

Silent Killer

High Blood Pressure (Hypertension)

Silent Killer

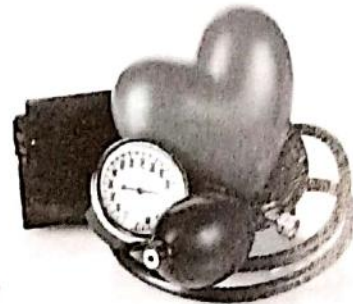


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INTRODUCTION:-

Hypertension is the most common disease in today's world. It is referred as silent Killer. It has grown into a modern epidemic. Hypertension is most prevalent chronic disease in India. It is common in adults and endemic in the older adult population. Hypertension is a major contributor to cardiovascular mortality and morbidity. Although there is a simple test to diagnose hypertension and relatively inexpensive drugs to treat it, the disease is often under diagnosed and treated

WHAT IS HIGH BLOOD PRESSURE:-



Blood pressure is a measure of how hard the blood pushes against the walls of your arteries as it moves through your body. It's normal for blood pressure to go up and down throughout the day, but if it stays up, you have high blood pressure. Another name for high blood pressure is hypertension.

When blood pressure is high, it starts to damage the blood vessels, heart, kidneys and brain. This can lead to heart attack, stroke, kidney damage and other problems. High blood pressure is called a "silent killer" because it doesn't usually cause florid symptoms while it is causing this damage.

Very few patients gets symptoms of blood pressure so the myth of having headache with increased BP is not always correct.

Your blood pressure consists of two numbers: systolic and diastolic. Someone with a systolic pressure 120 mmHg and diastolic pressure of 80mmHg has a blood pressure of 120/80 or "120 over 80".

- The systolic number shows how hard the blood pushes when the heart is pumping.
- The diastolic number shows how hard the blood pushes between heart, when the heart is relaxed and filling with blood.

Hypertension can also occur in children and should be taken seriously.

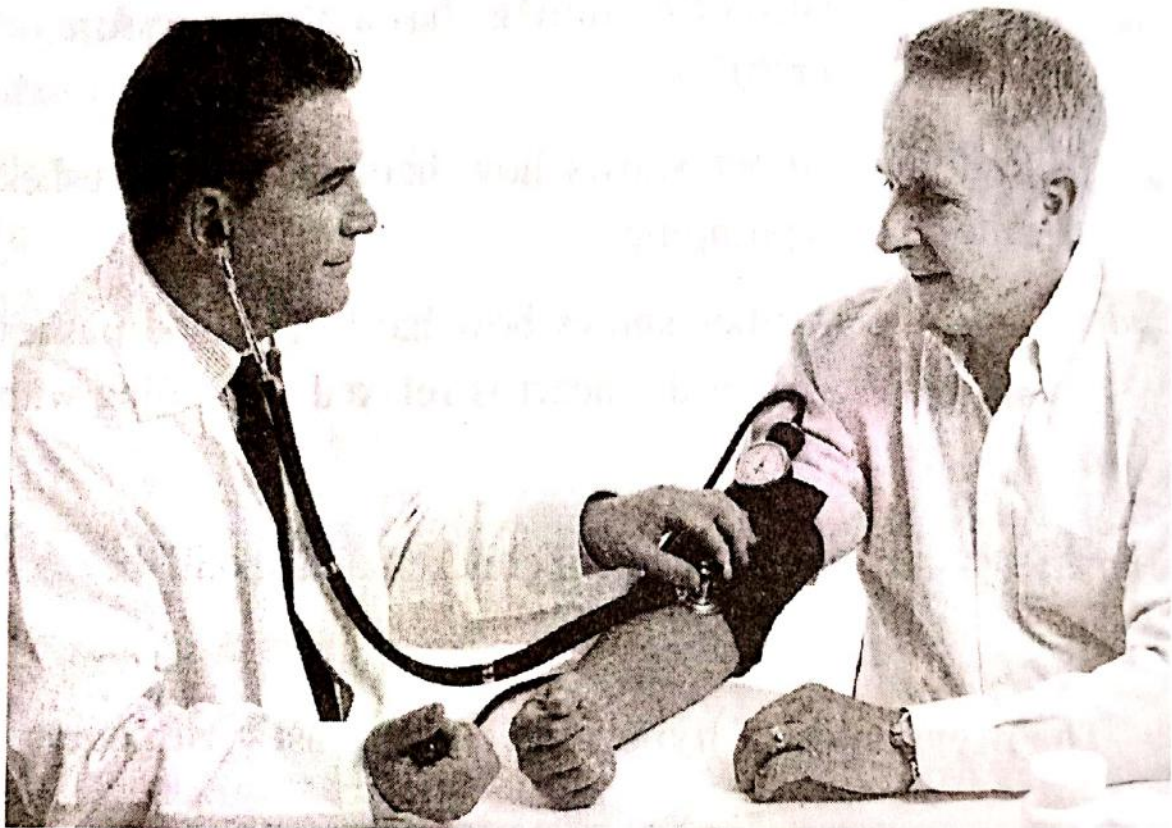
The prevalence of hypertension increases with age.

