



THE TIMELESS ELEGANCE OF CLASSIC STRUCTURAL INTEGRATION

# Changes in myofascial stiffness from Structural Integration treatment

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The study was approved by the independent Bioethics Committee of the Opole Medical School, Poland nr KB/205/FI2019.

ISRCTN registry Trial Id: ISRCTN46707309



## 1. Background

The principle of biotensegrity was introduced by Levin and Ingber in the 1980s, as an idea of applying the concept of tensegrity to represent the interaction of forces in all hierarchical biological systems. To date, the overwhelming body of evidence clearly indicates the applicability of the principle of biotensegrity in anatomy and physiology from macro- to nano-scale biology systems.

According to Dr. Ida Rolf, the goal of Structural Integration is to integrate the body to make it more efficient in the gravitational field. This requires balancing the myofascial system (left side to right side, front of body to back of body, inner muscles to outer muscles) around the centrally located vertical line of the body.

## 2. Aim

Assess the effect of SI on variation in fascial stiffness across 12 anatomic locations

## 3. Methodology

Study group consisted of 13 generally healthy women (all of them were non-smokers, two had non-regular menstrual cycle, and two used contraceptive pills) at the age mean 23.38, SD ± 0.5 years, Height 167,60cm ± 5,19, Weight 59,70kg ± 4,45, BMI 21,23 kg/m<sup>2</sup> ± 0,85.

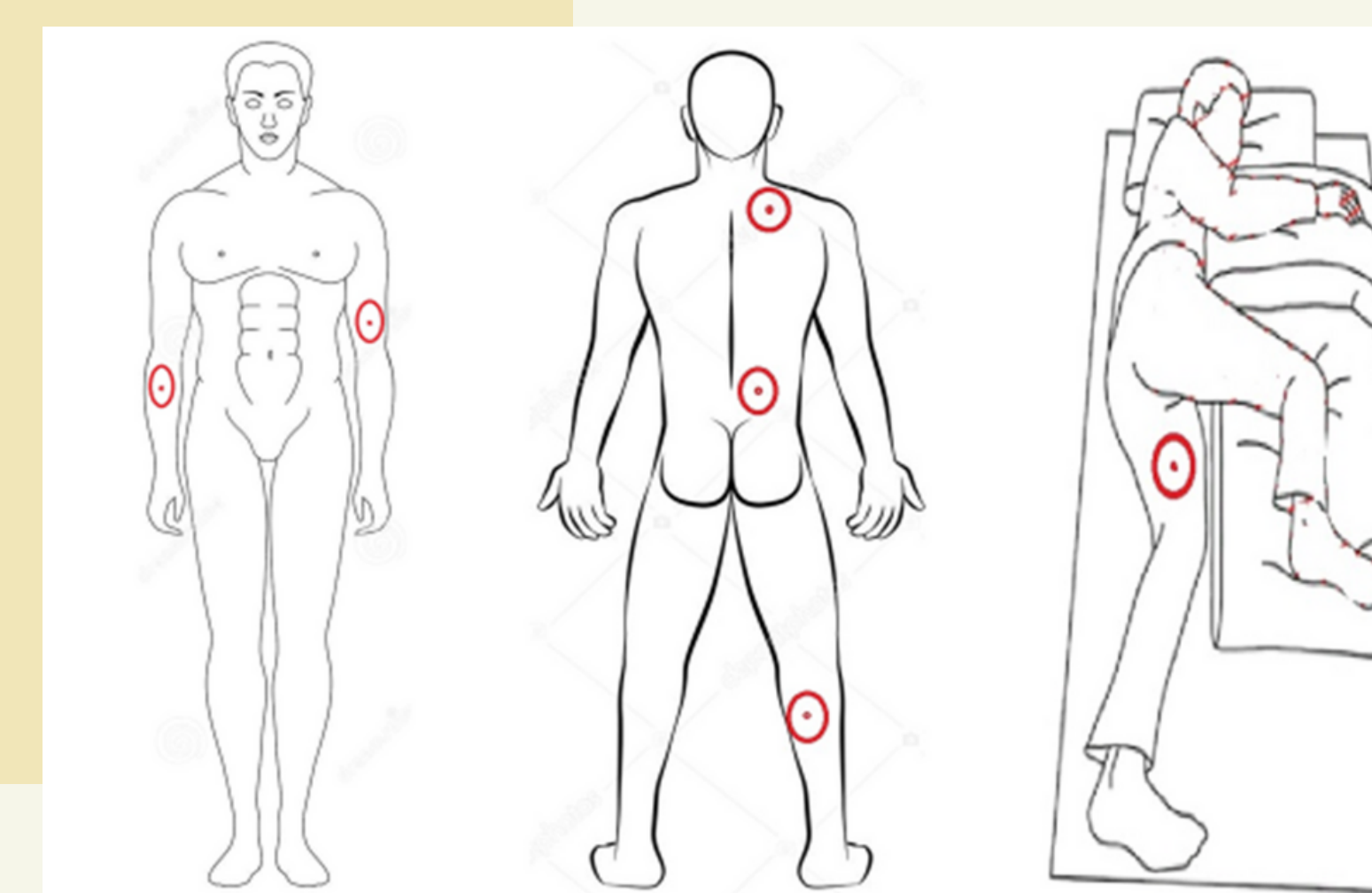
A trained SI therapist with 3 years of practical experience conducted the SI interventions. Each intervention lasted 60 min, and patients underwent 10 completed sessions in total (one session/week). Soft tissue stiffness, was evaluated at baseline and 72 h following 10 sessions of SI interventions.

