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VITAMIN DEFICIENCY STUDIES

1. THE RELATION OF VITAMIN DEFICIENCY TO MUSCLE FATIGUE IN RATS

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(*ABSTRACT*)

When the physiological performances of vitamin deficient rats are analyzed in conjunction with growth curves and other data, certain relationships are apparent. Fatigue curves produced by animals lacking vitamin B show progressive diminution in amplitude and endurance as the length of time on diet increases. These curves also show progressive loss of tonicity and an irregularity of contraction that seem very characteristic. Animals lacking vitamin A show similar curves which in amplitude and duration are roughly inversely proportional to the interval upon the diet but the decrease in tonicity is not so apparent. At the time the animals were used, they had been on their respective diets for periods varying from three to ten weeks.

Just what mechanisms are affected by vitamin deficiency still remains to be learned but it would seem that upon direct stimulation the muscles certainly are involved. It is evident also that upon indirect stimulation the nervous system is involved. Changing from the indirect to direct stimulation on the same muscle shows that deficiency of both vitamins alters the normal functioning of the neuro-muscular junction.

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