

Your Heart and Diabetes



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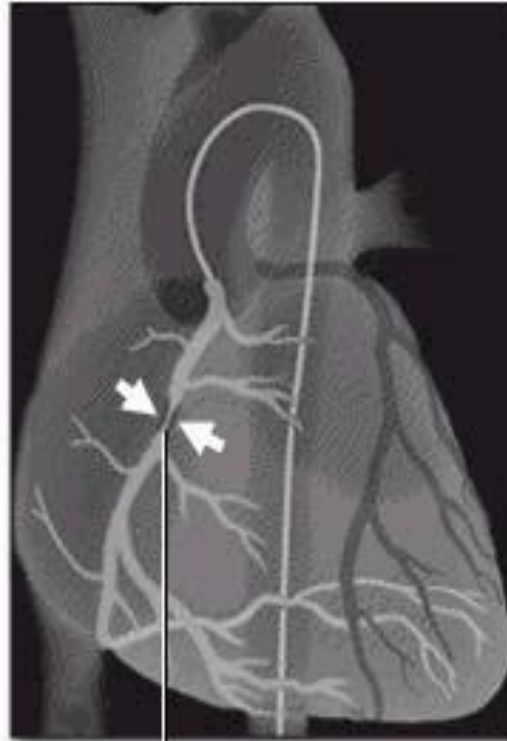
Presenter Disclosure Information

- Consultant, Merck and Co., Inc.
- Consultant, GNC Corporation



Cardiac Catheterization

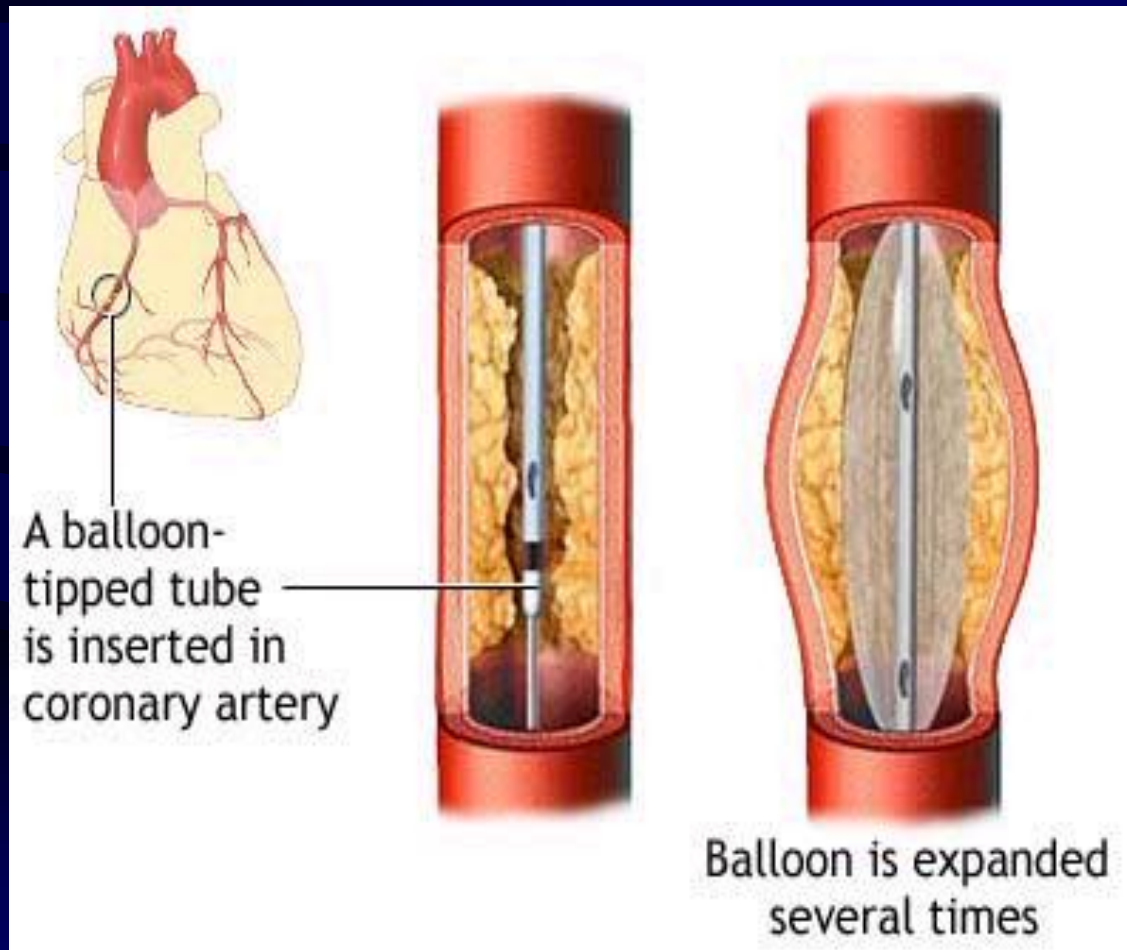
Dye is injected into the coronary arteries



