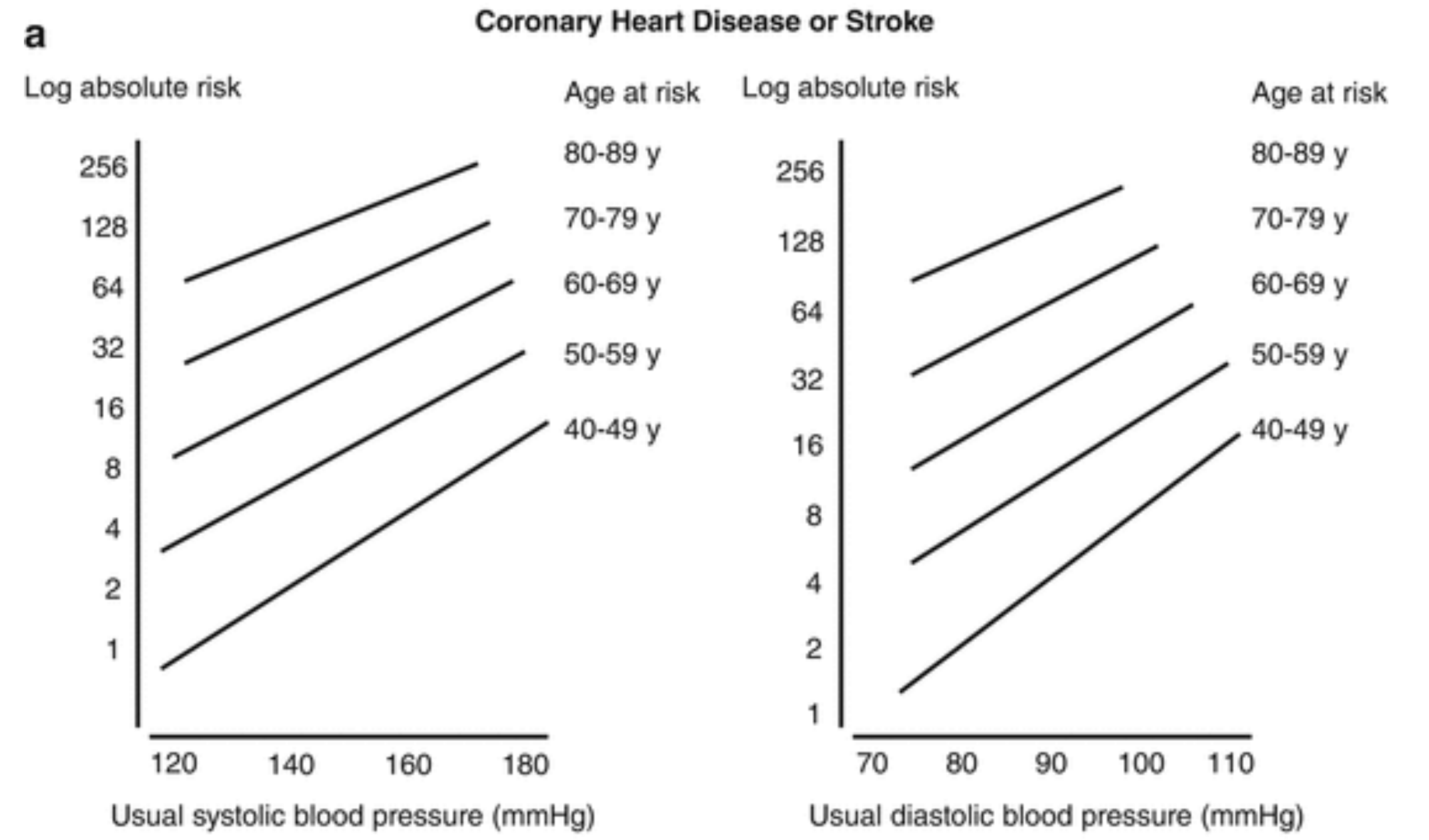
Prevalence of smoking among U.S. adults as of 2019, by ethnicity



