

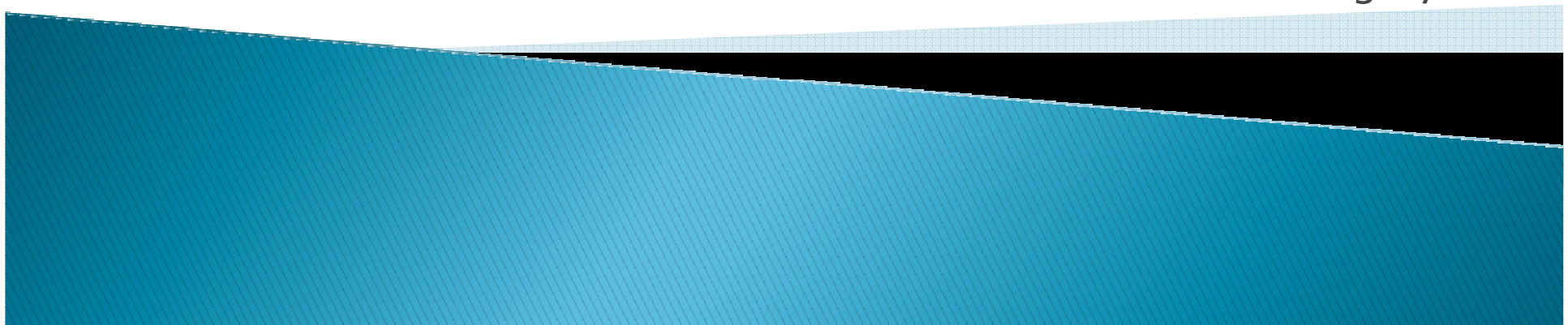
# THERMAL QUANTITATIVE SENSORY TESTING IN FIBROMYALGIA PATIENTS AND IN NON SPECIFIC LOW BACK PAIN PATIENTS

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# Background and aim

- ▶ Fibromyalgia (FM) is disorder characterized by chronic diffuse muscle pain, skin sensitivity, fatigue, sleep disturbance and depression and skin sensitivity;
- ▶ Non-specific low back pain (LBP) is characterized by tension, soreness and/or stiffness in the lower back region;
- ▶ Dysfunction of C and A $\delta$  peripheral nerve fibres is responsible for neuropathic pain syndromes but it is not clear of their involvement in generalized and other nociceptive pain states;
- ▶ With thermal quantitative sensory testing (T-QST) is possible to examine function of nociceptive sensory system;
- ▶ Our study analyzes changes in thermal perception t and pain thresholds in FM patients and LBP patients in correlation with both disorders clinical symptoms

