

mineral density, a significant risk factor for fractures, particularly in elderly women. In one study of Englishwomen, those with the highest blood pressure lost bone density at nearly twice the rate of those in the lowest range. It is not clear whether this effect occurs in men or in non-Caucasian women.

Sexual Dysfunction

Sexual dysfunction is more common and more severe in men with hypertension, and particularly in smokers, than it is in the general population. Many of the drugs used to treat hypertension are thought to cause impotence as a side effect; in these cases, it is reversible when the drugs are stopped. More recent evidence is suggesting, however, that the disease process that causes hypertension itself is the major cause of erectile dysfunction in these men. Newer anti-hypertensive agents, including angiotensin-converting enzyme (ACE) inhibitors and angiotensin-receptor blockers (ARBs), are less associated with erectile dysfunction. In fact, ARBs, such as losartan (Cozaar), may be particularly effective in restoring erectile function in men with high blood pressure who suffer from impotence. Sildenafil (Viagra) was reported to be successful in achieving erections in almost two-thirds of patients with controlled high blood pressure, but at this time its safety for men with uncontrolled hypertension is unclear.

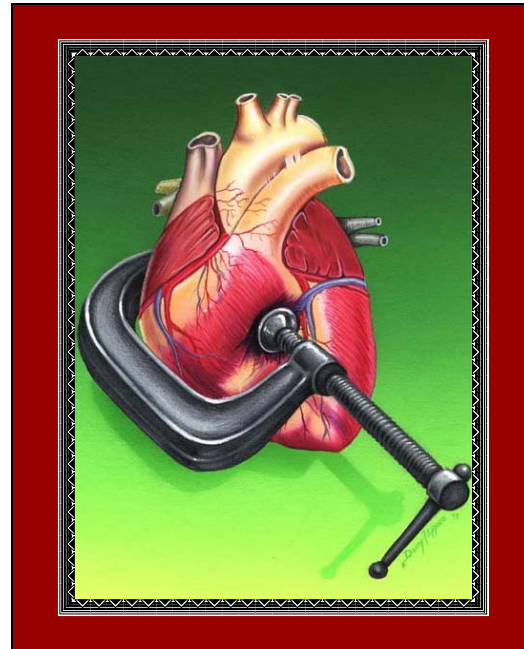


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HYPERTENSION RISK FACTORS & COMPLICATIONS



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The RISK FACTORS & COMPLICATIONS of HYPERTENSION

Risk Factors

Age is the major risk factor of hypertension. Blood pressure increases with age in both men and women, and in fact, the lifetime risk for hypertension is nearly 90%. More men than women have hypertension until age 55. After that the ratio reverses, and over time women gain on men and finally overtake them. In all, mortality rates from hypertension are higher in women than in men.

Ethnic groups when compared to Caucasians have 1.8 times the rate of fatal stroke, 1.5 times the risk for fatal heart disease, and 4.2 times the rates of end-stage kidney disease. In general, about 36% of African men and women have hypertension; it may account for over 40% of all deaths in this group.

In fact, the prevalence of high blood pressure among Africans is among the highest in the world. The rates of hypertension in Hispanics are about equivalent (ranging from 24% to 27%). A number of theories have addressed the reasons for this difference:

- ⌘ Some studies have indicated that Africans may have lower levels of nitric oxide and higher levels of a peptide called endothelin-1 (ET-1) than Caucasians. (Nitric oxide keeps blood vessels flexible and open and ET-1 narrows blood vessels.)
- ⌘ African have a higher risk for an impaired response to angiotensin (Ang II), which is a peptide important in regulating salt and water balances. (Africans are more likely to be salt-sensitive than other groups.)
- ⌘ Social and income disparities and dietary issues may explain many of the differences in blood pressure rates observed between



ethnic groups. For example, while Africans in the west have a disproportionately high rate of hypertension, one study in rural African villages, where diets are rich in fish, reported only a 3% rate of high blood pressure among inhabitants.

In any case, hypertension appears to be dangerously under-treated in major minority groups Inadequately controlled hypertension is the major factor for the higher mortality rate from heart disease among African Americans.

Weight

Obesity. About one-third of patients with high blood pressure are overweight. Even moderately obese adults have double the risk of hypertension than people with normal weights. In fact, the increase in blood pressure with age may be due primarily to weight gain. Children and adolescents who are obese are at greater risk for high blood pressure when they reach adulthood.

Thinness. Interestingly, thin people with hypertension are at higher risk for heart attacks and stroke than obese people with high blood pressure. Experts surmise that thin people with hypertension are likely to have conditions such as an enlarged heart or stiff arteries that cause the high blood pressure and also pose greater dangers to health.