Source
CDC
© Statista 2021

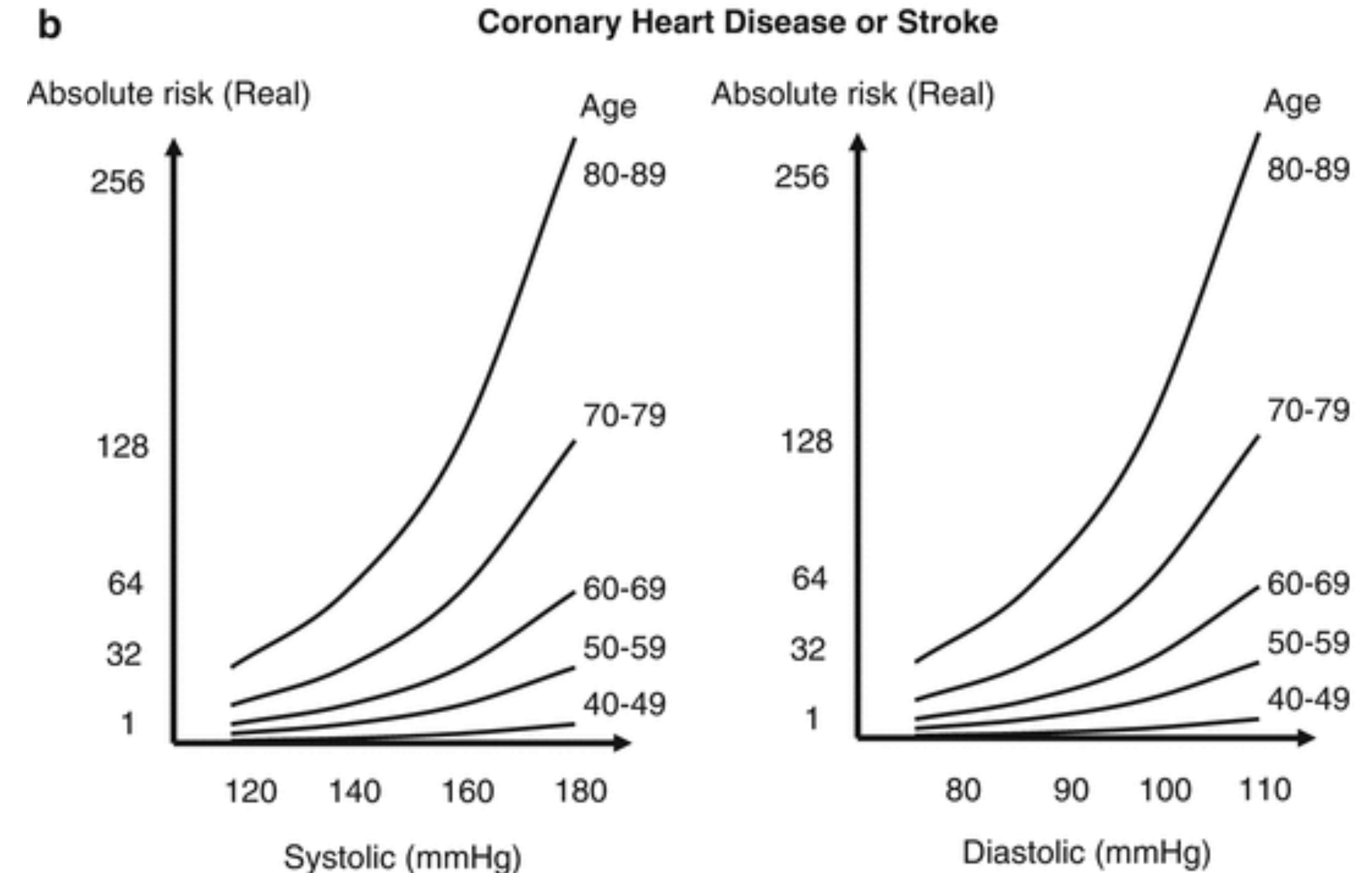
