



# Modern aspects of treatment with transcutaneous electrical nerve stimulation

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## PURPOSE:

The aim of the research is to study the effects of this modality of the physical therapy and the implications over the rehabilitation process.

## MATERIALS AND METHODS:

This research was carried out in a period of 3 working weeks, or 15 working days, as long the rehabilitation lasts. The statistical sample consists of three groups. One group is 15 patients who are treated for predominantly arthritic degenerative pathologies in the acute and chronic phase, with localization of upper and lower extremities; and patients who are in the acute and chronic phase of periarthritis, contusions and joint dislocations, also on the upper and lower extremities. The other group is 15 patients with degenerative chronic and acute pathological conditions of the musculoskeletal system of the spine. The third group is 15 patients in whom TENS is not included.

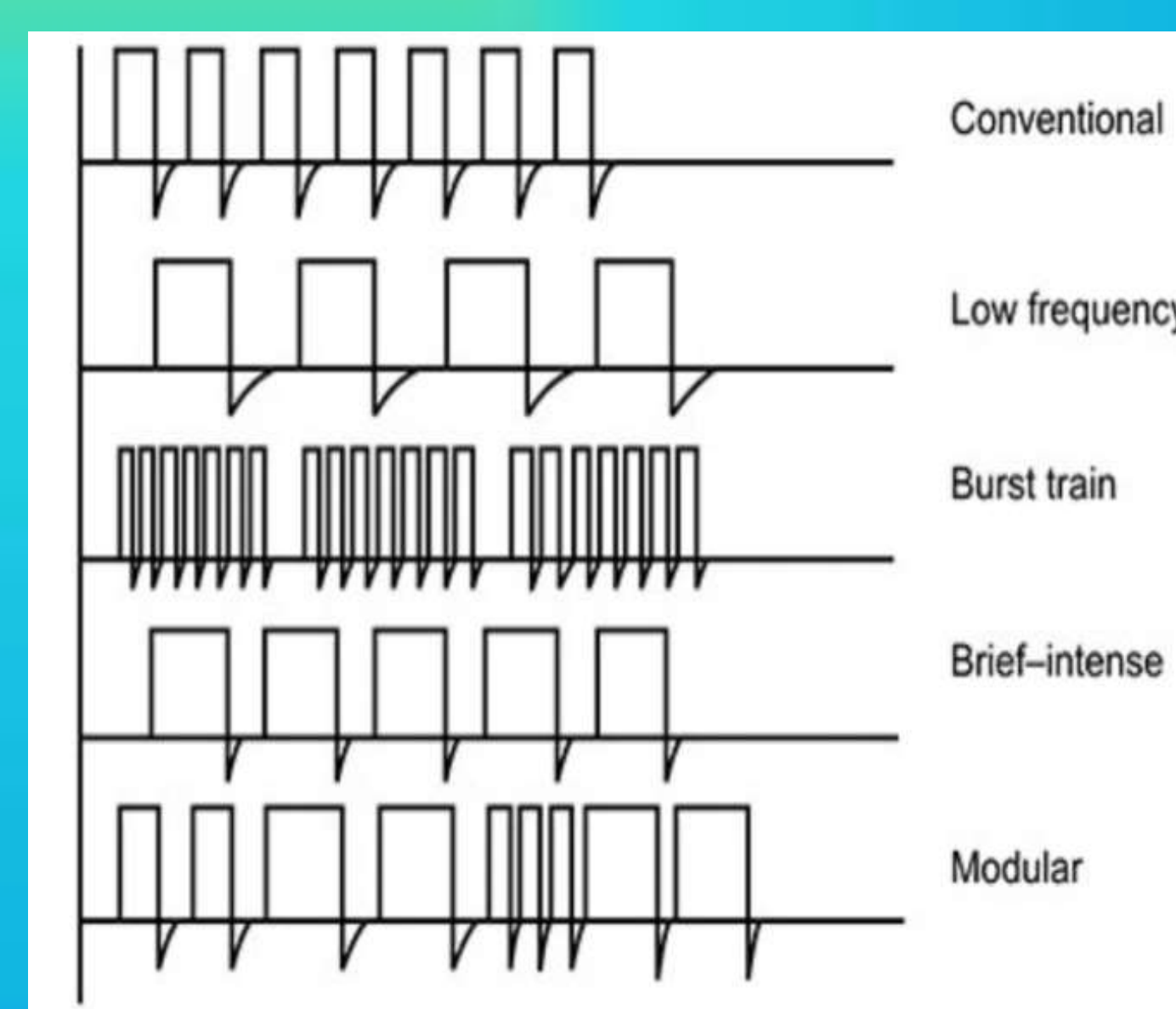
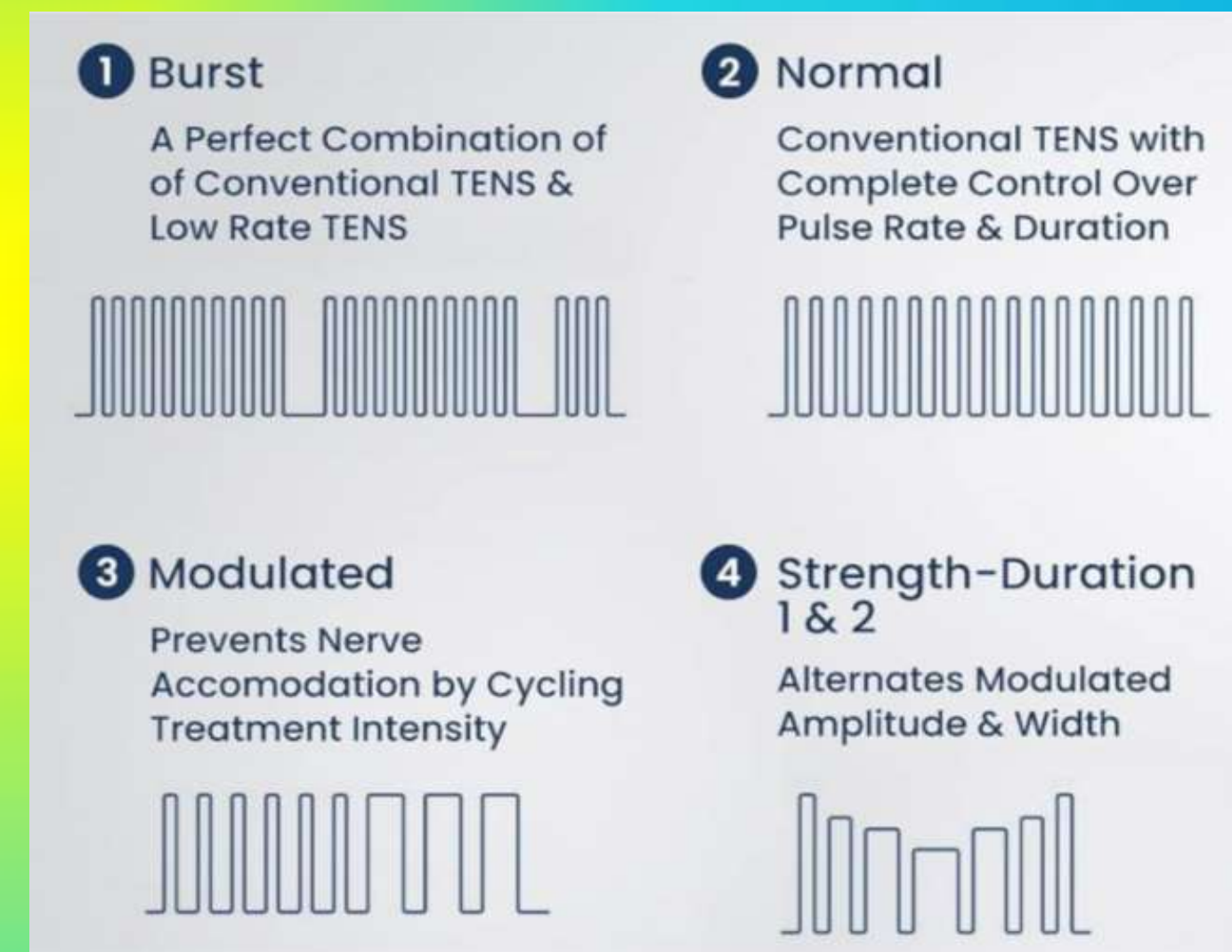
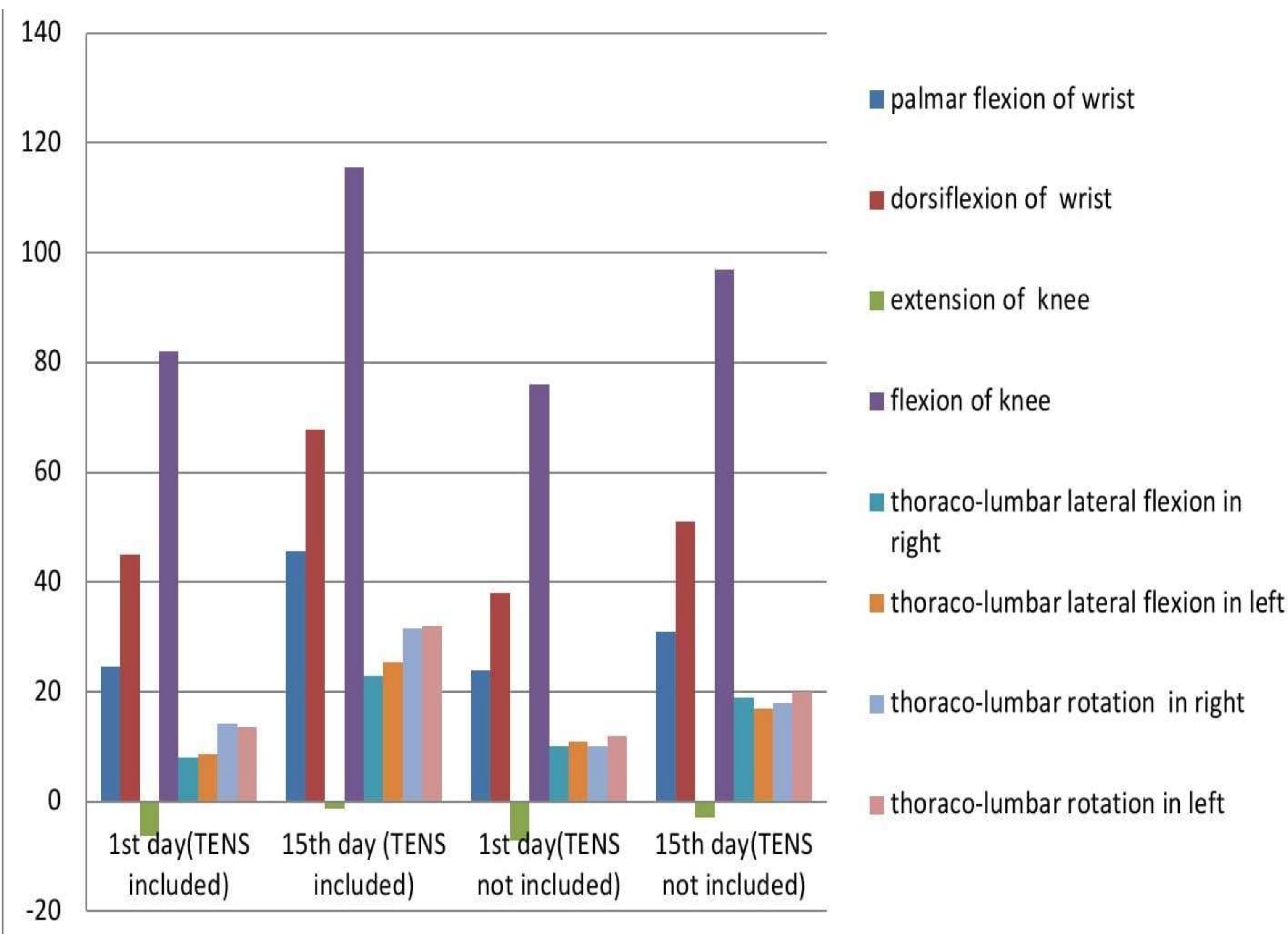
## CONCLUSION:

