The term *cardiovascular disease* refers to any disorder of the heart and blood vessels, including hypertension, coronary artery disease (CAD), cardiac dysrhythmias, cerebrovascular disease, valvular heart disease, cardiomyopathies, peripheral vascular disease, and congenital cardiac abnormalities. Each disorder has been characterized epidemiologically; incidence and prevalence rates vary widely by country and culture. Because hypertension, coronary artery disease, cardiac dysrhythmias, and cerebrovascular disease account for the majority of cardiovascular morbidity and mortality in developed countries, those topics are the focus of this chapter. For each of the disease categories, the epidemiology, etiology, risk indicators and primary prevention, diagnostic assessment, and treatment and prognosis are discussed.

### Hypertension

#### Epidemiology

High blood pressure is the most common cardiovascular disease, with a prevalence exceeding 20% in most areas of Canada and the United States (Davidson, 1991). Hypertension is commonly defined as having a systolic
blood pressure (SBP) of 140 mm Hg or greater, a diastolic blood pressure (DBP) of 90 mm Hg or greater, or as taking antihypertensive medications. Prevalence rates are nearly equal in men and women, increase with age, and are higher in African Americans than in whites. The risk of coronary artery disease (CAD) and stroke increases directly with increasing levels of both SBP and DBP (Joint National Committee, 1993; Stamler, Stamler, & Neaton, 1993).

The Framingham Offspring Study prospectively determined the 8-year incidence of hypertension in 4,294 young women and men who were free of the disorder at baseline examination. Adiposity was the major contributor to changes in SBP and DBP in both genders during the follow-up period. Alcohol consumption was also a significant predictor of blood pressure elevation in women (Garrison, Kannel, Stokes, & Castelli, 1987).

Etiology

Fewer than 10% of cases of high blood pressure have surgically remediable causes; these include coarctation of the aorta, Cushing’s syndrome, and pheochromocytoma, as well as structural abnormalities of the kidney or stenosis of the renal artery, which can alter renin-angiotensin-aldersterone relationships. Where an underlying etiology cannot be determined, the term essential (or primary) hypertension is applied, and the primary goal becomes control instead of cure.

Risk Indicators and Primary Prevention

In addition to obesity and heavy ethanol consumption, physiological indicators of risk for development of primary hypertension include aging, sodium intake and excretion imbalances, and a family history of hypertension. Ethnic and cultural differences in hypertension prevalence are attributable in part to differences in the above factors (Franco et al., 1985; Gorkin, 1987).

Approximately two thirds of all persons over the age of 65 have a SBP of 140 mm Hg or greater or a DBP of 90 mm Hg or greater (Joint National Committee, 1993). Elevations in SBP may be attributable in part to decreased compliance of the arterial walls, raising arterial resistance. The phenomenon of systolic hypertension in the elderly has been the subject of several long-term studies. When elevated DBP appears for the first time in this age group, a search for secondary causes is appropriate (Applegate, 1989).

The balance between sodium intake and excretion affects both normotensive and hypertensive individuals. In normals, decreases in total pe-