



Ohio AgrAbility Working with Occupational Therapy to Serve Agricultural Workers



**THE OHIO STATE
UNIVERSITY**

COLLEGE OF FOOD, AGRICULTURAL,
AND ENVIRONMENTAL SCIENCES



Objectives

- Review agriculture in Ohio.
- Discuss the roles of Ohio AgrAbility and OTs working together.
- Examine the on-farm assessment process to identify client's needs
- Review the documentation and follow up process when providing service to clients

Agriculture in Ohio

- Largest industry in the state
- 77,000 farms in Ohio – 91% individual / family owned
- Average age of farmer in Ohio is 57 years
- Health of farmer critical to survival of the business



Agriculture in Ohio

- Family farms are multi – generational
 - 2, 3, even 4 generations
- Multi-cultural:
 - Amish cultures
 - Migrant farm workers



Agriculture in Ohio

- Unique environment:
 - Home and workplace are the same
 - Vast area to work
 - Daily care for livestock (7days/week, 365days/year)
 - Seasonal work practices
 - Long work days
 - Weather



Injuries Faced by Famers

- Head injury
- Paralysis
- Amputation
- Cut / caught in
- Blunt trauma
- Sprain / strain
- Secondary Injuries



Health Issues Faced by Famers

- Arthritis
- Hip and knee replacement
- Cardiac health
- Stroke
- Diabetes
- Cancer
- Respiratory issues



Safety Concerns for Aging Farmers

- Reduced reaction time
- Reduced balance
- Loss of Strength
- Overexertion
- Fatigue quickly
- Reduced vision
- Hearing impairment



Ohio AgrAbility Program

National AgrAbility Project

The National AgrAbility Project was created through the U.S.D.A. to assist people with disabilities employed in agriculture and provide practical education and assistance that promotes independence in agricultural production and rural living.



Ohio AgrAbility Program

Ohio AgrAbility Program

The Ohio State University has partnered with Easter Seals to serve Ohio's agricultural residents impacted by a disability, by providing training, technical assistance, and become a primary source of information directly to the farmer.



Ohio AgrAbility Program

We have also developed partnerships through our Advisory Committee which includes:

Ohio Rehabilitation Services Commission

Ohio Arthritis Foundations

Ohio Rural Health Coalition

Centers for Independent Living

USDA's Farm Service Agency

and many other health care professionals, public officials, and agribusiness professionals.

Ohio AgrAbility Program

Why is the program needed?

Agricultural production is ranked as one of the most hazardous occupations in Ohio and the nation.

- Agriculture has one of the highest disabling injury rates of any industry.
- 1 out of 14 Ohio farm families experience a farm-related injury each year.
- Approximately 84% of those injuries occurred on the farm, and about 69% of them were farming operations related.



Ohio AgrAbility Program

Why is the program needed?

Farm and rural families experience the same types of non-work related injuries and disabling conditions as the rest of the population.

- ✓ Off - the - Farm incidents
- ✓ Workplace injuries
- ✓ Illness or Health problems

Older farmers often experience limitations such as:

- ✓ vision loss
- ✓ hearing loss
- ✓ loss of strength
- ✓ loss of range of motion



Ohio AgrAbility Program

Who is served by the program?

- The Ohio AgrAbility Program serves farmers and rural families in Ohio who have faced a wide range of disabilities.
 - head or spinal cord injury
 - back injury
 - visual impairment
 - amputation
 - arthritis
 - hearing impairment
 - stroke
 - diabetes
 - mental illness
 - respiratory impairment
 - ergonomic / repetitive motion injuries

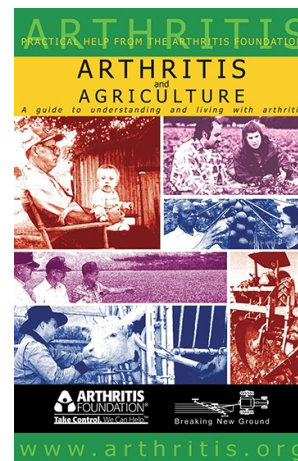
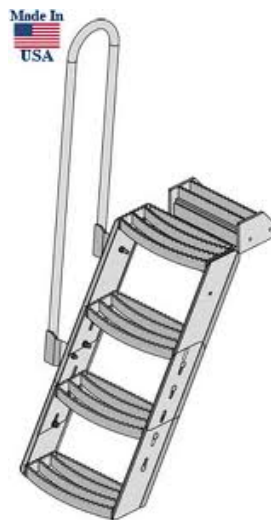


Ohio AgrAbility Program

No Cost Services:

1) Provide a wide variety of resources and information on solving specific problems and working with a specific disability.

