

# **Extracorporeal shock wave therapy suppresses the acute early proinflammatory immune response to a severe cutaneous burn injury**

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## **Introduction:**

Extracorporeal shock wave therapy (ESWT) promotes the healing of chronic wounds; however, the mechanism is unclear. We investigated the role of ESWT treatment on the early proinflammatory response in a murine model of acute full-thickness burn wound.

**Methods:** A panel of 184 candidate genes known to be involved in acute inflammation and wound healing was screened.

## **Results:**

We demonstrate that ESWT of burn wounds at 1 hr post-wounding significantly blunts polymorphonuclear neutrophil (PMN) and macrophage infiltration into the wound site. ESWT potently attenuates both chemokine expression, acute proinflammatory cytokine expression and extracellular matrix proteolytic activity at the wound margin.

## **Discussion:**

These findings suggest that ESWT may optimize the cellular and molecular wound landscape to progress through normal inflammatory and proliferative phases of healing unimpeded, thereby limiting the development of a chronic non-healing wound.

## **Conclusion:**

Physical energy in the form of ESWT results in a biologic effect in which wound healing may be fostered.