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— for Heart Disease:

VITAMIN E

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well enough to play golf. With their stethoscopes, the doctors claim, they have heard the sounds emitted by sick hearts settle to the normal rhythm of healthy organs.

On the surface, it appears preposterous to expect such results from a *vitamin*. Look at the E substance supposed to work these miracles. There is more of it in the body than all other vitamins put together. Discovered in 1922 by Dr. Herbert M. Evans of the University of California, it was first labeled the "fertility" vitamin. When female rats were denied the substance, they were unable to bear young. Thus, vitamin E became the chief weapon against human abortion. Treated with it, women who had lost three or more babies were enabled to bear healthy children 80 per cent of the time.

After this heartening work, other researchers began to wonder. Was E useful only in reproduction? When rabbits were fed E-free diets, they became paralyzed. The same was true with guinea pigs, turkeys, ducks and even puppies! Microscopic examination of these animals showed that muscle fibers were "washed out."

These findings changed all emphasis on E. Instead of being primarily the fertility vitamin, it appeared to exert a far greater influence in keeping muscles healthy. These observations led to use of E in treatment of fibrositis and other types of muscular pain.

A British researcher tried vitamin E on old hunting dogs that showed all signs of heart disease. Under treatment, the animals ran with the pack again and even were used for breeding.

Nevertheless, it was difficult to make such findings fit an orderly pattern. Still, E was the muscle vitamin—and the heart was the hardest-working muscle in the body. This, however, is getting ahead of our story. Let's get back to Evan Shute of Ontario, a big, mild-mannered man who once was intercollegiate boxing champion of Canada.

His father, a rural schoolteacher and farmer, waited until mid-life to settle on a career. At 34, he sold the family farm and used the money to enroll in medical college.

The elder Shute wanted his three sons to become doctors, too. Evan went to the University of Toronto, then did postgraduate work in pathology at Wayne University, Detroit. Next he spent a year in surgery at Montreal General Hospital, then three-and-a-half years at Chicago's famed Lying-in Hospital, working with the great Dr. Joseph B. De Lee.

In 1935, while practicing obstetrics in London, he started using E on women who had suffered spontaneous abortions. He became convinced that the vitamin had an antagonistic action against estrogen, a hormone produced by the ovaries, which causes rhythmic contractions of the womb. Mightn't this hormone cause dislodgement of a new life, resulting in abortion? And wasn't it reasonable to suppose that vitamin E prevented this by neutralizing estrogen?

During the summer of 1945, Floyd Skelton, medical student at Western Ontario, wanted a research project. Shute suggested that he investigate the E-estrogen antagonism. Skelton agreed and started injecting dogs with estrogens.

Soon he noted something strange;

blood vessels under the dogs' skin broke down. But when the animals were given E, the purple patches disappeared. Skelton reported this to Shute at an opportune moment.

In a London hospital, a friend of Shute's—Dr. Arthur Vogelsang—had a difficult patient, a 67-year-old man with hypertensive heart disease. The patient was scheduled for surgery, but his condition was so poor that the surgeon was afraid to operate. Kidneys were limping badly; fluids were causing gross swelling of legs. Rupture of blood vessels made large purple patches—and it was this that caught their interest.

E had cleared up such hemorrhages in dogs. What about man? Skelton calculated the amount of vitamin E required to get results. Each day, the old man took massive doses. On the fifth day, Vogelsang was making routine rounds of the hospital. The patient's bed was empty. The old man was helping floor nurses with trays!

The patient reported that he hadn't felt better in years. Breathlessness was gone, and so was the leg swelling. He announced proudly that he had done more work that morning than in several years.

Vogelsang and Shute, unprepared for this turn of events, started reading all available data on E. Besides its stimulating effect on muscles, E exerted some mysterious beneficial effect on blood vessels. Also, muscles starved of E required a lot of oxygen—several times the amount required by healthy muscle.

Vogelsang and Shute reasoned that E's stimulating effect on blood vessels would have direct action on the heart itself. This same stimulat-

ing effect would account for improved kidney function; and E's ability to cut oxygen requirements would minimize breathlessness. Thus, the two men theorized their way through the problem. They were reasonably sure that the vitamin could do no harm—the body would simply discard any excess quantities it did not want.

Patient No. 2 was Dr. Shute's mother, a 71-year-old lady who had suffered stabbing anginal pains. For fear of bringing on an attack, she avoided exercise: her arms and legs were waterlogged. After five days on E, swelling was gone and pains had disappeared.

Brother Wilfrid Shute, practicing in Guelph, started using vitamin E in his own practice. In the three years that have elapsed since Case No. 1 was treated, the three-man team has used vitamin E on some 4,000 heart patients.

ONE OF THE COMMONEST FORMS of heart disease is that which accompanies hypertension—high blood pressure. This means that the heart must work harder to push blood through the circulatory system. It may, in time, simply work itself to death.

Coronary occlusion is another form of heart disease. In this, a clot forms on an artery in the heart, grows larger, finally blocks the flow of blood. A fifth of the people to whom this happens die within a few hours. In others, scar tissue forms in the damaged area, cutting heart efficiency.

Rheumatic heart disease is a third form. In this, some microbe as yet unidentified attacks the heart, injuring valves, destroying muscle

tissue. The organ may have to labor several times as hard to accomplish a given amount of work as it did before injury.

A fourth form is caused by hardening of heart arteries. They become smaller and less elastic, thereby reducing the heart's food supply. The starved muscle reacts by forming scar tissue, which further cuts the capacity of the organ.

For the most part, laymen think of angina pectoris as a disease in itself. Actually, it is a *symptom* which may announce the presence of any of the conditions mentioned above. Stabbing pains simply indicate that the heart muscle isn't getting enough blood.

