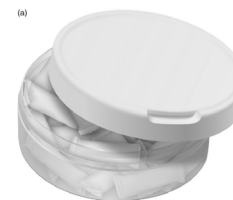
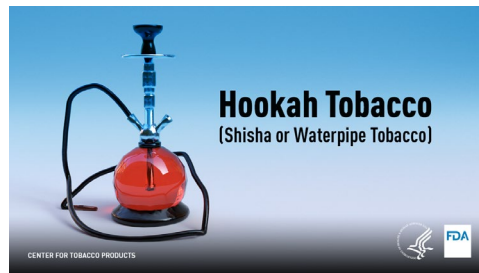
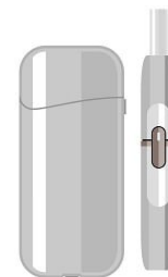


# Epidemiology of Tobacco and Cancer

*Neal Freedman, PhD, MPH*

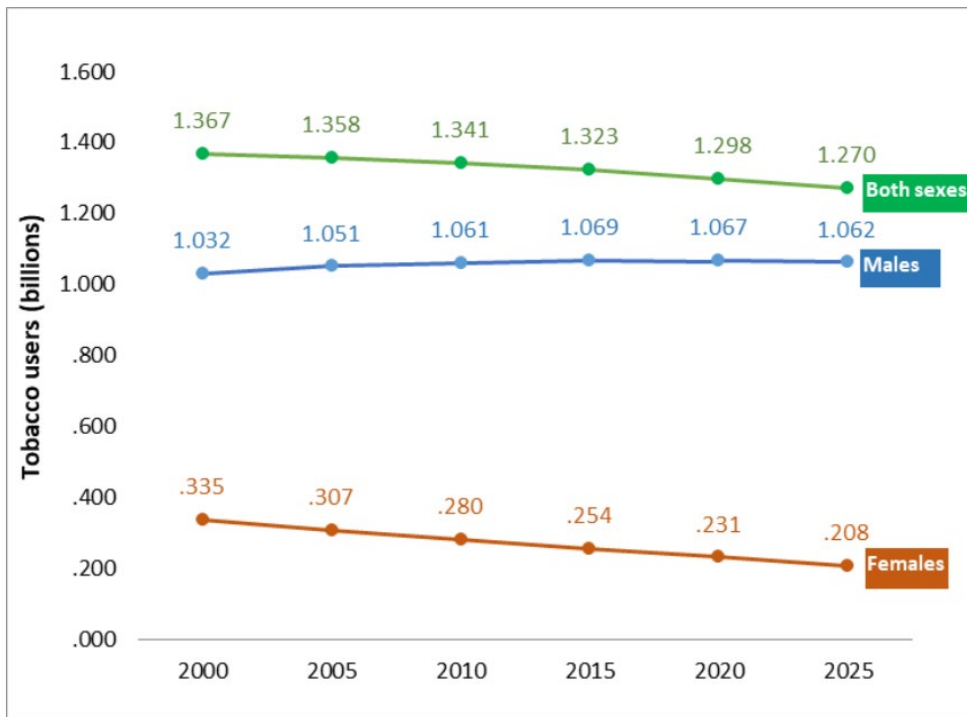


nicotine pouches



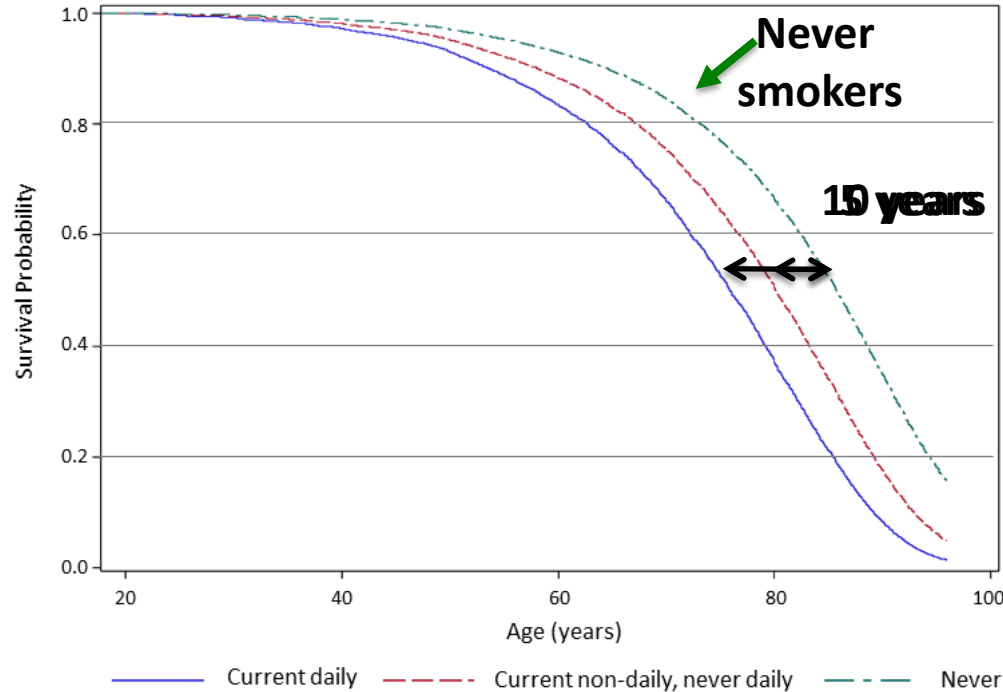
heated tobacco

# Global number of tobacco users, age 15+



WHO global report on trends in prevalence of tobacco use 2000-2025, fourth edition

# People who smoke have substantially shorter lives than people who don't, on average.



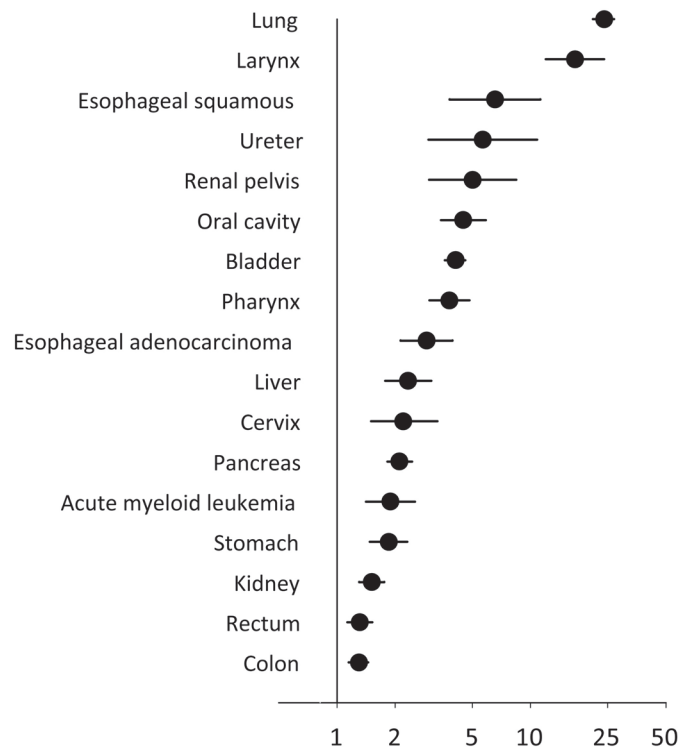
> 8 million  
deaths/year

Inoue-Choi M *et al*, *Am J Prev Med*, 2019

“On the basis of current smoking patterns, ... , annual tobacco-attributable deaths will rise from **about 5 million in 2010 to more than 10 million in a few decades**, as the young smokers of today reach middle and old age. ... If current smoking patterns persist, tobacco will kill about **1 billion people this century**, mostly in low- and middle-income countries.”

