

TENDON WORKS[®]

a Synapse micro-current technology

A CLINICALLY PROVEN METHOD FOR TREATING
DEGENERATIVE TENDON PATHOLOGY



 **SNAPSE**
MICRO-CURRENT TECHNOLOGY

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About Synapse Micro-current

Synapse Micro-current Ltd. is a leading medical technology based company specialising in developing and taking to market clinically proven medical devices to promote advanced tissue healing in a variety of different applications.

Incorporated in January 2003, Synapse focussed its efforts in the early years in refining and securing the rights to patented technology in tissue viability. Evidence of this came in 2007, when Synapse was awarded ISO 9001 (upgraded 2008) & ISO 13485 accreditation for the design and manufacture of its micro-current devices for medical and veterinary use.



What makes Synapse unique?

In simple terms it is the level or strength of the current used that differentiates one electrical treatment device from another. Synapse micro-current operates at similar levels to the body's natural electrical systems. In general terms micro-current uses a very low level of current, operating at cellular level. This is in contrast to devices using stronger intensity that can cause muscle contractions as a cause of mechanical effect



What is Tendonworks®?

Tendonworks® micro-current is clinically proven to accelerate healing in soft-tissue structures. Tendon and ligament repairs benefit from the augmentation of the production of type 1 collagen, promoting the regenerative sequence of normal tendon tissue. This results in a quick regenerative process which facilitates a speedier and better quality repair.

Research into degenerative tendon conditions is where it all started for Synapse. The original research applied a micro-current based treatment to subjects with chronic Achilles tendonopathy.

Measurable outcomes showed that a controlled and cell specific sequence of micro-current electricity stimulates, restores and optimises intra/extra cellular molecular balance to help 'normalise' the tissue environment.

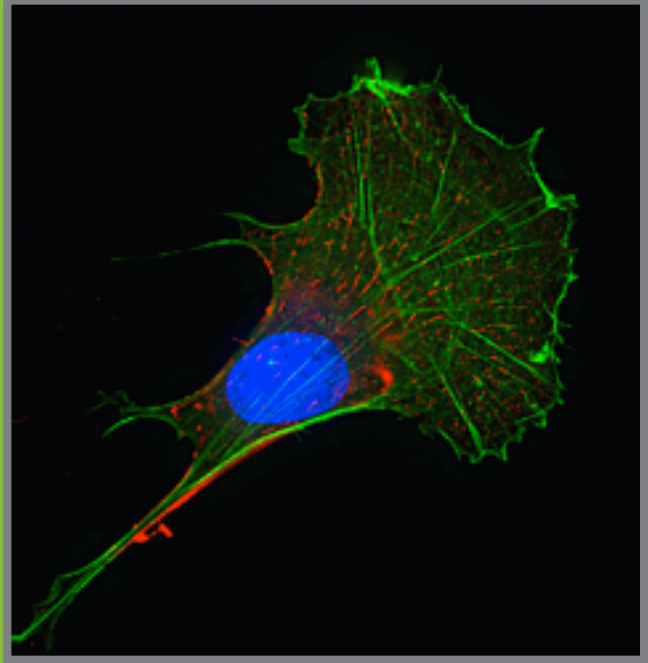
A major cause of tendon injury is chronic degeneration within the tissue matrix. The Tendonworks treatment significantly increases the level of cellular activity which in turn increases the rate of collagen production deminishing the effect of chronic degeneration so reducing the chance of re-injury

Tendonworks® is the brand name of the Synapse micro-current tendon treatment device.

How does Tendonworks micro-current unit differ from other electrical devices?

In simple terms it is the level or strength of the current used that differentiates one electrical treatment device from another.

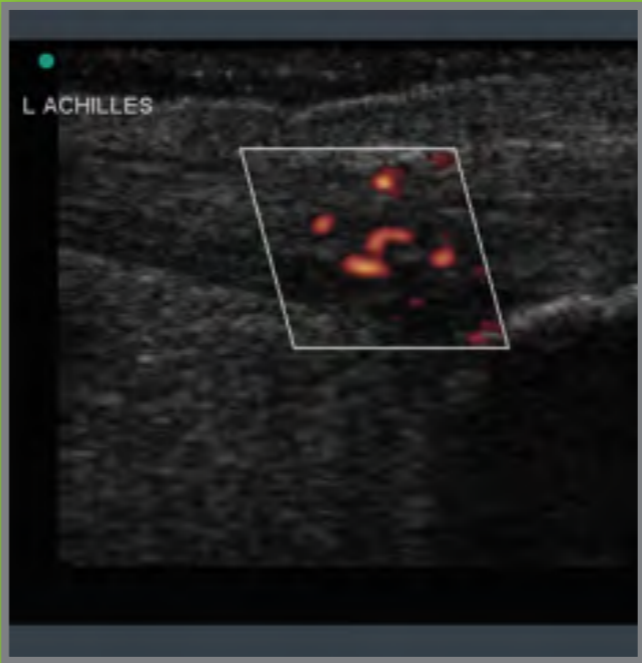
Cellular activity and intercellular communication is regulated (chemically) by electricity and it is the efficiency of this communication process which is key to the existence of a normal physiological state. The hypothesis underlying Synapse micro-current treatments is that damaged or disrupted (electro-chemical) pathways (caused by illness, injury and extreme conditions such as intense exercise) can be reignited.



