

In Vitro Study: Effects of MUST Therapy and UVC on Fibroblastic Migration Rates

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Objectives: To determine if acoustic or electromagnetic energy could be utilized to accelerate fibroblast migration in an incisional wound healing model.

Methodology: 3 T3 fibroblast cultures were prepared and allowed to reach 100% confluency. Three linear incisions were made in each culture dish. Baseline measures of incision width were performed at three separate points.

Assessments: Incision width was measured at baseline, 2, 4, 6, 8, 10, 12, and 24 hours post-wounding.

Data/Results: The fibroblasts from the control dishes had decreased the wound incision width by 6%, 6%, 16%, 21%, 23%, 44%, and 54% at 2, 4, 6, 8, 10, 12, and 24 hours, respectively. MUST Therapy (5 second application, 40 KHz) decreased the incision width by 26%, 40%, 49%, 57%, 57%, 66%, and 70%. Ultraviolet radiation (UVC) (5 second application, 15 mW) decreased the incision width by 6%, 2%, 14%, 19%, 12%, 22%, 24%.

Summary/Conclusions: This data indicates that at the tested doses, MUST accelerates fibroblastic pseudopodial movement, while UVC retards it, compared to controls.

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