Homeostasis

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Homeostasis is the concept of maintaining a constant internal environment that allows cellular processes to function optimally . Many aspects of surgery , trauma and injury a ff ect homeostasis and can lead to organ dysfunction. Traditionally the metabolic response to injury is divided into an initial period of catabolism (which may include a period of shock) followed by an anabolic phase of repair and tissue healing. The catabolic phase begins at the time of injury and is characterised by hypovolaemia, decreased basal metabolic rate, reduced cardiac output, hypothermia and lactic acidosis. The main physiological role of this phase is to conserve both circulating volume and energy stores and thus maximise sur - vival chances for future recovery . A series of neurohormonal responses accompany these e ff ects and trigger a systemic inflammatory response syndrome (SIRS), where body stores are mobilised for recover y and repair. The catabolic e ff ects include muscle breakdown, weight loss and hyperglycaemia, which themselves increase the risk of complications, especially sepsis. As the catabolic phase subsides, an anabolic (rebuilding) phase develops, which may last for weeks if extensive recovery and repair are required following serious injury .

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