Hypertension and vascular disease

BP categories, the crisis, arterial vs venous legs, aneurysm, Raynaud and Buerger

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CARDIOVASCULAR

1 AT A GLANCE

High blood pressure is silent, common, and damages the heart, brain, kidneys and eyes. Most people have no symptoms.

Adult blood pressure (mmHg)

Category	Systolic	Diastolic
Normal	Under 120	and under 80
Elevated	120 to 129	and under 80
Stage 1	130 to 139	or 80 to 89
Stage 2	140 or higher	or 90 or higher
★ **Severe**	Over 180	or over 120

Diagnosis: Except in emergencies, it uses averaged, properly taken readings, typically confirmed at home or a pharmacy before treatment. Take them seated and relaxed, in both arms.

Causes and risks

- Primary: the most common type, with no single cause we can find.
- Secondary: from another problem, like kidney disease, hormone disorders or sleep apnea.
- Drugs that raise it: anti-inflammatory pain relievers, decongestants like pseudoephedrine, estrogen birth control pills.
- Risks: age, family history, obesity, a salty diet, heavy drinking, chronic stress, inactivity.
- Untreated: heart attack, heart failure, stroke, vision loss, kidney damage. Providers check the heart, the retinal vessels and kidney function.

Lifestyle and drug teaching

- ★ Lifestyle change is for everyone; at stage 2, and in higher-risk clients, drugs usually start right away too. Teach a heart-healthy diet, like the DASH plan, with potassium and fiber; aim for **under 1,500 mg of sodium a day**.
- At least 150 minutes of moderate to vigorous aerobic exercise a week. Alcohol: 1 drink a day for women, 2 for men, or less. Stop tobacco, reach a healthy weight, reduce stress.
- ★ Many need two or more drugs. Take them as prescribed, **report side effects instead of stopping**, and bring a home pressure log.
- ACE inhibitors: dry cough, high potassium, angioedema. Beta blocker: apical pulse first. Amlodipine: ankle swelling. Rise slowly.

Hypertensive crisis

- ★ Over 180 or 120 mmHg is severe. **Acute organ injury, not the number, makes it an emergency.**
- ★ Signs: severe headache, nausea and vomiting, confusion, vision changes, nosebleeds. Headache and nosebleeds alone are nonspecific; **confusion or vision changes can signal organ injury: recheck, stay, escalate urgently**.
- ★ A hypertensive emergency is treated with IV drugs in a monitored setting; severe pressure without organ injury usually gets oral drugs. **Avoid rapid or excessive drops.**
- Monitor the pressure during and after each dose. It falls more when upright: keep the client lying down until it's safe to stand.
- Nitroprusside lowers pressure immediately: use it only where the pressure is monitored continuously. Dilute it, never push it; higher or longer infusions can cause cyanide toxicity.

Arterial or venous?

	Arterial: peripheral artery disease	Venous insufficiency
Problem	Atherosclerosis narrows the arteries to the legs	Weak walls and damaged valves let blood pool in the leg veins
★ **Pain**	Claudication: calf, thigh or hip pain with walking that eases with rest	Aching, heavy legs: worse standing, better raised
Skin	Cool, pale when raised, dusky red when lowered; hair loss, thick nails	Swollen, dark and discolored, dry or scaly
Pulses	Weak or absent; capillary refill over 3 seconds	Usually present
Ulcers	Toes or feet	Legs or ankles; heal slowly
★ **Position**	**Let the legs dangle**	**Raise the legs**

Arterial care

- ★ Stable claudication: **walk to the point of pain, rest, then walk again**. This builds collateral circulation. Not for acute limb ischemia.
- Let the legs dangle when sitting; if there's swelling, raise them, but not above the heart.
- No tight clothing or crossed legs. Inspect the feet every day, and report any injury.
- Stop smoking; control pressure, cholesterol and glucose. Statins and antiplatelet drugs are common.