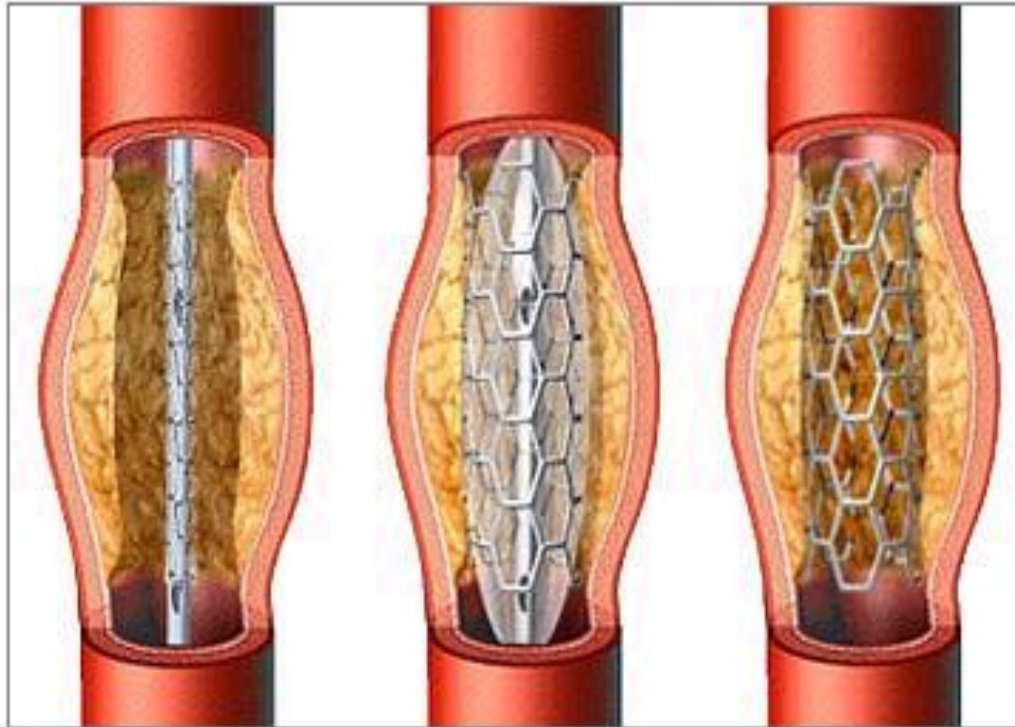
Coronary artery
blockage site

X-ray image

Balloon Angioplasty



Stent Placement



Stent
insertion

Stent
expansion

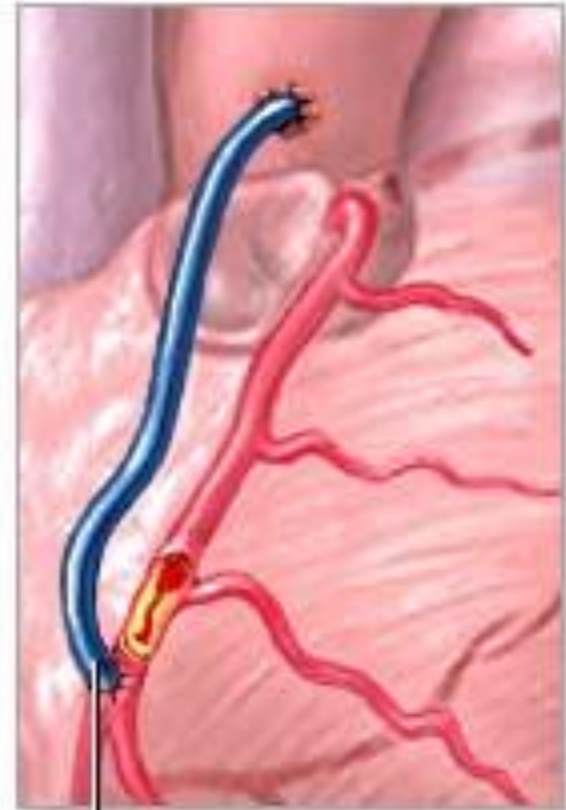
Stent remains in
coronary artery

Before

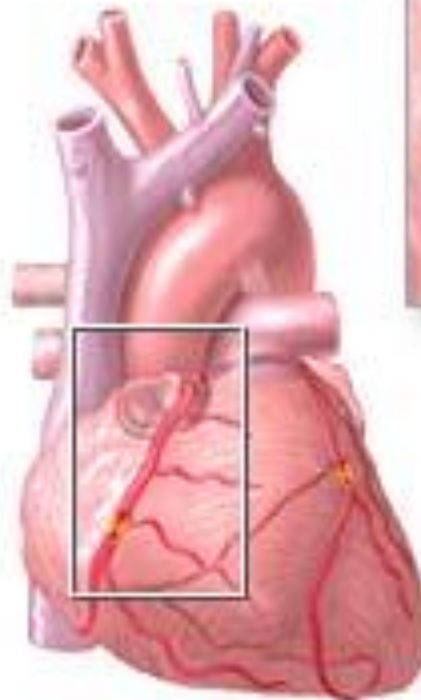


Blocked coronary artery

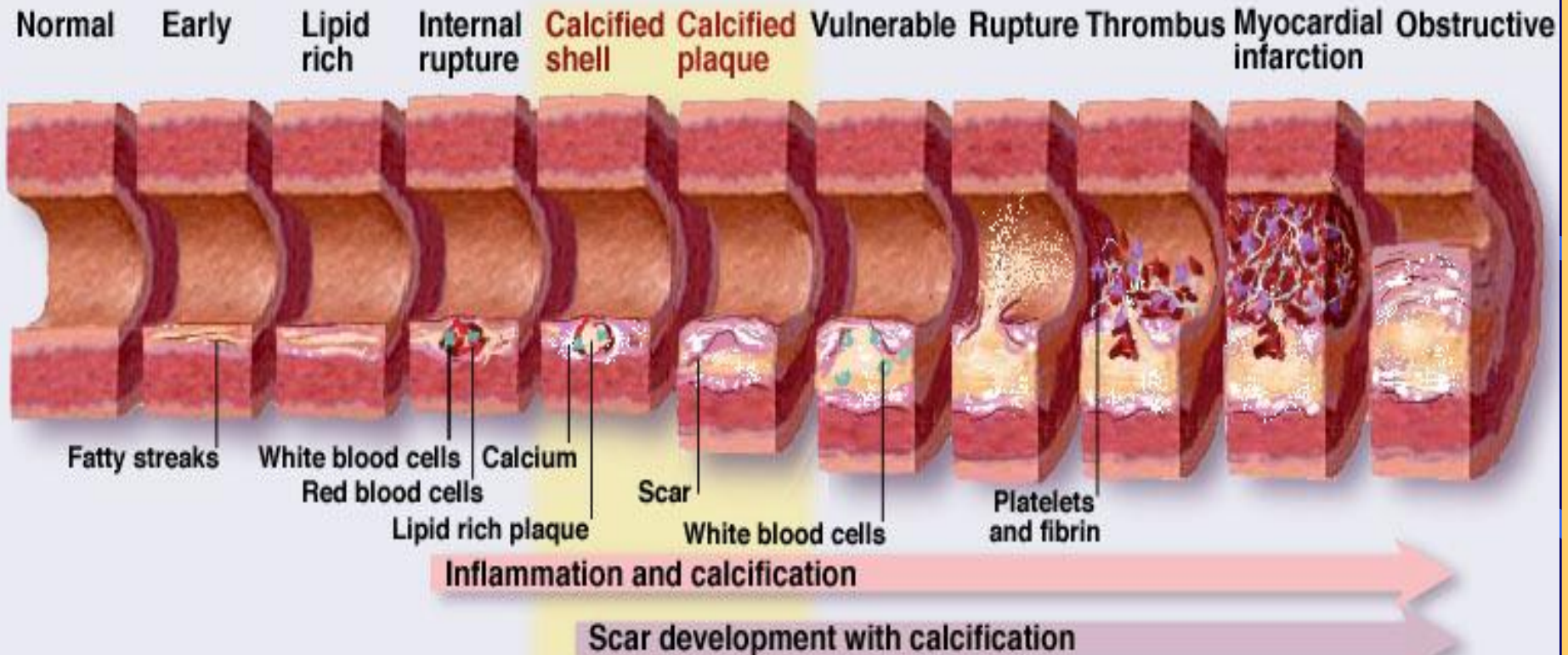
