

Visualizing and Predicting Heart Diseases with an Interactive Dash Board

Dashboard Showing Different Types Of Visuals

Blood Pressure Stages



STAGE	SYSTOLIC	DIASTOLIC
NORMAL	LESS THAN 120	LESS THAN 80
ELEVATED	120 – 129	LESS THAN 80
HYPERTENSION STAGE I	130 – 139	80 – 89
HYPERTENSION STAGE II	140 OR HIGHER	90 OR HIGHER
HYPERTENSIVE CRISIS	HIGHER THAN 180	HIGHER THAN 120

Source: American Heart Association

Forbes HEALTH

Normal Blood Pressure

Elevated Blood Pressure

Higher blood pressure and a higher risk of developing hypertension are indicated by readings between 120 and 129 systolic and less than 80 diastolic.

According to Dr. Desai, the workload on the heart and arteries increases as blood pressure rises. "This causes the heart muscle to thicken (hypertrophy), which might cause heart failure. Additionally, it causes microtears in the arterial wall, which deposit cholesterol (atherosclerosis). This causes the vessel to narrow and the blood pressure to rise even more.

Hypertension Stage I

A systolic value between 130 and 139 and a diastolic reading between 80 and 89 indicate Stage I hypertension.

According to Dr. Wong, while doctors initially recommend a healthier lifestyle—eating more vegetables and whole grains, using less salt, increasing physical activity, and managing stress—if blood pressure falls in this range on numerous readings over time in people with other cardiovascular risk factors, medications may be required.

According to the 2017 ACC/AHA guidelines, Dr. Wong continues, persons with Stage I hypertension should start thinking about taking medication three to six months after beginning nonpharmacologic therapy.

The possibility of Atherosclerosis is a condition where the arteries become thicker or harder due to a buildup of plaque in the artery's inner lining.

1. **Age:** Age of subject
2. **Sex:** Gender of subject: 0 = female 1 = male
3. **Chest-pain type:** Type of chest-pain experienced by the individual:

- 1 Typical angina
- 2 Atypical angina
- 3 Non-angina pain
- 4 Asymptomatic angina

4. **Resting Blood Pressure:** Resting blood pressure in mm Hg

5. **Serum Cholesterol:** Serum cholesterol in mg/dl

6. **Fasting Blood Sugar:** Fasting blood sugar level relative to 120 mg/dl: 0 = fasting blood sugar \leq 120 mg/dl
1 = fasting blood sugar $>$ 120 mg/dl

Resting ECG: Resting electrocardiographic results
0 = normal
1 = ST-T wave abnormality
2 = left ventricle hypertrophy

7. **Max Heart Rate Achieved:** Max heart rate of subject

8. **Exercise Induced Angina:**
0 = no 1 = yes

9. **ST Depression Induced by Exercise Relative to Rest:** ST Depression of subject

10. **Peak Exercise ST Segment:**
1 = Up-sloping
2 = Flat
3 = Down-sloping

11. **Number of Major Vessels (0-3) Visible on Fluoroscopy:**
Number of visible vessels under fluoro

12. **Thal:** Form of thalassemia: [3](#)
3 = normal
6 = fixed defect
7 = reversible defect.