

CHAPTER 2

THE HUMAN BODY

Introduction

1. Chapter 1 sets out the role of the First Aider and outlines the basic principles under which he should operate. Before discussing specific aspects of first aid you must have a basic knowledge of the human body.

The Skeleton

2. The human body has a basic framework of bones, which is called the skeleton. Figure 8, which is at the beginning of Chapter 7, which deals with broken bones, shows the basic elements. Bones are joined together by joints, which are like door hinges in that they allow bones to move without becoming separated.

3. The main prop of the skeleton is the backbone. This bone is made up of short sections and looks something like a bamboo cane.

4. Fixed to the top of the backbone is the skull. This is made of bone. Inside the backbone is the spinal cord. Inside the skull is the brain. The spinal cord connects with the brain through a hole in the base of the skull. There is a hole in the skull for the nose, two holes at either side for the ears and two sockets for the eyes. The rest of the skeleton is made up as follows:

- a. The jaw-bone is hinged at either side. The teeth are fixed into the jaw-bone.
- b. The ribs are joined behind to the backbone. In front, the ribs are fixed to the breastbone. There are twelve ribs on either side. They move up and down when you breathe.
- c. The collar-bone is joined in front to the breastbone. At the shoulder the collar-bone is joined to the shoulder-blade.
- d. The shoulder-blade is flat. It is slung to the backs of the ribs by muscles. At the shoulder it forms a shallow socket for the rounded end of the upper arm bone.
- e. In the upper arm there is only one bone, but in the forearm there are two. The two forearm bones are joined to the upper arm bone by the elbow joint. The two forearm bones are joined by the wrist joint to the hand.
- f. The hand and wrist are made up of many small bones.
- g. The hip-bones form a girdle called the pelvis, which is joined to the bottom of the backbone.
- h. Hinged to the pelvis at each side are the thigh-bones, the biggest bones in the body.
- j. The thigh-bones are joined by the knee to the two leg bones.
- k. In front of the knee joint is a small bone called the knee-cap.
- l. The small bones which form the foot are joined to the two leg bones by the ankle joint.

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The Muscles

5. The muscles are fixed to the bones. They provide the power to move the bones.
6. The muscles are controlled by nerves which look like white threads. The nerves go from the brain down the spinal cord and then out to the muscles.
7. The muscles are covered by a layer of fat and the layer of fat is covered by the skin.
8. All these bones and muscles must be supplied with oxygen to keep them alive. Oxygen is carried round to the various parts of the body by the blood, which gets it from the lungs. The lungs get the oxygen from the air, and this, of course, is why we must breathe air to keep alive.

The Heart and Lungs

9. The heart and lungs are protected by a cage formed by the ribs. The rise and fall of the chest in breathing enables air to pass in and out of the lungs. In the lungs, the oxygen of the air passes into the blood stream.
10. The liver, kidneys and bowels are protected at the back by the backbone. In front they are protected by the abdominal wall, which is made of muscles. The pelvis, which is made of bones, protects the bladder and the back passage.

How the Blood Goes Round

11. The blood travels round the body in tubes. It is pumped into the tubes by the heart. The tubes are of two sorts. The tubes carrying blood away from the heart are called arteries. The tubes which take the blood back are called veins. The veins often run by the side of the arteries. The main arteries are shown at Figure 1.
12. The small blood vessels joining the arteries to the veins are called capillaries. They are present throughout the body. The blood continually flows round the body in these tubes, collecting oxygen as it flows through the lungs.
13. The position of the arteries is very important. They are quite easy to find and you can feel them thumping with your finger. This thumping is caused by the blood being pumped round by the heart. It is called the pulse and can be felt at the wrist. Its normal rate is 60-80 beats per minute.

Pressure Points

14. A pressure point is a place where an artery is near the surface and passes over a bone. The blood flow in the part may be stopped by pressing at this point. There are several pressure points but it is current practice to use only two, of which you will learn more in Chapter 5.

