

HIGH BLOOD PRESSURE

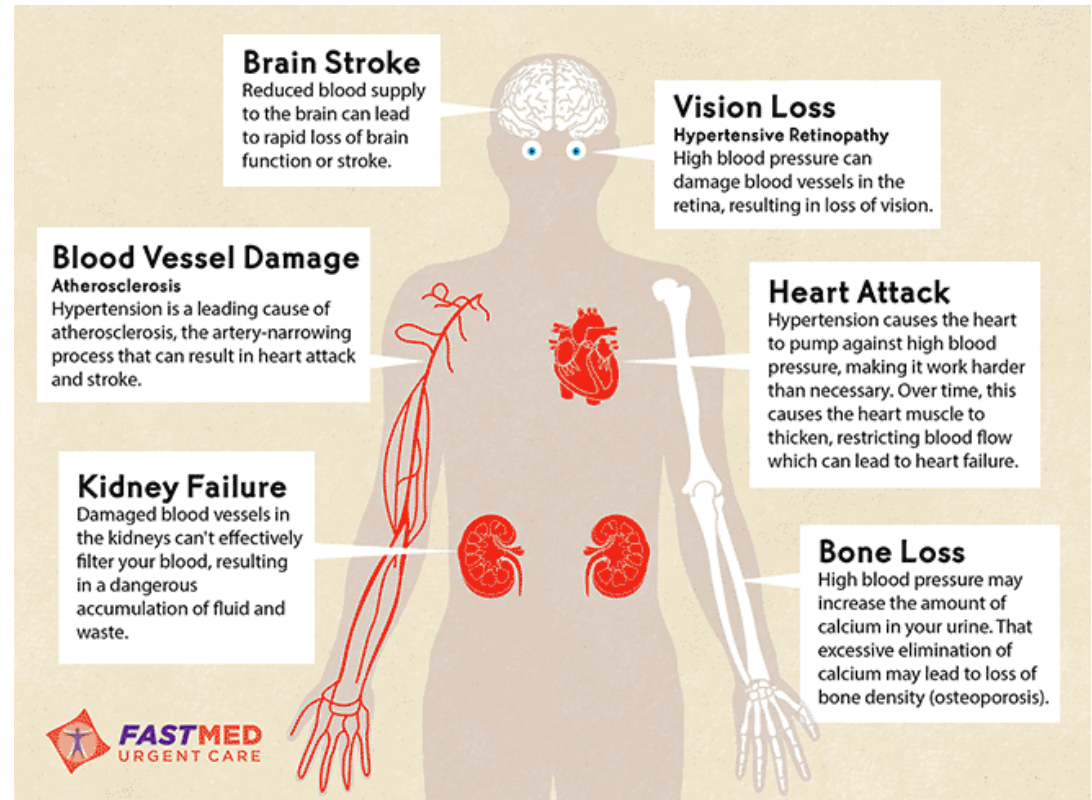
Systemic Arterial Hypertension

Hypertension, aka as **high blood pressure**, defines a long term medical condition in which the blood pressure in the arteries is persistently elevated.

- **primary** (essential) HBP accounts for approximately 90–95% of cases
- **secondary** HBP is the remaining 5–10% of cases

Although high blood pressure usually does not cause symptoms by itself, long term high blood pressure is a major risk factor for

- **coronary artery disease,**
- **stroke,**
- **heart failure,**
- **peripheral vascular disease,**
- **vision loss,**
- **chronic kidney disease.**



HIGH BLOOD PRESSURE

Systemic Arterial Hypertension

Blood Pressure Category	Systolic mm Hg (upper #)		Diastolic mm Hg (lower #)
Normal	less than 120	and	less than 80
Prehypertension	120 – 139	or	80 – 89
High Blood Pressure (Hypertension) Stage 1	140 – 159	or	90 – 99
High Blood Pressure (Hypertension) Stage 2	160 or higher	or	100 or higher
Hypertensive Crisis (Emergency care needed)	Higher than 180	or	Higher than 110

There is a continuum relationship between arterial pressure levels and cardiovascular risk. Therefore, clinical evaluation (and subsequent therapeutic approach) should not be based exclusively on blood pressure levels, but it should take into account the whole patient cardiovascular risk

HIGH BLOOD PRESSURE and global cardiovascular risk

Cardiovascular risk is intended here as the likelihood of a person developing a cardiovascular event over a defined time period.

