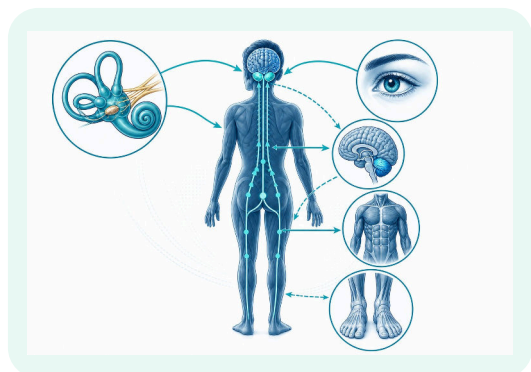


## Steady on Your Feet: Balance, Walking, and Leg Strength



### WHAT IS HAPPENING?



Falls are not just a normal part of getting older — most of them happen because leg muscles get weak and balance gets rusty, and both of those can be rebuilt at any age. These are the starting exercises from a program proven to lower falls, simplified for home use without a therapist; the benefit comes from working up steadily and keeping at it for many months, not from a few good weeks.



### READ THIS BEFORE YOU START

Read this first. These exercises are general education, not a diagnosis. If you have not been examined for this problem, call us before starting. Stop and read "Stop and get help" on the last page now, so you know the warning signs before you begin.

#### KEEP THE SUPPORT SHOWN IN THE PICTURE

Where a movement picture is shown, it shows the complete person and the complete safety setup.

# How Your Week Fits Together

## ● STRETCHES

- Do both stretches first, on the same 3 days you do your exercises. A stretch should feel like a gentle pull, never a sharp or burning pain, and you should never bounce.

## ● HOME EXERCISES

### ● Before you start — ask us first if any of these apply to you

- You use a cane or a walker; you have had a stroke or have Parkinson's disease; you have had hip or knee surgery in the last 3 months, or a hip or knee replacement at any time; you have numbness, burning, or loss of feeling in your feet; your vision has changed, or you are waiting on cataract surgery or being treated for macular degeneration or diabetic eye disease; you have had two or more falls in the past year or a fall that hurt you. Any of these changes which exercises are safe for you and how far you should progress. If you have numbness in your feet or vision that is not fully corrected, keep at least your fingertips on the counter at all times — do not go on to the hands-hovering step on your own.

### ● How your week fits together

- Pick 3 exercise days with a rest day in between — for example Monday, Wednesday, Friday.

- Do the balance and walking practice on **all 3 days**, gym or no gym. No machine does that job, and that is the part that actually lowers falls.

- If you do not go to a gym: do all three home exercises on all 3 days.

- If you do go to a gym: the three machines **replace** the sit-to-stand and the heel raises on your 2 gym days. Never do more than 3 leg-strengthening days in a week. Five days of leg work will leave your legs tired and unreliable, which is the opposite of what we want.

# How Your Week Fits Together

- Walking: start at 10 minutes at your usual pace, on 2 days that are **not** your exercise days. Start indoors, or on flat, even, well-lit ground. You may split it into two 5-minute walks. Build up toward 30 minutes over about a month. Use your cane or walker if you use one. No walking at dusk, on grass, or on uneven ground.
- If you have fallen in the past year, do not start the outdoor walking until we clear it at a visit. Indoor walking is fine to start now.
- Walking is for your heart and your stamina. Walking by itself does not prevent falls. If you only have time for one thing, do the balance practice.
- Over the next 2 to 3 months, work up toward about 3 hours a week of exercise and walking put together, and then keep going. Falls only go down when this continues month after month.
- Keep your phone in your pocket every time you exercise.

## ● GYM EXERCISES

- **Before your first gym session:** Ask a staff member to set up each machine for you the first time — it is free and it is what they are there for. On your first gym day, do **one light set** of each machine and then stop, and see how you feel the next morning before you build up to 2 sets. Watch the floor while you are there: wet locker-room and pool-deck tile, dumbbells left lying around, and cables to step over are the trip hazards in a gym. These machines are the substitute for your home strength work, not extra work on top of it.

## ● WHY THESE MOVEMENTS HELP

- **Sit-to-Stand from a Sturdy Chair:** So you can get out of a chair, a car, or off the toilet on your own — and so your legs are strong enough to catch you when you stumble.
- **Balance and Walking Practice at the Counter:** This is the part that actually lowers falls. Leg strength alone has not been shown to prevent falls — you need both. Walking sideways also works the side-hip muscles that keep you steady when you turn or get bumped, which is how many people fall and break a hip.

