RECOMMENDED RESPONSE WHEN HYPERTENSION IS SUSPECTED (DIAGNOSIS OF HYPERTENSION)

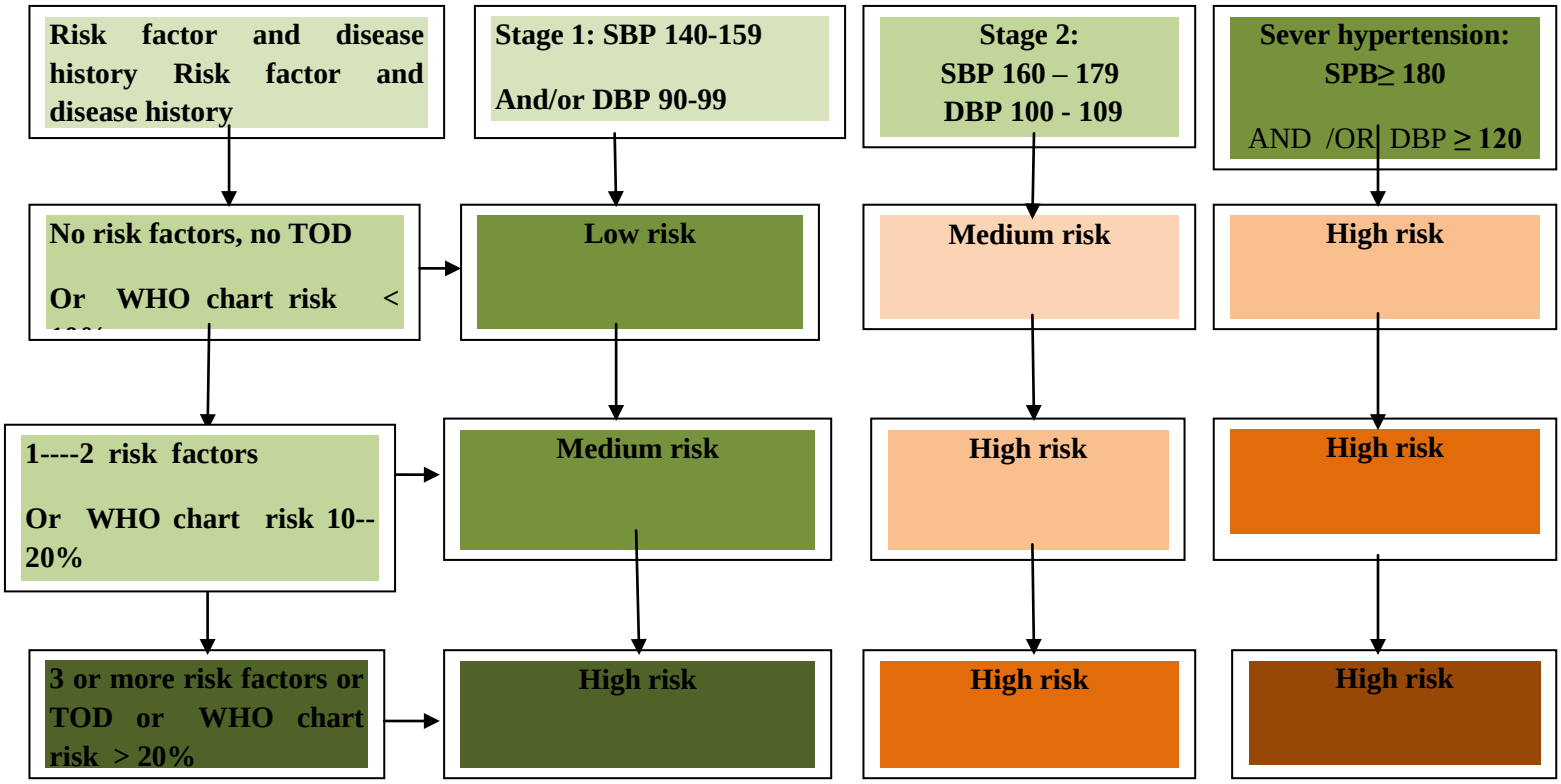
Normal BP: <130/80:	**Recheck every year if the age is more than 40**
Prehypertension: SBP130---139 and /or /DBP 80---89	**Recheck every 6 months**
STAGE 1 : :SBP140---159 and /or /DBP /90—99	**Check every week for one month**
STAGE 2 : :SBP160--179 and /or / DBP/100—119	**Confirm with two readings every week for two weeks**
Sever hypertension: SPB≥ 180 AND /OR DBP ≥ 120	**CONFIRM. IF URGENCY OR EMERGENCY. TREAT** ACCORDINGLY

- IF 24 HOURS B.P. MONITOR IS USED HYPERTENSION IS DIAGNOSED IF : daytime ambulatory measurements of ≥135/85 m Hg Or nocturnal measurements of ≥120/70 mm Hg

Asses the *risk* **The risk of developing CVD in the coming 10 years {fatal or nonfatal major cardiovascular event (myocardial infarction or stroke)according to**

A- Age > 55years 2-level of SB.P 3-smoking 4-DM 5-Abdominal obesity (Waist circumference >102 cm (Male), >88 cm (Female) 6-Family history of premature CVD7-Hypercholesterolaemia (if cholesterol level measurement is available) or

B- Use the WHO risk prediction chart


Risk factor and disease history Risk factor and disease history
Stage 1: SBP 140-159
And/or DBP 90-99
Stage 2:
SBP 160 – 179
DBP 100 - 109
Sever hypertension:
SPB≥ 180
AND /OR DBP ≥ 120
No risk factors, no TOD
Or WHO chart risk <
Low risk
Medium risk
High risk
1----2 risk factors
Or WHO chart risk 10--20%
Medium risk
High risk
High risk
3 or more risk factors or TOD or WHO chart risk > 20%
High risk
High risk
High risk

