



The efficacy of the treatment of abdominal cellulite and skin tightening with a Venus Freeze (MP)²-A pilot study.

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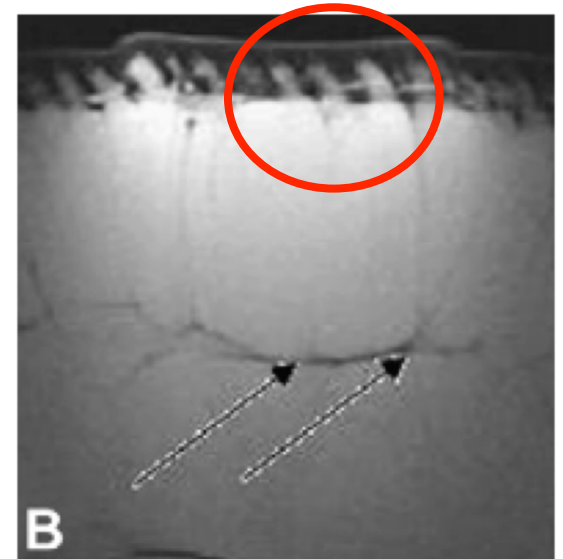
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Cellulite

- ❖ An architectural disorder of adipose tissue
- ❖ Characterized by the padded and nodular appearance of skin
- ❖ Cellulite-prone areas
 - Posterolateral thigh
 - Pelvic region
 - Abdomen



Skin Res Technol 2002;8:118-24.



Pathophysiology of cellulite

- ❖ Weakened connective tissues
- ❖ Low metabolic rate of adipocytes
- ❖ Deterioration of the dermal vasculature
 - excessive fluid retention
 - vascular compression and hypoxia

J Am Acad Dermatol. 2010; 62(3): 361-70; quiz 371-2.



Treatments of cellulite





Background

- ❖ The Venus Freeze® (MP²) combines Multi-polar radiofrequency current and Pulsed Magnetic Fields in synergy.
- ❖ **Multi-polar radiofrequency**
 - 8 electrodes
 - Raise the temperature of treatment area quickly and homogenously
- ❖ **Pulsed Magnetic Field**
 - Stimulate molecular and cellular activities and reactions
 - Increase fibroblast derived collagen production





Objective

- ❖ To determine the efficacy of a Venus Freeze (MP²) in treatment of abdominal cellulite and skin tightening



Subjects

❖ 25 subjects

❖ Inclusion criteria

- Females with abdominal cellulite grade II-III
- Age 18-65 years old
- Never received any treatments

❖ Exclusion criteria

- Pregnancy and lactation
- Patients with pace maker or implant
- Any skin lesions in the treatment area
- Receive oral isotretinoin within 6 months



Methods

- ❖ 8 weekly treatments
- ❖ 30 minute for each treatment sessions





Evaluations

(baseline, 1-, 4-, and 12-week after treatment)

❖ Objective

- Body weight and abdominal circumference at umbilical level
- Subcutaneous tissue thickness by ultrasound at baseline and 1-week after treatment

❖ Subjective

- Physician assessment with standardized photographs
- Patient satisfaction rating



RESULTS



Results

- ❖ All subjects finished 8 treatments 3-month follow up visit.



Demographic data

- ❖ Mean(SD) age: 37.56(6.8) years old
- ❖ BMI: 19.5-34.4
- ❖ Fitzpatrick skin type
 - III : 3(12%)
 - IV : 22(88%)



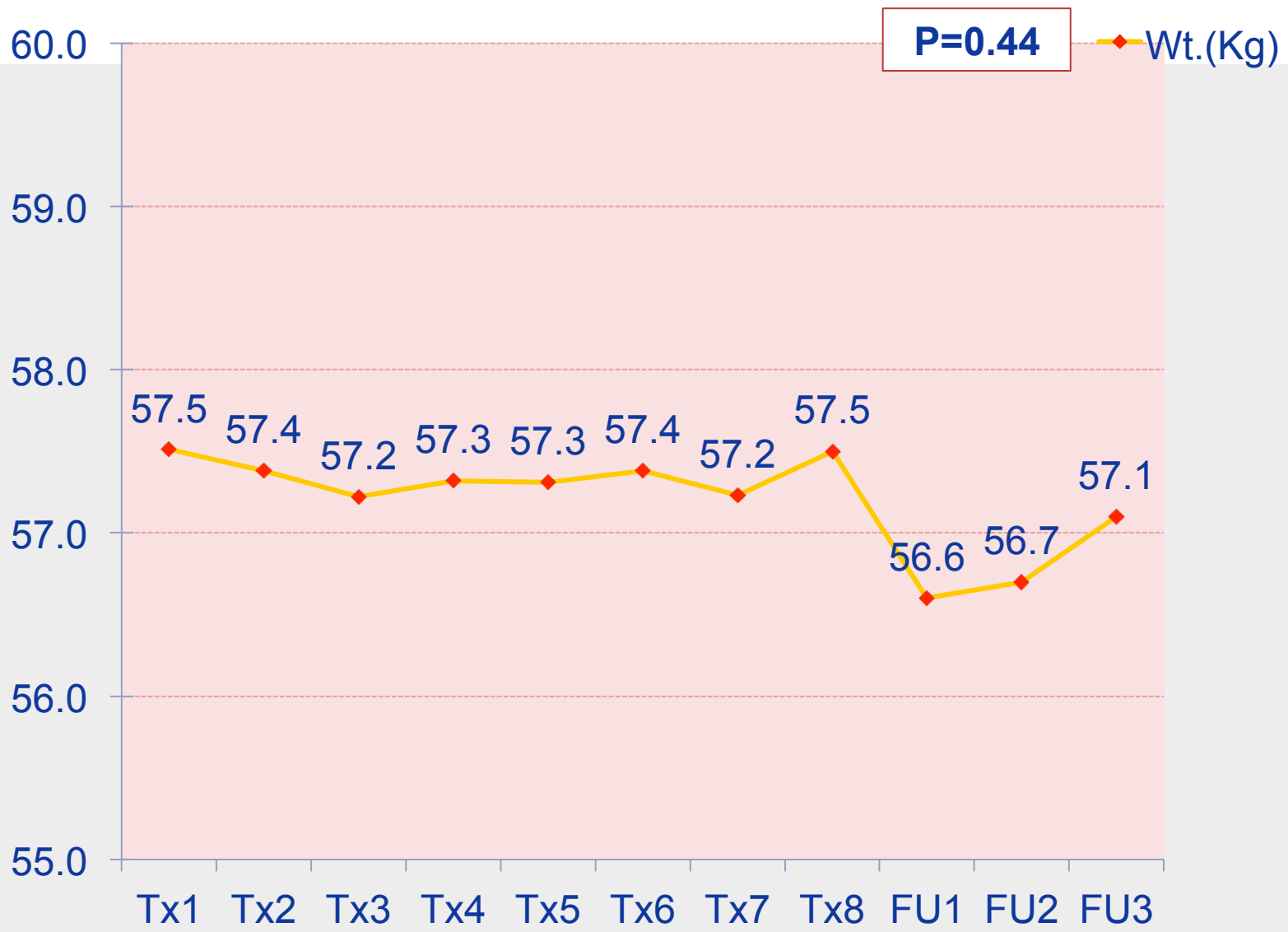
Treatment data

- ❖ All patients experienced post operative erythema.
 - Mild: 3(12%)
 - Moderate: 22(88%)

- ❖ No immediate post operative complication was found.



