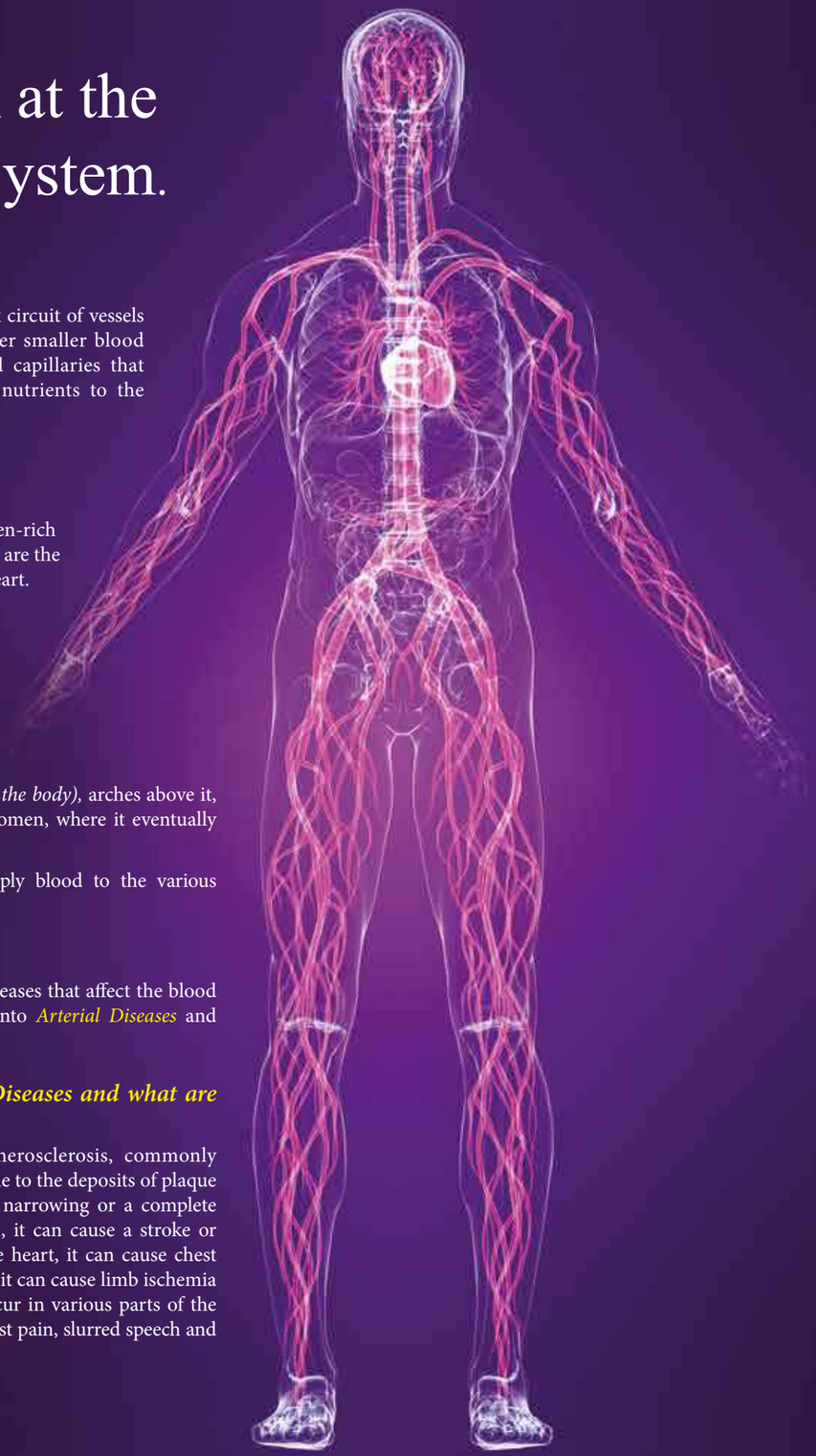
A Look at the Vascular System.



What is the Vascular System?

The human vascular system is a complex circuit of vessels comprising arteries and veins, and other smaller blood vessels such as arterioles, venules and capillaries that circulate blood, carrying oxygen and nutrients to the whole body.