Synapse's patented programs are specifically based on the understanding that different cell types respond to different treatment parameters.

Cellular activity is sensitive to the treatment and laboratory studies have demonstrated that cells can be turned 'off' as well as 'on'.

Therefore, if treatment parameters are not accurately delivered there is the potential to have a detrimental effect. If programs are not within specific parameters we would question the efficacy.



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A Typical Treatment Plan

Each unit contains a minimum of fifty 30 minute treatments totalling over 25 hours

A typical treatment regime is as follows:

Days 1 - 5, 3 x thirty minute treatments per day

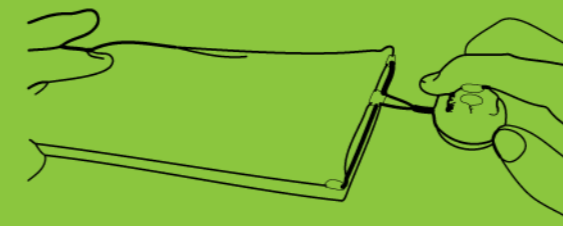
Days 8 - 12, 2 x thirty minute treatments per day

Days 15 - 19 1 x thirty minute treatments per day

This totals 15 hours of treatment over a three week period.

Following the treatment regime we suggest the unit is used once a day for five days (2.5 hours of treatment) every three months. This will provide a further year of cover. When this is completed the unit will have completed its cycle of programmes.

1



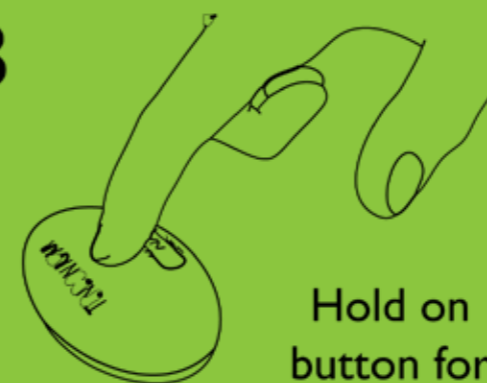
Remove unit from packaging

2



Attach electrodes either side of treatment area

3




Hold on button for 2 seconds to activate

4



Flashing green light indicates activation - unit will now run for it's programmed 30mins



Novel Micro-current Treatment

is more effective than conventional therapy for chronic achilles tendonopathy: A randomised controlled trial.
Authors: Dr. David Chapman-Jones & Professor D Hill

Background

The healing processes of tendon tissue are not well understood and are reflected in the difficulty of clinical management of this pathology. Previous in-vitro studies have demonstrated that the application of micro-current has the ability to promote protein production (collagen) in fibroblasts and tenocytes.

In-vivo studies, using animal models, have demonstrated that tendon and ligament tissue responds particularly well to this application. Thus, the purpose of the study was to evaluate, following the application of micro-current for therapeutic purposes, the functional outcome in patients presenting with chronic pathology in the Achilles tendon in comparison with the current conservative management.

METHOD

A prospective comparison study was undertaken utilising a blocked randomisation method. Subjects were allocated to either group A and were exposed to current clinical management or group B the experimental micro-current regime. Classification and subsequent evaluation of pathology was assessed employing clinical assessment tests, self-assessment and assessment by diagnostic ultrasound. Subjects were assessed at three; six and twelve month intervals post entry into the study.

Forty-eight subjects (48), twenty-four (24) in each group completed the study. A statistical analysis was performed, calculating the differences between the two groups and between each interval assessment.

