A wound is defined as an interruption of tissue to a greater or lesser extent, which may affect skin, mucosa, or organs. The specific sequence of different processes following wounding has one common aim: repair. This is achieved by very complex and dynamic procedures, in which material is degraded (catabolic phase) and newly synthesized (anabolic phase). Wound healing includes aspects concerning certain cell types, biochemical conditions, localization, and time. In every wound type the healing process runs through three stages, which partly overlap. The first one, the exsudative or inflammatory phase, is followed by the proliferative phase and finally the regenerative phase (Fig. 1).

1.1 Exsudative Phase

Characteristic for the exsudative (or inflammatory) phase – lasting approximately 72 h – is the activation of the blood coagulation system and the release of various mediators from platelets, such as platelet-derived growth factor (PDGF), platelet-activating factor (PAF), thromboxane, serotonin, adrenaline, and complement factors.

Effects of platelets in wound healing
1. Hemostasis
   * Aggregation
   * Coagulation
2. Secretion of biologically active components
   * Vasoactive mediators
   * Chemotactic factors
   * Growth factors

Fig. 1. Phases of wound healing
Fig. 2. Blood coagulation

Fig. 3. Fibrin synthesis