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Smoking and Cardiovascular Risk

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Cardiovascular Risk Factors

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- Age
- Family history
- Personal history of CVD
- Peripheral vascular disease
- *Tobacco*
- Hypertension
- Lipids
- Diabetes Mellitus

NCEP, ACC, AHA guidelines

Prevalence of Current Smoking for Americans >18yrs

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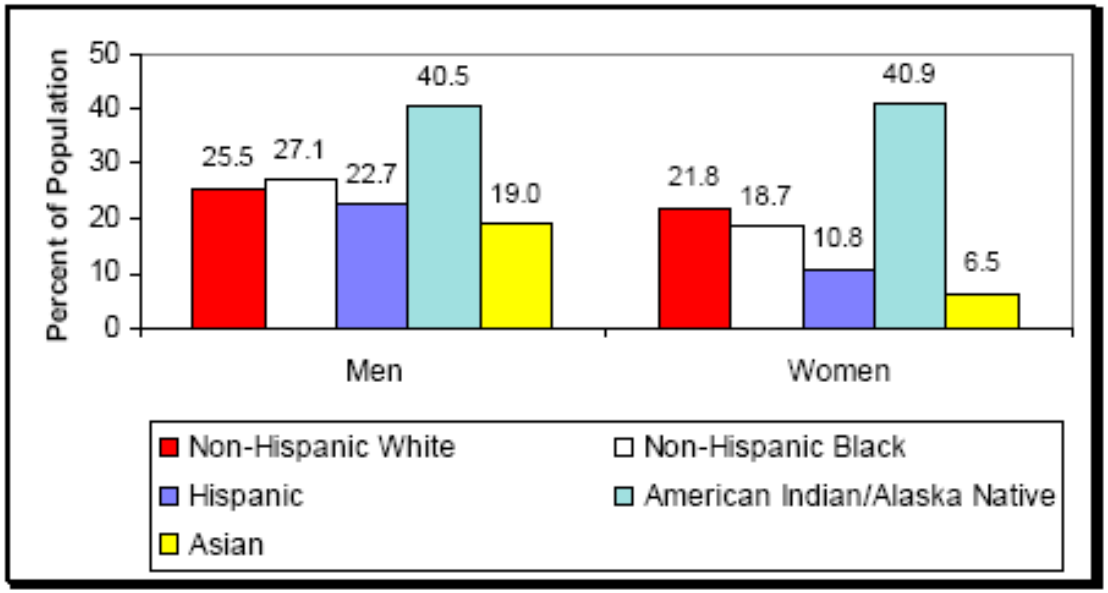

: MMWR, Vol.53(20); 427-431, May 28, 2004, CDC/NCHS.

Since 1965, smoking has declined 47% among adults, BUT

2003: 30% of high school boys, 25% girls report tobacco use

Tobacco in Women

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- 20% of women in U.S. smoke
  - 37% NA, 22% W, 18%AA, 13% H, 7% A
- Cessation rates have declined more slowly in women c/w men
- 50% of heart attacks are caused by smoking
  - Leading preventable cause of CVD
  - Particularly in premenopausal women
- 1 to 4 cigarettes/day = 2.5 x risk

NEJM 1995; 332: 1758-1766
1998 Heart & Stroke Facts: American Heart Association
Cleve Clin J Med 1998; 65: 464-469
Circulation 1997; 96:2468-2482

Cardiovascular risk and smoking

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- Incidence of MI in one pack a day smokers: c/w nonsmokers
  - 6x increase in women
  - 3x increase in men
    - Circ 1996;93:450 , BMJ 1998;316:1043
- Smoking greater risk of MI than diabetes
  - 15,152 cases/ 52 countries
  - Smokers OR 2.9, diabetes 2.4, HTN 1.9, lipids 3.2
  - Population attributable risk 35%, 10%, 18%, 49%
    - Lancet 2004;364:937.