After



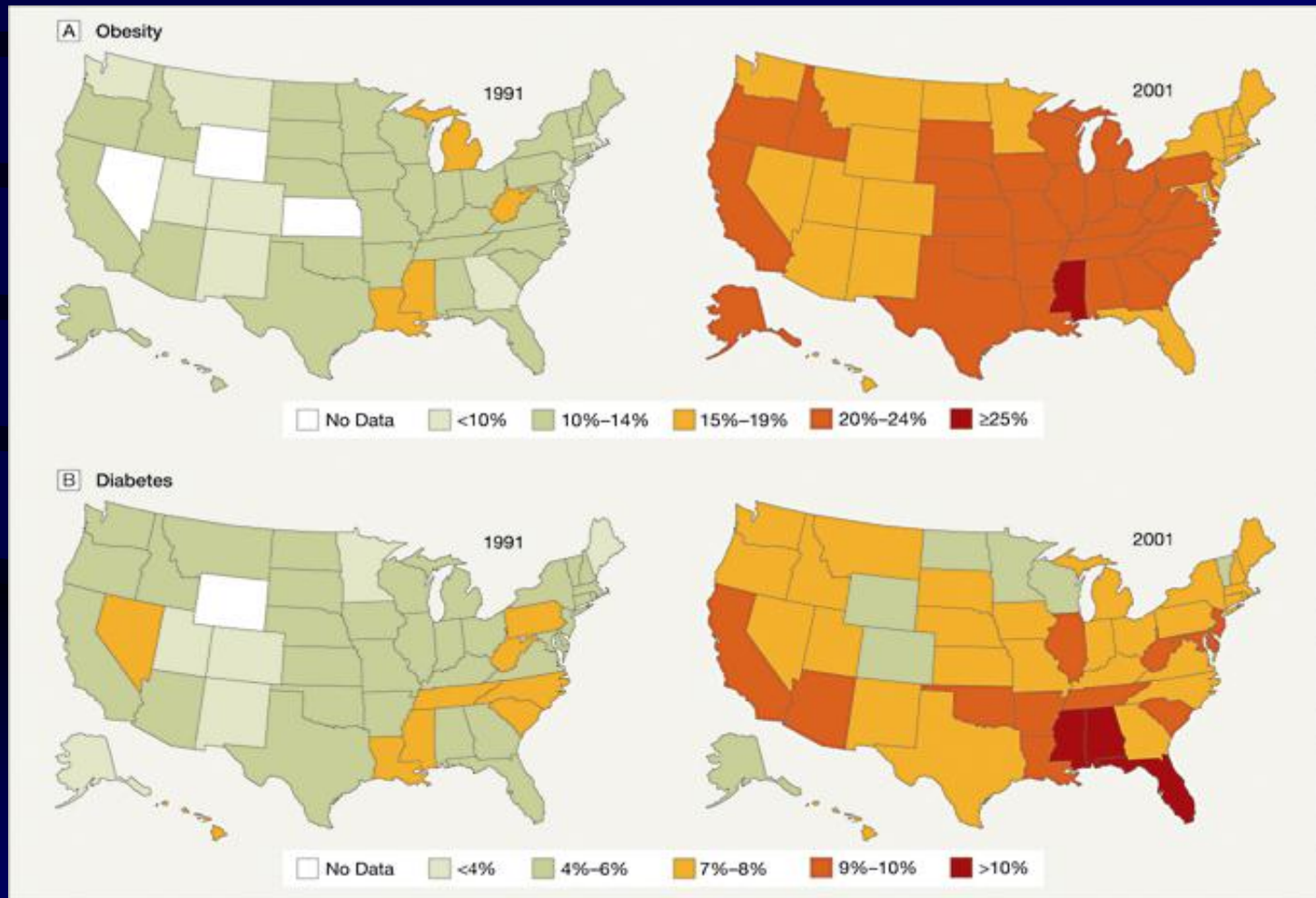
Vein graft sewn in to bypass blockage



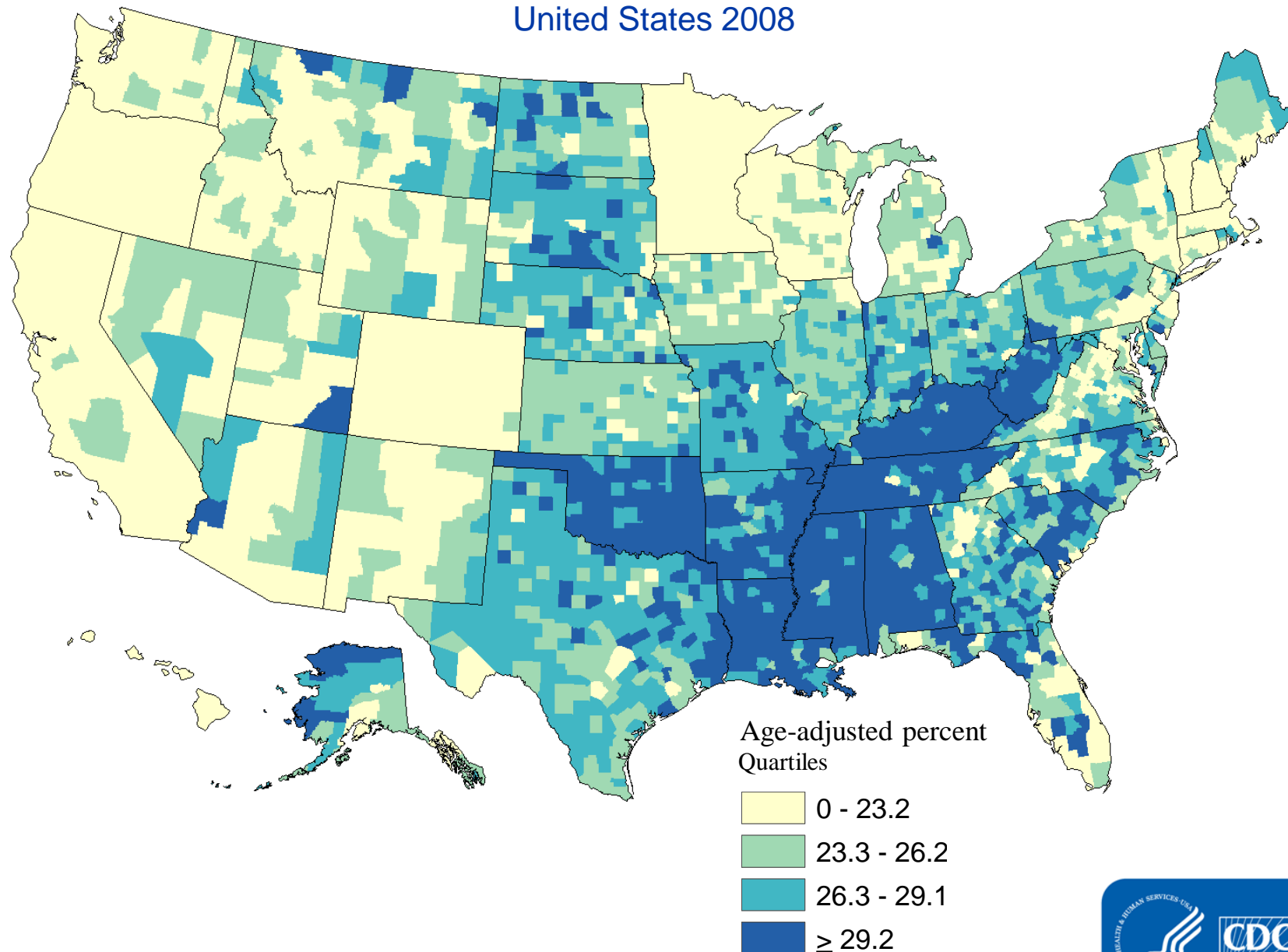
Coronary Artery Disease Timeline



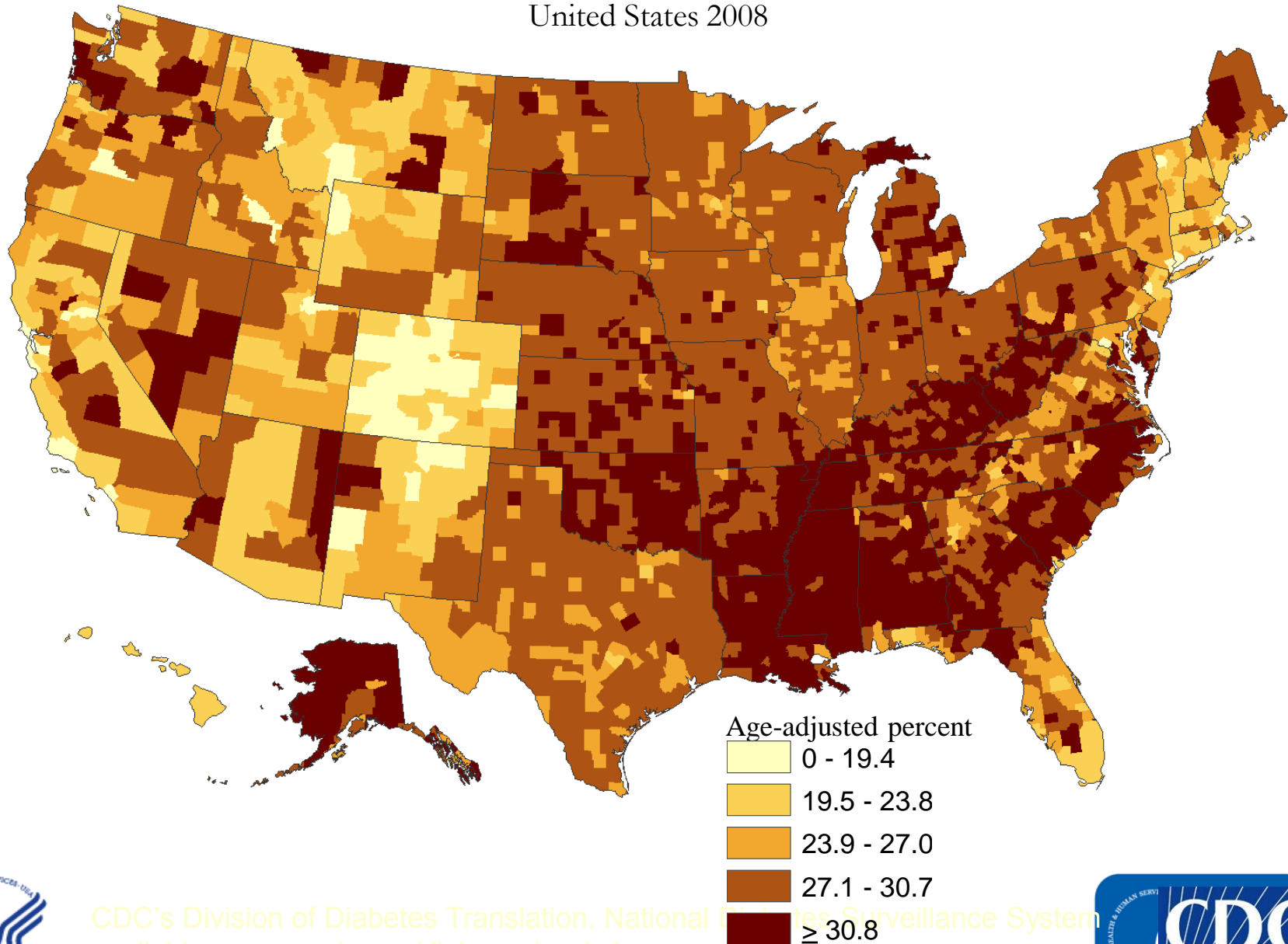
Prevalence of Obesity and Diagnosed Diabetes Among US Adults, 1991 - 2001



