

## Summary of recommendations for Hypertension

### Recommendation 1: Diagnosis of Hypertension

It is recommended to general practitioners and other PHC physicians that, subjects with SBP levels  $\geq 140$  mmHg and/or DBP levels  $\geq 90$  mmHg verified in the average of two or more properly measured seated, blood pressure readings on each of two or more office visits, considered as subjects with hypertension.

**Level of evidence: (I)** **Class** **of**  
**recommendation: A**

### Recommendation 2: Diagnosis of Hypertension

It is recommended to general practitioners and other PHC physicians to advise subjects with hypertension to monitor home blood pressure using validated electronic arm devices

**Level of evidence: (III)** **Class** **of**  
**recommendation: A**

### Recommendation 3: Diagnosis of Hypertension

It is recommended to general practitioners and other PHC physicians that white-coat hypertension is defined as hypertension in the office in at least 3 visits and low blood pressure (24h blood pressure measurement or home measurements) out of the office. In white-coat subjects with hypertension without additional risk factors, therapeutic intervention should be considered to be limited to lifestyle changes only, but this decision should be accompanied by a close follow-up.

**Level of evidence: (II)** **Class** **of**  
**recommendation: A**

### Recommendation 4: Laboratory testing of Osteoporosis

It is recommended to general practitioners and other PHC physicians that subjects with normal blood pressure at the office and high blood pressure out of the office should be characterized as having masked hypertension.

**Level of evidence: (II)** **Class** **of**  
**recommendation: A**

### Recommendation 5: Evaluation of Bone Mass Density

It is recommended to general practitioners and other PHC physicians to advise subjects with white coat hypertension or masked hypertension to underwent ambulatory blood pressure measurement (ABPM).

**Level of evidence: (III)** **Class** **of**  
**recommendation: B**

### **Recommendation 6: Cardiovascular Risk Estimation**

It is recommended to general practitioners and other PHC physicians to estimate the total Cardiovascular Risk and classify it as low, moderate, high or very high in each subject with hypertension.

**Level of evidence: (II)**

**Class of**

**recommendation: A**

### **Recommendation 7: Clinical and laboratory tests after diagnosing hypertension**

It is recommended to general practitioners and other PHC physicians that the essential laboratory tests at the time of hypertension diagnosis are: glucose, total cholesterol, HDL and LDL cholesterol, triglycerides, urea, creatinine, uric acid, potassium, sodium, blood analysis, urine analysis and electrocardiogram.

**Level of evidence: (III)**

**Class of**

**recommendation: A**

### **Recommendation 8: Non pharmaceutical treatment**

It is recommended to general practitioners and other PHC physicians to advise each subject with hypertension or high normal blood pressure to reduce their weight to BMI of 25 kg/m<sup>2</sup> and waist circumference to <102 cm in men and <88 cm in women.

**Level of evidence: (I, II)**

**Class of**

**recommendation: A**

### **Recommendation 9: Non pharmaceutical treatment**

It is recommended to general practitioners and other PHC physicians to guide all subjects with hypertension or high normal blood pressure for immediate smoking cessation.

**Level of evidence: (I, II)**

**Class of**

**recommendation: A**

### **Recommendation 10: Non pharmaceutical treatment**

It is recommended to general practitioners, other PHC physicians and professionals to encourage each subject with hypertension or high normal hypertension to:

- adopt a diet high in fruits, vegetables, fat-free dairy, potassium and calcium and low in fat,
- reduce salt consumption and alcohol consumption to no more than 1-2 standard drinks per day, and
- do regular physical exercise.

**Level of evidence: (I, II)**  
**recommendation: A**

**Class of**

**Recommendation 11: Pharmaceutical treatment – Initiation treatment**

It is recommended to general practitioners and other PHC physicians not to initiate pharmaceutical treatment to individuals with Systolic Blood Pressure<140mmHg and Diastolic Blood Pressure<90mmHg with or without comorbidities.

**Level of evidence: (I, II)**  
**recommendation: A**

**Class of**

**Recommendation 12: Pharmaceutical treatment – Initiation treatment**

It is recommended to general practitioners and other PHC physicians to suggest total lifestyle changes for a few months period to each subject with hypertension grade 1 or 2 and low or moderate Cardiovascular Risk and after that period to initiate pharmaceutical therapy if Blood Pressure remains > 140/90mmHg.

**Level of evidence: (I, II)**  
**recommendation: A**

**Class of**

**Recommendation 13: Pharmaceutical treatment – Initiation treatment**

It is recommended to general practitioners and other PHC physicians to initiate pharmaceutical treatment within 2-3 weeks in each subject with hypertension grade 1 or 2 and high or very high CVR.

