

FIGURE 6e-1 Death rates per 100,000 population for 2007 by 5-year age groups in U.S. women. Note that the scale of the y axis is increased in the graph on the right compared with that on the left. Accidents and HIV/AIDS are the leading causes of death in young women 20–34 years of age. Accidents, breast cancer, and ischemic heart disease (IHD) are the leading causes of death in women 35–49 years of age. IHD becomes the leading cause of death in women beginning at age 50 years. In older women, IHD remains the leading cause of death, cerebrovascular disease becomes the second leading cause of death, and lung cancer is the leading cause of cancer-related deaths. At age 85 years and beyond, Alzheimer's disease (AD) becomes the third leading cause of death. Ca, cancer; CLRD, chronic lower respiratory disease; DM, diabetes mellitus. (Data adapted from Centers for Disease Control and Prevention, http://www.cdc.gov/nchs/data/dvs/MortFinal2007_WorkTable210R.pdf.)

Some studies have suggested that estrogen administration improves cognitive function in nondemented postmenopausal women as well as in women with AD, and several observational studies have suggested that postmenopausal hormone therapy (HT) may decrease the risk of AD. However, HT placebo-controlled trials have found no improvement in disease progression or cognitive function in women with AD. Further, the Women's Health Initiative Memory Study (WHIMS), an ancillary study in the Women's Health Initiative (WHI), found no benefit compared with placebo of estrogen alone [combined continuous equine estrogen (CEE), 0.625 mg daily] or estrogen with progestin [CEE, 0.625 mg daily, and medroxyprogesterone acetate (MPA), 2.5 mg daily] on cognitive function or the development of dementia in women ≥ 65 years. Indeed, there was a significantly increased risk for both dementia and mild cognitive impairment in women receiving HT. However, preliminary findings from the Kronos Early Estrogen Prevention Study (KEEPS), a randomized clinical trial of early initiation of HT after menopause that compared CEE 0.45 mg daily, 50 μ g of weekly transdermal estradiol (both estrogen arms included cyclic

oral micronized progesterone 200 mg daily for 12 days each month), or placebo, found no adverse effects on cognitive function.

CARDIOVASCULAR DISEASE AND STROKE

(See also Chap. 293) There are major sex differences in CVD, the leading cause of death in men and women in developed countries. A greater number of U.S. women than men die annually of CVD and stroke. Deaths from CVD have decreased markedly in men since 1980, whereas CVD deaths only began to decrease substantially in women beginning in 2000. However, in middle-aged women, the prevalence rates of both coronary heart disease (CHD) and stroke have increased in the 1999–2004 National Health and Nutrition Survey (NHANES) compared to the 1988–1994 NHANES, whereas prevalence rates have decreased or remained unchanged, respectively, in men. These increases were paralleled by an increasing prevalence of abdominal obesity and other components of metabolic syndrome in women.

Sex steroids have major effects on the cardiovascular system and lipid metabolism. Estrogen increases high-density lipoprotein (HDL)

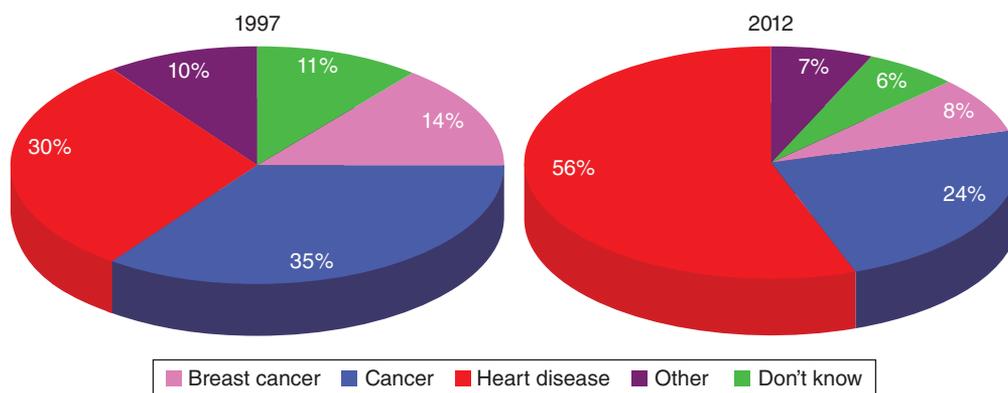


FIGURE 6e-2 Changes in perceived leading causes of death among women surveyed in 1997 compared with those surveyed in 2012. In 1997, cancer was cited as the leading cause of death in women, not heart disease. In 2012, this trend had reversed. The rate of awareness that heart disease is the leading cause of death in women was significantly higher in 2012 (56% vs 30%, $p < .001$) than in 1997. (Data adapted from L Mosca et al: *Circulation* 127:1254, 2013.)