County-level Estimates of Leisure-time Physical Inactivity among Adults aged ≥ 20 years: United States 2008



County-level Estimates of Obesity among Adults aged ≥ 20 years:
United States 2008

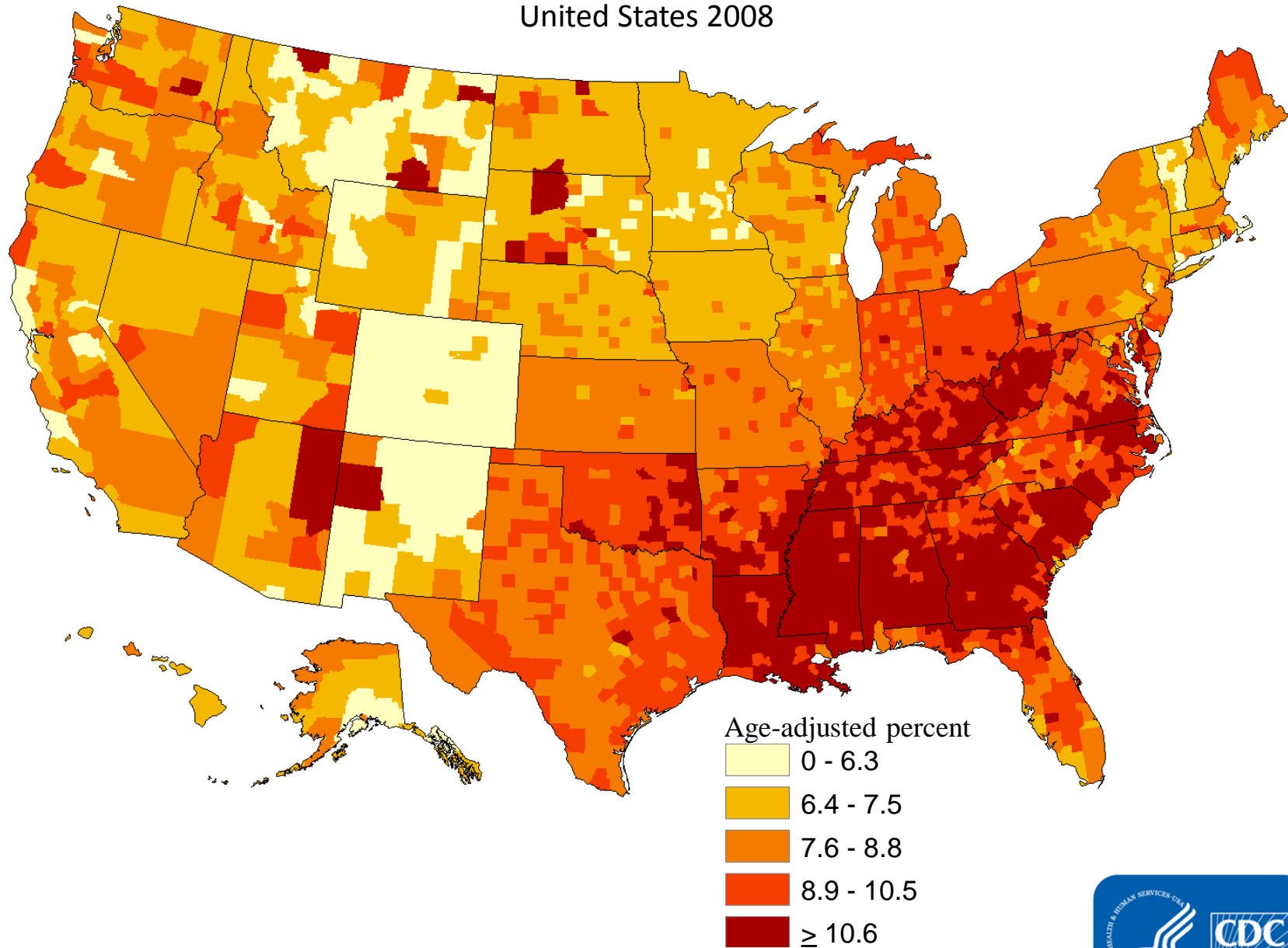


CDC's Division of Diabetes Translation, National Diabetes Surveillance System
available at www.cdc.gov/diabetes/statistics

