

RESEARCH QUARTERLY

pulse above the resting rate. Individuals with a low resting pulse tend to show a greater increase in pulse rate due to mild exercise and those with the higher resting rates are least affected.

Subtracting the resting rate from the post-exercise rate does, to some extent, counter-balance the effect of the resting pulse rate upon the post-exercise pulse rate following strenuous exercise. This counterbalancing effect does not operate at the milder intensities of exercise.

A comparison of the mean exercise rates with the resting rates shows that a mild exercise (10 steps) increases the pulse only approximately 30 per cent over the resting level. An intermediate exercise (20 or 30 steps) produces only about a 40 per cent increase, while a more strenuous exercise (40 steps) results in more than a 90 per cent elevation in rate.

The Rate of Pulse Deceleration Following Graded Intensities of Exercise.—The pulse deceleration after exercise may be measured by comparing the rate during the first thirty seconds after an exercise with the rate during the second thirty seconds after the same exercise. Observations of the post-exercise pulse deceleration of eleven normal male adults are summarized below:

Steps per Minute	Mean Deceleration	S.D.	Correlation with Resting Pulse
10	5.19	3.03	— .640
20	10.91	5.91	— .228
30	14.45	3.60	— .064
40	15.64	12.76	.135

The post-exercise pulse deceleration rate is inversely related to the resting rate at the mildest intensity of exercise. The greater increase in beats due to the mild exercise in individuals with low resting pulse rates is accompanied by a much faster fall in rate after the exercise. At the strenuous exercise level this relationship does not exist.

By comparing the mean deceleration rates, it is noticed that the deceleration rate increases as the exercise rate is increased.

The Occurrence of a Secondary Rise in Pulse Rate after Exercise in Individuals with Normal and in Cases of Abnormal Hearts.—Following the first fall in pulse rate after exercise there is observed occasionally a secondary rise in pulse rate. This secondary rise usually occurs at about one and one-half minutes after the exercise and is observed to increase as much as ten beats per one-half minute. This rise occurs most frequently after the more strenuous exercises and lasts for about one-half to three minutes.

In order to study the frequency of the occurrence of a secondary rise in heart rate following exercise in individuals with normal hearts