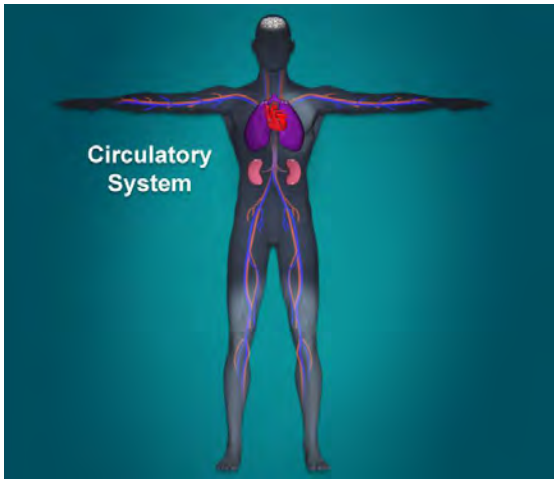
DALLAS CARDIOVASCULAR SPECIALISTS

CIRCULATORY SYSTEM AND BLOOD VESSELS



WHAT DOES THE CIRCULATORY SYSTEM DO?

Your circulatory system continuously delivers blood to all parts of your body. It also returns oxygen-poor blood to the lungs. The circulatory system consists of:

- The heart which pumps blood into the vessels;
- Blood vessels (tubes) that carry blood to your entire body and back to the heart;
- The lungs which supply oxygen to the blood.

You can compare your circulatory system to a figure eight. One loop routes blood from the heart to the lungs and back to the heart. On this loop carbon dioxide is removed from the blood, and oxygen is put into the blood. You fill your lungs with oxygen when you breathe in. Carbon dioxide is removed when you breathe out. The second loop delivers blood - along with oxygen and nutrients - to every other part of your body. The blood vessels then take away waste products (for example, carbon dioxide). Finally, the oxygen-poor blood returns to the heart for more oxygen. The cycle then repeats continuously.

This second loop is large and very complex. To give you an idea, an adult has about 60,000 miles (96,560 kilometers) of blood vessels throughout the body. Your circulatory system does more than carry oxygen and carbon dioxide, however. It carries nutrients from your intestines to your body's tissues. It carries hormones to the appropriate parts of your body from your glands. The circulatory system also carries waste products to your liver and kidneys to be removed.

WHAT DO BLOOD VESSELS DO?

Your blood vessels are a vast network of tubes that carry blood throughout your entire body. Arteries "drop off" oxygen and nutrients to all of the cells in your body. Veins then "pick up" waste products like carbon dioxide and return the oxygen-poor blood to the heart and lungs. When the blood passes through your lungs, oxygen moves once again into the blood.

CORONARY ARTERIES - THE BLOOD VESSELS IN YOUR HEART

Like the other muscles in your body, your heart needs oxygen to survive. The blood vessels that deliver oxygen to your heart muscle are the coronary arteries. They have that name because they encircle and sit on the surface of your heart like a crown. (The word "coronary" means crown.)

The coronary arteries are divided into two systems. The left coronary artery system supplies blood mostly to the left side of your heart. The right coronary artery system supplies blood mostly to the right side of your heart.

COMMONLY BLOCKED CORONARY ARTERIES

Maybe someone you know has coronary artery disease (CAD) or heart disease. A person with CAD has at least one coronary artery that is clogged with plaque. Plaque results when fatty substances, like cholesterol, build up in your arteries. Over time the arteries become hard and narrowed. In the coronary arteries, plaque buildup can slow blood flow to the heart muscle.

These larger coronary arteries are the ones that are most likely to become blocked or affected by CAD:

- Left anterior descending artery
- Left circumflex artery
- Left main artery
- Posterior descending artery
- Right coronary artery

THE PERIPHERAL VASCULAR SYSTEM - BLOOD VESSELS OUTSIDE THE HEART

The peripheral vascular system includes the blood vessels outside the heart that deliver oxygen and nutrients to the rest of your body. Like the heart's coronary arteries, peripheral arteries can become clogged with plaque. Plaque results when fatty deposits, like cholesterol, build up in your arteries. Over time the arteries can become hard and narrowed. In the peripheral arteries, this plaque can slow blood flow to vital areas such as the brain.

This problem with blocked arteries is called peripheral vascular disease (PVD). You may also hear it called peripheral artery disease. Some of the arteries that are especially prone to PVD supply blood to your:

- Brain (the carotid arteries, located in your neck)
- Arms (the subclavian arteries)
- Kidneys (the renal arteries)
- Lower abdomen (the iliac arteries)
- Upper legs (the femoral arteries)
- Lower legs (the popliteal arteries)