



HYPERTENSION

Dr.N K Goel

Prof.& Head,,

Deptt. of Community Medicine

GMCH, Chandigarh



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 and for overall health & well being.



Patient Subgroup	Target SBP (mm Hg)	Target DBP (mm Hg)
≥ 60 years	<150	< 90
< 60 years	<140	< 90
> 18 years with CKD	<140	<90
> 18 years with diabetes	<140	<90

CKD = chronic kidney disease; DBP = diastolic blood pressure; SBP = systolic blood pressure

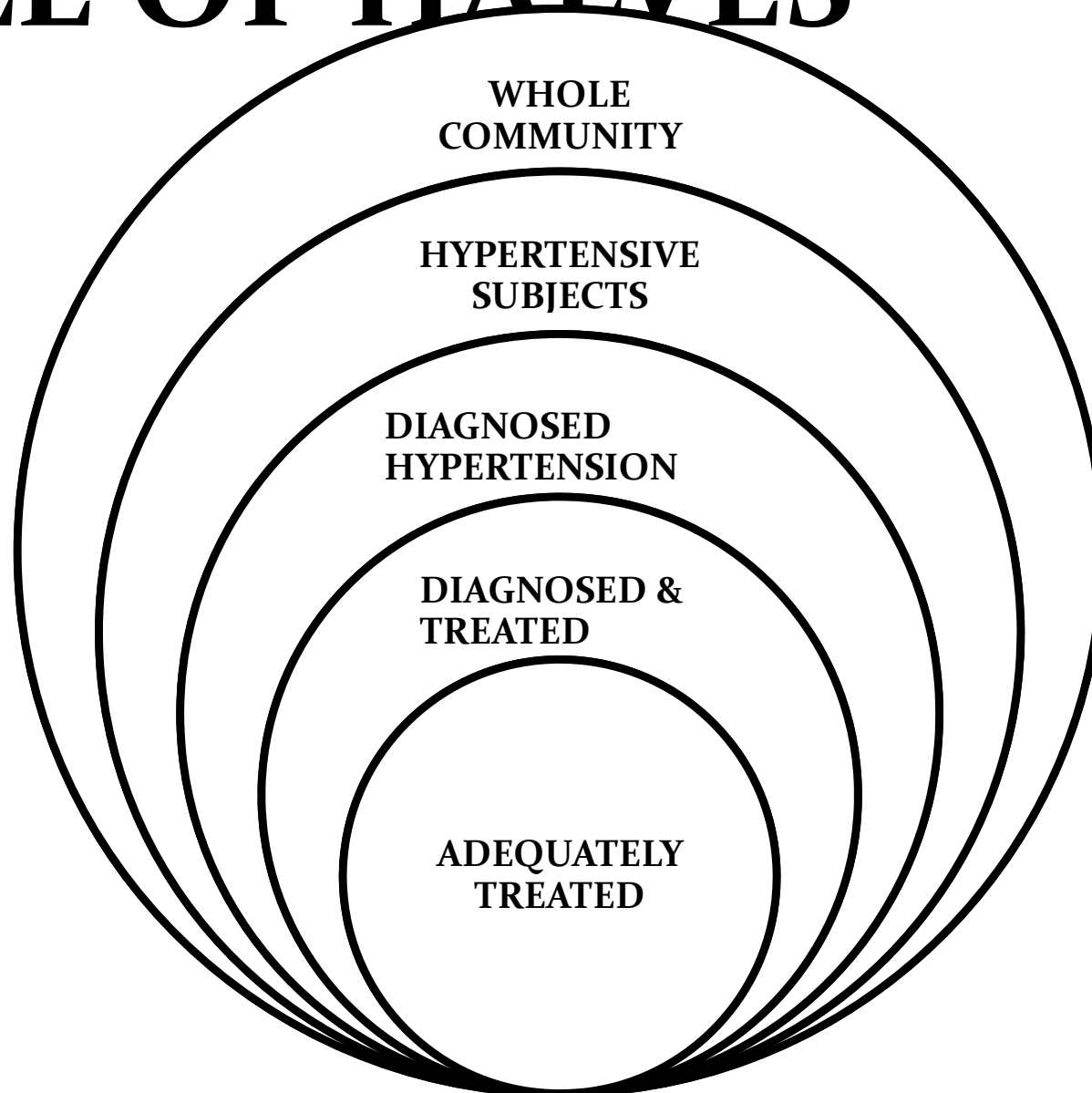
James PA, et al. *JAMA*. 2013 Dec 18. [Epub ahead of print]

