Understanding Left Ventricular Hypertrophy (LVH)

Left ventricular hypertrophy (LVH) is a condition where the size of the heart muscle is larger than normal. The left ventricle is the heart's main pumping chamber. It pumps oxygen-rich blood from your heart to the aorta and out to your body. When you have LVH, the muscle wall of the left ventricle becomes thick (hypertrophy) and enlarged.

LVH can happen over time if you have certain health conditions that overwork the heart muscle, such as high blood pressure or aortic stenosis. As the heart works harder than normal, the left ventricle adapts. It gets thicker and enlarged to pump blood to the body. But the heart becomes less elastic and doesn't pump as well. This prevents healthy blood flow.

What causes LVH?

LVH is often caused by other health problems such as:

- High blood pressure (this is the main cause)
- Heart valve problems, such as aortic valve stenosis, aortic valve regurgitation, or mitral valve regurgitation
- A genetic condition in which the heart muscle grow abnormally thick and stiff (hypertrophic cardiomyopathy)
- Some congenital heart conditions such as coarctation of the aorta

In addition, LVH is sometimes seen in high-level athletes (called physiologic LVH). Over time, intense endurance and strength training can cause the heart to adapt to handle the extra workload.

Symptoms of LVH

You may have LVH for many years with no symptoms. But as it gets worse over time, you may have symptoms such as:

- Chest pain (often when exercising)
- Extreme tiredness (fatigue)
- Fast heartbeat (palpitations)
- Shortness of breath
- Dizziness or fainting

See your healthcare provider right away if you have any of these symptoms. This set of symptoms can be caused by a few different health conditions.

Diagnosing LVH

It can be hard to diagnose LVH because you may not have symptoms for a few years. But these 2 tests can often find LVH even before you have symptoms:

- **Echocardiogram (echo).** Sound waves (ultrasound) are used to make a picture of the heart and look for structural defects.
- **ECG (electrocardiogram).**This test records the heart's electrical activity.

A heart MRI can also be used to diagnose LVH. This imaging test makes detailed pictures of the heart using radio waves, magnets, and a computer.

Treatment for LVH

Your treatment will depend on what condition caused LVH. Treatment will focus on addressing that underlying problem, such as:

- **High blood pressure.** This is often the cause of LVH. Treatment for high blood pressure includes taking medicines, monitoring your blood pressure and making healthy lifestyle changes. This includes regular exercise, a healthy diet, staying at a healthy weight, reducing stress, getting enough sleep, limiting alcohol, reducing salt intake, and not smoking.
- **Heart valve problem.** If a heart valve problem caused the LVH, you many need surgery to fix the valve.
- **Hypertrophic cardiomyopathy.** Treatment may include medicines to help your heart pump more effectively, or to reduce arrhythmias. In some cases, surgery can destroy or remove thickened tissue to improve blood flow. Your healthcare provider will work with you to create a treatment plan to help you feel better now and prevent future problems.
- **Other heart problem.** Talk with your healthcare provider about the treatment options for your situation.
- **Athletic LVH**

Possible complications of LVH

Having LVH may put you at higher risk for other health problems such as:

- Heart attack
- Stroke
- Heart failure
- Heart rhythm problems