### IndentoPRO Tissue Compliance Meter

- Data collection was repeated 3 cycles for a total of 9 measurements at each location both pre- and post-treatment.

- Stiffness at 5 mm depth measured at pre and post treatment on left and right of 6 anatomic locationsn:

1. Bracho-radialis (BR)
2. Biceps brachii, caput longum (BB)
3. Adductores (ADD)
4. Triceps surae, medial head (TS)
5. Erector spinae (ES)
6. Trapezius (T)



## 4. Analysis

Locations of pre- vs. post-treatment data were compared both overall and for each anatomic location by Wilcoxon sign rank. Variations in stiffness were compared by the median centered Robust Variation method of Brown and Forsythe. Given the exploratory aim, p values at levels <0.01, <0.05, and <0.1 were considered supportive of further investigation. Data analysis was performed on StataIC 16 (StatCorp LP, College Station, Texas, USA.)

## 4. Results

P values for comparison of pre- vs. post-treatment stiffness were supportive of further investigation at six anatomic locations. Changes in variations of stiffness were supportive both overall and at two anatomic locations.

### Stiffness Changes Pre vs. Post Treatment

	Pre Tx Median (Var)	Post Tx Median (Var)	Sign Rank p	Robust Variation p
<b>ll Locs (n=156)</b>	0.69 (0.116)	0.675 (0.074)	0.141	<b>0.036**</b>
<b>TS Left (n=13)</b>	0.72 (0.033)	0.66 (0.012)	0.960	<b>0.097*</b>
<b>TS Right (n=13)</b>	0.65 (0.025)	0.71 (0.012)	<b>0.06*</b>	0.365
<b>ES Left (n=13)</b>	0.55 (0.034)	0.57 (0.031)	1.000	1.000
<b>ES Right (n=13)</b>	0.49 (0.038)	0.56 (0.027)	0.983	0.726
<b>T left (n=13)</b>	0.83 (0.059)	0.78 (0.032)	0.698	0.556
<b>T Right (n=13)</b>	0.82 (0.060)	0.6 (0.035)	<b>0.008***</b>	0.479
<b>BR Left (n=13)</b>	1.19 (0.093)	1.17 (0.048)	0.600	0.390
<b>BR Right (n=13)</b>	1.18 (0.123)	1.12 (0.042)	<b>0.027**</b>	0.416
<b>BB Left (n=13)</b>	0.67 (0.050)	0.79 (0.022)	0.465	0.224
<b>BB Right (n=13)</b>	0.81 (0.091)	0.67 (0.034)	<b>0.022**</b>	0.256
<b>AAD Left (n=13)</b>	0.5 (0.009)	0.5 (0.003)	0.465	<b>0.091*</b>
<b>AD Right (n=13)</b>	0.52 (0.009)	0.46 (0.008)	0.599	0.743

Legend: \* p<0.1; \*\* p<0.05; \*\*\* p<0.01

## 5. Conclusions:

An exploratory re-analysis of data from a small sample of healthy females found pre- vs. post-SI treatment changes in stiffness and its variation that suggest increased uniformity both overall and at some specific anatomic locations. This is supportive of further investigation which should enroll larger, more anthropomorphically diverse samples and implement more extensive controls.