- worksite modifications
- adaptive tools
- accessibility issues
- assistive technologies
- health and safety information
- secondary injury prevention



Ohio AgrAbility Fact Sheet Series

Secondary Injury Prevention: Ergonomics for the Farm

S. Don Jorgens, Assistant Professor, State Safety Institute, Agricultural Safety and Health,
Food, Agricultural and Biological Engineering, The Ohio State University

Kent McGuire, Ohio AgrAbility Program Coordinator, Agricultural Safety and Health,
Food, Agricultural and Biological Engineering, The Ohio State University

Danielle Palmed, Student Intern, Agricultural Safety and Health,
Food, Agricultural and Biological Engineering, The Ohio State University

Ergonomics is the science of designing the job, equipment, and workplace to fit the worker, while maintaining the efficiency of people in the workplace. The use of ergonomics keeps workers safe, comfortable, and productive. Improving work posture, reduced force, and less repetitive motions can prevent injuries. The repetitive nature of farming, ergonomics can be of great value in reducing the risk of injury. Remember that old habits die hard and many farming practices have been passed down from generation to generation. Following a few simple ergonomic guidelines can prevent injuries that develop because of continuous physical activity over a long period of time.

Hand Work

- Avoid placing needed tools or other items above shoulder height.
- Place frequently used items within 17 inches of the work.
- Alternate low-repetitive tasks with tasks that require repetitive motion, such as in picking or weeding, for adequate recovery from the repetitive motion task.
- Integrate seated jobs. Strain on the lower back and legs is reduced by sitting down while working. Standing causes legs to swell (more than walking down). The best jobs are ones that allow workers to do different types of work, changing from sitting, to standing, to walking and back again.
- Allow foot and knee clearance for both standing and sitting workers, so they can get close to the work.
- Have floor mats at standing workstations to reduce fatigue.
- Use the proper workstation height.

Hand Tools

- When tools require force, handle size should allow the hand to grip all the way around the handle so that the forefinger and thumb overlap by 1/2 inch. Handle diameter should range from 1 1/2 inch for small hands to 2 1/2 inch for large hands with an average of 1 3/4 inch.
- Cover handles with smooth, slip-resistant material (plastic or rubber).
- Dual-handled tools (like shears or pliers) should have a handle length of at least 4 inches. They should have a spring return to maintain a secure position, and handles that are almost straight without finger grooves.

Lifting

- When lifting, keep the loads between hand level and shoulder level. Avoid lifts from the floor or over shoulder level.

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Ohio AgrAbility Program

No Cost Services:

2) On-Site assessments and technical assistance

- Prioritizing specific obstacles
- Helping to find solutions to meet specific needs
- Utilizing best practices
- Identification of assistive technology needs
- Applying Universal Design concepts
- Process development



Ohio AgrAbility Program

No Cost Services:

3) Peer to Peer Support

- Connecting people with similar experiences for sharing ideas and support.
- Assistive technology demonstrations
- Family / primary caregiver support



Ohio AgrAbility Program

No Cost Services:

4) Referral Information

Providing information on services available in:

- agriculture
- rehabilitation
- state service agencies
- local community



Ohio AgrAbility Program

No Cost Services:

5) Training

Our staff is available to provide training on a variety of topics including:

- farming with a disability
- ag safety and health
- researched - based best practices
- farm accessibility issues
- prevention of secondary injuries



Ohio AgrAbility Program

No Cost Services:

