

Women in pain

GENDER The overwhelming majority of pain patients are women, though the precise reason why remains elusive. Researchers are trying to understand the gender pain gap, but answers only seem to pose more questions. **Lorrie Kelly** reports

Not only do women suffer from more pain conditions, but they also feel pain more intensely, have lower pain thresholds and process pain differently than men.

Beverly Collett, a consultant in pain management and anaesthesia, University Hospitals of Leicester, believes the gender divide in pain management will be a complex puzzle to solve.

"I don't think anyone really knows why men and women are so different," says Dr Collett. "Scientific research has shown that when you subject women to a pain stimulus – cold water, heat, an electrical stimulus – they feel pain at a lower stimulus than men."

One explanation has been hormones, such as testosterone, which may have protective qualities against pain. For example, men who suffer from angina experience symptom relief when given testosterone, and the incidence of childhood migraine in girls and boys is about the same until the onset of puberty when the number of female migraine sufferers becomes twice that of males.

In much the same way, studies have shown that circulating oestrogen appears to significantly affect cognitive function and the way

that pain is perceived by women. Oestrogen also affects serotonin which deals with pain processing and modulation. This discovery has led to the use of SSRI (selective serotonin reuptake inhibitor) antidepressants to aid in the treatment of conditions such as PMT (premenstrual tension) and fibromyalgia.

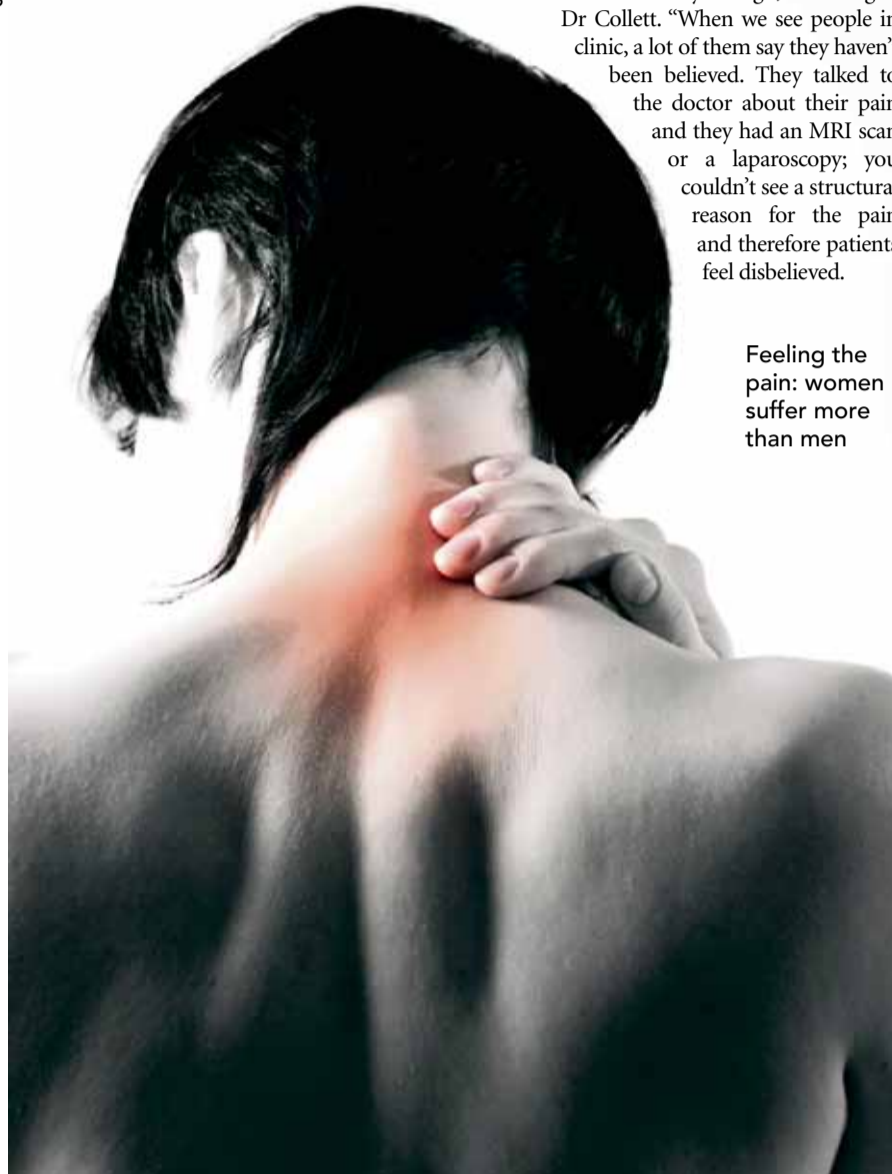
"The gender variance may also be due to differences in activation of neural pathways in the brain," says Dr Collett. "We know from the newer functional magnetic resonance imaging (fMRI) scans that women tend to activate a part of their brain called the limbic system. This is the emotional centre of the brain; so this is where we feel fear, anxiety and where the sleep cycle of our brain is controlled. If you compare fMRI scanning of men and women, women do appear to activate the limbic system more than men."

