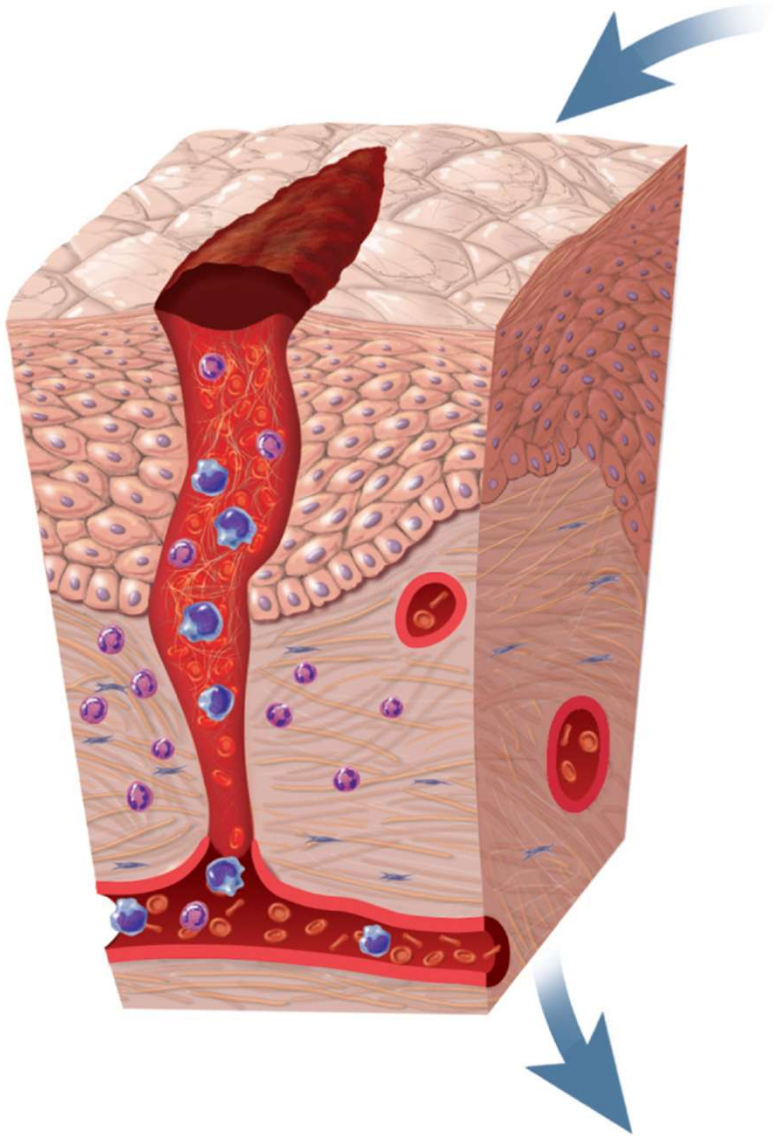
Chapter 5.4

Tissue Repair and Wound Healing



How do we repair damaged tissue?
Regeneration VS Fibrosis

•Regeneration

–replace dead or damaged cells with same type of cells (i.e. mitosis)

–restores normal function (e.g. skin injuries and liver damage)