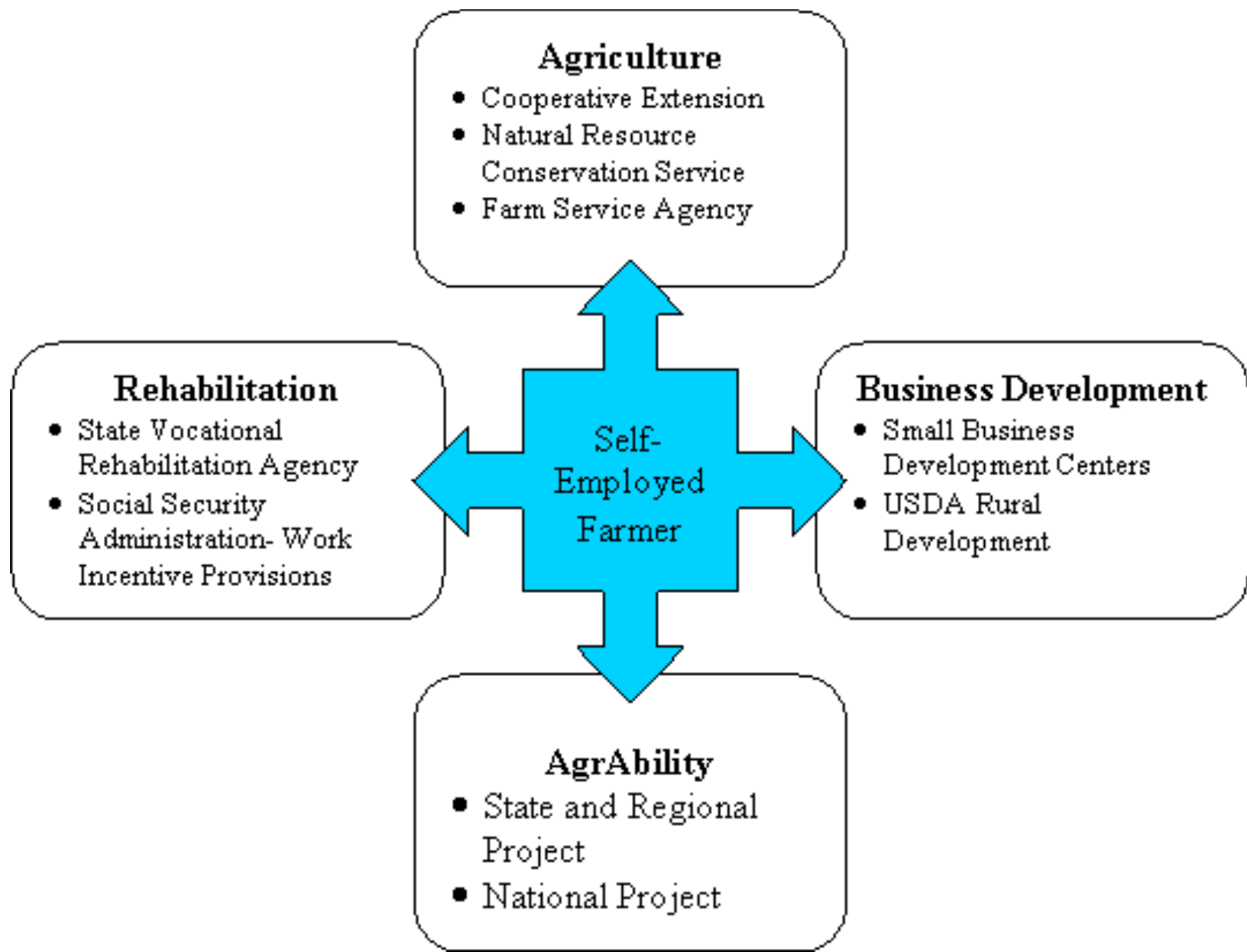
6) Public Awareness:

Our staff can speak or provide displays at:

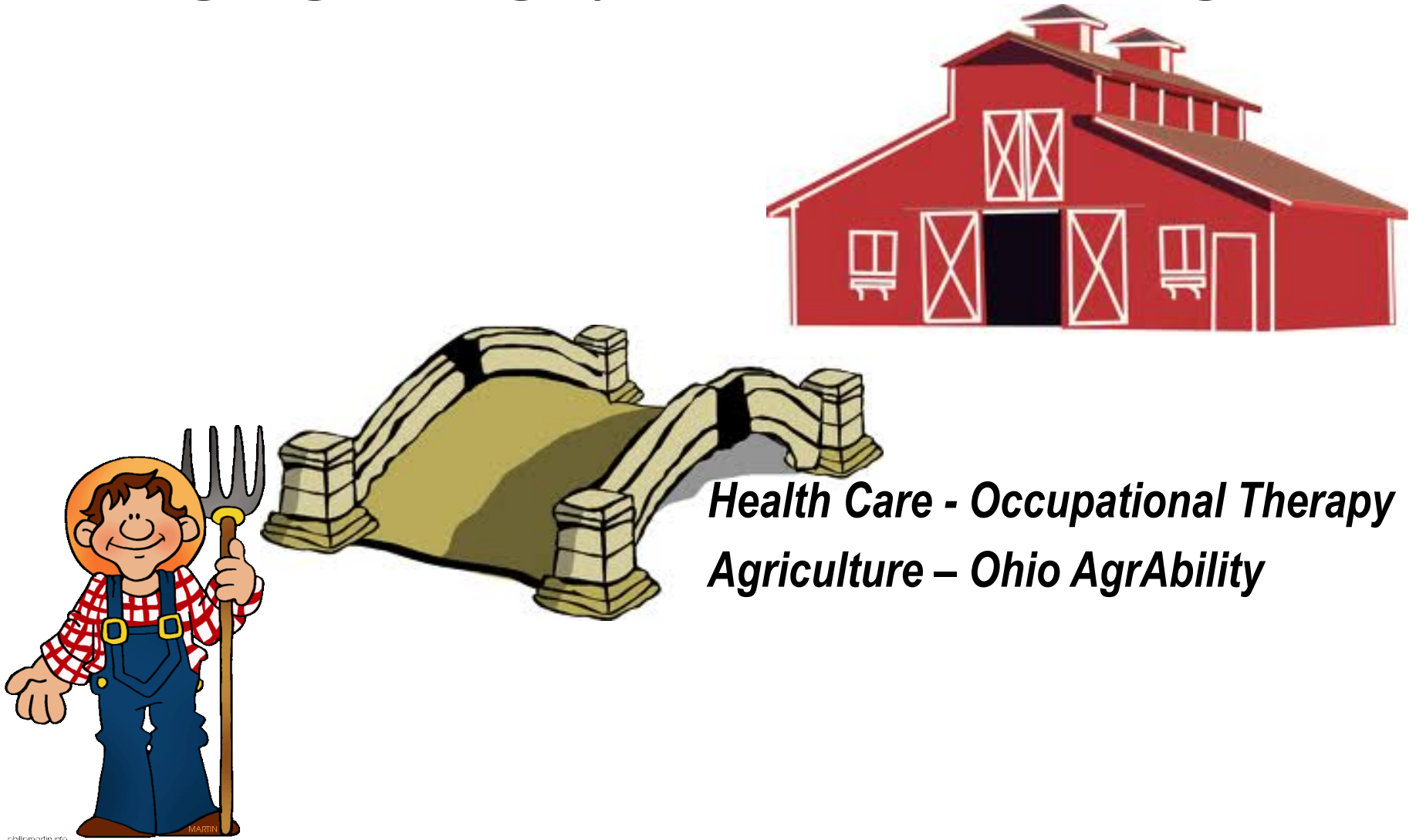
- community events & health fairs
- field days & ag safety seminars
- agricultural trade shows
- civic organizational events



The Overall Picture



Bridging the gap with common goals



Bridging the gap with common goals

- **Identify** a farmer's job tasks.
- **Evaluate** a person while on the job to determine his or her ability to complete job tasks.
- **Create** a safe, productive, and functional work environment.
- **Monitor** a farmer's progress and reassess work tasks.



OT Rehabilitation Facility

Bridging the gap with common goals

- **Recommend** modifications to job tasks that the farmer can complete safely.
- **Implement** the use of assistive devices that may help a person complete a task safely.
- **Design programs** to develop strength and endurance in performing job tasks.



Farm / Work Environment

Creating a productive and safe work environment

Assistive technology / Adaptive Equipment

Extending Universal Design to the farmstead

– Home \Rightarrow Garage, Farm shop, Barn

Entrances / Accessibility

Workplace modifications

Specialty work areas

Tools / Equipment

Livestock handling



Assistive Technology

Any kind of device, modification, or service that will help a person with a disability work and live more independently.

- low tech or high tech
- expensive or inexpensive

Ultimately helps to make it possible for someone to complete a job that might otherwise be difficult.

Create a productive and safe work environment



Universal Design

Universal Design is the creation of products and environments meant to be usable by all people, to the greatest extent possible, without need for adaptation or specialization.