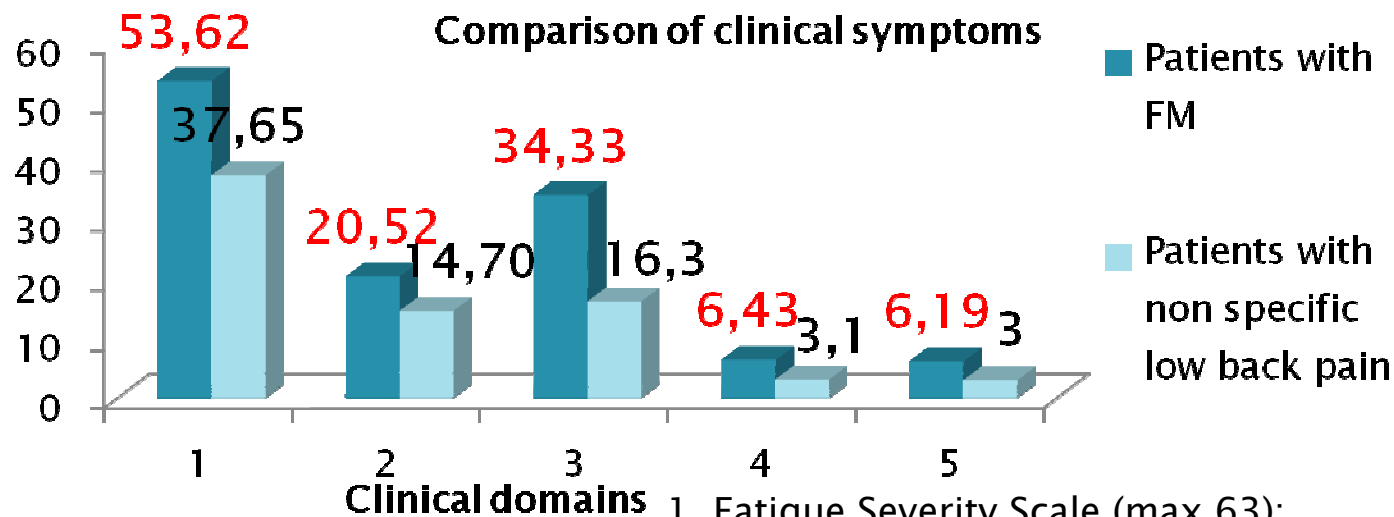
# Methods

- ▶ We studied 41 patients:
  - ✓ *21 patients with FM;*
  - ✓ *20 patients with non specific low back pain.*
- ▶ Clinical symptoms were evaluated with qualitative – quantitative survey scales:
  - ✓ *McGill Pain Questionnaire;*
  - ✓ *Brief Pain Inventory;*
  - ✓ *Fatigue Severity Scale;*
  - ✓ *Hospital Anxiety and Depression Scale;*
  - ✓ *Fibromyalgia Impact Questionnaire.*
- ▶ Thermal QST was performed using apparatus *MEDOC PATHWAY* (TSA – II, Medoc, Israel).
- ▶ Measured:
  - ✓ *FM patients – both hands and both legs dorsal surfaces;*
  - ✓ *Non specific low back pain patients – both sides of spine and both legs dorsal surfaces.*

# Results

## Clinical signs and symptoms

- Chronic fatigue discovered:
  - ✓21 (100%) FM patients;
  - ✓10 (50%) non specific low back pain patients;
- Anxiety and depression symptoms discovered:
  - ✓20 (94,4%) FM patients;
  - ✓14 (70%) non specific low back pain patients.

