

[IMAGE]

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## **Healing in the Presence of Motion**

By Ben Benjamin, PhD

**Question:** Is it best to immobilize a body part during the healing of a musculoskeletal injury?

**Answer:** No.

When a body part is immobilized, it is more likely to form adhesive scar tissue, making effective healing much more difficult.

Adhesive scar tissue can form in two ways: internal to the injury and/or external to the injury. Internal scar tissue occurs between the fibers within an injured ligament, muscle or tendon. External scar tissue refers to adhesions that form between the damaged-but-healing structure and adjacent tissues, such as nearby fascia, bone, muscle, ligament, etc. When a body part is immobilized after injury, considerable scar tissue of both types may form, making complete healing and successful treatment more difficult.

**Question:** Why is healing more effective and complete in the presence of full range of motion?

**Answer:** It allows healing to occur with a minimum of adhesive scar tissue.

Healing in the presence of full range of motion is a basic healing principle. When healing occurs without full range of movement, adhesive scar tissue forms in inappropriate places, often turning an acute injury into a chronic one. Internal and external scar tissue help perpetuate stubborn injuries and resulting pain. People restrict their movement and activities for months or years because they know if they look up too high or for too long, bend from the waist to lift even a pencil off the floor, or kneel down on their bad knee, they will suffer many weeks of pain.

When we heal in the presence of full range of motion, damaged tissue is replaced by a small-but-appropriate amount of scar tissue, in a discrete and defined area within the originally injured structure. There is no strain on the internal fibers due to adhesions; there are no external adhesions to adjacent structures; and the surrounding muscles and other structures maintain their strength and flexibility.

For instance, if an ankle is sprained and the individual immobilizes the ankle, it is likely that scar tissue will form within the sprained ligament(s), and possibly between the inflamed ligament and nearby structures such as bones and fascia. If the same individual moves the ankle joint as soon as possible within the maximum pain-free range of motion without bearing weight, then moves the ankle with weight bearing as soon as can be accomplished without excessive discomfort, adhesive scar tissue is much less likely to occur.

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