Other risk factors, asymptomatic organ damage or disease	Blood pressure (mmHg)			
	High normal SBP 130–139 or DBP 85–89	Grade 1 HT SBP 140–159 or DBP 90–99	Grade 2 HT SBP 160–179 or DBP 100–109	Grade 3 HT SBP ≥180 or DBP ≥110
No other RF		Low risk	Moderate risk	High risk
1–2 RF	Low risk	Moderate risk	Moderate to high risk	High risk
≥3 RF	Low to moderate risk	Moderate to high risk	High risk	High risk
OD, CKD stage 3 or diabetes	Moderate to high risk	High risk	High risk	High to very high risk
Symptomatic CVD, CKD stage ≥ 4 or diabetes with OD/RFs	Very high risk	Very high risk	Very high risk	Very high risk

BP = blood pressure; CKD = chronic kidney disease; CV = cardiovascular; CVD = cardiovascular disease; DBP = diastolic blood pressure; HT = hypertension; OD = organ damage; RF = risk factor; SBP = systolic blood pressure.

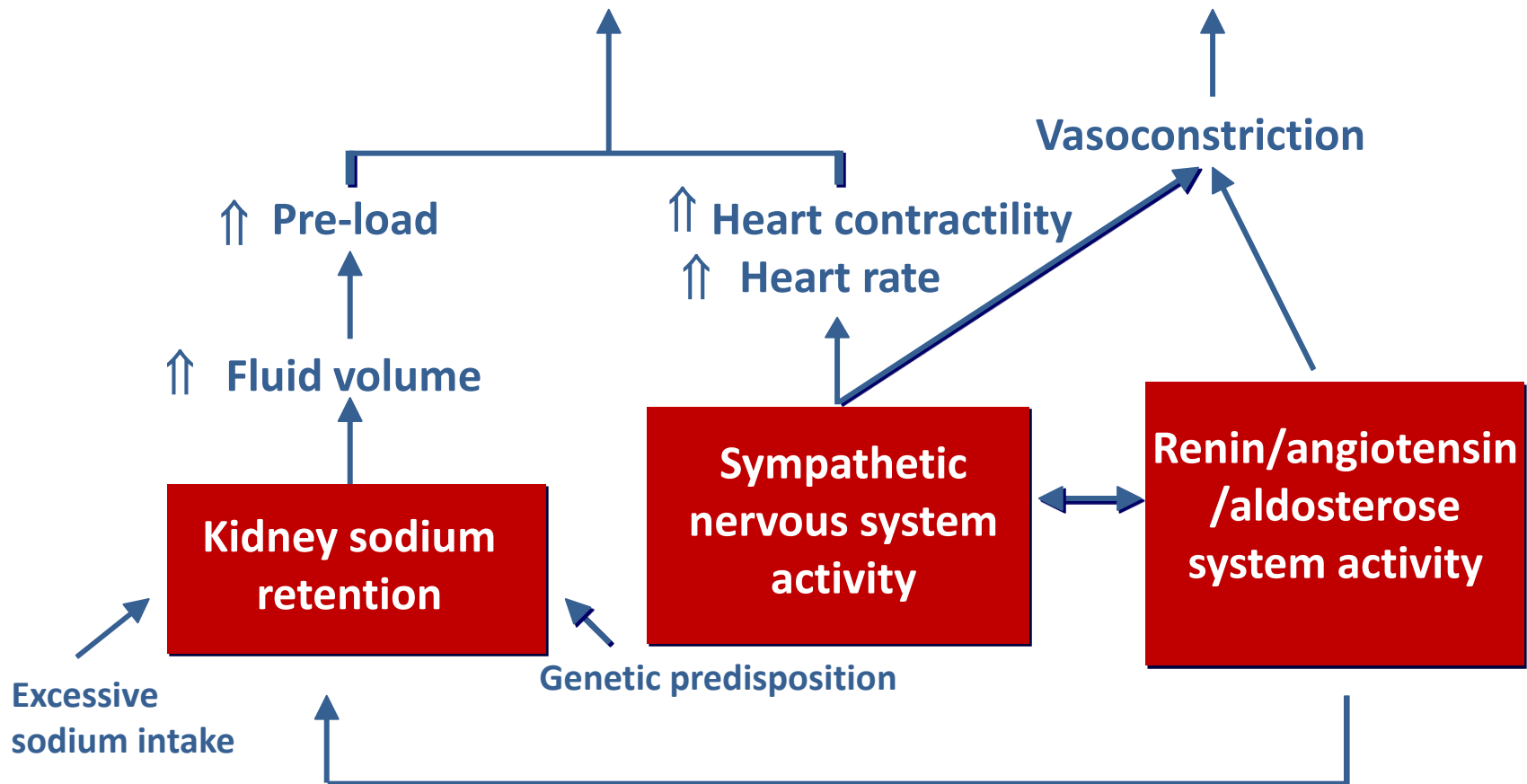
CARDIOVASCULAR RISK FACTORS

Risk Factor	Defining Criteria
Age	Men \geq 45 yrs; Women \geq 55 yrs
Family History	Heart attack, 'Bypass surgery', or sudden death before the age of 55 yrs for father/brother; or before 65 yrs for mother/sister.
Cigarette smoking	Current smoker, or have quit < 6 months, or is exposed to environmental smoke.
Sedentary lifestyle	Not participating in moderate (that makes you sweat) physical activity at least 3 days/week for 3-months.
Obesity	Body mass index \geq 30 kg/m ² or waist girth > 102 cm (40 in) for men and > 88 cm (35 in) for women.
Hypertension	Systolic Blood Pressure \geq 140 mmHg and or Diastolic \geq 90 mmHg, or taking medication.
Dyslipidemia	LDL \geq 130 mg/dl, or HDL < 40 mg/dl, or taking medication. Or TC > 200 mg/dl
Pre-diabetes	IFG \geq 100 mg/dl or OGTT \geq 140 and \leq 199 mg/dl confirmed by two different measurements.
Negative Risk Factor	
HDL	\geq 60 mg/dl
<i>ACSM's Guidelines for Exercise Testing & Prescription. LWW, 2014 (p. 27).</i>	