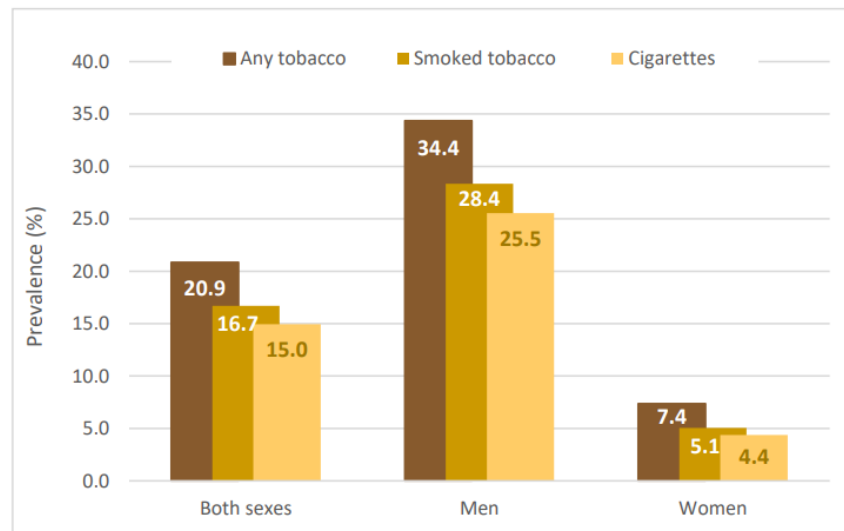
Jha and Peto, NEJM, 2015

# Profound impact of cigarette smoking on cancer



Freedman et al, IJE, 2016

Fig 6: Age standardized global prevalence of tobacco use by type, 2022

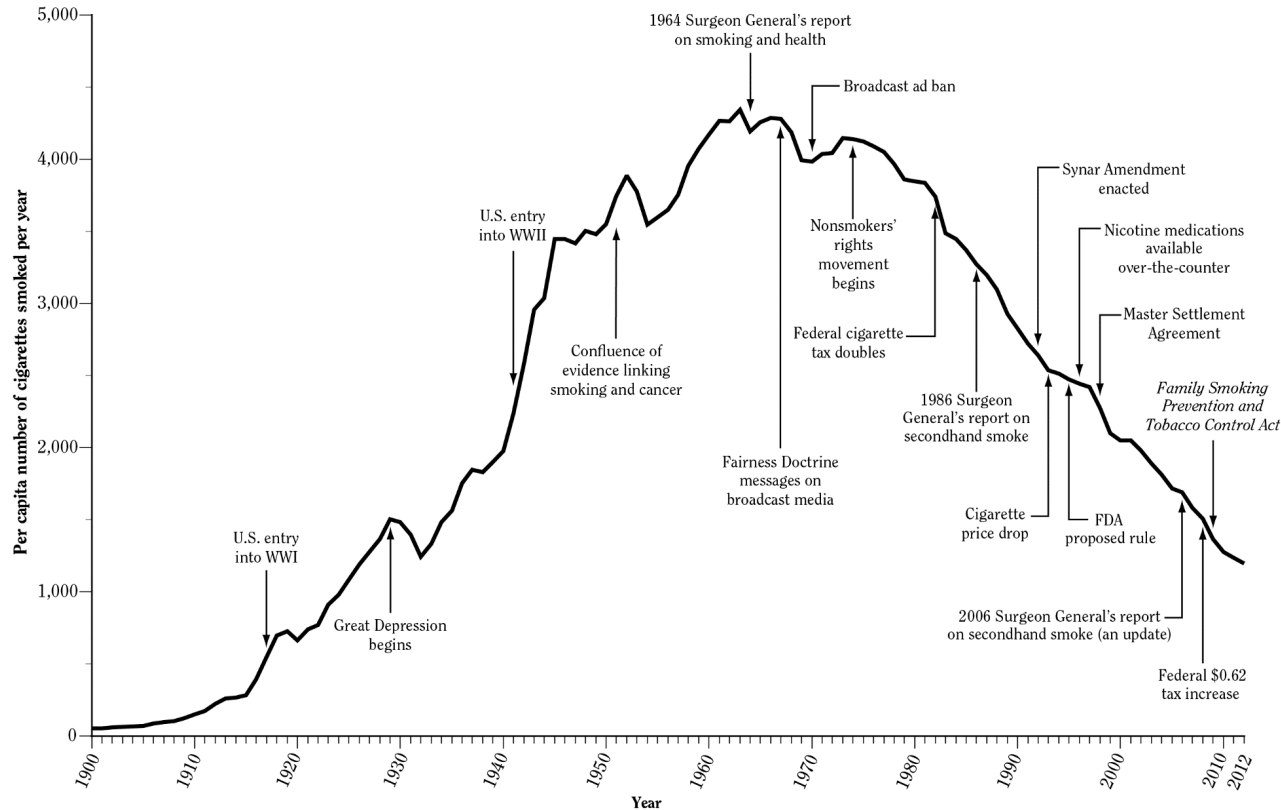


