


**Assistive Technology:
What It Is and How
Can It Improve Your
Life?**


February 8 and 11, 2011
Sue Redepenning and Jen Mundi

Agenda

Courage Center	Physical Adaptations
Assistive Technology	Cognitive Adaptations
Benefits to Seniors	Visual Adaptations
Types of Technologies	Auditory Adaptations
Common Usages	Resources
Overview of Devices	Final Comments
Hands-On Experimentation	



Definition of Assistive Technology




The Senior Juggle

Assistive Technology or AT is defined as products, devices or equipment, whether acquired commercially, modified or customized, that are used to maintain, increase or improve the functional capabilities of individuals with disabilities..."





Assistive Technology Act of 2004

Through years of experience, we know that assistive technology improves quality of life, increases independence and enhances safety.



Courage Center

- Golden Valley
- Stillwater
- Forest Lake
- Burnsville
- Maple Lake
- Duluth
- Lake George

Technology Divide

Studies find when older people go online, depression can be reduced and brain function improved. But only 42 percent of people over 65 are online.



What is the Digital Divide?

"...the gap between people with effective access to digital and information technology, and those with very limited or no access at all. It includes the imbalance both in physical access to technology and the resources and skills needed to effectively participate as a digital citizen."



Computers for Retirees

<http://www.computersforretirees.com/index.html>

<http://www.savvysenior.org/>



42% of seniors do not see the benefits of technology. Technology is more than a computer.



Built-In Accessibility Features

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Built-in Accessibility

Most devices come with settings for accessibility such as the computer, iPad, cell phones, buildings, national parks, hospitals, public buildings, housing, transportation, and more.

The control panel in Microsoft Windows

The system settings within Macintosh

Options within the iPhone or iPad

Settings on most devices



Windows Accessibility Features

<http://www.microsoft.com/enable> for more instructions on how to use it

- Mouse Keys
- Filter Keys
- Singlekey Typing
- Keyboard Shortcuts
- Shows Sounds
- Settings for Keyboard
- Display Options
- High Contrast
- Magnifier
- On Screen Keyboard
- Narrator
- Auditory Descriptions
- Speech Recognition
- Accessibility Wizard



PC Accessibility

Accessibility For Seniors

<http://www.microsoft.com/enable/aging/default.aspx>

Having trouble seeing things on your computer screen? By the time we reach our fifties, two-thirds of us have vision, hearing, or dexterity impairments that will impact our computer use. Discover easy ways to customize your computer without downloading or purchasing anything.



Macintosh Accessibility Features

- Mouse Keys
- Slow Keys
- Sticky Keys
- Gesture controlled Screen Reader
- Amplifier
- Voice Over
- Alex the Voice
- Plug-In for Braille Display
- Zoom Magnifier
- Cursor Enhancement
- High Contrast
- Reverse Video
- Dock Magnification
- Talking Alerts
- Talking Calculator & Clock
- Text to Speech

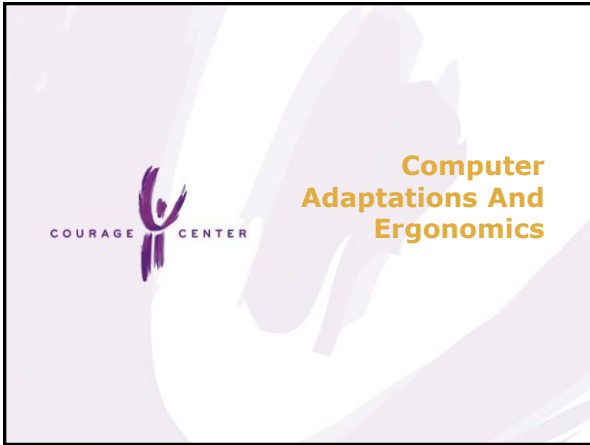


Macintosh Accessibility

<http://www.apple.com/accessibility/>


<http://atmac.org>





Definition

Ergonomics is defined as the science related to man and his work, embodying the anatomic, physiologic, and mechanical principles affecting the efficient use of human energy.




