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PUBLIC AFFAIRS PAMPHLET No. 168

YOUR BLOOD PRESSURE AND YOUR ARTERIES

By Alexander L. Crosby

THE AMERICAN HEART ASSOCIATION, INC.



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YOUR BLOOD PRESSURE AND YOUR ARTERIES, the new Public Affairs Pamphlet by Alexander L. Crosby, is an important publication for these times. The pressure is on again. Business, government and industry are marshaling strength to build the country's defenses. We are depending on executives and administrators, shop foremen and mechanics to get the job done. The age bracket of leadership—from 32 on—roughly corresponds to the ages when high blood pressure develops. Not without reason is the medical name for high blood pressure hypertension. The tensions of our times will take their toll unless people under pressure use certain precautions.

Mr. Crosby's pamphlet tells what these precautions are. It also gives good advice to the 20 per cent of the adult population who already have high blood pressure or hardening of the arteries. Many patients have the mistaken notion that because they are sick they can't do anything. This is not necessarily true. In recent years the scope of their activity has been redefined and broadened. For many sufferers, new medical developments have outmoded invalidism. Now that our nation requires the most effective use of manpower, millions of men and women who would have been ruled out a generation ago can make a vital contribution.

HOWARD B. SPRAGUE, M.D.
President, American Heart Association

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YOUR BLOOD PRESSURE AND YOUR ARTERIES

By ALEXANDER L. CROSBY

IF you are the one out of about every five adults who has high blood pressure or hardening of the arteries, you are probably unnecessarily alarmed. There is no reason for worrying yourself into bed.



Research has not yet discovered the cause of either high blood pressure (hypertension) or hardening of the arteries (arteriosclerosis). But enough has been learned about treatment and management to make changes that are almost revolutionary. Patients who would

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have been condemned twenty years ago to a useless life are now advised to live normally, taking sensible prec:

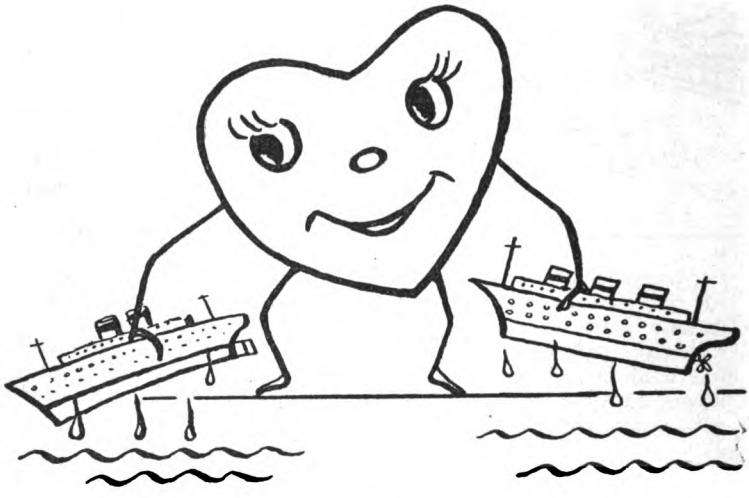
Most people with one or both of these conditions can count on living useful lives. The wise physician would no more prescribe an invalid's routine for the average patient than he would recommend getting a job as a longshoreman. The key in treating both conditions is moderation in living habits.

Let's first take a look at your heart and your circulatory system.

The Heart

The heart is a hollow, muscular organ about the size of a grapefruit but infinitely tougher. Compared with mechanical motors, the heart seems weak: it is rated as only 1/240th horsepower. But the average heart pumps nine or ten tons of blood every day, handling the body's entire stock of blood about once a minute. If the heart's labor over forty-eight years could be concentrated in a single moment, it would be enough to lift both the *Queen Elizabeth* and the *Queen Mary* out of the water.

This goes to show that the heart is not nearly so delicate as it is sometimes made out to be.



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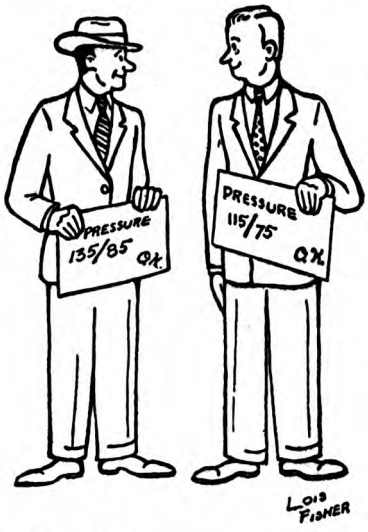
How Blood Pressure Varies

Arteries have thicker walls than veins because the blood pressure is about twenty times greater. The walls are formed of elastic and muscular tissue. They expand when the heart pushes blood into the arteries, then recoil—and the recoil helps to propel the blood further on its way to the arterioles. This sudden distention and recoil creates a wave (the pulse) along the whole arterial tree. You can feel it at your wrist or temple.



