



Center on Technology and Disability
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Positioning and Mobility

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Tots-n-Tech
Newsletter – May 2009



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May 2009



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POSITIONING AND MOBILITY: THE BASICS

What is positioning and how can it help children?

Positioning refers to the way a child is placed in his/her environment using typical or special positioning equipment. Special equipment is considered to be assistive technology (AT) because it enables participation in home, school, or community environments. Positioning equipment is used to help children who are not able to support themselves in positions such as sitting, standing, lying down, etc.

Depending on the child's physical status, proper positioning may help with:

- Body movement
- Attention Span
- Breathing
- Object manipulation
- Participation in activities/routines
- Socialization with peers and adults
- Self esteem
- Energy expenditure

What is mobility?

Mobility is the ability to move through an environment. It includes a variety of movements and is not limited to just walking. Children can move by running, crawling, creeping, jumping, operating a power chair or much more!

Why is mobility important?

All children have the desire to move, but for some it may be challenging; any mobility concerns should be addressed at as young an age as possible. Mobility is an essential part of the development of self-awareness by helping children learn that they have an impact on their surroundings. Mobility also promotes children's exploration of environments by allowing them to view the world from different perspectives. Independent mobility may contribute to children's independence and facilitate their social interaction with peers and adults.

How do positioning and mobility relate to one another?

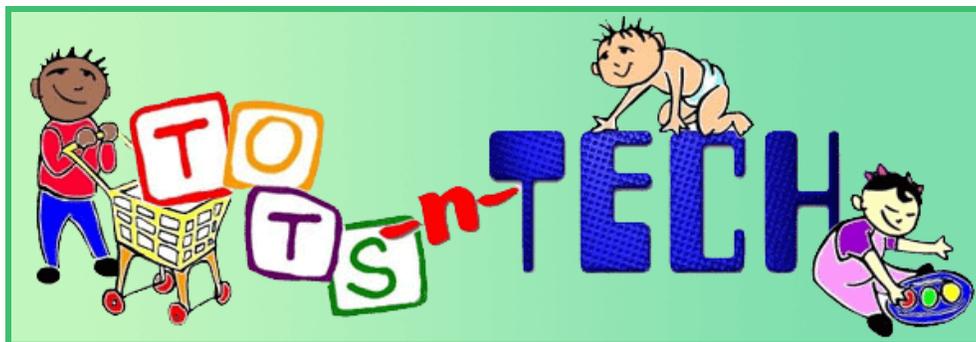
Mobility is a functional skill that is used in daily activities and routines. Proper positioning compliments mobility by allowing children to move freely. Improper positioning can impede the child's movement or stop it all together. Helping children move to the best of their abilities requires the use of proper positioning techniques. You can't have one without the other!

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POSITIONING DEVICES

Bolsters— These devices are great because they are usually found in the home and can be made using towels, cushions, pillows, blankets, fabric, etc. They can be used to help children support themselves while sitting and lying down and can be molded into the needed shape. More stable pieces can be made by wrapping a block of wood or a metal can in foam and cloth.



Bean Bag Chairs—

These offer support all around the child's body and can provide a sense of security for the child. Pillows can also be placed around the child for even more support. If needed, add straps to keep the child in place.



Standing Frames—

Allows the child to move to an upright position and participate in functional activities performed while standing. These devices can be stationary or mobile and children may be positioned on their stomachs or backs.



Sidelyers—If pillows don't provide enough support these are great for children who aren't able to independently lie on their sides. Use a pillow to support the child's head and straps to keep the child in the correct position. A pillow can also be placed in between the child's legs.