Body weight



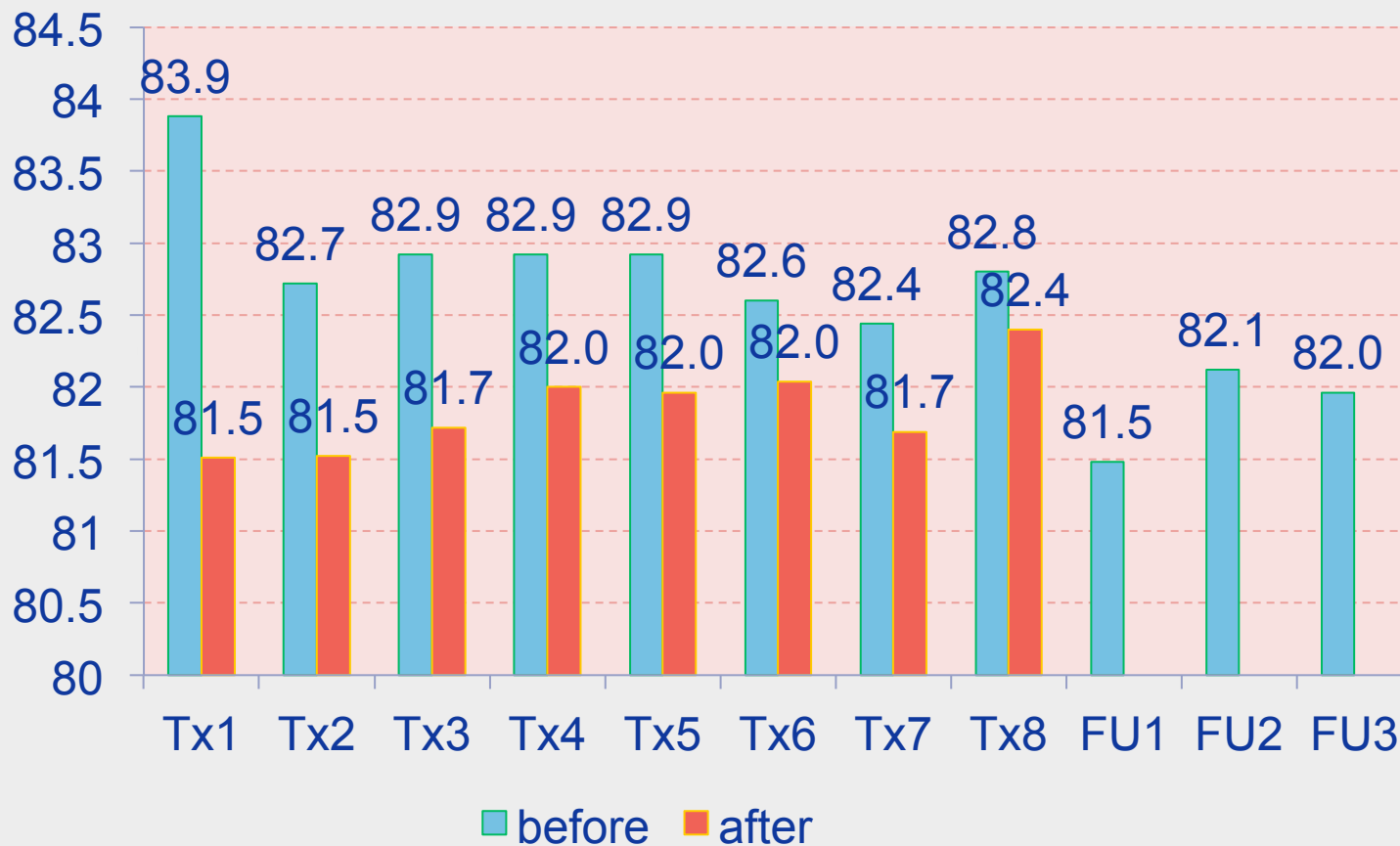


Body weight

Body weight (kg)	Mean (SD)	% cumulative weight reduction
Tx.1	57.51 (6.67)	
Tx.2	57.38 (6.46)	0.18 (1.10)
Tx.3	57.22 (6.60)	0.49 (1.45)
Tx.4	57.32 (6.62)	0.31 (1.24)
Tx.5	57.32 (6.60)	0.33 (1.44)
Tx.6	57.38 (6.60)	0.22 (1.38)
Tx.7	57.23 (6.56)	0.45 (1.69)
Tx.8	57.48 (6.66)	0.46 (1.90)
FU1	56.64 (6.39)	0.79 (2.22)
FU2	56.73 (6.26)	0.62 (1.76)
FU3	57.11 (6.68)	0.69 (2.30)

Abdominal circumference

$P < 0.001$ (at least)



Paired samples t-test



Abdominal circumference

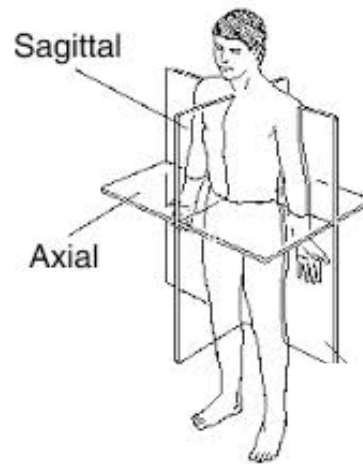
Abdominal circumference (cm.)	Mean (SD)	% cumulative circumferential reduction
Tx.1	83.88 (6.15)	
Tx.2	82.72 (5.84)	1.35 (1.75)
Tx.3	82.92 (5.72)	1.09 (1.93)
Tx.4	82.92 (5.65)	1.08 (2.41)
Tx.5	82.92 (5.89)	1.10 (2.13)
Tx.6	82.60 (6.04)	1.50 (2.15)
Tx.7	82.44 (5.99)	1.69 (2.17)
Tx.8	82.80 (5.81)	1.23 (2.56)
FU1	81.48 (5.87)	2.82 (2.42)
FU2	82.12 (6.17)	2.08 (2.63)
FU3	81.96 (6.35)	2.27 (2.97)



