

Adjustable standing frame

Device that provides support for standing posture. Ordinary standing frames support posteriorly, which is beneficial for those with limited trunk, head, and neck control. The primary support is at the pelvis and knee. Standing frames typically comprise hip supports, lateral supports, and head support. Additionally, footplates and kneepads are included. Standing frames are usually highly adjustable for multi-user settings or to accommodate growing children.

Variants include prone standing frames (which provide support anteriorly using the force of gravity on the head and neck to facilitate strengthening and increased control; these standing frames counteract extensor tone and allow for gradual progression to standing position) and mobile standing frames (which provide for standing posture; while not a mobility device, casters and wheels enable assisted movement). Product features may also include the ability to transfer the person from a seated position to the standing frame. Standing frames may also contain unique support systems, straps, and pads for varying user needs.

- **Product Classification**

- APL (WHO Assistive Product Priority List): 38 (Standing frames, adjustable)
- ISO 9999:2022: 044839 (Standing frames and supports for standing)

- **Possible configuration variants**

- Prone standing frame.
- Mobile standing frame.

- **Possible accessories or optional components**

- Powered assists, i.e Hydraulic pump, to move the frame to a standing position.
- Supportive tray that follows the user from sitting to standing.
- Upper extremity resistance exercise (the adjustable resistance cylinders are accessible to the user while they are in the standing position, so they can easily adjust the resistance).

- **Product goals**

Activities or functions the product is mainly intended to support, according to WHO ICF Classification:

- Maintaining body position [\[d415\]](#) (standing).

- **Indicated impairments**

Difficulties the product is mainly intended to address, according to the WHO ICF Classification:

- Muscle tone functions [\[b735\]](#).
- Transferring oneself [\[d420\]](#).
- Changing body position [\[d410\]](#).
- Maintaining body position [\[d415\]](#) (severe difficulty in standing).
- Muscle power functions [\[b730\]](#).
- Vestibular functions [\[b235\]](#)

- **Contraindicated impairments**

Difficulties for which the product may be inappropriate:

- Limited hip, knee and ankle mobility.
- Severe scoliosis.

- **Indicated environments**

Specific environments in which the product should be used:

- Indoors.
- **Contraindicated environments**
Environments in which the product may be inappropriate:
 None specified.
- **Other indicated factors**
Other factors or situations the product is intended to address:
 - Risk of painful, problematic and costly secondary complications due to long-term sitting (especially of wheelchair users).
 - Conditions such as cerebral palsy and spina bifida.
 - Musculoskeletal factors such as tight hip, knee or plantar flexors and mild joint contractures.
- **Other contraindicated factors**
Other factors or situations in which the product may be inappropriate:
 None specified.
- **Points to be considered in product selection**
 - Standing is an effective way to ameliorate many of the negative effects of constant sitting. Enabling standing has a number of benefits including: maintaining vital organ capacity; reducing the occurrence of urinary tract infections (UTIs); maintaining bone mineral density; improving circulation; improving passive range of motion; reducing abnormal muscle tone and spasticity; reducing the occurrence of pressure sores; reducing the occurrence of skeletal deformities; enhancing psychological well-being. People who use standing frames often experienced improved self-esteem, self-confidence, and overall improved abundance of life. Additionally, studies show that wheelchair users have experienced significant reduction in spasticity and have suffered fewer pressure sores while using standers.
 - A musculoskeletal assessment: this includes assessing the range of motion of their hips, knees and ankles, and a postural assessment of the spine and pelvis.
 - The individual's mobility level.
 - The method of transfer to and from the standing frame.
 - The activities the user will pursue while in the standing frame.
 - The availability of care giver to position user.
 - The attitude of the user toward using a standing frame.
 - The type of stander to be used (anterior, posterior support) The environment the standing frame will be used in including the physical space available for the equipment.
 - The surfaces and attachments necessary to support the user.
 - The need for mobility of the standing frame.
 - Transportation of the equipment.
- **Points to be considered in product fitting**
 - Adjust standing frame for height of individual; special attention should be given to the fitting of the hip and knee supports.
 - Adjust seat depth, back angle, footplate height, and kneepad height and handle height.
 - Adjust resistance of exercise cylinders.
 - Adjust straps.
- **Points to be considered in product use**
 - Existing contractures: overstretching contracted muscles may cause harm, especially in a user with limited sensation.
 - Skeletal deformities: special accommodations may have to be provided for people with significant deformities, especially if those deformities are not flexible; skeletal alignment should be carefully observed while standing. In some cases of severe deformities, the use of standing frames may be contraindicated.
 - Lack of standing tolerance: standing tolerance should be assessed. For example, use may start in 10-minute intervals when assessing tolerance. In most cases, a one-hour limit should be placed on standing.
 - Bone Mineral Density (BMD) loss: existing BMD loss and osteoporosis might cause fractures if attempting to stand prematurely and without a well-designed progressive standing program.

- Postural hypotension: blood pressure and dizziness should be checked while standing up, especially for individuals with recent injuries and who are new to a standing frame.
- Ensure adjustments are tight and secure.
- When positioning an individual in a standing frame secure pelvic and chest supports first.
- When not being moved, lock wheels or casters.
- Do not move over uneven surfaces.
- Do not leave standing frame on a sloping surface.
- **Points to be considered in product maintenance / follow-up**
 - Maintain all upholstery and straps in good order.
 - Keep all surfaces and clean.
 - Maintain all adjustments in good order.
- **Examples of products available on the market**
 - Live product search in the EASTIN website <https://www.eastin.eu/en/searches/products/list?iso=044839>

Source

This Fact Sheet was compiled in 2021 by an international team of experts, to provide the initial knowledge base for a project ("An online system to assist the selection of assistive product") supported by the World Health Organization in 2020-2021 within the GATE Initiative (Global collaboration on Assistive Product). Fact Sheets were compiled for each of the 50 types of products included in the WHO APL (Assistive Product Priority List).

The team was composed of Renzo Andrich (Italy, group leader), Natasha Layton (Australia), Stefan von Prondzinski (Italy), Jerry Weisman (USA), Silvana Contepomi (Argentina) and Hasan Minto (Pakistan).

The project led to a prototype online tool called ASPREX (ASsistive PROduct EXplorer). At the end of the project, it was transferred to a WHO collaborating center (the Global Disability Hub in the UK), in view of possible future developments.