Ergonomics is employed to fulfill the two goals of health and productivity. It is relevant in the design of such things as safe furniture and easy-to-use interfaces to machines.

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Break Time

Every fifteen minutes, look away from your workstation and take a stretch break.



Neck Stretch


- Tilt ear toward shoulder.
- Reach up and touch top of head with palm to hold in tilted position.
- Hold 5-10 seconds. Repeat 2-3 times (come out of stretch very slowly.)

Chair Exercises

- Turn to your right and left, looking over your shoulders, and stretch your back
- Blink hard and look away from your task
- Lift your legs up and down to reduce stress on the body

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Gorilla Ergonomics



- Sunglasses to reduce headaches and eyestrain
- Phone books to elevate feet
- Elevating the monitor to eyesight level
- Increasing the size of text
- Looking away from computer
- Blinking eyes throughout the day
- Placing working material in reach
- Wearing headphones to reduce noise

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Computer Equipment



RSIGuard Software
Manufactured by: Kennedy Interactive



Ergotron Workfit Station from <http://www.ergotron.com/>



VuRyte 18" Document Holder
<http://www.kinesis-ergo.com/>



True Arm arm and mouse support by Distributed by Life with Ease



Ergotron LX Desk Mount Arm
Ergotron









Adaptations for Physical Needs

Computers Access

<p>Adapted Keyboards</p> <p>Enlarged Keyboards</p> <p>Trackballs</p> <p>Head Pointers</p> <p>Word Prediction</p>	<p>On-Screen Keyboards</p> <p>Voice Recognition</p> <p>Screen Readers</p> <p>Screen Magnification</p> <p>Abbreviation Expansion</p>
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Computer Adaptations- Mice

 <p>Trackbar Emotion www.ergopro.com</p>	 <p>Evoluent Vertical Mouse http://www.evolutent.com/vm3.html</p>	 <p>Mousebean http://www.mousebean.com/</p>
 <p>Zero Tension Mouse www.ergopro.com</p>	 <p>Quill Mouse http://www.ergo-items.com/quillMouse.htm</p>	 <p>No Hands Mouse www.ergo-items.com</p>



Bypass the Mouse

It's not just the keyboard that can make your hands and wrists sore and painful; the mouse is also a culprit. These are some short cuts:

Save	Control + S	Start Button	Control + Esc
Print	Control + P	Bold	Control + B
Copy	Control + C	Menu bar	Control + Letter
Paste	Control + V	Undo	Control + U

<http://support.microsoft.com/kb/126449>

http://guides.macrumors.com/Keyboard_shortcuts



Keyboards



Cherry Keyboard
www.enablenet.com



Gold Touch
Thehumansolution.com



Freestyle
<http://www.kinesis-ergo.com/>



Right Hand Matron Keyboard
www.matron.com



BAT keyboard
www.infogrip.com



Microsoft Ergonomic Keyboard
www.microsoft.com



More Keyboards



Apple Adjustable Keyboard
www.apple.com



Dvorak Keyboard
<http://www.typematrix.com/dvorak/>



Dragon NaturallySpeaking
www.nuance.com



Periboard-710 2.4 GHz super
www.ergoPro.com



Contoured keyboard
<http://www.kinesis-ergo.com/>



Dvorak Keyboard

The Dvorak Simplified Keyboard is an alternative keyboard layout or key map that replaces the QWERTY keyboard layout. There are many **ergonomic** problems with the QWERTY keyboard and the Dvorak Simplified Keyboard fixes those.