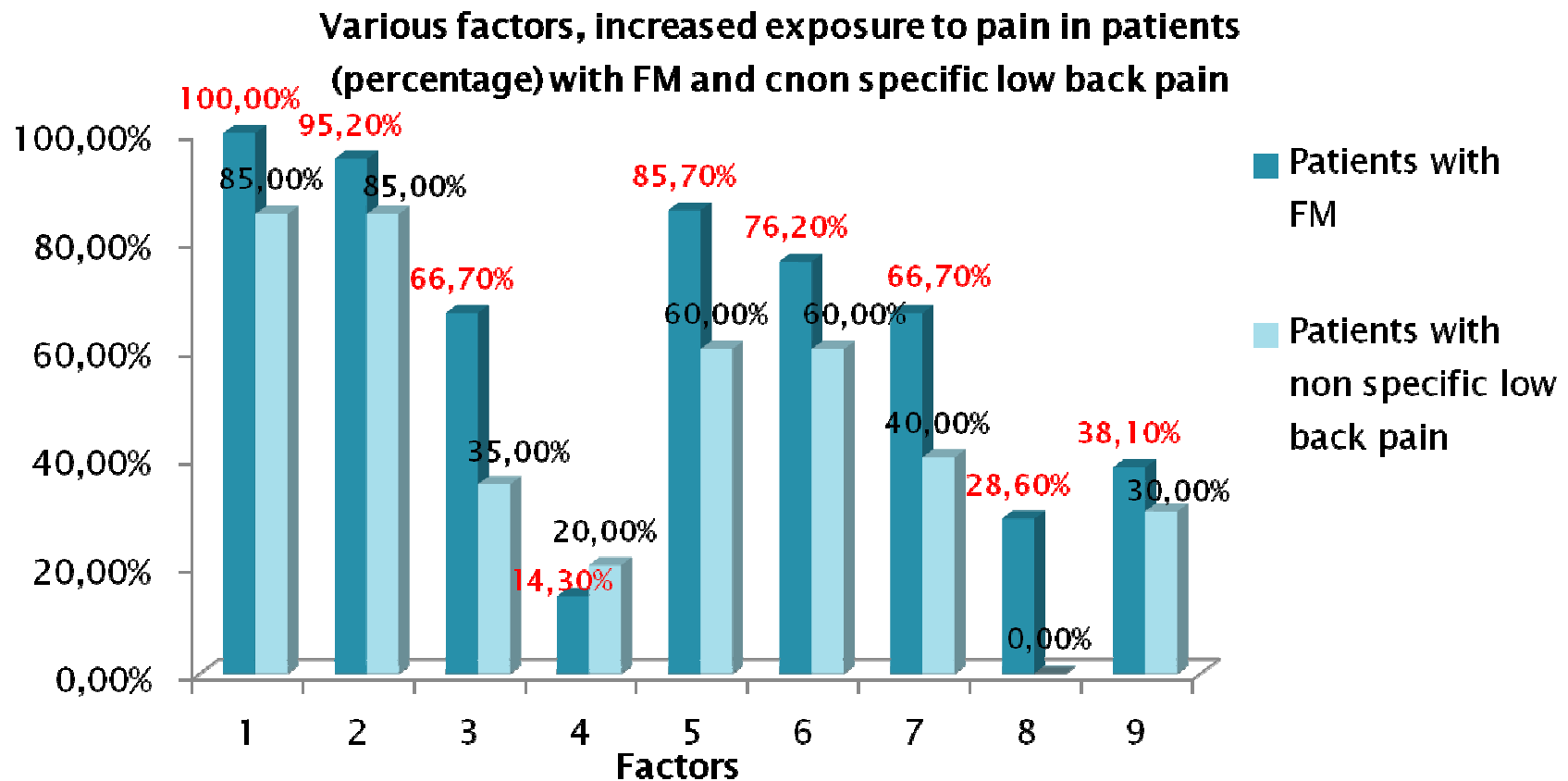


1. Fatigue Severity Scale (max 63);
2. Hospital Anxiety and Depression Scale (max 42);
3. McGill Pain Questionnaire (max 56);
4. Pain intensity measured by Brief Pain Inventory (max 10);
5. Pain influence measured by Brief Pain Inventory (max 10);