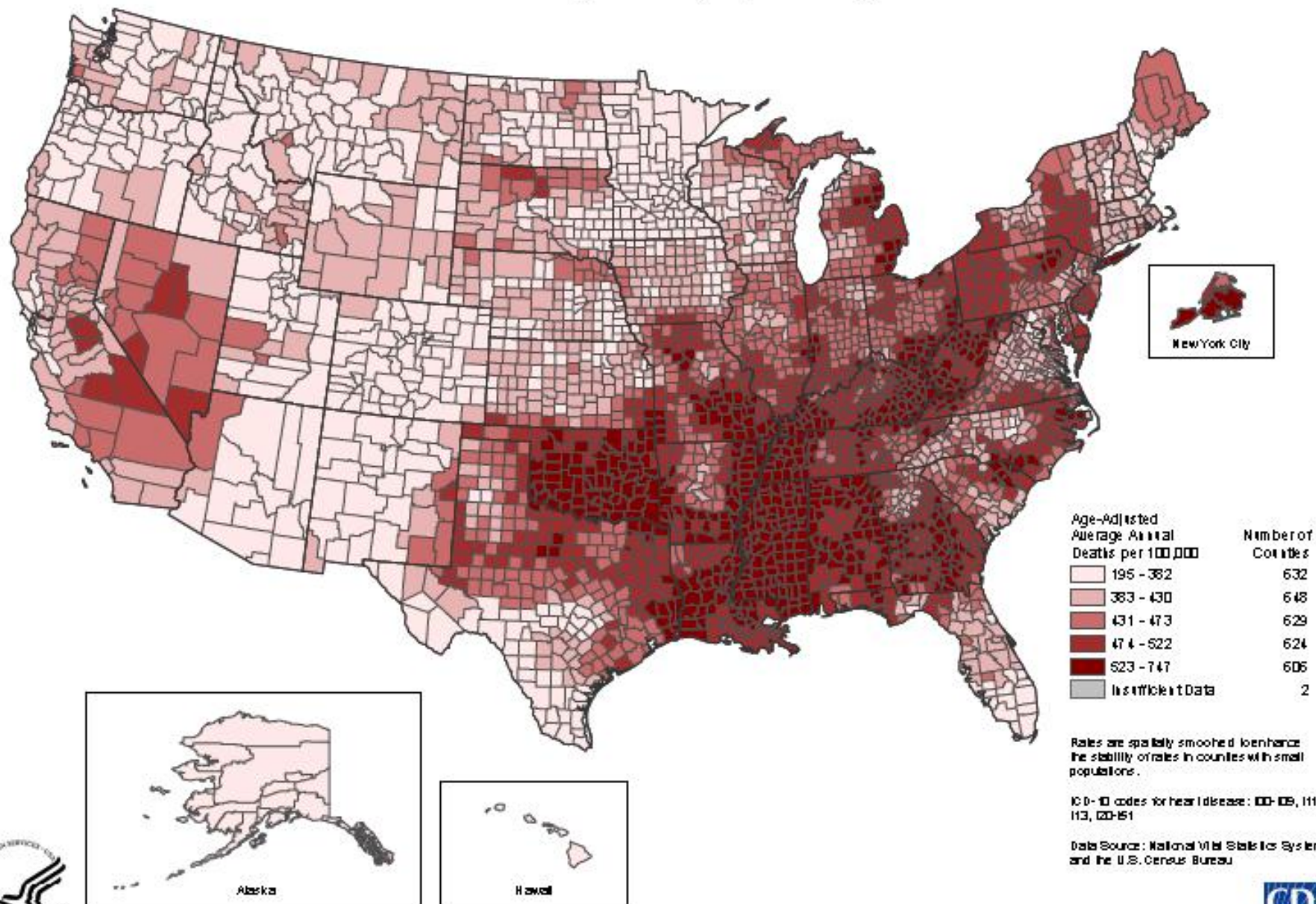
www.cdc.gov/diabetes



County-level Estimates of Diagnosed Diabetes among Adults aged ≥ 20 years: United States 2008

