CQ HAND + UPPER LIMB
SPECIALIST ORTHOPAEDIC SURGEON

PATIENT INFORMATION

How Tendons Work and Heal

Tendons are the body's cables — tough cords that connect muscle to bone and transmit the pull of the muscle into movement. When you bend a finger or lift your arm, it is tendons doing the work of carrying that force across the joint. Tendons are strong, but they heal slowly and in a particular way, and — importantly — *not all tendons heal the same way*. A cut flexor tendon in the finger and a torn rotator cuff tendon in the shoulder follow quite different healing stories, which is why their surgery and rehabilitation are so different. This page explains, in plain language, what tendons are and how they mend — and then, for the curious, goes deeper into the biology, including why a flexor-tendon repair gets *weaker before it gets stronger*, and why a rotator cuff heals onto bone the way it does.

What a tendon is and what it does

A tendon is a rope made mostly of **collagen** — the same tough protein that gives bone its flexibility — packed into tightly-aligned bundles that run along the line of pull. One end blends into muscle; the other anchors into bone. Its job is simple but vital: to transmit the force a muscle generates to the bone, so the joint moves. Some tendons also have to **glide** — the flexor tendons that bend your fingers slide back and forth through narrow tunnels every time you make a fist.

Tendons are living tissue, but only just: they have relatively few cells and a sparse blood supply compared with muscle or skin. That is a large part of why they heal slowly.

How tendons heal

When a tendon is cut or torn, it heals in three overlapping phases, much like other tissues:

1. **Inflammation (first week).** A clot forms and repair cells move in. At this stage the join is held together mostly by the surgeon's stitches — the tendon itself is contributing very little strength.
2. **Repair (weeks).** Cells lay down new collagen across the gap, but it is disorganised and weak at first — like a hastily-tied bundle of threads rather than a neat rope.
3. **Remodelling (months).** With time and gentle use, that disorganised collagen is gradually replaced and re-aligned along the line of pull, and the tendon regains strength. This continues for many months — often up to a year or more.

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A key point: tendon heals largely by forming **scar**, not by perfectly re-growing the original tissue. The repaired stretch is never quite as pristine as the original — which is why careful rehabilitation, and patience, matter so much.

What helps a tendon heal

- **The right amount of movement.** Tendons respond to load. Controlled, graded exercise (guided by a hand or physiotherapist) tells the healing collagen how to organise itself. Too much, too soon, ruptures the repair; too little leads to stiffness and a tendon stuck down by scar.
- **Protecting the repair early.** A fresh tendon repair is fragile for weeks even when it feels fine — following your splint and activity limits is what stops it pulling apart.
- **Good general health.** Not smoking, controlling diabetes, and avoiding unnecessary steroids all help; smoking in particular impairs tendon healing.
- **Time.** Tendon is slow tissue. Real strength takes months, not weeks.

See also

- How bone heals and remodels — how the bone side of a tendon-to-bone repair behaves
- Smoking and musculoskeletal healing — why smoking slows tendon and bone healing
- Corticosteroid injections — steroids around tendons: uses and cautions

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