**Level of evidence: (I, II)**  
**recommendation: A**

**Class of**

**Recommendation 14: Pharmaceutical treatment – Initiation treatment**

It is recommended to general practitioners and other PHC physicians to initiate pharmaceutical treatment within a few days period in each subject with hypertension grade 3.

**Level of evidence: (I, II)**  
**recommendation: A**

**Class of**

**Recommendation 15: Pharmaceutical treatment – Initiation treatment**

It is recommended to general practitioners and other PHC physicians to initiate pharmaceutical treatment to subjects with hypertension at the age between 65 and 80 years and Systolic Blood Pressure>140mmHg, while initiation of treatment at the age>80years is recommended when Systolic Blood Pressure>160mmHg.

**Level of evidence: (I)**  
**recommendation: A**

**Class of**

**Recommendation 16: Pharmaceutical treatment – Initiation treatment**

It is recommended to general practitioners and other PHC physicians that diuretics (thiazides, chlorthalidone and indapamide) or beta-blockers or calcium antagonists or ACE inhibitors or angiotensin receptor blockers are all suitable and recommended for the initiation and maintenance of antihypertensive treatment.

**Level of evidence: (I, II)** **Class of recommendation: A**

**Recommendation 17: Pharmaceutical treatment – Initiation treatment**

It is recommended to general practitioners and other PHC physicians that in each subject with hypertension grade 3 and high or very high Cardiovascular Risk, initiation treatment with a combination of 2 antihypertensive drugs should be considered.

**Level of evidence: (I, II)** **Class of recommendation: A**

**Recommendation 18: Pharmaceutical treatment – Indications of first line antihypertensive medication**

It is recommended to general practitioners and other PHC physicians that ACE inhibitors (angiotensin-converting-enzyme inhibitors), beta-blockers and angiotensin receptor blockers are the first line therapy for subjects with hypertension and heart failure. Aldosterone antagonists are an additional contributing treatment.

**Level of evidence: (I)** **Class of recommendation: A**

**Recommendation 19: Pharmaceutical treatment – Indications of first line antihypertensive medication**

It is recommended to general practitioners and other PHC physicians that ACE inhibitors (angiotensin-converting-enzyme inhibitors) or beta-blockers or angiotensin receptor blockers are the first line therapy for subjects with hypertension and after AMI.

**Level of evidence: (I)** **Class of recommendation: A**

**Recommendation 20: Pharmaceutical treatment – Indications of first line antihypertensive medication**

It is recommended to general practitioners and other PHC physicians that beta-blockers or long-acting calcium antagonists are the first line therapy for subjects with hypertension and angina.

**Level of evidence: (I)** **Class of recommendation: A**

**Recommendation 21: Pharmaceutical treatment – Indications of first line antihypertensive medication**

It is recommended to general practitioners and other PHC physicians that in subjects with hypertension and LVH, initiation of treatment should be with ACE inhibitors or angiotensin receptor blockers or calcium antagonist.

**Level of evidence: (II)** **Class of recommendation: A**

**Recommendation 22: Pharmaceutical treatment – Indications of first line antihypertensive medication**

It is recommended to general practitioners and other PHC physicians that all classes of antihypertensive agents are appropriate and can be used in subjects with hypertension and diabetes. RAS blockers may be preferred, especially in the presence of proteinuria or microalbuminuria.

**Level of evidence: (I)** **Class of recommendation: A**

**Recommendation 23: Pharmaceutical treatment – Indications of first line antihypertensive medication**

It is recommended to general practitioners and other PHC physicians that for subjects with hypertension and chronic kidney disease diabetic or non diabetic etiology the treatment of choice is ACE inhibitors or angiotensin receptor blockers.

**Level of evidence: (I, II)** **Class of recommendation: A**

**Recommendation 24: Pharmaceutical treatment – Indications of first line antihypertensive medication**

It is recommended to general practitioners and other PHC physicians that for subjects with hypertension and chronic renal insufficiency ( eGFR<30ml/min) that thiazides diuretics are not effective and loop diuretics are prescribed instead.

**Level of evidence: (I, II)** **Class of recommendation: A**

**Recommendation 25: Pharmaceutical treatment – Indications of first line antihypertensive medication**

It is recommended to general practitioners and other PHC physicians that the treatment for subjects with hypertension and paroxysmal atrial fibrillation is ACE inhibitors or angiotensin receptor blockers, because they decrease the possibility of relapse.

