

# Effects of a Fibrin Sealant on Skin Graft Tissue Adhesion in a Rodent Model.

Authors: Balceniuk M.D., Wingate N.A., Krein H., Curry J., Cognetti D., Heffelfiner R., Luginbuhl A.

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## Abstract:

**Objective** To establish a rodent model for skin grafting with fibrin glue and examine the effects of fibrin glue on the adhesive strength of skin grafts without bolsters. **Study Design** Animal cohort. **Setting** Academic hospital laboratory. **Subjects and Methods** Three skin grafts were created using a pneumatic microtome on the dorsum of 12 rats. Rats were evenly divided into experimental (n = 6) and control (n = 6) groups. The experimental group received a thin layer of fibrin glue between the graft and wound bed, and the control group was secured with standard bolsters. Adherence strength of the skin graft was tested by measurement of force required to shear the graft from the recipient wound. Adhesion strength measurements were taken on postoperative days (PODs) 1, 2, and 3. **Results** The experimental group required an average force of 719 g on POD1, 895 g on POD2, and 676 g on POD3, while the average force in the control group was 161 g on POD1, 257 g on POD2, and 267 g on POD3. On each of the 3 PODs, there was a significant difference in adherence strength between the experimental and control groups ( $P = .036$ ,  $P = .029$ ,  $P = .024$ ). **Conclusion** There is a significant difference in the adhesion strength of skin grafts to the wound bed in the early postoperative period of the 2 groups. In areas of high mobility, using the fibrin sealant can keep the graft immobile during the critical phases of early healing.

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