ULTRASONOLOGIC EVALUATION



Axial and sagittal plane



Axial

Sagittal

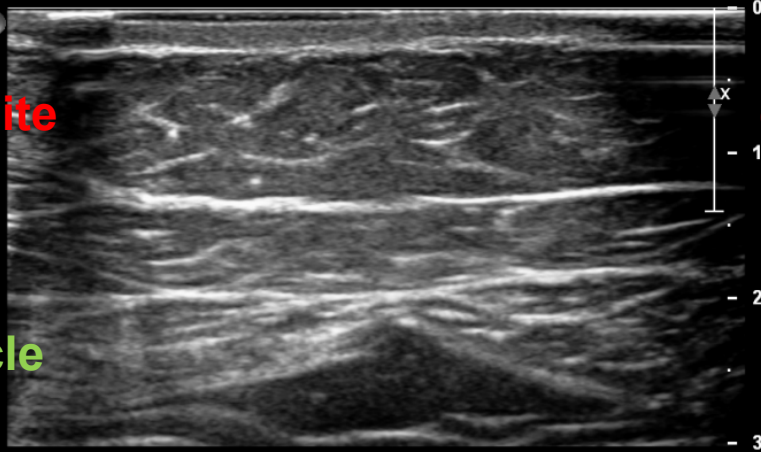
FR 36Hz
RS

2D
78%
C 55
P Low
Res

cellulite

fat

muscle



M2

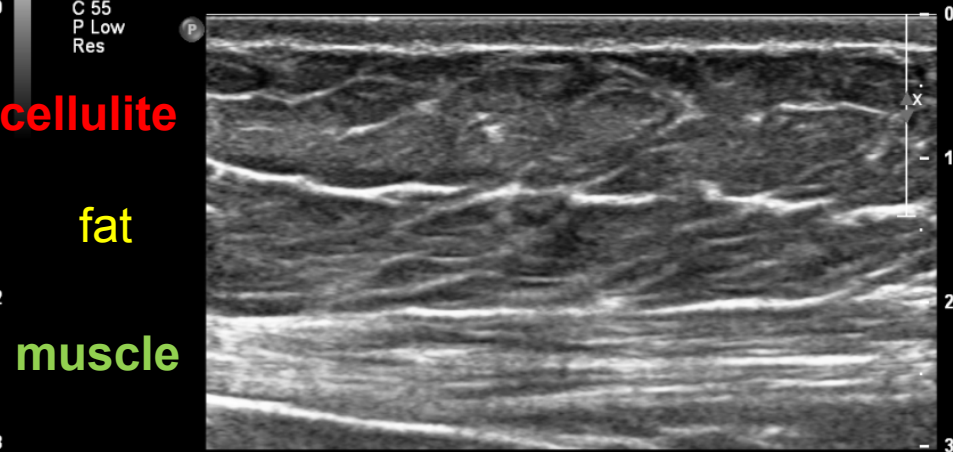
FR 36Hz
RS

2D
78%
C 55
P Low
Res

cellulite

fat

muscle



M2



Patient no. 22

PreTx1



1 week FU

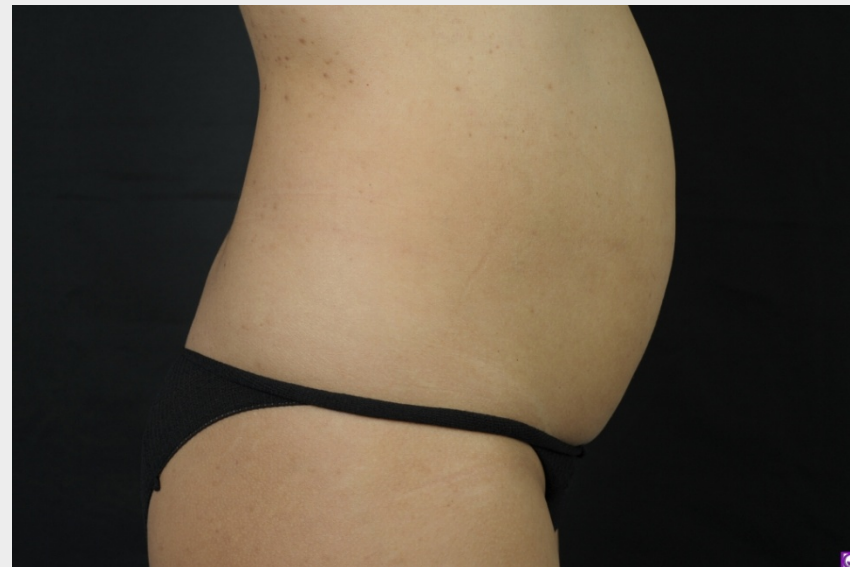




PreTx1



1 week FU





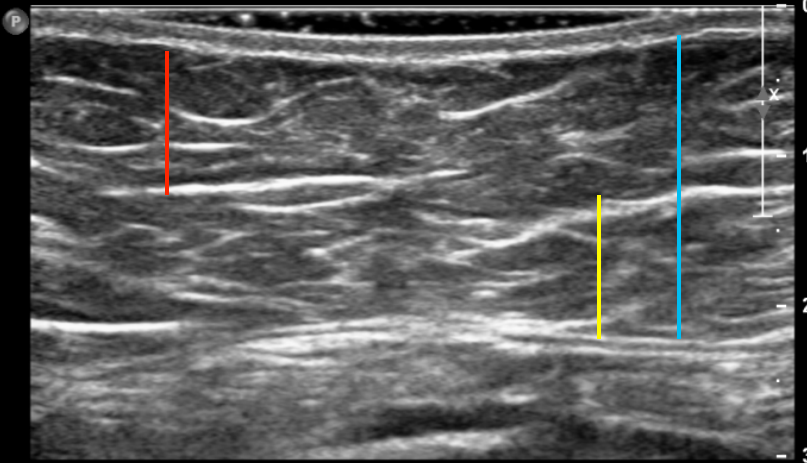
Patient no. 22: Axial plane

PreTx1

1 week FU

FR 36Hz
RS

2D
78%
C 55
P Low
Res



FR 36Hz
RS

2D
78%
C 55
P Low
Res

✦ Dist 1.41 cm
✕ Dist 0.621 cm
◇ Dist 0.739 cm



■ : cellulite	0.870	0.621	
■ : fat	0.936	0.739	
■ : total subcutaneous	1.810	1.410	(cm)

