

MARRTC Offers Practical Solutions For Farmers and Ranchers with Arthritis

"I was surprised that simple modifications combined with small changes in daily routines and habits could result in so much improvement in comfort for me while I am operating these tractors."

William Wetherell

Throughout rural, agricultural communities across the country, countless farmers and ranchers of all ages are experiencing problems that affect their ability to safely and successfully complete their every day chores because of their arthritis. Because of the NIDRR funded Missouri Arthritis Rehabilitation Research and Training Center **Farmers with Arthritis Project** thousands of farmers and ranchers with arthritis have safely remained gainfully employed in agriculture and have gained a higher level of independence.

Arthritis and related musculoskeletal conditions are the leading cause of disability in the United States today. The CDC reports that roughly a quarter to a half of U.S. adults of working age with arthritis say their arthritis affects their work. In fact, arthritis is a major cause of work disability and is also the most common reason given by adults between the ages 40 and 75 for limitations in their physical activities that restrictions their activities of daily life.

Arthritis is a potentially disabling condition for anyone with these diseases, but the impact of arthritis on farmers and ranchers living in rural, agricultural communities often times is more severe. The rural, agricultural environment presents major physical challenges for farmers and ranches with arthritis, both at home and on-the-job.

Arthritis may prevent farmers or ranchers from completing physical tasks such as getting on and off the tractor, driving tractors for long periods of time, walking across uneven surfaces, and running errands like going into town to get needed supplies. Arthritis pain, fatigue, and stiffness also can limit farmers and ranches quality of life in a variety of ways.

When farmers or ranchers have chronic arthritis conditions that hinder their ability to complete their day-to-day agricultural tasks, help is a phone call away. The **Farmers with Arthritis Project** works collaboratively with the Missouri Arthritis Rehabilitation

Research and Training, Missouri AgrAbility Project, Center for Disease Control (CDC) Missouri Arthritis & Osteoporosis Program, and Arthritis Foundation offer farmers and ranchers with reliable tips and techniques. This one-stop-shop arthritis resource center offers reliable, practical solutions to farmers and ranches. Customized services are also offered to farmers and ranchers with arthritis including:

- Comprehensive evaluation of the home and recommendations on necessary adaptations
- Comprehensive on-the-farm assessment, worksite evaluation, and suggestions for practical, safety, and effective interventions.
- Recommendations and training in the use of adaptive or assistive technologies
- Recommendations on simple solutions on use of ergonomics, body mechanics, and energy conservation techniques
- Recommendations tool usage to prevent pain and further injury with this disease.

Tools and Equipment Modifications

Tool and equipment modifications are also suggested to farmers and ranchers to help reduce joint stress, pain, and fatigue. The following principles can be used to help guide farmers and ranchers when selecting adapted devices or assistive technologies as well as evaluating those currently used to prevent secondary injury and disability.

Use Wheels

- To reduce friction, lessening the resistance between surfaces
- To avoid lifting and carrying

Simple Solution: Use a cart or attach a carrier with wheels to items to avoid unnecessary the strain of carrying.

Use Extended Handles

- Products with long handles or long attachments let you use less force to manipulate objects. These products help to conserve energy.

Simple Solution: A piece of wood, metal, foam, or firm plastic can be attached to many types of objects to increase the length of the handle.

Use lightweight objects

- To reduce joint stress, pain, and fatigue

Simple Solution: A small garden shovel is easy to carry and clean.

Use large handles

- To help maintain a secure hold when hands are weak
- To help hold an object if fingers do not fully close
- To lessen tension required to maintain your hold on objects

Simple Solution: Purchase hand tools made with bulky soft handles about one inch in diameter or pipe insulation tubing with an opening from 3/8 to 3/4 inch in diameter offers an easy and inexpensive way to build up your tool handles.

Body Mechanics

The principle of body mechanics is to use the muscles and joints efficiently in order to reduce stress, pain, and fatigue. Proper attention to the following principles can solve many potential problems in the future.

Distribute the load over stronger joint(s) and/or larger surface area:

- To reduce joint stress and prevent joint pain by spreading the weight of objects you are carrying, pushing, or pulling.
- To eliminate tight grasping and pinching, since these actions may stress your knuckles or cause hand stiffness.
- Hold objects close to your body. This reduces the load and in turn reduces fatigue and joint stress.

Simple Solution: Instead of using your arms, **use your whole body.**
Instead of your back, **use your legs.**

Avoid maintaining the same joint position for prolonged periods:

- To reduce joint stiffness.
- Hips and knees: Alternate between sitting and standing positions; stretch frequently.
- Knees: when sitting, change the position of your legs so that your knees are periodically stretched out. This can reduce stiffness and pain when you return to standing.

