

## PRESS RELEASE

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### PAIN AND GENDER: 3D VISUALISATIONS TO HELP PEOPLE AFFECTED

**The ‘Embodied Perceptions’ project, led by the AIT Centre for Technology Experience, takes a holistic and gender-sensitive approach to pain: The project team is researching ways to visualise subjective pain perception using 3D avatars - this helps patients and medical staff.**

Pain and illness are highly subjective and at the same time can only be conveyed through communication - and those affected not only come up against language barriers, but also prejudices and local social norms. Gender medicine and gender-specific medicine have only been developing since the 1990s, contributing to an increasing awareness of the different causes of pain and contextual factors of the subjective extent of suffering of women and men.

One current problem is corona-related long-term consequences and pain, which occur to very different degrees in those affected and still need to be fully researched. Women and their pain and symptoms are often ridiculed and not taken seriously. There is currently a wave of posts and messages on social media under the hashtag #frauenticket, according to which the majority of women report that their pain was sometimes not taken seriously for years, often dismissed as psychological ‘weirdness’ and therefore not treated accordingly. Those affected suffer from this ‘medical gaslighting’, especially in the case of little-researched or new clinical pictures such as Long Covid: doctors negate the women's pain or actually treat them incorrectly.

#### **Pain aspects are visualised**

This is precisely where the ‘Embodied Perceptions’ project comes in, which was launched in September under the leadership of the AIT Centre for Technology Experience. The project aims to develop the foundations for a user-centric platform that enables patients to visualise their personal pain perceptions using 3D technology. Various aspects of pain - such as intensity, location, spread and type of sensation - are to be precisely depicted using visualisation methods and thus made clear and quickly comprehensible to outsiders, such as medical staff. This visualisation is intended to help both those affected themselves and medical staff to communicate and interpret the symptoms more accurately. People with any kind of physical or cognitive language impairment in particular could benefit from this. This opens up a completely new dimension to personalised diagnosis and treatment approaches for everyone involved.

#### **Understanding pain better and treating it more effectively**

‘Pain is a highly individualised experience that is often difficult to describe. In the ‘Embodied Perceptions’ project, we want to find ways to make pain visible and understandable,’ emphasises

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Diotima Bertel, project manager at the AIT Center for Technology Experience. 'Diversity-sensitive 3D visualisations allow patients to express their feelings in a new way. This helps medical staff to better understand patients' individual pain and provide more targeted treatment,' explains Bertel. The AIT Center for Technology Experience has many years of interdisciplinary expertise in the development of gender-sensitive, user-centred technologies and the evaluation of technologies with the help of user studies.

'Chronic pain patients in particular often have the problem that pain is difficult to put into words and traditional pain questionnaires are not sufficient to fully capture the extent of the symptoms,' explains Beatrix Wais-Zechmann, physiotherapist and researcher at the AIT Center for Technology Experience. 'With the new platform, we will create a bridge between the patient's subjective perception of pain and the medical analysis,' Wais-Zechmann is convinced.

The project is also researching the role of social norms and the possibilities for communicating about pain in order to counteract 'medical gaslighting'. The first step at AIT is to develop a requirements analysis for diversity-sensitive visualisations of pain - including empirical surveys and co-design workshops. A 'pain framework' will then be developed in collaboration with the project partners and patients, which will serve as the basis for the development of the online platform.

### **Influence of social norms and socialisation**

When it comes to the perception and expression of unpleasant sensations such as pain, society's prevailing norms and the associated socialisation play a decisive role. The prioritisation of male experiences in medicine in the past has led to a 'health data gap', with the result that little research has been carried out into women-specific pain and diseases such as endometriosis (a gynaecological disease) in particular and they are therefore barely present in the medical community. In addition, social norms influence which forms of pain are socially acceptable and can be communicated. This emphasises the importance of gender medicine in the context of pain diagnosis and treatment. 'Embodied Perceptions' helps to make these differences visible and thus contribute to a better understanding and differentiated therapeutic measures.

### **Outlook: Improving pain therapy with digital support**

'Embodied Perceptions' benefits from the close collaboration between different specialist disciplines and partners with many years of experience. In addition to AIT as project coordinator, the EURAG Austria/Allianz Chronischer Schmerz association (patient perspective), the Academy for Gerontology at the Haus der Barmherzigkeit as a leading institution in long-term care, the RISC software competence centre and the technology company SYNYO are part of the consortium. This interdisciplinary expertise ensures that both practice-oriented and digitally innovative solutions are developed in the project.

'We see great potential in the application of 3D visualisations, not only for communication between patients and medical staff, but also in research into pain conditions in (new) clinical pictures such as Long Covid, new therapeutic approaches and in medical training,' adds Diotima Bertel. 'In the long term, the project aims to change the way pain is documented and understood in a gender-

and diversity-sensitive way,' says the researcher. The project 'Embodied Perceptions - Diversity-sensitive representation and visualisation of body data' is being funded as part of the FFG FEMtech 2023 call and will run for 30 months from September 2024.

### **About AIT Austrian Institute of Technology**

The AIT Austrian Institute of Technology is Austria's largest research and technology organisation with over 1,500 employees and an operating performance of almost 200 million euros. The AIT focuses on the research areas of 'sustainable and resilient infrastructures', particularly in the fields of energy, transport and health, as well as the 'digital transformation of industry and society' and works closely with universities, industry and public institutions.

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