



**REDUCING COSTS & IMPROVING OUTCOMES**



# INTRODUCING THE STAK REHABILITATION TOOL

Orthopaedic surgeons and physiotherapists are under extreme pressure.

Over 100,000 TKR's were carried out in 2020/21, and this is expected to increase to 118,000 by 2030. 43% of patients currently wait longer than the target 18 weeks for orthopaedic surgery.

## THE PROBLEM

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

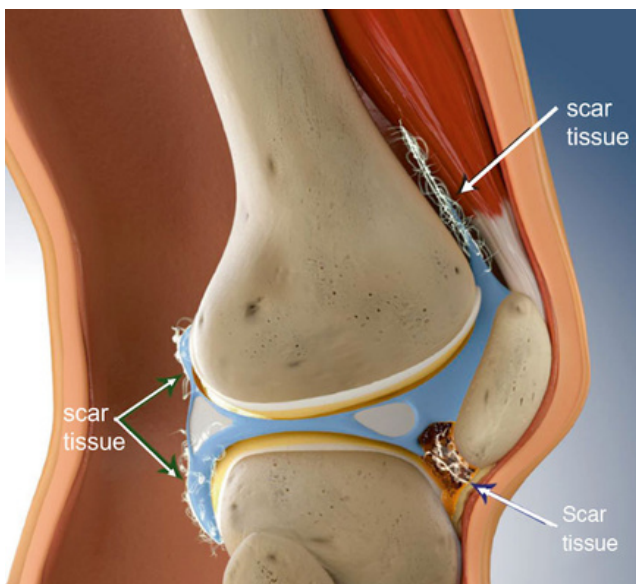
**1 in 5** patients are **not satisfied** with the results of their total knee replacement surgery.



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. In the most severe cases it can result in permanent inability to bend and straighten the knee.



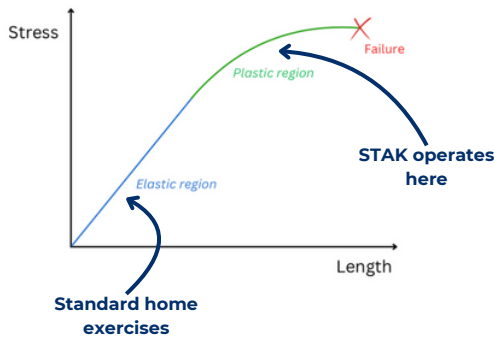
After MUA, Barrington only had 45°. After 8-weeks of using the STAK, he achieved 95° (50° increase).



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). 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 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 enabling new tissues to form, reducing stiffness pain and improving ROM, strength and function.



### CLASSIFICATION OF POST SURGICAL FIBROSIS

Post-Surgical Fibrosis (PSF) classification is crucial for assessing knee stiffness following joint surgeries like total knee replacement.

Severity	Flexion	Extension
Mild	90°-100°	5°-10°
Moderate	70°-89°	11°-20°
Severe	<70°	>20°

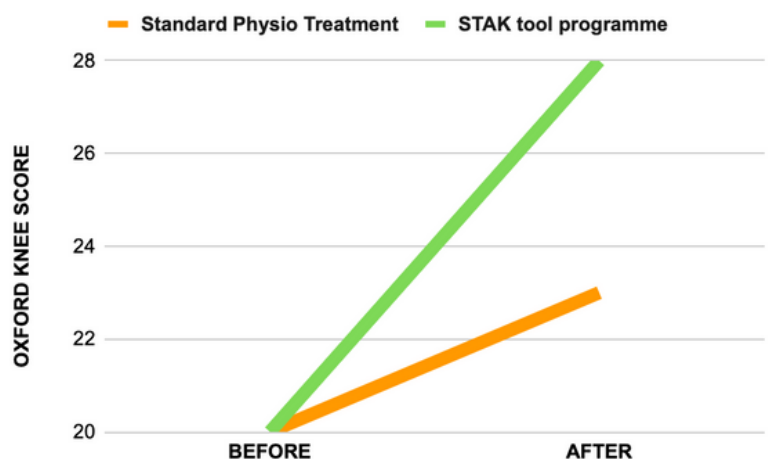
Based on an international consensus (Kalson et al. 2016)

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.

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). CPM machines sometimes used in hospitals do not enable patients to generate the crucial high intensity stretches.

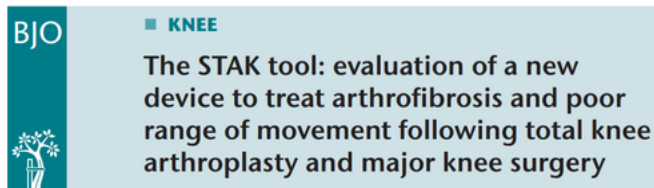


- The STAK is light, easy to use and re-usable. Unlike the JAS it does not require single use custom fitting.
- The STAK is safe - the patient is in full control of the intensity of the stretch, using their own body weight and leverage.
- The STAK enables the patient to carry out high intensity static stretching of the muscle fibres and dynamic stretching of the tendons.
- Patients will see an immediate improvement in ROM during their first session.
- The STAK requires only three 20-minute periods of stretching per day to see results.



## RESEARCH

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,  $p < 0.0005$ ).