Research on the effects of analgesics in women is critical to pain-management strategies. The limited data available shows that men and women do not react in the same way to medications used to treat pain. For example, painkillers known as kappa agonists have been shown to be good analgesics in women, whereas they have little or

no effect in men. Also, established pain medications, like morphine, may be less effective in women and have unacceptable side effects.

Social attitudes to pain simply do not help the cause. Since chronic pain will not kill you, most people do not take it seriously enough, according to Dr Collett. "When we see people in clinic, a lot of them say they haven't been believed. They talked to the doctor about their pain and they had an MRI scan or a laparoscopy; you couldn't see a structural reason for the pain and therefore patients feel disbelieved."

Feeling the pain: women suffer more than men



"I think disbelief occurs more in women because some of the conditions that they have are due to dysfunctions in the nervous system," says Dr Collett. "If you think about fibromyalgia or IBS (irritable bowel syndrome), for example, there isn't a structural reason for the pain. Usually if you have a pain, like sciatica, you go to an orthopaedic surgeon; they'll do an MRI scan and look for a disc prolapse."

"But many of the patients we see, both men and women, don't have a structural reason for the pain," she explains. "We now understand that the pain may be due to abnormal sensitivity of the nervous system or activation in the nerve pathways to the brain that normally don't fire in people without pain. So the pain is not due to a structural reason but is due to an abnormal firing or an abnormal network set-up in the nervous system and you can call this dysfunctional pain."

However, lack of an obvious structural reason for pain should not deter patients from seeking medical intervention. "There have been some recent interesting studies showing that fMRI-scanned brains of people who had a history of chronic pain look very different to brains of people without pain," says Dr Collett. "The grey matter in the brain started to disintegrate and degenerate in chronic pain sufferers. I think this is particularly important because it does show that the persistence of pain does cause central-nervous-system changes and brain degeneration. You obviously can't see that; you can only see that on functional MRI scanning. It means that we must take pain much more seriously than we do at the present time."

Even more revealing, there is some evidence to suggest that treating and effectively managing pain might reverse any cognitive damage that was caused by a chronic-pain condition.

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Getting back on your feet...

Pain relief without medication or surgery is no longer an impossible dream for sufferers of knee osteoarthritis. Reality may be in the shape of a scientifically-proven brace which can reduce pain and enable an active life.

Mind-numbing painkillers that diminish quality of life and come with possible, wide-ranging side effects are not a long-term solution to pain for many. Surgery is invasive and does not come without risks and possible complications.

It may be that medication cannot ease the pain and surgery has failed to solve the problem. But do not despair, an innovative knee brace may be the answer.

It certainly was for keen sports-woman Malin Asplund who suffered mounting pain following knee surgery and, in her late-20s, was diagnosed with osteoarthritis.

"Just over a year ago I visited a knee specialist who showed me a



The Unloader Brace enables an active life despite knee osteoarthritis

new device, a brace, which I then decided to try out," she says. "The brace helped me a great deal and I did not suffer from any adverse side effects, unlike with the painkillers."

The Össur Unloader One brace is designed to reduce pain caused by osteoarthritis by minimising bone-on-bone contact within the knee joint. The brace's thigh and calf shells, along with uniquely designed straps, create a leverage system that literally unloads the pressure from the affected area, creating more space between the bones.

The brace means that Malin can enjoy long daily walks with her dogs again. On a recent holiday, she was even confident enough to attempt hiking in the mountains.

A new study from the US Steadman Philippon Research Foundation has evidenced the effectiveness of knee braces to reduce pain and improve physical function.

The study, "Use of an Unloader Brace for Medial or Lateral Compartment Osteoarthritis of the Knee", was presented in March at the 2010 American Academy of Orthopaedic

Surgeons Annual Meeting. It showed that patients who used bracing reported significant improvement of their symptoms, without resorting to surgery. The conclusions are backed by other research, including an ongoing study at the Department of Orthopaedics of Iceland's Akureyri Hospital.

At Össur, Life Without Limitations is more than just a slogan; it has been a passion for almost 40 years. A global leader in orthopaedics, the company employs the smartest minds and the most advanced technologies to help change lives. The end result is award-winning prosthetics, bracing and supports that make a real difference to people's mobility. With headquarters in Iceland, Össur has major operations in the Americas, Europe and Asia, with additional distributors worldwide.

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