JNC 8

- General nonblack population
 - Thiazides, CCB, ACEI, or ARB initially
- General black population
 - Thiazides or CCB initially
- CKD
 - Treatment should include ACEI or ARB
- Up-titrate or add therapy after 1 mo if BP goal not achieved
 - Don't use ACEI and ARB together
 - If > 3 drugs needed, refer to hypertension specialist

PRIMARY (ESSENTIAL)	SECONDARY (<i>KNOWN CAUSE</i>)
MOST PREVALENT (90%)	(10%)
Cause- Unknown	Cause – <i>Disease process or abnormality</i> involved -Chronic Glomerulonephritis -Chronic Pyelonephritis -Tumours Of Adrenal Gland -Congenital Narrowing of Aorta -Toxemia Of Pregnancy

“RULE OF HALVES”



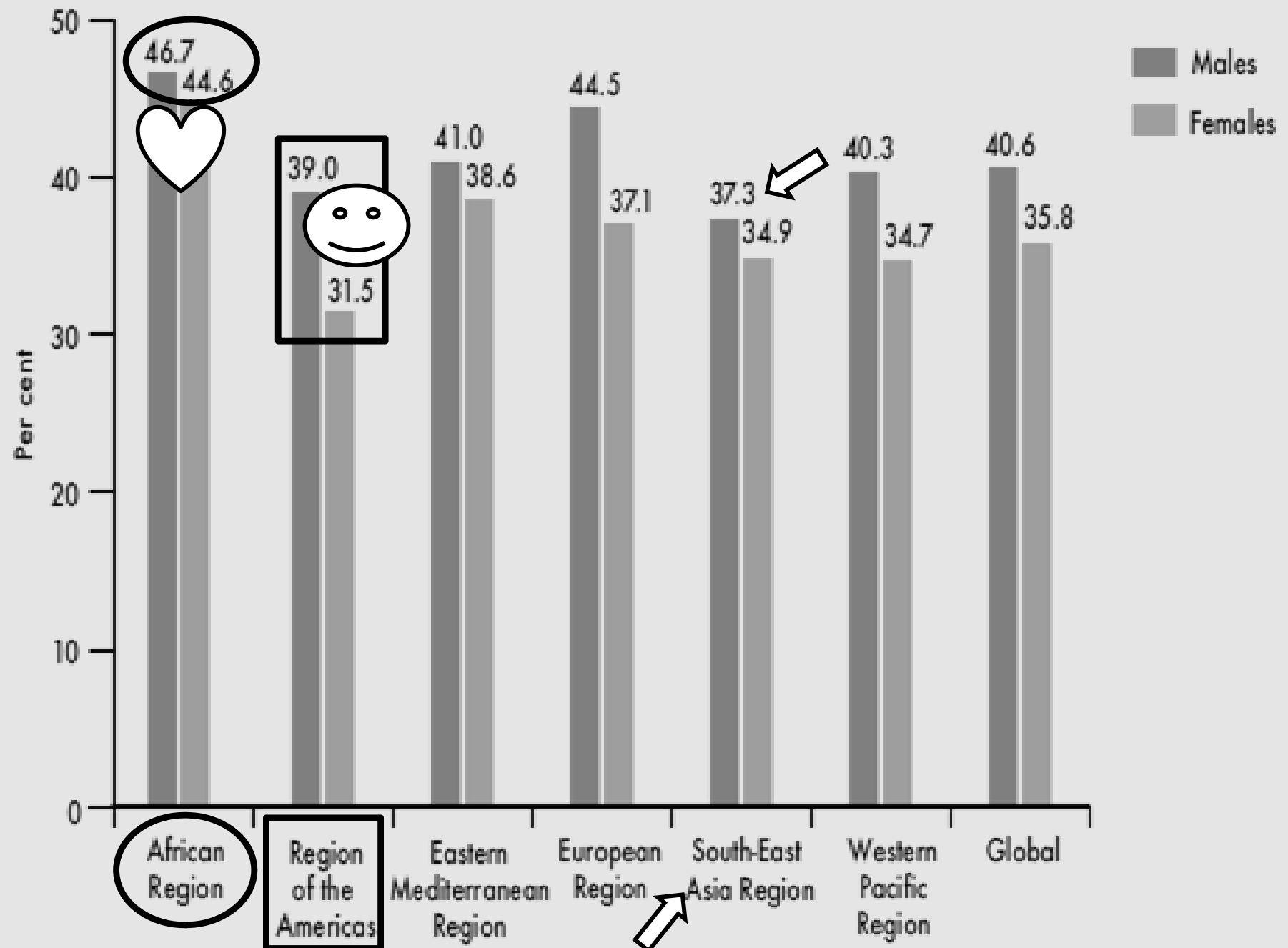
Why high blood pressure is a public health concern

