

changes occurring in the muscle itself, or an increased oxygen supply to the muscles from an improved circulation.

Date	Excess of lactic acid.
3-18-25	458
3-20-25	329
4- 2-25	309
4-10-25	199
4-23-25	159
4-24-25	158

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The effect of breathing oxygen-enriched air upon the excretion of lactic acid.

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Lactic acid was determined in the urine of two subjects before and after a measured exercise. Two groups of four experiments each were made with each subject. In one group the subject breathed air, and in the other oxygen-enriched air containing about 40 per cent of oxygen. In order to eliminate the possible effects of training, the air and oxygen experiments were alternated. The exercise consisted in carrying a 30 pound load for five minutes on a treadmill with 7-inch steps, operated at the rate of 80 to 85 steps per minute, the work performed being about 6000 kgm. in five minutes. The resting rate of excretion of lactic acid bodies in the urine was determined before each exercise period, and the excess excretion above this level during approximately a half-hour period after the exercise. Determinations were made in duplicate by the method of Clausen, using permanganate oxidation as recommended by Long.

Both subjects showed a lower excess excretion of lactic acid when breathing oxygen-enriched air than when breathing air. Average figures for the four experiments in each group are as follows:

Subject.	<i>Excess Excretion of Lactic Acid.</i>	
	Breathing Air.	Breathing 40% Oxygen.
A. W. H.	73 mg.	24 mg.
J. K. L.	324 mg.	198 mg.

We believe the diminution in lactic acid excretion when breathing oxygen-enriched air to be due to lessened lactic acid accumulation in the muscles.

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Effects of cholesterol on smooth muscle of intestine and uterus.

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In connection with a study of agents and conditions that may alter the responses of smooth muscle toward autonomic drugs, etc., it has been found that cholesterol definitely increases the activity of excised intestines and uteri of cats and rabbits. The results with flaky emulsions, and filtrates from saturated solutions, of the cholesterol in Tyrode's solution at 37° C. were the same. The exact concentration of the cholesterol in solution was unknown, quantitative estimation yielding only traces of the product, but a rough estimate indicated that muscular stimulation was secured with concentrations probably as low as 1:5,000,000. About the only important change conferred on the Tyrode solution by cholesterol was a lowering of surface tension.

The stimulation of intestinal and uterine muscle was essentially the same, being characterized by a prompt increase in the amplitude of contractions without material changes in rate and tonus in the majority of strips (Figure 1). In a small proportion of strips the rate of contraction and tonus were also increased. When the activity of muscles was weak at the start, or reduced by fatigue, it was almost invariably increased upon the direct addition of cholesterol to the bath. Duration of stimulation has been observed for as long as 30 minutes. Since the stimulation per-