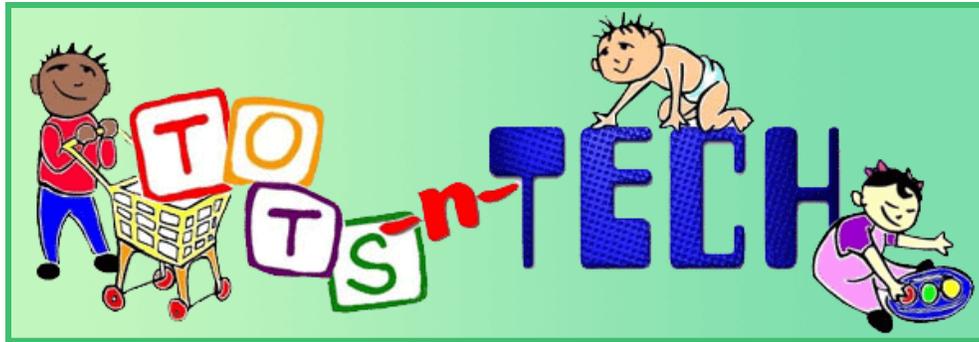


Wedges—Shaped like a triangle, wedges position children when lying down on their backs or stomachs. If needed, a strap can be added so that the child will not slide or roll off the wedge.



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MOBILITY DEVICES

Stroller—A light and portable option, readily available in stores. Strollers such as this one are helpful for children who tire easily or need assistance over long distances.



Walker—Provides upright support for walking and coordination; some require the use of hands while others do not. They have varying levels of support depending upon the child's needs.



Tricycle—good for outdoor mobility as well as moving around in hallways and corridors. Can be powered by feet or hands and can be adapted for better support based on the child's needs.



Wheelchair - There are many different options, ranging from chairs that are manually operated by the child/adult to battery powered chairs with switches.



Caster Cart—Low to the ground seat with large wheels. Children sit with legs straight out and can push the wheels or the ground with their hands.



Crawling Assist—Supports body weight while allowing children to use their arms and legs to explore their environment.



Toys - Push toys and battery powered cars can be used to assist with mobility. Children who are unstable when walking may benefit from using push toys. Children who aren't able to keep up with peers can use a battery powered car to move around.

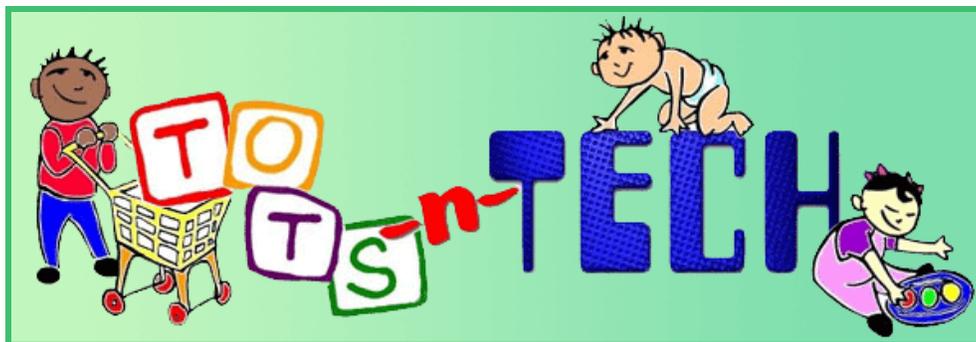


Prone Scooter—Kids lie on their stomachs and propel themselves with their hands or their hands and feet. Scooters are good for playing on the floor for children who are able to hold their heads up independently.



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MOBILITY EQUIPMENT: TERMINOLOGY

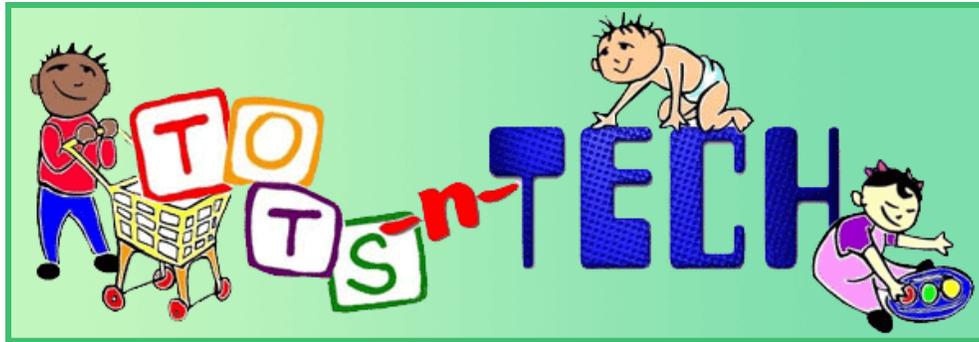
| | |
|-----------------|--|
| DEPENDENT | <ul style="list-style-type: none"> Requires another person, or attendant, to push or propel the device Useful if children do not have the motor skills to move the device on their own Good for travel and quick trips/errands |
| INDEPENDENT | <ul style="list-style-type: none"> Does not require an attendant to push or propel the device Child can propel themselves with hands, feet, or both |
| MANUAL | <ul style="list-style-type: none"> Requires the user or another person to move the device, using hands, feet or both Useful if the child does not have the understanding to operate a powered system Good for travel and quick trips/errands |
| BATTERY POWERED | <ul style="list-style-type: none"> Requires batteries and is controlled by a switch or switches Good for children who may not have the motor ability to move a manual device but are able to understand dangerous situations regarding balance, hitting others, etc. May also be controllable by another person |