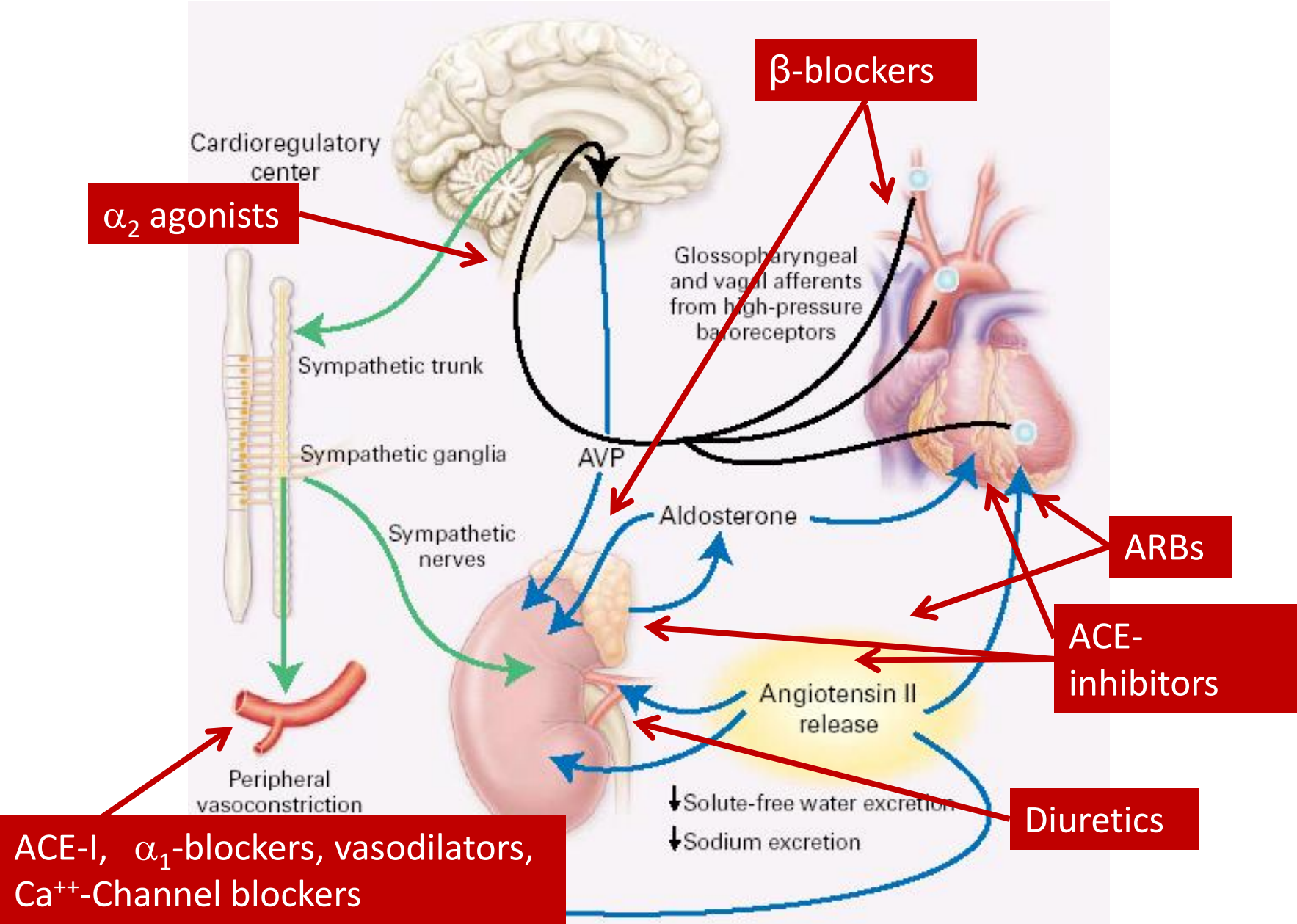
THE DETERMINANTS OF ARTERIAL BLOOD PRESSURE

Systemic blood pressure = Cardiac output x Total peripheral resistance










Hypertension = Increased CO and/or increased TPR



ANTI-HYPERTENSIVE DRUGS



SUMMARY OF SITES AND MECHANISMS BY WHICH ANTIHYPERTENSIVE DRUGS REDUCE BLOOD PRESSURE.

Drugs	Organ	Mechanisms
<ul style="list-style-type: none"> β Receptor blockers Peripherally acting sympatholytics 		Decrease in force and rate of cardiac contraction 
<ul style="list-style-type: none"> Diuretics Angiotensin inhibitors β Receptor blockers 		Decrease in blood volume 
<ul style="list-style-type: none"> Peripherally acting sympatholytics Ca^{++} channel blockers Direct vasodilators Angiotensin inhibitors 		Relax vascular smooth muscle 
<ul style="list-style-type: none"> Centrally acting sympatholytics β Receptor blockers 		Decreased sympathetic outflow  

THE "ABC" OF HIGH BLOOD PRESSURE TREATMENT

ANTIHYPERTENSIVE DRUGS



ACE INHIBITORS:



B-BLOCKERS:



CALCIUM ANTAGONISTS:



C MILLER