

## Postural stability & balance

### ► What is it?

Postural stability is the ability to maintain and change the position of the trunk and neck so that the spine provides a stable base for movement of the arms and legs. Balance can be divided into static (still) and dynamic (moving). Having strong muscles around the pelvis in the back and abdomen and around the shoulders contributes to good postural stability. Good postural stability is a building block for development of balance skills.

### ► Why is it important?

Good postural stability is required for efficient movement control. All gross motor movements originate from the trunk/ torso. Stability at the pelvic and shoulder girdles (core stability) allows a wide range of movement of the arms and legs. Arm control and therefore all fine manual dexterity and stamina is greatly reduced when the trunk is not stabilised. This means that good postural stability is essential for optimal use of the hands in functional skills such as fastening buttons and handwriting.

### ► What are the implications?

Children with postural stability and balance problems may have difficulties with:

- Hopping, skipping, jumping/ moving fluently/ change direction, joining in playground games
- Walking over uneven ground/ along a rope or bench/ going upstairs
- Team games/ bat and ball games/ obstacle courses
- PE activities/ working with equipment or on apparatus off the ground
- Sitting on a chair or the floor without fidgeting, slouching, or falling
- Maintaining a functional working position, writing on interactive board, and having stamina for task, school day and school term
- Bike riding, swimming

### ► Teaching strategies

- Make sure you supervise your child
- Ensure you grade activities to ensure for your child's success
- Break down into smaller steps and build on each stage
- Do for short periods of time – little and often
- Ensure it is incorporated into play activities

### ► Activities to improve postural stability

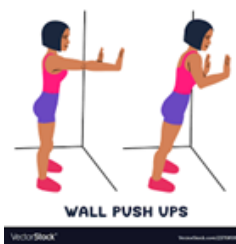
- Activities incorporating lying on tummy (prone extension) – note that head, arms, legs off floor (see picture). Can make into a game such as ball rolling. Ensure child does not hold for long period of time. They should rest down onto floor.



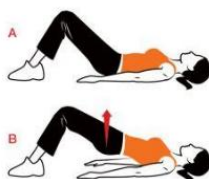
- Crawling: through tunnels, around obstacle courses, over cushions, commando crawling, animal crawls. You can make the crawling into a race – try getting them to pretend to be an animal and move along the floor or crawl along the floor as fast as you can.
- Pull along a bench using arms whilst on tummy.
- Push-ups: encourage the child to lie on their tummy and then push themselves up on their feet and hands. Ask them to lower their chin to the floor by bending their arms at the elbow and keeping the body straight. You can make this easier for the child by letting them do push ups while on their knees instead of feet.



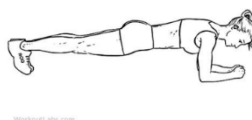
- Sit ups
- Wall push ups ensuring that you use a solid wall and encourage them with 'can you push the wall down'.



- Bridge – Lie on your back with your knees bent and feet flat on the ground. Keep your arms at your side with your palms down. Lift your hips off the ground until your knees, hips and shoulders form a straight line. Hold your bridged position for a couple of seconds. After bridge get your child to lie on back and curl/ hug knees into their chest to help relax their back muscles.



- Plank - Place the forearms on the ground with the elbows aligned below the shoulders, and arms parallel to the body at about shoulder-width distance. If flat palms bother your wrists, clasp your hands together. Ensure that your child's body is 'in line' without bottom pushed up in air



- Superman position - Kneel on all fours and stretch one arm straight out in front and the opposite leg straight out behind. Try to make a flat surface along the line of the arm, body and leg. Hold the superman for up to 30 seconds. Ensure they are not holding their breath by counting aloud with them. Record the number of seconds they can hold this position.



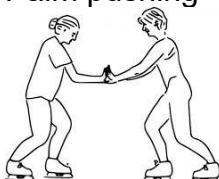
- Crab walking - requires child to sit down on the floor and putting arms behind them and pushing arms up into an extended position and walking on hands and feet with bottom lifted from the floor. Encourage them to walk forwards, backwards, or sideways. Try moving in-between objects whilst in this position. You can use this position to play football!



- Static wheelbarrows: place the pelvic region on a small box or stool and support the body with straight arms. Once this feels easier you can support the body with one arm while carrying out activities with the other. Ensure your child is not twisting and encourage them to maintain position for as long as possible without straining their back.
- Gym ball/ peanut ball activities: ask the child to lie on their tummy on the ball and hold them by putting your hands firmly on their hips. Ask the child to pick up puzzle pieces/ letter cards/ skittles/ toys lying in front of the ball and play with them placing one hand on the floor to balance. Again, ensure your child is not twisting and encourage them to maintain position for as long as possible without straining their back.



- Arm wrestling – sit opposite your child with elbows on table. Hold each other's hand and encourage your child to push against resistance.
- Palm pushing – get the child to push his palms against yours.