WHO global report on trends in prevalence of tobacco use 2000-2030

**US: 59% of current tobacco users used cigarettes;  
73.6% used a combustible product**

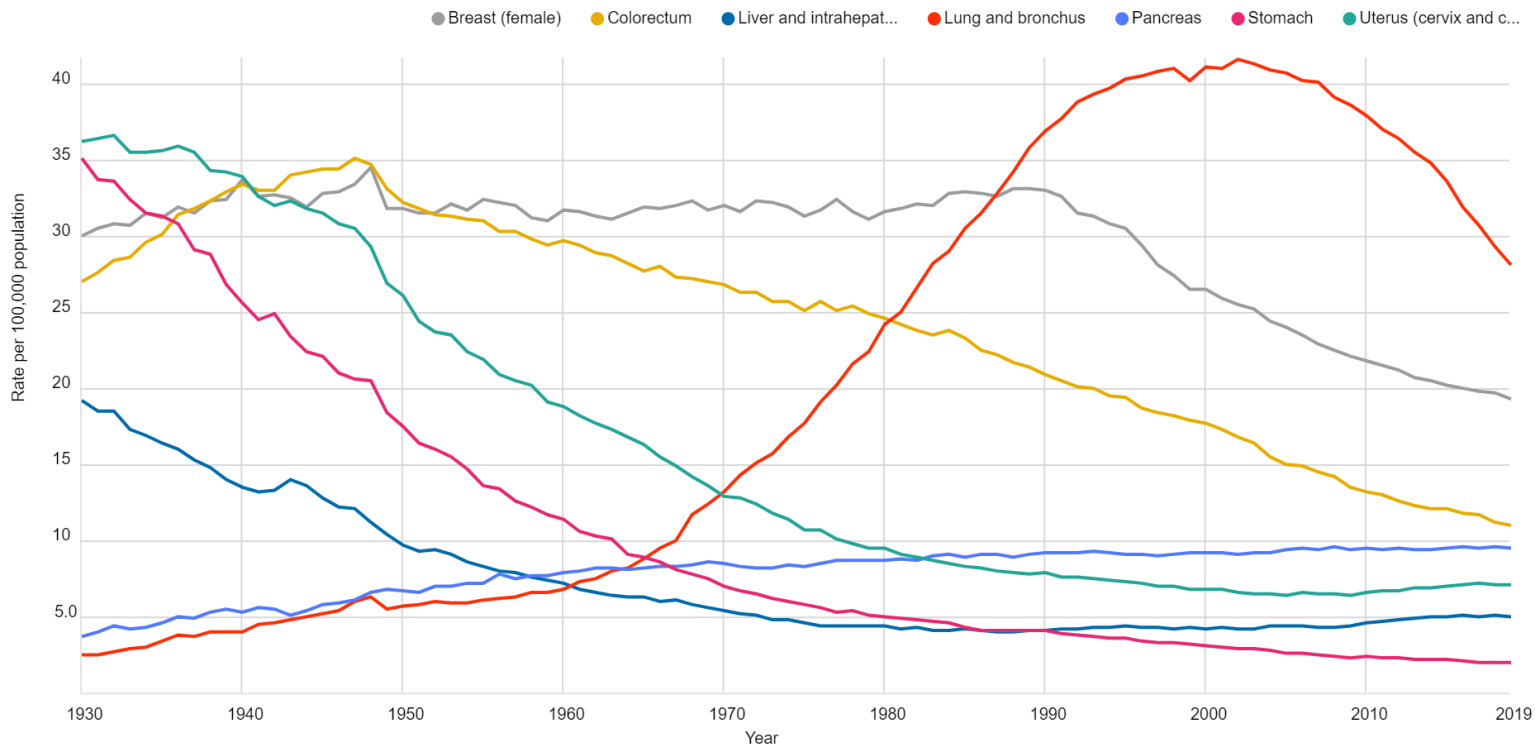
CDC, 2022 NHIS Highlights