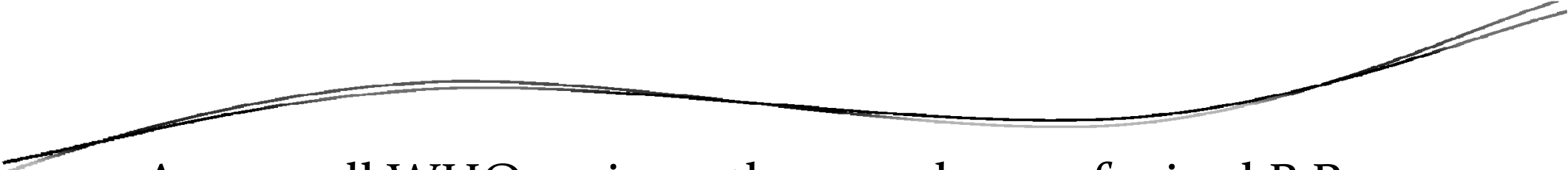
- Raises the probability of
 - *heart attack, stroke and kidney disease.*
- Hypertension is identified as *the world's most prevalent preventable disease* in WHO's Health 2020 policy.

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



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- 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*

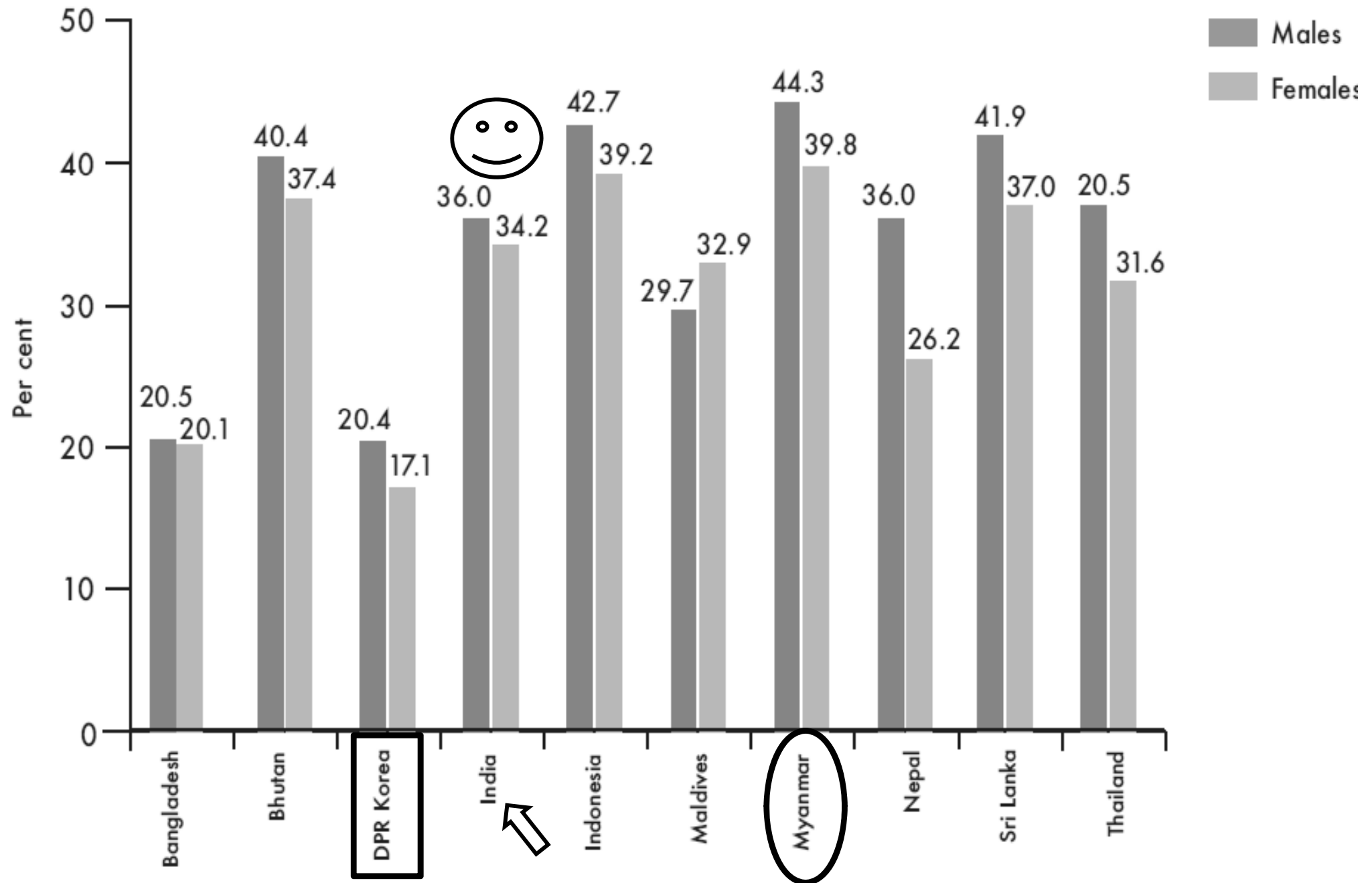
- *Led to reduction in prevalence of high B.P*