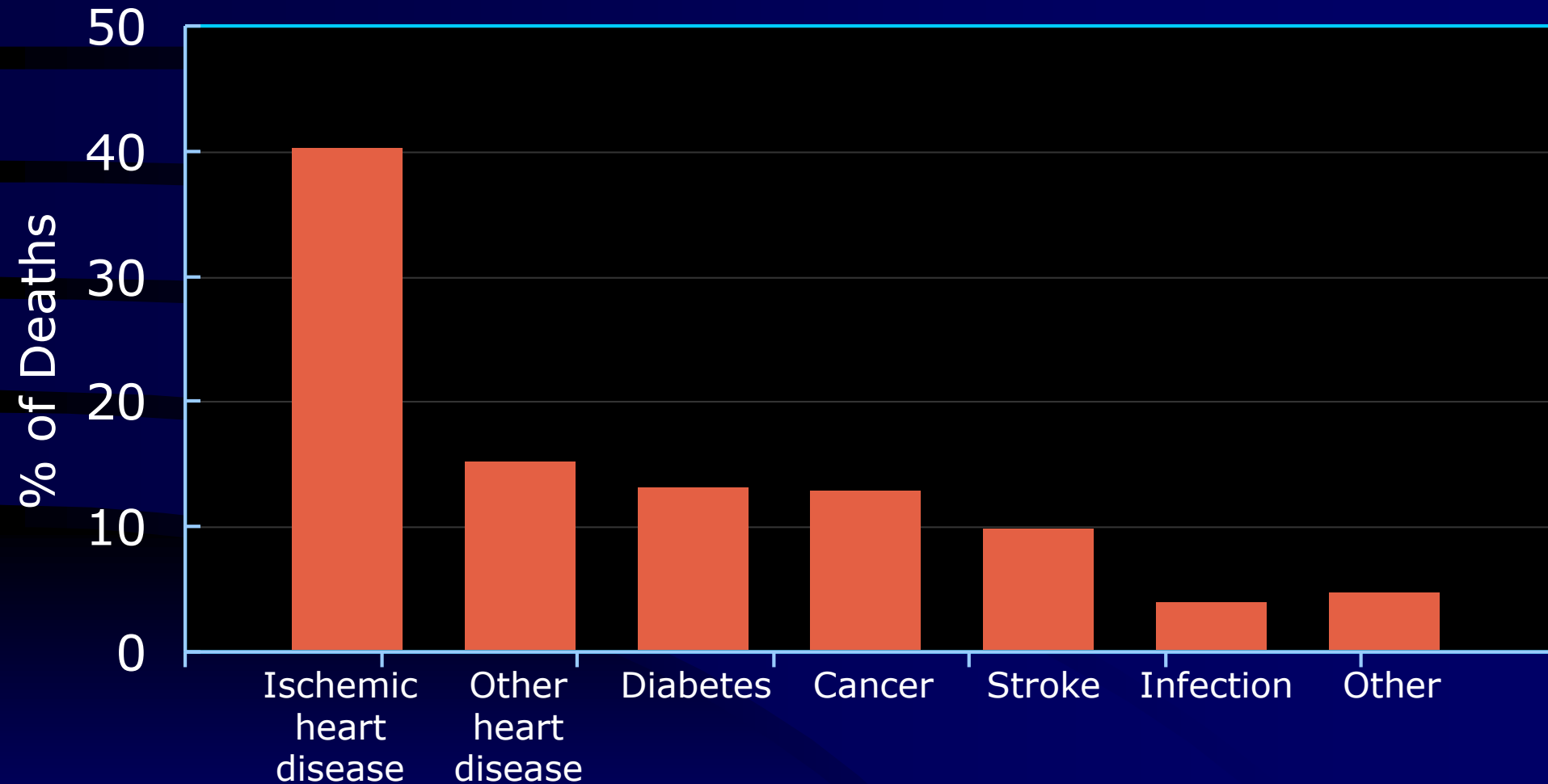


Heart Disease Death Rates, 2000-2006 Adults Ages 35+, by County



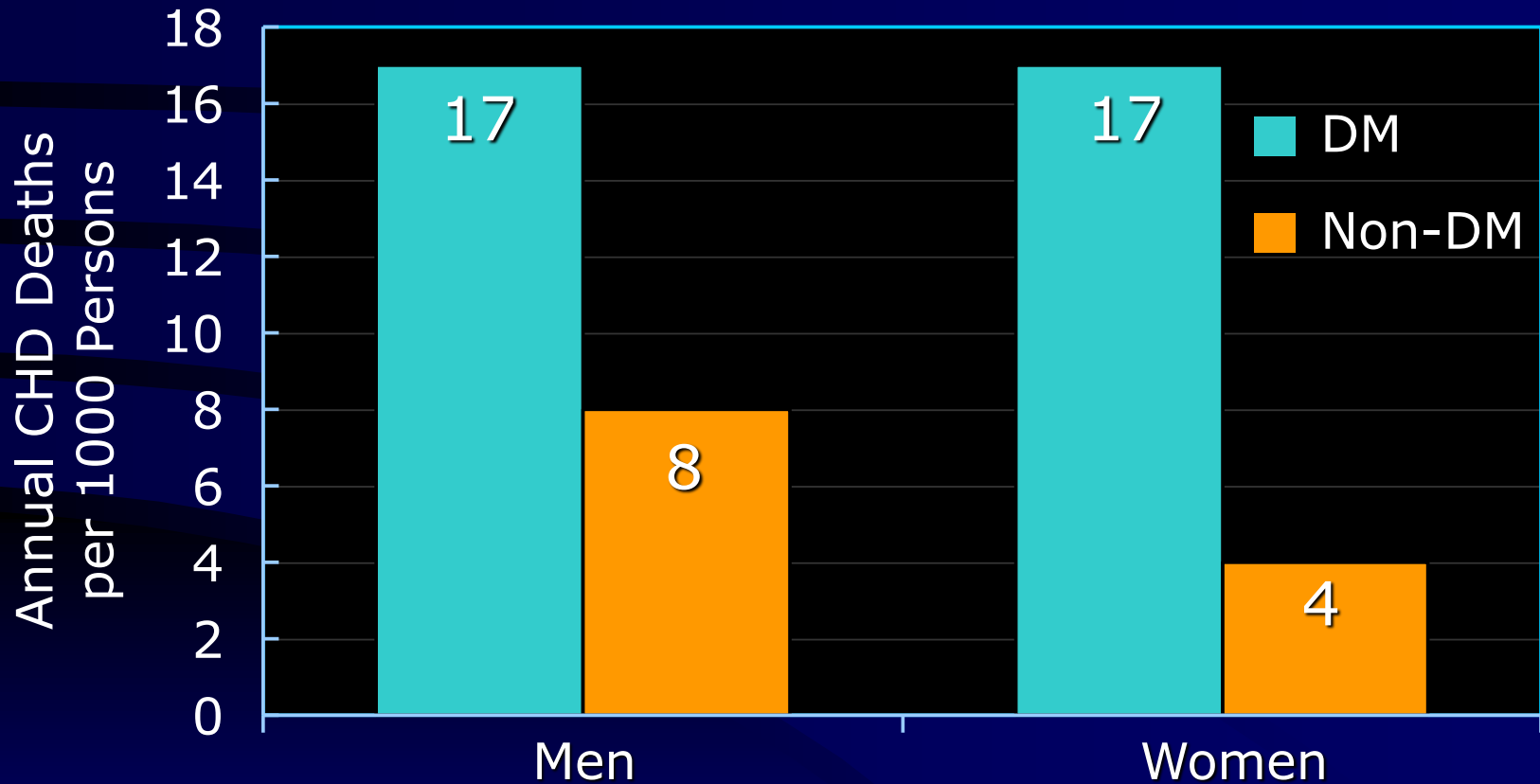
Mortality in People with Diabetes

Causes of Death

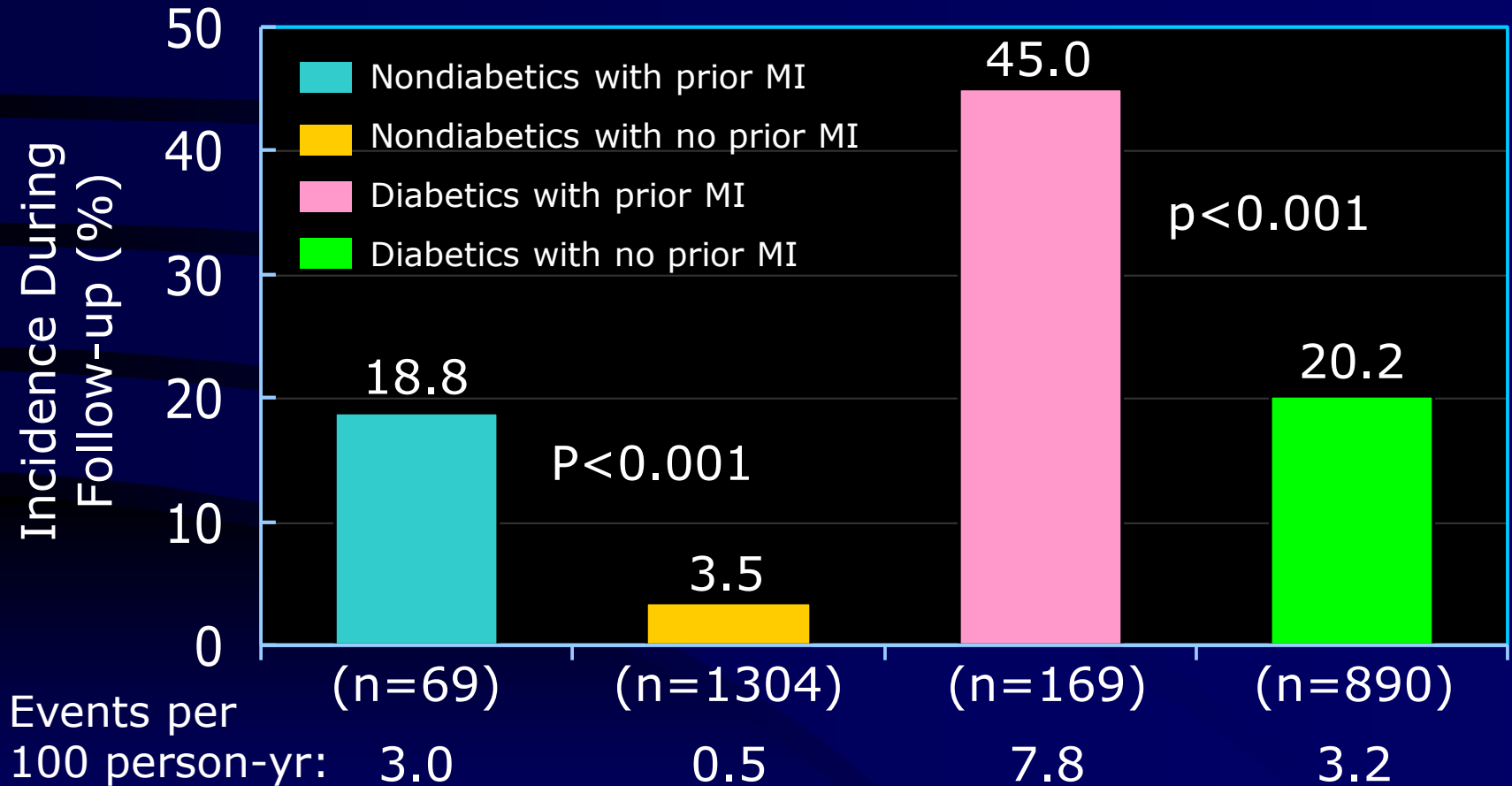


