

Bridging the Gap between Consumers and Products in Rehabilitation Medicine

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How is assistive technology used?

- Mental and / or Physical Activities of Daily Living (ADL)
 - Improve functioning
 - Overcome disorder or impairment
 - Prevent worsening of a condition
 - Strengthen a weakness

ADLs

- Self Care
 - Mobility



ADLs

- Self Care
 - Dressing

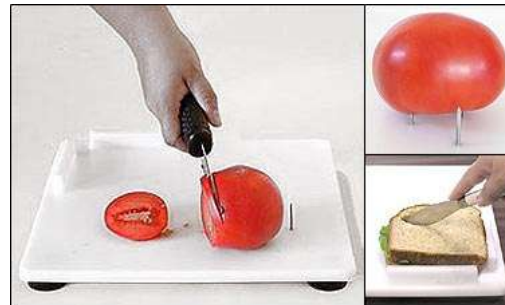


ADLs

- Self Care
 - Eating and Meal Preparation



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ADLs

- Self Care
 - Eating



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ADLs

- Self Care
 - Hygiene



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ADLs

- Communication



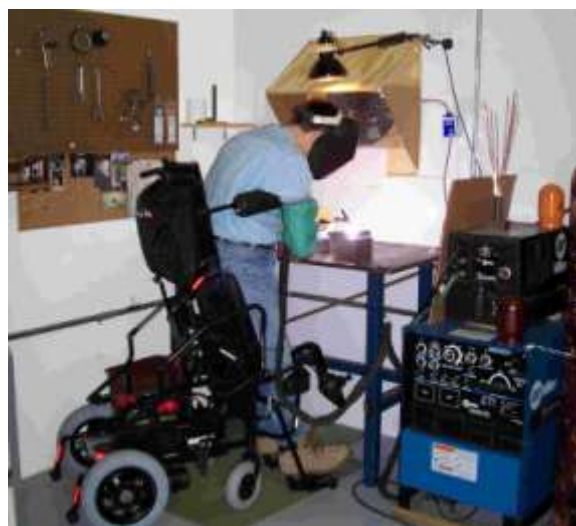
ADLs

- Leisure
 - Hobbies, sports, travel, etc.

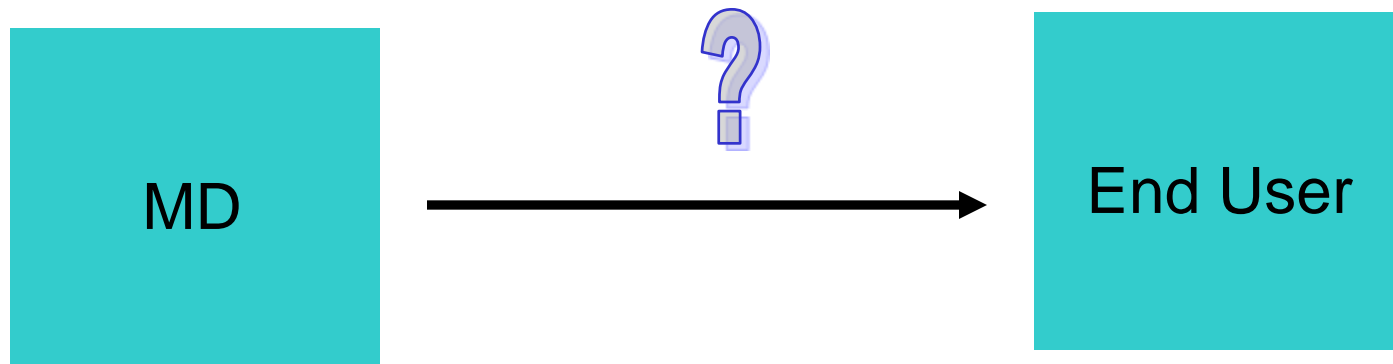


ADLs

- Vocation and Education



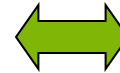
Prescribing Rehabilitation Equipment



The Transdisciplinary Team

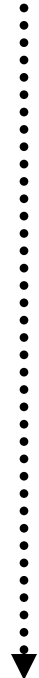
Physiatrist

Computer Engineer
Family / Tutor / Caregiver
Rehabilitation Counselor
Assistive Technology Specialist
Service Coordinator
Fabrication / Adaptation Tech
Training Coordinator
Audiologists
Nurse Practitioners
Psychologist



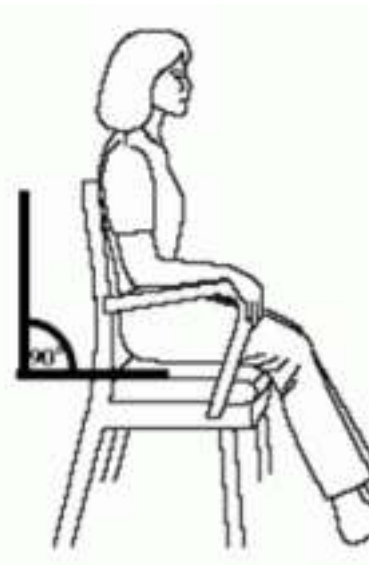
Social Workers
Occupational Therapist
Speech-Language Pathologist
Prosthetists
Medical Consultants
Teachers / Special Educators
AT Equipment Vendors
Hearing Device Specialists
Physical Therapists