POSITIONING & MOBILITY: THINGS TO CONSIDER

- As always, the positioning and mobility needs of the child should be matched with the features/functions of the equipment/device(s).
- The team should focus on finding a form of mobility that will help the child move as independently as possible
- Safety!** Is the child protected if they fall? Is it easy for them to run into others or objects? If stairs are nearby will they be blocked off? Does the device have brakes? Always consider safety.
- How comfortable is the device? Does the child think it is comfortable? How long is the child able to use the device comfortably?
- What are the environmental obstacles that the child may encounter while using the device (stairs, inclines, narrow passages, etc.)? Can these obstacles be avoided or modified?
- Is the equipment/device easy to transport?
- Who will be responsible for teaching the child how to use the device?
- How will the device be maintained? Who will be responsible?
- What types of surfaces will the child be traveling on? Indoor? Outdoor? Uneven ground?
- How stable is the device? How fast can it go and will the child be able to remain in control at all times?

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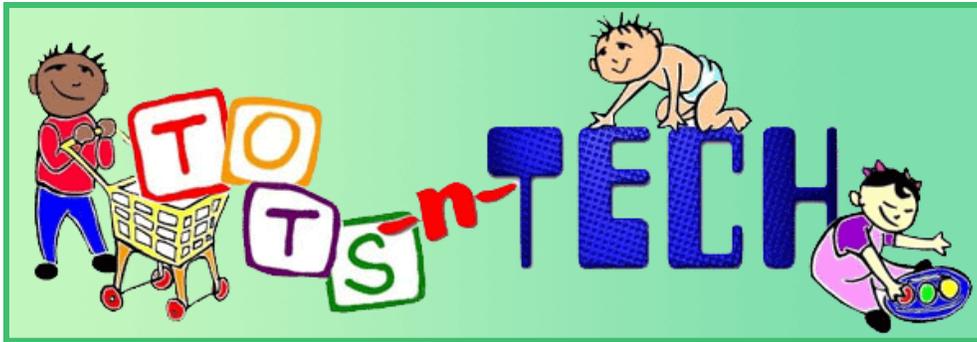
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USING POSITIONING & MOBILITY EQUIPMENT OR DEVICES DURING ACTIVITIES & ROUTINES

| Morning Routine | Mealtimes | Indoor Play | Bedtime | Errands |
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| If the child stays on one level during morning routine use a homemade scooter or a tricycle to move to and from the bedroom, bathroom, kitchen, etc. | Construct a small box (that can support the weight of the child) to help for stepping up to the chair at the table. | If the child has a push toy and is unstable when walking, the child may hold onto the push toy for balance when moving around the playroom (or within a house). | Use cushions, pillows, blankets, etc. to position the child for sleep. | When running quick errands use the stroller so the child can participate without having to keep up. |
| Provide support for an unstable child by having him or her hold onto one side of a hula hoop while you hold on to the other—this can help a child balance while walking during their morning routine (or other routines). | Instead of bringing the child to the table, bring the table to the child. Eat your meals at a coffee table that is lower to the ground or spread out a blanket and have a picnic! | Play catch indoors—place a child in stander, connect a balloon to ceiling that is long enough for children to catch, throw back and forth, etc. | Construct a small box (that can support the weight of the child) to help for stepping up to their bed or put the child's mattress on the floor so he/she can easily get in. | If the child is fairly stable with a push toy such as a child's shopping cart and the errand being run isn't in a crowded place, have the child walk beside you and push the toy. |
| Use magazines around the child's legs or a towel around the child's waist for support while standing | Use cushions to position the child in a chair or highchair. | When children are able to move their arms well a hula hoop may be used to round up toys that otherwise they would have to move to retrieve. | Arrange furniture in the bedroom so that the child can use it to steady themselves as they move around their room. | Use pool noodles, cushions, etc. for positioning a child in a shopping cart and to protect them from sharp edges. |
| Use a standing frame to position the child at the sink for teeth brushing, face washing, hand washing, etc. | Attach a tray to the child's wheelchair or stander. | Have the child lie with their stomach on a scooter to easily move themselves to and from peers/toys. | Use a scooter or tricycle to move from the bathroom to the bedroom. | |

