AN EXPERIMENTAL PARADIGM TO ASSESS FEAR OF INTERNAL BODILY SENSATIONS IN ADOLESCENTS WITH CHRONIC PAIN

Luca Schaan* (1), Piotr Gruszka* (2), Dirk Adolph (2), Christiane Pané-Farré (3), Christoph Benke (3), Silvia Schneider (2), Tanja Hechler (1)
(1) Department of Clinical Child and Adolescent Psychology and Psychotherapy, University of Trier; Germany
(2) Department of Clinical Child and Adolescent Psychology, Ruhr-Universität Bochum, Germany;
(3) Department of Biological and Clinical Psychology, University of Greifswald, Germany
*equally contributed , Corresponding author: Luca Schaan: luca.schaan@uni-trier.de

DFG HE5942/4-1; SCHN415/5-1
Internal Research Fund of the Witten/Herdecke University

Background and study aims

The present study addresses the question if internal stimuli can activate a conditioned fear response in adolescents with chronic pain [1]. We present an experimental paradigm that enables a multimodal assessment of fear during the provocation of interoceptive sensations similar to paradigms used in studies in individuals with anxiety symptoms [2]. Study aims:

1. To determine whether fear can be triggered in adolescents with chronic pain when experiencing interoceptive sensations locally proximal to the primary pain region (Pilot study).
2. To investigate fear responses of adolescents with chronic pain by use of a comprehensive paradigm that allows multimodal assessment of fear during the provocation of locally proximal and locally distal interoceptive sensations (Main study).

Pilot study [3]

Sample:
n = 20 adolescents (11-18 years) with chronic headache (CH)
n = 20 adolescents (11-18 years) with chronic abdominal pain (CAP)

Methods: Provocation of interoceptive sensations locally proximal and distal to the main pain region via three muscle tensioning tasks:

1. Frown
2. Tighten stomach
3. Clench fists

Subjective fear rating (VAS 0-100)

Results:

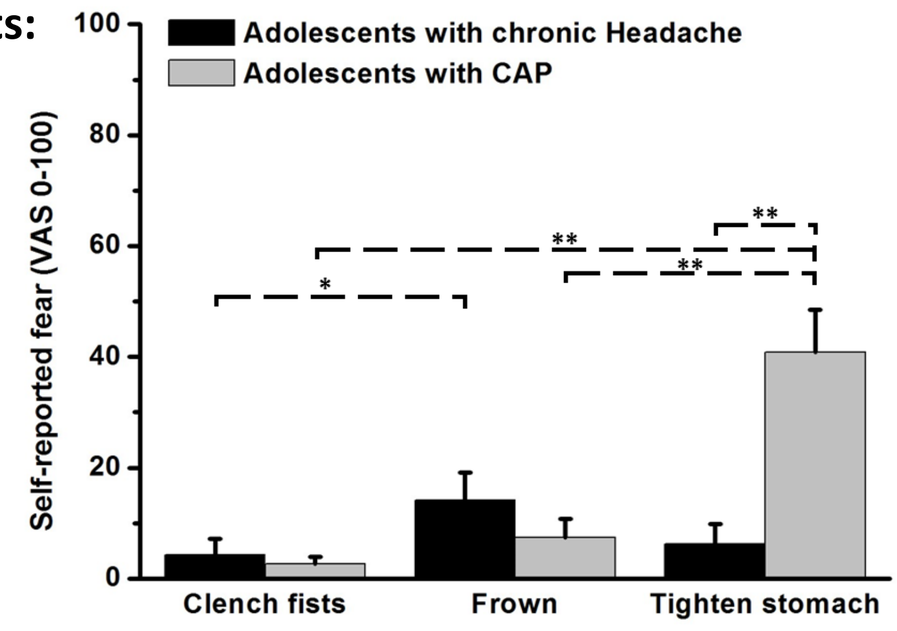

Figure 1: Self-reported fear of adolescents with CH and CAP across the three tasks.

Main study

Sample:

Three Groups:
- *n* = 40 adolescents (11-18 years) with CH (actual *n* = 33)
- *n* = 40 adolescents (11-18 years) with CAP (actual *n* = 20)
- n = 40 healthy adolescents (11-18 years) with CAP (actual *n* = 10)

Three muscle tensioning tasks:
(1) Tensing neck
(2) Tighten stomach
(3) Clench fist

Methods:

1. Subjective fear reports
2. Defence response mobilization
   - heart rate
   - skin conductance,
   - potentiation of the startle eye-blink response

