

5<sup>th</sup> International Conference of

# Orthopedic Surgeons and Rheumatology

June 16-17, 2016 Alicante, Spain

## Mechanisms of pain resilience and vulnerability

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Pain is one of the main drivers of long term disability in patients with chronic musculoskeletal pain. The matrix of brain structures responsible for the perception of pain has been shown to have both high specificity and sensitivity for pain. Subtle sex differences in cortical processing have also been described. There is increasing evidence for central sensitization resulting from abnormal processing within this matrix being a key driver in the maintenance of chronic pain. Common candidate mechanisms related to abnormal processing of expectation and attention to pain have been identified in the brains of patients with osteoarthritis (OA) and fibromyalgia (FM). Increased summation and abnormalities of descending inhibition have also been identified in these populations. In addition changes in brain opioid receptor binding have been related to increased vulnerability and vulnerability to pain. These findings taken together suggest a range of physiological phenotypes in patients with different types of chronic pain that does not respect traditional medical models and classifications of pain..

### Biography

Anthony Jones is Professor of Neuro-rheumatology at Manchester University and leads the Human Pain Research Group. Whilst at the Hammersmith Hospital, he pioneered the development of techniques to image neuro-chemical and metabolic brain responses to pain using Positron Emission Tomography. Over the last twenty years, he has used a number of functional brain imaging techniques to understand the normal and abnormal mechanisms of pain perception. He also leads the International Association for the Study of Pain Musculoskeletal Pain Taskforce and has led the development of National and International Guidelines on the Integrated Management of Musculoskeletal Pain (jointly sponsored by the BSR and the IASP).

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