Framingham Study: DM and CHD Mortality

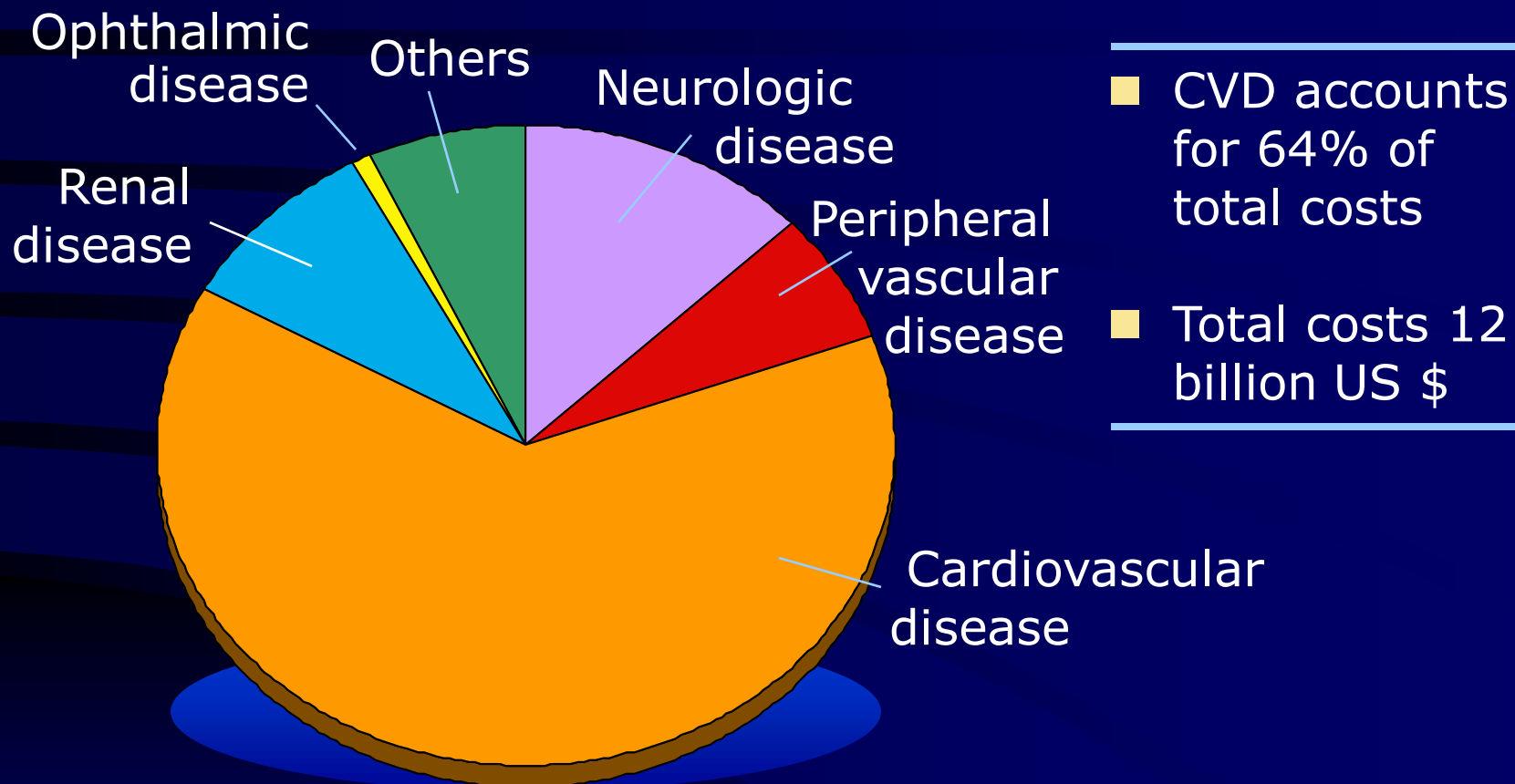
20-Year Follow-up



Incidence of Fatal or Nonfatal MI During a 7-Year Follow-up in Relation to History of MI in Nondiabetic vs. Diabetic Subjects: *East-West Study*

