# The patient’s response to injury

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Immediately after the traumatic event, physiological reactions are initiated as part of the body’s homeostasis mechanisms to preserve vital organ functions and to maintain survival. Initial responses represented by the so-called acute-phase response may be altered as the insult of injury evolves and deterioration of the patient’s condition may occur. It is essential therefore that the timing and nature of inter - ventions should be altered accordingly . Reversal of haemody - namic instability due to ongoing bleeding must be carried out promptly in order to avoid the development of coagulopathy and secondary damage to vital org ans (i.e. the brain) due to hypoxia. It is important to monitor the patient’s physiological state, including body temperature, degree of oxygenation and organ perfusion. Low body temperature is commonly present the patient with appropriate blankets during transportation, resuscitation and surgery will reduce the risk of hypothermia, coagulation disturbances and ongoing bleeding. Administra tion of inspired oxygen or ventilation, if required, will improve the patient’s degree of oxygenation. Ongoing blood loss is associated with low blood pressure, reduced perfusion of the extremities (skin discoloration), tachycardia and an altered level of consciousness. Normally , vasoconstriction and endogenous clotting factors are activated to stop the bleeding in order to maintain adequate circula tory volume. A further consideration is that traumatised lung parenchyma cannot tolerate surplus fluid. Therefore, the lat est resuscitation guidelines advocate a r eduction in crystalloid administration and the early transfusion of blood products. Furthermore, there is a need to quickly identify the source of bleeding and stop loss of blood. Another important part of the response to injur y is activa tion of the immune–inflammatory system. Acute-phase medi ators are released systemically , stimulating polymorphonuclear leukocytes to interact with the endothelium via the expres sion of surface receptors (integrins). If certain conditions are met extravasation of leukocytes may take place , particularly into the lung parenchyma, causing autodestruction. Clinical decisions should aim to minimise the risk of an exaggerated immune–inflamma tory reaction. Surgical procedures, which can act as a second insult, where injury is considered the first, should be carefully timed and selected. The patient’s response to injury

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