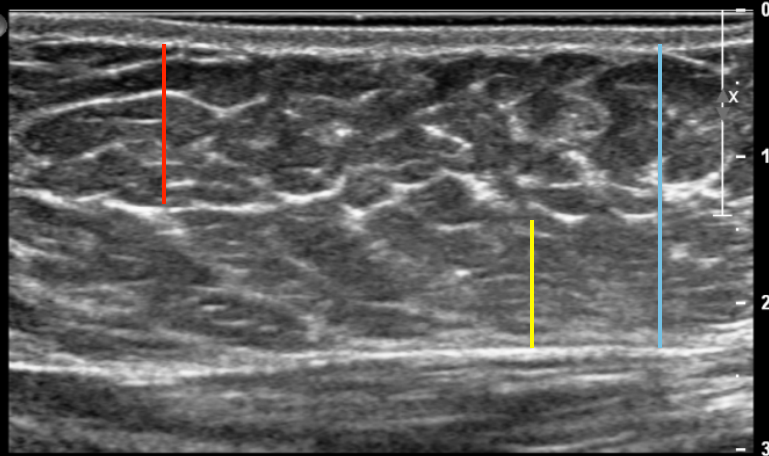


Patient no. 22: Sagittal plane

PreTx1

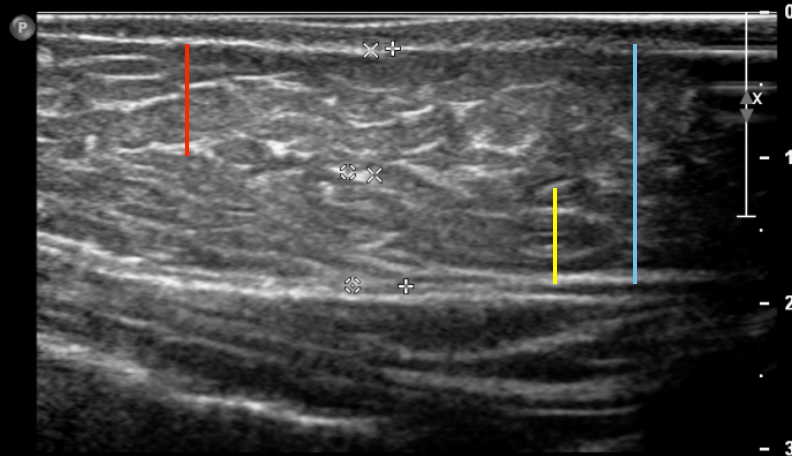
1 week FU

FR 36Hz
RS
2D
78%
C 55
P Low
Res



FR 36Hz
RS
2D
78%
C 55
P Low
Res

✦ Dist 1.64 cm
✧ Dist 0.857 cm
✧ Dist 0.779 cm



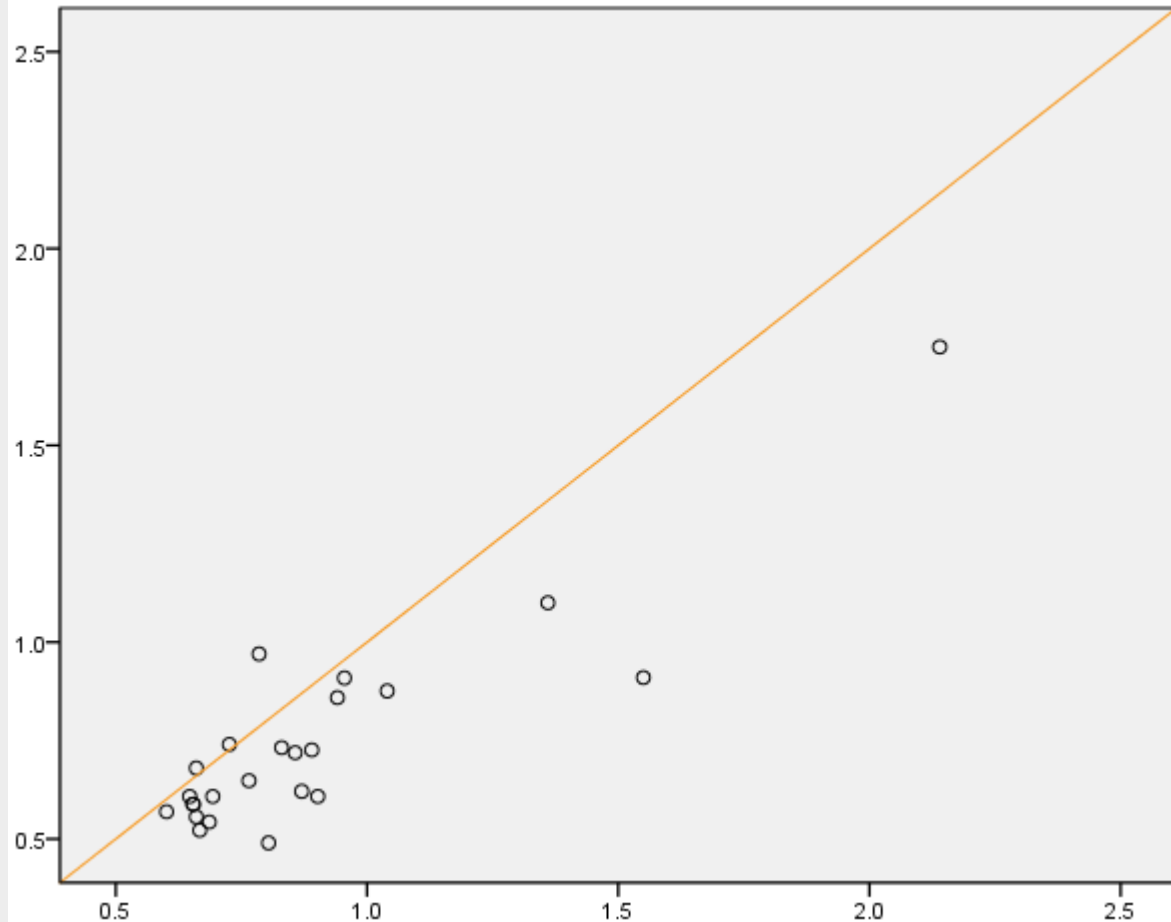
■	: cellulite	1.010	0.857
■	: fat	1.040	0.779
■	: total subcutaneous	2.060	1.640
			(cm)



Cellulite thickness (Axial plane)

$p < 0.001$

PreTx1
(cm)



FU 1 week (cm)

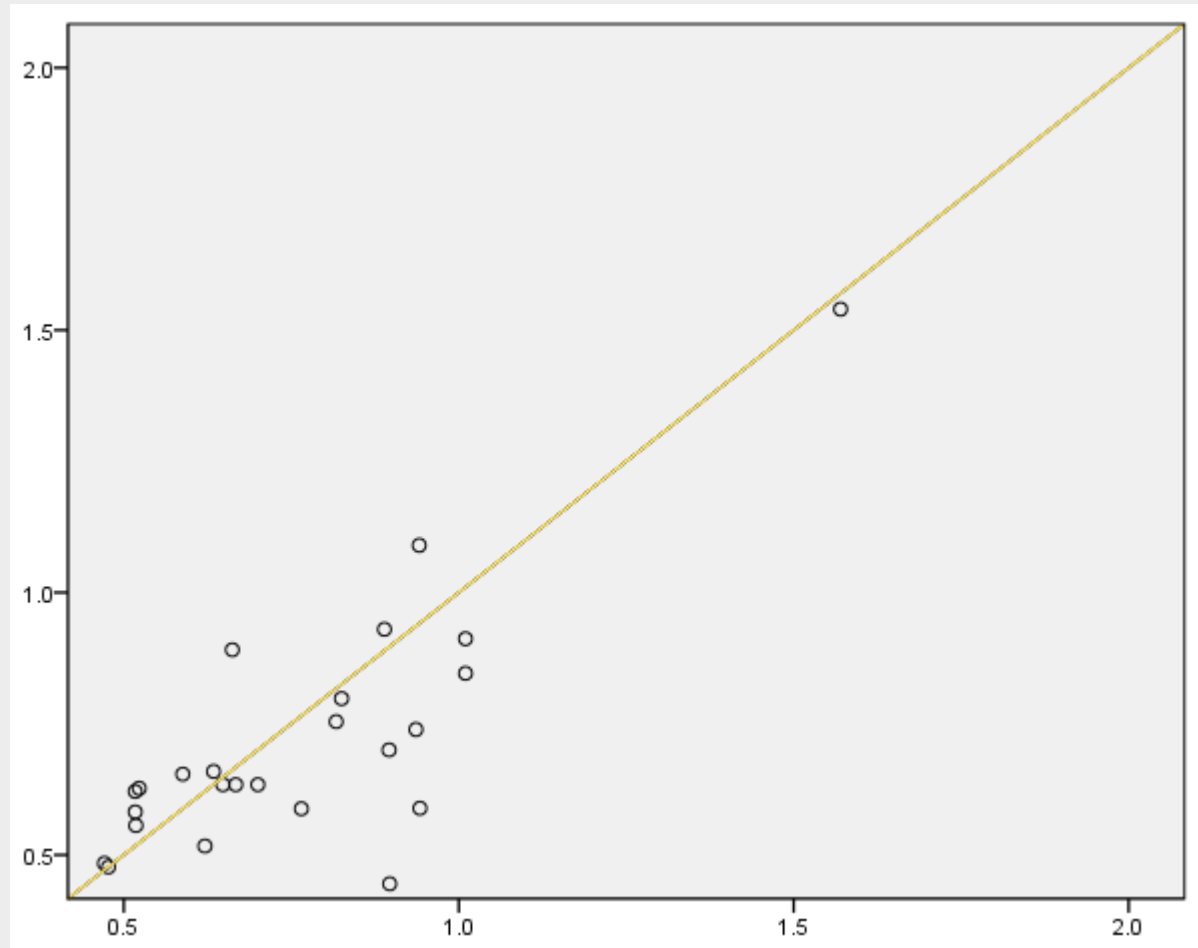
Paired samples t-test



Fat thickness (Axial plane)

$p=0.146$

PreTx1
(cm)



FU 1 week (cm)

