

Wheelchair Fitting

Wheelchair fitting is a critical process that involves tailoring the dimensions of a wheelchair to an individual's specific needs for optimal comfort, support, and functionality. Basic measurements such as seat width, seat depth, seat height, armrest height, backrest height, and footrest length are essential considerations. Seat width, measured across the widest point of the hips and thighs, ensures ample space for comfortable seating. Seat depth, the distance from the posterior buttock to the popliteal fold, prevents pressure by maintaining a 2-inch gap. Seat height is determined by the user's height and mobility, while armrest height is measured to promote an erect sitting position. Backrest height, based on the distance between the seat and the patient's axilla, influences posture. Footrest length impacts support and ground clearance. Understanding these measurements is crucial for providing a proper fit and preventing issues like pressure sores and joint contractures. Different wheelchair types, such as standard adult sizes (16"x18"x20"), recline wheelchairs, and tilt-in-space wheelchairs, cater to diverse user needs. Wheelchair fitting also considers regulations, such as ADA Wheelchair Regulations, to ensure accessibility and safety. Additionally, skin integrity protection, contracture prevention, and promoting proper posture are integral aspects of wheelchair fitting, contributing to the overall health and well-being of users by preventing complications and enhancing functional abilities in everyday tasks and mobility.



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Basic Measurements

Seat Width

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Seat width is the measurement across the widest point of the hips and thighs of the client. Adding half an inch to one inch on each side ensures that the client has enough space to sit comfortably in the wheelchair.

Seat Depth

Seat Depth

When measuring for wheelchair seating, it is important to keep a 2-inch gap between the front edge of the seat and the popliteal space to prevent pressure. To measure, begin at the user's posterior buttock and follow the lateral thigh to the popliteal fold, while keeping your hand horizontal to the seat. It is recommended that there should be enough space for three to four fingers between the front edge of the seat and the back of the user's knee.

Seat Height

Seat Height

Determine based on the user's height and if the wheelchair is self-propelled. For those who use their feet to propel, the seat height should allow them to reach the floor with their heel. Those using footrests have higher seat heights. Measure from the user's heel to the popliteal fold, with the bottom of the footrest 2 inches from the floor.

Armrest Height

Armrest Height

Measure the distance between the seat of the chair and the olecranon and add one inch to allow users to sit erect, with level shoulders when bearing weight on the forearms as they rest on the armrest.

Backrest Height

Backrest Height

To ensure an erect posture while seated, the inferior angles of the scapula should be approximately 1 finger-breadth above the back. This distance is determined by measuring the distance between the seat of the chair and the patient's axilla and subtracting four inches. The height of the backrest should be determined based on the user's needs. Those who self-propel their chair require a backrest that allows their shoulders to move freely. Users who struggle with sitting upright may need a higher backrest that provides greater spinal support.

Footrest Length

Footrest Length

This measurement impacts the support provided to both the feet and thighs as well as the distance between the footplates and the ground. To ensure proper ground clearance, the footplate should be elevated approximately 1 to 2 inches above the ground.

Types of Wheelchairs

16" x 18" x 20"

Sweet (16) x (18) ID x (20) Dollar-bill

16" x 18" x 20" (DxWxH) is considered the standard adult wheelchair size. The 16-inch width is measured from the inside of one side of the wheelchair frame to the inside of the other side at the widest point of the seat. The 18-inch depth is measured from the back of the seat to the front, where the legs will rest on the footrests. The 20-inch height is the height of the chair's backrest from the seat to the top. This size is considered the standard because it fits the majority of adult users and allows for easy maneuverability in tight spaces. However, it is important to note that not all individuals will fit into this standard size, and wheelchair measurements should always be taken on an individual basis to ensure proper fit and comfort.

Recline Wheelchair

Recliner Wheelchair

A recline wheelchair is a type of wheelchair that allows the user to tilt the seat backrest to a reclined position, usually ranging from 90 to 180 degrees. This feature can provide pressure relief, increased comfort, and improved positioning for individuals who spend long periods of time in a wheelchair. The degree of recline can be adjusted to meet the specific needs of the user, such as reducing pressure on certain areas of the body or facilitating activities such as feeding and communication. Recline wheelchairs are often prescribed for individuals with spinal cord injuries, cerebral palsy, multiple sclerosis, or other conditions that affect mobility and positioning.