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# Results

## Clinical signs and symptoms

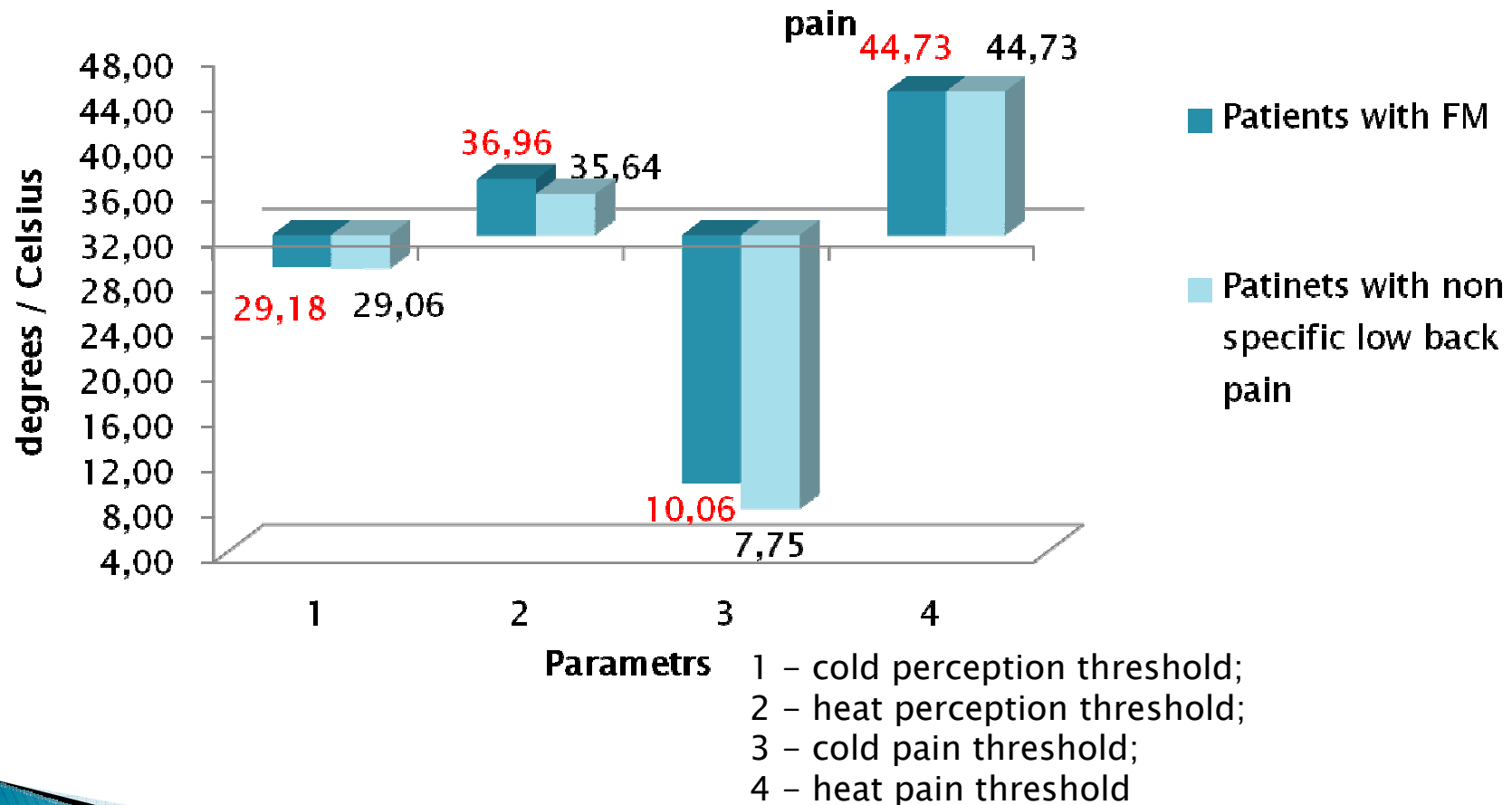


1 – physical activity, 2 – static load, 3 – emotional burden,  
4 – peace, 5 – fatigue, 6 – immobility;  
7 – changing weather conditions, 8 – heat; 9 – cold