Venous care

- Compression stockings, fitted and put on correctly; watch the skin under them.
- Raise the legs, above the heart when sitting. Walk and work the calf muscles; avoid long sitting or standing.

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Hypertension and vascular disease

1 AT A GLANCE, CONTINUED

Aneurysm

- A bulge in a weakened vessel wall. Rupture: a burst that can cause fatal bleeding. Dissection: a tear in the inner wall, with bleeding inside the wall.
- Risks: hypertension, atherosclerosis, smoking, age. Most cause no signs until they're large or rupture.
- Signs: a pulsating mass or a bruit over the artery. An abdominal aortic aneurysm can cause dull low back pain, or deep, tearing, constant abdominal pain.
- Small ones are watched with repeat imaging. Control the pressure, with drugs like beta blockers and ACE inhibitors, and stop smoking. Repair: open surgery, or a stent graft placed through the groin.
- Screening: in 2019, the USPSTF advised a one-time abdominal ultrasound for men 65 to 75 who have ever smoked.

Raynaud and Buerger

	Raynaud phenomenon	Buerger disease
What	Cold or strong emotion makes small arteries spasm	Inflames and clots small vessels of the hands and feet
Who	Primary often starts in women under 30; secondary comes with scleroderma, lupus, smoking or some drugs	Mostly men 20 to 45 who use tobacco heavily
Signs	Fingers turn white, then blue, then red	Cold, pale or bluish fingers and toes; pain at rest; small painful ulcers
★ **Teach**	Keep warm; gloves outdoors and for frozen food; stop smoking; avoid caffeine. Report sores or color that doesn't return	**Stop all tobacco**: the key treatment. Clients who keep using it can need repeated amputations

2 PRIORITY AND SAFETY CALLS

★ Severe pressure with new confusion or vision changes: **recheck the pressure, stay with the client, and escalate urgently**.

★ During an IV antihypertensive: **close monitoring so the pressure doesn't fall too fast**; keep the client lying down.

★ The six P's (pain, paralysis, tingling, no pulse, pallor, cold) signal acute limb ischemia: an emergency, so get help at once.

After vascular surgery: check the site and the distal pulses, and report any drop in perfusion at once.

★ Known aneurysm with low pressure, fainting, and cool, pale, sweaty skin: bleeding or rupture. **Treat it as an emergency and get help at once.**

3 EXAM ANCHORS

1. Hypertension is usually silent: diagnose it from averaged readings confirmed out of office.
2. Severe is over 180 or 120 mmHg; organ injury makes it an emergency; lower it gradually.
3. Arterial legs are cool and pale, with pain on walking: let them dangle. Venous legs are swollen and dark: raise them.
4. Stable claudication: walk to the point of pain, rest, then walk again.
5. An aneurysm with shock signs is an emergency.
6. Raynaud and Buerger: keep warm, and no tobacco.
7. Traps: raising an arterial leg, mixing up arterial and venous signs, dropping a crisis pressure fast, and cutting down on tobacco instead of stopping.

4 SELF-QUIZ

1. Stage 2 is a systolic of _____ mmHg or higher, or a diastolic of 90 or higher.
2. Severe is over 180 systolic, or over _____ diastolic.
3. Aim for under _____ mg of sodium a day.
4. Get at least _____ minutes of aerobic exercise a week.
5. Venous ulcers are on the legs or ankles; arterial ulcers are on the _____ or feet.
6. In Raynaud, the fingers turn white, then blue, then _____.
7. In 2019, the USPSTF advised a one-time abdominal ultrasound for men 65 to _____ who have ever smoked.

ANSWER KEY 1. 140 · 2. 120 · 3. 1,500 · 4. 150 · 5. toes · 6. red · 7. 75

5 SOURCES

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Built from RN PocketPal course lessons: Hypertension and vascular disease (c08-l04). Every line on this sheet comes from those lesson scripts.

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