Smokers present 1-2 decades earlier: Age of First MI

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Women:

Nonsmokers age 79

Smokers age 60

Men:

Smokers age 71

Nonsmokers age 64

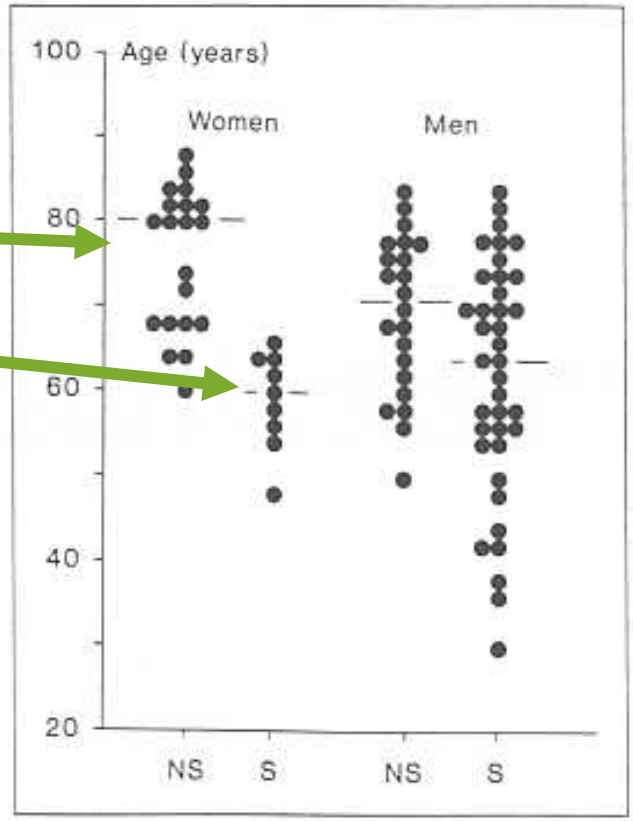

FIGURE 2. Age at time of first acute myocardial infarction for male and female nonsmokers (NS) and smokers (S). *Bars* denote median values.

Smoking in patients with established CAD

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- Increased mortality post-MI
  - 24% vs 15% *
  - 10% vs 4%
    - * no high school diploma
    - AJC 1993;71:1031
- Increased SCD in CAD patients :
  - 2.5x /8yrs
  - 8.1% vs 4.6% quitters vs 4.1% nonsmokers
    - Arch IM 2003;163:2301

Smoking and coronary revascularization

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- **Increased risk post CABG**
  - 1000 patients/ 20 year follow up
  - Smoking cessation postop, indep predictor survival
    - Smokers: 1.7x increased risk death
    - Quitters survival benefit: 3% at 5 yrs and 14% at 15yrs
    - Quitters 1.4x reduced revascularization
      - JACC 2000;36:878
- **Increased risk after percutaneous intervention**
  - 1.8x increased mortality
  - 2x increased risk of MI
    - NEJM 1997;336:755.

Smoking affects all phases of atherogenesis

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- **Affects initiation and progression of atherosclerosis:**
  - endothelial dysfunction
  - inflammation
  - oxidation of LDL
- **Affects acute clinical events:**
  - Plaque rupture and erosion
  - Thrombosis: increase platelets, decrease fibrinolysis
- **Mechanism:**
  - Increases oxidative stress, decreased NO availability