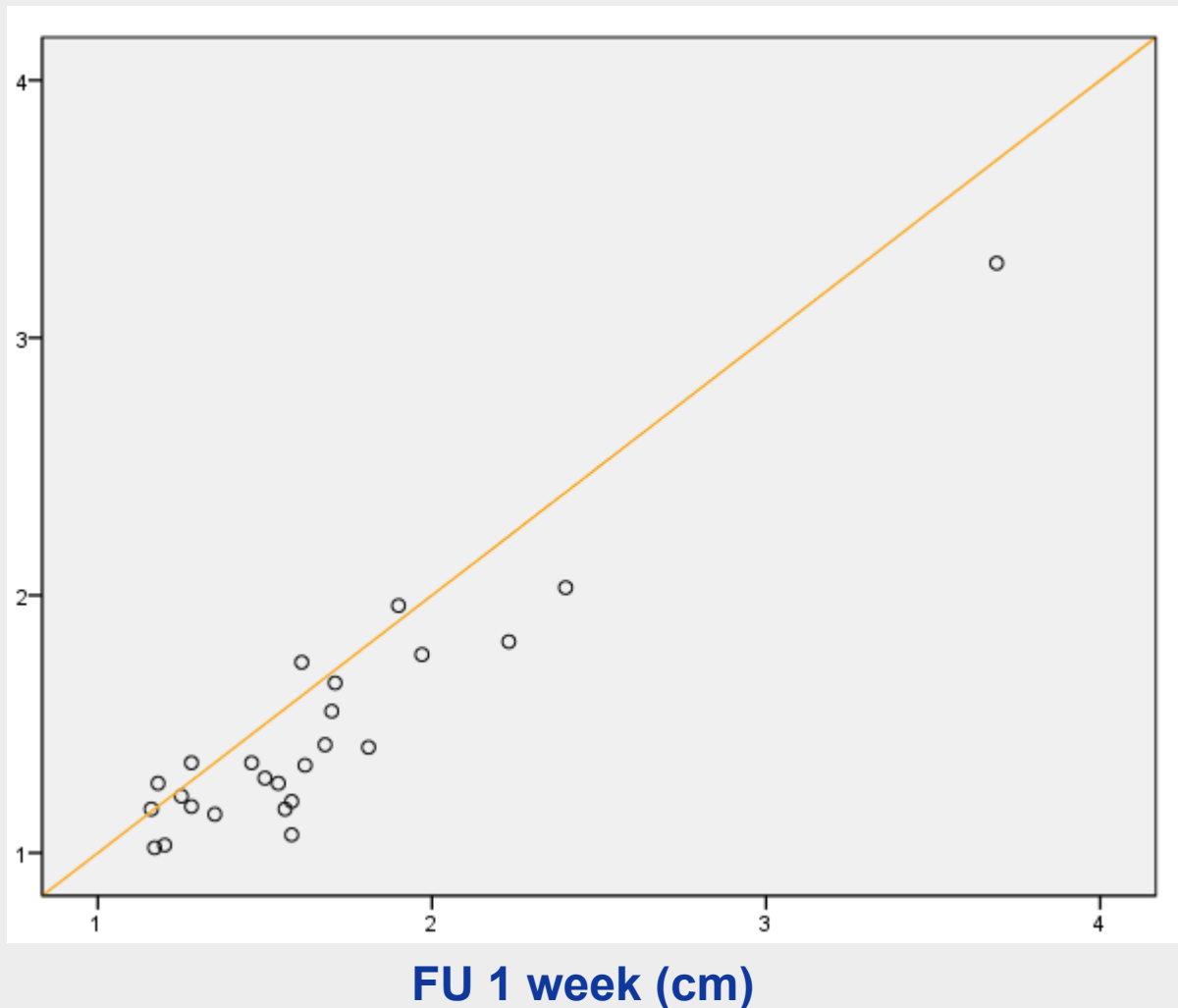
Paired samples t-test



Total subcutaneous thickness (Axial plane)

$p < 0.001$

PreTx1
(cm)



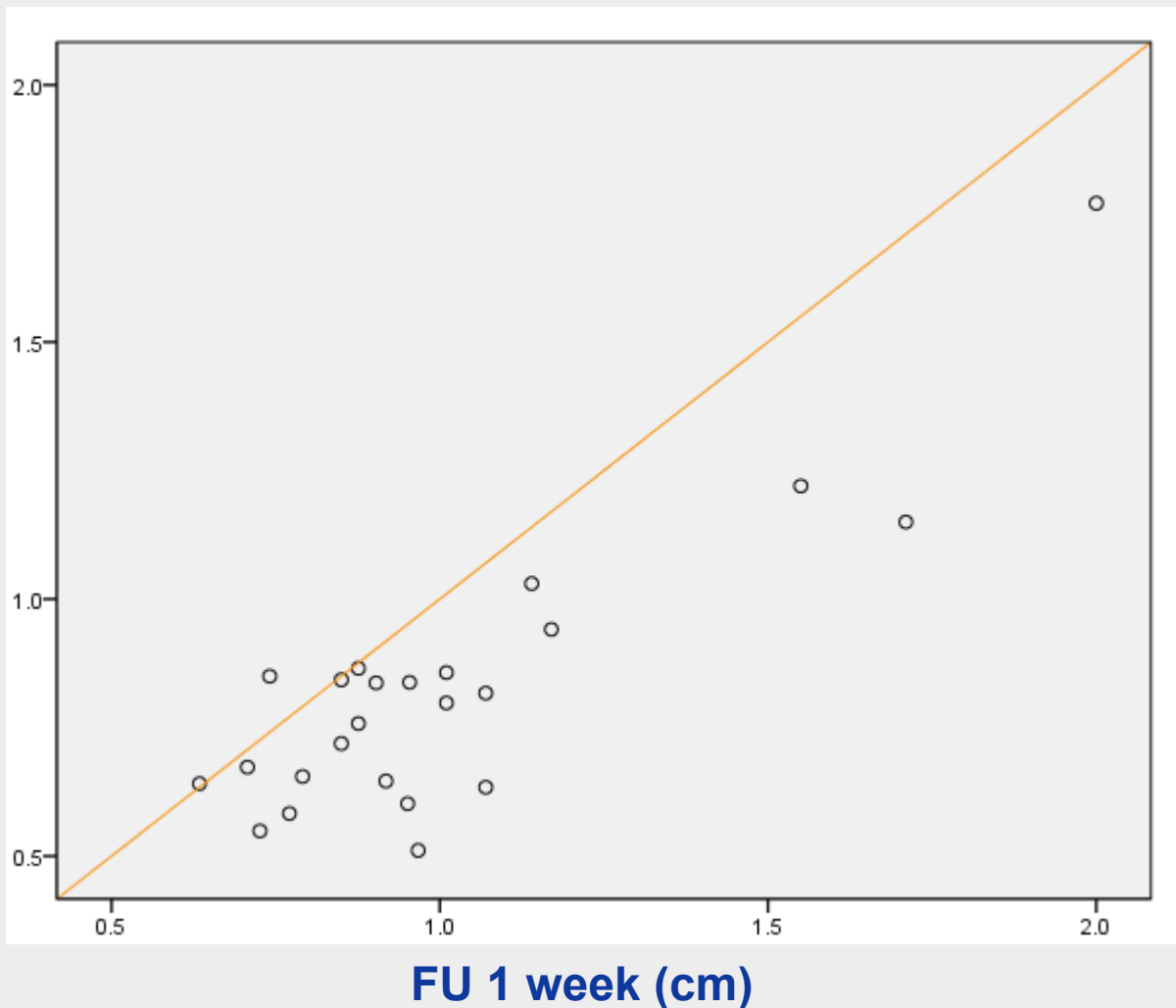
Paired samples t-test



Cellulite thickness (sagittal plane)

$p < 0.001$

PreTx1
(cm)