AGE	%
18-29	4
30-39	11
40-49	21
50-59	44
60-69	54
70-79	64
80+	65

MEASUREMENT OF BLOOD PRESSURE

Blood pressure is measured by an instrument called sphygmomanometer.

TECHNIQUE

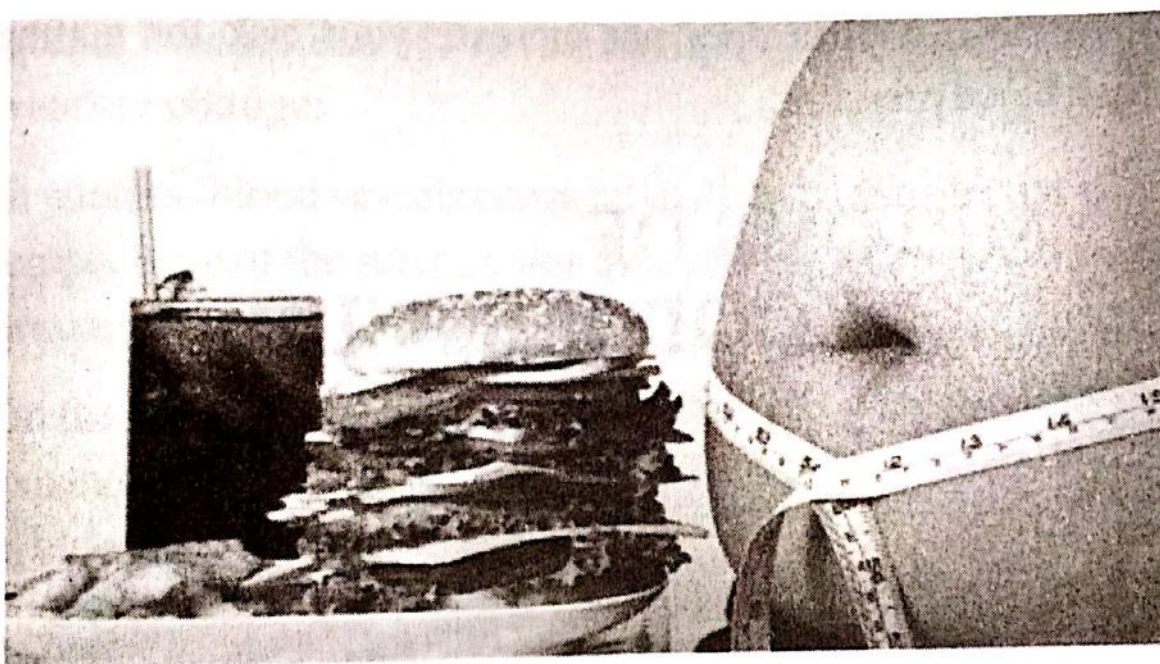


BP cuff should be tied two finger above the cubital fossa/elbow joint. Cuff should be inflated and diaphragm of stethoscope should be placed below the cuff medially. When the cuff is deflated, point where the sound start marks the systolic BP and where it ends marks diastolic BP.

Before measuring the blood pressure patient should be seated or lying comfortably for 5 minute and history of following must be told by patient.

