

Title: Hypertension and Left Ventricular Hypertrophy (LVH)

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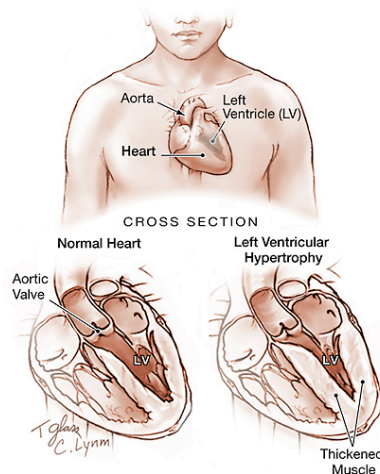
Abstract: Left Ventricular Hypertrophy (LVH) is a common complication associated with hypertension. It is associated with significant cardiovascular risk, including death. Its symptoms are not noticeable until late in the disease, so should be checked by your physician, especially if you are also diagnosed with hypertension. Electrocardiography (EKG) is a cheap and sensitive test for LVH. Echocardiography is the gold standard for diagnosing LVH but is not yet indicated for screening purposes.

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Hypertension and Left Ventricular Hypertrophy (LVH)

What is Left Ventricular Hypertrophy (LVH)?

LVH represents an extreme increase in the left ventricular mass of the heart. The left ventricle is the part of the heart most responsible for pumping blood to our body, and like any muscle, grows in reaction to more rigorous use. Most cases of LVH are thought to result naturally from a “hard-working” heart. It is generally a response to heart pressure or volume overload, which most commonly happens in patients with high blood pressure (hypertension). Initially LVH may be beneficial as it allows the heart to compensate for the hemodynamic changes, but in the long run LVH is very harmful.



Left ventricular hypertrophy (LVH) prevalence varies with severity of hypertension

Borderline hypertension (BP 120-139/80-89): 17%
Stage I hypertension (BP 140-159/90/99): 20%
Stage II hypertension (BP >160/>100): 100%

**Increased risk if you are older, obese and/or African-American.*

Why is left ventricular hypertrophy (LVH) harmful?

LVH is a risk factor for premature death and cardiovascular events. It is a strong predictor of congestive heart failure, coronary heart disease and stroke.

20-40% increase in major cardiovascular events (stroke, heart attack, death)

What are the symptoms?

Like high blood pressure (hypertension) there are no symptoms initially. Symptoms like chest pain, dizziness, palpitations, fatigue and shortness of breath during exertion or while sleeping may occur, but by this point the disease may be very far along. These are already symptoms of heart failure.

How do I know if I have left ventricular hypertrophy (LVH)?

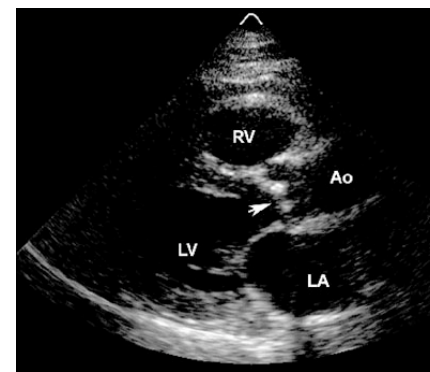
If you have high blood pressure, are being treated for hypertension and/or have any of the above symptoms and you do not know if you have LVH, then ask your doctor for testing.

Electrocardiogram (EKG): Non-invasive test where electrodes are placed on the skin to measure the heart's electrical activity. Electrical conduction in the heart changes when the heart muscle becomes too thick. This test is recommended for all newly diagnosed hypertensive patients.



Echocardiogram: Relatively non-invasive test utilizing ultrasound technology to show a live picture of the heart and actually see if the heart muscle is too thick or if the flow of blood through the heart is disrupted.

This test is the medical standard for diagnosing LVH. There are currently no guidelines for its use specifically and is left to the discretion of your physician depending on patient risk and desire to have the test done.



Is there a treatment?

YES! Left ventricular hypertrophy can be slowed or prevented and will regress with certain anti-hypertensive therapies. This effect has been shown to be somewhat independent of blood pressure control and certain medications work better than others for this specific problem.

Most effective to least effective anti-hypertensive medications in treating LVH:

- Angiotensin Receptor Blockers (ARBs)
- Calcium Channel Blockers
- Angiotensin-Converting Enzyme Inhibitors (ACEI)
- Diuretics
- Beta-Blockers

How does getting treatment for left ventricular hypertrophy (LVH) affect me?

Like hypertension, LVH is relatively asymptomatic. You will not necessarily “feel” the difference. However, proven regression of LVH as seen by electrocardiogram has shown many benefits:

- 29% overall decrease in cardiovascular risk
- 38% decrease in cardiovascular death
- 27% decrease in stroke
- 19% decrease in myocardial infarction (heart attack)

What do I do next?

If you don't know if you have hypertension: Make an appointment with your doctor, go to a health fair or to a pharmacy or grocery store with blood pressure machines and get tested for high blood pressure.

If you are diagnosed with hypertension: Make sure your doctor tests you for left ventricular hypertrophy (LVH) by doing an electrocardiogram (EKG).

If you are diagnosed with LVH: If you have symptoms it may reduce them, but follow treatment even if you do not feel ill. It can prevent major disease in the future.