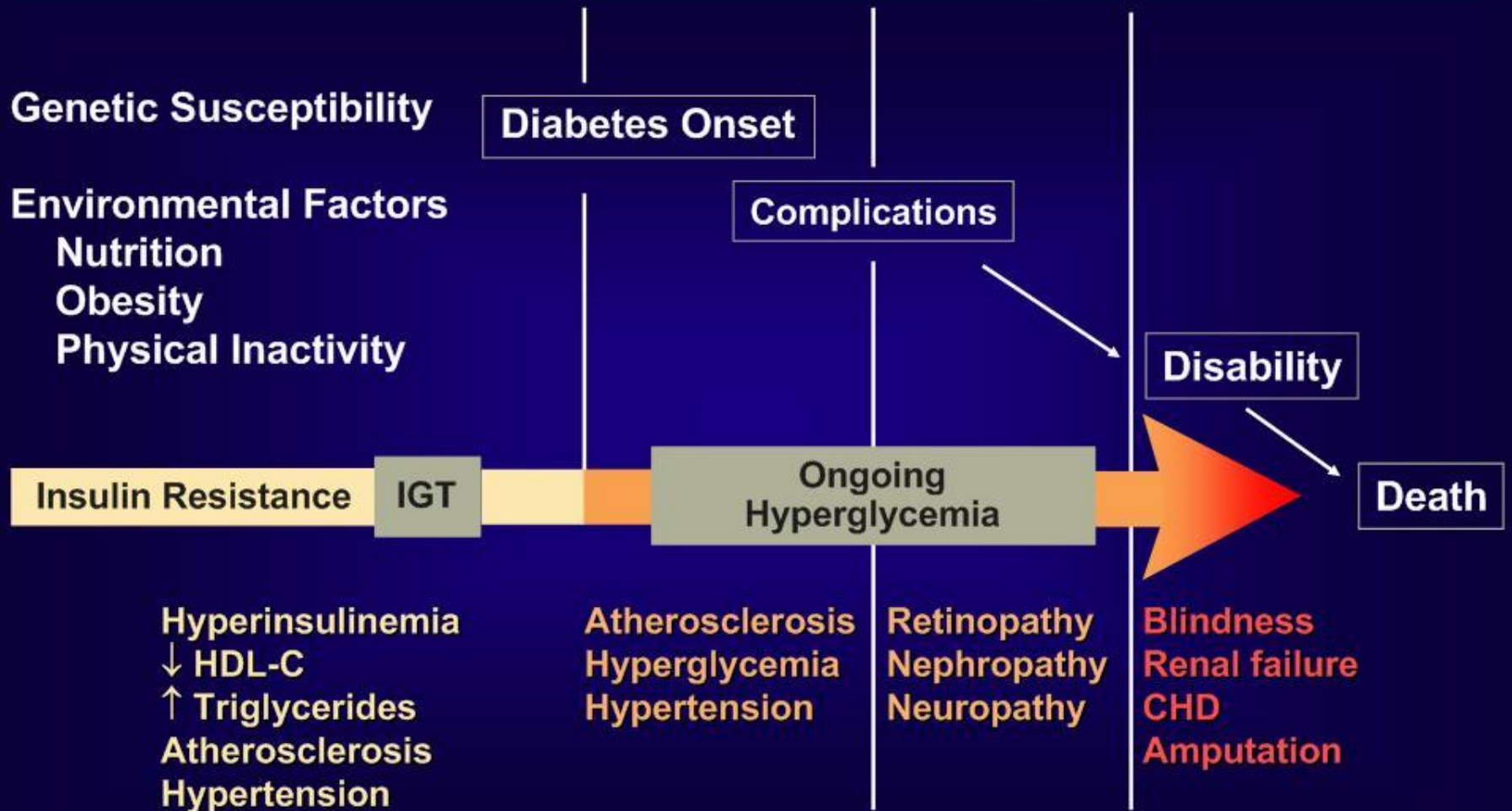


Hospitalization Costs for Chronic Complications of Diabetes in the US



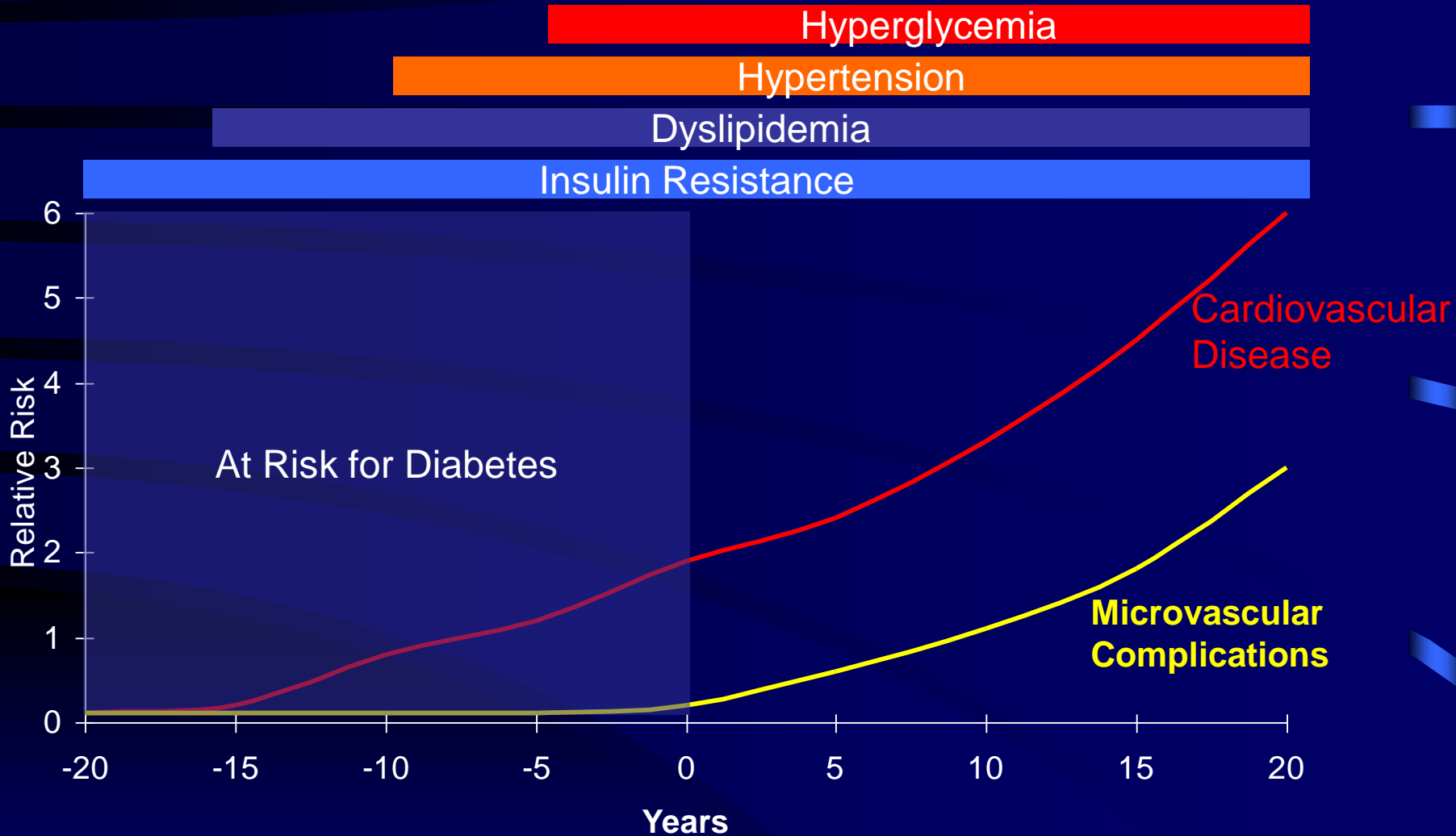
American Diabetes Association. *Economic Consequences of Diabetes Mellitus in the US in 1997*. Alexandria, VA: American Diabetes Association, 1998:1-14.

The Continuum of CV Risk in Type 2 Diabetes



Adapted from American Diabetes Association. *Diabetes Care*. 2003;26:3160-3167.
Tsao PS, et al. *Arterioscler Thromb Vasc Biol*. 1998;18:947-953.
Hsueh WA, et al. *Am J Med*. 1998;105(1A):4S-14S.
American Diabetes Association. *Diabetes Care*. 1998;21:310-314.

Risk of Complications in Type 2 Diabetes



“Ticking Clock” Hypothesis

For	The “clock starts ticking”
Microvascular complications	At onset of hyperglycemia
Macrovascular complications	Before the diagnosis of hyperglycemia

Strategies for Reduction of Diabetic Cardiovascular Complications

- Microvascular complications
 - Aggressive screening
 - Improved metabolic control
- Macrovascular complications
 - Improved glycemic control (positive but minor)
 - Prevention of type 2 diabetes
 - Aggressive treatment of metabolic dyslipidemia

Order of Priorities for Treatment of Diabetic Dyslipidemia in Adults*

- LDL cholesterol lowering*
 - First choice: HMG CoA reductase inhibitor (statin)
- HDL cholesterol raising
 - Behavior interventions such as weight loss, increased physical activity and smoking cessation
 - Glycemic control
 - Difficult except with nicotinic acid, which is relatively contraindicated
- Triglyceride lowering
 - Glycemic control first priority
 - Omega 3 fish oil (4000mg DHA/EPA)
 - Fibric acid derivative (gemfibrozil, fenofibrate)

* Decision for treatment of high LDL before elevated triglyceride is based on clinical trial data indicating safety as well as efficacy of the available agents.