Low Birth Weight. Low birth weight, particularly in girls, has been associated with high blood pressure in both childhood and adulthood. (One study suggested that breast-feeding these babies may help reduce this risk.) Another

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study reported high levels of stress hormones in babies with low birth weight, which could increase the risk for high blood pressure later on. Low birth weight is also associated with subsequent obesity, a major contributor to hypertension.



Diabetes. Up to 75% of cardiovascular problems in people with diabetes may be due to hypertension. There are strong biologic links between insulin resistance (with or without diabetes) and hypertension. And, it is not altogether clear which condition causes the other. Some experts believe angiotensin may be the common factor linking diabetes and high blood pressure. This natural chemical not only influences all aspects of blood pressure control but it also interferes with insulin's normal metabolic signaling. Studies are now suggesting the people with diabetes need to control their blood pressure to 130/85 mm Hg or lower to protect the heart and help prevent other complications common to both diseases. Lowering systolic pressure may be particularly important for diabetics.

Effects of Family

Family History and Genetics. Some experts now believe that essential hypertension may be inherited in 30% to 60% of cases. According to one study, being a brother or sister of someone with premature coronary artery disease is a greater risk factor for hypertension than having a parent with the disease. A family history of heart disease is considered to be a major risk factor for high blood pressure in younger adults (under 65).

Emotional Factors

People who are anxious or depressed may have over twice the risk for high blood pressure than those without these problems.

Mental Stress. Recent evidence confirms the association between stress and high blood pressure. In one 20-year study, for example, men who periodically measured highest on the stress scale were twice as likely to have high blood pressure as those with normal stress. The effects of stress on blood pressure in women were less clear. Job stress and lack of career success have been specifically linked to high blood pressure in both men and women.

Anxiety. Studies suggest that anxiety is risk factor for hypertension, particularly in women.

Depression. There is increasing evidence that depression has actual physiological effects that impair the heart, as well as contributing to destructive behaviors, such as weight gain, smoking, or alcohol abuse.

Seasonal Factors

Seasonal changes may influence variations in blood pressure, with hypertension increasing during cold months and declining during the summer, particularly in smokers. While cold may narrow blood vessels, lack of light has also been associated with higher blood pressure.

Complications

Hypertension places stress on a number of organs (called target organs), including the kidney, eyes, and heart, causing them to deteriorate over time. High blood pressure was directly responsi-



ble for nearly 44,619 American deaths in 2000 and was listed as the primary or contributing cause of death in an estimated 118,000 cases. The death rate from high blood pressure is estimated to have increased by 21.3% between 1990 and 2000, with the actual numbers increasing by nearly 50%. High blood pressure contributes to 75% of all strokes and heart attacks. It is particularly deadly in Africans.

Stroke

About two-thirds of people who suffer a first stroke have moderate elevated blood pressure (160/95 mm Hg) or above. Hypertensive people have up to ten times the normal risk of stroke, depending on the severity of the blood pressure. Hypertension is also an important cause of so-called silent cerebral infarcts, which are blockages in the blood vessels in the brain that may predict major stroke or progression to dementia over time.

Mental Problems and Dementia

Uncontrolled chronic high blood pressure is also associated with reduced short-term memory and mental abilities. Isolated systolic hypertension may pose a particular risk for complications in the brain. Fortunately, controlling blood pressure with medications can reduce or even prevent memory loss and mental decline due to hypertension. (Anti-hypertensive drugs may even help protect against Alzheimer's disease in people with genetic susceptibility to this disease.)

Heart Disease

Among older patients, high blood pressure is the major risk factor for heart disease. Two studies in 2001 further reported that high blood pressure in young men poses a higher risk for heart disease later on, and in one of the studies, fewer years of life.

Heart Attack. About half of people who suffer

their first heart attack have moderate hypertension (160/95 mm Hg) or greater. High blood pressure increases the risk for a heart attack by up to five times, depending on the severity of the hypertension.

Heart Failure. Hypertension precedes congestive heart failure in between 75% and 90% of heart failure cases.

Kidney Disease

Diabetes and Nephropathy (Kidney Disease). High blood pressure is strongly associated with diabetic nephropathy. In fact, patients with type 2 diabetes who show early signs of nephropathy already have hypertension.

End-Stage Kidney Disease. High blood pressure causes 30% of all cases of end-stage kidney disease (medically referred to as end-stage renal disease or ESRD). Only diabetes leads to more cases of kidney failure. In fact, although anti-hypertensive therapy has reduced the incidence of stroke and heart attack, the incidence in ESRD has almost doubled in the last decade.

Kidney Cancer. Men with high blood pressure may also have a higher risk of kidney cancer.

Effect on the Eyes

High blood pressure can injure the eyes, causing a condition called retinopathy.

Bone Loss

Hypertension also increases the elimination of calcium in urine that may lead to loss of bone