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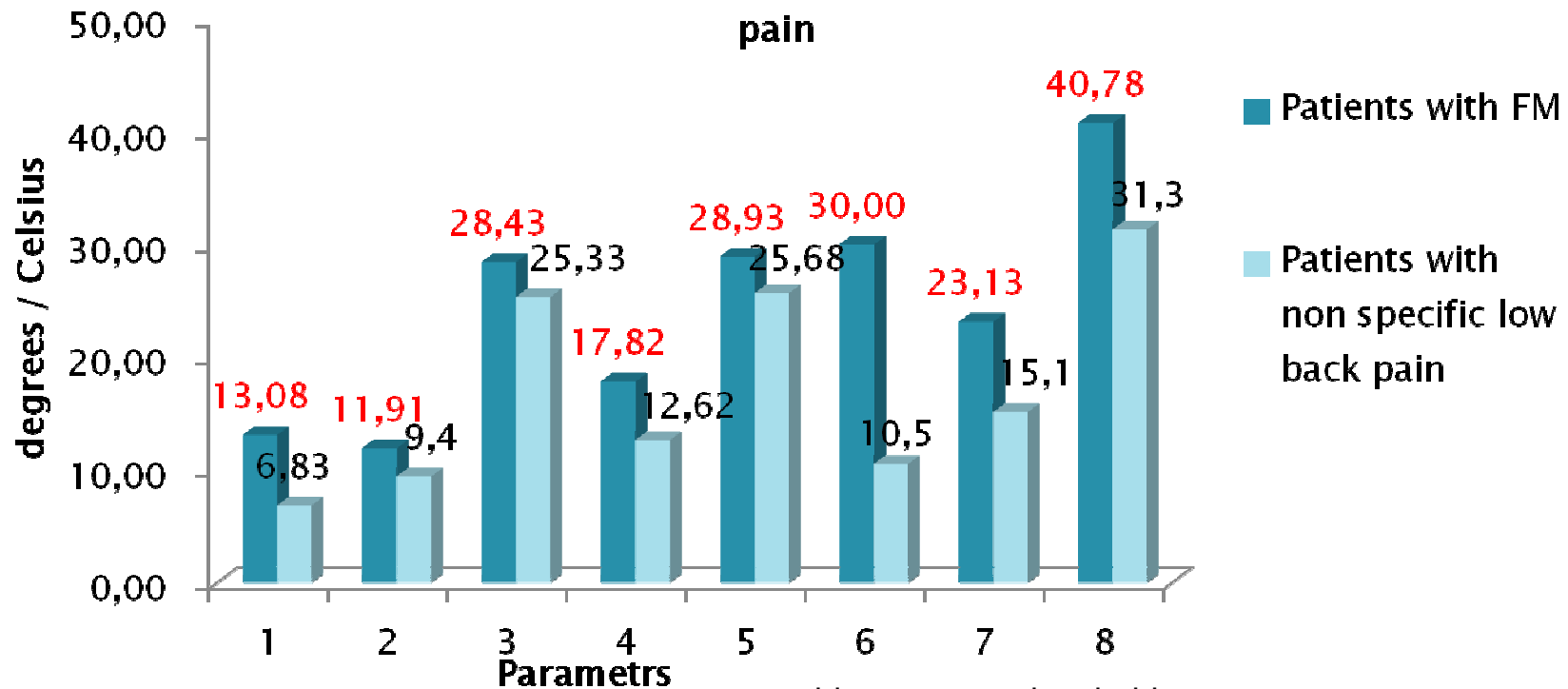
# QST results

The mean cold and heat perception and pain threshold comparison in absolute terms in patients with FM and patients with non specific low back



# QST results

Thermal QST range comparison of FM patients with non specific low back pain



- 1 – cold perception threshold;
- 2 – heat perception threshold;
- 3 – cold pain threshold;
- 4 – heat pain threshold;
- 5 – cold perception and pain threshold interval;
- 6 – heat perception and pain threshold interval;
- 7 – cold and heat perception threshold interval;
- 8 – cold and heat pain threshold interval.

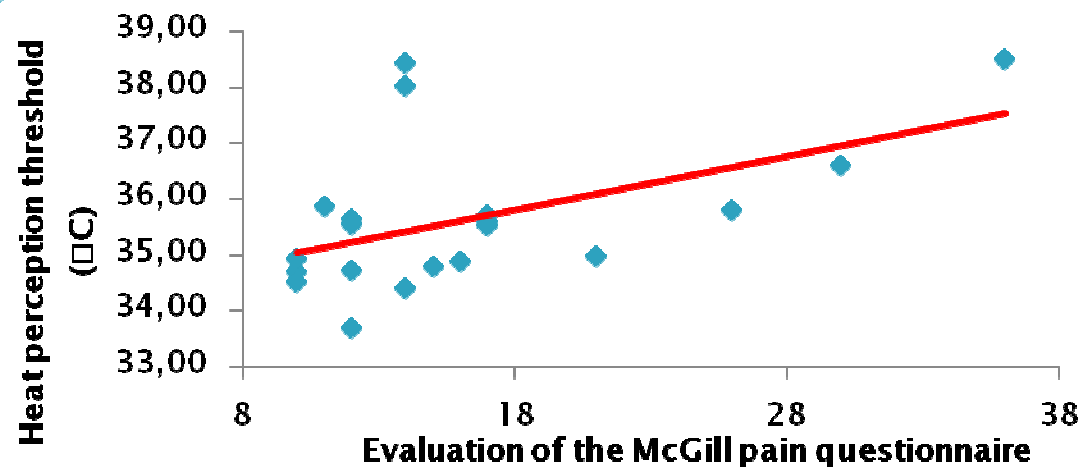
# Results

## Clinical symptoms correlated with the results of the QST

Heat perception threshold and clinical symptoms correlation in patients with non specific low back pain.

