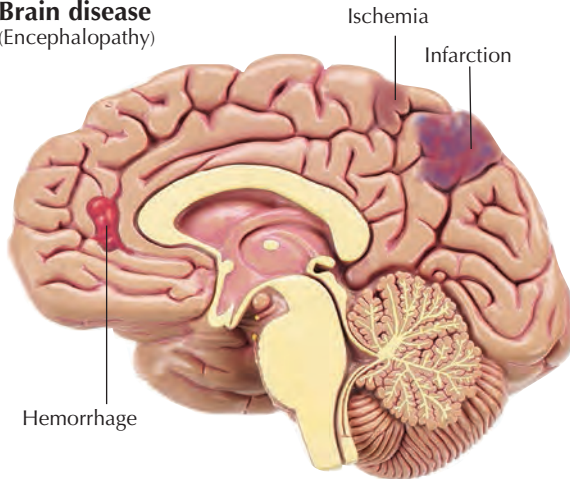


METABOLIC SYNDROME

Metabolic syndrome is a group of risk factors that occur together and increase the risk for cardiovascular disease, stroke, and type II diabetes. Contributing factors include weight, genetics, endocrine disorders, aging, and sedentary lifestyle. In general, a person who has metabolic syndrome is twice as likely to develop heart disease and five times as likely to develop diabetes as someone who doesn't have metabolic syndrome.

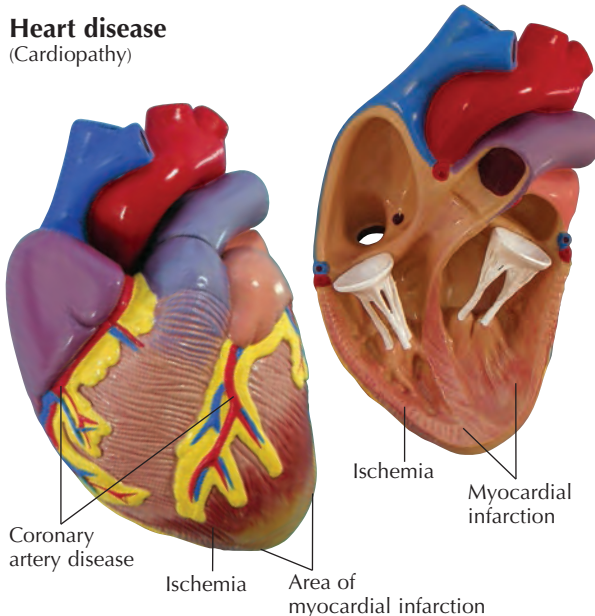
Brain disease (Encephalopathy)



BRAIN

A cerebral vascular accident is called a stroke. Strokes are the result of either a hemorrhage (bleeding) within the brain or infarction (lack of blood flow resulting in irreversible damage or necrosis). When there is reduced oxygen flow to the tissues, this is known as a transient ischemic attack (TIA). Symptoms of a TIA include temporary left or right-sided weakness and slurred speech or visual problems which can resolve over time. Because the arteries in the brain may be sclerosed (hardened), the brain tissue receives less oxygen which can result in vascular dementia (deterioration of mental faculties including memory, reasoning and personality).

Heart disease (Cardiopathy)



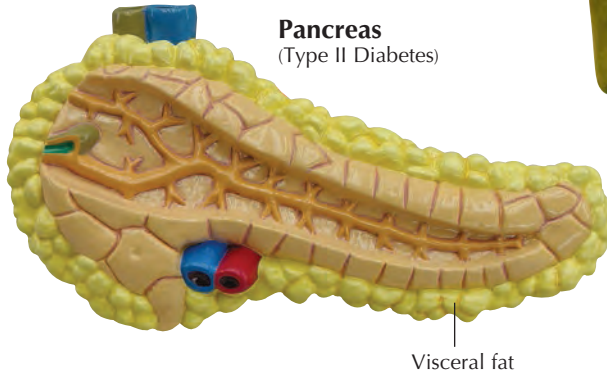
HEART

Congestive heart failure occurs when left ventricular hypertrophy (increased muscle mass) occurs because the left ventricle has to work harder due to a consistently higher blood pressure. Atherosclerotic complications (hardening of the arteries) lead to coronary artery disease. Angina (chest pain) is a consequence of ischemia (lack of oxygen to the heart). A myocardial infarction (heart attack) occurs when lack of blood flow and oxygen to a portion of the heart results in irreversible damage or necrosis.

