

A Case History: Lysine/Ascorbate-Related Amelioration of Angina Pectoris

Marie McBeath, Ph.D.¹ and Linus Pauling, Ph.D.²

The patient, a 67-year-old woman, 5'4", 123 lbs., came from a family with a history on both sides of coronary artery disease and early deaths from heart attacks and strokes.

In the early 1960s she began taking supplementary vitamins A, B, and E (800 LU. per day) and beginning about 20 years ago also vitamin C, recently taking between 5 and 6 grams per day.

Twenty years ago she developed a mild case of intermittent claudication, located at the back of her right knee. Discomfort (ischemia) could be brought on by climbing three flights of stairs. It now occurs at rest on an average of once or twice a week. It was blamed on the fact that she had smoked for 30 years (age 17 to 47). In June 1991 she had an attack of unstable angina and was hospitalized in an intensive unit for ten days. She had been traveling all winter and believed the attack to have been brought on by the stress and overwork of preparing a scientific paper on short notice and preparing for the taping of a series of television programs (she is a teacher of chemistry who had received a Ph.D. in physical chemistry.). Several standard stress tests brought on recorded angina at $3.53 \pm .02$ minutes. An angiogram in August 1991 showed no blockage in the major arteries. A cardiolite test showed effort-related ischemia in the left ventricle, considered likely to be caused by blockage in minor arteries. Her cardiologist prescribed isordyl (isosorbide dinitrate) 3 times per day, 325 mg of aspirin per day, and nitroglycerine (0.3 mg) sublingually as required. From October 1991 to May 1992 she traveled around the world with her husband and experienced few problems until returning home to face working on and taping another TV series. She continued to have effort-related angina, even after this work was completed. Cardiolite and stress tests showed no measurable change in her condition. At that

time she was taking nitroglycerine sublingually six or seven times per day, while gardening, doing housework, climbing stairs, etc.

In July 1992 she read reports about vitamin C and lysine in relation to atherosclerosis,¹ including the lysine-ascorbate case report.² She obtained a supply of lysine from the United States and began taking 1 gram of lysine on 9 October 1992, increasing the dose after five days to 2 grams a day. On October 19 she had a strong feeling of improvement in her energy level, permitting her to move with greater vigor. She describes the change as dramatic, and bordering on the miraculous. Her sense of well-being has remained, and she continues in February 1993 with a maintenance dose of 3 grams of lysine a day, at eight-hour intervals. She has also decreased her isordyl from three to two 10 mg tablets a day and has not had to take nitroglycerine sublingually since October 19, 1992.

The high doses of lysine have so far not had a noticeable effect on her intermittent claudication. Moreover, she noted that early studies show that there is some evidence that lysine produces atherosclerosis in animals, and some indication also for humans.

The evidence about production of atherosclerosis by lysine in rats and rabbits was summarized by Weigensberg et al., in 1964,³ and some later studies have given a similar result. Presumably the effect of lysine in humans in interfering with the binding of lipoprotein-a to the arterial wall would not occur in these animals, which do not have lipoprotein-a in their blood — the sort of atherosclerosis produced in animals by a high-cholesterol diet is different from human atherosclerosis. The evidence about increased cardiovascular disease in humans with a diet high in lysine is indirect.

References

1. Rath M and Pauling L, 1991: Solution to the puzzle of human cardiovascular disease: Its primary cause is ascorbate deficiency leading to the deposition of lipoprotein(a) and

1. 49 Lansdowne Street, Fredericton, N.B., Canada E3B 1T1.
2. 440 Page Mill Road, Palo Alto, California 94306.

- fibrinogen/fibrin in the vascular wall. *J. Orthomolecular Medicine* 6(3&4): 125-133.
2. Pauling L, 1991: Case report: Lysine/ascorbate-related amelioration of angina pectoris. *J. Orthomolecular Medicine* 6(3&4): 144-146.
 3. Weigensberg BI, Sary HC and McMillan GC, 1964: Effect of lysine deficiency on cholesterol atherosclerosis in rabbits. *Experimental and Molecular Pathology* :444-454.