Blood pressure is naturally highest when the heart contracts to push the blood through the arteries. In the diastolic phase, when there is no push from the heart and blood is leaving the arterial system through the arterioles, pressure falls. Normal blood pressure varies for different people. Blood pressure also varies normally from hour to hour, depending on what a person is doing. It usually changes somewhat on lying down or standing up. Systolic blood pressure normally ranges from about 110 to 140 millimeters of mercury and the diastolic range is about 70 to 90 millimeters. These are the pressures that your doctor measures when he wraps the cuff around your arm and pumps up the cuff until the circulation is temporarily blocked.

HIGH BLOOD PRESSURE

NOBODY yet knows what causes high blood pressure. There is a hereditary background in about 40 per cent of the cases. The condition cannot be blamed on age alone, since it is occasionally

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A lot of things may worry you. Little things, like your son's habit of leaving his bike on the lawn. Or the torn nightgown your wife wears. Or the antisemitic cracks from a neighbor who thinks you share his fatuous prejudice.



There will be big worries, too. Money. Insurance. Life expectancy. The lousy shape the world is in.

What to Do About Problems

Face up to these worries. If you don't know the answers, talk to your doctor. Discuss with him the possible value of psychotherapy. Then dispose of each problem—either by solving it or by filing it away. There is no better guide for you than the old rhyme:

For every evil under the sun
There's a remedy, or there's none;
If there's one, try to find it;
If there's none, never mind it.

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CONCESSIONS TO YOUR HIGH BLOOD PRESSURE:



LOIS FISHER
AND KARL MURR

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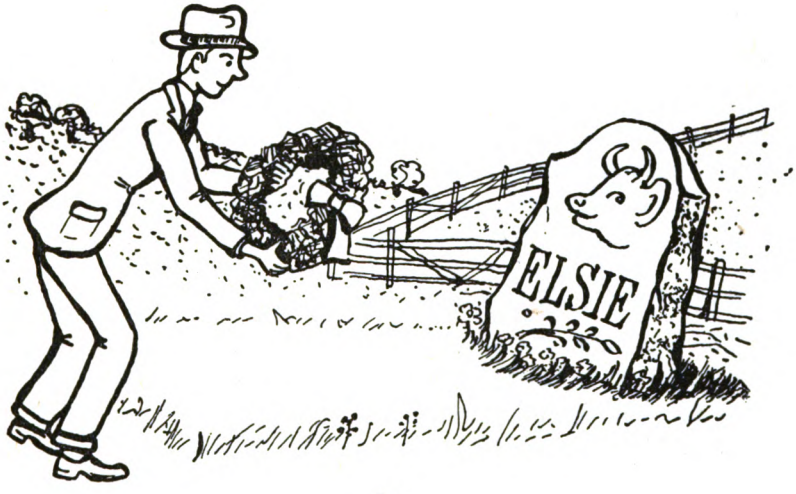
The bedridden patient must be protected against the possibility of new clots forming in the heart or elsewhere. Two new drugs are used as anticoagulants to prevent clotting. The first discovery, heparin, is made from ox liver. It is expensive and not always safe. In 1941 a new synthetic anticoagulant, dicumarol, was introduced. The story of dicumarol is a science classic.

Mr. Carlson's Cow

Back in 1933 a Wisconsin farmer, Ed Carlson, lost five cows from "sweet-clover disease," contracted after eating rotted sweet clover hay. The cattle had bled to death. Other farmers had lost cows, too, but Mr. Carlson figured the government ought to do something about it. He took a dead cow to the University of Wisconsin and asked why the cow had died. Dr. Karl Paul Link, an agricultural chemist, couldn't say offhand but he decided to find out. A first discovery was that the cow's blood wouldn't clot. Dr. Link and his colleagues kept experimenting with rotten clover. After six years they extracted from the hay a few crystals called dicoumarin, which prevented clotting. It was later found that dicoumarin could be made synthetically from coal tar derivatives.



