Your Heart and Health

TV FACTS

WHAT IS HYPERTENSION?

By David Kavesteen, MD, FACC

Hypertension, also known as high blood pressure, is a condition in which the pressure of blood flow in the blood vessels is chronically elevated. With every heart beat, the heart pumps blood through the arteries to the rest of the body. Blood pressure is the force of blood that is pushing up against the walls of the blood vessels.

If the pressure is too high, the heart has to work harder to pump, and this could lead to organ damage and several illnesses such as heart attack, stroke, heart failure, aneurysm, or renal failure. Like air in a balloon, blood fills arteries to a certain capacity-and just as too much air pressure can cause damage to a balloon, too much blood pressure can harm healthy arteries

Blood pressure is measured by two numbers. The normal level for blood pressure is below 120/80, where 120 represents the systolic measurement (pressure during every beat) and 80 represents the diastolic measurement (pressure in between beats). Blood pressure of 140/90 or above on two or more consecutive visits to the doctor is considered hypertension. The goal of treatment is to lower the pressure below 140/90, and even lower in people with diabetes and chronic kidney disease who have a higher risk of stroke and heart attack.

Hypertension may be classified as essential or secondary. Essential hypertension is the term for high blood pressure with no known cause, and accounts for the majority of cases. Secondary hypertension is the term for high blood pressure with a known direct cause, such as kidney disease, tumors, or birth control pills.

Though the cause of hypertension is generally unknown, there are several risk factors that are highly associated with hypertension: smoking, diabetes, obesity, lack of physical activity, high levels of salt intake, increasing age, stress, genetics and kidney disease.

Hypertension is also referred to "the silent killer" because it usually presents with no symptoms and a person feels perfectly fine until end organ damage occurs. Hypertension does not cause problems over days, weeks, or months; rather, it causes problems over many years and can affect your entire body. By adding strain to the blood vessel walls, hypertension makes them more likely to develop a buildup of fat and cholesterol -- also known as "hardening" of the arteries. This, in turn, puts extra strain on your heart as it pumps blood through the narrowed arteries.

Over time, the strain and build up of fat hypertension causes on the heart and blood vessels, can increase the risk of serious health problems, such as heart disease, stroke, heart attack and kidney damage. Therefore, it is very important to be treated for hypertension.

YOUR HEART AND HEALTH
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MEDICAL EDGE

TV FACTS

Most Cases of ALS Do Not Run in Families

DEAR MAYO CLINIC: My brother was diagnosed with ALS and then died two years later. An aunt on my mother's side had the disease. All of my siblings have children, and we want to know if ALS is hereditary. Is there a test that would indicate risk?

ANSWER: Most cases of amyotrophic lateral sclerosis (ALS) are not familial and do not run in families. In a minority of ALS cases, though, the disease may be inherited and occur in multiple family members. Not all gene mutations responsible for the inherited form of ALS have been identified. But the ones that have can usually be detected through genetic testing.

ALS is a serious neurological disease that causes muscle weakness, disability and eventually death. In ALS, the nerve cells that control muscle movement gradually die, so the muscles progressively weaken and begin to waste away. ALS often begins with muscle twitching and weakness in an arm or leg, or with slurring of speech. Eventually, ALS affects the ability to control the muscles needed to move, speak, eat and breathe. ALS is often called Lou Gehrig's disease, after the famous baseball player who died of the disease in 1941.

In the vast majority of ALS cases, no specific cause of the disease can be identified. In about 5 percent of ALS cases, though, the disease is inherited. These familial cases are due to mutations in a number of genes. At this time, researchers have only been able to identify about one-third of the gene mutations responsible for ALS. Genetic testing to detect these gene mutations requires a blood sample that is sent to a laboratory for analysis.

Unfortunately, determining if someone is carrying a gene mutation for ALS isn't as simple as performing a single test. About two-thirds of the familial cases of ALS involve gene mutations that researchers have not yet identified. That means a negative genetic test does not necessarily rule out the possibility of familial ALS.

If an individual is found to have a gene mutation associated with ALS, each of that person's first-degree relatives - siblings and children - has a 50 percent chance of also carrying the gene mutation that causes familial ALS. A person who carries the gene mutation is at high risk to develop ALS. But, for reasons that are not clear, not everyone who carries the gene goes on to develop the disease.

As you and your family members consider the option of genetic testing, I encourage you to talk with each other about it before you proceed. Having these conversations before genetic testing can give you a sense of how family members may respond to the test results.

In addition, I strongly recommend you consult with a genetic counselor prior to undergoing genetic testing. The counselor will review your personal and family medical history with you to help you better understand your risk. A genetic counselor can also explain the implications of a positive or negative test, walk you through the testing process, and help weigh the pros and cons of genetic testing. Your family physician can help you locate a genetic counselor in your area. - Eric Sorenson, M.D., Neurology, Mayo Clinic, Rochester, Minn.

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