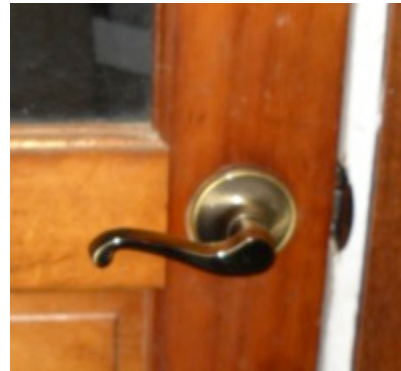
Extending Universal Design to the farmstead

– Home \Rightarrow Garage, Farm shop, Barn



Creating a productive and safe work environment

- Entrances / Accessibility
 - Doors & Gates
 - Handles
 - Stairway vs. Ladder



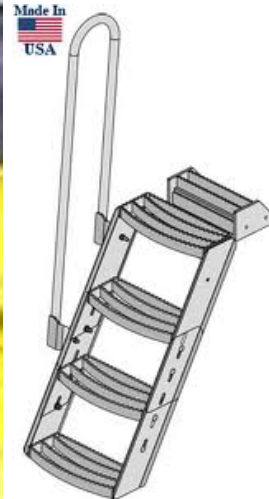
Creating a productive and safe work environment

- Mobility
 - Standing Wheel Chair
 - Mobility Scooter
 - ATV / UTV



Creating a productive and safe work environment

- Equipment modification
 - Steps
 - Hand controls
 - Steering



Creating a productive and safe work environment

- Equipment modification
 - Quick – Attach
 - Hitching Devices
 - Ag Cams
 - Seating



Creating a productive and safe work environment

- Equipment modification
 - Lifts



Creating a productive and safe work environment

- Job Accommodations
 - Anti - Fatigue mats
 - Stools / Utility Carts
 - Task lighting



Creating a productive and safe work environment

- Job Accommodations
 - Tool / parts storage
 - Hoist / lifting devices
 - Wash areas



Creating a productive and safe work environment

Storage: Indoor or Outside

- Keep most used items 18" – 54" from floor
- Reduce travel with storage items to the job location or garden



Creating a productive and safe work environment

- Tools / Equipment
 - Pneumatic powered
 - Battery powered



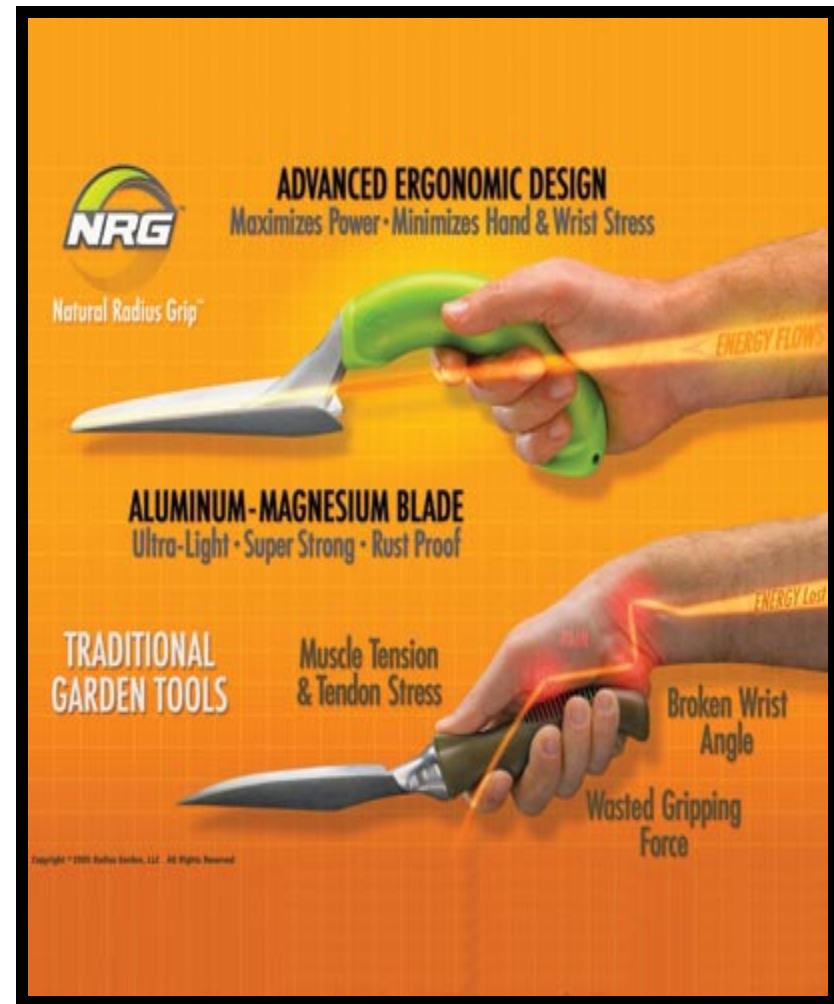
Creating a productive and safe work environment