•Fibrosis

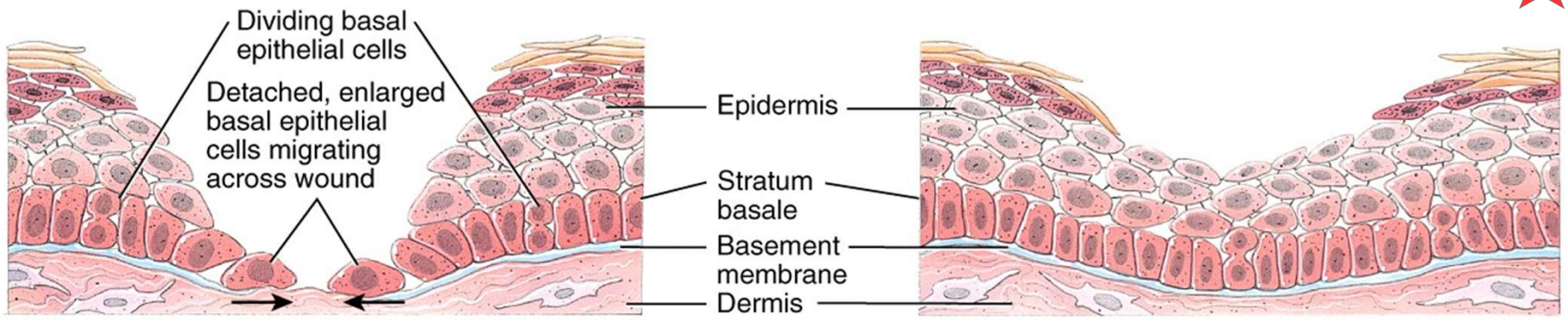
–replace damaged cells with scar tissue (i.e. fibroblast make connective tissue by filling in space with extracellular collagen fibers)

–this is one of the steps associated with the inflammatory response

–fibrosis function is to hold other tissues together /// fills in the space

–does not restore normal function

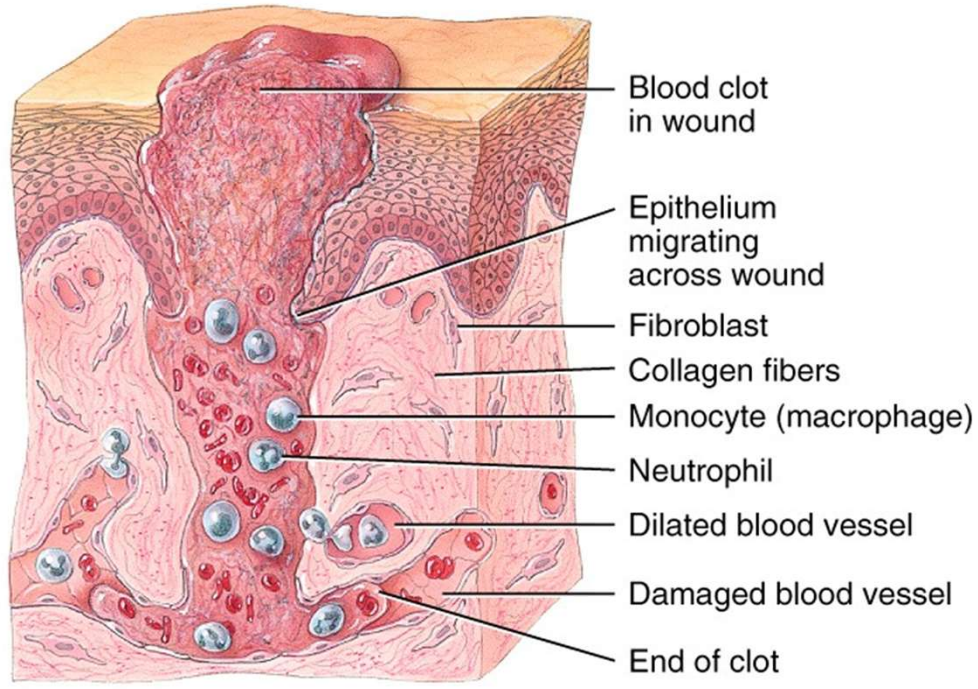
–occurs following severe cuts and/or burns on skin, healing of cardiac and skeletal muscle injuries, scarring of lungs in tuberculosis