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USING POSITIONING & MOBILITY EQUIPMENT OR DEVICES DURING ACTIVITIES & ROUTINES

| Outdoor Play | Bath time | Leaving the House | Family Outings | Chores |
|--|--|---|---|---|
| Use a motorized toy car or a tricycle to help the child keep up with their peers. Some tricycles have adult handles on the back so the child may be pushed when tired. | Children may be helped to get into a tub by sitting on a small stool with their feet in the tub and then sliding into the tub | When a house and the garage or outside are all on one level (no steps), various types of equipment like push toys, gait trainers, walkers, etc. may be used to support the child when going to the car. | Make sure to bring a stroller to transport the child easily. Bring towels, pillows or blankets to position the child comfortably in the stroller. | Attach a basket to child's tricycle so supplies for chores may be carried in the basket while a child is helping with cleaning. |
| Use a larger push toy like a baby buggy to help the child remain stable outside. Make sure the ground they are walking on is flat! | Positioning the child in a stander in front of the sink so they can wash their hands, brush their teeth, etc. | A small stepstool may be used next to a car or van to help a child climb up into the vehicle to be lifted by the adult into the car seat. | Bring cushions, pillows, etc. to position a child in a restaurant chair. Or make a fabric support that will hold a child upright in a child's restaurant chair. | Use a child's shopping cart to provide support during walking and a way of carrying items like toys from one place to another to put them away. |
| When going on a walk take a wagon along in case the child gets tired but wants to continue the walk. | Use a beach chair to support the child in the bathtub. Or a small inter-tube where the child can sit in the middle can help provide support; or use a laundry basket or an infant bath seat to help provide stability and support. | Children who are not yet walking may be able to go outside and down steps in sitting. Leaving the house is generally for a purpose – to walk in the neighborhood, ride someplace in a car, take public transportation. Think about the steps involved and which pieces a child may be able to do independently. | When visiting a friend's, relative's, or neighbor's house, make sure to bring something to help position the child comfortably. | A stander or a standing tower may be used to position children level with kitchen counters to help in preparing food or washing the dishes. |

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POSITIONING AND MOBILITY IDEAS

- Use a pillow to help children who are learning to creep - the pillow should be thick enough for comfort but thin enough so that they can reach the ground with their hands and feet
- To keep the child's limbs extended, tie a magazine gently around their arms or legs
- Wrap a dishtowel around the child's body to provide support for standing
- A securely buckled belt around the child's waist can be held by an adult for support while walking
- Football receiver gloves (small ones!) can help children grip walkers, handrails, push toys, etc.
- A heavy rope secured to an above tree branch can be used for support to help a child with weak legs practice walking outside
- A bicycle helmet can be used to protect a child who falls easily
- Fill a cardboard box with something heavy enough to stabilize it yet light enough for the child to push—the child can push the box around the house for support while walking
- Think of typical toys that can be used for stability when walking — a toy chopping cart, baby buggy, push toy
- Children also need time out of their equipment to move freely and be held
- Children should be placed in several different positions during the course of the day
- To avoid the child seeing the equipment as punishment (because it may restrict their normal movements) make sure they are able to play and are given personal attention when in a device

MOBILITY: HELPFUL WEBSITES

Zoom! Babies learn to ride robots at UD (<http://www.udel.edu/research/media/babiesrobotsgallery.html>) - "Babies driving robots. It sounds like the theme of a cartoon series but it is actually the focus of important and innovative research being conducted at the University of Delaware that could have significant repercussions for the cognitive development of infants with special needs."