- Tools / Equipment
 - Cushioned, thicker handles
 - Specialty tools
 - Material handling



Ergonomic Tools

- Tools should have handles that fit your hand
 - Handle should be big enough that your thumb barely overlaps your fingers
 - Handle should be small enough that you can hold it comfortably



Long Handle Tools

Ergonomic Considerations



- Two handed grip is better
- Light weight
- Enlarged, foam, or soft handle
- Telescoping handle
 - Shorter length to accommodate task at hand

D - Grip

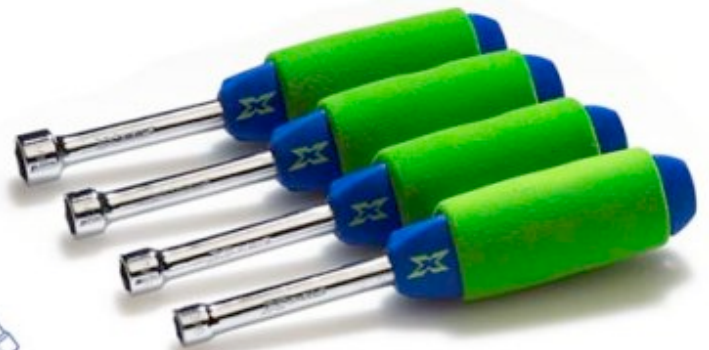


- **D-grip:** Tool Accessory for rakes, shovels, hoes, pitch forks, and brooms.
- Mounts mid-way down the tool handle to give lifting leverage to the forward hand.

Creating a productive and safe work environment

Universal design tools

- Larger handles
- Cushioned handles
- Ergonomic grips
- Easy to use on / off switches
- Large digital display or dials
- Color coded
- Larger knobs



Creating a productive and safe work environment

- Job Accommodations: Livestock
 - Feed / Water processes
 - Efficient daily chores



Creating a productive and safe work environment

- Job Accommodations: Livestock
 - Modify handling processes
 - Livestock handling equipment
 - Corral systems



On – Site Assessment Process

1) Initial Visit

- Kitchen table discussion
- Prioritizing specific obstacles
- Walk - thru of farmstead

2) On-Site assessments and technical assistance

- Helping to find solutions to meet specific needs
- Determine goals
- Identification of assistive technology needs
- Applying Universal Design concepts
- Changes in process

3) Follow up visits

- Equipment use
- Seasonal changes
- Health changes



On – Site Assessment Tool

- 1) Personal Data
- 2) General Farm Data
- 3) Overall Farm Accessibility
- 4) General Farm Maintenance
- 5) Equipment & Machinery
- 6) Crop Production
- 7) Livestock Production
- 8) Orchards / Woodlots / Gardens
- 9) Farm Management Activities
- 10) Additional Vocational Skills
- 11) Establishing Goals
- 12) Comments / Observations
- 13) Farmstead Layout



Working with | Opportunities for Ohioans with Disabilities

Ohio AgrAbility partners with OOD to assist farmers with disabilities to maintain farming

- Mission of both OOD and Ohio AgrAbility

Referral and Eligibility

- Making sure the client is right fit for eligibility and a good match to work with OOD

Provide assessments for OOD

- Assessments for the home, farm and ag work environment

Utilize our networking resources to seek viable solutions

- National AgrAbility, OSU Extension, USDA, Ohio Farm Service Agency, Equipment manufacturers

Recommendations on a plan to keep that individual farming

- Work with OOD to design and develop an individualized plan for the farmer.
- Make sure the equipment / AT is good match for client and work environment.