Use good posture:

- Proper body alignment when standing, sitting, lifting, and changing positions uses your muscles and joints more efficiently.
- Check your posture: ears directly over shoulders, shoulders in line with the hips, stomach muscles lightly contracted, knees straight but unlocked, feet shoulder-width apart, and even weight on both feet.

Lifting:

- To lift objects from the ground or low shelves, bend your legs instead of your back.
- Pick up the object, holding it as close to your body as possible, and rise, letting your leg muscles do the work.

Prevention is crucial. Using the right techniques and tools will allow farmers and ranchers to farm longer and enjoy it more, with less risk of strain and injury. However, if you are a farmer with arthritis, please contact Farmers with Arthritis Project and Missouri AgrAbility Projects for practical solutions, resource information, and direct assistance to help you in your everyday farm and ranch tasks.

References

<http://www.muhealth.org/arthritismofarmers.html>

<http://www.aota.org/featured/area6/index.html>

Lorig, K. & Fries, IF. (1995). The arthritis helpbook (4th ed.). Reading, MA: Addison-Wesley Publishing Company.

Farming with Arthritis Case Study

William Wetherell assists part time on the family livestock and grain operation. He contacted the MARRTC *Farmers with Arthritis Project* because he was having problems with pain and fatigue due to his osteoarthritis. The MARRTC staff suggested options for mounting the tractor; installed a metal grate on steps and platform of the tractor to provide better traction; fabricated a longer handle for the PTO lever to reach the right-side of the tractor seat; and taught him proper body mechanics for shoveling. As a result of assistance from the MARRTC, William has been able to significantly reduce the discomfort levels he previously experienced using his Farmall M and IHC 806 tractors. "I was surprised that simple modifications combined with small changes in daily routines and habits could result in so much improvement in comfort for me while I am operating these tractors." The first step was to provide the farm operator with an on-the-farm assessment to evaluate the problems and provide practical, safe, and effective solutions.

Problems

William Wetherell, a part-time farmer who assists on the family livestock and grain operation was diagnosed with osteoarthritis of the knees at age 28. He experienced difficult with pain and fatigue when trying to get on-and off-the tractor and when performing repetitive movements of shoveling, raking, and hoeing.

- Pain in knees, back, shoulders, and neck due to repetitive twisting and reaching motion necessary for PTO shut-off on the tractor while seated.
- Pain in knees and back as well as fatigue from poor positioning in the operators seat.
- Pain and knee and back fatigue resulting from poor positioning in the operators seat.
- Pain when mounting his old tractor due to position of the operator seat and steps.

Practical Solutions

A team occupational therapy students and their faculty mentor from the University of Missouri Columbia, Department of Occupational Therapy combined with the MARRTC Farmers with Arthritis and Missouri AgrAbility Project staff traveled to William's farm to access his arthritis concerns and needs.

Recommendations and training in the use of proper body mechanics and adaptive equipment as well as safety and energy conservation techniques were made to improve comfort, performance, and job satisfaction.

- Education and assistance to help identify ways to successfully and safely accommodate William's arthritis on the farm.

OT Students University of Missouri Columbia, 2002

Karen Funkenbusch, MA, Marian Minor, Ph.D., PT, Willard Downs, Ph.D., and Diana Baldwin, MA,
OT/C, FAOTA

- Analysis of his on-the-farm work tasks.
- Specific ideas for safe, affordable, and practical modifications or solutions.
- Instruction on proper body mechanics.
- Guidance on tool alternative techniques.
- Referral to the local Central Missouri Regional Arthritis Center.
- Referral to the Division of Vocational Rehabilitation for potential funding of assistive technologies and adapted devices.
- Referral to the Arthritis Foundation.
- Guidance on home and out buildings alternative techniques.

A Few Facts About Arthritis and Agriculture

Arthritis is the leading cause of disability among U.S. adults.

- Arthritis and chronic joint symptoms affect nearly 70 million Americans, or about one of every three adults.
- In 1997, the costs for arthritis totaled \$86.2 billion -- a staggering 1 percent of the U.S. gross domestic product.

Arthritis or Chronic Joint Symptoms (CJS) is not just for old person's disease.

- One of three U.S. adults are affected by arthritis or chronic joint symptoms.
- Nineteen percent of people with this disease are under the age of 44.
- Forth two percent of people with this disease are under the age of 65.
- Fifty eight percent of people with this disease are 65 years of age or older.

