

HYPERTENSION (HT)

Screening

Check blood pressure (BP) **annually** with **large cuff** in everyone 18 years and over.

Case Definition

BP > 140/90

- x 3 separate readings over at least 2 weeks.
- Need to consider **ABSOLUTE RISK** for each patient to decide appropriate management plan.

DETERMINING ABSOLUTE RISK:

1. Assess **grade** of hypertension (see over 1).
2. Assess **comorbidities/disease history** and **other cardiovascular (CV) risk factors** (see over 2, 3).
3. Determine level of **absolute risk** (see over 4).
4. Follow therapeutic protocol for **low, medium or high absolute risk** accordingly.

NB: All people with **comorbidities/disease history** (see over 3) have **HIGH** absolute risk regardless of level of HT and other risk factors.

Principles of Management

- Everyone with hypertension needs **lifestyle review** and appropriate lifestyle change advice (see [HEALTHY LIVING](#)).
- Identify and address **other CV risk factors**.
- Encourage alcohol intake < 2 standard drinks (20g) / day.

BASELINE ASSESSMENT:

To identify common causes of secondary HT, assess end organ damage and recognize other CV risk factors.

- BMI and waist circumference.
- ECG.
- CV examination (heart, carotids, peripheral pulses).
- Electrolytes, creatinine, glucose, lipids, urine dipstick and ACR.

THERAPEUTIC GOALS:

Isolated HT BP < 130/90.

HT with DM, CAD or kidney disease BP < 125/80.

Aim to achieve control with one agent (though note that > 50% people will need two or more agents).

Therapeutic Protocols

Decide **when to start drug therapy** according to Absolute Risk:

LOW: watch for 6 - 12 months. Then start medication if BP remains > 150/95.

MEDIUM: watch for 3 - 6 months. Then start medication if BP > 140/90.

HIGH: start medication immediately.

1. WITHOUT COMORBIDITIES

ABORIGINAL PEOPLE:

FIRST **quinapril** 5mg daily doubling dose every 2 weeks to maximum 40mg daily

THEN ADD **amlodipine** 2.5mg daily doubling every 2 weeks to maximum 10mg daily

THEN ADD **atenolol** 50mg daily and increase to 100mg daily.

NON-ABORIGINAL PEOPLE:

FIRST **hydrochlorothiazide** 12.5mg daily

THEN ADD **quinapril** as above

THEN ADD **amlodipine** as above.

2. WITH COMORBIDITIES

CAD - early use of **atenolol** 50 - 100mg daily.

CKD/proteinuria - early use of **quinapril** (as above) and **irbesartan** 75mg daily doubling dose every 2 weeks to maximum 300mg daily.

Diabetes - add **quinapril** early (as above), avoid hydrochlorothiazide.

Stable HF (LVEF <35%) - consider **carvedilol** 6.25mg - 25mg bd.

Follow-up

Until treatment target reached:

- Check BP every 2 weeks.
- Check creatinine and electrolytes 2 weeks after starting **quinapril, irbesartan** or **hydrochlorothiazide** or after any dose increase.

Once stable:

- BP every 6 months.
- Annually check ACR, eGFR, creatinine, electrolytes, glucose and lipids.
- ECG every 5 years.

Women of Child Bearing Age

- Encourage presentation **early in pregnancy**.
- If **pregnant**, stop all antihypertensive drugs. Commence **methyldopa** 250mg bd and discuss with obstetrician.
- If **breastfeeding** and requiring ACE-i (see Therapeutic Protocols) use **enalapril** 5mg daily doubling every 2 weeks to maximum dose 40mg daily.

Refer / Discuss

TO PHYSICIAN:

- Hypertension **uncontrolled** on 3 agents.
- Patient **not tolerating** medication.
- Evidence of **end organ damage**.

HYPERTENSION (HT)

1. Grade of Hypertension

	SYSTOLIC	and / or	DIASTOLIC
High normal	130 - 139 mmHg		80 - 90 mmHg
Grade 1 (Mild)	140 - 159 mmHg		90 - 99 mmHg
Grade 2 (Moderate)	160 - 179 mmHg		100 - 109 mmHg
Grade 3 (Severe)	> 180 mmHg		> 110 mmHg

2. Comorbidity / Disease History

Presence of any of the following automatically places pt. in **HIGH absolute risk** category:

1. TARGET ORGAN DAMAGE:

- left ventricular hypertrophy on ECG
- ultrasound evidence of arterial wall thickening or atherosclerotic plaque
- proteinuria

2. DIABETES MELLITUS

3. ASSOCIATED CLINICAL CONDITIONS:

- cerebrovascular disease
- coronary artery disease including MI, angina, CCF
- chronic kidney disease
- peripheral vascular disease
- advanced retinopathy i.e. haemorrhages or exudates, papilloedema

3. Other Cardiovascular Risk Factors

- male > 55 years or female > 65 years
- smoking
- dyslipidaemia
- history of premature heart disease in 1st degree relative i.e. men < 55 years, women < 65 years
- obesity i.e. waist circumference > 100cm

4. Assigning level of Absolute Risk

CV Risk Factors → BP ↓	None	1 - 2	≥ 3
Normal	none	low	medium
High normal	none	low	high
Grade 1	low	medium	high
Grade 2	medium	medium	high
Grade 3	high	high	high

i.e. the **absolute risk** for a major cardiovascular event occurring in the following 10 years is:

- **LOW** risk group <15%
- **MEDIUM** risk group 15-20%
- **HIGH** risk group >20%