- Tug of war – play with your child, either standing or sitting on floor.
- Working on vertical surface – drawing name/ writing on easel/ board which is fixed to the wall. Try to keep arms as straight as possible. If child struggles with letter formation, get them to draw patterns such as lines, circles, waves, zig zags etc. Use different media – paint brush, chalk, paint.
- Scooter board – the child lies on stomach on a scooter board, keeping arms and legs up. Begin by the child pushing themselves off from a wall by starting with legs bent and feet against the wall. The back is arched, and the head and shoulders are raised, arms should be bent at the elbow to hold onto the scooter board or held straight out in front of the child. Progress to the child holding onto a hoop and being pulled by an adult whilst maintaining this position and then to the child propelling the scooter board themselves.



- Playground: to give them opportunities to use the slide and practice using climbing frames. Adventure playgrounds and soft play areas. Weight bearing activities such as pushing, pulling, climbing games, monkey bars, balance beams, climbing ladders.
- Leisure activities such as swimming, Tae Kwando/ martial arts, gymnastics, indoor or outdoor rock climbing, swimming, horse riding, dance can all develop core strength.
- Statues game: The adult asks the child to make a stiff body or to freeze like a statue and then pushes against the child's trunk, first in one direction and then in the other. This is repeated to both sides of the body, forwards and backwards. This skill is good for co-contraction which is muscles around a joint or the spinal column contract simultaneously to provide a stable position.
- When jumping on the trampoline or bouncing on the space hopper ensure that their movement is slow and rhythmical it gives the child both proprioception as well as vestibular sensation and can get deep pressure tactile input when contacting with the trampoline.
- Skipping - with a slow and rhythmical bounce depending on the child's skill level.



- Yoga – Lots of different postural positions which can improve postural stability.



### ► Activities to improve balance skills

- Playground: to give them opportunities to use the slide and practice using climbing frames. Adventure playgrounds and soft play areas. Such as swings, balance beams, wobble bridges, raised step stones.
- Walking on uneven surfaces (different textures/ media) – such as forest walks, on sand at the beach, on grass areas, soft play centres.
- Jumping games – two feet together in each square/ tile etc.
- Hopping games: in straight line, backwards, forwards, sideways, weaving in and out of cones/ skittles, throwing bean bag/ target games, hopscotch.



- Space hoppers – ensure upright sitting posture, both feet on the floor. Progress with small jumps ensuring both feet landing. As skills increase can do bigger distances, and higher jumps up.



- Scooter riding – start with 3 or 4 wheeled scooters if very difficult for you child. Ensure remain in upright posture and focus head and eyes ahead. Stop between each step forward to improve stopping under control between each scoot initially until skill and confidence increase. Then increase speeds and number of scoots and distance etc.
- Bike riding – Get them to walk along with bike holding onto handlebars in a straight line. When able to do this practice using both brakes to stop the bike suddenly on command. Progress to child practicing to steer round corners so they can get use to managing and distributing the weight of the bike and steering. Then put all skills learnt together - straight lines, corners, and brakes. Teach child to pick bike off ground so they can learn to manage the bikes weight. set seat height so feet on ground when seated. Rather than using stabilisers, remove pedals, and stabilisers to get child scooting along using their own feet in a straight line. When this is achieved put pedals back on. Teach them to kick pedal into position ready for push off. You may wish to hold onto back of seat as child gets use to pedalling whilst balancing. As balance improves repeat same stages as when scooting – straight lines and use brakes, then corners/ turns.



- Trampoline – it is important to supervise your child. If they are nervous start just sitting and bouncing, then kneeling, and finally standing. When confident they can jump up and down feet together. Progress to jumping with their feet apart and then together (star jumps). Jumping with one foot in front of the other, then

together, and then one foot in front of the other. Jumping sideways, backwards, forwards. Catching a ball and counting while doing the above.

- Balance board – have your child balance whilst kneeling or standing. As skills progress let them try throwing and catching a ball whilst maintaining balance.



- Heel-toe walking - between two ropes or along a line forwards, backwards on floor or along a bench.
- Step stones - Make a set of 2 step stones out of cereal box, old carpet etc. ensure not slippery on floor – the ‘stones’ should be large enough for your child to be able to place their foot onto it. Try the above using just two stones – the child places the shape down in front of the other, and step two feet forward onto it. They then crouch all the way down to floor with bottom touching their heels. Picks stone up from behind without twisting body or turning feet around. Ensure they stand upright and then place the stone directly in front of them and step forward with two feet. And repeat. Increase the speed and distance as the child progresses and vary the direction the child must move i.e., around the furniture.
- Standing on one leg – ensure they do not wrap foot around leg or hold onto leg that is off the floor. Get them to focus eyes on something on wall and use arms to assist their balance. You can time how long they can maintain their standing posture.
- Walking on a variety of stilts.



- Dipping toes: Stand on the bottom stair and pretend you are on a beach – try dipping your toes into the water. Do not put the whole foot onto the floor. Begin by holding onto the banister and as hip stability improves try to do this exercise without holding on. Ensure that the hips do not twist when doing this activity.
- Ball rolling: Place your foot on a football and roll it round in circles. Try each leg. Try moving the ball around in a forward/ backward motion, progress to a circular motion with the foot, making the circles bigger as skill increases.

