

WELCOME TO STAK

Using the STAK, patients gained **30°**
increase in knee range of movement in
only **8 weeks**.

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The STAK – No. 1 Knee Rehabilitation Tool

The Problem

Stiffness is the primary cause of dis-satisfaction with 20% of patients being severely dis-satisfied following total knee replacement (TKR) (Ebert *et al.*, 2017). Arthrofibrosis - stiffness and pain can occur following knee surgery or trauma.

This is the result of an exaggerated inflammatory response causing scar tissue to be deposited in the knee joint. Scar tissue continues to build up in the joint resulting in severe stiffness, pain and serious loss of ROM and quality of life.

Cost implications

Physiotherapy treatment following knee replacement rehabilitation in the US costs approximately \$1500 per patient (Graver *et al.*, 2010). Arthrofibrosis accounts for 28% of hospital readmissions within 90 days of discharge (Cheuy *et al.*, 2017).

Patients who have undergone manipulation under anaesthetic (MUA) have approximately twice the rate of revision surgery measured at 7 -10 years post primary TKR (Werner *et al.*, 2015; SKAR *et al.*, 2018).

Stiffness is the primary reason for revision surgery (Cohen *et al.*, 2018) which is associated with an increased risk of continued postoperative treatment.

The outcomes of surgically treated post-traumatic fibrosis of the knee are poor with most patients unable to return to pre-injury / surgery level of function.

How the STAK treatment works

The STAK is a clinically proven, patented class 1 medical device for home use which enables the patient to generate the high intensity stretches required to break down the dense scar tissue facilitating new tissues to form, reducing pain, stiffness and improving ROM, strength and function.

Standard conventional treatment involves stretching and manipulations at joint end range by physiotherapists. These must be carried out daily to be effective (Davies and Ellenbecker., 2011; Jacobs and Sciascia, 2012). There are simply **not** the resources to do this in the NHS or even in private healthcare.

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Home exercises provided as part of standard physiotherapy treatment do not enable the patient to generate the high-intensity stretching of the knee required to break down the dense scar tissue. Home exercises have been found to produce less than **10%** of the torque applied by a physiotherapist (Uhl *et al.*, 2011).

- ✓ The STAK is light, easy to use and re-usable. Unlike the JAS it does not require single use custom fitting.
- ✓ The STAK is safe - the patient is in full control of the intensity of the stretch, using their own body weight and leverage.
- ✓ It is highly motivating and enables the patient to quickly regain ROM.

The STAK enables the patient to carry out both dynamic stretching of the tendons, and static stretching of the muscle fibres leading to long lasting increase in ROM, function and reduction in pain.

The STAK tool allows patients to administer high intensity knee rehabilitation daily in the comfort of their home. The STAK has a self-motivating feedback scale, which empowers patients, giving them the best possible outcomes for their knee.

Research

35 patients post-major knee surgery with arthrofibrosis and mean ROM of 68° were recruited and block randomised to STAK or control group.

Compared to the control group, the **STAK intervention group made significant gains in mean ROM (30°**

versus 8°, $p < 0.0005$), WOMAC (19 points versus 3, $p < 0.0005$), and OKS (8 points versus 3, $p < 0.0005$). The improvements in the STAK group were maintained at long-term follow-up.

Extension and swelling also significantly improved in the STAK group compared to control. No patients suffered any complications relating to the STAK, and 96% of patients found the STAK tool 'perfectly acceptable'.

Following the 8 week treatment periods the 15 patients who had received standard physiotherapy alone (control) were given the opportunity to use the STAK at home for 8 weeks. They achieved an **additional mean increase in ROM of 21°**.



Sheila increased her knee flexion by 39° using the STAK tool

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Supported by clinical research trials <https://online.boneandjoint.org.uk/doi/full/10.1302/2633-1462.18.BJO-2020-0096> and NICE review <https://www.nice.org.uk/advice/mib252/chapter/The-technology>, the STAK tool is highly effective in treating the most severe arthrofibrosis cases giving patients' their quality of life back, even when expensive manipulation under anaesthetic and revision surgery has failed.

Current STAK availability

The STAK is currently being used by NHS and private hospitals.
I am offering training sessions for both surgeons and physiotherapists and supply STAKs for long term hire (current introductory offer £349 for 6months hire). I also hire to patients and treat patients referred by surgeons myself via zoom. So whatever the severity of your patient case please get in touch!

Please see links to surgeons and patients talking about their experiences of using the STAK and do make contact if you are interested in knowing more about the STAK.

University Hospitals of Leicester NHS Trust Surgeons' views

Mr Aujla Clip <https://youtu.be/krwsS6ZrCXE>

Professor Ashford <https://youtu.be/aCuRI2hfRZg>

Mr Elsarafy <https://youtu.be/0a4XjBfPZnw>

Patients' views

-Patient ID: 05 daily activities after using STAK <https://youtu.be/swUNRIZ3nHM>

-ID: [13 Thoughts on STAK Tool and advice to others](https://youtu.be/swUNRIZ3nHM) <https://www.youtube.com/watch?v=DVuPLf84qME>

Kind regards,

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