Arthritis affects more than joints.

- When a person experiences the pain of chronic arthritis, it is hard to stay active.
- Other physical problems can develop, including heart disease, high blood pressure, and too much weight gain.
- Arthritis can also affect the mental health of the person with the disease and his/her family.
- Dealing with physical pain can create feelings of stress and helplessness.
- Dealing with the cost of health care often creates a financial burden in families dealing with arthritis.

ALL forms of arthritis can be helped.

- There is no magic cure for arthritis. *However*, experience shows that staying active and knowing how to manage your arthritis can greatly reduce the effects of this disease.
- Some forms of arthritis can be prevented.

What Can A Farmer and Ranchers Do?

Understand the warning signs

- Swollen, painful or hot joints.
- Unexplained weight gain or fatigue.

Seek professional help early

- Rheumatologists are doctors who specialize in arthritis.

Seek the experience of others

- You may not have to look far to find people who have solved many arthritis problems.

Use good body mechanics

- Use body leverage
- Distribute the load over stronger, larger joints
- Don't stay in the same position for long periods
- Reduce excess body weight
- Use good posture.

Select helpful products

- Use wheels and levers
- Use lightweight objects
- Use enlarged handles
- Use convenience items.

Stay active

- Keep your joints flexible with exercise
- Do at least 30-minutes of moderate physical activity most days of the week.

National Arthritis Resources

Missouri Arthritis Rehabilitation Research and Training Center

University of Missouri Health Sciences Center

Toll Free: 877.882.6826

TTY: 800.735.2966 (Relay Missouri)

E-mail: marrtc@missouri.edu

<http://marrtc.missouri.edu/about/grant.html>

National Center for Chronic Disease (CDC) Prevention and Health Promotion

1600 Clifton Rd.

Atlanta, GA 30333, U.S.A

Public Inquiries: 404.639.3534 / 800311.3435

<http://www.cdc.gov/nccdphp/arthritis/>

The National Institute of Arthritis and Musculoskeletal and Skin Diseases Information Clearinghouse

National Institutes of Health

1 AMS Circle

Bethesda, MD 20892-3675

Telephone: 301.495.4484

TTY: 301.565.2966

<http://www.circlesolutions.com/niams/>

Arthritis Foundation

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

Missouri Arthritis Resources

Farmers with Arthritis Project

University of Missouri Columbia
232 Agricultural Engineering Building
Columbia, MO 65211
1.800.995.8503

<http://marrtc.missouri.edu/products/products.html>

Missouri AgrAbility Project

University of Missouri Extension, Agricultural Engineering Extension
217 Agricultural Engineering Building
Columbia, Missouri 65211
1.800.995.8503

<http://fsb.missouri.agrability/>

Missouri Arthritis & Osteoporosis Program

Missouri Department of Health and Senior Services
Unit of Chronic Disease Control
920 Wildwood Drive
P. O. Box 570

Jefferson City, Missouri 65102-0570
800.316.0935 or 800.735.2966 (TTY)

<http://www.dhss.state.mo.us/maop/>

Missouri Regional Arthritis Centers

Central Missouri Regional Arthritis Center

601 Business Loop 70W, Suite 219
Columbia, MO 65203
Phone: 573.882.8097

<http://marrtc.missouri.edu/about/grant.html>

Kansas City Regional Arthritis Center

Saint Luke's Hospital Regional Arthritis Center
4401 Wornall Road
Kansas City, Missouri 64111-3238
816.321.734

<http://marrtc.missouri.edu/about/grant.html>

Northeast Regional Arthritis Center

Kirksville College of Osteopathic Medicine
800 W. Jefferson
Kirksville, MO 63501

<http://marrtc.missouri.edu/about/grant.html>

Northwest Regional Arthritis Center

801 Faraon St.
St. Joseph, MO 64501
816.271.7064 or 800.443.8858

<http://marrtc.missouri.edu/about/grant.html>

Southeast Missouri Regional Arthritis Center

211 St. Francis Dr.
Cape Girardeau, MO 63703
573.331.5880 or 888.216.3293

<http://marrtc.missouri.edu/about/grant.html>

Southwest Regional Arthritis Center

St. John's Hospital
1235 E. Cherokee
Springfield, MO 65804
417.820.3665, 417.820.3446 or 800.835.5197

<http://marrtc.missouri.edu/about/grant.html>

St. Louis Regional Arthritis Center

8390 Delmar Blvd.
St. Louis, MO 63124-2100
314.991.9333 ext. 316

<http://marrtc.missouri.edu/about/grant.html>