Clotting Mechanism

- **Introduction**
  - When a blood vessel is damaged, a mechanism called clotting is triggered. The body's ability to form blood clots is a normal, protective process. Clotting in an unbroken vessel is called thrombosis. We will examine this process.
- **Normal Blood Flow**
  - Blood is made up of a variety of cells in a fluid called plasma. Each blood element has a function. Red blood cells, for example, carry oxygen; white blood cells protect the body against foreign substances; platelets are necessary for clotting. The inner lining of healthy blood vessels is smooth, permitting blood to flow freely. When blood vessels are damaged, however, blood flow can be impeded by a process known as clotting. Once the damage has been repaired clots dissolve. It is important that the body has a healthy balance between making clots and dissolving.
- **Cause of Clotting**
  - There are a number of abnormalities of the blood or blood flow that make the blood prone to clotting. The normally smooth line of a blood vessel can become damaged. When this happens, chemicals called tissue factors are released from the injured vessel. Tissue factors will trigger the beginning of a complex chain of cellular and molecular reactions, called the clotting cascade, which leads to clot formation.
- **Clotting Overview**
  - Platelets begin to stick to the damaged wall. Then a web-like mesh of fibrin grows to hold the platelets in place and trap more platelets. This is thrombosis. Over time the clot may enlarge to the point of blocking blood flow, cutting off vital nutrients to the areas of the body that are supplied by the vessel.

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