- Tea/Coffee intake.
- Smoking.
- Emotional stress.
- Physical Exertion

RISK FACTORS FOR HIGH BLOOD PRESSURE:-



- 1) Over weight.
- 2) A family history of high blood pressure.
- 3) Eating a lot of sodium(salt).
- 4) Drinking more than 2 alcoholic drinks a day for men or more than 1 alcoholic drink a day for women.
- 5) Lack of exercise or physical activity.
- 6) Race. African Americans are more likely to get high blood

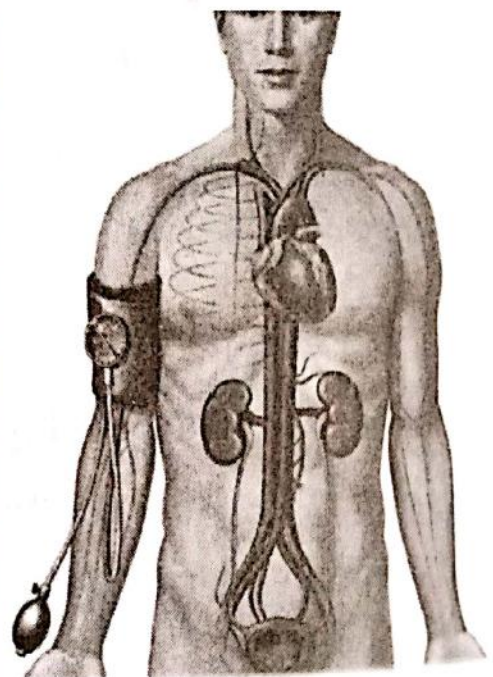
pressure, often have more severe high blood pressure, and more likely to get the condition at an earlier age than others. Why they are at greater risk is not known.

OTHER POSSIBLE RISK FACTORS INCLUDE:

- Low intake of potassium, magnesium and calcium.
- Sleep-disordered breathing.
- Long-term use of pain killer medicines like naproxen or ibuprofen. Aspirin does not increase your risk for getting high blood pressure.

SYMPTOMS OF BLOOD PRESSURE:-

- Pulsatile Headache.
- Impairment in vision.
- Disturbed sleep.
- Loss of concentration in work.
- Heavy breathing.
- Nausea and vomiting.
- Redness in eye.
- Palpitation.



These symptoms can also be caused by dangerously high blood pressure called malignant high blood pressure

FLUCTUATION IN BLOOD PRESSURE DUE TO CHANGE IN WEATHER

A large study of more than 40,000 people over almost a decade convincingly proved that climate changes have a direct impact on blood pressure. In general, blood pressure is better in the summer and worse in the winter, regardless of the climate in which you live.

Actual Mechanism of fluctuation in blood pressure due to weather change:

In winters, blood vessels constrict (narrow) due to decrease in temperature of the surrounding thus causing increase in blood pressure.

On the contrary, In summers, blood vessels dilate (widens or expand), due to increase in temperature thus causing decrease in blood pressure.

- So patient should consult their doctor every time when there is change in weather so that medicine can be altered accordingly.

MANAGEMENT:

- Lifestyle Modification.
- Dietary Modification.
- Primary and Secondary Prevention of hypertension.

LIFESTYLE CHANGES:

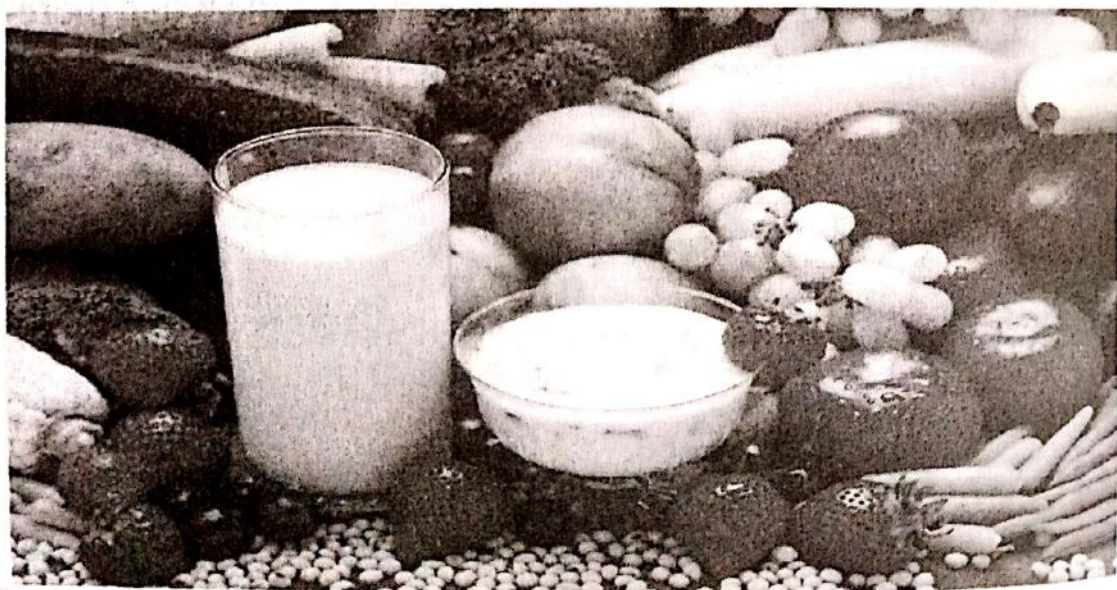
Healthy lifestyle changes are an important first step for lowering blood pressure. Current guidelines recommend that people should