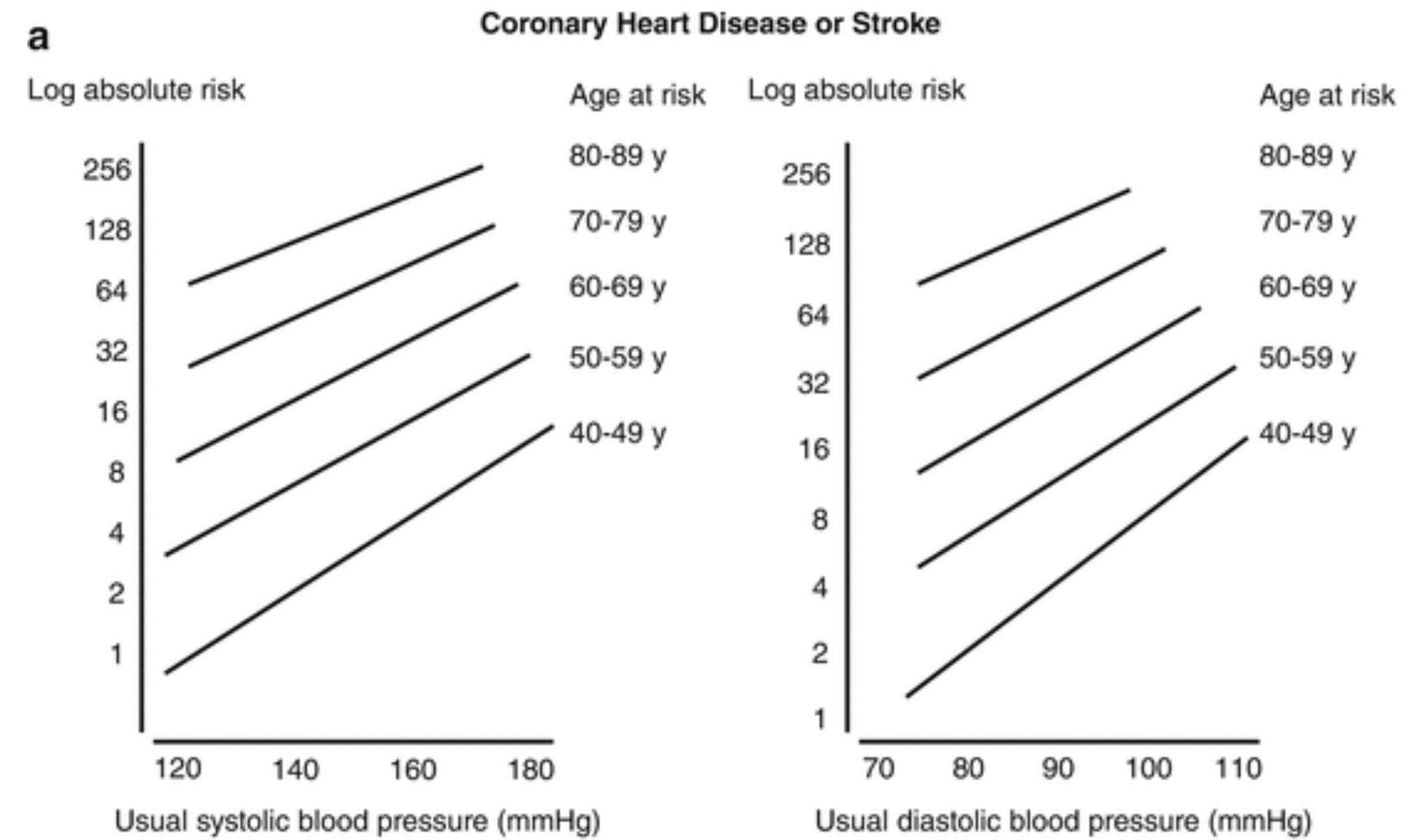
Additional Information:
United States; CDC