Implementation of the plan

- Assist with implementing the plan.
- Assist with looking at lowest cost item and getting price quotes.
- Purchase of equipment / AT

Follow through to success

- Follow up for OOD with farmers
- Continue to work with the farmer to solve problems to maintain productivity and success

Working with **Ohio**

Opportunities for Ohioans
with Disabilities

OOD has provide funding for:

- Farm Utility Equipment
- Tractor / Equipment Modifications
- Mobility Devices / Track Chair / Standing Chair
- Livestock Handling Systems
- Feed Handling Systems
- Material Handling Equip.
- Vehicle Modifications
- Mobility Aid Devices
- Home Lifts / Modifications
- Dragon Software
- Hearing Devices



Working Together = Results

- Ohio AgrAbility can be a resource for OTs and the farmer patient.
- Occupational Therapy and Ohio AgrAbility working together can increase positive outcomes for farmers with a disabling condition.

Where can I find more information?

www.ohioline.osu.edu

*Assistive Technology for the Farm,
Extending Universal Design Principles onto the Farmstead,
Secondary Injury Prevention: Walking and Working Surfaces,
Secondary Injury Caused by Lifting,
Secondary Injury Prevention: Caught-in or between Objects,
Secondary Injury Prevention: Ergonomics for the Farm,
Secondary Injury Prevention: Farming with a Pacemaker,
Secondary Injury Prevention: Heat Stress
Secondary Injury Prevention: Safety for Senior Farmers,
Secondary Injury Prevention: Understanding Concussions,
Secondary Injury Prevention: Repetitive Motion,
Overexertion Causing Secondary Injury
Farming with Lower Extremity Amputation,
Farming with Upper Extremity Limitation/Amputation,
Injury Prevention: Types of Cold Stress,
Injury Prevention: Working in Cold Weather
Managing Arthritis When Farming,
Farming After a Stroke,
Managing Stress for a Healthy Heart,
Preventing Heart Disease,
Farming with Parkinson's Disease,
Farming with Diabetes
Initial Farm Injury Emergency Response
Primary Caregiver for a Farm Family Member,*



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Ohio AgrAbility Fact Sheet Series

Managing Arthritis When Farming

S. Dee Jepsen, Assistant Professor, State Safety Leader, Agricultural Safety and Health, Food, Agricultural and Biological Engineering, The Ohio State University

Kent McGuire, Ohio AgrAbility Program Coordinator, Agricultural Safety and Health, Food, Agricultural and Biological Engineering, The Ohio State University

Danielle Poland, Student Intern, Agricultural Safety and Health, Food, Agricultural and Biological Engineering, The Ohio State University

Arthritis tends to affect most farmers in their hands, knees, and hips because these are the joints that take the most pressure. Seven strategies minimize pressure on these points, reducing pain and stiffness.

1. Maintain a healthy weight. The Arthritis Foundation suggests that every 10 pounds lost relieves 40 pounds of pressure on the knees.
2. Look for ways to simplify body movements.
 - Adding a drop-down step with non-slip material and attaching an extra handle to farm machinery.
 - Installing suspension seats or seat cushions with lumbar support and adjustable armrests in tractors will absorb shock, protecting joints.
 - Adding mirrors inside and outside of the tractor cab decreases twisting.
 - Using a wheelbarrow or utility vehicle to move heavy objects minimizes pressure on the knees and back.
 - Adding padding to gears and handles. Building up tractor knobs, levers, small tools, or handles with foam and duct tape can make them easier to grasp, especially if hand strength is limited. Adding an extender to a handle can also change the leverage and make it easier to use.
3. Maintain a healthy lifestyle—which includes a healthy diet.
4. Don't smoke. Research by the Arthritis Foundation

has found a correlation between smoking and arthritis.

5. Utilize treatments. Many of the traditional treatment methods for arthritis can improve mobility. Hot and cold packs on the affected joints, anti-inflammatory medication, or wearing a brace that helps prevent inflammation around joints are helpful treatments.
6. Consult an occupational therapist. Consider visiting with an occupational therapist to learn more about ways to protect the joints.

A purposeful exercise program

Have a purposeful exercise plan. Farmers do get exercise in the physical work they do every day, but a “purposeful” exercise plan includes stretching and warming up, strength and endurance exercises, and low-impact weight bearing activity that can benefit the joints—such as walking or swimming. A purposeful exercise will protect, strengthen, or maintain function in joints. Exercises should include:

- Range of motion exercises to extend joints through their limits of movement. These help maintain normal joint movement, relieve stiffness, and restore flexibility that's been lost.
- Strengthening exercises to help retain or increase muscle tone. Strong muscles help keep joints stable and more comfortable.