## How Your Week Fits Together

- **Heel Raises and Toe Raises at the Counter:** Your ankles make the small, quick corrections that keep you upright, and toe raises help your foot clear rugs and door thresholds so you do not trip.
- **Seated Leg Press:** Builds the thigh and hip muscles you use to stand up out of a chair and to catch yourself in a stumble. On gym days this takes the place of your sit-to-stands.
- **Seated Leg Curl:** The muscles at the back of your thigh control your leg when you step down a curb or walk downhill, and they help keep you from pitching forward.
- **Seated Calf Raise:** Your calf muscles make the quick push that catches you when you start to tip forward, and they push you off the ground with every step. On gym days this takes the place of your heel raises at the counter.

# Calf Stretch at the Counter

Match the setup first. Then move slowly toward the end-position reference.

## 1 START / SETUP



**MATCH THIS SETUP**

## 2 END POSITION



**MOVE TO HERE**

### WATCH THIS

The back heel has to stay flat on the floor — the moment it lifts, the stretch stops working.

### SET UP

Stand facing a kitchen counter with both hands flat on the edge, gripping it. Step one foot straight back about two feet. Point the back foot straight ahead toward the counter and press the back heel flat on the floor. Wear flat, closed shoes with a firm back.

### DO THIS

Keep the back knee straight and the back heel glued down. Gently bend your front knee and lean your hips toward the counter until you feel a comfortable pull in the calf — the muscle at the back of your lower leg — on the back leg. Hold still and breathe normally.

### HOW MUCH

Hold 30 seconds, 2 times on each leg, on your 3 exercise days.

### FORM CHECK

The back heel has to stay flat on the floor — the moment it lifts, the stretch stops working. Keep the back foot pointed straight ahead, not turned out to the side. Keep both hands on the counter the whole time.

# Front-of-Hip Stretch at the Counter (both feet flat)

Match the setup first. Then move slowly toward the end-position reference.

## 1 START / SETUP



MATCH THIS SETUP

## 2 END POSITION



MOVE TO HERE

**WATCH THIS** The buttock squeeze is the exercise, not the lean.

### SET UP

Stand facing the counter with both hands gripping the front edge — a real grip, not fingers resting on it. Take one short step straight back with one foot, about the length of your own shoe. Both feet stay flat on the floor, both toes pointing at the counter, feet about hip-width apart side to side. Let the back knee be slightly bent and soft.

### DO THIS

Keep gripping the counter with both hands and keep both heels down. Tighten your stomach and squeeze the buttock muscle of the back leg so your tailbone tucks under and your lower back flattens. That tuck is the whole stretch — you should feel a gentle pull across the front of the back hip without moving your feet at all. If you feel nothing, shift your weight forward about one inch, no more.

### HOW MUCH

Hold 30 seconds, 2 times on each leg, on your 3 exercise days.

### FORM CHECK

The buttock squeeze is the exercise, not the lean. Do not lift the back heel and do not step out into a long lunge — that narrows the base you are standing on and is exactly how people wobble. Do not arch your back. If you feel at all unsteady, do this sitting down instead: sit on the front half of a firm chair with arms that is backed against a wall, hold both chair arms, slide one foot back under the chair with that heel lifted, and do the same tailbone tuck.

# Sit-to-Stand from a Sturdy Chair

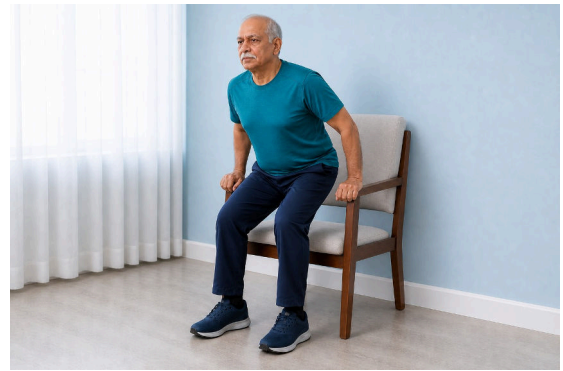
Match the setup first. Then move slowly toward the end-position reference.