# US per capita cigarette consumption



2014 Surgeon General's Report

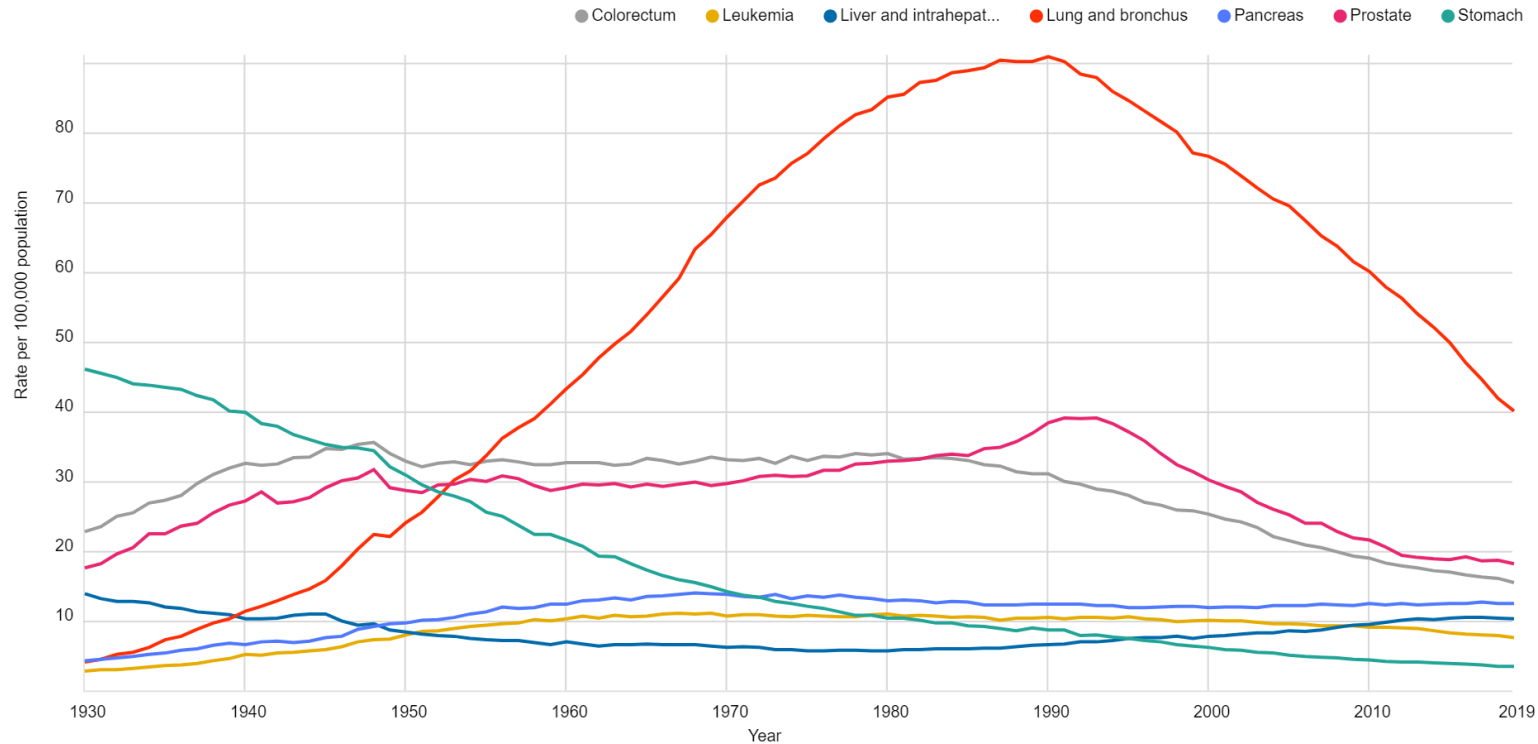
# Rates of cancer mortality in US women, 1930-2019



[cancerstatisticscenter.cancer.org](https://cancerstatisticscenter.cancer.org)