- *In contrast , in many developing countries – disease burden caused by raised B.P – increased over past decades.*

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 –*
 - *Lowest--19% DPR Korea*
 - *Highest--42% Myanmar*
- *In India, raised B.P increased from 05% in 1960s to nearly 12% in 1990s, to more than 30% in 2008, 40% in 2018.*

- *Major contributors to increased blood pressure in urban areas:*
 - *Ageing population,*
 - *Rapid urbanization,*
 - *Transition from agrarian life to a wage-earning,*
 - *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 06 states of Andhra Pradesh, Madhya Pradesh, Maharashtra, Uttarakhand, Tamil Nadu & Mizoram.
- Prevalence : 17 -21 % in all the states-. *Prevalent in all age groups, more prevalent in Service class & Executive categories in all states*

What Are The Risk Factors For High Blood Pressure

- *Non-modifiable risk factors*
- *Modifiable risk factors*



Non-modifiable Risk Factors

- *Age*
- *Gender*
- *Genetic factors*
- *Ethnicity*



Modifiable Risk Factors

- *Obesity central*
- *Diet: Salt, Saturated fats, 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:

↓ **stroke**

↓ **heart failure, kidney failure etc.**

Population Strategy

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





Population Strategy

- *dietary control*
- *weight control*
- *no alcohol*
- *exercise*
- *relaxation*
- *self care*
- *community education*



High Risk Strategy

Identifying risk:

Family H/o - Clustering in families
tracking since childhood

- Specific advice

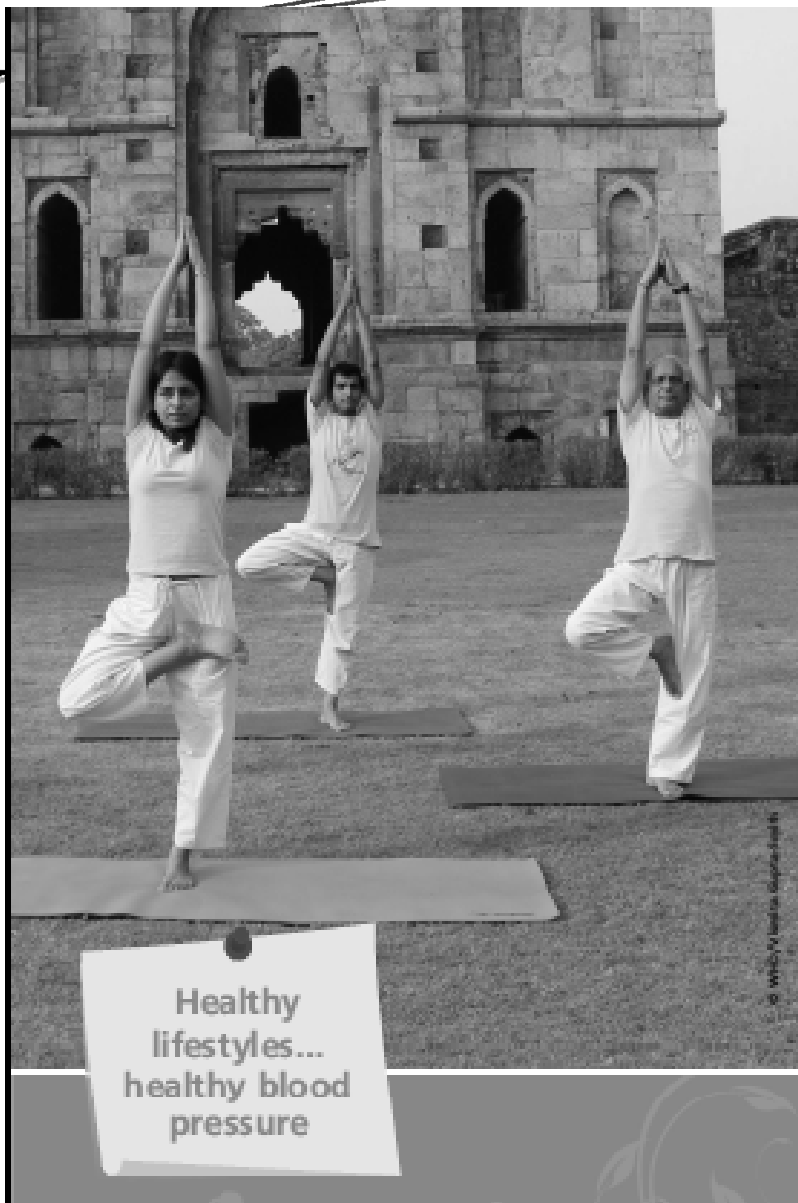
Dietary Approaches to Stop Hypertension (DASH)

- 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*
- Containing fewer sweets, added sugars and **sugary** beverages, and red meats.

Life Style Modifications To Manage Hypertension

<i>MODIFICATION</i>	<i>RECOMMENDATION</i>	Approx. Systolic BP reduction range(21-55 mm Hg)
<i>Weight reduction</i>	Maintain normal body weight (BMI- 18.5- 24.9)	<i>05-20mmHg/ 10 kg Weight loss</i>
<i>Adopt <u>DASH</u> eating plan</i>	Consume diet rich in fruits, vegetables & low- fat diary products with reduced content of saturated fat & total fat	<i>08-14 mm Hg</i>
<i>Dietary sodium reduction</i>	Reduce dietary sodium intake – <i><100 M eq/D</i> (2.4 g sodium or 6 g sodium chloride)	<i>02-08 mm Hg</i>

Physical activity	Engage in regular physical activity brisk walking for at least 30 min/day most days of the week	04-09 mm Hg
Moderation of alcohol consumption	Limit consumption to <ul style="list-style-type: none"> • <i>no more than 2 drinks / day in most men</i> • (1 oz or 30 ml ethanol • 24 oz beer, • 10 oz wine, • 3 oz 80 proof whiskey) • <i>no more than 1 drink / day in</i> 	02-04 mm Hg



Healthy
lifestyles...
healthy blood
pressure

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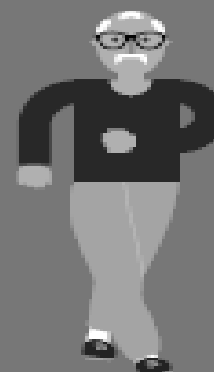
5–17 years

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


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 e.g.DM.*

- These should include **TECHNOLOGIES:**

- *B.P measuring device*

- *Weighing scale*

- *Urine strips for albumin assay*

- *Blood sugar measurement device-Glucometer*



- **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



World Health
Organization



Thanks