**Level of evidence: (III)** **Class of recommendation: A**

**Recommendation 26: Pharmaceutical treatment – Indications of first line antihypertensive medication**

It is recommended to general practitioners and other PHC physicians that in subjects at the age of > 65 years with hypertension, initiation of the treatment is based on thiazide diuretics or calcium antagonists (dihydropyridine).

**Level of evidence: (I, II)** **Class of recommendation: A**

**Recommendation 27: Pharmaceutical treatment – Contraindications of first line antihypertensive medication**

It is recommended to general practitioners and other PHC physicians that the administration of a combination of a thiazide diuretic with a beta-blocker is avoided in subjects with hypertension and high risk of diabetes.

**Level of evidence: (III)** **Class of recommendation: A**

**Recommendation 28: Pharmaceutical treatment – Contraindications of first line antihypertensive medication**

It is recommended to general practitioners and other PHC physicians that the administration of thiazide diuretics is avoided in patients with hypertension and gout (not simple hyperuricaemia).

**Level of evidence: (III)** **Class of recommendation: A**

**Recommendation 29: Pharmaceutical treatment – Contraindications of first line antihypertensive medication**

It is recommended to general practitioners and other PHC physicians that the administration of beta-blockers in patients with asthma, chronic obstructive

pulmonary disease, second- or third-degree atrioventricular block and metabolic syndrome should be avoided.

**Level of evidence: (II, III)** **Class of**

**recommendation: A**

**Recommendation 30: Pharmaceutical treatment – Contraindications of first line antihypertensive medication**

It is recommended to general practitioners and other PHC physicians not to administrate 2 RAS inhibitors together (ACE inhibitors, angiotensin receptor blocker).

**Level of evidence: (I)** **Class of**

**recommendation: A**

**Recommendation 31: Pharmaceutical treatment – Contraindications of first line antihypertensive medication**

It is recommended to general practitioners and other PHC physicians that the administration of ACE inhibitors and angiotensin receptor blockers to subjects with hypertension during pregnancy (and in potentially pregnant women) or with bilateral renal artery stenosis or hyperkalemia or history of angioedema (ACE inhibitors) is avoided.

**Level of evidence: (III)** **Class of**

**recommendation: A**

**Recommendation 32: Pharmaceutical treatment – Contraindications of first line antihypertensive medication**

It is recommended to general practitioners and other PHC physicians to administrate a fixed-dose or free combination of a thiazide diuretic with an ACE inhibitor or an angiotensin receptor blocker to subjects with hypertension.

**Level of evidence: (I)** **Class of**

**recommendation: A**

**Recommendation 33: Pharmaceutical treatment – Guidelines on antihypertensive drugs combined administration**

It is recommended to general practitioners and other PHC physicians to administrate fixed-dose or free combination of a calcium antagonist with ACE inhibitor or ARB or a thiazide diuretic to subjects with hypertension.

**Level of evidence: (I)** **Class of**

**recommendation: A**

**Recommendation 34: Pharmaceutical treatment – Contraindications of first line antihypertensive medication**

It is recommended to general practitioners and other PHC physicians not to administrate combination of a non-dihydropyridine calcium channel blocker and a beta-blocker to subjects with hypertension.

**Level of evidence: (I)** **Class of recommendation: A**

**Recommendation 35: Treatment goals**

It is recommended to general practitioners and other PHC physicians that Systolic Blood Pressure/Diastolic Blood Pressure treatment goal in subjects with hypertension should be <140/90mmHg independently of the presence of renal disease, coronary artery disease, stroke etc.

**Level of evidence: (I)** **Class of recommendation: A**

**Recommendation 36: Treatment goals**

It is recommended to general practitioners and other PHC physicians that Systolic Blood Pressure/Diastolic Blood Pressure treatment goal in subjects with hypertension and diabetes should be <140/85 mmHg .

**Level of evidence: (I)** **Class of recommendation: A**

**Recommendation 37: Treatment goals**

It is recommended to general practitioners and other PHC physicians that Systolic Blood Pressure treatment goal in subjects with hypertension between 65 and 80 years old should be <140mmHg, while in those >80years old with hypertension should be 140 - 150mmHg with the restriction that they are in good physical and mental condition.

**Level of evidence: (I)** **Class of recommendation: A**

**Recommendation 38: Special circumstances**

It is recommended to general practitioners and other PHC physicians to administrate low doses of aspirin (100mg per day), to subjects with hypertension with previous myocardial infarction or stroke or renal insufficiency or high Cardiovascular Risk, provided that blood pressure is well controlled.

**Level of evidence: (I, II)** **Class of recommendation: A**

**Recommendation 39: Reference to a specialist**



It is recommended to general practitioners and other PHC physicians that reference to a specialist should be suggested in cases of resistant hypertension (hypertension persists despite the concomitant administration of full dose of three different kinds of drugs, one of which is diuretics).

