MEDICINE

Help Dystrophy Patients

Treatment with amino acids and selected vitamins brings improvement in 10 patients with muscular dystrophy, a disease with previously little hope for aid.

➤ HOPE, WHERE there has been virtually none, may be at hand for victims of muscular dystrophy, a disease in which the muscles gradually waste away.

The hope lies in a new treatment reported in *California Medicine* (Oct.) by Dr. J. Ray Van Meter of the University of California School of Medicine.

Dr. Van Meter has used amino acids and selected vitamins in 10 patients over periods ranging from two months to a year. Improvement was noted in every patient, including a return of strength and a sense of well-being.

Though not all changes occurred in all patients, the improvements included increase in size of wasted muscles, restoration of normal respiratory action and relief of depression. One woman, a complete invalid, was able to resume all her household chores. In general, the first signs of improvement were noted in from three weeks to a month.

No scarce, unusually expensive, or new drugs are involved. All components of the formula are made in quantity by pharmaceutical houses.

Dr. Van Meter cautioned that his report is preliminary. Not enough patients have been observed over long enough time to evaluate the treatment at present. Moreover, other doctors must try out the treatment.

If it bears up under further research, the treatment will be the first big break in a disease that has been particularly resistant to medical efforts. Most of the reasonable drugs in the pharmacopaiea—including, recently, testosterone and vitamin E—have been tried without success.

Dr. Van Meter based the formula of his treatment on the idea that one of two deficiencies of body chemistry might be responsible for muscular dystrophy.

First, there might be a failure of the digestive system to split protein foods, like meat, into amino acids. Proteins are made of combinations of some 22 amino acids. When proteins are taken into the body, the digestive system normally breaks them down into the amino acids. Then these amino acids can be recombined, with the aid of enzyme systems, into new body-building proteins, like muscle tissue. If the protein break-down system doesn't work, no amino acids are available to build new protein tissue.

Second, there might be a failure of the enzyme systems responsible for combining the amino acids into proteins—in this case, into muscle tissue. Enzymes are chemicals that provide a large part of the body's chemical reactions, and vitamins are intimately involved in the enzyme reactions.

So Dr. Van Meter prepared a replacement formula to counter both of these possible deficiencies. It includes 22 amino acids and what he considers essential vitamins. The amino acids were prepared by the digestion of proteins by enzymes from hog pancreas, the usual commercial method of preparing amino acids. All components of the formula are made in quantity by pharmaceutical houses.

The scientist said that the big job of research lies ahead. He started out on a strictly trial-and-error basis. The results now call for biochemical studies to determine what changes are produced in body chemistry to account for the improvement of the patients. The factors or combination of factors in the broad prescription responsible for the effects must also be determined by a process of elimination. These studies are now proceeding.

Muscular dystrophy is a disease characterized by progressive wasting of the muscles. It is inherited, may strike in early childhood or not until later in life. When it strikes children, it usually progresses rapidly. In middle life it is more benign.

The first symptoms may be an inability to raise the arms to comb the hair, an awkwardness in walking or a lack of balance. The use of the arms and legs is gradually lost, and in the overwhelming majority of cases the patient eventually becomes a complete invalid, unable even to turn over in bed without aid.

The face muscles may become paralyzed, and should the disease reach the chest muscles, breathing is slow and difficult.

Muscular dystrophy does not itself kill, usually. But it so weakens the body that other diseases kill easily. A cold may be dangerous.

Science News Letter, October 24, 1953

GENERAL SCIENCE

Bureau's Work Praised

➤ THE NATIONAL Bureau of Standards will have a larger program of basic research serving the government and the nation if the recommendations of the scientists' evaluating committee just made public are implemented.

Counteracting the criticism leveled at this government research establishment when the new administration took over, the nine-man committee, representing scientific and technical societies, reported to Secretary of Commerce Sinclair Weeks that the Bureau of Standards is vital to national strength, that it has a splendid record and tradition with competent and loyal staff, and that cuts in funds during the past three years should be restored and augmented to increase its usefulness.

The committee, headed by Dr. Mervin J. Kelly of the Bell Telephone Laboratories, recommended that policies on commercial product tests be the responsibility of the Secretary of Commerce, but that the Bureau continue to publish freely new scientific and technical information from its work.

Since controversy over a commercial battery additive brought on the investigation, suggested new procedures for making known evaluation tests of commercial products of industry are critical parts of the report.

More activity, increased space and modernization of facilities for the Bureau's basic programs in physics, mathematics, electronics, chemistry, metallurgy and engineering were recommended. Advisory committees in various scientific and technical areas are urged. The government should make larger use of the Bureau's services, in the committee's opinion.

Divorce of most projects of weapons development from the Bureau and transfer to the Department of Defense has already been accomplished. These projects constituted five-sixths of the $48,000,000 of the Bureau's funds in the 1953 fiscal year.

Another committee appointed to appraise the quality of work performed by the Bureau of Standards on the battery additive AD-X2 has not yet reported. Dr. A. V. Astin, Bureau director once fired by Secretary Weeks, has been retained permanently in his job on the Kelly Committee's recommendation.

Science News Letter, October 24, 1953

Huge Sphere Houses A-Sub Power Plant

See Front Cover

➤ WITH ITS 3,850 tons of steel in place, the huge sphere that will house the prototype of an atomic power plant for submarines is shown on the cover of this week's SCIENCE NEWS LETTER.

Rising as high as an 18-story building, the big ball is made of inch-thick steel plates joined together by more than five miles of welding. It was constructed at West Milton, N. Y., by the Chicago Bridge and Iron Company for the Atomic Energy Commission, as part of the facilities of the Knolls Atomic Power Laboratory, operated by the General Electric Company for AEC.

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