



Ethiopia

Hypertension Protocol

የኢትዮጵያ ፌዴራላዊ ዲሞክራሲያዊ ሪፐብሊክ
ጤና ጥበቃ ሚኒስቴር
Federal Democratic Republic of Ethiopia
Ministry of Health

Measure blood pressure of **all adults** over 30 years of age

- Step 1** If BP is high (SBP 140-159 or DBP 90-99 mmHg)*
Prescribe amlodipine 5 mg.
 - Step 2** After 30 days, measure BP again. If still high:
Increase to amlodipine 10 mg.
 - Step 3** After 30 days, measure BP again. If still high:
Add hydrochlorothiazide 12.5 mg.
 - Step 4** After 30 days, measure BP again. If still high:
Increase to hydrochlorothiazide 25 mg.
 - Step 5** After 30 days, measure BP again. If still high:
Add lisinopril 20 mg.**
 - Step 6** After 30 days measure BP again. If still high:
Increase to lisinopril 40 mg.***
- After 30 days, measure BP again. If still high:
Check if patient has been taking medications regularly and correctly. If yes, refer to higher level of care.

* CVD risk assessment should be done on all patients over 40 years of age.

If SBP \geq 180 mmHg or DBP \geq 110 mmHg, refer patient to a specialist after starting treatment.

If SBP 160-179 mmHg or DBP 100-109 mmHg, start treatment on the same day.

If SBP 140-159 mmHg or DBP 90-99 mmHg (elevated) and patient has two or more risk factors (family history of premature CVD, age $>$ 55 (men), age $>$ 65 (women), diabetes, high cholesterol, smoker, obesity) check BP again on a different day. If BP is still elevated, start amlodipine.

If SBP 140-159 mmHg or DBP 90-99 mmHg but patient has fewer than two risk factors, consider a three month trial of lifestyle changes before starting medications.

** 10 mg lisinopril can be considered for low weight for height patients.

*** Consider enalapril 5 and 10 mg tablets if lisinopril is not available.

Special populations

- ⚠️ Pregnant women and women who may become pregnant**
DO NOT GIVE lisinopril, enalapril nor hydrochlorothiazide to pregnant women nor to women of childbearing age who are not on effective contraception.
- Diabetic patients**
Treat diabetes according to protocol.
- Heart attack in last 3 years**
Add beta blocker to amlodipine with initial treatment.
- Heart attack or stroke, ever**
Begin low-dose aspirin (75 mg) and statin.
- People with high CVD risk (\geq 30%)**
Consider statin.
- Chronic kidney disease**
ACE inhibitor or ARB preferred if close clinical and biochemical monitoring is possible.

Advice for lifestyle modification



Stop tobacco use, and avoid second-hand smoke and harmful use of alcohol



Increase physical activity to equivalent of brisk walk 150 min/week



Reduce salt to less than 1 tsp/day

- If overweight, lose weight.
- Eat 5 servings of fruits and vegetables per day.
- Eat nuts, legumes, whole grains and foods rich in potassium.
- Eat fish at least twice per week.
- Use healthy oils like sunflower, flax seed, soybean, peanut and olive.
- Limit red meat to once or twice per week.
- Avoid added sugar.
- Limit consumption of fried foods and foods with high amounts of saturated fats.
- Avoid chips, margarines and other processed foods containing trans fat.
- Reduce fat intake by changing how you cook:
 - Remove the fatty part of meat.
 - Boil, steam or bake instead of frying.
 - Limit reuse of oil for frying.