What is the difference between Arteries and Veins?

Arteries are blood vessels that carry oxygen-rich blood away from the heart, whereas veins are the vessels that carry the blood back to the heart.

What is the largest blood vessel in the human body?

The largest blood vessel of the body is the aorta, the main pipeline carrying blood from the heart. The aorta exits the left ventricle *(the strongest chamber of the heart that pumps blood throughout the body),* arches above it, curves down and descends into the abdomen, where it eventually branches to the lower limbs.

The aorta has many branches that supply blood to the various organs and different parts of the body.

What is Vascular Disease?

Vascular disease is a general term for diseases that affect the blood vessels of the body. It can be divided into *Arterial Diseases* and *Venous Diseases*.

What are the causes of Arterial Diseases and what are some common conditions?

Most arterial diseases result from atherosclerosis, commonly known as the hardening of the arteries due to the deposits of plaque *(cholesterol and fat)*. This results in the narrowing or a complete block of the vessels. If it is in the brain, it can cause a stroke or Transient Ischaemic Attack *(TIA)*; in the heart, it can cause chest pain or a heart attack; in the lower limbs, it can cause limb ischemia *(lack of blood supply)*. Because it can occur in various parts of the body, symptoms vary and can include chest pain, slurred speech and limb pain, among many others.

Is there a general approach to the prevention of arterial diseases?

The prevention of atherosclerosis is the key to preventing arterial diseases. It is quite difficult to reverse atherosclerosis, but you CAN prevent the formation of more plaque. This is done by living a healthy lifestyle, maintaining a healthy weight *(losing weight if necessary)*, exercising more, eating a healthy diet and managing stress.

Food

- A good rule of thumb is to reduce and even stay away from transfat, get a healthy dose of mono-unsaturated fat *(MUFA)* and poly-unsaturated fat *(PUFA)* and limit intake of saturated fat from animal protein. You should also reduce consumption of carbohydrates and sugar while increasing intake of fibre from fruits and vegetables.

Exercise

- Try to get in at least 30 minutes of moderate exercise a day. This will help improve vessel and heart health and circulation, reduce diabetes risks, improve lung capacity, increase the 'good cholesterol' high-density lipoproteins (HDL) level and give you a host of other benefits. It is also a mood enhancer.

Stress

- High stress can lead to many health issues such as hypertension and heart diseases, and disrupt metabolic activity and mental well-being. Find ways to relax and de-stress every evening in preparation for restorative sleep.

Habits

- Smoking, overeating, and living a sedentary lifestyle are bad habits that can lead to various health problems. Not getting adequate rest and sleep can also stress your body and immune system. Inculcate good habits to stay healthy.

What are the causes of Venous Diseases?

While atherosclerosis is the primary cause of arterial diseases, there is no similar identifying factor for venous diseases. The more common venous diseases are varicose veins caused by the failure of valves in the superficial veins of the lower limbs and Deep Vein Thrombosis (DVT) which result from clots.

How can we prevent Venous Diseases?

Again, unlike arterial diseases, there is no single primary approach to preventing venous diseases, mainly because the causes themselves vary.

Varicose veins that are caused by prolonged standing and stress on the veins can be prevented to a certain degree by walking, leg elevation and mobility. As for DVT, which can result from prolonged immobility such as long-haul flights, one can take simple measures, including getting up regularly and walking periodically. Doctors would prescribe medication and practice other preventative measures prior to surgical procedures to prevent surgical related DVT.

What are the treatment options for Vascular Diseases?

Treatment and management all depend on the diseases and the extent of the problem. There are drug treatments that may improve blood flow, while more severe diseases would require surgical intervention.

A newer technique - endovascular surgery - is also now available as an alternative to open surgery. Less invasive, the benefits of endovascular surgery include reduced recovery time, smaller incisions, less discomfort and reduced risks for patients with medical conditions, among others.

Endovascular techniques now allow endovascular surgeons to diagnose and treat vascular problems in almost any part of the body.

At the end of the day however, prevention is still the best cure.