Patient



Assistive Technology: One Size Doesn't Fit All

Total Hip
Replacement
- precautions



Long Handled Sponge

At 2 months, 30%
of patients aren't
using the device

Steps to Successfully Issue an Assistive Device

Home and Patient evaluation:

- Health Status
- Economic
- Physical Environment
- Social Aspects
- Personal

Additional Steps to Successfully Issue an Assistive Device

- Introduction of device
- Site and method of instruction / training

Different Levels of Assistive Technology Require Different Amounts of Training

Low Technology Adaptation

- Easy to use and does not require electrical power. May require a short training period.

Elementary Technology Devices

- Includes most battery-operated devices. User requires a moderate training period. Usually off-the-shelf or inexpensive.

High Technology Devices

- Includes complex and programmable equipment. User requires specific training in order for the user to take full advantage of their capabilities. Expensive.

Additional Steps to Successfully Issue an Assistive Device

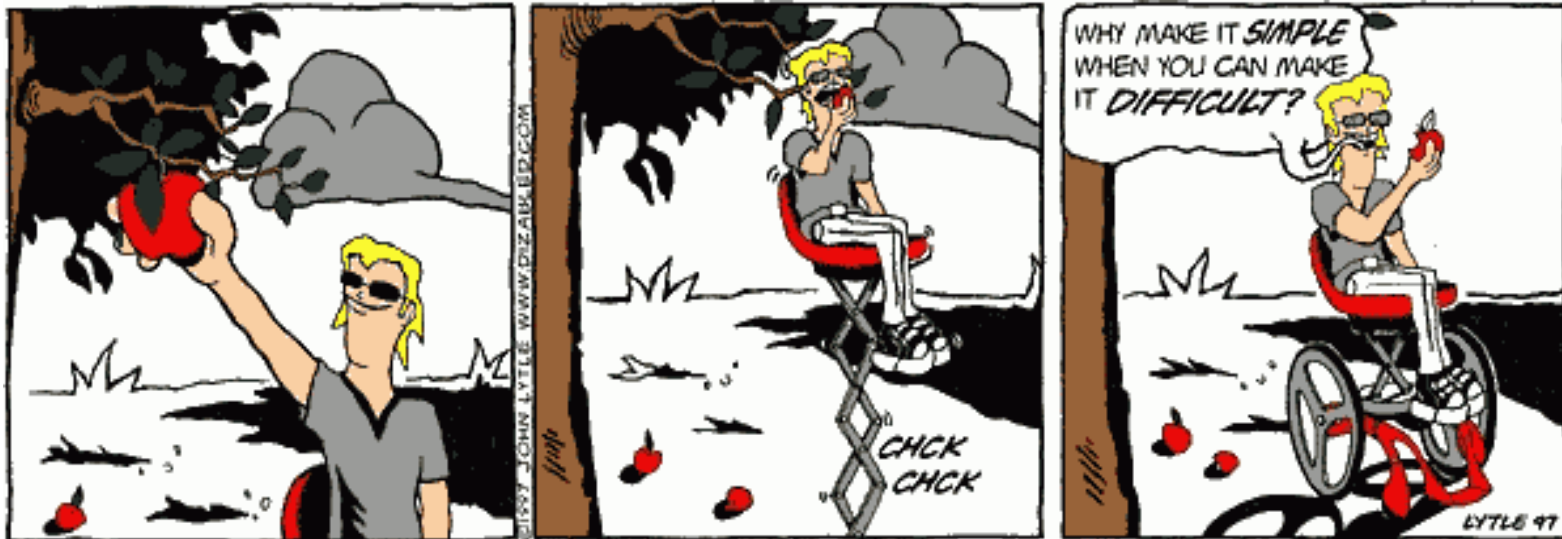
- Written justification to insurance company

Description of disability	Thorough description of the disability, how it impacts function and/or engagement in daily occupations, and why this necessitates AT
Assistive technology description	Thorough description of the AT being requested, outline of any modifications needing to be made to the AT for its use
Assistive technology relationship to medical need	Thorough explanation of the medical need for the AT to improve or sustain function in daily occupations
Inability of alternatives to meet medical needs	Thorough explanation of why alternatives or other AT would not meet the medical needs of the client
Ability to use technology	Thorough explanation of how the client will be able to operate or utilize the AT given his or her particular disability
Requested assistive technology as community standard	Thorough explanation that it is the standard or current practice in OT to provide the requested AT to persons with the specific disability
<i>Note.</i> Adapted from Michigan Disability Rights Coalition (n.d.). Retrieved from http://www.copower.org/funding-strategy/303-step-6-document-your-need.html	