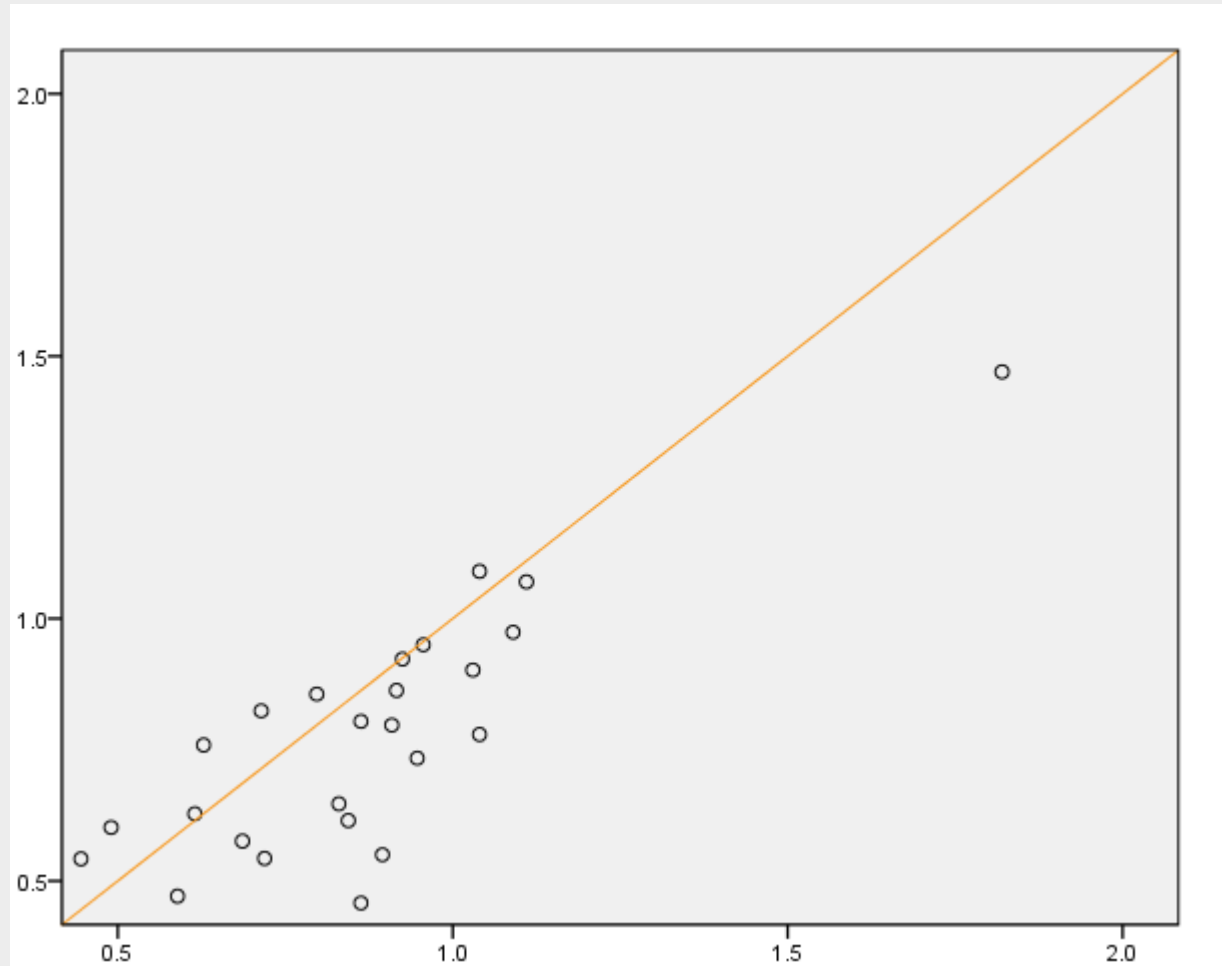
Paired samples t-test



Fat thickness (sagittal plane)

$p=0.005$

PreTx1
(cm)



FU 1 week (cm)

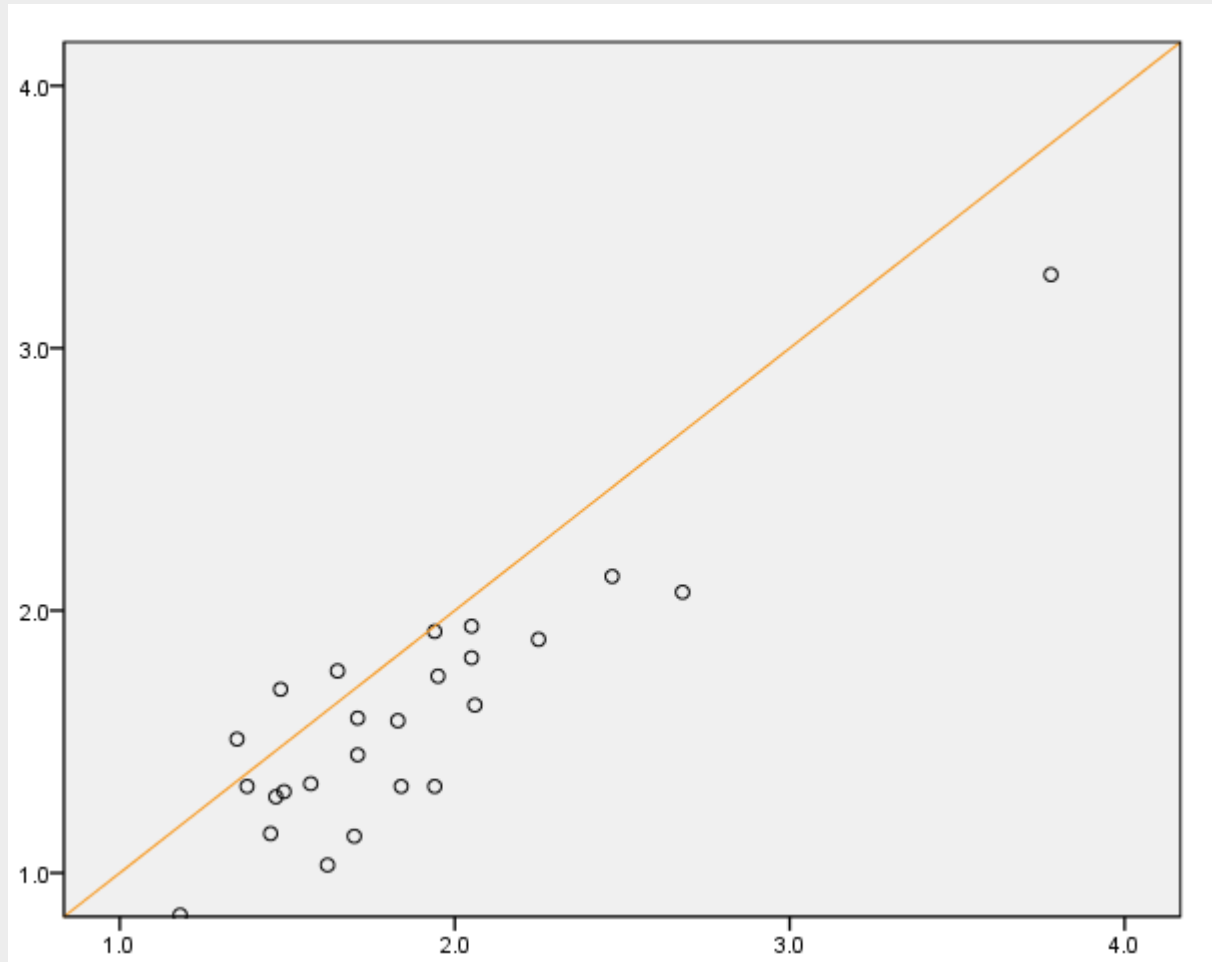
Paired samples t-test



Total subcutaneous thickness (sagittal plane)

$p < 0.001$

PreTx1
(cm)



FU 1 week (cm)