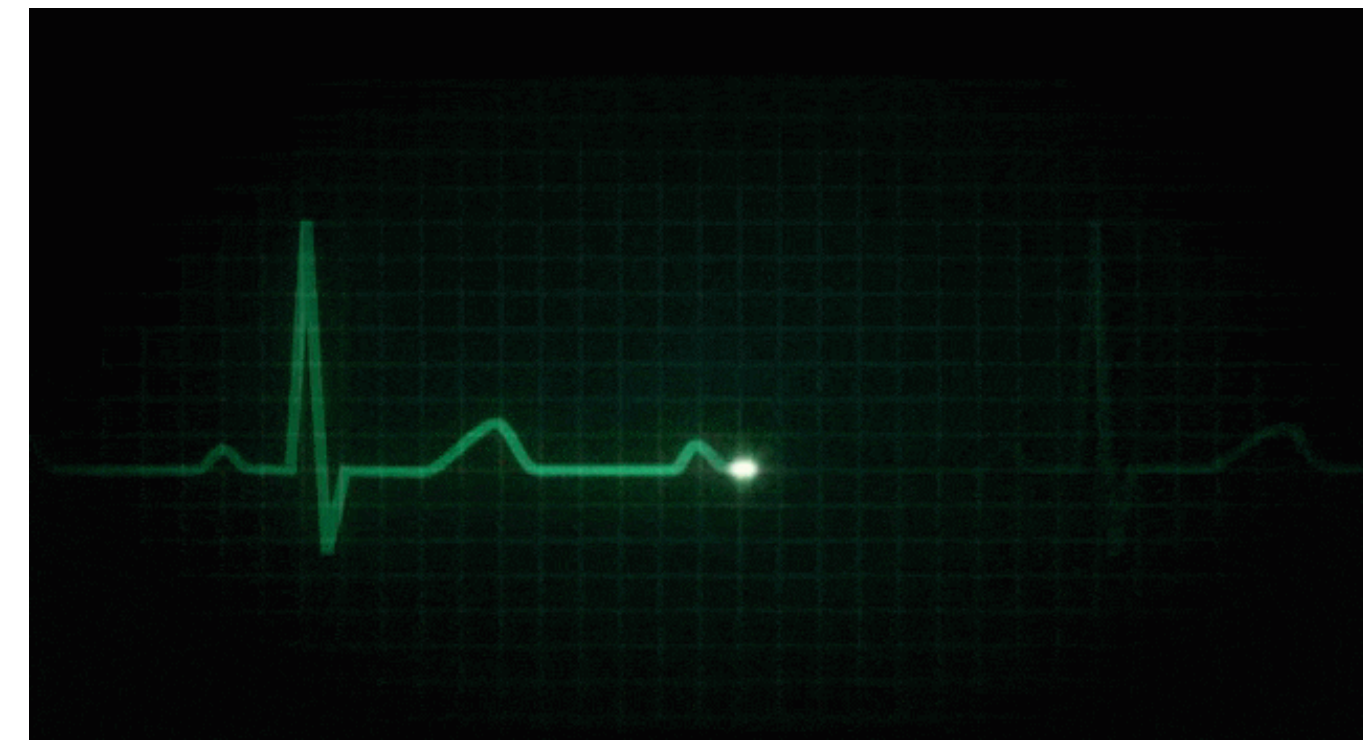
CV Risk

- Major Adverse Cardiovascular Event (MACE) Risk
 - Rises exponentially with blood pressure
 - More profound risk with advancing age
- Smokers are 2 to 6 times more likely to suffer heart attack compare to non-smokers
- Increases risk of coronary disease and stroke 100%!
- Increases risk of death in undiagnosed heart disease by 300%!