Exercise at least 30 minutes a day.

- Maintain normal weight.
- Reduce sodium (salt) intake.
- Increase potassium intake.
- Limit alcohol consumption to no more than one or two drinks a day.
- Consume a diet rich in fruits, vegetables, and low-fat dairy products while reducing total and saturated fat intake.
- Quit smoking.

DASH DIET:

A diet that is effective in lowering blood pressure is called Dietary Approaches to stop Hypertension (DASH).



DASH DIET

RECOMMENDATIONS:

- Limit sodium (salt) intake to no more than 2-3 gm a day.
- Reduce saturated fat to no more than 6% of daily calories and total fat to 27% of daily calories.
- When choosing fats, select monounsaturated oils, such as olive or canola oils.
- Choose whole grains over white flour.
- Choose fresh fruits and vegetables every day. Many of these foods are rich in potassium, fiber, or both, possibly helping lower blood pressure.

Include nuts, seeds, or legumes (dried beans or peas) daily.

- Choose modest amounts of protein. Fish, skinless poultry, and soy products are the best protein sources.
- Other daily nutrient goals in the DASH diet include limiting carbohydrates to 55% of daily calories and dietary cholesterol to 150 mg. Patients should try to get at least 30 gm of daily fiber.

RESTRICTING SALT AND INCREASING POTASSIUM

NOTE:- KIDNEY PATIENTS SHOULD NOT TAKE POTASSIUM DIET AND SHOULD MONITOR THEIR POTASSIUM LEVELS FREQUENTLY

Some sodium (salt) is necessary for health, but the amount is vastly lower than that found in the average American diet. High salt intake is associated with high blood pressure. It is a good idea for everyone to restrict their salt intake to less than 2-3 gm a day. Some people over age 50, or who have high blood pressure, may need to reduce sodium intake to less than 1-5 gm daily. This lowering of blood pressure may also help protect against heart failure and coronary heart disease.

Some people (especially African-Americans, older adults, people with diabetes, overweight people, and people with a family history of hypertension) are "salt sensitive," which means their blood pressure responds much more to salt than other people. People with salt sensitivity have a higher than average risk of developing high blood pressure as well as other heart problems.

Salt substitutes, such as Nusalts and Mrs. Dash, (which contain mixtures of potassium, sodium, and magnesium) are available, but they can be risky for people with kidney disease or those who take blood pressure medication that causes potassium retention.

Potassium. A potassium-rich diet is important for reducing blood pressure. For people without risks for potassium excess, potassium-rich foods can help offset dietary salt intake. These foods include bananas, oranges, pears, tomatoes, dried peas and beans, nuts potatoes.

Some patients may need to take potassium supplements. However, people who takes medications that limit the kidney's ability to excrete potassium, such as ACE inhibitors, digoxin or potassium-sparing diuretics, should not take potassium supplementes and should be aware of excess potassium in the diet.

OTHER DIETARY CONSIDERATIONS:

Fiber. Increasing fiber in the diet may help blood pressure levels.