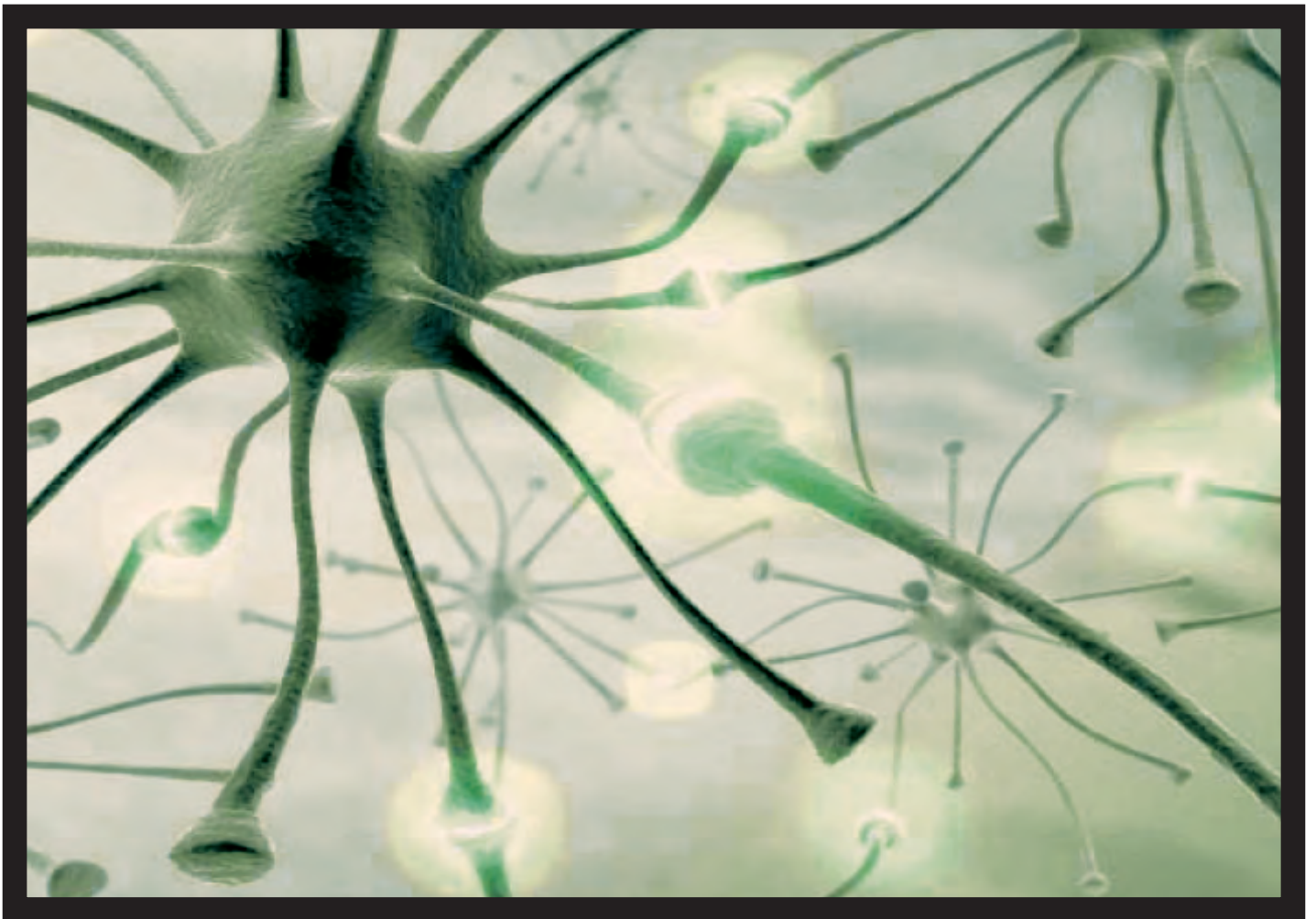
Categorical variables were compared between the two groups using the Chi-squared test. The Mann-Whitney test was performed to assess changes in ordinal variables.

RESULTS

Statistically significant differences were found in favour of group B, the experimental group, in four out of the five clinical markers used at the 0.1% level of significance. Baseline characteristics were similar in both groups.

CONCLUSION

The application of micro-current treatment to the patient presenting with chronic Achilles tendon pathology may make a significant contribution to the clinical management of the condition. Therefore, because from a biological perspective tendons tend to behave in a similar manner, these findings may reasonably be extended to treat other tendons presenting with similar pathology.



Contact Us

Head Office - Registered Office - All Enquiries
Synapse Micro-current Ltd.
1C The Courtyard
Market Square
Westerham
Kent
TN16 1AZ

Tel: +44 (0) 1959 569 433
Fax: +44 (0) 1959 565 281

info@tendonworks.com
customerservices@tendonworks.com

www.tendonworks.com

