

# Autonomic nervous system dysfunctions in patients with stress-related and functional syndromes vs. healthy controls

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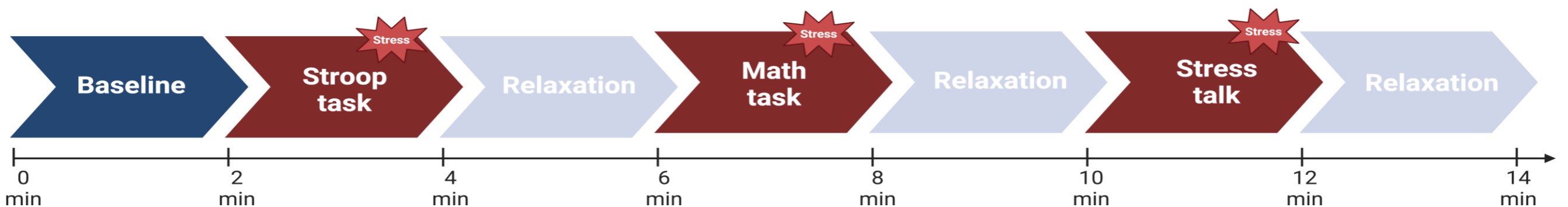
## BACKGROUND AND AIMS

- 40-49% of primary care patients experience somatic symptoms that cannot be (fully) explained by organic dysfunction
- These symptoms can be innocent and transient, but can also occur
  - in the context of stress-related psychological disorders, such as overstrain or occupational burnout
  - as chronic and highly debilitating symptoms in the form of functional somatic syndromes, such as chronic fatigue syndrome or fibromyalgia
- Dysfunction of the autonomic nervous system is thought to be one of the underlying mechanisms behind functional somatic syndromes (FSS) and stress-related disorders (SRD)

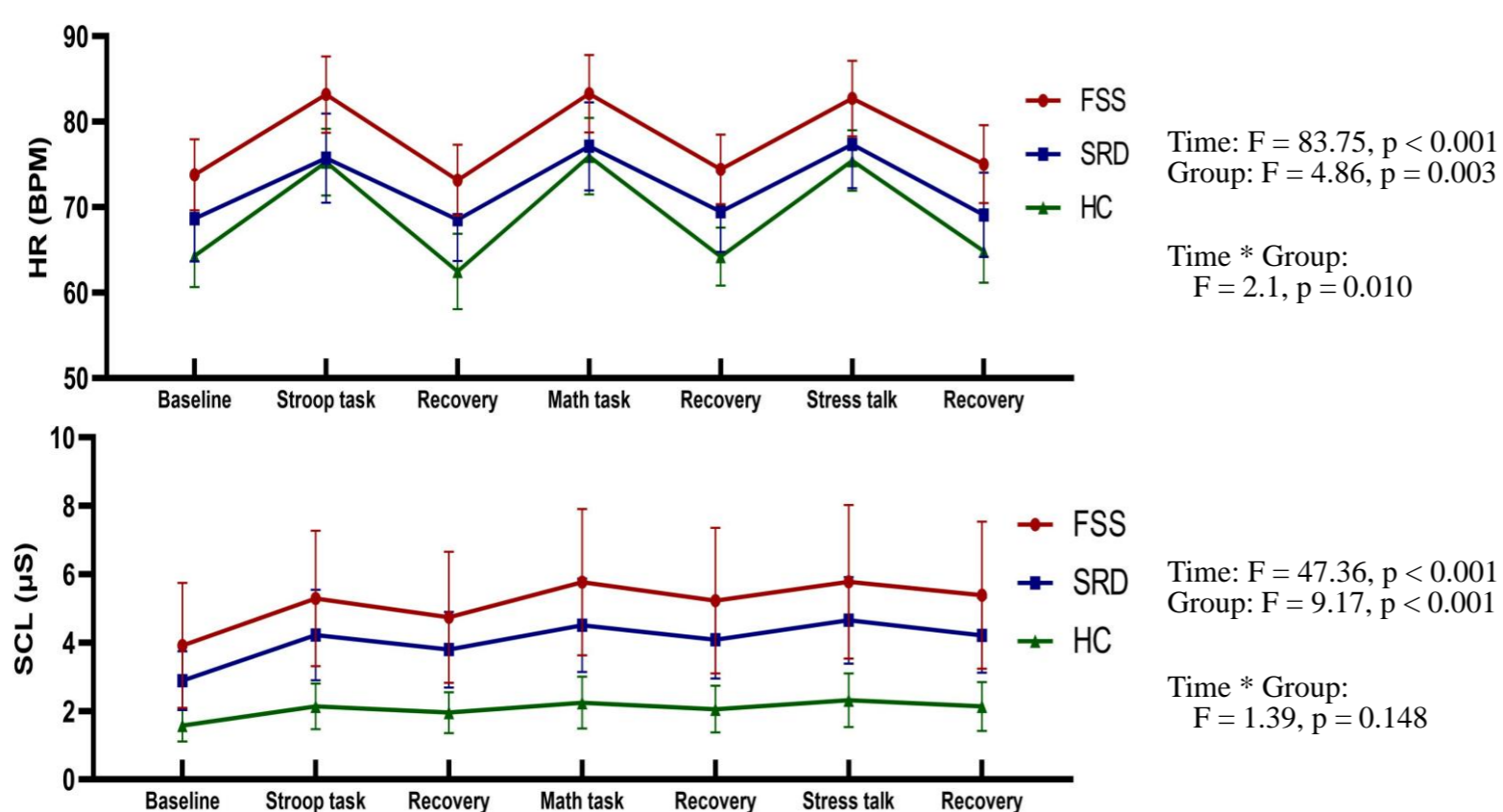
The aim of this study was to investigate the autonomic response to a psychosocial stressor in FSS, SRD, and healthy controls

