

## Integrating Scar Tissue into the Fascial Web

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**BACKGROUND** Three case studies are presented using ultrasound imaging techniques to assess scar tissue changes after manual therapy *ScarWork (SW)*. The *SW* method was developed using similar principles to those Ida Rolf used in developing Rolwing® SI.<sup>1</sup> However, the techniques themselves are unique and are now the subject of a specialized course. Scars are fibrous areas that result from an injury to tissue. In scars, the collagen matrix is denser, less random and more cross-linked than in normal tissue and generally of inferior functionality. Many studies have established the influence of various dressings on wound healing rates and quality and some more recent studies have also demonstrated that physical intervention, such as pressure application, might be useful in improving healing properties. The purpose of this study was to evaluate changes in scars after a single *SW* session lasting about one hour.

**METHODS** Three female subjects (58-63 years old) with abdominal incision scars were evaluated using ultrasound imaging before and after *SW* treatment. Subject's scars ranged from 12 to 43 years old. Ultrasound images were obtained up to two weeks before and up to two weeks after treatments using a Mindray DC-6 color Doppler ultrasound system with multi-beam parallel imaging and equipped with a convex array transducer (2.5-6.0 MHz).

**RESULTS** Ultrasound images of normal tissue before and after *SW* look similar. Abdominal incision scars after treatment generally had reduced echo intensity and reduced thickness. This suggests that the collagen fibrils after treatment were more randomly arranged, had reduced density and possibly reduced cross-linking, more consistent with normal tissue layers. Incision scars from one subject showed clear tethering and puckering effects between fascial layers before treatment. After treatment those same regions showed a return to normal layering with a release from the tethering between the dermis, Camper's fascia and deeper fascia. The release of the scar tissue layers from the dermis was evident in measurements from the dermis to the superficial fascial layer. Measurements showed the distance between the dermis to the base of the superficial fascia increased from 1.79 cm before treatment to 2.74 cm after treatment.

**CONCLUSION** Ultrasound was useful in observing changes in scar tissue before and after manual treatment. The results suggest that *ScarWork* may be a useful therapy for treating long-term scars and improving both the structure and functionality of the tissue.

**REFERENCES** <sup>1</sup>Rolf, IP, 1979. Rolwing: Reestablishing the Natural Alignment and Structural Integration of the Human Body for Vitality and Well-Being. Healing Arts Press (Book)