

# **HYPERTENSION**

by:

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# HIGH BLOOD PRESSURE

- Force of blood pushing against the walls of blood vessels (arteries) as it circulates through the body.
- A condition in which the blood vessels have persistently raised pressure.

- Blood pressure is written as two numbers e.g. 120/80 mm Hg
  - First (systolic) : pressure in the blood vessels when the heart beats.
  - Second (diastolic) : pressure in the blood vessels when the hearts rests between beats.
- Normal levels of both systolic & diastolic blood pressure important for efficient functioning of vital organs
  - heart , brain, kidneys & for overall health & well being.

# JNC 7: CLASSIFICATION OF HYPERTENSION

## NORMAL

- SYSTOLIC: < 120 mmHg
- DIASTOLIC: < 80 mmHg

## PRE-HYPERTENSION

- SYSTOLIC: 120 - 139 mmHg
- DIASTOLIC: 80 - 89 mmHg

## STAGE I HYPERTENSION

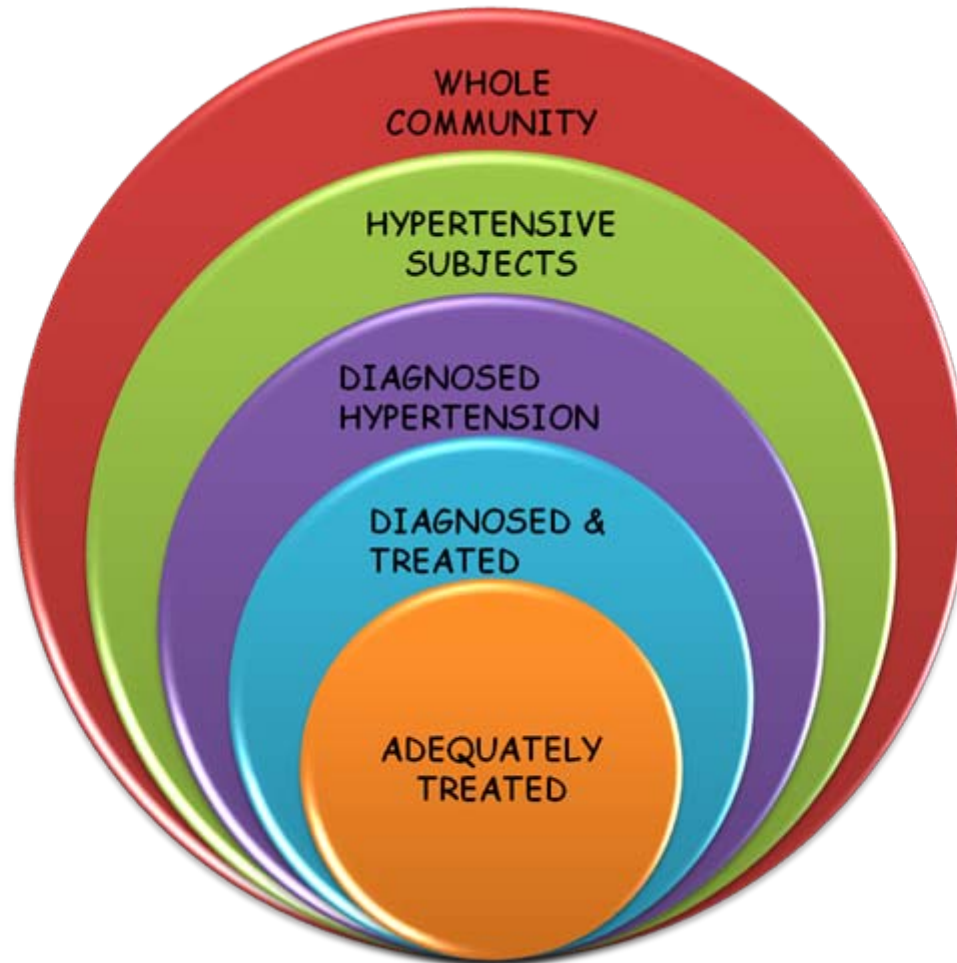
- SYSTOLIC: 140 - 159 mmHg
- DIASTOLIC: 90 - 99 mmHg

