Is hormone X a link to hypertension?

Biochemists at the Ann Arbor Veterans Administration Medical Center are stalking a possible link between too much salt and high blood pressure.

The VA researchers think this "hormone X" may explain why the body holds more salt than is necessary. If so, their work could help up to 8 million Americans with high blood pressure live longer.

The program is headed by Roger Grekin, M.D., VA chief of endocrinology. He is carrying on work begun by internationally known researcher and physician Jerome Conn, M.D., who worked at the VA Medical Center and University of Michigan Medical School before retiring in 1976.

THE THEORY behind the research is that in some people with high blood pressure, the body's system for controlling its salt balance has gone haywire.

Along with tooth decay, sinus trouble and arthritis, high blood pressure (hypertension) is one of America's most common maladies and a major contributing factor to heart attacks and strokes.

The American Heart Association estimates that about 34 million Americans have high blood pressure. "About a quarter of these show evidence of inappropriate salt retention," Dr. Grekin said.

Only 300,000 people nationwide have the specific type of hypertension being studied at the VA Medical Center. But Dr. Grekin and his associates are sure their work will shed light on mechanisms of the body affecting all hypertension patients with salt-related problems.

In the interim, his work ties in on a daily basis to the medical needs of veteran patients at the 368-bed acute care facility that is affiliated with the University of Michigan Medical School.

Because high blood pressure strikes three times as many men as women and tends to surface when people are in their 50s and 60s, the frequency of blood-pressure related problems among VA patients is much higher than the national average, he said.

HIS STUDIES center on a hormone named aldosterone. The body's balance of salt is regulated through the kidneys. Aldosterone, produced by the adrenal glands, is a signal to the kidneys to adjust the salt balance. Just as there are two kidneys, there are two adrneal glands, one located above each kidney.

At time of salt shortage, Dr. Grekin said, the adrenal glands start making more aldosterone. This signals the kidneys to hold on to salt.

When too much salt is held, the adrenal glands stop making aldosterone, signaling the kidneys to release the salt buildup.

In some patients with high blood pressure, however, the adrenal glands don't know when to quit sending aldosterone regardless of the body's salt level. The result is a build up of salt and high blood pressure.

THIS OVERACTIVITY problem is called primary aldosteronism. An identified growth of a noncancerous tumor in the adrenal gland is one of the causes. Once this tumor is removed, the salt balance — and the patient's blood pressure — return to normal.

However, one-third to one-half of the patients with this disease have no tumor but the same symptoms. Dr. Grekin's research is designed to find out why.

Hormone X is speculated as being responsible for this version of the disease. If it exists, the hormone would have an effect on the production of aldosterone, and it would be a case of one hormone activating production of another.

The main evidence supporting the existence of hormone X is a series of experiments blocking a substance called serotonin, which uses the nervous system to control the release of certain hormones, Dr. Grekin said.

In test-tube studies on blood from patients with adrenal tumors, it was found that blocking serotonin made no change in the production of aldosterone. In patients with the second type of disease, however, blocking serotonin produced a decrease or actual halt in aldosterone production.

Such a serotonin-controlled hormone may be the factor in the
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second type aldosteronism, and researchers are trying to prove a connection.

With funding from both the $2 million annual VA research budget and the National Institutes of Health, the VA endocrinologists plan experiments on salt retention that Dr. Grekin estimates will take three years.

15 in 90° could fry best friend

Fifteen minutes in the sun on a 90-degree plus day can make you hot and uncomfortable, but it can actually kill your pet, the Humane Society of the United States (HSUS) warns.

"Dogs and cats cannot sweat the way people do," cautions Phyllis Wright, director of animal sheltering and control for HSUS. Wright explains that dogs and cats rely on panting, a way to exchange the hot air inside the body for the cooler air outside, to regulate their body temperature.

When the temperature outside is hotter than the animal's own body temperature, that system can easily break down, resulting in heat exhaustion and death in just a few minutes.

Wright recommends that during times of extreme warm weather, animals should be kept inside and given more water to drink than usual. Exercise should be limited to the coolest part of the day — early morning or late evening. Above all, never leave a pet in a car during the day in the summer, even in the shade.

If your pet should become overheated, immediate action can help save its life. If your pet shows signs of heat exhaustion — excessive panting with sides heaving or a deep red or purple tongue — the most important thing is to cool it, fast.

Put the animal in the shower or under the garden hose immediately, then feed it ice cubes or ice cream. Never let an overheated animal have unlimited water — it can easily drink itself to death.

Finally, Wright says, use your common sense. Your pet depends on you for its well-being in the summer. Don't let it down.

Providence plans free health fair

Free blood pressure tests and information on a variety of health topics will be provided at a community health fair sponsored by Providence Hospital in Southfield.

The fair is slated for Aug. 8 and 9 at the Twelve Oaks Mall in Novi. It will take place from 9 a.m. to 9 p.m. in the court near Lord and Taylor.

Participants in the blood pressure screening will be given the results of their tests. Those with elevated readings will be referred to their own physicians or to the Providence family practice units in Southfield and South Lyon.

The fair will emphasize maintaining good health throughout life. Hospital personnel will be on hand to answer questions and provide information. Many topics are included, such as: hypertension, prevention of cardiovascular disease and cancer, proper nutrition, weight reduction, physical fitness and aerobic exercise and safety measures for home and work.

There will also be a dental hygiene booth where free dental floss and toothbrushes will be distributed.

Rita Kaminski, R.N. health fair coordinator, is being assisted by staff members from patient care, dietary, physical therapy and pharmacy who have volunteered to help with the project.