## 1 START / SETUP



MATCH THIS SETUP

## 2 END POSITION



MOVE TO HERE

**WATCH THIS** Lean your chest forward over your feet **BEFORE** you push.

### WHY IT HELPS

So you can get out of a chair, a car, or off the toilet on your own — and so your legs are strong enough to catch you when you stumble.

### SET UP

Use a firm chair **with arms**, pushed back against a wall so it cannot slide. Sit toward the front half of the seat, feet flat on the floor and hip-width apart, ankles under or just behind your knees. Wear flat, closed shoes with a firm back. If you sink down into the seat or flop backward when you sit, the chair is too low — put a firm cushion on it.

### DO THIS

Lean your chest forward until your nose is over your toes, then push down through your heels and stand all the way up tall. Sit back down slowly, counting to three or four the whole way down. Do not drop into the chair.

### HOW MUCH

3 days a week. Move up one step at a time, and only after the step you are on has felt easy on two different days: 5 stands pushing down on both chair arms → 10 stands pushing down on both chair arms → 10 stands using one hand → 10 stands with your arms folded across your chest. Once 10 with folded arms is easy, do 2 sets of 10, resting 1 to 2 minutes between sets.

### FORM CHECK

Lean your chest forward over your feet **BEFORE** you push. Most people struggle here because they try to stand up while sitting straight upright. Breathe out as you rise. Never hold your breath and strain — that spikes your blood pressure and can leave you lightheaded, which matters a lot if you take blood pressure medicine or a water pill.

# Balance and Walking Practice at the Counter

Match the setup first. Then move slowly toward the end-position reference.

## 1 START / SETUP



MATCH THIS SETUP

## 2 END POSITION



MOVE TO HERE

### WATCH THIS

Some wobbling is the point — that is your balance system doing its job.

### SET UP

Stand facing a kitchen counter or a heavy fixed table with a solid cabinet base. A corner is good, but check behind you too: in these positions you are most likely to wobble backward, so clear the floor behind and beside you — no throw rug, no pet bed, no cord, no shoes on the floor — and stand where a wall is at your back or your side. Put both hands flat on the counter edge. Flat, closed shoes on. Phone in your pocket.

### DO THIS

**Part A, standing still:** Hold each foot position still for 10 seconds, eyes straight ahead at the wall, not down at your feet. Position 1: feet side by side and touching. Position 2: slide one foot forward so the big toe of the back foot is beside the instep of the front foot. Position 3: heel-to-toe, front heel directly in front of the back toes, both feet on one line.

**Part B, walking:** Sideways walking. With both hands sliding along the counter, take 10 slow steps sideways to the right — step the lead foot out, then bring the other foot over to meet it — then 10 slow steps back to the left. Once sideways walking feels easy with only your fingertips on the counter, switch Part B to heel-to-toe walking: 10 slow steps forward along the counter, placing the heel of each step directly in front of the toes of the other foot.

## Balance and Walking Practice at the Counter — Dose and Form

Use the START and END pictures on the previous page while you follow these details.

### HOW MUCH

3 days a week, every one of the 3 days. Part A: hold each position 10 seconds, working up to 30 seconds; 2 rounds of each position, then switch which foot is in front. Part B: 10 steps in each direction, 4 times through, resting whenever you need to. Make it harder by taking your hands away first, not by changing the foot position: both hands flat → one hand → fingertips of both hands → hands hovering just above the counter without touching. Only move on to the next foot position after you can hold the one before it for 30 seconds with your hands hovering, on two different days. Do not go past fingertip support at all if you have numbness in your feet or vision that is not fully corrected.

### WHY IT HELPS

This is the part that actually lowers falls. Leg strength alone has not been shown to prevent falls — you need both. Walking sideways also works the side-hip muscles that keep you steady when you turn or get bumped, which is how many people fall and break a hip.

### FORM CHECK

Some wobbling is the point — that is your balance system doing its job. But if you actually have to grab the counter to keep from falling, that step was too hard: put more fingers back down, or go back to the easier foot position. Never do this with your eyes closed, in a dark room, while turning your head quickly, or walking backwards. Never do it standing on a pillow, a couch cushion, a folded towel, a foam pad, or a wobble board.

# Heel Raises and Toe Raises at the Counter

Match the setup first. Then move slowly toward the end-position reference.