Where can I find more information?

www.agsafety.osu.edu

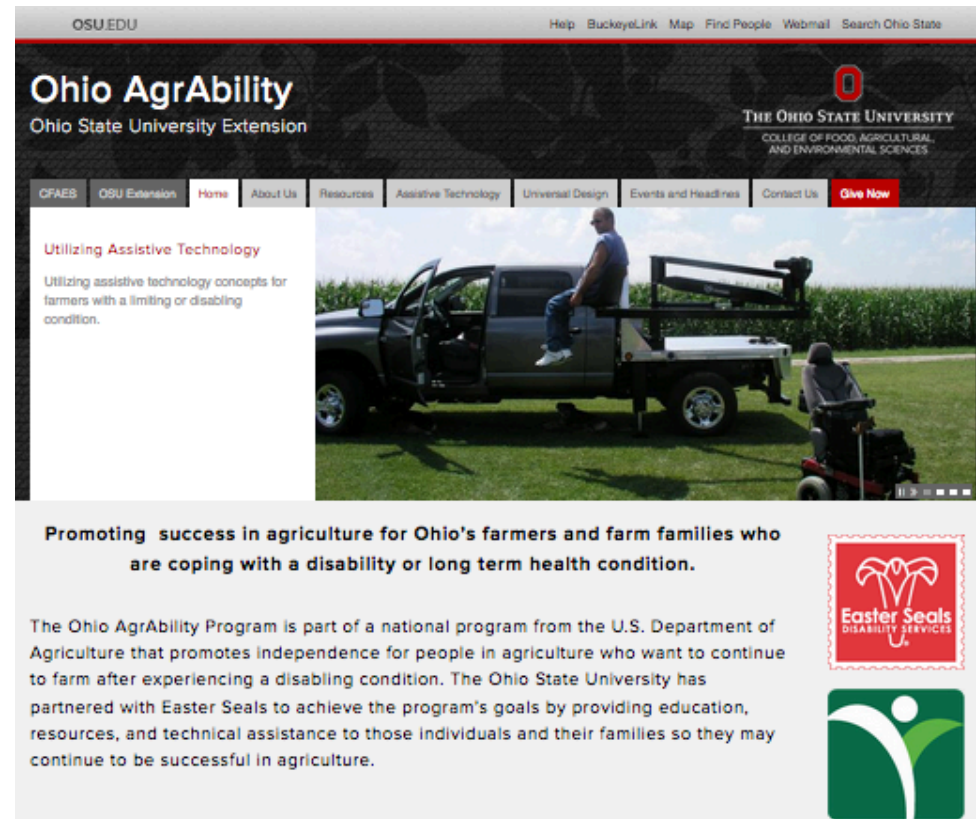
www.agrability.osu.edu

www.agrability.org

OSU Ag Safety & Health



Your local OSU Extension office.

A screenshot of the Ohio AgrAbility website. The header includes "OSU.EDU" and navigation links like "Help", "BuckeyeLink", "Map", "Find People", "Webmail", and "Search Ohio State". The main title is "Ohio AgrAbility" with "Ohio State University Extension" below it. A navigation bar contains links for "CFAES", "OSU Extension", "Home", "About Us", "Resources", "Assistive Technology", "Universal Design", "Events and Headlines", "Contact Us", and a red "Give Now" button. The main content area features a section titled "Utilizing Assistive Technology" with a description: "Utilizing assistive technology concepts for farmers with a limiting or disabling condition." To the right is a large photo of a man sitting on the back of a pickup truck in a field, with a person in a wheelchair nearby. Below the photo is a paragraph: "Promoting success in agriculture for Ohio's farmers and farm families who are coping with a disability or long term health condition." Further down is another paragraph: "The Ohio AgrAbility Program is part of a national program from the U.S. Department of Agriculture that promotes independence for people in agriculture who want to continue to farm after experiencing a disabling condition. The Ohio State University has partnered with Easter Seals to achieve the program's goals by providing education, resources, and technical assistance to those individuals and their families so they may continue to be successful in agriculture." On the right side of the bottom section are two logos: "Easter Seals Disability Services" and a green logo with a white figure.

How can I contact the Ohio AgrAbility program?

Kent McGuire

The Ohio State University

Dept. Of Food, Agriculture & Biological Engineering

590 Woody Hayes Drive

Columbus, Ohio 43210-1057

Email: mcguire.225@osu.edu

Phone: 614-292-0588

Fax: 614-292-9448