## STAGE II HYPERTENSION

- SYSTOLIC: > 160 mmHg
- DIASTOLIC: > 100 mmHg

<b>PRIMARY (ESSENTIAL)</b>	<b>SECONDARY</b>
<b>MOST PREVALENT (90%)</b>	<b>(10%)</b>
Cause- Unknown	<p>Cause – Disease process or abnormality involved</p> <ul style="list-style-type: none"> <li>-Chronic Glomerulonephritis</li> <li>-Chronic Pyelonephritis</li> <li>-Tumours Of Adrenal Gland</li> <li>-Congenital Narrowing Of Aorta</li> <li>-Toxemia Of Pregnancy</li> </ul>

# “RULE OF HALVES”



# Why high blood pressure is a public health concern

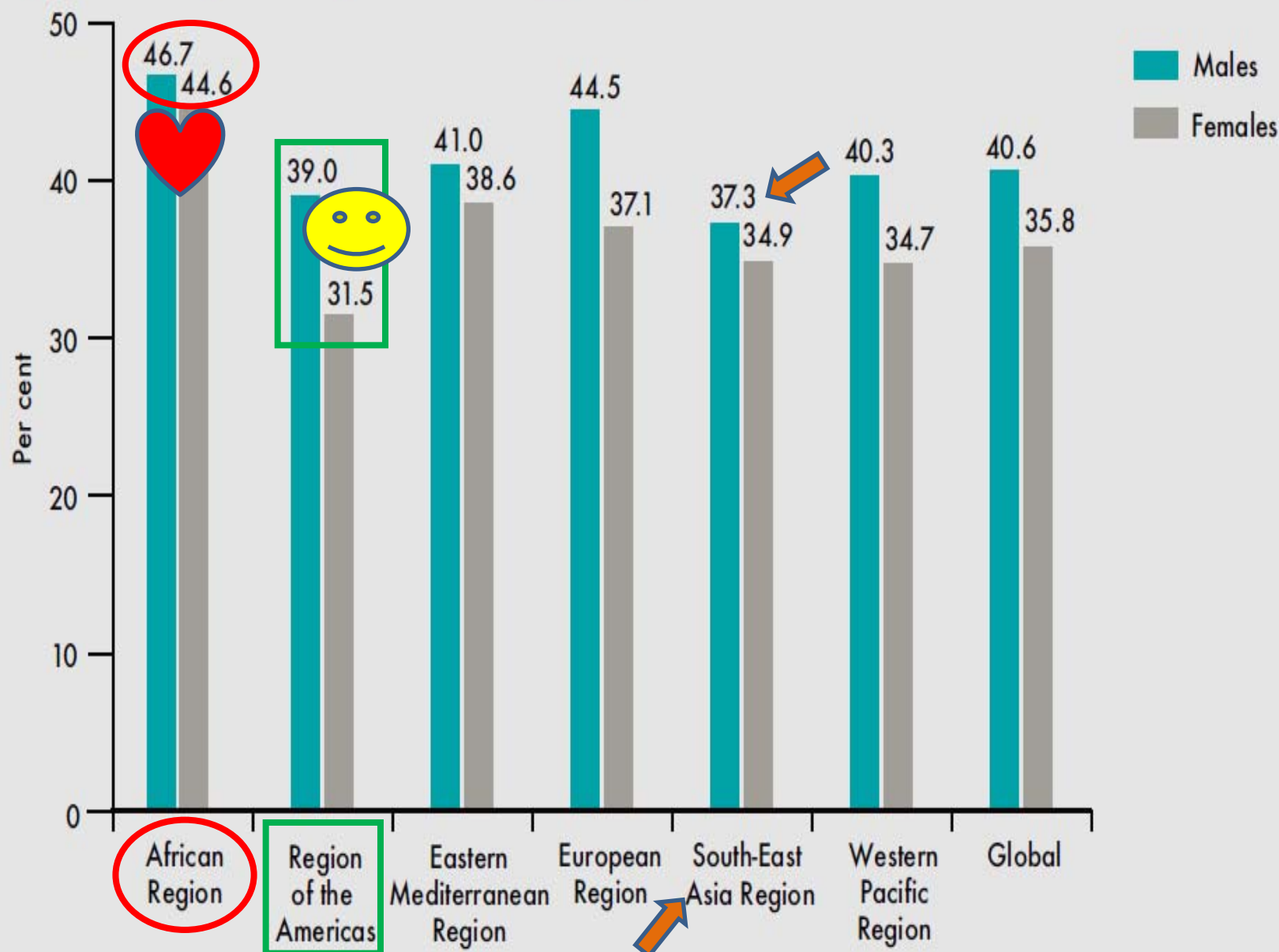
- Raises the probability of
  - heart attack, stroke and kidney disease.
- Hypertension is identified as *the world's most prevalent preventable disease* in WHO's Health 2020 policy.