Paired samples t-test

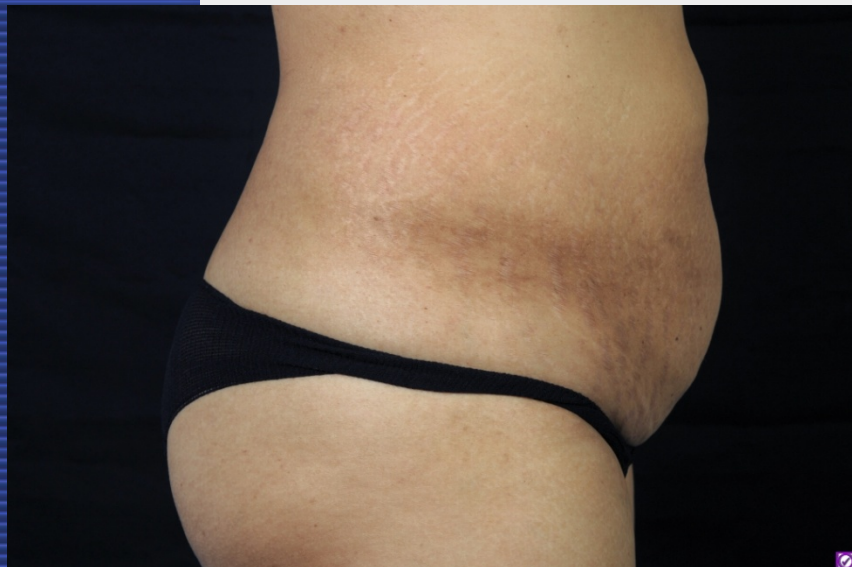


QUARTILE EVALUATION



No improvement

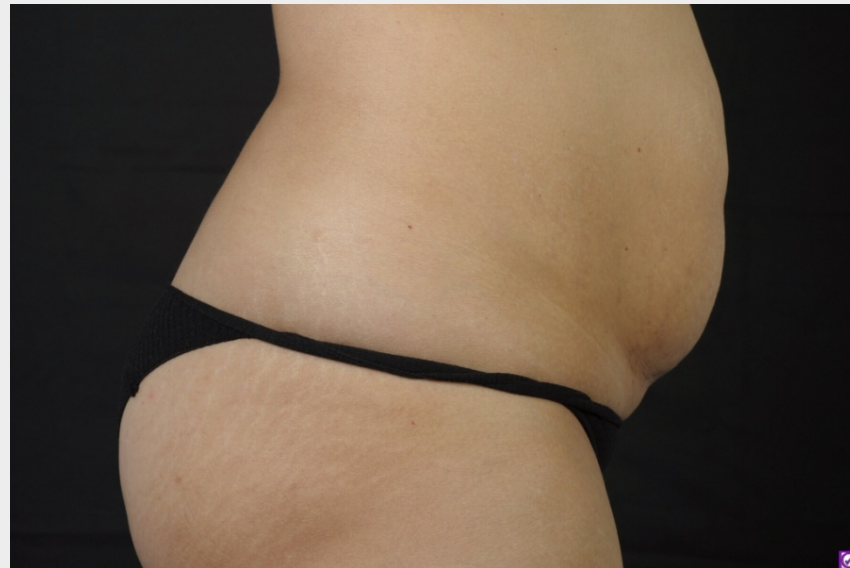
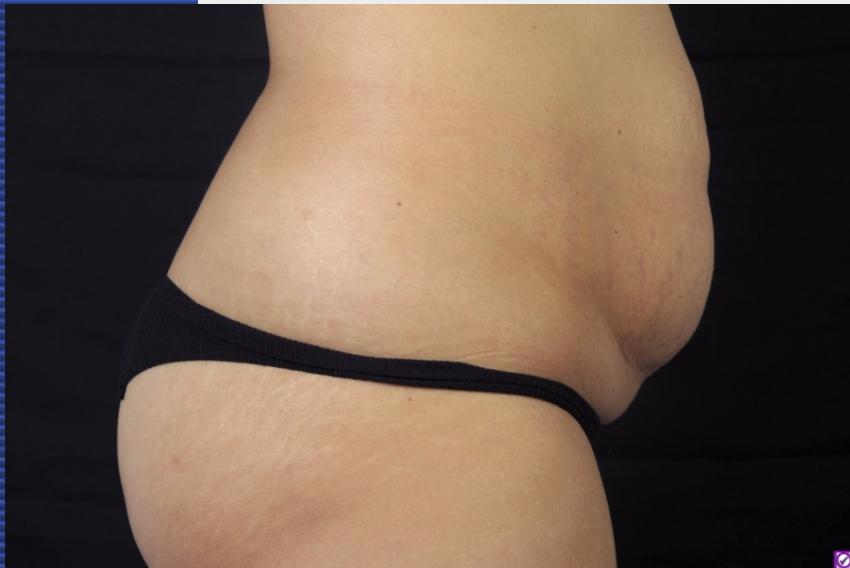






Slight improvement (1-25%)

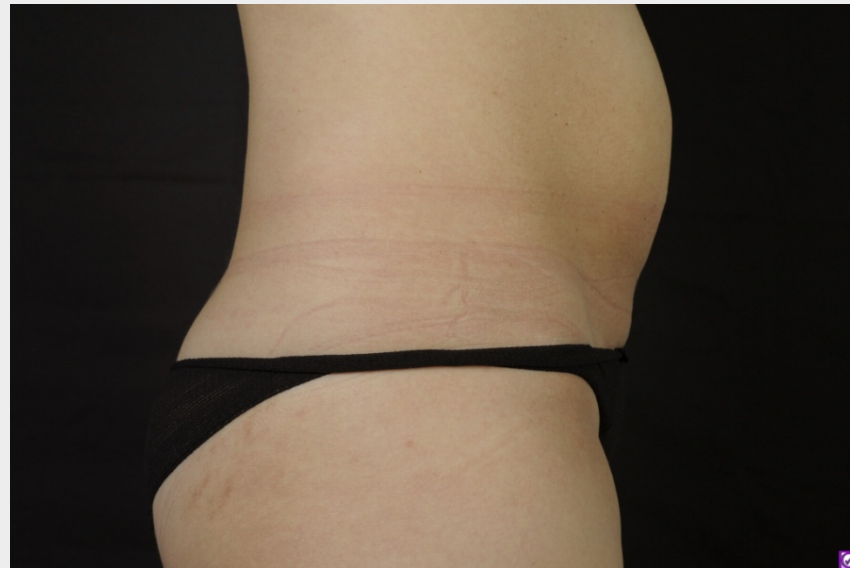






Moderate improvement (26-50%)







Good improvement (51-75%)