Plan of management after confirmation of pre hypertension and hypertension

Goal: BP <140/90 for all people

Measure the blood pressure for all adults: **Exclude secondary causes if age <40.**

Risk assessment by using the table above or the WHO risk	Prehypertension SBP 130 - 139 DBP 85 - 89	Stage 1 HT SBP140 – 159 and /or DBP 90 - 99	Stage 2 HT SBP 160 - 179 DBP 100 - 109	Sever HT SBP ≥ 180 and/or DBP ≥ 120
Low risk: no risk factor or < 10%	Lifestyle change No intervention Recheck every 6 months	- Lifestyle change -Add BP drugs if persistently high over one month	- Lifestyle change -add BP drugs if persistently high over two weeks month	Give the dose if missed or TREAT with short acting oral drug AND REFER TO SPECIALIST
Medium risk 1- 2 Risk factors or 10-20%	- Lifestyle change No intervention - recheck every 3 months	- Lifestyle change -If persistently high for two weeks , add BP drugs	- Lifestyle change Add BP drugs immedietly	
High risk ≥ 3 risk factors or risk > 20%	- Lifestyle change No intervention- recheck every 6 weeks	- Lifestyle change - Then add BP drugs if persistently high for two weeks	- Lifestyle change + immediate BP drugs	
Symptomatic CVD, CKD stage ≥ 4, or DM with TOD/RF	- Lifestyle change - No BP intervention	- Lifestyle change - Then add BP drugs targeting <140/90	- Lifestyle change - Then add BP drugs targeting <140/90	

BP = Blood pressure; SBP =Systolic blood pressure; DBP = Diastolic blood pressure; HT = Hypertension; RF = Risk Factor
OD = Organ Damage; CKD = Chronic Kidney Disease; CV = Cardiovascular; CVD = Cardiovascular Disease

NON-PHARMACOLOGICAL therapy : Lifestyle modifications: weight reduction , diet :rich in vegetables, fruits, ,low-fat Reduce dietary sodium intake regular aerobic physical

Pharmacological therapy: ***initiate the*** **treatment with Thiazide diuretics or long acting calcium channel blockers, Choice of other drugs according to compelling indications**

Class of drug	Alpha-blockers	ACE inhibitors	Beta-blockers	CCBs (rate limiting)	ARBs
compelling indication	Benign prostatic Hypertrophy	Heart failure, LV dysfunction, post-MI, Established HD, type I diabetic nephropathy. C/I in pregnancy.	Post MI, Angina. Aortic dissection	Angina, arrhythmias	ACE inhibitor intolerance, Type II diabetic Nephropathy, LVH, Heart failure, post MI. C/I in pregnancy

Start **with low dose of a single drug aiming for a reduction of 5 to 10 in blood pressure at each step In.**

Patients with resistant HTN or type 2 diabetes mellitus should be monitored with Ambulatory OR HOME BP if they are at high risk for cardiovascular complications

Decide **whether to continue the same management plan or to modify it. if adequate response is not achieved as follow:-- Thiazide Diuretics: after one month**

-- ACEIs, CCBs, ARBs: 2 weeks to 1 month

Better to choose **long acting preparations**

combination therapy: ***when blood pressure is >20/10 mmHg above the goals***

Steps of combining the drugs are:

1-Use of two drugs at low dose 2-Use of the two drugs at full dose 3-Use previous combination at full dose in addition to a third drug low dose 4-Use of the three drug combination at full dose.

***FIRST STEP*: THIAZIDE DIURETIC OR CCBS + ACEI/ARB (low dose of 2nd drug)**	***SECOND STEP*: THIAZIDE OR CCBS + ACEI / ARB (max. dose of 2nd drug)**
***THIRD STEP*: THIAZIDE + CCBS + ACEI / ARB (low-max. dose of 3rd drug)**	**FOURTH STEP: THIAZIDE + CCBS + ACEI / ARB (max. doses) + {B- BLOCKER OR α – Blockers OR SPIRONOLACTONE OR OTHER DIURETICS OR CENTRALY ACTING DRUGS}.** **Screen for secondary causes if still not controlled. Consider ambulatory BP monitoring.**
OTHER DRUGS: Aspirin: Unless contraindicated, low-dose aspirin (50 -150mg/ day) is recommended for all people needing secondary prevention of ischemic CVD, and primary prevention in people with hypertension over the age of 50 years who have a high CVD risk > 30%(AFTER THE BP IS CONTROLLED)	**Statin: therapy is recommended for all people with high BP complicated by CVD and for primary prevention in people with high BP who more than 65 years or have a moderate CVD risk >20%**

Frequency of the follow-up visits at PHC level

All patients with hypertension should be provide with regular follow-up, the follow up intervals can vary from one week to one year according to patient's condition. Arrange follow- up visits as follows:

- STAGE 1: Monthly until goal blood pressure is achieved, then every 3 to 6 months.
- STAGE 2: every 2 weeks until goal blood pressure achieved then every 3 months.
- SEVER HYPERTENSION: refer and then F.U. weekly until the goal blood pressure achieved then every 3 months
- In the presence of co-morbidity as DM or heart disease might increase the follow up frequency.

What to do during the follow-up visit:

1-Check the blood pressure 2-Check adherence to medication 3-Advice and educate `on life style modification 4-Inquire about symptoms that indicate the presence of target organ damage (complication) e.g. breathlessness, chest pain 5-Investigate as required: One week after initiating ACEIs: Serum creatinine and electrolytes Annual routine investigations: Lipid profile. renal function test and electrolytes

Resistant hypertension {(Office blood pressure >140/90 And Patient prescribed 3 or more antihypertensive in full doses including diuretics if possible }