## METHODS

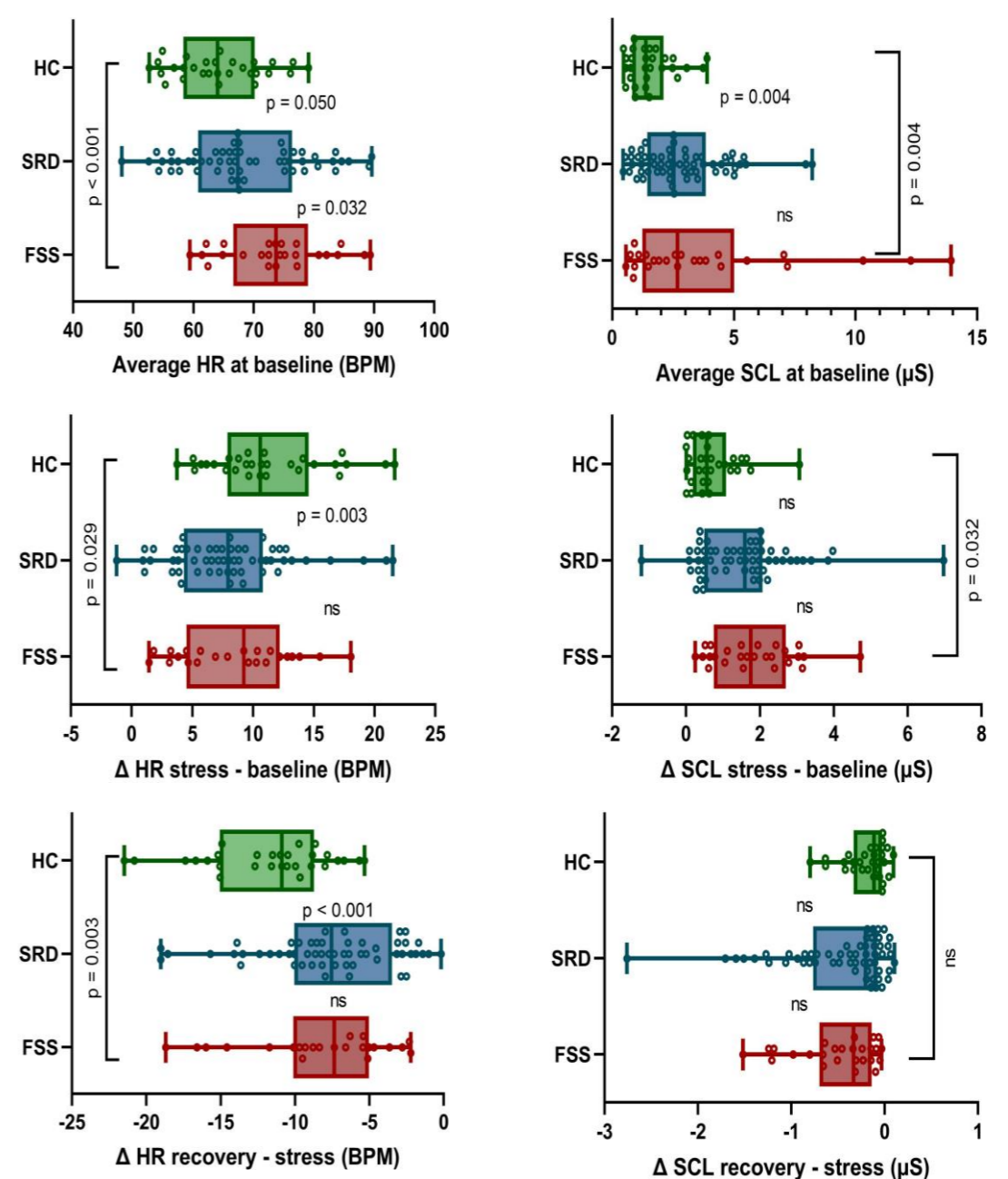
- 26 outpatients with fibromyalgia and/or chronic fatigue syndrome (FSS group) and 59 patients with overstrain or occupational burn-out (SRD group) were recruited from outpatient clinic Tumi Therapeutics
- 30 healthy controls (HC) were recruited through public advertisement
- Participants went through a psychosocial stress test consisting of a Stroop Color Word Task, a math task, and a stress talk, each followed by a relaxation period
- Heart rate (HR), skin conductance levels (SCL), and skin temperature (ST) were continuously measured using the multimodal Mindmedia Nexus X
- Measures were averaged over the stress and relaxation phases. Covariance pattern models including planned pairwise comparisons were used to test differences between groups in the different phases



## RESULTS – all phases



## RESULTS - pairwise comparisons



## CONCLUSIONS

- Patients with FSS and patients with SRD have higher resting heart rate and skin conductance levels than healthy controls
- The increase in skin conductance levels following a psychosocial stressor was higher for FSS patients than for healthy controls
- The increase in heart rate following a psychosocial stressor and the drop in heart rate upon relaxation was larger for healthy controls than for FSS patients, possibly due to a ceiling effect
- Skin temperature could not differentiate between participant groups

## NOTES

- Displayed data are observed data
- Before analysis, all data was box-cox transformed
- P-values are FDR-corrected within each outcome measure

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