Evolution and everyday stress have led to disproportionate suffering among women

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We're 100% behind knowledge-based research, but sometimes you really do have to question evolution!

Jaw-dropping research? Not really, quite the opposite actually!

A Malmö University professor has investigated how a stone age instinct,

combined with modern day stress, has left a disproportionate number of women in agony.

Up to 15 percent of the population experience prolonged pain in the face, mouth or jaws, and evidence reveals that such pain is three times as common in women as in men. In addition, there is a connection with increased stress in women's everyday lived experiences.

Per Alstergren, professor and senior consultant, has been investigating how long-term pain affects the brain.

"Many people who suffer from such prolonged pain experience negative stress in life, with high internal demands—this inevitably leads to physical consequences. When we are stressed, we tighten our jaws. There is a theory that it is an old stone age reflex that aims to protect the lower jaw, which is fairly loose," says Alstergren, who is based at the Faculty of Dentistry. Unfortunately, the problem starts as early as puberty, and is more common among girls. More preventive work is needed so that the problems are discovered before they become long-lasting and more difficult to treat," says Alstergren.

It is when young people go to a regular dental check that there is an opportunity to detect any problems.

Alstergren, who also works at Specialized Pain Rehabilitation at a university hospital in southern Sweden, is ideally placed to study the gap between dental and medical care.

"Many of our patients with long-term pain problems fall into a vacuum between dental and medical care. The pain affects their quality of life and many are on long-term sick leave," says Alstergren.

In addition to meeting patients, he researches arthritis in people with

rheumatic disorders, especially in pediatric patients.

"We investigate pain, degradation and growth disorders in the jaw joint, and our goal is to find early signs with the help of, for example, biomarkers in saliva or blood, or with the help of magnetic resonance imaging."

Another track in the research is to map the changes that long-term pain causes in the brain and to understand whether such changes are reversible.

"There are indications that the structure and function of the brain changes with long-term pain, but exactly what these changes mean is not so easy to know. All sensory impressions are handled by dedicated centers in the brain, such as vision and hearing centers. But in pain, we see that large parts of the brain are activated."

First, all patients in the study are examined with a magnetic camera, to see if structures in their brain have been affected by long-term pain. Then half of the patients undergo internet-based cognitive behavioral therapy (CBT), and half receive a occlusal splint. They are then re-examined to see if the interventions with CBT or braces have restored the structures and functions affected by the pain.

"The study began in 2016 and now we are analyzing the collected material. Although we expect to see a treatment effect in the group that received CBT, it remains to be seen whether the improvement also means that the brain has healed. But it would be fantastic if that was the case," says Alstergren.

Provided by Malmö University