# **HIGH BLOOD PRESSURE : GLOBAL & REGIONAL OVERVIEW**

- **GLOBAL BURDEN:**
- Cause of pre mature death world wide killing nearly 9.4 million people every year globally, & problem is growing.
- Over 1 billion people : living with high B.P
- In 2008, globally the overall prevalence of high B.P in adults aged 25 & above was around 40%.



# Age-standardized prevalence of raised blood pressure in adults aged 25+ years by WHO Region, 2008



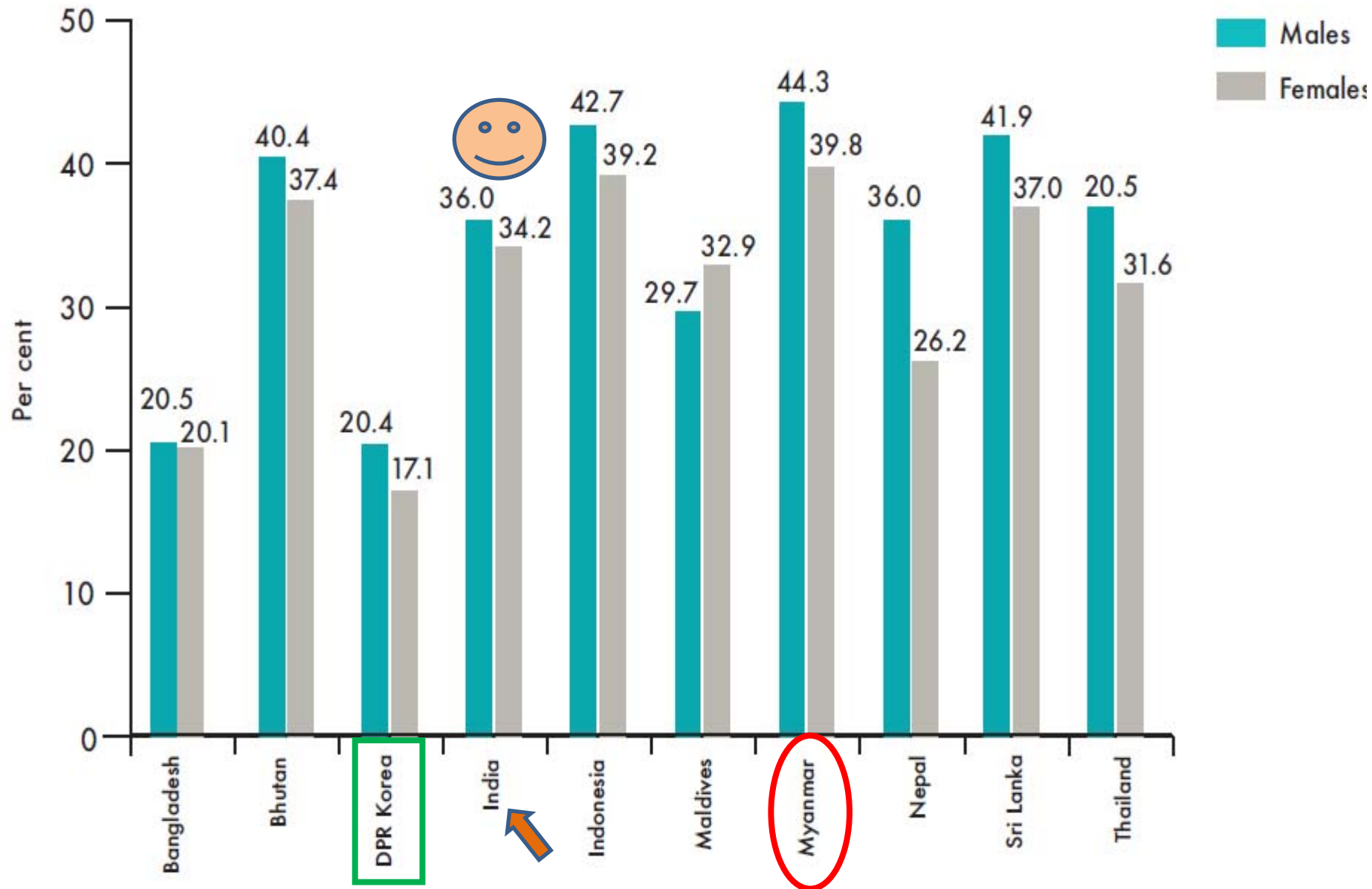
- Among all WHO regions, the prevalence of raised B.P
  - Highest- African Region (46%)
  - Lowest – Region of America (35%)
- In South- East Asia Region, 36% of adults have Hypertension.
- In all WHO regions: males had slightly higher prevalence of raised B.P than females.
- **Prevalence of raised B.P is higher in low, lower- middle & upper middle income countries (40%) than in high- income countries (35%).**

