

### 19.2.1 Body fluids

The clinical laboratory receives samples of many different types of body fluids for analysis. Definitions are included here for the more common types of samples that are routinely encountered in the clinical laboratory.

#### **Blood**

The fluid that circulates through the heart, arteries, capillaries, and veins. Blood is composed of plasma, the fluid portion, and cells, the particles suspended in the plasma.

#### **Blood cell**

Any cellular element of the blood including erythrocytes, leucocytes, and platelets.

#### **Blood cell count**

The number of red blood cells and white blood cells per unit volume in a specimen of venous blood.

#### **Blood group**

Red cell phenotypes classified by their antigenic structural characteristics, which are under the control of various allelic genes. The cell membrane properties that provide the specific antigenicity of the blood groups are called agglutinogens as they agglutinate or clump in the presence of their specific antibody.

#### **Cord blood**

The blood contained in the vessels of the umbilical cord at the time of birth.

#### **Occult blood**

Blood present in such small amounts that its presence can be ascertained only by chemical analysis or by spectroscopic or microscopic examination; particularly the blood found in stools.

#### **Peripheral blood**

Blood obtained from parts of the body that are located at some distance from the heart.

Examples are blood drawn from the earlobe, fingertip, or heel pad.

### **Plasma**

A clear, yellowish fluid that accounts for about 55 percent of the total volume of blood. Plasma is obtained by centrifuging a whole blood sample that has had an anticoagulant added to it. Plasma from which fibrinogen and related coagulation proteins have been removed is called serum.

### **Serum**

The clear, yellowish fluid that separates from blood when it is allowed to clot. It closely resembles plasma except for the absence of some coagulation factors.

### **Protein-free filtrate**

A sample of blood, serum, or plasma from which all proteins have been removed by chemical or physical denaturation, dialysis, ultrafiltration, or solvent extraction.

### **Urine**

A fluid, containing water and metabolic products, that is excreted by the kidneys, stored in the bladder, and normally discharged by way of the urethra.

## Miscellaneous Body Fluids

### **Amniotic fluid**

The fluid that surrounds the fetus in the amniotic sac. A specimen is obtained by a technique called amniocentesis in which a long needle is inserted into the amniotic sac through the abdominal wall through which fluid is withdrawn.

### **Cerebrospinal fluid (CSF)**

A clear, colourless fluid that fills spaces within and around the central nervous system. It is formed from plasma by a biological ultrafiltration process. Specimens are obtained by a lumbar puncture (i.e., a spinal tap).

### **Lymph**

A yellowish, slightly basic fluid. Lymph is collected from peripheral tissues throughout the body and is carried in lymph vessels to the circulatory system via the thoracic duct and the right lymphatic duct.

### **Saliva**

The clear, viscous secretion from the parotid, submaxillary, sublingual, and smaller mucous glands in the cavity of the mouth.