The individual points – heat perception threshold for individual patient.

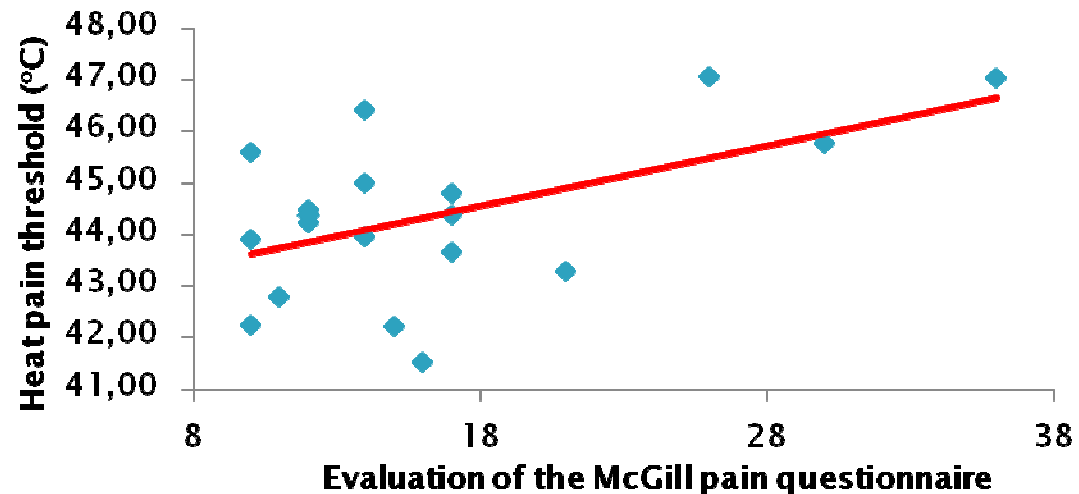
$p < 0,0001$ ,  $r = 0,509$



Heat pain threshold and clinical symptoms correlation in patients with non specific low back pain.

The individual points – heat pain threshold for individual patient.

$p < 0,0001$ ,  $r = 0,531$





# Conclusion

1. FM patients were observed temperature perception and pain threshold changes in the form of hyperalgesia, hypalgesia and hypoaesthesia in all test locations, and points to the possible origin of neuropathic pain;
2. Non specific low back pain patients were found in temperature perception and pain threshold changes in the back area, which may indicate the origin of neuropathic pain;
3. Patients with non specific low back pain was found statistically significant moderate close clinical correlation with the heat pain threshold in the form of hypalgesia and heat perception threshold in the form of a tendency to hypoaesthesia;
4. No moderate close or close correlation between the clinical symptoms and the QST results, in patients with FM was not found;
5. Compared pain assessments at McGill pain questionnaire, FM patients pain numerical estimates are much higher, indicating a possible origin of neuropathic pain in FM patients;
6. Comparing the average test values of FM and non specific low back pain patients should take into account the results of a large dispersion of FM patients who have a significant impact on the average.

# Discussion

1. Were seen different cold pain perception in FM and non specific low back pain patients, which might indicate a different underlying mechanism of pain;
2. Cold perception threshold and pain interval and cold and heat pain threshold interval in FM patients are lower than in patients with non specific low back pain. It is possible that the reduction of this interval could be considered as the nerve fibre function impairment;
3. There was not found moderate close or close correlation between thermal QST results and clinical symptoms in FM patients. Probably because the patients were taken different medications or because the number of patients was insufficient or because the thermal QST was in the hands and feet, but not the most painful points