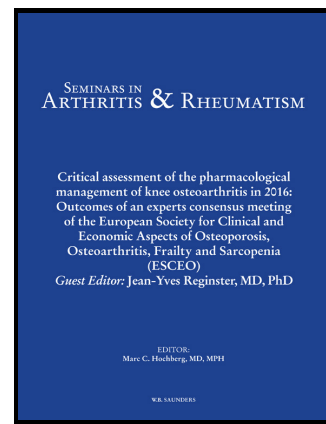


# Author's Accepted Manuscript

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PII: S0049-0172(17)30028-8  
DOI: <http://dx.doi.org/10.1016/j.semarthrit.2017.06.005>  
Reference: YSARH51208

To appear in: *Seminars in Arthritis and Rheumatism*

Cite this article as: Ashley Smith, Marina López-Solà, Katie McMahon and Michele Sterling, Multivariate Pattern Analysis Utilizing Structural or Functional MRI - In Individuals With Musculoskeletal Pain and Healthy Controls: A Systematic Review, *Seminars in Arthritis and Rheumatism*, <http://dx.doi.org/10.1016/j.semarthrit.2017.06.005>

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**Multivariate Pattern Analysis Utilizing Structural or Functional MRI - In Individuals With Musculoskeletal Pain and Healthy Controls: A Systematic Review**

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Keywords: musculoskeletal pain, functional MRI, multivariate pattern analysis, systematic review.

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## 1. Introduction

Musculoskeletal pain is highly prevalent and places a huge burden on society (Vos, Flaxman et al. 2012). It is postulated that treatment directed at the underlying mechanisms of pain would assist with more effective therapeutic outcomes (Woolf 2011, Baron, Binder et al. 2012). However, it is challenging to provide appropriately directed specific treatment when the underlying neurophysiological processes are not well understood. Recent studies report that chronic musculoskeletal pain conditions involve morphological (structural) brain changes (Schmidt-Wilcke, Leinisch et al. 2006, Apkarian, Hashmi et al. 2011, Smallwood, Laird et al. 2013) and functional adaptations of brain processing (Flor, Braun et al. 1997, Giesecke, Gracely et al. 2004, Baliki, Petre et al. 2012). As such, various non-invasive structural and functional neuroimaging techniques (e.g.

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