- In high –income countries,
  - Strong public health policies
  - Multisectoral preventive action
  - Widely available diagnosis & treatment
- Led to reduction in prevalence of high B.P
- In contrast , in many developing countries –disease burden caused by raised B.P – increased over past decade.

# **BURDEN IN SOUTH – EAST ASIA REGION (SEAR)**

- High B.P – leading risk factor for death claiming 1.5 million lives each year in the Region.
- 1 in 3 adults in the Region has high B.P
- Males have slightly higher prevalence of high B.P than females.

# Age-standardized prevalence of raised blood pressure in adults aged 25+ years, South-East Asia Region, 2008



- In the 10 countries from which data were available, the prevalence of high B.P –
  - 19% in Democratic People's Republic of Korea
  - 42% in Myanmar
- In India, raised B.P increased from 5% in 1960s to nearly 12% in 1990s, to more than 30% in 2008.
- Major contributors to increased blood pressure in urban areas:
  - Ageing population,
  - Rapid urbanization,
  - Transition from agrarian life to a wage-earning, and
  - Modern city life.

# PREVALENCE IN INDIA

- Community based survey –
  - ICMR during 2007-08
  - to identify risk factors for NCDs
  - under state based IDSP Phase I.
- Carried out in states of Andhra Pradesh, Madhya Pradesh, Maharashtra, Uttarakhand, Tamil Nadu & Mizoram.
- Prevalence : 17 -21 % in all the states.

# **What Are The Risk Factors For High Blood Pressure**

- Non-modifiable risk factors
- Modifiable risk factors



# Non-modifiable Risk Factors

- Age
- Sex
- Genetic factors
- Ethnicity

# Modifiable Risk Factors

- Obesity
- Diet
  - Salt
  - Saturated fat
  - Dietary fibres
- Alcohol
- Tobacco
- Physical activity
- Stress
- Socio-Economic Status

# What Are The Symptoms Of High Blood Pressure

- Sometimes can present as:
  - Headache
  - Shortness of breath
  - Dizziness
  - Chest pain
  - Palpitations
  - Nose bleed
- **But most people usually have NO warning signs or symptoms.**

# Prevention of Hypertension

- Primary Prevention
  - Population strategy
  - High risk strategy
- Secondary Prevention

# Population Strategy

- Nutrition
- Weight reduction
- Exercise promotion
- Behavioral changes
- Self care



