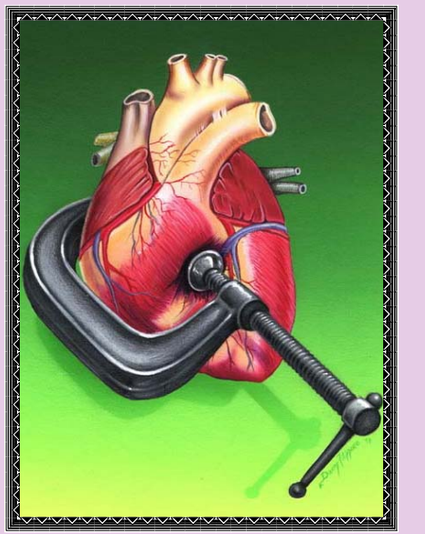
Blood Pressure in Children

A child's blood pressure is normally much lower than an adult's. Children are at risk for hypertension if they exceed the following levels:

- Ages three to five: 116/76 mm Hg
- Ages six to nine: 122/78 mm Hg
- Ages 10 to 12: 126/82 mm Hg
- Ages 13 to 15: 136/86 mm Hg

January 2009

HYPERTENSION
An Introduction



MANSOOR MEDICAL
FOR WOMEN'S HEALTH

DR. RAYMOND MANSOOR
B Sc , MB BS , DM (OG, UWI), FACOG
OBSTETRICIAN & GYNAECOLOGIST

TANNER STREET & CORN ALLEY
P.O. BOX W1361
ST. JOHN'S, ANTIGUA
TEL/FAX: (268) 463 2232/3
info@mansoormedical.org
www.mansoormedical.org

An Introduction to HYPERTENSION

Introduction

High blood pressure, also called hypertension, is, simply, elevated pressure of the blood in the arteries. Hypertension results from two major factors, which can be present independently or together:

- *The heart pumps blood with excessive force.*
- *The body's smaller blood vessels (known as the arterioles) narrow, so that blood flow exerts more pressure against the vessels' walls.*

Although the body can tolerate increased blood pressure for months and even years, eventually the heart may enlarge (a condition called hypertrophy), which is a major factor in heart failure . Such pressure can also injure blood vessels in the heart, kidneys, the brain, and the eyes.

Two numbers are used to describe blood pressure: the systolic pressure (the higher and first number) and the diastolic pressure (the lower and second number). Health dangers from blood pressure may vary among different age groups and depending on whether systolic or diastolic pressure (or both) is elevated. A third measurement, pulse pressure, is becoming important as an indicator of severity.

Blood pressure is measured in millimeters of mercury (mm Hg). For example, excellent blood pressure would be less than 120/80 mm Hg (systolic/diastolic). Blood pressure is now categorized as optimal, pre-hypertensive (formerly normal to high-normal), and hypertensive (which is further divided or Stage 1 and 2, according to severity). [See Table: Blood Pressure Ranges.]

Some expert groups recommend that any blood pressure above normal should be treated. Some experts are concerned, however, that such guidelines may unnecessarily increase the use of anti-hypertensive drugs.

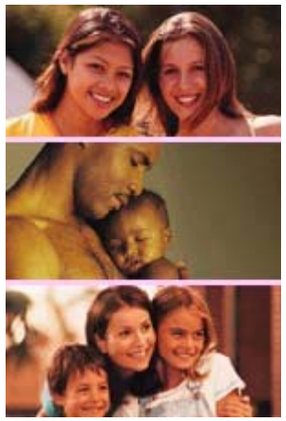
***Systolic Blood Pressure**. The systolic pressure (the first and higher number) is the force that blood exerts on the artery walls as the heart contracts to pump out the blood. High systolic pressure is now known to be a greater risk factor than diastolic pressure for heart, kidney, and circulatory complications and for*

HYPERTENSION: An intro

death, particularly in middle-aged and elderly adults. The wider the spread between the systolic and diastolic measurements, the greater the danger.

In fact, elevated systolic pressure may pose a significant danger for heart events and stroke events even when diastolic is normal -- a condition called isolated systolic hypertension. Isolated systolic hypertension is the most common form of hypertension in people older than fifty. In one study it comprised 87% of hypertension cases in people between ages 50 and 59.

***Diastolic Blood Pressure**. The diastolic pressure (the lower and second number) is the measurement of force as the heart relaxes to allow the blood to flow into the heart. High diastolic pressure is a strong predictor of heart attack and stroke in young adults. [See Blood Pressure Ranges, below.]*



***Pulse Pressure**. Pulse pressure is the difference between the systolic and the diastolic readings. It appears to be an indicator of stiffness and inflammation in the blood-vessel walls. The greater the difference between systolic and diastolic numbers, the stiffer and more injured the vessels are thought to be. Although not yet used by physicians to determine treatment, evidence is suggesting that it may prove to be a strong predictor of heart problems, particularly in older adults. Some studies suggest that in people over 45 years old, every 10-mm Hg increase in pulse pressure increases the risk for stroke increases by 11%, cardiovascular disease by 10%, and overall mortality by 16%. (In younger adults the risks are even higher.)*

Hypertension Categories

Some experts categorize hypertension into the following types:

***Essential Hypertension**. Essential hypertension is also known as primary or idiopathic hypertension. About 90% of all high blood pressure cases are this type. The causes of essential hypertension are unknown but are certainly based on complex processes in all major organs and systems, including the heart, blood vessels, nerves, hormones, and the kidneys.*

***Secondary Hypertension**. Secondary hypertension comprises about 5% of high blood pressure cases. In this condition, the cause has been identified.*

***Isolated Systolic Hypertension**. This occurs when systolic hypertension is over 160 mm Hg but diastolic pressure is normal. It is related to arteriosclerosis (hardening of the arteries).*

***Pregnancy Induced Hypertension**. This condition occurs during pregnancy if blood pressure increases by more than 15 mm Hg above normal.*

***White Coat Hypertension**. This form of hypertension is elevated blood pressure that occurs only during a visit to the doctor's office, but not at home. It is a factor in about 20% of patients with mild hypertension. Although previously considered a relatively harmless condition, research is now suggesting that white-coat hypertension shares certain features with essential hypertension. In fact, studies have even suggested that white-coat hypertension actually may pose a risk for future heart problems, although the increased danger appears to be small compared with the risk in those with steady mild hypertension.*

Blood Pressure Ranges

Blood Pressure Category	**Ranges for Most Adults (systolic/diastolic)**
Optimal Blood Pressure (systolic/diastolic)	Systolic below 120 mm Hg Diastolic below 80 mm Hg
Pre-hypertension (Formerly Normal to High-Normal Blood Pressure)	Systolic 120 to 139 mm Hg Diastolic 80 to 89 mm Hg (NOTE: *139/89 or below should be the minimum goal for everyone. People with diabetes should strive for 130/80 or less.)*
Mild Hypertension (Stage 1)	Systolic 140 to 159 mm Hg Diastolic 90 to 99 mm Hg
Moderate to Severe Hypertension (Stage 2)	Systolic over 160 mm Hg and/or Diastolic over 100 mm Hg

Note: If one of the measurements is in a higher category than the other, the higher measurement is usually used to determine the stage. For example, if systolic pressure is 165 (Stage 2) and diastolic is 92 (Stage 1), the patient would still be diagnosed with Stage 2 hypertension. It should be strongly noted that a high systolic pressure compared to a normal or low diastolic pressure should be a major focus of concern in most adults.