

HEARTS 2.0 Standard Clinical Pathway

Integrated Cardiovascular-Kidney-Metabolic (CKM) Management for Primary Care

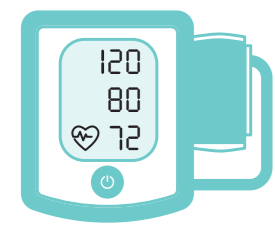
A

DETECTION & DIAGNOSIS OF HYPERTENSION

All adults, regardless of age:
≥140/90 mmHg in NON HIGH-RISK individuals
≥130/80 mmHg in HIGH-RISK individuals

Measure **blood pressure** in all adults and at all visits

Implement **targeted case-finding strategies** for groups with limited access to healthcare services

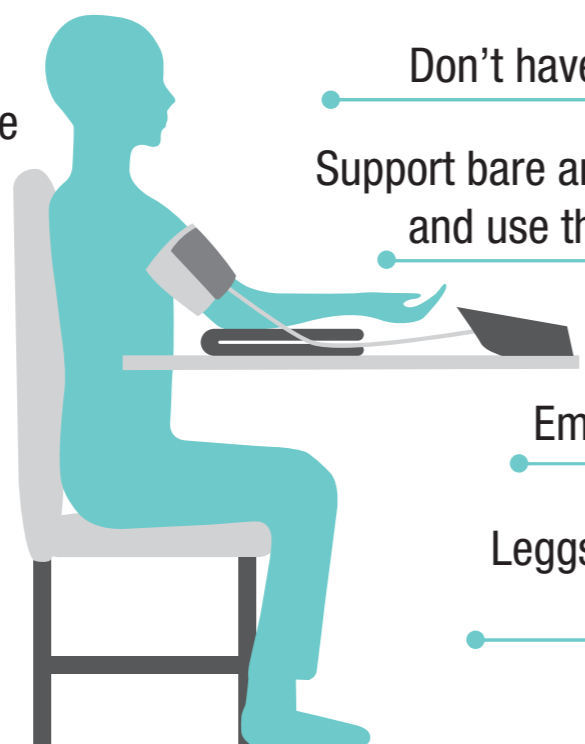


Use **AUTOMATED and CLINICALLY VALIDATED BP Measurement Devices**

Ensure a warm and quiet room

5-minutes rest before blood pressure measurement

Seated with back supported



Don't have a conversation
 Support bare arm at heart level and use the right cuff size

Empty bladder first

Legs uncrossed and feet supported

B

EARLY CKM DETECTION AND RISK ASSESSMENT

Classify as **HIGH-RISK** if any of the following are present:



ESTABLISHED CARDIOVASCULAR DISEASE (CVD)

Coronary heart disease / Cerebrovascular disease
 Peripheral vascular disease



CHRONIC KIDNEY DISEASE (CKD)

eGFR < 60 mL/min/1.73 m² **and/or** uACR ≥ 30 mg/g persistent for more than 3 months



DIABETES MELLITUS (DM)

HbA1C ≥6.5% **or** Fasting Glucose ≥126 mg/dl on 2 separate visits **or** Random Plasma Glucose ≥200 mg/dl



CVD RISK SCORE ≥ 10%

Use the **HEARTS App** to estimate risk score



Always repeat the measurement and calculate the average of the 2 readings to obtain the final Blood Pressure result

Closely monitor women with a history of hypertension during pregnancy

C

HYPERTENSION TREATMENT PROTOCOL AND COMPLEMENTARY CKM THERAPY

Blood pressure control targets:

<140/90 mmHg in NON HIGH-RISK individuals
<130/80 mmHg in HIGH-RISK individuals

- Start treatment immediately after confirming hypertension
- Follow the standardized protocol for hypertension in all individuals
- Provide complementary treatment according to the CKM risk profile
- Take all medications at the same time every day