Often good for one-handed typist



On-Screen Keyboards

Picture Based

- Clicker 5 by Crick Software



Word Based

- Wivik by Prentke Romich Company
- EZ Keys by Technology for Education
- Point and Click Scanner by PNC
- Windows On-Screen Keyboard by Microsoft
- On-Screen by RJ Cooper



Voice Recognition



MacSpeech by MacSpeech

Speech Recognition in Microsoft Operating Systems

Dragon NaturallySpeaking by Nuance

IBM Via Voice by Nuance

Buddy Goose Neck Microphone by Microphones.com

Not a Tape Recorder



Head Pointers and Eye Gaze

TrackerPro by Madentec

Smart Nav by RJ Cooper

HeadMouse Extreme by Origin

Tobii Eye Gaze System by Tobii

Quick Glance by Quick Glance

Cyberlink by Brain Technology

Brain Fingers for ALS

Communication or Computer Access



Software Enhancement

Word Prediction

- Co-Writer by Don Johnston
- Read and Write by TextHelp!
- WordQ by Quillsoft




Abbreviation Expansion

- Instant Text by Textware Solution
- Read and Write by TextHelp!
- Autocorrect by Microsoft Word




Physical Rehabilitation


- Dynavision**
- Useful Field of View**
- Robotics**
- Simulation**
- Virtual Reality**
- Christopher Reeve**
- Mobility training**




Robotics



Locomotor



Simulation & Functional Capacity







Cognitive Adaptations

Rehabilitation Cognition/Attention


- Interactive Metronome**
- Nintendo DS with Brain Age**
- Wii Cognitive Games**




Interactive Metronome



Nintendo & Brain Age




Wii & Xbox




Cause/effect limited choice


- Picture choice**
- Simple words**
- Cause/effect choice**



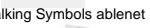
Talking Picture Book ablenet




Put-Arounds Enabling Devices




Step by Step ablenet




Talking Symbols ablenet



Big Talk Enabling Devices



iTalk2 ablenet

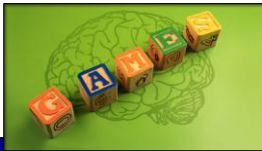


Free Computer Cognition Website

http://www.aarp.org/health/brain-health/brain_games

<http://www.gamesforthebrain.com/game/cantstop/>

http://www.sheppardsoftware.com/braingames/brain_games.htm



Memory Tools

PDA

iPOD Touch

Smart Phone

Outlook

Google Calendar



Tablet Computer with Outlook



iPOD Touch



E-Books



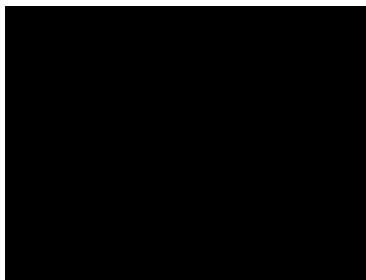
Palm and Handhelds



Smartphone





Cell Phones



Visual Adaptations



Visual Recommendations

- **Eye-to-screen distance:** at least 25", preferably more.
- **Vertical location:** viewing area of the monitor between 15° and 50° below horizontal eye level.
- **Monitor tilt:** top of the monitor slightly farther from the eyes than the bottom of the monitor.
- **Lighting:** ceiling suspended, indirect lighting. Use blinds and shades to control outside light.
- **Screen colors:** dark letters on a light background.





Vision Adaptations

- Closed-Circuit Television
- Hand Magnifier
- Screen Magnification
- Locator
- Color Schemes
- High Marks

Low vision Store and State Services For the Blind




Use the KeyRinger to quickly find

TV Remote

Keys

Cane







Vision Adaptations

- ZoomText Level 2 by Ai Squared**
- JAWS by Freedom Scientific**
- Kurzweil 1000 by Kurzweil Education**
- Magic by Freedom Scientific**
- Window Eyes by Dolphin Software**

Built in Options

- Narrator
- Magnifier
- Display Options
- Voice Over


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Auditory Adaptations

Hearing Aids

- Battery life
- Background noise reduction
- Sound Smoothing
- Wind reduction
- In/out of ear
- Digital versus Auditory
- Attachments for phone and TV
- Volume Control
- Size and comfort
- Replacement plan