Experimental paradigm

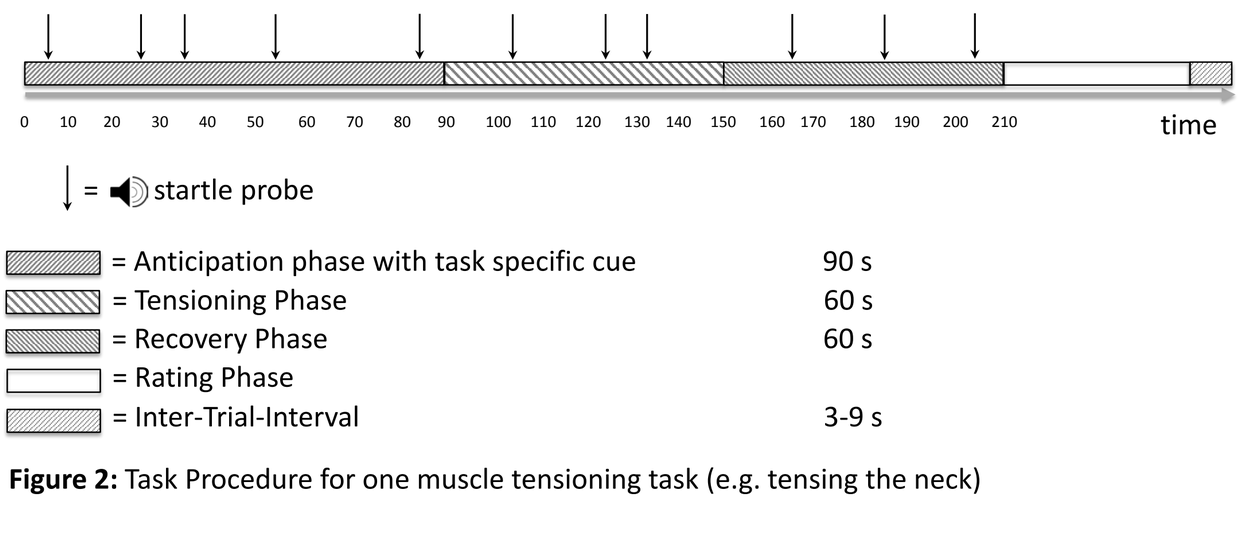

Figure 2: Task Procedure for one muscle tensioning task (e.g. tensing the neck)

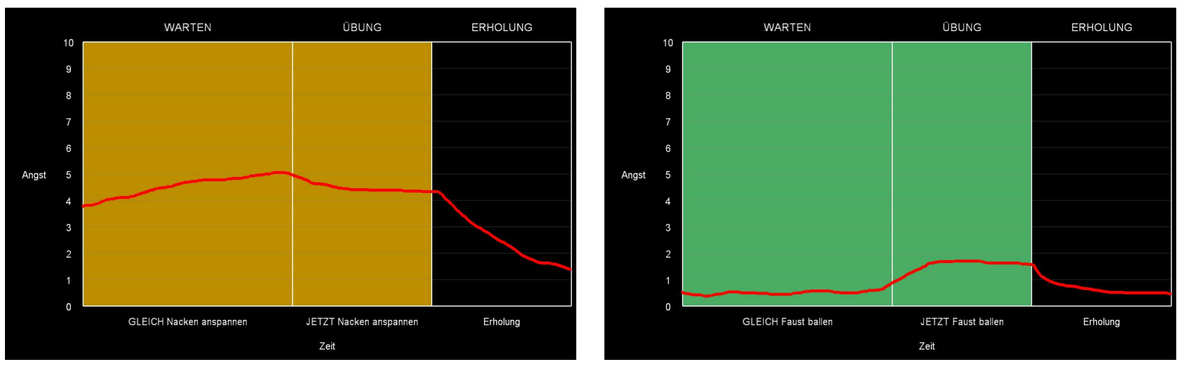

Figure 3: Example of self-reported fear (for tensing neck and clenching fist; 16 years old girl with CH)

Future steps

- To test the assumption that anticipation and perception of locally proximal interoceptive sensations to the main pain will lead to a defence response mobilization in adolescents with CH and CAP, but not in healthy adolescents
- In case of increased fear responses in adolescents with chronic pain, to conduct treatment studies involving therapeutic techniques which are capable to reduce the fear of interoceptive sensations

Literature

[1] Vlaeyen J. W., Morley, S., & Crombez, G. (2016). Behav Res Ther, 86, 23-34.
[2] **Melzig , C. A.**, Holtz, K., Michalowski, J. M., & Hamm, A. O. (2011). Psychophysiology, 48(6), 745-754
[3] Flack, F., **Pané-Farré, C. A.**, Zernikow, B., **Schaan, L.**, **Hechler, T.** (2017). *J Ped Psychol*, 42(6), 667-678.