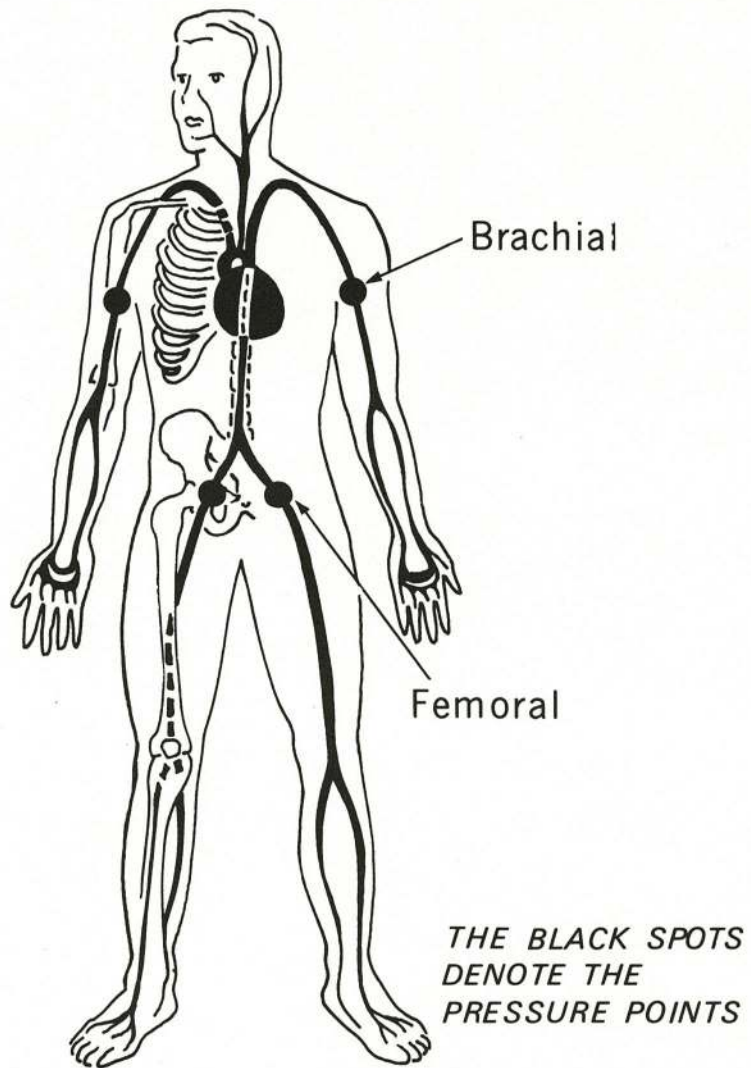
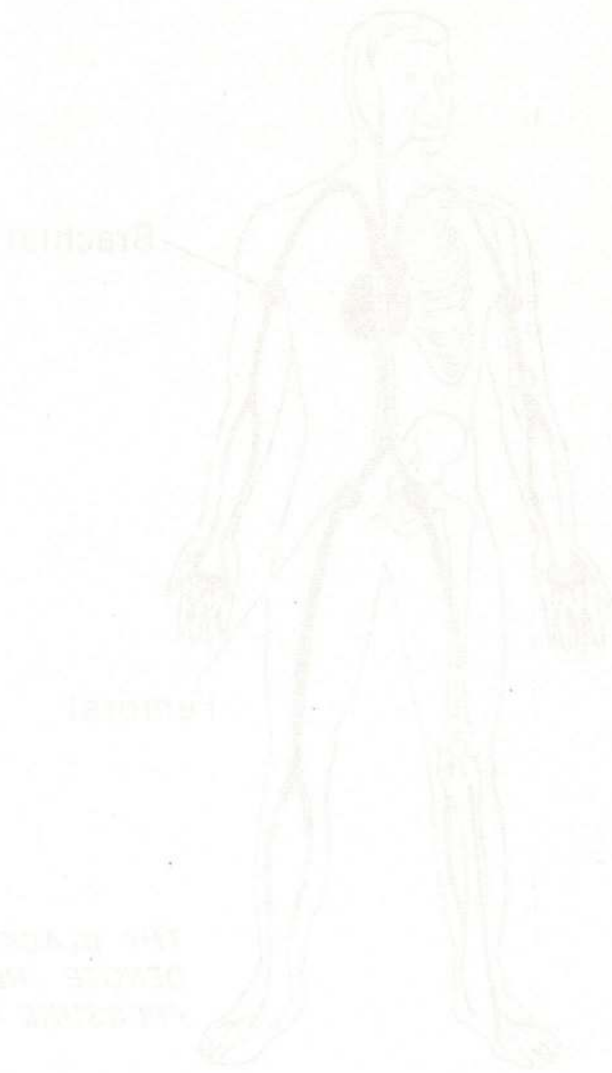


Fig 1 The Circulation of the Blood



THE HEART
DEVELOPS
AT AN EARLY STAGE

FIG. 1. THE DEVELOPMENT OF THE HEART

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