

# **Mechanical strength in rat skin incisional wounds treated with fibrin sealant.**

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Publication Date: 1987

## **Abstract:**

The biomechanical strength of skin incisional wounds of rats treated with fibrin sealant was assessed by in vitro determination of maximum tensile strength and relative failure energy. Wounds adapted without application of fibrin sealant served as control. Both types of wounds were fixed with surgical tape for the first 8 days of healing. Measurements were performed after 0, 2, 4, 8, 20, and 42 days of healing. After 2 days of healing, wounds treated with fibrin sealant possessed increased maximum tensile strength and relative failure energy. This increase corresponds to the initial strength of the fibrin sealed wounds (0 day values). After 4 and 8 days of healing, no differences were found between the sealed and unsealed groups. After 20 days, the pattern had changed showing increased tensile strength and relative failure energy in wounds not treated with fibrin sealant. A similar trend was reported after 42 days of healing. In both sealed and control wounds, an increase in strain at maximum stress during healing was most pronounced in the first 8 days. After 2 days of healing the strain at maximum stress was increased in wounds treated with fibrin sealant.