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## Exercising Under Pressure

Many of us go through life trying to do the right things. We exercise regularly, eat healthy, avoid bad habits, try to get enough sleep and manage stress (which seems to be very difficult in 2020). Yet sometimes, no matter what we do, we are still affected by physical ailments. Not so much an outright injury, but a silent issue that could be affecting your health. I'm referring to high blood pressure, or hypertension, which is also called the "silent killer" because it can have detrimental and irreversible effects on the body even before it is discovered.

I have seen many patients in my clinic with high blood pressure readings who didn't know they had any issues because they hadn't seen a physician for a routine check-up for quite some time. There may not be any signs or symptoms of this disease. We hear about hypertension all the time and it's likely that you or someone you know has it. But what exactly is hypertension? How does it affect the body? And is it beneficial or safe to exercise if you have been diagnosed with it?

Hypertension is an all-too-common diagnosis. An estimated 26% of the U.S. population over the age of 18 is affected by high blood pressure. This increases to more than 60% in people over the age of 60. As you can see, high blood pressure is all around us and a good understanding of it can ensure proper treatment and control.

In simple terms, hypertension is an increase in the pressures in your blood vessels as the heart pumps blood through your body. There are two numbers that indicate your blood pressure. The upper number, or systolic pressure, is the pressure that is measured in your blood vessels when your heart is contracting and pushing blood through your system. The lower number, or diastolic pressure, is the pressure that is measured when your heart is relaxed. Ideally, you want to see the pressures measured to be less than 120/80. Here are the current definitions of hypertension on blood pressure readings from the American College of Cardiology and the American Heart Association:

- Normal blood pressure: Less than 120/80
- Elevated blood pressure: Systolic pressure 120-129 and diastolic pressure less than 80
- Stage 1 hypertension: Systolic pressure 130-139 and diastolic pressure 80-89
- Stage 2 hypertension: Systolic pressure 140 or greater and diastolic pressure 90 or greater
- Hypertensive crisis: Systolic pressure over 180 and/or diastolic pressure over 120

Your blood vessels are very elastic and expand and contract with the heart as it pumps blood through your body. In high blood pressure, these blood vessels can stiffen due to cholesterol build up on the walls or calcification that occurs in the blood vessels in response to the higher pressures. Over time, the vessels lose their elasticity, which further narrows the blood vessels and can make the cardiovascular system less efficient.

Think about each blood vessel as a hose. Water will flow much easier through a wide diameter hose than a narrow diameter hose. And when the water is turned on, the flow through the hose should be smooth and regulated. But if you kink or constrict the hose, the

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pressure builds up and sprays with more force. Ultimately these excess forces may damage the hose. Similarly, the long-term effects of uncontrolled hypertension can alter and damage tissues and organs in the body and can lead to heart, kidney, lung and vision problems as well as stroke and sexual dysfunction.

There are many factors that can contribute to a diagnosis of hypertension, some can be controlled and others cannot. Here are the major risk factors of hypertension:

**Uncontrollable factors**

- **Genetics:** One of the most common causes of high blood pressure
- **Age:** Blood vessels lose elasticity and stiffen with age, which increases the risk of high blood pressure
- **Race:** African Americans and Hispanics have a higher propensity for high blood pressure
- **Sex:** Men are more prone to high blood pressure in middle age; women in older age

**Controllable factors**

- Lack of exercise
- Unhealthy eating habits
- High salt diet
- Obesity Excessive caffeine use
- Smoking and illicit drugs
- Excessive alcohol use
- Poor sleep habits
- High stress job
- Medications such as anti-inflammatories, birth control and antidepressants
- Medical conditions such as diabetes, thyroid problems and kidney disease

The most important question to answer for the purpose of this article is whether it is safe to exercise with hypertension. The answer is absolutely! Exercise of any sort can be beneficial in trying to control and lower blood pressure. To reap the benefits, you need to exercise for at least 150 minutes over the span of a week. This can include running, walking, cycling, swimming, etc. Incorporating strength building exercises also can help decrease blood pressure. In some athletes, hypertension may persist no matter how much they exercise, control their weight, avoid poor lifestyle habits and eat well. This is most likely due to the uncontrollable factors mentioned above. However, exercise can help curb worsening hypertension and decrease the risk of it progressing to uncontrollable hypertension.

Controlling hypertension will prevent irreversible damage to the body. It's important for athletes, or anyone, to have routine medical evaluations to monitor blood pressure readings. If hypertension is caught early, it may be controlled with exercise and lifestyle changes. Once again, hypertension cannot be seen or felt in most cases so it can cause damage before you even realize you have it.

If you have a diagnosis of hypertension and it cannot be controlled with lifestyle changes, your physician will likely recommend medications. There is absolutely no harm in exercising while on medications for hypertension. It is important to let your physician know your level of exercise, whether it be walking, running, cycling, etc., because there are some medications

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(beta blockers) that can affect your heart rate and you may have difficulty with performance and stamina.

If you have any questions or concerns regarding an injury or pain, please reach out to one of our experienced sports medicine physicians at Corewell Health Medical Group Orthopedics at (616) 267- 8860. You can also find more information about our orthopedic program and providers on our [website](#).

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