Amplification



Sonic Alarm



Timex Reminder watch



Loop Amplifier



Flashing safety alarm



Pocket Talkers



Amplified Phone and recorder



Communication

Phones

Goose Neck Holder



Voice Activated Phone



Blue Tooth



PDA phones

Large Button




TTY




Simple Low Technology Solutions

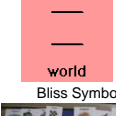
Picture Boards



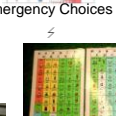
Bliss Board Symbols




Alphabet Boards




Emergency Choices




Planner




Two Step Choices




Bliss Symbols



Large Board




Picture Choices




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Alphabet/Picture Speech Devices


Switch Activated Options




Simple Choices




Used for Speech Selections




Introduction to AAC




Lingo by ablenet




M3 Dynavox




One by Four Button Talker EnableMart



FL4SH ablenet



Comboard ablenet



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Communication Devices

Dynavox



PRC



Gus



Palmtop 3 Dynavox



Phrase Maker Enabling Devices



Rehab Solutions



Enabling Devices



Tango High Tech Rehab Solutions



SpringBoard Lite PRC




Vmax Dynavox




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Eye Gaze Systems


Tobii Eye Gaze System




Eye Response Technologies




Dynavox




EyeTech TM3 Techcess




PRC




My Tobii Portable 15"




Techcess




EyeMax Dynavox



ECO PRC



ERICA by Eye Response Technologies




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EADL's Overview

Electronic Aids of Daily Living or also environmental controls are devices that require power to activate and are more complex than a simple product used for daily living.

Electronic Aids of Daily Living can be controlled by voice, switch, touch panel, communication device, wheelchairs and more.



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No Tech

Energy Conservation Techniques


Doing the same job differently (i.e. sitting down while cooking, cooking with one hand, using a mop instead of getting on hands/knees)

Writing down steps to a project/breaking it down


Using a pen with that has a wider grip

Using a scissors to open a cake mix package

Sitting on a taller chair



Low Tech



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High Tech



Pill Dispenser



Home Monitoring



Electric Page Turner



Electric Feeder



Electronic Cupboards



Ergonomic Workstation



Robotic Arm



Electric Lift Chairs



Basic Alerts and Chimes

Emergency Alerts

Chimes/Alerts to sense movement

Way of calling out for needs

Simple, easy, least expensive



Door open/close alert sensor



Call Bell Tash



Button alert



Wireless doorbell and button



Attendant Call Chime Enabling Devices



Basic Environmental Controls

A system permitting remote control of electronic devices in the immediate surroundings. A person can independently turn lights, radio, and television on and off, answer or initiate phone calls, and unlock a door. Essentially any aspect of the environment can be controlled depending upon the system's complexity. A hardware or software system allowing the user programmed or spontaneous control over remote, electrically operated appliances.



ECU Kit Enabling Devices



PowerLink by Ablenet



Imperium



Mini Relax Tash



X-10 Modules



Advanced Environmental Controls

Scan

Sip and Puff


Voice Activation

Computer based

Infra Red

Electric Wheelchair Powered


AAC Device




Quartet



Vocalize for cell phone use



SiCare Voice Activation



HAL by Home Automation









Relax II TASH



Home Accommodations

- Simple grab bars
- Ramp
- Stair Lift
- Elevator
- Automatic door openers
- Kitchen
- Lift Chairs

Home Technology

- Home Monitoring Basic to High Tech
- Environmental Controls
- Medication Management















Wheelchair Controls/ ECU control




Permobil




iBOT



Invacare Storm



Pride Q614




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Driving Adaptations


Driving Overview Courage Driving Program


Adapted Hand Controls	Lifts and Ramps	
Left Foot Accelerator	Stimulator	
Spinner Knobs	Mirrors & Backup Sensors	
High Tech Van Options	Driving Software for Study Purposes	
Voice Activation for Accessory Functions	Simple Adaptations for General Functions	
Doorjamb Support	Metro Mobility & Medical Cab	
	Seatbelt Extender	
		

