

IRIDOLOGY

HYPERTENSION

(High Blood Pressure)

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IMPORTANT

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Introduction

Hypertension, or high blood pressure, is a common disorder, often without symptoms and marked by high blood pressure persistently exceeding 140/90.

Essential hypertension, also called primary hypertension, is the most frequent kind, and it has no one known cause and is often the only disorder. However, the risk of hypertension is increased by overweight, a high sodium level in the blood, a high cholesterol level, and a family history of high blood pressure, stroke, and/or heart disease. High blood pressure is always a health risk, especially for developing heart disease.

Secondary hypertension is high blood pressure linked to diseases of the kidneys, lungs, glands, and vessels.

Malignant hypertension, also called accelerated hypertension, is marked by a diastolic pressure higher than 120, severe headaches, blurred vision and confusion, and may result in a heart attack or stroke. Malignant hypertension is the most life-threatening form of hypertension, and is marked by very high blood pressure that may damage the tissues of small vessels, the brain, the eyes (especially the retinas), heart, and kidneys. It may be caused by a variety of factors, such as stress, a family history of the disease, being overweight, tobacco, birth control and other hormone based pills, high intake of table salt (sodium chloride), an inactive life-style, and general aging. Many patients with this condition also have signs of low blood potassium, blood that is alkaline, and the release of high levels of an adrenal gland hormone (aldosterone).

Known causes of hypertension include adrenal problems, over-active thyroid gland, certain pregnancies, and kidney disorders. Hypertension is more common in men than in women, and is

twice as great in blacks as in whites. Persons with mild or moderate hypertension may have no symptoms, or they may experience headaches, especially on rising, ringing in the ears, lightheadness, easy fatigability, and the feeling that their heart is beating wildly. With sustained hypertension, artery walls become thickened and resistant to blood flow, and, as a result, the blood supply to the heart may be reduced, thus causing angina or heart attack. High blood pressure is often accompanied by anxiety attacks, rapid or irregular heart beat, profuse sweating, pallor, nausea, and, in some cases, fluid in the lungs.

Drugs used to treat hypertension include diuretics, as thiazide derivatives; vasodilators, as hydralazine and prazosin; sympathetic nervous system (SNS) depressants, as rauwolfia alkaloids; SNS inhibitors, as guanethidine and methyldopa; and ganglionic blocking agents, as clonidine and propranolol. Patients with high blood pressure are advised to follow a low-sodium, low-saturated-fat diet, to reduce calories, to control obesity, to exercise, to avoid stress, and to take adequate rest.

Disease Process

Hypertension is a disease of the vascular regulatory system, in which the mechanisms that usually control arterial pressure within a certain (normal) range are altered/malfunctioning. The central nervous system and renal pressor system, as well as extracellular volume, are the predominant mechanisms that control arterial pressure. Thus, some combination of factors effects changes in one or more of these systems, ultimately leading to increased cardiac output and increased peripheral resistance. This elevates the arterial pressure, reducing cerebral perfusion and the cerebral oxygen supply, increasing the myocardial workload and oxygen consumption, and decreasing the blood flow to/and oxygenation of the kidneys.

Potential Complications

Complications of hypertension include atherosclerotic disease, left ventricular failure, cerebrovascular insufficiency with or without stroke, retinal hemorrhage, and renal failure. When the pathologic process is accelerated, malignant hypertension results, the blood pressure becomes extremely high, and nephrosclerosis, encephalopathy, and cardiac failure rapidly ensue.

Treatment

- Treatment of underlying disease in secondary hypertension
- Systematic exercise
- Restriction of dietary sodium
- Decreased alcohol intake
- Quitting smoking, stress reduction
- Weight loss, if indicated
- Regular monitoring of blood pressure
- Adopting an appropriate dietary regime
- Taking appropriate medications/supplements
- Monitoring for potential long-term complications

How to Take a Traditional Blood Pressure Measurement

Blood pressure readings can be self-taken or taken by another, and are measured as follows:

- To measure blood pressure, there will be a measuring device (Sphygmomanometer - mercury based or aneroid type) and a stethoscope (some measuring devices have the stethoscope 'built-in').
- Blood pressure is measured in terms of millimetres of mercury (mm Hg). The reading is made by either observing a column of mercury or a dial on



the measuring device.