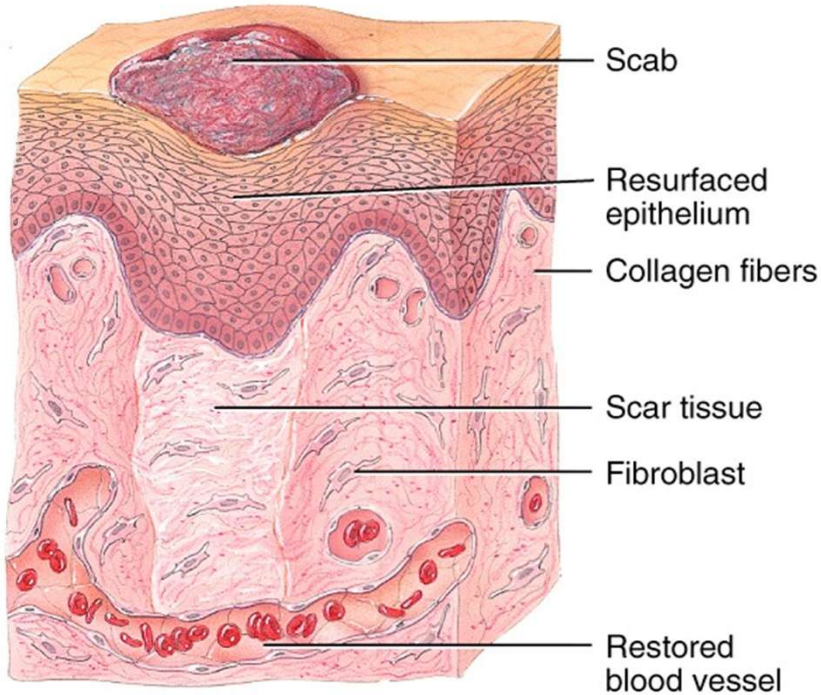
(a) Division of stratum basale cells and migration across wound

(b) Thickening of epidermis

Epidermal wound healing



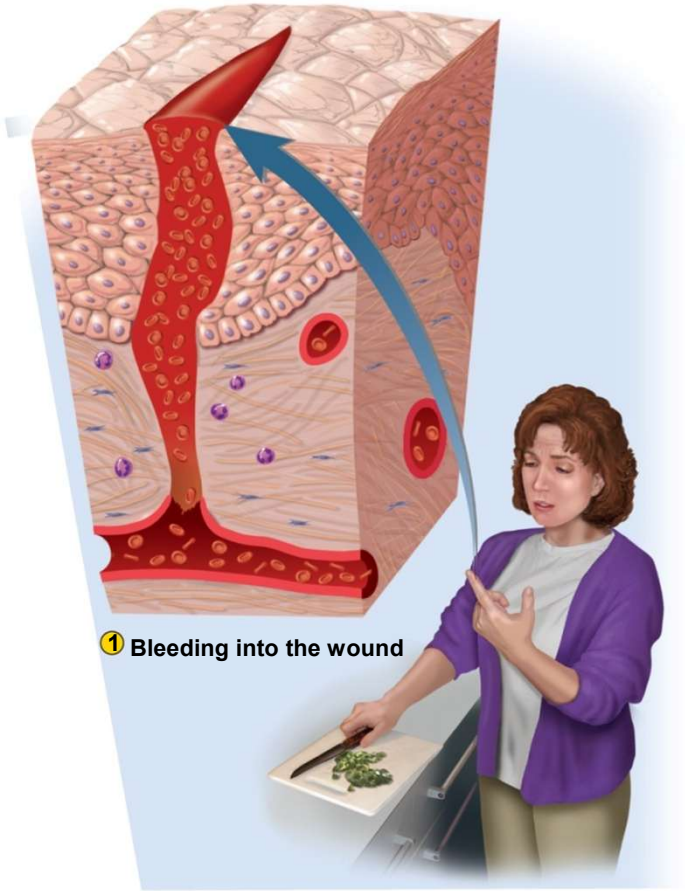
(c) Inflammatory phase



(d) Maturation phase

Deep wound healing

Key Events in Wound Healing



Note: Know Sequence of Events

- **severed blood vessels bleed into cut**

- **mast cells release histamine and heparin**
  - –dilates blood vessels
  - –increases blood flow to area
  - –makes capillaries more permeable
  - –heparin slows down blood clotting

- **blood plasma seeps into the wound carrying**
  - –antibodies
  - –clotting proteins
  - –white blood cells