Orthopaedic Proceedings

KNEE

FULL ACCESS

### ARTHROFIBROSIS AFTER TOTAL KNEE ARTHROPLASTY: STAK TOOL IS SUPERIOR TO PHYSIOTHERAPY

The British Association for Surgery of the Knee (BASK) May 2022 Meeting, Newport, Wales, 17-18 May 2022.

NICE National Institute for Health and Care Excellence

A way to reduce manipulations under anaesthetic the STAK tool: a stretching device to treat arthrofibrosis following total knee replacement

S. Aspinall<sup>1,2,\*</sup>, S. Hignett<sup>3</sup>, S. Godsiff<sup>2</sup>, P. Wheeler<sup>1,2</sup>, D. Fong<sup>1</sup>

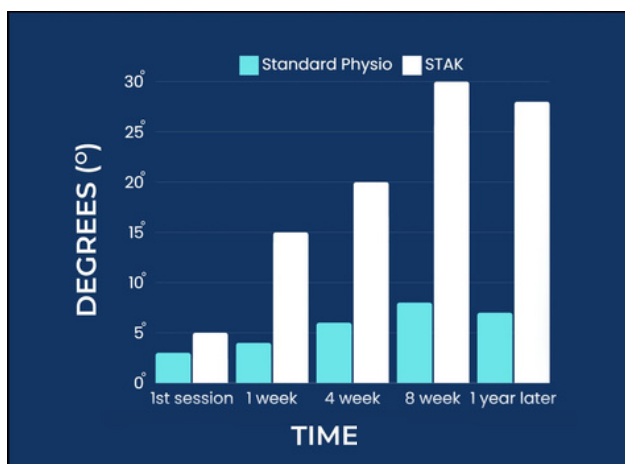
### The STAK tool for preventing and treating knee stiffness

Medtech innovation briefing  
Published: 9 February 2021

[www.nice.org.uk/guidance/mib252](http://www.nice.org.uk/guidance/mib252)

The improvements in the STAK group were maintained at a 1-year 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 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°.



### The STAK tool has been effective increasing ROM in patients up to 5 years post-TKR

Supported by clinical research trials published in the Bone and Joint Open Journal and the NICE review, 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.

## TRANSFORM YOUR PRACTICE WITH THE STAK

**Easy:** The STAK integrates seamlessly into your existing treatment protocols.

**Effective:** Treat more patients in less time while significantly improving recovery and patient satisfaction.

**Advanced, Cost-Effective Technology:** Deliver high-intensity stretching therapy that's backed by research and designed for affordability, optimising your practice's resources.

**Minimise The Physical Strain of Manual Therapy** instead motivate & monitor patient progress using the STAK.

**Join the Innovators:** Be part of a community of forward-thinking physiotherapists elevating patient care with the STAK.

# Here are just **SOME** of our testimonials

## Patients

"AFTER 3 FAILED MUA'S & ARTHROSCOPIC DEBRIDEMENT, EXTENSIVE PHYSIO & CPM HIRES, MY FLEXION WAS ONLY 64°. THANKS TO STAK, I'VE REGAINED MY QUALITY OF LIFE WITH 108°!"

Edwina Benning (62),  
Devon



AFTER 6 WEEKS "I'M NOW BACK RIDING MY BIKE, COACHING NETBALL AND I'VE GOT MY LIFE BACK!"

Lyndsey (47),  
Market Harborough



"HAVING THE STAK WOULD HAVE BEEN IDEAL RIGHT FROM THE FIRST DAY, FROM THE BEGINNING"

Phillip Darragh(57),  
Leicester



"THE STAK WAS FANTASTIC, YOU COULD SEE AND FEEL THE IMPROVEMENT"

Sheila (78),  
Melton Mowbray



## Surgeons

"TKR stiffness is a top priority, requiring ongoing innovation. The STAK significantly improves our non-surgical approach to this challenging issue"

Professor Andrew Toms,  
National Clinical Lead for Revision Knee Surgery



"IT'S A SIMPLE THING TO DO A FEW TIMES A DAY FOR A FEW MINUTES WITH EXCELLENT FUNCTIONAL RESULTS"

Professor Robert Ashford,  
Consultant Musculoskeletal Tumour & Joint Reconstruction Surgeon



"In the most challenging cases where traditional methods, such as extensive physiotherapy, hydrotherapy, continuous passive motion (CPM) machine hire, and manipulation under anaesthetic, fell short, the STAK proved to be the solution."

Mr. Muhammad Tawfiq Korim  
Consultant Knee Surgeon  
UHL NHS Trust



"STAK IS INVALUABLE IN OUR PHYSIOTHERAPY, IMPROVING OUR NON-SURGICAL APPROACH TO STIFFNESS"

Liz Jacobs,  
Extended Scope Physiotherapist,  
Royal Devon University Healthcare NHS Foundation Trust



Scan the QR codes below to see more endorsements from patients and healthcare professionals

Patients



Visit the STAK Website



Healthcare Professionals



## CURRENT STAK AVAILABILITY

The STAK is currently being used by both NHS and private hospitals, where I offer further training sessions for both surgeons and physiotherapists in its use.

STAK tools are currently available for either short-term trials or for long-term hire, and I also treat patients referred by surgeons myself via Microsoft Teams.

So whatever the severity of your patient case, get in touch and join the growing STAK community!

Kind regards,  
Sara Aspinall



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