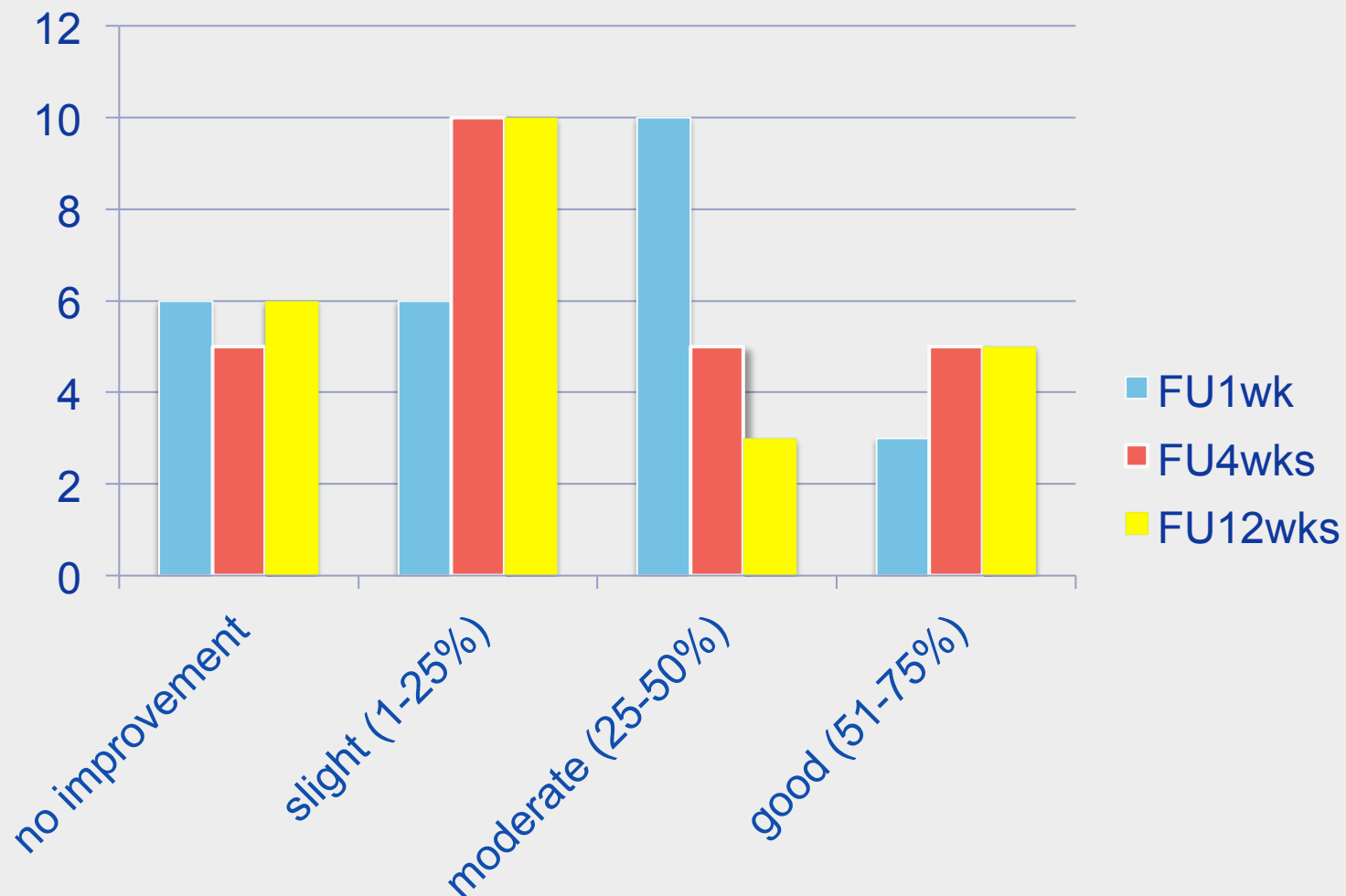






Improvement after 3 follow-ups

patients

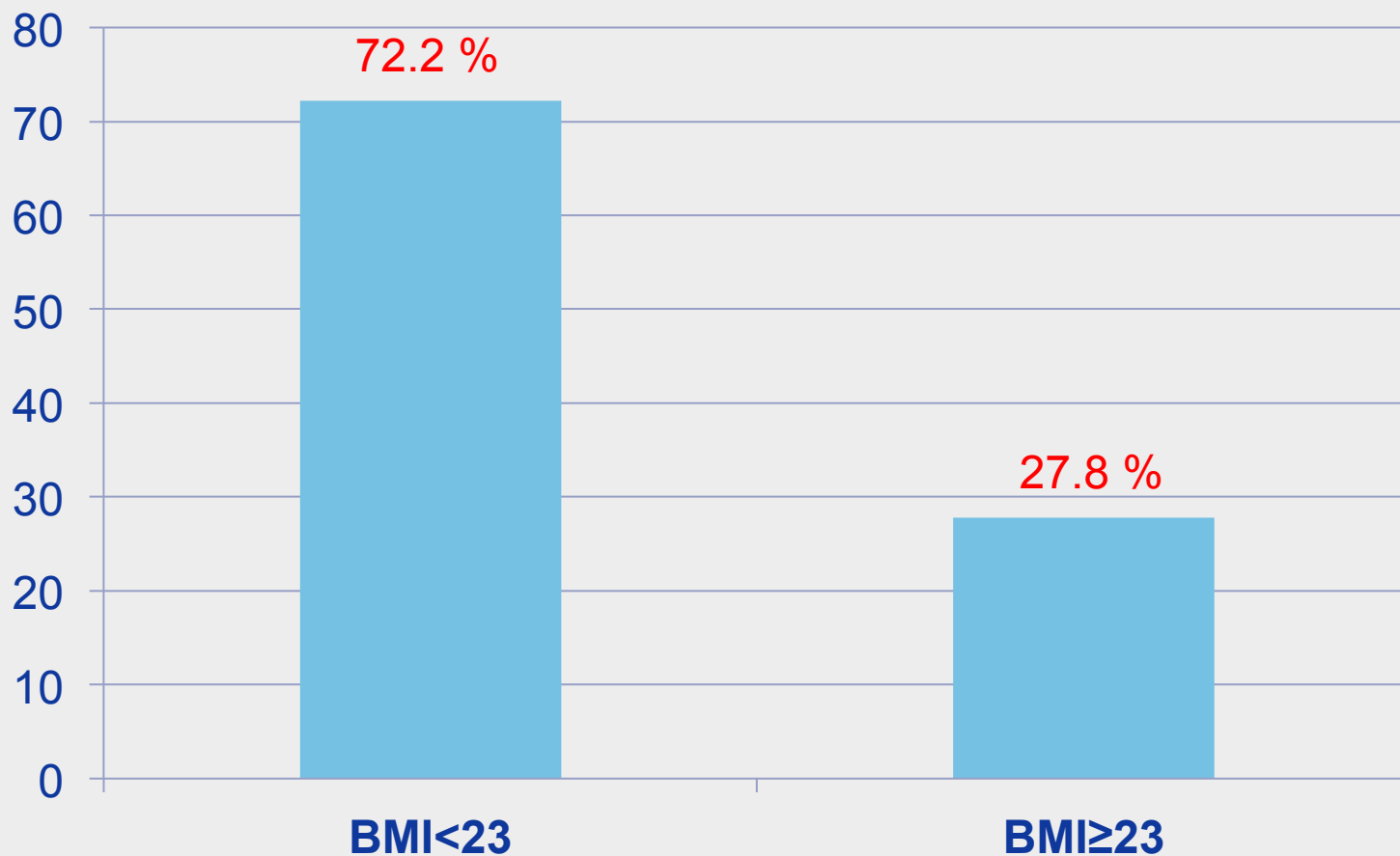




Improvement sustainability after three follow-ups: **BMI**

patients

$P=0.021$



Fisher's exact test



Improvement sustainability after three follow-ups: **baseline abdominal circumference**

Improvement after three follow ups	Baseline abdominal circumference (cm)	
	Mean	SD
With improvement (n=18)	81.78	4.9
Without improvement (n=7)	87.95	7.7

P=0.025



Result after 3 follow-up visits

- Ultrasonographic evaluation shows **significant decreases** of
 - **cellulite thickness** (both axial and sagittal plane)
 - **fat thickness** (sagittal plane)
 - **total subcutaneous thickness** (both axial and sagittal plane)



Result after 3 follow-up visits

- In the group of **BMI<23**, there is significant higher percentage of patients who sustained improvement ($p=0.021$)
- The group of sustained improvement has significant **lessor baseline abdominal circumference** ($p=0.025$)



- Age, skin type, degree of erythema reaction and power used in a procedure display no significant correlation with improvement of abdominal cellulite and tightening.



Conclusions

- Multi-polar RF with pulsed electromagnetic field demonstrated the efficacy in abdominal cellulite and fat thickness reduction.
- Patients with BMI < 23 and lessor baseline abdominal circumference tended to have sustainable abdominal cellulite and fat reduction.



Thank You !

