Effects of Aging on CV System

most noticeable effect of aging on CV system is stiffening of arteries

heart has to work harder to overcome resistance

ventricles enlarge, esp left ventricle
    may get so thick that not enough space to pump blood effectively

valves may thicken and become calcified

impulse conduction along conducting system becomes more difficult
    ♦ increase in arrhythmias or heart block

muscle cells die
    heart becomes weaker
    ♦ lower tolerance to physical activity

Atherosclerosis is main change seen in blood vessels with age

stiffening of arterial walls with increasing deposits of collagen fibers &
    declining resilience of elastic fibers

also decline in responsiveness of baroreceptors so less vasomotor response
to changes in blood pressure

    results: quick move from lying to standing, blood is drawn away from brain,
        can cause dizziness or fainting
Disorders of the Circulatory System

Heart Disease
leading cause of death in US
‡ 30% of deaths/yr

most common form is coronary atherosclerosis
often leading to myocardial infarction

Abnormal Blood Pressure

Hypotension
low BP ‡ systolic <100
usually not a cause for concern
‡ often associated with long healthy life

but.
in some may produce dizziness when standing up too quickly
(esp in older patients)
may be due to severe bleeding and lead to circulatory shock
may hint at poor nutrition eg. <blood proteins

Hypertension
if transient is normal:
adaptation during fever, exercise, strong emotions

if persistent is a cause for concern
30% of those >50 yrs old suffer from hypertension
usually asymptomatic for first 10-20 yrs= silent killer

high blood pressure affected by:
gender: men slightly higher risk of HBP
age: risk increases after age 35
heredity/race: African Americans at higher risk
diet: any factors leading to obesity

prolonged hypertension is a major cause of:
heart failure
vascular disease
kidney failure
stroke
aneurysms

Stroke
sudden death of brain tissue occurring when cerebral atherosclerosis,
thrombosis or hemorrhage of a cerebral aneurysm cuts off blood flow to part of the brain.

effects range from unnoticeable to fatal depending on extent of tissue damage and function of affected tissue

**Varicose Veins**

can occur anywhere on body but most common on legs
veins in legs are largest in body and must counteract gravity to get blood back to the heart
veins become enlarged and valves fail to prevent backflow of blood
often associated with tired, achy, or feeling of heavy limbs
most common in superficial saphenous veins
мы they are poorly supported by surrounding tissues
many factors contribute to likelihood of varicose veins:

**heredity**

**age** esp occur betw 18 and 35 yrs, peaks betw 50 and 60 yrs

**gender** women are 4 to 1 times more likely to get them

**pregnancy** sometimes form during pregnancy (8-20% chance) then disappear afterwards

**lifestyle:** prolonged sitting or standing daily

**Transposition of the Great Vessels**

the child will develop normally until they begin to walk
the right ventricle wll be unable to pump enough blood through systemic circuit