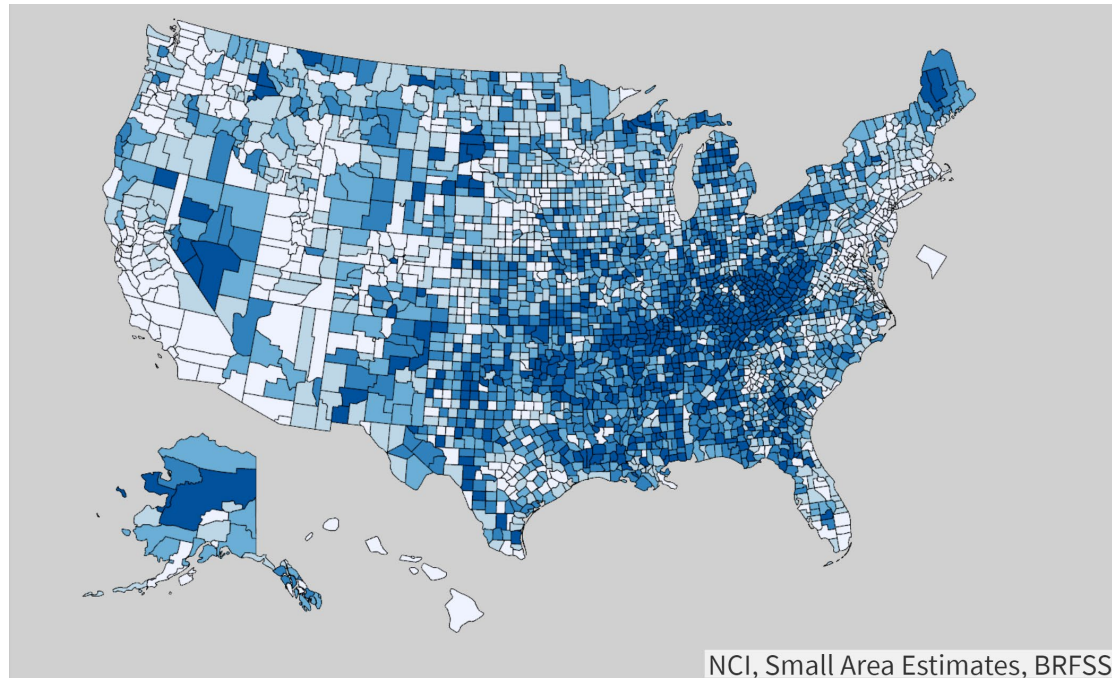
# Rates of cancer mortality in US men, 1930-2019



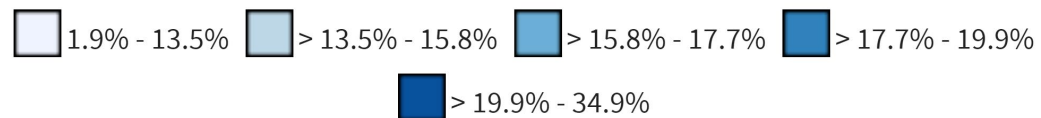
[cancerstatisticscenter.cancer.org](https://cancerstatisticscenter.cancer.org)

# Leading causes of cancer death, 2024

Cancer type	N	% of cancer deaths
Lung and Bronchus	125,070	20%
Colon and Rectum	53,010	9%
Pancreas	51,750	8%
Breast	42,780	7%
Prostate	35,250	6%



**Current Smoking Prevalence (Age 18+)**  
**Estimated Percent**  
**US by County, Both Sexes, 2017-2019**



# Prevalence of current tobacco use in the United States

	Any Tobacco Product	Cigarettes	Cigars	E-Cigs	Smokeless	Hookah	Pipe	Heated Tobacco Products	Nicotine Pouches	≥2 Tobacco Products
Adults	14.3%	8.9%	2.4%	3.0%	1.2%	0.4%	0.2%	0.1%	0.5%	2.1%
High School	10.1%	1.7%	1.5%	7.8%	1.5%	0.8%	0.5%	0.9%	2.4%	3.7%

## Sources:

**Adult Data:** Tobacco Use Supplement to the Current Population Survey (TUS-CPS), 2022-23

**High School Data:** Jamal A, Park-Lee E, Birdsey J, et al. Tobacco Product Use Among Middle and High School Students — National Youth Tobacco Survey, United States, 2024. MMWR Morb Mortal Wkly Rep 2024;73:917–924. DOI: <http://dx.doi.org/10.15585/mmwr.mm7341a2>.

**Dr. Mayer Sutherland**

# Prevalence of exclusive current tobacco use in the United States by age

Age	Any Tobacco Product	Cigarettes	Cigars	E-Cigs	Smokeless	Pipe
18-24	16.8%	1.2%	1.0%	10.3%	0.3%	0.1%
25-44	24.4%	7.6%	2.6%	6.1%	1.5%	0.6%
45-64	21.0%	11.2%	2.1%	2.0%	2.0%	0.1%
≥65	11.6%	7.5%	1.5%	0.6%	0.8%	0.1%

NHIS: Arrazola et al, MMWR, 2025

# Summary

Tobacco products continue to contribute substantially to the burden of cancer worldwide, including in the US

Multiple tobacco products cause cancer, including cigarettes, cigars, pipes, and smokeless tobacco

E-cigarettes, nicotine pouches, heated tobacco, and waterpipe are more commonly used by younger people in the US and their impact on cancer is less understood.



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