## 1 START / SETUP



MATCH THIS SETUP

## 2 END POSITION



MOVE TO HERE

### WATCH THIS

Go slowly, especially on the way down — the lowering is where the muscle is built.

### WHY IT HELPS

Your ankles make the small, quick corrections that keep you upright, and toe raises help your foot clear rugs and door thresholds so you do not trip.

### SET UP

Stand facing the same counter, feet hip-width apart and pointing straight ahead, **both hands flat on the counter edge**. Shoes on.

### DO THIS

Part A (heel raises): rise up onto the balls of both feet, counting to three, pause at the top, then lower slowly counting to four.  
Part B (toe raises): keep your heels planted and lift the front of both feet and your toes off the floor, pause, then lower slowly.

### HOW MUCH

10 heel raises, then 10 toe raises — that is one set. Do 2 sets, resting a minute between them, on your 3 exercise days. Once 2 sets are easy with both hands, do them with one hand, then with fingertips only.

### FORM CHECK

Go slowly, especially on the way down — the lowering is where the muscle is built. Do not push down on the counter with your arms; it is there for balance, not to hold you up. Keep your body in one straight line instead of sticking your bottom out.

# Seated Leg Press

Match the setup first. Then move slowly toward the end-position reference.

## 1 START / SETUP



MATCH THIS SETUP

## 2 END POSITION



MOVE TO HERE

### WATCH THIS

Breathe out while you push.

### WHY IT HELPS

Builds the thigh and hip muscles you use to stand up out of a chair and to catch yourself in a stumble. On gym days this takes the place of your sit-to-stands.

### SET UP

**MACHINE:** Seated leg press machine **with a weight stack and a pin** — the one where you sit upright against a backrest and push a footplate away from you. Do **not** use the angled sled that you load by hand with heavy plates; loading it, setting the catches, and unloading it are the risky part. If your gym only has the angled one, ask us first.

Set the seat so that when both feet are flat on the footplate, your knees are bent to about a right angle. Feet hip-width apart, whole foot on the plate. Sit all the way back so your back and hips are flat against the pad. Rest your hands on the side handles.

### DO THIS

Press through your heels and push the footplate away until your legs are almost straight — stop just before your knees lock. Then let it come back slowly, counting to three or four, until your knees are bent to about a right angle again.

### HOW MUCH

2 sets of 10 to 12 reps, resting 1 to 2 minutes between sets, 2 gym days a week with at least one day off in between. Pick a weight where rep 10 feels somewhat hard but you could still do 2 more. Add weight only after you can finish 2 sets of 12 with good form and are not extra sore the next morning.

### FORM CHECK

Breathe out while you push. Never hold your breath and bear down — that spikes your blood pressure and can leave you lightheaded, which matters if you take blood pressure medicine or a water pill. If your hips or lower back curl up off the pad at the bottom, the seat is too close — move it back.

# Seated Leg Curl

Match the setup first. Then move slowly toward the end-position reference.

## 1 START / SETUP



MATCH THIS SETUP

## 2 END POSITION



MOVE TO HERE

### WATCH THIS

Keep your bottom on the seat and your back against the pad.

### WHY IT HELPS

The muscles at the back of your thigh control your leg when you step down a curb or walk downhill, and they help keep you from pitching forward.

## SET UP

**MACHINE:** Seated leg curl machine — you sit upright, a pad rests across your thighs, and a padded roller sits behind your ankles.

Adjust the backrest so your knees line up with the machine's hinge. The roller pad should sit across the back of your legs just above your heels, and the thigh pad should be snug across your thighs just above the knees. Sit back, hold the handles at your sides.

## DO THIS

Bend your knees, pulling your heels down and back underneath the seat, counting to two or three. Pause. Then let the pad come back up slowly, counting to three or four, until your knees are almost straight.

## HOW MUCH

2 sets of 10 to 12 reps, 2 gym days a week, the same days as the other two machines. Bend as far as is comfortable — you do not have to reach a right angle, and you should not force it if you have had a knee replacement or have a stiff, arthritic knee.

## FORM CHECK

Keep your bottom on the seat and your back against the pad. If your hips lift or you have to rock to move the weight, it is too heavy. Breathe out as you pull.

# Seated Calf Raise

Match the setup first. Then move slowly toward the end-position reference.