JACC 2004;43:1731

Pathophysiology of smoking and CV dysfunction

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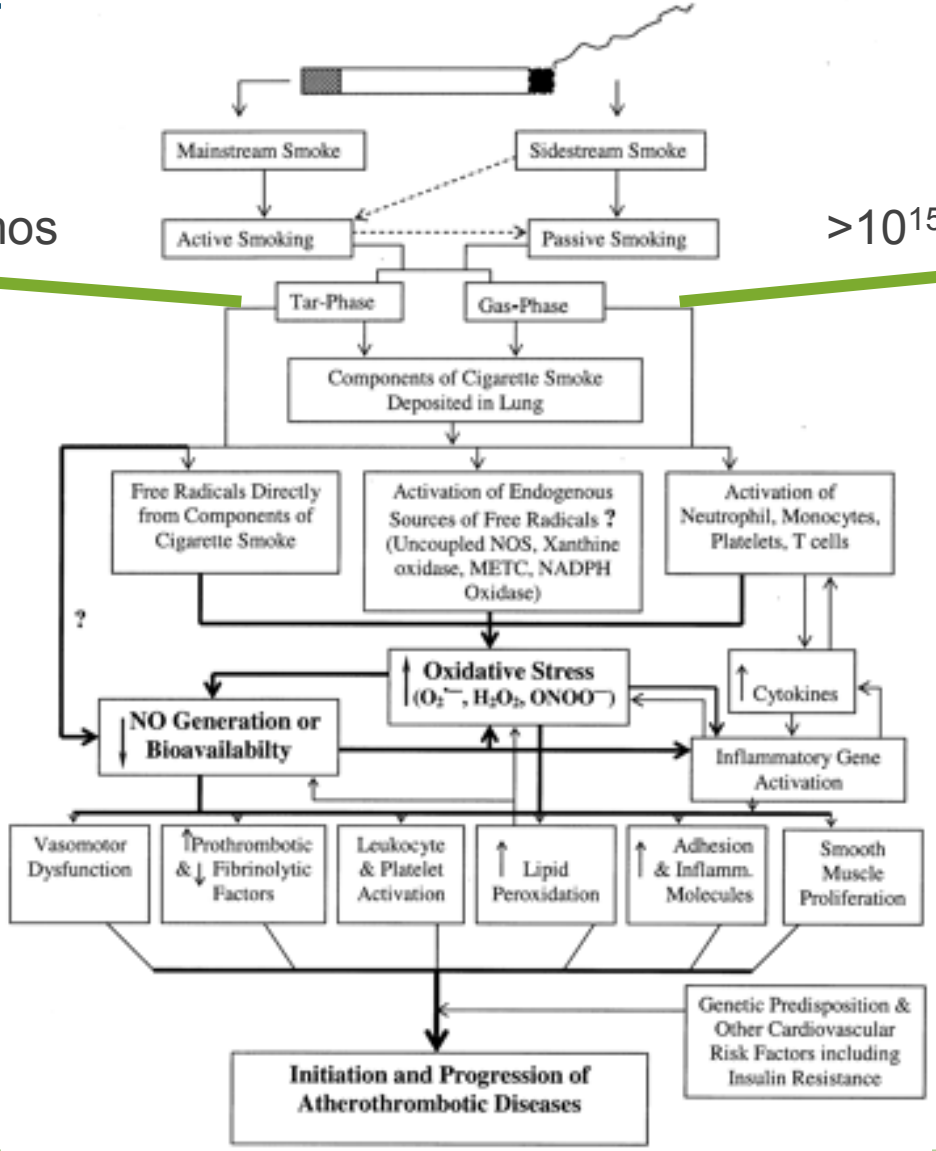
>10^{17}/g lasting hrs-mos

>10^{15}/puff lasting seconds



JACC 2004;43:1731

Smoking cessation for the primary care clinician

Strategy 1
Ask: systematically identify all tobacco users at every visit.
Implement an office-wide system that ensures that, for EVERY patient at EVERY clinic visit, tobacco-use status is queried and documented.
Strategy 2
Advise: strongly urge all smokers to quit.
In a clear, strong, and personalized manner, urge every smoker to quit.
Strategy 3
Identify smokers willing to make a quit attempt.
Ask every smoker if he or she is willing to make a quit attempt at this time.
Strategy 4
Assist: aid the patient in quitting
Help the patient with a quit plan.
Encourage nicotine replacement therapy or bupropion except in special circumstances.
Give key advice on successful quitting.
Provide supplementary materials.
Strategy 5
Arrange: schedule follow-up contact.
Schedule follow-up contact, either in person or via telephone.

Modified from Fiore, MC, Bailey WC, Cohen, JJ, et al. Smoking Cessation. Clinical Practice Guideline Number 18. AHCPR Publication No. 96-0692. Rockville, MD: Agency for Health Care Policy and Research, Public Health Service, U.S. Department of Health and Human Services, 1996.

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Safe in outpatient CAD patients, not tested in ACS