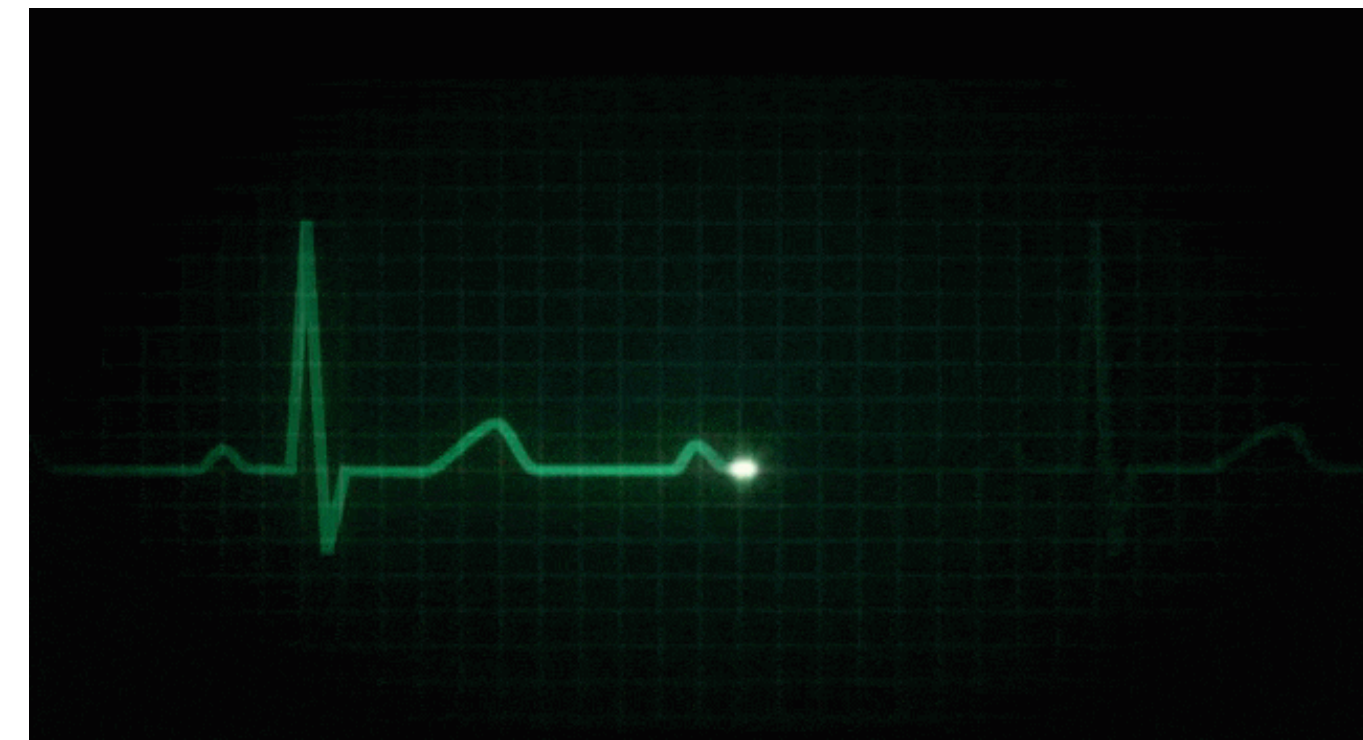
After the last drag...

- **20 minutes:** heart rate returns to normal levels
- **2 hours:** circulation improves
 - BP normalizes. Blood flow returns toes and fingers
 - Withdrawal symptoms start
- **12 hours:** carbon monoxide levels normalize
 - improved oxygen to brain, heart, body



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After the last drag...

- **24 hours:** Earliest point for potential decline in heart attack risk
- **48 hours:** nerve endings regrow, improving taste and smell
- **3 days:** nicotine gone from system; peak withdrawal symptoms

After the last drag...

- **2-3 weeks:** withdrawal symptoms should be concluded. Exercise capacity and breathing improve significantly
- **1 month:** respiratory cilia repair
- **1 year:** *risk for heart disease* is lowered to half that of a smoker



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After the last drag...

- **5 years:** risk of having a stroke is the *same* as that of a nonsmoker
- **10 years:** risk of dying from lung cancer will drop to half that of a smoker's. Additional risk for other cancers drop
- **15 years:** risk for heart disease will be at the *same* as that of a nonsmoker. Risk of arrhythmias normalize
- **Lifelong: nonsmokers live* about 10 years longer than smokers**

Survivability

- Today's tobacco products are designed to increase use in younger populations
 - Flavored tobacco use
 - E-cigarettes
- Smoking has multifaceted effect on CV health
 - Compounded when considering race and ethnic disparities
- Smoking cessation makes an immediate impact on health and long term survivability