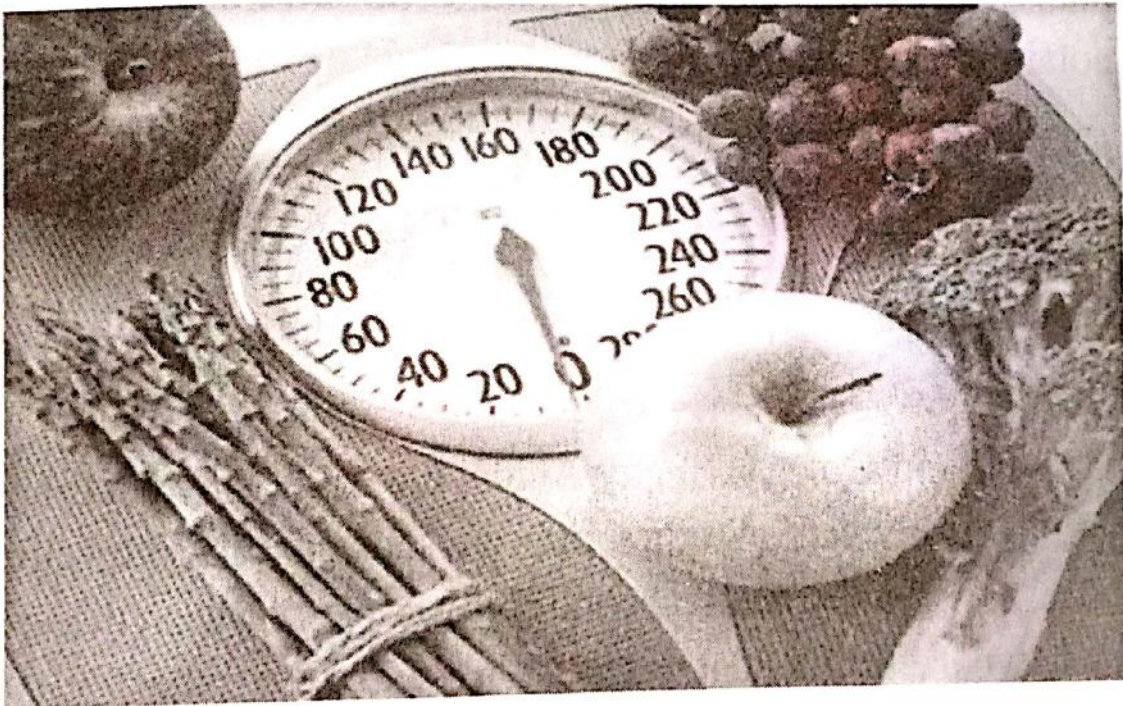
Fish Oil and Omega 3 Fatty Acids. Omega 3 fatty acids are found in oily fish. Studies indicate that they have specific benefits for many medical conditions , including heart disease and hypertension. They appear to help keep blood vessel flexible and may help protect the nervous system. Fatty acids are also available in supplements, but their long-term effects on blood pressure are unknown.

Calcium. Calcium regulates the tone of the smooth muscles lining blood vessels. Studies have found that people who have sufficient dietary calcium has lower blood pressure than

those who do not. Hypertension itself increases calcium loss from the body. The effects of extra calcium on blood pressure however, are mixed, with some even showing higher pressure.

PRIMARY AND SECONDARY PREVENTION OF HYPERTENSION:

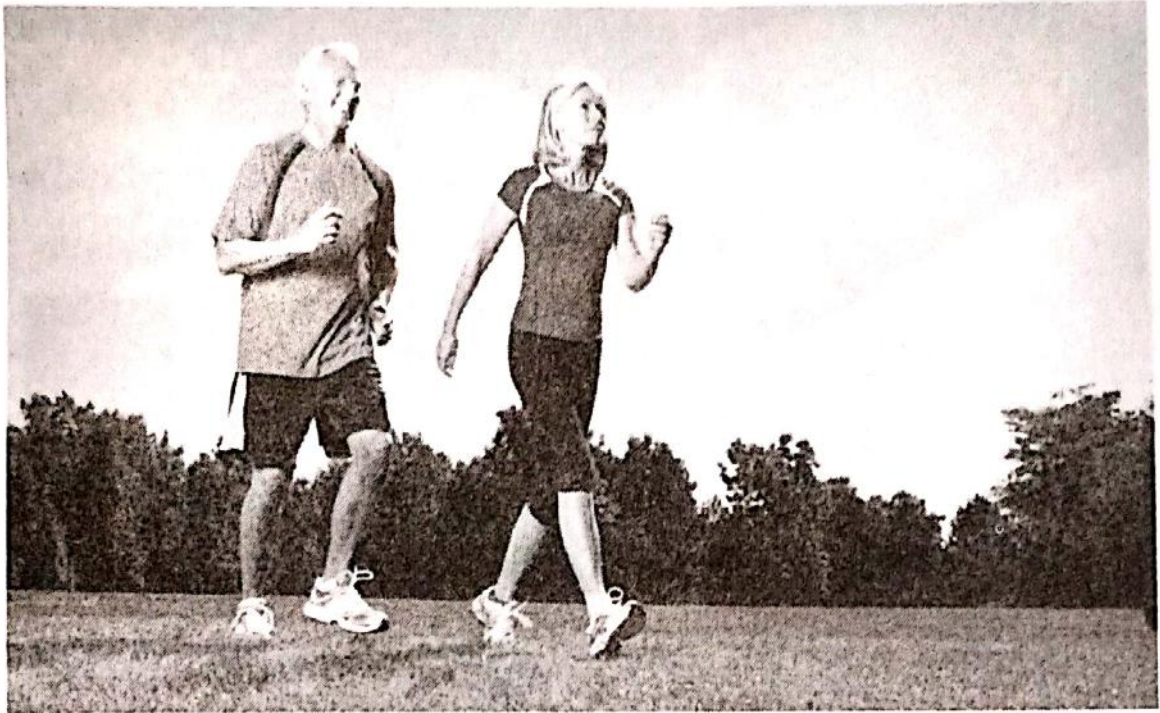
WEIGHT LOSS



Even modest weight loss in overweight people, particularly in the abdominal area, can lower blood pressure. Weight loss, especially when accompanied by salt restriction, may allow patients with hypertension to safely reduce or go off medications. The benefits of weight loss on blood pressure are long-lasting.

EXERCISE:

Regular exercise helps keep arteries elastic, even in older people, which in turn ensures blood flow and normal blood pressure. Doctors recommend at least 30 minutes of exercise on most days.



High-intensity exercise may not lower blood pressure as effectively as moderate intensity exercise and may be dangerous in people with hypertension older people and those with uncontrolled hypertension or other serious medical conditions should check with their doctors before starting an exercise program.

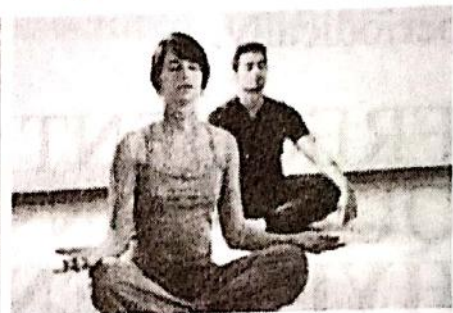
GOOD SLEEP HABITS:



Certain sleep disorders, especially sleep apnea, are associated with hypertension. Even chronic, insufficient sleep may raise blood pressure in patients with hypertension, placing them at increased risk of heart disease and death. Stress hormone levels increase with sleepiness, which can activate the sympathetic nervous system, a strong player in hypertension. Patients who have chronic insomnia or other severe sleep disturbances may want to consult a sleep expert. Patients with hypertension who are habitually poor sleepers should consider long-acting blood pressure medications to help counteract the increases in blood pressure that occurs in the early morning hours.

STRESS REDUCTION:

- Avoid Smoking.
- Avoid excess salt and alcohol.
- Stress reduction may help blood pressure control.
- Yoga and relaxation techniques such as meditation may be beneficial.
- Study of religious sculptures and attending religious congregations.



KEY POINTS:-

- The DASH diet focuses on foods that are high in calcium, potassium, and magnesium. These nutrients can lower blood pressure.
- Don't make big changes in your diet all at once. Make small changes and don't give up. As soon as those changes become habit, add a few more changes.
- You'll have more success if you make a plan that includes long-term and short-term goals as well as ideas for getting past barriers-things that might get in the way of changing your eating habits.
- Support from family and friends can go a long way toward

helping you find success in changing your habits. Don't be afraid to let family and friends know what you're trying to do. And ask for their help.

- In spite of all medications, role of lifestyle modifications, physical activity, stress reduction, Dash diet, plays a vital role in controlling hypertension.
- Regularity of taking medications and other lifestyle alteration is very important, so patient should take his/her medicines regularly and go for a routine check up periodically.

FREQUENTLY ASKED QUESTIONS ABOUT HYPERTENSION:

Q1. What Causes High Blood Pressure?

- While the cause of high blood pressure in most people remains unclear, a variety of conditions -- such as getting little or no exercise, poor diet, obesity, older age, and genetics -- can contribute to the development of hypertension.

Q2. What Is a Normal Blood Pressure?

- The Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure has classified blood pressure measurements into several categories:
- Normal blood pressure is systolic pressure less than 120

and diastolic pressure less than 80 mmHg.