**Level of evidence: (II, III)** **Class of recommendation: A**

**Recommendation 40: Reference to a specialist**

It is recommended to general practitioners and other PHC physicians that reference to a specialist is suggested in cases of suspicion of Secondary Hypertension.

**Level of evidence: (II, III)** **Class of recommendation: A**

**Recommendation 41: Multidisciplinary team**

For the better support of people with hypertension, it is recommended general practitioners and other physicians in Primary Health Care to collaborate with a team consisting of specialists and other healthcare professionals (nurses, health visitors, social workers dieticians/ nutritionists, psychologist etc).

**Level of evidence: (IV)** **Class of recommendation: B**

**Recommendation 42: Self-management**

It is recommended to GPs and other PHC physicians to work in partnership with other PHC professionals and patients to compile a written action plan and advocacy with self-management plan that contributes further to the hypertension regulation.

**Level of evidence: (IV)** **Class of recommendation: B**

**Recommendation 43: Health services**

It is recommended that GPs and other PHC physicians should keep patient record in order to monitor their care.

**Level of evidence: (I)** **Class of recommendation: B**

**Recommendation 44: Health services**

It is recommended to GPs and other PHC physicians to cooperate with services and programs of domiciliary care.

**Level of evidence: (IV)** **Class of recommendation: B**

**Recommendation 45: Health services**

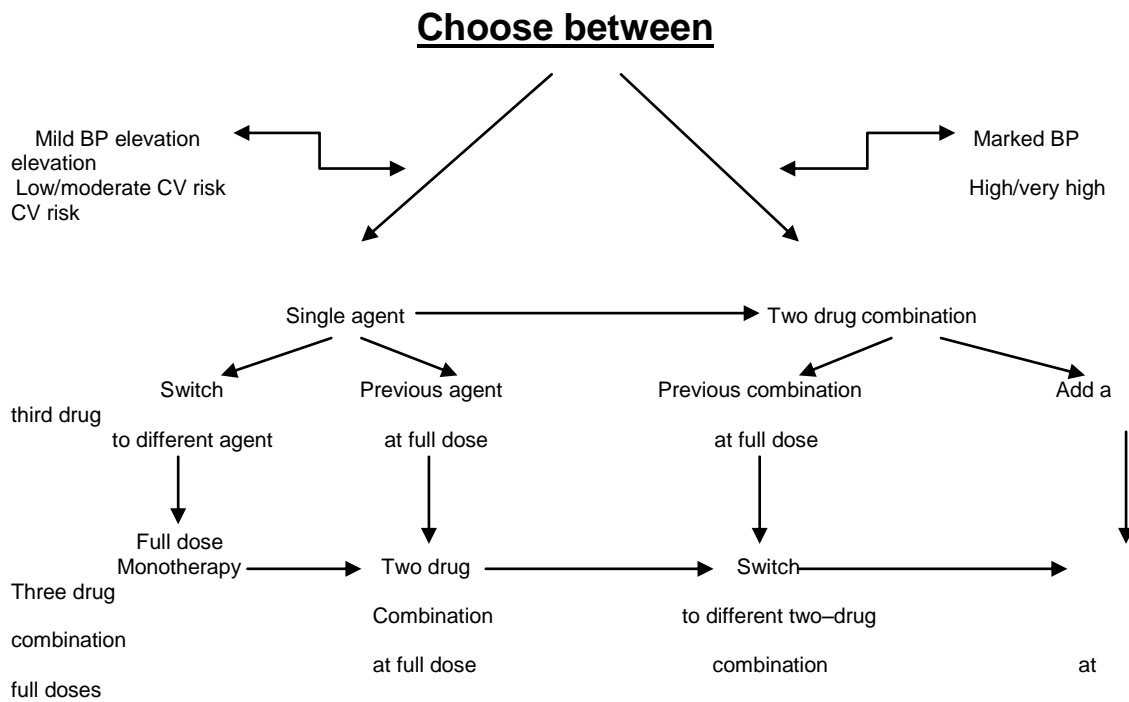
It is recommended to GPs and other PHC physicians as well as other PHC professionals to encourage subjects with hypertension to participate in programs and actions of associations of non-governmental association in order to be motivated and improve their quality of life.

**Level of evidence: (IV)**  
**recommendation: B**

**Class of**

**Παράρτημα 3: Practical algorithm**

**Figure 1: Algorithm for the management of patients with Hypertension**



**BP = blood pressure; CV = cardiovascular**