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» Journal Abstract

Prolactin responses to stress induced by a competitive swimming effort.

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Purpose: The aim of the present study was to investigate the changes in prolactin (PRL) plasma concentrations induced by competitive swimming practice. **Methods:** Twenty-three males, 13 trained swimmers (experimental group) and 10 sedentary and healthy students (age-matched control group) took part in this investigation. The swimmers were assessed at three points: basal conditions, pre- and post-swimming competition (100 m freestyle), whereas subjects from the control group only undertook the basal trial. The variables analysed were: several body composition measures, anxiety level (STAI questionnaire), PRL and lactic acid concentrations. **Results:** No statistical differences were observed in PRL basal levels between groups. An evident PRL response to pre-competition psychological stress was observed in the experimental group, since the PRL plasma concentration rose from 4.02 ± 0.53 ng/ml (basal conditions) to 5.52 ± 0.53 ng/ml ($p \leq 0.05$). The PRL response to the competitive effort produced an important increase in its plasma concentration (10.07 ± 1.59 ng/ml), showed statistical differences from pre-competition ($p \leq 0.01$) and from basal conditions ($p \leq 0.001$). A significant rise in plasma lactate levels just at the end of the effort was found, although it did not correlate with PRL levels in the same situation. **Conclusion:** While we observed a remarkable response of PRL to psychological and physiological stress induced by a short term competitive effort in swimming, no changes in PRL basal levels were exhibited with swim training. More research is needed to clarify these findings.

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