ASPREX Fact Sheet

Forearm crutch

Hand-held device, usually used in pairs, designed to support walking. It is usually composed of a handgrip with forearm support, a height-adjustable shaft and a rubber-tip ferrule; the distance between the handgrip and the forearm support is also adjustable. The shaft can be made of various materials such as steel, aluminum or carbon fiber.

- Product Classification
  - APL (WHO Assistive Product Priority List): 11 (Crutches, axillary/elbow)
  - ISO 9999:2022: 120309 (Forearm crutches)
- Possible configuration variants
  - Ice ferrule (ferrule with metal spikes instead of rubber tip).
  - Pivoting ferrule (ferrule with a large swivel base enabling to maintain full contact with the ground when used on uneven surfaces).
  - Shock-absorbing ferrule (ferrule made in such a way to cushion the impact with the ground).
  - Contoured handgrip.
  - Closed forearm support (to prevent the forearm slipping sideways out of place).
- Possible accessories or optional components
  - U-shaped clip (to secure the crutch to a wheelchair or other walking aid when not in use).
  - Prop (to be clipped around the crutch to hang it when not in use).
- Product goals

  Activities or functions the product is mainly intended to support, according to WHO ICF Classification:
  - Walking [d450].
  - Moving around in different locations [d460].
- Indicated impairments

  Difficulties the product is mainly intended to address, according to the WHO ICF Classification:
  - Walking [d450] (moderate difficulty in walking).
  - Maintaining body position [d415] (moderate difficulty in standing).
  - Fine hand use [d440] (difficulty in grasping/gripping).
- Contraindicated impairments

  Difficulties for which the product may be inappropriate:
  - Severe difficulty in walking.
  - Severe difficulty in standing.
  - Severe difficulty in grasping/gripping. *Unless used with variants: Contoured handgrip*
  - Ability to use only one hand.
  - Severe arms weakness.
  - Severe difficulty in holding things. *Unless used with variants: Closed forearm support*
  - Having had a fall in the past months or feeling at risk of falls.
- Indicated environments

  Specific environments in which the product should be used:
  None specified.
- Contraindicated environments

  Environments in which the product may be inappropriate:
  - Iced ground. *Unless used with variants: Ice ferrule*
  - Wet or slippery ground.
  - Low friction pavements.

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- Other indicated factors

  Other factors or situations the product is intended to address:
  None specified.
- Other contraindicated factors

  Other factors or situations in which the product may be inappropriate:
  None specified.
- Points to be considered in product selection
  - Ensure that the chosen equipment is suitable for the person's weight (check in the product documentation or with the provider what is the maximum person's weight the crutch can bear).
  - Ensure that the handgrip can be firmly held by the person.
  - In case the crutches are going to be used also on low-friction surfaces, a larger pivoting ferrule may be considered instead of the standard rubber tip.
  - If the crutches are going to be used also on ice, provide an ice ferrule to apply on the tip when needed.
- Points to be considered in product fitting
  - First, adjust the forearm support height: the support should be at the elbow level, when the person is standing with shoulder relaxed, and wearing shoes.
  - Second, adjust the distance between the handgrip and the forearm support: the latter, whether open or closed, should cradle the forearm just below the elbow joint so that the movement of the elbow is not impeded.
- Points to be considered in product use
  - When walking, footwear should be well fitted, secure on the feet and supportive.
  - When walking, place the crutches in front and slightly to the side of the body; push down on handgrips and step forward with the weaker (or only) leg; step forward with the stronger leg.
  - When going up stairs, step up with the stronger (or only) leg first; lift the crutches onto the step; step up with the weaker leg.
  - When going downstairs, place the crutches on to the step first; step down with the weaker (or only) leg; step down with the stronger leg.
  - When rising from a chair or bed, push up with the hands on the arms of the chair or on the bed and only take hold of the crutches once standing: don't lean on the crutches, as they are not stable enough to support; in case there is no place to lay the crutches while rising, hold them with the weaker side, so as to use the stronger side to push up.
  - When sitting down, stand in front of the chair or bed, with back of legs touching it, hold the crutches in one hand (on the weaker side), reach back with the free hand to hold onto the chair/bed and slowly sit down.
- Points to be considered in product maintenance / follow-up
  - Regularly inspect the ferrules and change them when worn.
  - Regularly inspect the handgrip and change it when worn.
  - Replace the crutches with new ones if the shaft is broken or damaged.
  - Carry out follow-up checks about every six months and in case the crutches seem to be not used any more, consider the following possible reasons: they are broken and need replacement; they have not been fit correctly; the user has not learned correct use; there are health problems affecting the user's mobility; the environment makes it difficult to use the device.
- Examples of products available on the market
  - Live product search in the EASTIN website https://www.eastin.eu/en/searches/products/list?iso=120309

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.

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