

Orthostatic vitals

"Vital signs are vital."

Why take orthostatic vital signs?

Orthostatic vital signs are measured to check for "orthostatic hypotension," which is an abnormal drop in blood pressure when you change position.

Normally, here's what happens:

- When you change from lying/sitting to sitting/standing, the blood pools in your lower body. Now less blood fills the heart, just for a moment, and the heart pumps at a lower pressure.
- The body senses this, and fixes it by giving you a tiny jolt of adrenaline-like hormones. Now the heart beats more strongly and the blood vessels tone up, increasing the pulse and blood pressure to normal again.

What is orthostatic hypotension?

If the body doesn't react normally, the blood stays pooled in the lower body, and the blood pressure and pulse do not return to normal. This causes dizziness and faintness, due to "orthostatic hypotension."

This is usually caused by low blood volume, for example when you are dehydrated. Dehydration can result from medications (water pills), from vomiting, from high blood sugar. You'd also have a low blood volume if you recently lost a lot of blood due to injury, childbirth, or surgery.

Sometimes it is caused by a low response of the adrenaline system (the flight-or-flight "sympathetic nervous system"). This in turn can be caused by:

- Neurological problems (due to diabetes or autoimmune problems, for example)
- Medications (blood pressure meds, tricyclic antidepressants, Parkinson's drugs)
- Drug withdrawal (from pain medicines or from anti-inflammatory steroids, for example).

These cause dizziness on rising all the time, not once in a while.

It can also occur with heart or valve problems, like aortic stenosis caused for example by untreated strep throat (rheumatic fever).

Occasional low blood pressure after eating, or when using the bathroom, is due to overactivity of the rest-and-digest "parasympathetic nervous system." This overrides the usual adrenaline response, producing orthostatic hypotension. Prevent this by eating smaller meals, and eating more slowly.

How to take orthostatic vital signs:

You need:

Pen and paper

Watch or clock with second hand

Blood pressure cuff

(Stethoscope - optional)

1. Have person lie down comfortably for 10 minutes.
2. After 10 minutes, take blood pressure and pulse. Write them down. (If you can't find wrist pulse [on thumb side] or neck pulse [next to Adam's apple], you can count heartbeats with stethoscope.)
3. Now have person stand up (or sit up, if unable to stand). Wait one minute (60 seconds). Be ready to catch them if they fall!
4. Write down blood pressure and pulse, standing/sitting up for 60 seconds. Don't forget to record name, date, and time (for records)!

Results ...

Subtract to find:

- Change in systolic blood pressure = (top number lying down) minus (top number standing up)
A drop of less than 20 is normal. More than twenty is abnormal.
- Change in diastolic blood pressure = (bottom number lying down) minus (bottom number standing up)
A drop of less than 10 is normal. More than ten is abnormal.
- Change in pulse = (pulse lying down) minus (pulse standing up)
Changes in pulse give clues to the cause of a blood pressure drop.

Some people only have symptoms (dizziness, fainting) after 5 or 10 minutes standing up. If this is the case, measure their blood pressures and pulses at 5 and 10 minutes. Have them stand up with the backs of their legs against a bed, in case they faint.

If a person has orthostatic hypotension, they will need to stay well hydrated and protect themselves against falls.

- They need to sit on the edge of the bed for a minute before they stand up, They need to avoid standing in line for long periods without any place to sit.
- They need to drink 2 liters of fluid per day, mostly plain water.
- They may need to normalize their blood sugar.
- They should review all their medications and supplements with their doctor as soon as possible - taking their home "orthostatic vitals" measurements along, to share.