Tilt in Space Wheelchair

Tilt in Space Wheelchair

A tilt-in-space wheelchair is a type of wheelchair that allows the user to maintain the same seated position while the entire seat frame tilts backward. A tilt-in-space feature rotates the seat around a fixed axis, does not change the client's position, and provides pressure relief for the buttocks. The tilt angle can be adjusted to meet the user's needs, which can include improved posture, pressure relief, or better access to daily activities. This type of wheelchair is often used for individuals who require extended periods of sitting or who have difficulty with repositioning themselves. Tilt-in-space wheelchairs are commonly prescribed by occupational therapists and physical therapists as part of a comprehensive seating and mobility evaluation.

Provision of Proper Fitting

ADA Wheelchair Regulations

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ADA Wheelchair Regulations are a set of guidelines that provide specifications and requirements for wheelchair design and use, including considerations for accessibility and safety. These regulations are important in the context of wheelchair fitting, as they help ensure that the wheelchair is appropriately designed and adjusted to meet the individual needs of the user. OT and PT programs teach students about ADA regulations related to wheelchair fitting to help them understand the importance of proper fitting and to provide them with the knowledge and skills necessary to conduct thorough assessments and make appropriate recommendations for wheelchair use.

Skin Integrity Protection

Skin-suit Integra Protective-shield

Skin integrity protection in relation to wheelchair fitting refers to the measures taken to prevent pressure sores, skin breakdown, and other skin injuries in wheelchair users. Proper fitting of the wheelchair, including seat width, depth, and height, as well as appropriate cushioning and support, can help distribute pressure and reduce the risk of skin damage. In addition, regular repositioning and movement, proper hygiene and skin care, and adequate nutrition and hydration are important factors in protecting skin integrity for individuals who use wheelchairs. Proper skin integrity protection is crucial for the overall health and well-being of wheelchair users and is an important consideration in the process of wheelchair fitting.

Contracture Prevention

Contractors at Contractures Prevention

Contracture prevention refers to the strategies and interventions implemented to prevent or reduce the development of joint contractures in individuals who use wheelchairs. Joint contractures occur when muscles and connective tissues surrounding a joint become stiff and inflexible, limiting the range of motion and causing pain. Contracture prevention strategies during wheelchair fitting may include selecting a chair with appropriate seating and positioning options, providing regular range of motion exercises, and ensuring that the user is repositioned frequently to prevent prolonged periods of pressure on any one area of the body. By preventing contractures, individuals who use wheelchairs can maintain their mobility, reduce pain and discomfort, and improve overall quality of life.

Proper Posture

Proper-lady Posture

Proper posture refers to the correct alignment of the body in the wheelchair to prevent musculoskeletal complications and improve functional abilities. The proper alignment includes maintaining a neutral spine, level pelvis, and proper positioning of the extremities. Maintaining proper posture can improve breathing, digestion, circulation, and overall comfort of the individual. Inadequate or incorrect posture can lead to various complications, including contractures, pressure injuries, and respiratory or digestive problems. Proper posture is essential to achieve the maximum potential of the individual's functional abilities and overall quality of life.

Functional Tasks, Mobility and Transitions

Functional-chair Tasks, Mobility Mobile-phone, and Train-ignition

Functional tasks, mobility, and transitions refer to the ability of a person to perform everyday activities and move around in their environment using a wheelchair. Proper wheelchair fitting can greatly improve a person's ability to perform these tasks by ensuring that the wheelchair provides adequate support and stability, allows for proper posture, and is tailored to the individual's specific needs and abilities. Additionally, the wheelchair must be able to safely and comfortably transition between different surfaces and environments, such as going from indoors to outdoors or from flat surfaces to uneven terrain. A well-fitted wheelchair can greatly enhance a person's independence and quality of life by enabling them to perform functional tasks and participate in their community.