

Swimming versus running: effects on exhaled breath condensate pro-oxidants and pH

Araneda, Oscar F.

Contreras-Briceño, Felipe

Cavada, Gabriel

Viscor, Ginés

© 2018, Springer-Verlag GmbH Germany, part of Springer Nature. Purpose: The respiratory redox-state of swimmers can be affected by chronic exposures to chlorinated pools, and the effects of different exercises on it are unknown. Our aim was to compare two exercises performed at high-intensity and under habitual environmental conditions (swimming indoor vs. running outdoor) on the production of pro-oxidants (hydrogen peroxide and nitrite) and pH in exhaled breath condensate (EBC) and spirometry parameters in competitive swimmers chronically exposed to chlorinated pools. Methods: Seventeen men and women (mean age \pm SD = 21 \pm 2 years) swam 3.5 km in an indoor pool treated with Cl₂, and after 2-weeks, they ran 10 km outdoors. The pHEBC, [H₂O₂]EBC, [NO₂ ?]EBC, [NO₂ ?]EBC/[NO₂ ?]Plasma and spirometry parameters were analyzed pre-exercise and 20 min and 24 h after exercise ended. Results: Two mixed models were applied to compare EBC parameters between swimming and running. Lower levels of [H₂