- "Prehypertension" is systolic pressure of 120-139 or diastolic pressure of 80-89 mmHg.
- Stage 1 Hypertension is blood pressure greater than systolic pressure of 140-159 or diastolic pressure of 90-99 mmHg or greater.
- Stage 2 Hypertension is systolic pressure of 160 or greater or diastolic pressure of 100 or greater.

Q3. What Health Problems Are Associated With High Blood Pressure?

- Several potentially serious health conditions are linked to high blood pressure, including:
 - **Atherosclerosis:** a disease of the arteries caused by a buildup of plaque, or fatty material, on the inside walls of the blood vessels; hypertension contributes to this buildup by putting added stress and force on the artery walls.
 - **Heart Disease:** Heart failure (the heart is not strong enough to pump blood adequately), ischemic heart disease (the heart tissue doesn't get enough blood).
 - **Kidney Disease:** Hypertension can damage the blood vessels and filters in the kidneys, so that the kidneys cannot excrete waste properly.
 - **Stroke:** Hypertension can lead to stroke, either by contributing to the process of atherosclerosis (which can lead to blockages and/or clots), or by weakening the blood

vessel wall and causing it to rupture.

- Eye Disease: Hypertension can damage the very small blood vessels in the retina.

Q4. How Do I Know if I Have High Blood Pressure?

- High blood pressure often doesn't have any symptoms, so you usually don't feel it. For that reason, hypertension is usually diagnosed by a health care professional during a routine checkup. If you have a close relative with hypertension, or other risk factors, it is especially important to pay attention to your blood pressure reading.
- If your blood pressure is extremely high, you may have unusually strong headaches, chest pain, difficulty breathing, or poor exercise tolerance. If you have any of these symptoms, seek an evaluation immediately.

Q5. What Is the Treatment for High Blood Pressure?

- High blood pressure treatment usually involves making lifestyle changes and, if necessary, drug therapy.
- Lifestyle changes for high blood pressure include:
 - Losing weight.
 - Quitting Smoking.
 - Eating a healthy diet, such as the DASH diet, which is high in fruits, vegetables, lean protein and whole grains and low in salt and fat
 - Reducing the amount of salt in your diet

- Regular aerobic exercise (such as brisk walking)
- Limiting alcohol consumption.
- Seek treatment for sleep disordered breathing.
- Commonly prescribed high blood pressure drugs include ACE inhibitors, angiotensin receptor blockers, diuretics, beta-blockers, calcium channel blockers, and alpha-blockers (alpha-adrenergic antagonists).

Q6. What Are the Side Effects of High Blood Pressure Drugs?

- As is true with any medication, high blood pressure drugs have side effects. Among the most common are the following:
- Diuretics: headache, weakness, low potassium blood levels
- ACE inhibitors: dry and persistent cough, headache, diarrhea, high potassium blood levels.
- Angiotensin receptor blockers: fatigue, dizziness or fainting, diarrhea, high potassium blood levels
- Calcium channel blockers: dizziness, heart rhythm problems, ankle swelling
- Beta-blockers: dizziness or lightheadedness, decreased sexual ability, drowsiness, low heart rate, chest congestion.
- Alpha-blockers: dizziness, headache, pounding

heartbeat, nausea, weakness, weight gain

Q7. What Type of Diet Should I Follow if I Have High Blood Pressure?

- A healthy diet, such as the DASH (Dietary Approaches to Stop Hypertension) diet, is effective in helping to lower high blood pressure.
- The following steps can also help:
- Eating more fruits, vegetables, and low-fat dairy foods.
- Eating less of foods that are high in saturated fat and cholesterol, such as fried foods.
- Eating more whole grain products, fish, poultry, and nuts
- Eating less red meat and sweets.
- Eating foods that are high in magnesium, potassium, and calcium.
- Eating foods with less sodium.

Q8. When Should I Call My Doctor About High Blood Pressure?

- If you are diagnosed with high blood pressure, it's important to see your doctor on a regular basis. He or she can answer your questions during these visits.
- If you aren't responding to the prescribed treatment and your blood pressure is still high

- If you are having any side effects from the blood pressure medication; if this happens, your doctor may wish to adjust the dosage of the medication or put you on another medication.

Q9. Are There any Drugs that Cause High Blood Pressure?