 **AT Options for Recreation**


Recreation and Fitness

Increased strength	Adapted Yoga
Improved flexibility	Bend, Bone and Balance
Better pain management	Nutrition and Weight Loss
Improved circulation	Silver Sneakers
Maintained or improved bone density	Weight Management
Increased energy	
Reduced stress	





Fitness for Seniors in Minnesota



Low Impact
Stretching
Eastern Medicine
Yoga
Group Walking
Adapted

Fridley - <http://www.ci.fridley.mn.us/senior-wellness/fitness>


Maplewood - <http://www.ci.maplewood.mn.us/index.aspx?nid=113>

Golden Valley - <http://www.goldenvalleymn.gov/recreation/seniors/activities.php>

Hopkins - <http://www.hopkinsmn.com/activitycenter/activities.php>

General Minnesota Senior Fitness - <http://www.livestrong.com/article/236100-senior-activities-in-hopkins-minnesota/>

Courage Fitness Center and Warm Water Pool



Creative Shop Services Devices

The individual provided the knowledge of exactly what a device that enabled one-handed knitting should do. The OT worked with her to develop the dexterity she'd need in her left hand and showed her how to use her legs, lap, upper body and right arm and hand all as an assist; the Shop Services Technician engineered the device, calling upon his inventive talents and rehabilitation background and collaborating with the individual and the OT.



Contact
763.520.0491
ShopServices@CourageCenter.org

Cardholders
Adaptive Bicycles
Drink Holder
Book Stands
Your Ideas



Universal Pass to National Parks

The park pass that is given free, the [America the Beautiful National Parks and Federal Recreational Lands Pass Access Pass](#), is a lifetime pass to the National Parks.

The pass is given in person to the disabled individual at the individual park they are accessing. The access pass is given to all permanent residents of the United States and actual U.S. citizens that have a permanent disability that is able to be documented



Reading

State Services for the Blind

Communication Center

- Books on Tape
- Large Print
- Digital Conversions
- Closed-circuit Television Rental
- Mobility Services



Library

Disability and Senior Resources

Books on Tape

Digital Books for iPad Or Computer

Programs For Learning More about Available accommodations from the library

Large Print Books

Computer Access



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Learning More

To learn more With the Toolkit

<http://www.atmn.org/atmodtoolkit.pdf>

An overview of programs offered throughout Minnesota dealing with adapted technologies and other important resources to be knowledgeable in using.



Courage Assistive Technology Newsletter

Available on the Courage website and able to sign up for automatic delivery quarterly.





Websites

Abledata Search – www.abledata.com

Ability Hub – www.abilityhub.com


Alliance for Technology Access – www.ataccess.org

CATEA – www.assistivetech.net

AT Training On-line – <http://atto.buffalo.edu/>

Axistive – <http://www.axistive.com/>

RESNA – www.resna.org




Lending & Equipment Recycling Programs

- ALS Communication
- Goodwill
- Pacer SUPER
- Minnesota STAR
- Computers Go around
- Pass It on
- Assistive Tech MN
- STARTE
- AT Finder






Free online Resource



About 73 percent of all U.S. adults are online. That number is also high (71 percent) for baby boomers ages 50 to 64 who are entering retirement age. It drops to 32 percent for seniors 65 and older, according to the Pew study.



Facebook

Fastest growing segment of the social networking revolution are seniors

Free service through Facebook.com

Communicate with Others

Research and Company Information

Suggested common interests and friends

Chatting live



Genealogy

Minnesota History Center

Genealogy.com

Ancestry.com

Family Tree Software

Family Search

Genealogy House

Cyndi's List



Unique Resources

STAR Funding Directory

Goodwill Easter Seals

PACER Used Equipment Program

MN Assistive Technology Loan Program

MN AT for Funding Low Cost Loans

Shiner's Hospital/Clinic

PASS Plan SS Administration

Adapted Driving Financing Programs

Hennepin County Library AT Lab and Training



ASSISTIVE TECHNOLOGY



Visual Searches