- The cuff, containing the bladder, of the measuring device is carefully wrapped around the upper arm. The cuff should be placed with the bladder part covering as much of the inside of the upper arm as possible.
- The stethoscope is placed (if not built in) on the inside of the upper arm, just above the elbow joint.
- The measuring device is pumped, and the cuff bladder inflates and restricts the blood vessels in the upper arm. The measuring device is pumped until the pulse beat detected by the stethoscope disappears (e.g. ≤ 160 mm Hg).
- The measuring device is slowly deflated, releasing the air out of the cuff bladder, at a rate of 2 to 3mm Hg per second (or heartbeat).
- When the deflation reaches a certain point the blood begins to rush back into the closed off blood vessels. This flow will cause a beat or thumping sound to be detected through the stethoscope. This is known as 'Korotkoff Phase 1'. This sound signals the point at which the body's blood pressure overcomes the cuff resistance. This is the marker for the SYSTOLIC blood pressure reading. The reading (e.g. 130mm Hg) is taken by observing the mercury level or the dial on the measuring device.
- The deflation process continues, and the beat continues to be detected through the stethoscope. Precisely at the point when the beat stops, known as 'Korotkoff Phase 5', again the mercury level or dial reading is noted. This reading (e.g. 80mm Hg) represents the DIASTOLIC blood pressure.
- The two-figures 130mm Hg and 80mm Hg are combined into the final result, 130/80mm Hg. This is then read as, 'one-thirty-over-eighty'.
- The measuring device-cuff is allowed to deflate completely, and is removed from the upper arm.



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Interpretation

The following tables can be used to interpret the measurements:

CLASSIFICATION OF BLOOD PRESSURE IN ADULTS 18 YEARS AND OLDER		
Blood pressure range mm Hg (millimetres of mercury)	Category	Follow up by Doctor
(1) Diastolic Blood Pressure		
Less than 85mm Hg	Normal	Recheck within 2 years
85 - 89mm Hg	High normal	Recheck within 1 year
90 - 104mm Hg	Mild hypertension	Confirm within 2 months
105 - 114mm Hg	Moderate hypertension	Evaluate or refer promptly to source of care within 2 weeks
Greater than 115mm Hg	Severe hypertension	Evaluate or refer immediately to source of care

CLASSIFICATION OF BLOOD PRESSURE IN ADULTS 18 YEARS AND OLDER		
Blood pressure range mm Hg (millimetres of mercury)	Category	Follow up by Doctor
(2) Systolic Blood Pressure, when Diastolic is less than 90mm Hg		
Less than 140mm Hg	Normal	Recheck within 2 years
140 - 159mm Hg	Borderline isolated Systolic Hypertension	If Systolic is in 140 - 199mm Hg range, confirm within 2 months. If Systolic is at or above 200mm Hg, evaluate or refer promptly to source of care within 2 weeks.
Greater than 160mm Hg	Isolated Systolic Hypertension	

CLASSIFICATION OF BLOOD PRESSURE IN CHILDREN AND ADOLESCENTS	
Note: The following levels of blood pressure have been proposed as the upper limits of normal.	
Age in years	Blood Pressure in millimetres of mercury (mm Hg)
15 - 18 years	135/90mm Hg
11 - 14 years	125/85mm Hg
6 - 10 years	120/80mm Hg
Below 6 years	110/75mm Hg

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Automatic Measuring Devices

Many, modern blood-pressure measuring devices are fully automatic, and the only thing that the patient has to do is correctly fit the cuff. With an automatic device, the cuff is typically fitted around the wrist (picture right) or the upper arm.



