



PROPRIOCEPTION

What is proprioception?

Proprioception refers to how you perceive where your body is within an environment. This involves your skin, muscles and joints sending messages to your brain so that you are able to control your body.

Why is proprioception important?

Proprioception is important as it allows us to move in a coordinated and safe way. Proprioception keeps us safe by sending messages to the brain to enable us to adapt to environmental changes.

For example, if you are walking over rocks and you feel that you are unstable, your foot and ankle will send this information to your brain, your brain will tell your body to activate your core muscles, put your arms out to balance and to search with your eyes for a new rock to stand on.

It also allows people to know how much strength and force to use for accuracy, balance and to avoid fatigue. Some simple tests you can do at home to observe proprioceptive skills include:

- Stand with heels together with eyes closed for 30 seconds.
- Stand with eyes closed and touch your nose with your index finger (alternating hands).
- Thumb finding test (touching each finger to the thumb starting with the index finger).

These assess your balance, coordination and awareness of movement and body position.

Intervention will aim to improve spatial awareness, balance, joint positioning to improve proprioception.

Difficulties with proprioception could look like:

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|---|--|
| <input type="checkbox"/> Falling/tripping over regularly | <input type="checkbox"/> Poor postural control |
| <input type="checkbox"/> Bumping into objects | <input type="checkbox"/> Avoids sports/movement activities |
| <input type="checkbox"/> Balance difficulties | <input type="checkbox"/> Coordination difficulties |
| <input type="checkbox"/> Pressure through pencil when writing | <input type="checkbox"/> Difficulty recognising amount of force to use during tasks e.g. throwing a ball |

The next page includes Information on how to improve proprioception.

INTERVENTION IDEAS

These can be incorporated into daily routines or before completing a task that require us to sit still and concentrate. Choose activities that the individual enjoys to make it fun.

- Exercises (please see next page)
- Marching on the spot
- Side stepping or forward and back stepping (add music and a clap to make it fun)
- Play with weighted toys or objects
- Skipping
- Play on the trampoline
- Heavy work activities: pushing, pulling, lifting, carrying
- Animal walks (crab, frog and bear)
- Play grounds: monkey bars, swings, climbing, crawling
- Stretching - with verbal instructions such as 'reach up and then touch your toes'
- Create an obstacle course at home and practice using it without touching any of the objects
- Play Simon says with a focus on body movements
- Functional tasks within the house e.g. wiping down benches, moving furniture, holding doors open, cooking, gardening)
- Yoga/Pilates
- Bosu ball and/or exercise ball (Ask your OT for the handout)



For more information and to find out how Geronimo can support you to implement a reward system please visit www.geronimo-ot.com.au

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Proprioceptive Exercises



Step ups:

→ To start, place your entire foot onto the bench or chair. Press through your heel as you step onto the bench, before bringing your other foot up onto the bench/ chair.

→ Return to the starting position by stepping down with the leading foot, followed by the other foot, so both feet are on the floor.



Single leg stands:

→ Stand upright with hands in a comfortable position.

→ Lift one foot off the ground.

→ Do not allow your legs to touch.

→ Watch how many seconds you are able to stand on one foot for, aiming for 30 seconds.

→ Try doing the same on the other leg.



Grapevines:

→ Stand tall with your back straight, shoulders relaxed and hands on hips.

→ Lift your left heel off the floor to prepare to step to the left.

→ Perform the grapevine to the left by following this foot pattern:

- Left step (to the left)
- Right step (crossed behind the left foot)
- Left step again (again to the left)
- Right step (crossed over the front of the left foot).
- Repeat side to side.



Clocks:

→ Start with feet together and hands in a comfortable position, imagining you are standing in the middle of a clock.

→ If completing by yourself, think of a time on the clock and move your foot to that point on a clock face e.g. 12 o'clock would be directly out in front at the top of the clock face.

→ Bring your feet back together in the middle before changing direction of your foot to another time on the clock e.g. 3 o'clock would be out to the right side.

→ If someone else is with you, get them to call out a time on the clock for you.



Single Leg Pickups:

- Start with feet together facing object placed roughly 1 metre in front of feet.
- Lift one foot off the floor and leaning over from the hips, bend down to pick up object with one hand.
- Bend the planted leg as much as needed before slowly standing back up and placing other foot back on floor.
- Alternate feet each time you pick the object up.



Single Leg Toss:

- Start by lifting one foot off the floor, with a ball or object in one hand.
- Keeping your foot off the floor, toss the object into the hoop/ circle out in front of you.
- The further the hoop/ circle is away from you, the harder it will be.
- Once you have got the object in the hoop, change to your other foot before moving the hoop further away to make it more challenging.



Step Overs:

- Start with feet together and hands in a comfortable position.
- Lift one foot up and step over the object in front of you before picking up the back foot to step over the object and meet the other foot.
- Continue to pick feet up and step over each object, ensuring the front foot is flat on the floor before picking up the back foot.
- After stepping over each object, alternate the foot that is leading.