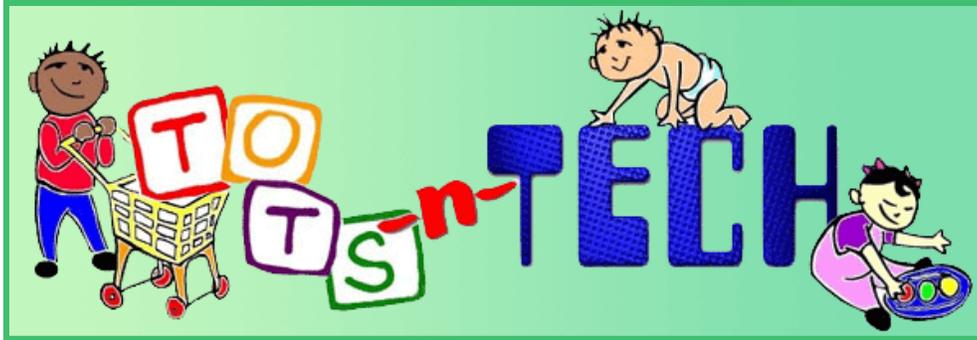
Fact Sheets on Standing Aids (http://www.abledata.com/abledata_docs/standaid.htm) - Detailed information on devices that help the user maintain a standing position. Also provides a list of manufacturers of standing aids.

Adaptive Equipment for Positioning and Mobility: Focus on Infants and Toddlers (http://www.eric.ed.gov/ERICDocs/data/ericdocs2sql/content_storage_01/0000019b/80/14/6e/c3.pdf) - This document is specifically geared to the birth to three population and contains a wealth of information on positioning, seating, and mobility. It also contains a how-to section.

Baby Power: A Guide for Families For Using Assistive Technology With Their Infants and Toddlers, Positioning and Mobility (http://www2.edc.org/NCIP/LIBRARY/ec/Power_3.htm) - This site "discusses ways to maximize positioning and mobility for an infant or toddler. Different positions and different ways of indicating responses are discussed, as well as assistive devices to promote mobility. Included are specific strategies to try and sample Individualized Family Service Plan (IFSP) goals."

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POSITIONING & MOBILITY: IDEAS TO SHARE

Here is a positioning idea from our Ideas to Share database. See the website (http://www.asu.edu/clas/tnt/home_files/ideas/getting_around/getting_around.html) for more great ideas!

Inexpensive Bolsters: A variety of bolsters can easily be made from items around the house. Large cans, oatmeal boxes, mailing tubes, etc., in the shape you need to support the child can be taped together, wrapped with foam and/or toweling and made into bolsters that will hold a child in a desired position.



From: D.E.S.K. (Designing Environments for Successful Kids), Wisconsin Assistive Technology Initiative (WATI), CESA 2, 448 E. High St., Milton, WI 53563, Phone 608-758-6232 X 340 or 800-991-5576, Email: info@wati.org

Materials:

Large cans or other items in desired shape
Foam from camping supply store
Towels or blanket remnants
Tape or thread

Instructions: Measure the child to determine the size of the bolster needed. Select base form such as a large can, oatmeal box, several mailing tubes taped together, etc. Wrap the form with 1-2" foam or with towels or blanket remnants (obtained from fabric stores remnant counter). Tape with cloth tape or stitch with thread.

Do you have a positioning or mobility idea that you'd like to share with others? Submit your idea with a picture and description, we'll put it on our website as a part of our Ideas to Share. To submit your idea, or if you have any questions, send an email to jill.mcleod@jefferson.edu.

Please feel free to forward this newsletter to any individuals or agencies that may benefit from information on assistive technology.

Questions? Comments? Concerns? Want to have the newsletter sent directly to your mailbox? Email Jill at jill.mcleod@jefferson.edu