How this all Relates to Product Development

- Involve all stakeholders early on and throughout the design process:
 - ❖ End users
 - ❖ Rehab team / therapist
 - ❖ Family members

Whenever possible, keep it simple



Disability ≠ Inability



Website Links

- ◆ [Allegro Medical](http://allegromedical.com): <http://allegromedical.com>
- ◆ [Abledata](http://www.abledata.com): <http://www.abledata.com>
- ◆ [North Coast Medical](https://www.ncmedical.com): <https://www.ncmedical.com>
- ◆ [Sunrise Medical](http://www.sunrisemedical.com): <http://www.sunrisemedical.com>
- ◆ [Disabled Sports](http://www.disabledsportsusa.org/sports/adaptive-equipment/):
<http://www.disabledsportsusa.org/sports/adaptive-equipment/>

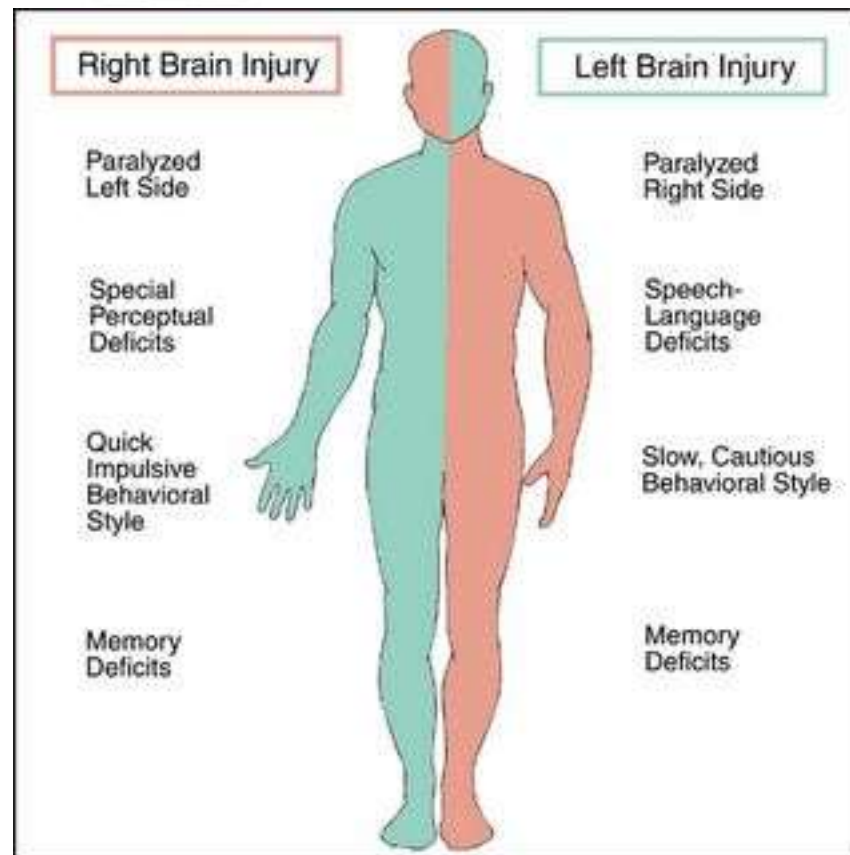
Where to donate used medical equipment

- ◆ [ReCARES](#)
- ◆ Lions Club – [Hearing Aid Recycling Program](#)
- ◆ [Silicon Valley Independent Living Center](#)
(wheelchairs <5 years old)
- ◆ [Centers for Independence of Individuals with Disabilities](#)
- ◆ Ability Tools – [Reuse Programs](#)

Practicing Subject and Caregiver Interviews

- ❖ Which of the following assistive technologies do our panelists use?
- ❖ Rules of the interview:
 - ❖ Explore social aspects, personal factors, economic and physical environments of the panelists
 - ❖ Find out what motivates these panelists
 - ❖ You may not ask directly if they use the AT in question or not

CVA



Example of a Low Tech Device: Reacher



\$10.69



\$27.30

Example of a Low Tech Device: Quad Cane

\$35 - \$50



Example of a Elementary Tech Device: Scooter



\$799



\$3000

Example of a High Tech Device: Kickstart Exotendon



\$7000+

Example of a High Tech Device: Kickstart Exotendon



Other Resources

- Shah and Robinson (2007) **Benefits of and barriers to involving users in medical technology development and evaluation.** Int J Technol Assess Health Care. 2007 Winter;23(1):131-7.
- Trish Wielandt et al., **Factors that predict the post-discharge use of recommended assistive technology.** Disability and Rehabilitation: Assistive Technology, January-June 2006; 1(1-2): 29 – 40

Other Resources

- **The Design and Evaluation of Assistive Technology Products and Devices Part 1: Design.** Marion A. Hersh. International Encyclopedia of Rehabilitation.