

# ONE POINT

MEDICAL

## Low Level Laser Therapy

Injury and overuse can mean time away from exercise or daily activity, pain and frustration. Low Level Laser Therapy (LLLT) is an effective, drug free alternative for treating these conditions. LLLT targets the underlying problem, as well as the symptoms, resulting in sustained benefits.

Dr Juliet Froomes encourages patients, to be as active as they can but if injury occurs she has a special interest in the use of Low Level Laser Therapy to treat musculoskeletal problems and pain.

### What is Low Level Laser Therapy?

LLLT uses infrared light to reduce inflammation, ease pain and promote healing.

LLLT is used in the following conditions;

- Tendinopathies (Achilles tendinosis, rotator cuff problems, tennis elbow)
- Acute sprains
- Neck and back pain due to arthritis and disc prolapse
- Bursitis
- Lymphoedema
- Chronic leg ulcers

Treatments are painless, last 15-20 minutes and are given 2x/week for a minimum of 3 weeks.

### How does Low Level Laser Therapy work?

LLLT is NOT a heat therapy – the effects are mediated by light. This is a photochemical effect that induces a chemical change within the cell that promotes healing.

Examples of other photochemical effects that are well known in medicine:

- the role of sunlight in Vitamin D synthesis
- the use of blue light to treat neonatal jaundice
- ultraviolet light to treat psoriasis
- ultraviolet light producing a suntan

LLLT works best in injured or “stressed” cells interrupting the inflammation pathway and helping to restore normal cell function and promote tissue repair.

Specifically, LLLT is absorbed by cytochrome c oxidase, an enzyme in mitochondria, the energy unit of the cell, causing a cascade of intracellular, extracellular and physiological changes.

### What are the clinical benefits?

1. Tissue repair
  - improved speed and regeneration of skin, muscle, tendon and nerve healing
2. Inflammation
  - equal to or better than anti-inflammatory medication (NSAIDS)
3. Oedema
  - lymph nodes drain more lymph
4. Pain relief

LLLT has been used for 30 years in the UK, Europe, North and South America.

It is well supported by clinical research.

LLLT is used by Harvard Medical School, NASA, the British Olympic Athletic Team, premier division soccer teams, US and British military and Formula 1.

Resources used to produce this information sheet

Efficacy of low-level laser therapy in the management of neck pain: a systematic review and meta-analysis of randomised placebo or active-treatment controlled trials  
Chow, Roberta T et al. *The Lancet*, Volume 374, Issue 9705, 1897 – 1908

Effects of low-level laser therapy and eccentric exercises in the treatment of recreational athletes with chronic achilles tendinopathy. Stergioulas A et al *Am J Sports Med.* 2008 May;36(5):881-7.

The Use of Low Level Laser Therapy (LLLT) For Musculoskeletal Pain. Cotler, H et al *MOJ Orthop Rheumatol.* 2015;2(5).