Painful periods increase sensitivity to pain throughout the month

**4 May 2011**

Words – 479

Sentences - 18

Women with painful periods show increased sensitivity to pain throughout their cycles, even when there is no background period pain.

The brain imaging study carried out at Oxford University shows that period pain is associated with differences in the way the brain processes pain, and that these differences persist throughout a woman’s menstrual cycle.

The findings are published in the journal Pain.

The Oxford researchers in the Nuffield Department of Obstetrics and Gynaecology and the Centre for Functional Magnetic Resonance Imaging of the Brain applied hot pads to the inner arm and abdomen of 12 women with painful periods (but who were otherwise healthy), and 12 women without, while they were in an MRI scanner.

Their brain’s responses to this painful stimulus were compared at three different points in the women’s menstrual cycles.

The team found that the group of women with painful periods were more sensitive to the hot pads – the pads didn’t have to be turned up as far to get the same reports of pain.

The brain imaging data revealed that women who experience period pain showed changes in activity in brain areas known to be involved in the pain response.

Importantly, differences in the way the brain processed the pain from the hot pads continued to be seen at times in their menstrual cycles when there was no period pain.

This suggests there may be longer-lasting changes to the experience of pain and discomfort.

These changes in sensitivity and processing of pain are similar to what is seen in patients with chronic pain conditions.

Also in common with chronic pain conditions, the researchers saw significantly lower levels of cortisol, a hormone connected to the body’s stress response.

These low levels persisted throughout the women’s menstrual cycles and were correlated with the length of time women had experienced period pain.

The women with painful periods also reported reduced quality of life suggesting the period pain may interfere with physical activity such as sport and work, although this is a small study for identifying such effects.

‘Many of the features of chronic pain conditions are present in women with painful periods, even though the pain is experienced for just a few days every month,’ says Dr Katy Vincent, a clinical lecturer in the Nuffield Department of Obstetrics and Gynaecology at Oxford University and first author on the paper.

Painful periods are common. Estimates vary, but can they can affect up to 90% of women at some time in their lives and are particularly common among adolescents and young women.

According to Dr Vincent, the condition is sometimes taken less seriously because it is so common and it is often considered normal; teenagers in particular don’t always seek treatment.

The researchers argue that because painful periods can measurably affect women’s lives and alter the way they experience pain, the condition should always be given prompt and adequate treatment.

**Notes to Editors**

* The paper ‘Dysmenorrhoea is associated with central changes in otherwise healthy women’ by Katy Vincent and colleagues has just been published as an uncorrected proof on the site of the journal Pain, so is now openly available at: <http://dx.doi.org/10.1016/j.pain.2011.03.029>
* The study was funded by Pfizer and the Oxford Biomedical Research Centre. The researchers designed, carried out and reported the study independently of the funders.
* **Oxford University’s Medical Sciences Division** is recognized internationally for its outstanding research and teaching, attracting the brightest minds from all over the world.  
    
  It is one of the largest biomedical research centres in Europe, with over 2,500 people involved in research and more than 2,800 students, and brings in around two-thirds of Oxford University’s external research income. Listed by itself, that would make it the fifth largest university in the UK in terms of research grants and contracts.  
    
  Oxford is home to the UK’s top-ranked medical school, and partnerships with the local NHS Trusts enable patients to benefit from the close links between medical research and healthcare delivery.  
    
  14 winners of the Nobel Prize for Physiology or Medicine worked or were educated at Oxford, and the division is home to 29 Fellows of the Royal Society and 68 Fellows of the Academy of Medical Sciences.  
    
  The development of penicillin at Oxford ushered in the modern age of antibiotics, and the confirmation of the link between smoking and cancer has prevented many millions of deaths. Oxford continues to be at the forefront of medical research, whether it’s the genetic and molecular basis of disease, the latest advances in neuroscience, or clinical studies in cancer, diabetes, heart disease and stroke. Oxford has one of the largest clinical trial portfolios in the UK and great expertise in taking discoveries from the lab into the clinic.  
    
  A great strength of Oxford medicine is its long-standing network of clinical research units in Asia and Africa, enabling world-leading research on the most pressing global health challenges such as malaria, TB, HIV/AIDS and flu. Oxford is also renowned for its large-scale studies, including UK Biobank and the Million Women Study, which examine the role of factors such as smoking, alcohol and diet on cancer, heart disease and other conditions.