The non-invasiveness of this physical procedure, together with the specific application of its modulations according to the pathological condition allow for a quick and efficient rehabilitation. The reduced feeling of pain allows a greater will to perform the exercises included, and thus a greater range of movements in the musculoskeletal system.

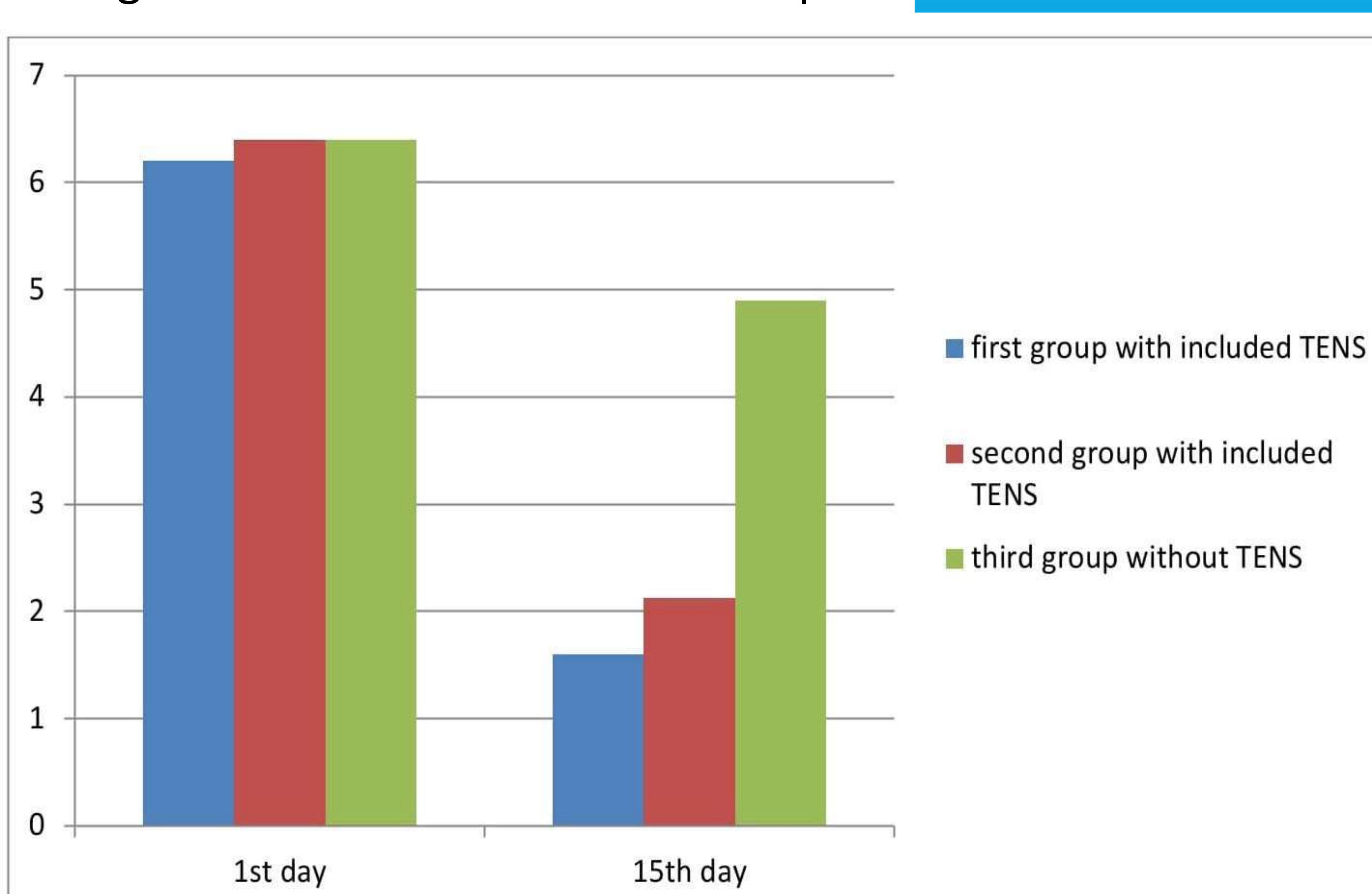
Number of patients	Type of musculoskeletal pathology	Type of transcutaneous electrical nerve stimulation modulation applied	Age	
1 <sup>st</sup> group	7	Fractures of the wrist	High frequency, 50-150 Hz; pulse, 50-125 μs	47,3±10,5
	8	Degenerative changes of the knee joint	Low frequency, 1-5 Hz; pulse 200-500 μs	
2 <sup>nd</sup> group	7	Acute pathology of the spine	Brief intense modulation, frequency 100 Hz; pulse 250 μs	42,8±9,7
	8	Chronic pathology of the spine	Low frequency, 1-5 Hz; pulse 200-500 μs Acupuncture like	
3 <sup>rd</sup> group	5	Fractures of the wrist		45±12,4
	5	Degenerative changes of the knee joint		
	5	Chronic pathology of the spine		

Source: Authors own research, Mitkov O., Vasileva D.

Active range of motion(AROM), graphic view of the changes of motion between two groups



Changes of the values of the scale of pain



## RESULTS:

According to the analysis and processing of the results of the active range of motion (AROM) goniometry of the joint structures of the upper and lower limbs and the spine and the pain scale at the beginning and after the 15<sup>th</sup> day of the rehabilitation procedures, results were obtained that after the statistical processing, shows a significant improvement if the transcutaneous electrical nerve stimulation is included