1	Treatment initiation 1 Tablet of Valsartan/Amlodipine 160/5 mg	2 WEEKS
2	Patient above target after repeat BP measurement 1 Tablet of Valsartan/Amlodipine 320/10 mg	2 WEEKS
3	Patient above target after repeat BP measurement 1 Tablet of Valsartan/Amlodipine/Hydrochlorothiazide 320/10/25 mg	2 WEEKS
4	Patient above target after repeat BP measurement 1 Tablet of Valsartan/Amlodipine/Hydrochlorothiazide 320/10/25 mg + 1 Tablet of Hydrochlorothiazide 25 mg	2 WEEKS
5	Patient above target after repeat BP measurement 1 Tablet of Valsartan/Amlodipine/Hydrochlorothiazide 320/10/25 mg + 1 Tablet of Hydrochlorothiazide 25 mg + 1/2 Tablet of Spironolactone 25 mg	2 WEEKS

Refer to the next level of care if blood pressure control is not achieved after one month of Step 5 treatment



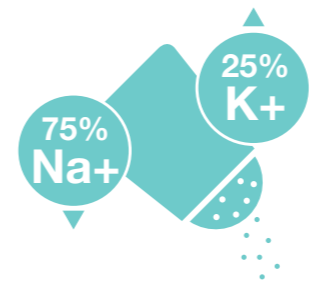
Follow a healthy diet



Keep a healthy body weigh



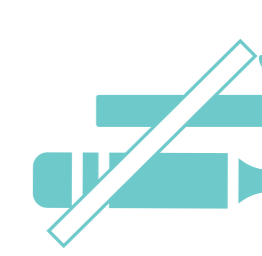
Avoid alcohol consumption



Reduce sodium and increase potassium intake.
 Prefer low sodium/potassium-enriched salt



Avoid a sedentary lifestyle
 Do at least 150 minutes/week of moderate-intensity physical activity



No Smoking or Vaping and ask for tobacco cessation treatment

COMPLEMENTARY TREATMENT for HIGH-RISK Groups

	CVD	DM or CKD	CVD RISK SCORE ≥ 10%
Atorvastatin	80 mg/daily	20 mg/daily	20 mg/daily
Empagliflozin	10 mg/daily	10 mg/daily	—
Aspirin	81 mg/daily	—	—

This treatment protocol is not indicated in women of childbearing potential. Please follow the specific treatment protocols for hypertension in pregnancy

Do not discontinue Pharmacologic Treatment once targets have been achieved

D

FOLLOW-UP AND PREVENTIVE STRATEGIES IN PATIENTS UNDER BLOOD PRESSURE CONTROL

Assess **Treatment Adherence** at each visit

Ensure the follow-up with **Non-Physician Healthcare Workers** for **Blood Pressure Monitoring** and **Treatment Intensification**

Implement measures to **prioritize care continuity** for **Vulnerable Individuals** (advanced age, social isolation, financial hardship)

Alongside this pathway, **ensure continued adherence to specific treatments plans** for DM, CKD, CVD, or other chronic conditions

CONTINUITY OF CARE	NON HIGH-RISK	HIGH-RISK
Minimal Follow-up intervals	Every 6 Months	Every 3 Months
Telemedicine to monitor treatment adherence and reduce loss to follow-up	✓	✓
Provide a 3-month medication supply	✓	✓
Lipid and glucose metabolism monitoring	Initially and Every 3 Years	Initially and Annually
Kidney function testing (eGFR and uACR) and electrolytes	Initially and Every 3 Years	Initially and Annually
ECG for the detection of LV Hypertrophy and Atrial Fibrillation	—	Initially and Annually
Influenza and COVID vaccination	Annually	Annually
Pneumococcal vaccination	Only individuals ≥65 years	All individuals with CVD, DM, or CKD regardless of age

Optimal Targets for CKM Health

- Blood Pressure** → < 120/80 mmHg
- Body Mass Index** → Between 18.5 and 24.9 Kg/m²
- LDL Cholesterol** → <100 mg/dl in General Population
<70 mg/dl in High-Risk
- Fasting Blood Glucose** → <100 mg/dl
- Glycated Hemoglobin (HbA1C)** → <5.7% in General Population
<7% in Diabetes
- Urine Albumin-Creatinine Ratio (uACR)** → <30 mg/g

For Asymptomatic Severe Hypertension (SBP ≥180 and/or DBP ≥120 mmHg), follow the treatment protocol rather than referring to the emergency department