THE REACTION OF GROWTH HORMONE (GH), INSULIN, FFA AND BLOODSUGAR TO EXERCISE IN OBESE PATIENTS AND IN NORMAL SUBJECTS

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Ergometer tests with a constant workload of 600 kgm/min during 30 minutes were done on 8 normal subjects, 8 severely obese patients and on 2 women who had formerly been obese. Arterial blood was sampled from a catheter 3 times before, 4 times during and 3 times after exercise. The incidence and height of the GH response was the same in the obese as in the normals. Of the formerly obese women only one showed a GH response. In the majority of the responders the rise of GH began almost immediately at the start of bicycling; in all of them GH values decreased as soon as work was stopped. There was no correlation between changes in GH and those in the other parameters measured.

It is very probable that the elevation of GH in our experiments was not caused by metabolic factors, but triggered through some neurogenic pathway by the stress of the exercise.

FFA levels were higher in the obese throughout the whole test. No correlation with the GH levels could be found. In three patients with diabetes mellitus in their family history there was a rise of bloodsugar during exercise, followed by a rise of insulin.