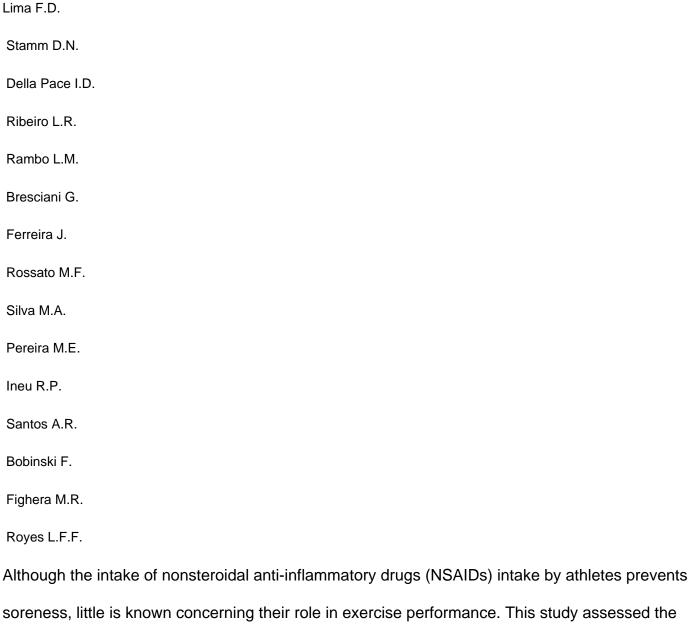
Ibuprofen intake increases exercise time to exhaustion: A possible role for preventing exercise-induced fatigue



Although the Intake of nonsteroidal anti-Inflammatory drugs (NSAIDs) intake by athletes prevents soreness, little is known concerning their role in exercise performance. This study assessed the effects of ibuprofen intake on an exhaustive protocol test after 6 weeks of swimming training in rats. Animals were divided into sedentary and training groups. After training, animals were subdivided into two subsets: saline or ibuprofen. Afterwards, three repeated swimming bouts were performed by the groups. Ibuprofen (15 mg/kg) was administered once a day. Pain measurements were performed and inflammatory and oxidative stress parameters were assayed in cerebral cortex and gastrocnemius muscle. Training, ibuprofen administration, or both combined (P < 0.05; 211 ± 18s, 200 ± 31s, and 279 ± 23s) increased exercise time to exhaustion. Training decreased the

acetylcholinesterase (AChE) activity (P < 0.05; 149 ± 11) in cerebral cortex. Ibuprofen intake decreased the AChE activity after exhaustive protocol test in trained and sedentary rats (P < 0.05; 270 ± 60 ; 171 ± 38 ; and 273 ± 29). It also prevented neuronal tumor necrosis factor-? (TNF-?) and interleukin (IL 1?) increase. Fatigue elicited by this exhaustive protocol may involve disturbances of the central nervous system. Additive anti-inflammatory effects of exercise and ibuprofen intake support the hypothesis that this combination may constitute a more effective approach. In addition, ergogenic aids may be a useful means to prevent exercise-induced fatigue. © 2015 John Wiley & Sons A/S. Published by John Wiley & Sons Ltd

AChE activity Exercise training exhaustive exercise inflammation **NSAIDs** intake acetylcholinesterase ibuprofen interleukin 1beta nonsteroid antiinflammatory agent reactive oxygen metabolite tumor necrosis factor animal animal experiment brain cortex drug effects

endurance

fatigue

male

metabolism
nerve cell
oxidative stress
pain
pain measurement
physiology
protein carbonylation
randomization
rat
skeletal muscle
swimming
Wistar rat
Acetylcholinesterase
Animals
Anti-Inflammatory Agents, Non-Steroidal
Cerebral Cortex
Fatigue
Ibuprofen
Interleukin-1beta
Male
Muscle, Skeletal
Neurons
Oxidative Stress
Pain
Pain Measurement
Physical Conditioning, Animal

Random Allocation
Rats
Rats, Wistar
Reactive Oxygen Species
Swimming
Tumor Necrosis Factor-alpha

Physical Endurance

Protein Carbonylation