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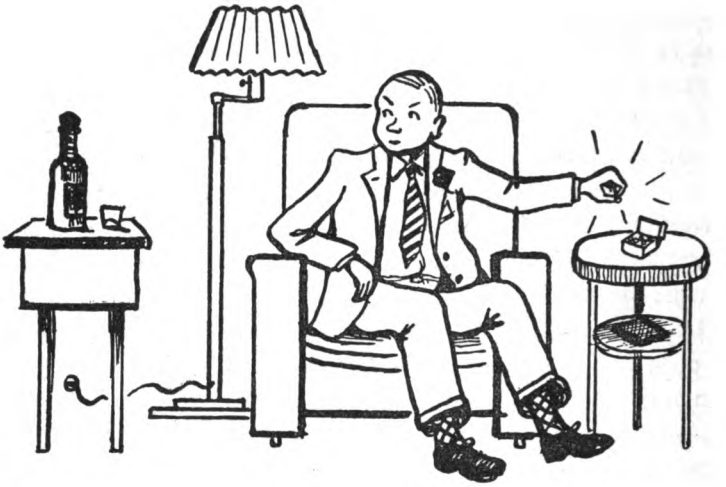

notion and sagely counseled: "Aside from the question of whether it would be more desirable to be an alcoholic or have hardening of the arteries, some doubt has been cast upon this belief because most alcoholics die before the age when arteriosclerosis usually is found."

Other medications are often prescribed to relieve coronary pain.

HOW ARTERIES HARDEN

NO one knows *why* arteries harden. Heredity seems to be a factor, but that doesn't explain why ancestors developed the disease. There is no evidence to place the blame on tobacco, alcohol, hard work, or emotional disturbances.

We do know, however, *what* happens. Fatty substances are deposited in the arterial wall. The lining is pushed out into the channel, partly blocking it. Of the fatty substances, cholesterol is the most important. Just how cholesterol gets into the artery walls is unknown, and research has not shown why male arteries

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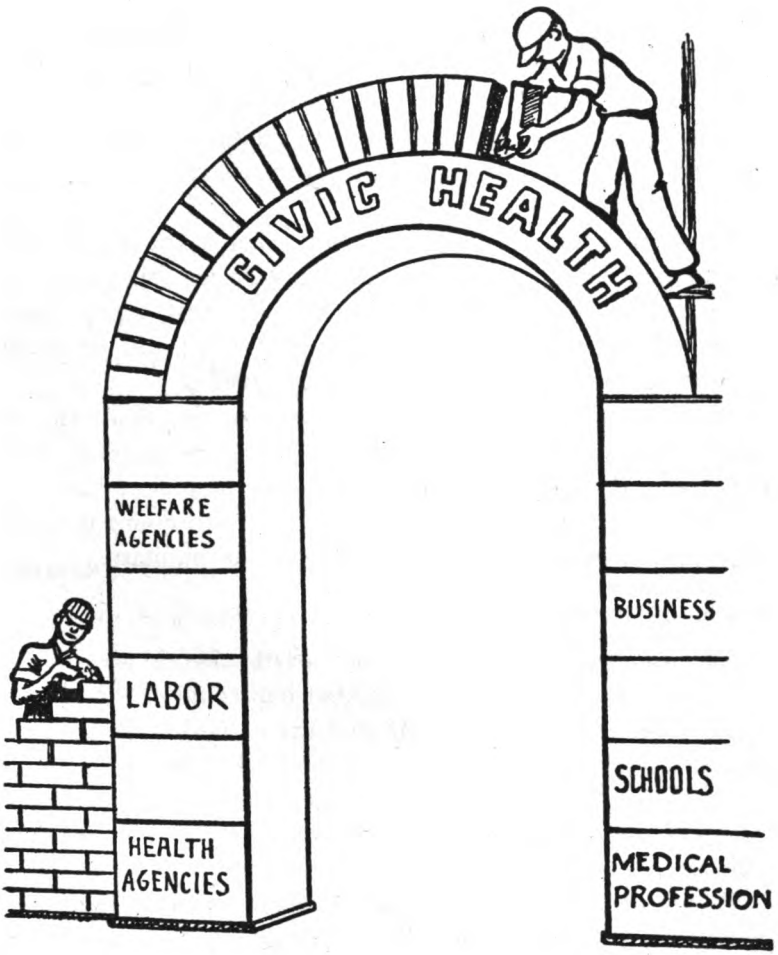
the needs. Sound advice on forming a local health council may be had from the National Health Council, 1790 Broadway, New York 19, N. Y. (Send 25¢ to them for the pamphlet, *Stepping Stones to a Health Council.*)



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These are the issues of ***The Annals*** for November, 1950 and January, 1951. Each volume is a symposium on the general topic indicated by its title—one of twenty-four and the other of twenty-six articles. All contributors are distinguished specialists and all leading points of view are presented.

Copies may be secured for only $2.00 each. Another and better procedure is to join the Academy (whose dues are only $5.00 per year) and receive six issues of ***The Annals***, each a symposium on some social, political, or economic topic.

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