# High Risk Strategy

- Identifying risk
- Specific advice

# **Dietary Approaches to Stop Hypertension (DASH)**

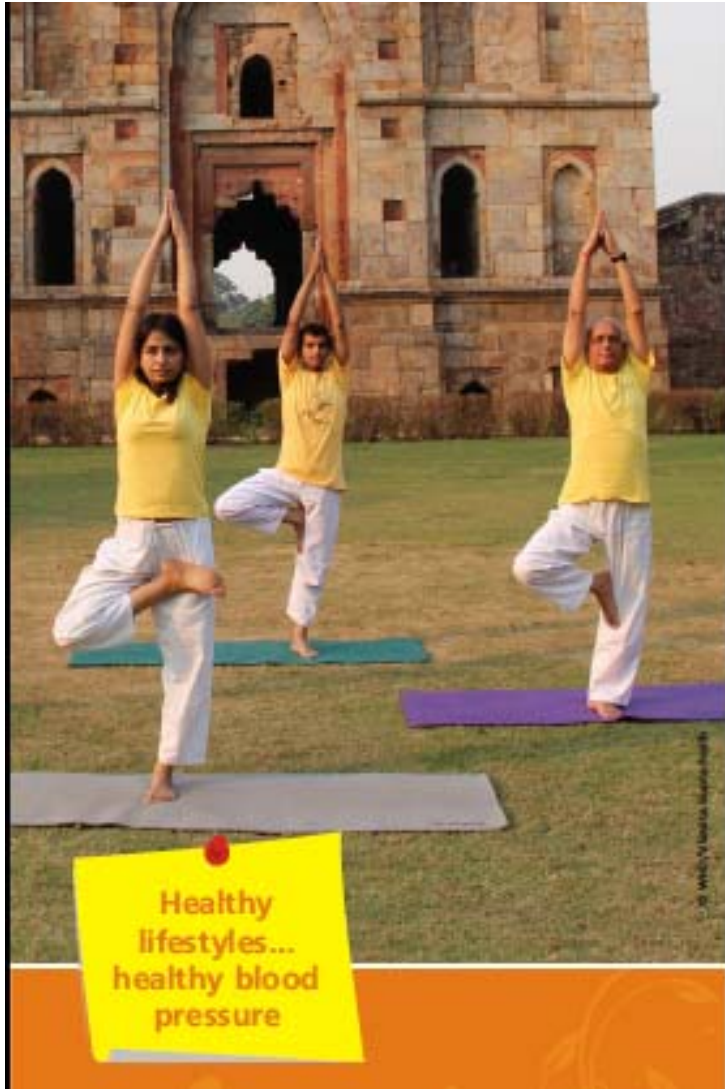
- The National Heart, Lung, and Blood Institute (NHLBI).
- Flexible and balanced eating plan.
- Low in saturated fat, cholesterol, and total fat
- Focuses on fruits, vegetables, and fat-free or low-fat dairy products
- Rich in whole grains, fish, poultry, beans, seeds, and nuts
- Contains fewer sweets, added sugars and sugary beverages, and red meats.

# Life Style Modifications to Manage Hypertension

<b>MODIFICATION</b>	<b>RECOMMENDATION</b>	<b>Approx. Systolic BP reduction range</b>
<b>Weight reduction</b>	Maintain normal body weight (BMI- 18.5- 24.9)	5-20 mmHg/ 10 kg Weight loss
<b>Adopt <u>DASH</u> eating plan</b>	Consume diet rich in fruits, vegetables & low- fat diary products with reduced content of saturated fat & total fat	8-14 mm Hg
<b>Dietary sodium reduction</b>	Reduce dietary sodium intake – no more than 100 M eq/D (2.4 g sodium or 6 g sodium chloride)	2-8 mm Hg



<b>Physical activity</b>	Engage in regular physical activity brisk walking for at least 30 min/day most days of the week	4-9 mm Hg
<b>Moderation of alcohol consumption</b>	Limit consumption to <ul style="list-style-type: none"><li>•no more than 2 drinks / day in most men</li><li>•(1 oz or 30 ml ethanol</li><li>•24 oz beer,</li><li>•10 oz wine,</li><li>•3 oz 80 proof whiskey)</li><li>•no more than 1 drink / day in women &amp; lighter – weight persons.</li></ul>	2-4 mm Hg



Healthy  
lifestyles...  
healthy blood  
pressure

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### 5–17 years

At least 60 minutes of moderate-to-intensive physical activity daily



### 18–64 years

At least 150 minutes of moderate-intensity aerobic physical activity throughout the week



### 65 years and above

At least 150 minutes of moderate-intensity aerobic physical activity throughout the week

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# Secondary Prevention

- Early case detection
- Treatment
- Patient compliance



# **Increase Access to Early Diagnosis & Management of High B.P**

- Integrated health programmes need to be established particularly at primary care level to increase access to health care services for high B.P & associated NCDs.
- Health workers should be trained in diagnosis & management of high B.P & other NCDs using standard guidelines.

- Primary health care facilities must be equipped with basic technologies & generic medicines for treatment of high B.P & associated NCDs such as DM.
- These should include **TECHNOLOGIES:**
  - B.P measuring device
  - Weighing scale
  - Urine strips for albumin assay
  - Blood sugar measurement device

- **MEDICINES:**

- Aspirin
- Statin
- ACE-Inhibitor
- Thiazide diuretic
- Calcium channel blocker
- Hypoglycemic agent
- Insulin.

In addition to treatment, counselling should be offered to ensure adherence to treatment.





under PRESSURE?

Cut your risk of heart attack and stroke - control your blood pressure

WORLD HEALTH DAY 2013

[www.who.int/control-blood-pressure](http://www.who.int/control-blood-pressure)



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