

Quadros AU, Pinto LG, Fonseca MM, Kusuda R, Cunha FQ and Cunha TM. (2015). Dynamic weight bearing is an efficient and predictable method for evaluation of arthritic nociception and its pathophysiological mechanisms in mice. *Sci Rep.*; 5: 14648.

The assessment of articular nociception in experimental animals is a challenge because available methods are limited and subject to investigator influence. In an attempt to solve this problem, the purpose of this study was to establish the use of dynamic weight bearing (DWB) as a new device for evaluating joint nociception in an experimental model of antigen-induced arthritis (AIA) in mice. AIA was induced in Balb/c and C57BL/6 mice, and joint nociception was evaluated by DWB. Western Blotting and real-time PCR were used to determine protein and mRNA expression, respectively. DWB detected a dose- and time-dependent increase in joint nociception during AIA and was able to detect the dose-response effects of different classes of analgesics. Using DWB, it was possible to evaluate the participation of spinal glial cells (microglia and astrocytes) and cytokines (IL-1 $\beta$  and TNF $\alpha$ ) for the genesis of joint nociception during AIA. In conclusion, the present results indicated that DWB is an effective, objective and predictable test to study both the pathophysiological mechanisms involved in arthritic nociception in mice and for evaluating novel analgesic drugs against arthritis.