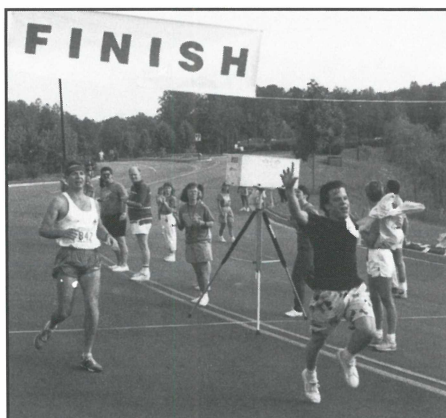


Figure 2. Plasma K concentration during the exercise and recovery period. Means and standard errors are shown.

meq/L/minute. In some individuals the fall was as great as 1.50 meq/L in 2 minutes. During the period of rapidly falling K concentrations, concentrations of the catecholamines continued to rise. These biochemical abnormalities, although present only transiently during the post-exercise period, may contribute to the vulnerability of the metabolically stressed myocardium (the middle and thickest layer of the heart wall) to other arrhythmogenic factors such as coronary insufficiency or ischemia (blood deficiency due to blood vessel obstruction).

If the coronary arteries constricted in response to the sharp fall in K after exercise, the risk of arrhythmia would be



RESEARCH is continuing to determine the possible role of K in reducing risk of "post-exercise peril."

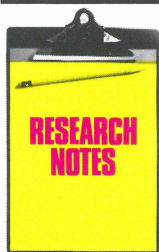
elevated in subjects whose coronary blood distribution was already limited by pre-existing disease.

Summary

This combination of biochemical and hormonal factors may contribute to the arrhythmogenic risks imposed by other factors such as myocardial ischemia. It would suggest the consumption of K-rich foods and beverages prior to strenuous exercise, because the body is unable to store K to use during periods of great demand. However, one should use caution when ingesting large amounts of K and do so only under directions of a physician. ■

Mississippi

Effects of Potassium Deficiency on Heart Functions in Animals



THE EFFECTS of moderate, chronic (five days) potassium (K) depletion on cardiac function were assessed in 14 dogs with sufficient K (normokalemic) and 13 with K deficiency (hypokalemic). Plasma K concentrations were significantly lower in the hypokalemic animals. Potassium deficiency produced major negative effects on several indices of mechanical cardiac function during both contraction and relaxation.

The authors suggest that results of the study indicate moderate hypokalemia may not affect the unstressed function of the normal heart, but may severely limit the ability of the heart to respond to stress and exercise. Deleterious effects of hypokalemia would be expected to be most severe in individuals with serious levels of heart disease. Results of this study should help determine whether to correct moderate K depletion and hypokalemia in the large number of human patients with this condition. ■

Source: D. E. Fitzovich, M. Hamaguchi, W. B. Tull and D. B. Young. J. Am. Coll. Cardiol. 18:1,105-1,111. 1991.