## 1 START / SETUP



HEELS HANG BELOW THE PLATFORM EDGE

## 2 END POSITION



MOVE TO HERE

### WATCH THIS

Keep the balls of both feet fully on the platform the whole time — never let a foot creep toward the edge.

### WHY IT HELPS

Your calf muscles make the quick push that catches you when you start to tip forward, and they push you off the ground with every step. On gym days this takes the place of your heel raises at the counter.

## SET UP

**MACHINE:** Seated calf raise machine — you sit on a seat, the balls of your feet rest on a low platform, and a padded bar sits across your thighs just above your knees. If your gym does not have one, do the heel raises at the counter on those days instead.

Sit tall with your back supported. Place the balls of both feet on the front edge of the platform, hip-width apart, toes pointing straight ahead, so your heels hang free. Lower the thigh pad until it sits snug across your thighs just above your knees, then release the safety lever. Rest your hands on the pad handles or on the sides of the seat.

## DO THIS

Let your heels sink down slowly below the level of the platform until you feel a gentle stretch in your calves — the muscles at the back of your lower legs — and stop there. No bouncing. Then press through the balls of your feet and lift your heels as high as they will go, counting to two. Pause one second at the top. Lower slowly, counting to three or four.

## HOW MUCH

2 sets of 12 to 15 reps, 2 gym days a week with at least one day off in between. Pick a weight where rep 12 feels somewhat hard but you could still do 2 more.

## FORM CHECK

Keep the balls of both feet fully on the platform the whole time — never let a foot creep toward the edge. Move slowly, especially on the way down. Breathe out as you lift. Put the safety lever back on and lift the pad off your legs before you stand up.

## Do Not Do These

- **Standing on one foot on your own.** Single-leg standing is the most useful balance exercise and also the easiest one to get hurt doing. We will add it at a visit when you are ready — do not add it on your own.
- **Balance work with your eyes closed, in a dark room, or while turning your head quickly.** That takes away the vision your brain is using to keep you upright. Those drills belong in a therapist's clinic, not your kitchen.
- **Walking backwards, at home or anywhere else, as an exercise.** You cannot see what you are stepping into, and there is nothing behind you to catch you.
- **Wobble boards, BOSU domes, foam pads, or standing on a pillow or couch cushion.** None of these are part of the proven home fall-prevention programs, and nothing catches you when the surface tips.
- **Holding onto a chair, a walker, a towel bar, a wheeled cart, or a table with a single center post.** They move. Use a kitchen counter, a heavy fixed table with a solid base, or a wall.
- **The stair-climber (StairMaster), and the elliptical if you cannot step on and off it without help.** Moving steps plus tired legs is a fall on the equipment.
- **Starting on a treadmill on your own.** Treadmill falls send a lot of older adults to the emergency room, and most of it happens getting on and off. If you already use one regularly and feel steady on it, keep doing what you do — but do not start on your own. Ask us first.
- **Barbell or dumbbell squats, lunges, step-ups onto a box, and the Smith machine.** Standing up with weight on your body is how beginners get hurt. The seated machines build the same leg strength with a backrest behind you.
- **The standing calf-raise machine with a pad pressing down on your shoulders.** It loads your spine while your balance is being challenged. Use the seated calf machine or the counter heel raises instead.

## Do Not Do These

- **Loading up the leg extension machine** (the one where you straighten your knees against a pad). Heavy weight there can make the kneecap ache, and it does not train balance, which is the part that prevents falls. If you already use it, keep it light and stay in a range that does not hurt.
- **Wearing ankle weights while walking around the house or on a treadmill.** They change the way your leg swings and make tripping more likely. Ankle weights are only for seated or standing strengthening exercises.
- **Holding your breath and straining during any lift.** It spikes your blood pressure and can leave you lightheaded — especially if you take blood pressure medicine or a water pill.
- **Exercising in socks, slippers, or backless shoes on a smooth floor.** Wear flat, closed, non-slip shoes with a firm back.
- **Exercising on an empty stomach** if you take insulin, a diabetes pill that can drop your sugar (glipizide, glyburide, glimepiride), or a weekly weight-loss shot and you are eating and drinking less than usual. Low blood sugar makes you unsteady.
- **Sit-ups, crunches, toe-touching, deep forward bends, or twisting with weight in your hands, if you have osteoporosis or have had a spine fracture.** Those movements are the ones that crack a weak spine bone. Everything in this handout is safe for you as written.
- **Doing your first two weeks of balance work alone in the house if you have fallen in the past year.** Have someone home, next door, or on the phone with you, and keep your phone in your pocket.
- **Skipping a week and then doubling up to catch up.** Falls only go down when this is done steadily, week after week, for months.