Vitamin E has been used for all these disorders by Drs. Shute and Vogelsang. Of 84 patients having anginal pain, 52 per cent got complete relief, 44 per cent got some improvement. In 28 cases of rheumatic heart disease, 53 per cent got marked improvement; 43 per cent some improvement. In 66 cases of hypertension, 42 per cent got marked improvement; 43 per cent some improvement.

Look at some of the patients. One man was a wheel-chair invalid. Even sustained conversation brought on sharp anginal pains. Massive doses of E got him out of his wheel chair. Recently, he fished all day, then played bridge until midnight. Next day, he played nine holes of golf!

A 52-year-old musician suffered attacks of coronary thrombosis over a five-year period. He started taking E in July, 1945, and hasn't spent a day in bed since. Another man, 26, had a siege of rheumatic fever while a youngster. Now he is working in

a foundry. Another patient, 71 years old, was prey to anginal pains at the slightest exertion. Now he is doing heavy work in a tannery.

On the basis of these cases—and hundreds like them—Wilfrid Shute states bluntly: "Vitamin E is the most effective known drug in the treatment of heart disease, and certainly the safest. The percentage of cases which show improvement is high—80 per cent. The degree of improvement, even in the worst cases, is often marked."

Best results recorded thus far, the Canadian physicians claim, have been obtained with anginal symptoms, with early coronary thrombosis, and in cases with early failure. So far as high blood pressure by itself is concerned, E seems to exert little influence, although dramatic improvement has been recorded in a few cases associated with heart disease.

RESULTS OBTAINED so far seem impressive. What, then, are the objections? Critical physicians complain that the Shutes and Vogelsang have not used "controls"—that is, have not treated one group of patients by traditional methods, while treating a second group with E. Such procedure would give a basis for comparing older methods with the new one.

To this objection, Evan Shute retorts: "We have the records of a century of medical practice to indicate the course of heart disease under standard treatment." Wilfrid Shute, who has treated 2,000 patients with E, affirms that private practitioners are in no position to do "controlled" experiments.

Secondly, physicians complain

about that ever-recurring medical bugaboo: publicity. The E treatment has been publicized in Canadian newspapers and American news magazines. Vogelsang replies that his group was in no position to stop such publication, since the stories covered talks given in open medical meetings and reports in medical publications.

A third criticism is that electrocardiograms—tracings of heart-action patterns—show little change soon after E treatment. Vogelsang replies that some electrocardiograms *do* show significant changes. And that in cases where there are no changes, he is more impressed by reactions of the patient than by reactions in a strip of photo film.

The American Medical Association sums up the case of the critics: "Far too often there has been over-emphasis in the press on research too fresh from the laboratory to permit evaluation. The reported discovery of almost-miraculous powers of vitamin E needs careful evaluation and confirmation, because the substance has already been investigated by many competent clinicians and found wanting."

Yet in the two years that have elapsed since this discovery was announced, no such critical reports have appeared in medical journals. On the other hand, there has been published a wealth of data all supporting the Shute-Vogelsang contention—experiments on cows, rats, rabbits, dogs, hamsters, monkeys.

SINCE E IS THE MOST COMMON of all vitamins—being present in the germ of grains, leafy vegetables, root vegetables, meats—how could heart disease trace to a shortage of

the substance in normal diet? The Canadian physicians reply that we have made an almost-systematic effort to remove it from foods.

Bread, they point out, is our main staple, yet we remove most of the E-carrying germ from white flour. In fruit—apples for example—it is present in peel and core, which are usually discarded. It appears in the peel of potatoes, which we throw away.

Many investigators contend that we are more deficient in E than in any other vitamin. To this lack they attribute many of the vague aches and pains that beset us; and they think they see a connection between lack of vitamin E and widespread circulatory disorders.

In a host of other disease conditions where inadequate blood supply is the basic factor, such as thrombosis and phlebitis, chronic leg ulcers, Buerger's disease, even early gangrene, vitamin E has proved remarkably effective.

In their own field, the Shutes and Vogelsang note that heart disease is almost unknown among primitive peoples—until they start eating civilized man's food. Further, they emphasize that in 1910—before our national diet had become too refined—heart disease was the fourth cause of death instead of the first, as it is today; and that the *rate* of heart deaths is up 250 per cent in this period.

Many people attempt to explain this away by noting that early in the 20th century, when the life span was shorter, people didn't live long enough to get heart disease. But cold fact lends little support to this idea. We may regard heart disease as an ailment of the aged, but it is

the third cause of death in the five-to-24 age group, and the top killer thereafter.

The evidence, then, seems to add up to the fact that we may all be gravely short of vitamin E. If the Canadian physicians are correct in their beliefs, the prevalence of heart disease may be simply an expression of this want.

Every new suggestion in medicine has had its early critics. At the moment, the position of E as a remedy for heart disease is not finally settled, but the dispute about its value is much less bitter than at first. The original opposition developed before doctors had tried the treatment themselves. But now, a single pharmaceutical company

can point to 3,300 medical men in the U. S. who are using vitamin E for heart disease. No longer are there on the one side three dedicated advocates, on the other, a mass of vocal critics. Evan Shute puts his case thusly:

"It is hard to imagine that what vitamin E does to clots in superficial vessels, it cannot also do for the vessels of the heart. The controversy can be settled with ease. All that is necessary is for an unprejudiced cardiac clinic to treat alternate patients by our methods and by traditional methods. The results will tell the story quickly. If we are wrong, it will be simple to prove it. If we are right, everyone should know about it."

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