



Power Standing

Clinical Resources

by Permobil Academy



Power Standing Summary

A power standing wheelchair offers a standing feature integrated into a wheelchair base that allows the user to obtain a standing position without the need to transfer from the wheelchair.

Integrating the standing feature into the power wheelchair base enables a person to stand in multiple different environments and allows them to maximise their ability to complete daily living tasks.

The Permobil White Paper: A systematic review of the evidence for power standing wheelchairs summarises the evidence on standing in wheelchair users.

The white paper identifies three key areas that wheelchair users gain benefit from use of a power standing wheelchair:

- Clinical benefits
- Functional benefits
- Psychological benefits



[Click here](#) or scan the QR code to access your free copy of the Permobil White Paper!

Standing Considerations

Prior to recommending a power standing wheelchair, a thorough assessment needs to be completed to ensure the person is safe to stand and that a power standing wheelchair will be a suitable option.

It is recommended that the following areas are considered:

Medical history and physical capacity to stand

- The person's diagnosis and the anticipated progression of their disease.
- Skin integrity concerns, including anterior knees and plantar surface of feet.
- Bone mineral density – if the person has not stood for some time.
- Risk of orthostatic hypotension – management plan may be required.
- Range of movement in lower limbs and the impact any contractures may have on standing.

Environmental support to stand

- Physical environment is accessible, including areas that relate to identified functional tasks.
- For younger people - family / caregiver / education support staff support age appropriate independence obtained from power standing.

Cognition

- Person is able to communicate any pain or discomfort while using the power standing function.
- Person is able to identify any goals and is motivated to achieve them.

The above considerations are not necessarily contraindications to standing, however they may contribute to successful use of a power standing wheelchair.

Functional Benefits

Power standing for function

The design of living and workspaces in the Western world is typically based on the assumption a person can stand, e.g., kitchen bench / counters and cooktop heights, bathroom sinks, storage cupboards and light switches. Since the default position of wheelchair users is to sit, this consequently means that typical living and work spaces are inaccessible. Power standing allows a person to access a wider range of unmodified spaces, for example, the kitchen at home to allow for independent meal preparation, science and technology classes at school to allow independent participation in education, and work benches, storage spaces or equipment at work. Functional benefits can be achieved as an indirect or direct result of standing. Direct benefits refer to immediate impact of power standing on function, whereas indirect benefits refer to the longer-term impact of clinical and psychological benefits which lead to functional benefits.

Power standing for transfers

Many wheelchair users are at risk of developing contractures or have challenges with increased tone or spasticity, over time these challenges can impact on a person's ability to stand transfer in/out of their chair.

Power standing offers an opportunity for prolonged weightbearing through the lower limbs, this prolonged weightbearing can be a useful adjunct to managing increased tone or spasticity. Prolonged standing can also contribute to a 24 hour postural management programme to maintain a person's range of movement, assisting to maintain the extension required to complete a standing transfer.

These benefits can also be achieved through use of a standing frame, however power standing may allow for a person to achieve standing independently without the need of assistance or an additional piece of equipment.

$$7x - 14(10 - 3) = x$$

Solve for x:





Clinical Benefits

Standing can provide benefits at a body structure and function level, with potential benefits identified with:

- Blader and bowel function
- Bone mineral density
- Motor function
- Pain
- Pressure redistribution and pressure injuries
- Range of motion and muscle length
- Spasticity

Power standing for pressure relief

Standing may be an alternative position for those who require power seat functions for pressure relief, with up to a 61% decrease in seat load seen when a person is in full standing.

Standing may offer a more functional position for pressure relief compared to the use of tilt +/- recline, with standing positioning a person forward and ready to interact with peers or complete functional tasks, as opposed to away and in a position of rest.

Psychological Benefits

The research for power standing is unique in that alongside the medical and functional benefits reported, there are often qualitative statements relating to the psychosocial benefits. The psychosocial benefits relate to the effect on a person's wellbeing related to their ability to stand, but not necessarily for a task that has a tangible functional outcome, for example standing at a sports game to be able to see their favourite player score a goal, or simply standing to shake hands with a guest in their home.

Standing has a positive impact on mental health and quality of life. Power standing benefits children's self-esteem, however younger persons report mixed feelings about standing with some reporting it helped them fit in, but others reporting it makes them stand out.

MyPermobil App
Available on the App Store

Wheelchair users can download and register on the App to gain insights and suggest improvements on how they use the functions of their chair.



Funding

Power wheelchairs that offer a power standing feature are a high cost item that require strong clinical rationale to support funding. This clinical rationale needs to be applicable to the person and meet the relevant funding guidelines.

The foundation to this rationale is to establish sound person centred goals with the support of an outcome measure. Using an Outcome Measure can assist in measuring any increase in a person's function (e.g., use of the FIM) or help with measuring progress towards a person achieving a specific self-identified goal (e.g., use of the WhOM).

Additional information to support clinical rationale may include:

- Are you combining a mobility and standing solution? What is the benefit of combining these solutions? Consider any carer support and environmental demands to using a standing frame.
- Are you increasing or maintaining function? What function are you looking to increase/maintain and how does power standing contribute to this? Is there any impact on carer support hours?
- What other options have been considered? What equipment, environmental modifications or carer support options have been taken into account?
- Are there any potential consequences if the person does not continue standing?

Please note, if a person requires power seat functions in addition to power standing, clinical rationale is typically required for these extra functions.

Our education team can support you in establishing rationale to support provision of power seat functions, please contact us on education.au@permobil.com if you require assistance.

Supporting Literature

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Permobil F5VS

The Permobil F5 is used as the power base for the power standing function as the front-wheel base offers maximum stability when the user is in standing. This ensures the user is in the most stable position for function and independence.

The F5VS has a fully programable standing sequence for matching the user's individual needs, with the ability to customise both the sit to stand and supine to stand sequences. When a person is standing in the F5VS they can change the back support and leg support position independently, creating the optimal stand position for stability, function and comfort.

The Permobil F5VS offers the full range of power seat functions in addition to the power standing function:

- Power tilt - 50 degrees
- Power recline - 180 degrees
- ActiveHeight™ - 14"
- Power elevating leg supports - 90-180 degrees
- Power adjustable lower leg length - 8"
- Memory seat functions
- Independent Repositioning Mode (IRM)





180° power recline

14" seat elevator

90°-180°
power elevating
leg support

50° of posterior tilt

8" power adjustable
lower leg length



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