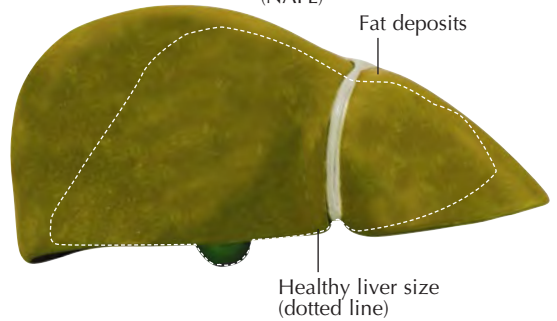
METABOLIC SYNDROME

LIVER

Non-alcoholic fatty liver disease is commonly found in patients with metabolic syndrome. Fat builds up in your liver tissue when your liver does not break down fat properly. If the liver is more than 5-10% fat, then it is classified as a fatty liver. This can cause the liver to swell and may cause scarring.



Non-alcoholic fatty liver (NAFL)



PANCREAS

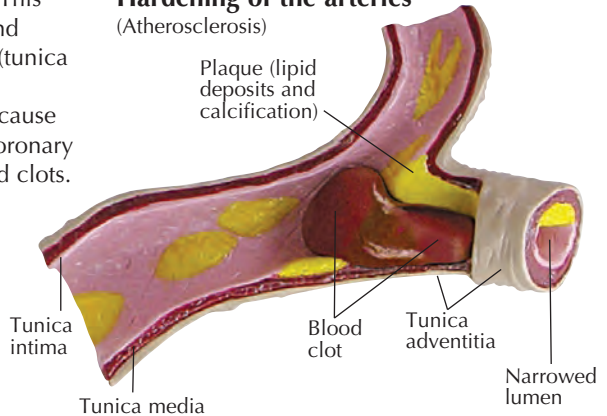
The pancreas is the organ that produces insulin. Insulin is needed to move glucose (blood sugar) into cells, where it is used for energy. The pancreas shown represents that of an obese person and is surrounded by visceral fat.

ARTERIES

Atherosclerosis is the hardening of the arteries. This condition is marked by plaque (fatty deposits and calcification) which collects in the inner lining (tunica intima), causing the artery to lose elasticity and obstruct the flow of blood. Atherosclerosis can cause arterial dissection (rupture of artery wall) and coronary artery disease, which may lead to harmful blood clots.

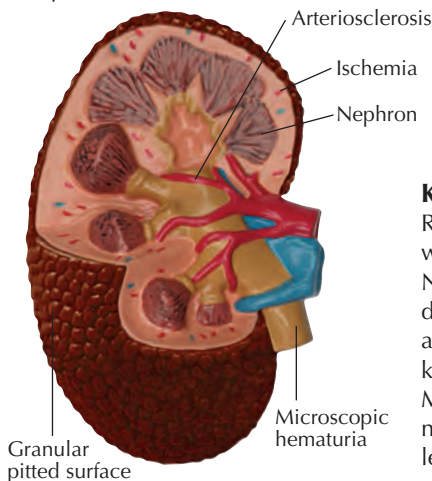
Hardening of the arteries

(Atherosclerosis)



Hardening of the kidney

(Nephrosclerosis)



KIDNEY

Renal arteriosclerosis is hardening of the arteries in the kidney, which after time causes nephrosclerosis (hardening of the kidney). Nephrosclerosis is the direct result of ischemia (lack of blood flow) due to narrowed lumen (opening or space) of the blood vessels, and is a leading cause of chronic renal failure. A nephrosclerotic kidney may be reduced in size with a granular pitted surface. Microscopically, the closure of the small arteries destroys entire nephrons (the functioning unit that creates the urine), and may lead to hematuria (blood in the urine).