

MEDICINE

May Cause Nerve Disease

► **ABRUPT REDUCTION** or withdrawal of cortisone and other steroids used to treat rheumatoid arthritis has been linked to a nerve disease, peripheral neuropathy, that frequently accompanies arthritis.

A study involving all rheumatoid arthritis patients seen within the last 15 years at the Mayo Clinic, Rochester, Minn., showed the link, Drs. Richard H. Ferguson and Charles H. Slocumb reported to the American Rheumatism Association meeting in Dallas, Tex.

Peripheral neuropathy may cause damage to nerves in different parts of the body, particularly the arms, hands, legs and feet. Damage may spread over a wide area, with loss of sensation, muscle weakness and consequent loss of movement. The pain may be so severe that narcotics have to be given.

A type of peripheral neuropathy called polyneuropathy, which affects several nerves, was found in 61 patients treated at the Mayo Clinic during the period 1950-60, when steroids had come into use. The

majority had been treated with heavy doses of steroids and showed marked signs of hypercortisolemia, including stomach ulcers, weight gain and brittle bones.

No examples of polyneuropathy were found in 5,188 rheumatoid arthritis patients examined during the five-year period 1945-49, before steroids were used. The scientists said it has been only within the past few years that increasing attention has been paid to peripheral neuropathy in arthritic patients.

Another process of peripheral neuropathy, which is called mononeuritis multiplex, attacks only single nerves in various parts of the body. It is linked with severe inflammation of the arteries, intensified by steroid treatment.

Abrupt discontinuance or reduction of steroid intake affects both types of peripheral neuropathy. Gradual tapering to safe maintenance doses is essential if the patient is to be rehabilitated, the physicians said.

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Body's Role in Cancer

► **A PERSON'S PHYSICAL** condition plays a prominent if not decisive role in the development of cancer, Dr. Harry Rubin of the University of California's virus laboratory at Berkeley, Calif., reported.

Maintaining the host's natural resistance to cancer may prove more practical than trying to protect him from cancer viruses or cancer-causing chemicals, the findings suggest.

In studies of the behavior of Rous sarcoma virus, which causes cancer in chickens, Dr. Rubin discovered that cells can remain healthy even in the presence of multiplying viruses if the environment contains natural substances that allow the cells to function at their best.

Dr. Rubin used laboratory dishes as a substitute for the body. In these he placed normal living cells along with viruses that could make the cells cancerous and fresh calf or fetal calf blood at various concentrations to nourish the cells.

Something in the fresh blood when present in high enough concentrations halted the effects of the virus. Even though the viruses continued to multiply, they did not alter the cells as they do in cancer. Fetal calf blood was more powerful in preventing the cancer changes than the blood of growing calves.

Dr. Rubin has isolated one of the active substances from the sera—a protein called fetuin. Other protective substances also may be involved. He believes the fetuin acts directly on normal cells, enabling them to grow rapidly and produce materials that block the cancerous transformation of the infected cells.

However, if great numbers of viruses

dumped into the cultures overwhelm the defenses even in the presence of high serum concentrations, they can cause cancerous changes.

Something similar may occur in chickens infected with the virus. If the virus is given in low doses it may cause no cancer or a cancer that regresses spontaneously. If it is given in high dose to the embryo, it brings on a bleeding disease instead of a cancer.

Dr. Rubin says a parallel exists in other cancers. Mice infected with a virus leukemia

PUBLIC HEALTH

Fountain of Death

► **POLLUTION OF OUR** water systems may cause the death of our civilization, Sen. Robert S. Kerr (D-Okla.) warned.

"This fountain of death," the Senator told *SCIENCE SERVICE*, "has become a serious threat to our way of life and is a major hazard to the national health as well as a major cause of the destruction of our fish and wild life."

Just to bring the sewage systems of United States municipalities to an acceptable standard will cost about \$600 million a year for eight years. This expenditure will not include cleansing our streams, rivers and waterways that growing industries and the accompanying dumping of their industrial wastes have polluted and are continuing to pollute, he said, at an informal meeting with public officials and leaders of private groups concerned with water conservation.

or other cancer viruses before or at birth do not usually show the disease for a long time. Presumably, age brings on the physiological conditions that enable the viruses to cause cancer.

The American Cancer Society, which supported Dr. Rubin's experiments, announced his findings.

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Hope Seen for Victims Of Lupus Erythematosus

► **FAVORABLE PROSPECTS** for victims of lupus erythematosus, a usually fatal disease of the connective tissues, were reported after a study of 72 cases surviving three years.

Dr. Robert P. McCombs, Tufts University School of Medicine, Boston, Mass., told the Hahnemann Medical College and Hospital symposium on inflammation and diseases of connective tissues in Philadelphia that there was hope for victims when the severity of the disease did not progress during the first three years after it began.

The prognosis was favorable, he said, provided there was no kidney involvement, blood abnormality, skin or constitutional manifestations at the time of diagnosis.

Dr. McCombs said corticosteroids aided in prolonging life to 36 months from the time of diagnosis in nearly all cases except those with kidney involvement. Even in such cases survival was enhanced by their use.

The prolonged use of corticosteroids, which are compounds isolated from the adrenal cortex, carried some risks, Dr. McCombs said, but in all but mild cases the risks were justified. Complications of this treatment constituted the second most common cause of death.

The 72 cases of survival follow-up were among 104 cases of lupus erythematosus seen by Dr. McCombs at the New England Center Hospital, Boston.

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Sen. Kerr, chairman of the Senate's select committee on national water resources, considers the reclaiming of our water "a direct challenge to the democratic system."

He noted that Soviet Premier Nikita Khrushchev has said that such major reforms cannot be done under a capitalist, democratic system.

Unless we want to imitate totalitarian control, with Federal Government undertaking the job on a total national level that would affect regulation of state industries and other matters now handled independently, municipal and state governments must initiate and undertake major responsibility for keeping their water fit to drink, the Senator said.

He endorsed the view of Federal responsibility in this area suggested by U.S. Surgeon General Leroy E. Burney.

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