IN THIS CHAPTER

- Moving the blood through the cardiovascular system
- Defining high blood pressure and understanding its consequences
- Preventing high blood pressure and examining treatment options
- Treating high blood pressure in children, women, and older people

Chapter 1
Introducing High Blood Pressure

If you have high blood pressure, you're not alone. According to the U.S. Centers for Disease Control and Prevention (CDC), approximately 120 million Americans have high blood pressure, which is defined as either taking prescribed medication for blood pressure or having blood pressure greater than 130/80. High blood pressure is a significant risk factor for heart attack, stroke, and vascular disease (see Part 2 of this book for more on these conditions).

You can do a lot to prevent high blood pressure or to lower it if you already have it. But before you act, you need to know what high blood pressure is and how you measure it. You also need to understand its causes and how it can be treated. This book is your blood pressure companion, providing you with a solid understanding of your blood pressure: how it affects your body organ by organ, who is at risk, how you can prevent it, and how you can treat it after it's properly diagnosed.

Understanding Your Cardiovascular System

To understand how high blood pressure affects your overall health, you need to understand the cardiovascular system — your heart, arteries, veins, capillaries, and the blood that fills them. The cardiovascular system carries

- **Nutrients** (carbohydrates, protein, fat, vitamins, and minerals) from the gastrointestinal tract to every organ in the body
- **Oxygen** from the lungs and in the blood to distant organs
- **Waste products,** a normal product of your body's metabolism (for example, carbon dioxide to the lungs and the other waste products to the liver and kidneys)

REMEMBER

Pressure must exist to push the blood through the cardiovascular system. (Otherwise your blood would pool in your legs due to gravity when you stood up!) Just as your household water supply reaches a faucet because of pressure pushing it through the pipes, blood reaches your brain because pressure is allowing it to defy gravity and rise from the heart.

The heart muscle (the source of this pressure) squeezes out the blood forcefully so the blood not only defies gravity but also travels through the smallest passageways (the *capillaries*, which are very small blood vessels in the body).

When essential body organs like the kidneys don't receive enough pressure to function properly, they signal the heart to pump harder. The sustained effect of high blood pressure over time is what's damaging to the brain, the blood vessels, and even the kidneys themselves. And that's when the consequences of high blood pressure occur (see Part 2).

Measuring Your Blood Pressure and Understanding the Measurement

When the medical staff in your health-care provider's office measure your blood pressure, they're using an automated blood pressure machine with a cuff wrapped around your arm. They press a button and wait while the automated blood pressure cuff squeezes your arm and measures your blood pressure. After a short amount of time, two numbers are displayed on the screen of the blood pressure

machine, and these numbers are then recorded in your patient chart as part of your electronic medical record.

What do those numbers mean? When your health-care provider reads the numbers — say "135 over 85" — the first number is the *systolic blood pressure*, and the second number is the *diastolic blood pressure.* In Chapter 2, I explain what these blood pressure measurements mean and why the results have such a serious effect on your life.


TIP

One of the most effective steps you can take in understanding your health is to measure your own blood pressure with a home monitoring device. I cover this subject in Chapter 2 as well.

Looking at the Risk Factors for High Blood Pressure

Significant research has been done into the causes of high blood pressure, including genetic aspects and environmental influences (see Chapter 3). Numerous unalterable factors affect blood pressure, including age, gender, ethnic background, and family history.

The risk factors you *can* change (including diet, exercise, and stress) can also increase your risk of developing high blood pressure. Your health-care provider will likely ask you the following questions as part of an annual health assessment:

- Are you less active than you could be in your day-to-day routine?
- Are you overweight?
- Do you consume foods high in salt and/or sugar?
- Do you lead a stressful lifestyle?
- Do you smoke and/or consume alcohol?


REMEMBER

If you answer "yes" to any one of these questions, you're at risk of developing high blood pressure. The more questions you answer "yes" to, the greater your odds of developing high blood pressure. On the other hand, if you're able to decrease the stress in your life and improve on some of these modifiable risk factors, you'll decrease your chances of developing high blood pressure.

The majority of high blood pressure in adults has been categorized as *essential high blood pressure* (blood pressure that occurs without an identifiable cause). We're

learning more and more about the genetic influences of high blood pressure (see Chapter 3), as well *resistant* (very difficult to treat) causes of high blood pressure, including a condition called *hyperaldosteronism*, which may impact more cases of high blood pressure than previously thought. This and other causes of resistant high blood pressure are discussed in Chapter 4.

Focusing on the Consequences of High Blood Pressure

Left untreated, over time your high blood pressure can cause damage to your heart, kidneys, brain, and eyes:

- Heart attacks or heart failure may be the major consequence for your heart (see Chapter 5).
- Kidney disease can affect the filtering function of your kidneys, as well as itself be a cause of difficult-to-control high blood pressure (see Chapter 6).
- An acute stroke may destroy important brain tissue and the movements it controls in the body (see Chapter 7).
- The eyes are not the just the windows to the soul — they're also affected by uncontrolled blood pressure. Looking at the vessels in the eyes can be a clue that you have uncontrolled high blood pressure (see Chapter 8).

High blood pressure is the silent killer and these conditions are very much preventable. This book provides you with the tools you need to keep your blood pressure in check.

Lowering High Blood Pressure with Different Treatments

Treating high blood pressure (or preventing it entirely) involves all the tools I discuss in Part 3. Get started with the following guidelines, and check out Part 3 for an outline of a successful plan:

1. **Switch from a nutrition plan that promotes high blood pressure to a diet that lowers blood pressure (see Chapters 9 and 10).**

2. **Eliminate tobacco use, alcohol consumption, and excess caffeine (see Chapter 11).**
3. **Add a regular exercise regimen (see Chapter 12).**

Sometimes lifestyle modifications aren't enough to help lower your blood pressure. Many times, blood pressure medications are needed to help. Your health-care provider will talk with you about your options; I cover the medications used to treat high blood pressure in detail in Chapter 13.

REMEMBER

Medications aren't *substitutes* for lifestyle changes — they're *additions* to lifestyle changes.

Evaluating High Blood Pressure in Children, Women, and Older People

When evaluating and treating high blood pressure in children, pregnant women, and older people, some special factors come into play:

- Older people usually have other complicating medical conditions, are taking other medications, and may have significant side effects from the medications they're taking. Turn to Chapter 15 for more on treating high blood pressure in people 65 and older.
- More and more children and adolescents are being diagnosed with high blood pressure than ever before. I cover obesity and other factors related to high blood pressure in children in Chapter 16.
- Throughout pregnancy, a woman is making new hormones while her body undergoes major changes. The high blood pressure that occasionally develops as a direct complication of pregnancy can harm both a mother and her unborn baby (see Chapter 17).