
Effect of training on hormonal responses to exercise in competitive swimmers.


A study was carried out on the effect of endurance training on the plasma catecholamine response to exercise at the same submaximal workload and to short duration, all out exercise. Eight experienced swimmers (six men and two women; average age 18 years), who had not trained for 2-7 months, swam 200 yards on one day and 1000 yards the next, both as fast as possible. After nine weeks of vigorous training the same tests were performed, the 200 yards flat out but the 1000 yards at the same pace as the initial test. After training, resting heart rates were significantly lower and in the 1000 yard swim heart rate response was 15% lower than pre-training figures though responses were similar for the 200 yard swims. In the 200 yard swim plasma insulin and glucagon concentrations were not significantly altered, either prior to or after training. However the 1000 yard swim produced a decrease in insulin level and an increase in glucagon level both before and after training. Adrenaline and noradrenaline concentrations, on average, were greatly increased after the 200 yard swim. Both levels also rose considerably after training, but the increase in adrenaline concentration was significantly smaller than before training. Both plasma catecholamines were significantly increased by the 1000 yard swim but post-exercise adrenaline levels were only one-ninth and noradrenaline only one-third as high after training. These results suggest that the catecholamine effect on the endocrine pancreas may be moderated by other factors. It also seems clear that during short-term, high intensity swimming, glucagon does not play an important role in stimulation of liver glycogenolysis or gluconeogenesis.

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To the Editor:

Dear Sir,

I would like to remind Lord Porritt that we did some anti-doping controls for the first time at the Olympic Games in Tokyo in 1964. After a lot of oppositions and difficulties, we have, thanks to Prince Alexander de Merode, visited Mr. A. Brundage, the then President of the I.O.C.

It was in the same period, that I had the opportunity to have contact by mail with the then Sir Arthur Porritt, who was a member of the I.O.C., and after having sent him an article, I received a letter dated July 1st, 1965, with the following answer:

"I was naturally interested to see how very much we were thinking along the same lines and I am quite sure that the more all of us do something about this miserable habit, the bigger effect it will have."

We like to thank Lord Porritt, who, as precursor of the battle against doping, had the merit to see the problem very clearly, and with his active cooperation, especially for the moral support in that difficult period.

Sincerely yours,

A. DIRIX
Vice-President, F.I.M.S.