- Some drugs that you take for another condition may increase blood pressure. These include pain killers like NSAIDS like ibuprofen, naproxen, nasal drops like amphetamines, methylphenidate (Concerta, Metadate, Methylin, Ritalin), corticosteroids, hormones (including birth control pills), certain migraine medications, cyclosporine, and erythropoietin.
- Also, many over-the-counter medications that contain pseudoephedrine and ephedrine (for example, allergy and cold medicines and appetite suppressants) can increase blood pressure.

Q10. How many times I should measure BP in a week?

- As far as measurement of blood pressure is concerned BP should be measured 3-4 times in a week in the morning and in evening after taking medicine, one should measure BP after taking rest for 5 minutes and there should not be any history of tea/coffee intake, smoking or any stress at least 2 hours prior to recording of BP.

Q11. Can Blood pressure medicines be stopped?

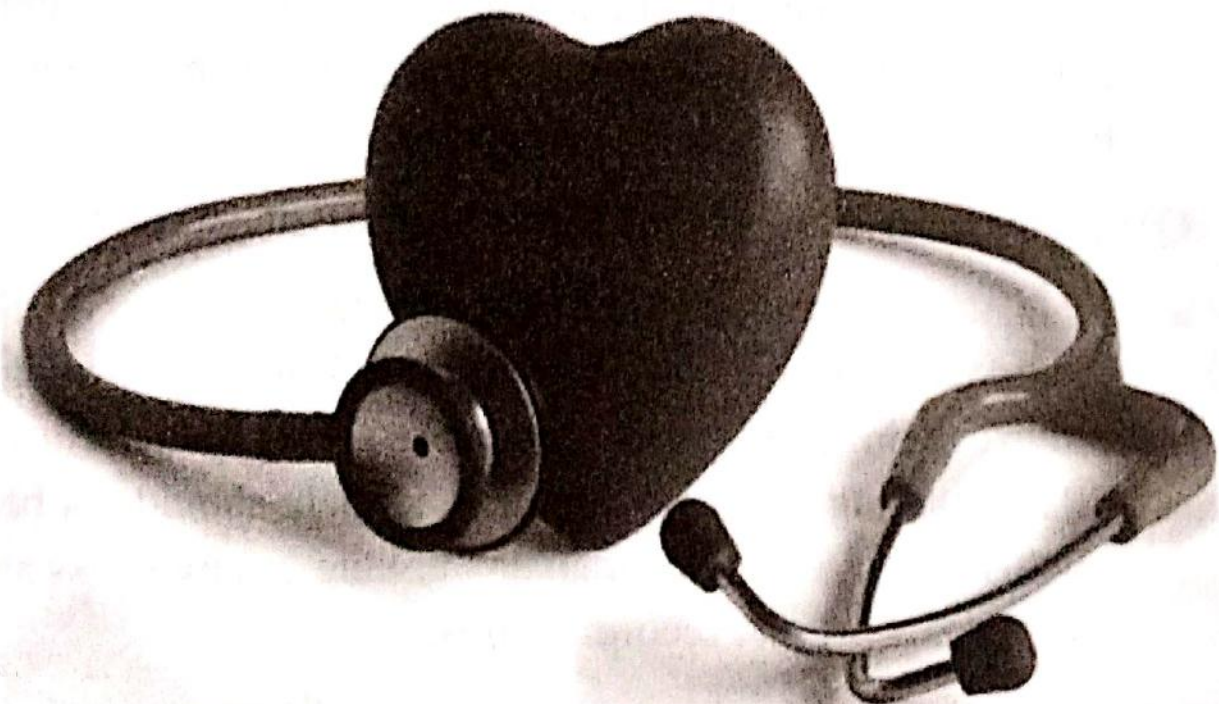
No, oftentimes can back-titrate a medicine to see if your

blood pressure returns to its baseline values.

Second point to remember is that sometimes, when a patient is diagnosed as having hypertension, there was a superimposed condition which was contributing to the blood pressure, Its the doctor has to look at the original diagnosis, the patient has to understand that the original diagnosis doesn't always change; sometimes it can, but the patients should not be stopping the medicines just because the reading's are normal.

Q12. Can I do Exercise or Yoga?

It has been seen that, one can have a tremendous control over Blood Pressure by doing exercise, yoga and Pranayam, regular exercise further reduces amount of medicines and its doses to



IN A NUTSHELL:-

- Controlled Diet habits
- Cautious use of pain killers
- Exercise, Yoga, Pranayam.
- Periodic Check Up
- By Reducing Stress
- Controlling alcohol intake

All these small changes can work wonders in controlling your blood pressure to a significant level

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