

Project: Central nervous emotional processing in fibromyalgia

Cooperation partners: County Hospital of Hochzirl - Natters (W. Halder), University of the Balearic Islands, Spain (P. Montoya)

Fibromyalgia is a chronic condition of widespread pain accompanied by symptoms like fatigue, sleep disturbance, depression, and cognitive impairments. The prevalence of fibromyalgia is estimated at 2–4%, where women are more frequently affected than men. Fibromyalgia symptoms substantially reduce quality of life, cause severe impairments in psychosocial functioning and lead to significant socioeconomical burdens. In addition to sensitization of central nervous nociceptive pathways, emotional dysregulation and aberrant cognitive processing of pain-related information are believed to play a role in the pathogenesis of the disorder. Through collaboration between UMIT TIROL, County Hospital Hochzirl - Natters and the University of the Balearic Islands, this project investigates emotional processes and their implications for fibromyalgia pain. The central nervous foundations of these processes are of particular interest, and are analyzed using EEG (evoked potentials and evoked oscillations). Preliminary results of the project suggest increased negative affect in fibromyalgia patients and enhanced central nervous processing of negative emotional information. Emotions like anxiety, sadness and anger contribute to the exaggerated pain sensitivity characterizing the disorder. The knowledge gained during the project may lead to advancements of psychological treatments specifically aiming to improve emotional regulation in chronic pain disorders.

Students of UMIT Tirol are involved in the project within the context of their bachelor and master theses; moreover, the project encompassed the PhD of L. Fischer-Ibali. The collaboration between UMIT TIROL and the University of the Balearic Islands, and the regular travel between these sites of project members, are supported by an ERASMUS+ agreement between the two universities.

Previous publications from the project

Fischer-Ibali, L.R., Montoro, C.I., Montoya, P., Halder, W., & Duschek, S. (2022). Central Nervous Activity during an Emotional Stroop Task in Fibromyalgia Syndrome. *International Journal of Psychophysiology*, 177, 133-144. doi: 10.1016/j.ijpsycho.2022.05.009 (A1)

Fischer-Ibali, L.R., Montoro, C.I., Montoya, P., Halder, W., & Duschek, S. (2022). Central Nervous Activity during a Dot Probe Task with Emotional Face Expressions in Fibromyalgia Syndrome. *Biological Psychology*, in press. doi: <https://doi.org/10.1016/j.biopsycho.2022.108361>

Fischer-Ibali, L.R., Montoro, C.I., Montoya, P., Halder, W., & Duschek, S. (2021). Central Nervous Activity during Implicit Processing of Emotional Face Expressions in Fibromyalgia Syndrome. *Brain Research*, 1758, 147333. doi: 10.1016/j.brainres.2021.147333

Sitges, C., González-Roldán, A.M., Duschek, S. & Montoya, P. (2018). Emotional influences on cognitive processing in fibromyalgia patients with different depression levels: an event-related potential study. *Clinical Journal of Pain*, 34, 1106-1113. doi: 10.1097/AJP.0000000000000637