## Warning Signs and What to Do

- Sudden dizziness along with slurred speech, a drooping face, double vision, weakness or numbness on one side, or a sudden severe headache. These are stroke signs — **call 911**
- Chest pain or pressure, a racing or pounding heartbeat, or fainting or blacking out even for a second. A fall you cannot remember counts as a blackout until we prove otherwise — **call 911**
- Calf pain or swelling **plus** new shortness of breath, chest pain that is worse when you breathe in, or coughing up blood. A clot may have travelled to your lung — **call 911**
- You fall and cannot get yourself up off the floor, and no one is there to help you — **call 911**
- A fall where you hit your head, even if you feel completely fine — and especially if you take a blood thinner such as Eliquis, Xarelto, warfarin (Coumadin), or Plavix. Bleeding around the brain can take hours or days to show up. Have someone drive you; do not drive yourself — **go to the ER today**
- After a fall you cannot put weight on a leg, or you have pain in your hip or groin when you stand. That can be a broken bone. Have someone drive you — **go to the ER today**
- New trouble controlling your bladder or bowels, not being able to urinate at all, or numbness in your groin, your bottom, or your inner thighs — the area that would touch a saddle — especially along with back pain or weakness in both legs. Do not wait for a call back and do not drive yourself; have someone drive you — **go to the ER today**
- Pain, swelling, warmth, or redness in one calf. That can be a blood clot, and it needs an ultrasound the same day — **call the office today**
- A leg that suddenly gives out under you, or new weakness in one leg — **call the office today**
- Feeling faint, gray, or lightheaded almost every time you stand up. This is often blood pressure medicine, a water pill, or not enough fluid, and it is common if you are on a weekly weight-loss shot and eating and drinking less — **call the office today**

## Warning Signs and What to Do

- Going shaky, sweaty, confused, or suddenly very hungry during or after exercise, if you take insulin or a diabetes pill. Treat it right away with 4 ounces of juice or 4 glucose tablets, and once you feel better — **call the office today**
- The room spinning when you roll over in bed, lie down, or look up. This is usually an inner-ear problem that has its own quick, specific treatment and will not get better with these exercises — **call the office this week**
- New numbness or burning in your feet, or a feeling like you are walking on cotton and cannot feel the floor. Nerve problems need testing, not just exercise — **call the office this week**
- Two or more falls in the past year, any fall that injured you, or you have started avoiding activities because you are afraid of falling. You need a full fall check of your medicines, blood pressure, vision, feet, and home — **call the office this week**
- Stairs feel unsafe, or you are not sure you could get yourself up off the floor if you fell. Both of those are fixable, and we can show you how — **call the office this week**

## How to Adjust or Stop

- Some muscle soreness and some wobbling are normal and expected. Wobbling actually means your balance system is working.
- Use the 3-out-of-10 rule for pain, where 10 is the worst pain you can imagine: during and after exercise, pain should stay mild — 3 or less, where you can still talk comfortably — it should settle within about 30 minutes of stopping, and you should not be more sore the next morning than you were when you started.
- If any one of those three is broken, go back to the last level that felt easy — fewer reps, less weight, more hand support — stay there for a full week, then try moving up again.
- For balance work: if you actually had to grab the counter to keep from falling, that step was too hard. Drop back one step.
- If you take insulin or a diabetes pill that can drop your sugar (glipizide, glyburide, glimepiride), check your sugar before you exercise, do not exercise if it is under 100, and keep juice or glucose tablets within reach. Stop and treat right away if you feel shaky, sweaty, confused, or suddenly very hungry.
- Stop right away and sit down if you get chest pain or pressure, get so short of breath you cannot talk, feel dizzy or lightheaded, break into a cold sweat, or feel like your legs are about to give out.
- If it does not pass within a few minutes, call the office. For chest pain, call 911.

## When We Recheck Your Plan

- Come back in 3 months so we can time your chair stands and your walking and move you up a level, then again at 6 months — but call sooner, within a week, if you fall, if you feel faint when you stand up, or if you start skipping things you used to do because you are afraid of falling.