



Injury Prevention in Agriculture

Are injuries a problem for those engaged in agriculture?

- Musculoskeletal disorders (MSDs) are a “near epidemic” in agriculture (*Chapman & Myers, 2001*)
- 1 ½ times the prevalence of back pain in production ag compared with U.S. industries overall.
- MSDs are so common among experienced farmers and farm workers that many perceive them as no more than normal and inevitable consequence of farm labor.
(*Chapman, & Myers, 2001*)
- Women are at an even greater risk for MSDs

The most common MSD is lower back pain and the four factors influencing lower back disorders are:

- Heavy physical work
- Lifting and forceful movements
- Bending and twisting
- Whole body vibration

According to the CDC the best way to reduce MSDs is

1. Redesign the tools
2. Redesign how the work process is done

Principles of Good Body Mechanics

Body mechanics is the utilization of correct muscles to complete a task safely and efficiently, without undue strain of any muscle or joint.

Maintain a stable center of gravity

- Keep your center of gravity low
- Keep your back straight
- Bend at the knees and hips

Maintain a wide base of support (this will provide you with maximum stability while lifting)

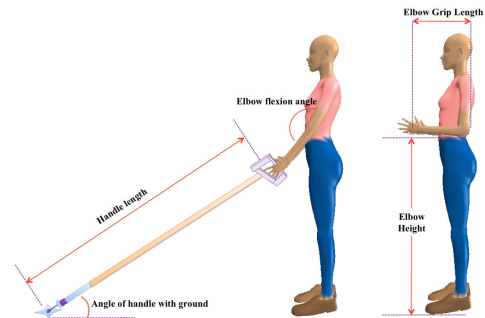
- Keep your feet apart
- Place one foot slightly ahead of the other
- Flex your knees to absorb jolts
- Turn with your feet

Maintain the line of gravity

- Keep your back straight
- Keep the object being lifted close to your body

Maintain proper body alignment (good posture)

- Tuck in your buttocks
- Pull your abdomen in and up
- Keep your back flat
- Keep your head up
- Keep your chin in
- Keep your weight toward and supported on the outside of your feet



Technique for Lifting

- Use the stronger leg muscles for lifting
- Bend at the knees and hips keeping your back straight
- Lift straight upward in one smooth motion

Technique for Reaching

- Stand directly in front of and close to the object
- Avoid twisting or stretching (keep your nose between your toes)
- Use a stool or ladder for high objects

What to do instead of stooping

- Squat (bend at the hips and the knees)
- Use your leg muscles to return to the standing position
- Do not bend over at the waist

Some principles of physics and other suggestions to help you with some farming tasks

- It's easier to pull, push or roll an object than it is to lift it
- Less energy or force is required to keep an object moving than it is to stop and start it
- Movements should be smooth and coordinated rather than jerky
- Use arm and leg muscles as much as possible, instead of your back muscles
- Keep work as close to your body as possible
- Rock backward and forward on your feet to use your body weight as a pushing or pulling force
- Keep your body in good physical condition to reduce the chance of injury (see stretching handout).

Proper Stretching Technique

- Perform balanced stretching. This means you should always stretch the muscles on both sides of your body evenly. Don't stretch one side more than the other side.
- Avoid over-stretching. Never stretch to the point of pain or discomfort. You will feel slight tension or a pull on the muscle at the peak of the stretch.
- Go slow! Always stretch slowly and evenly. Hold the stretch for about fifteen seconds and release slowly as well.
- Never bounce or jerk while stretching. This can cause injury as a muscle is pushed beyond its ability. All stretches should be smooth and slow.
- Don't forget to breathe. Flexibility exercises should be relaxing. Deep, easy, even breathing is key to relaxation. Never hold your breath while you stretch.

Abdominal Stretch

Here is a stretch you can do anywhere prior to any vigorous activity, including shoveling

1. Stand up straight with your arms at your sides and your feet shoulder width apart
2. Bend your trunk sideways to the left while sliding your left hand down your thigh and reaching your right arm over your head
3. Hold for a count of 10
4. Return to starting position
5. Now bend your trunk sideways to the right while sliding your right hand down your thigh and reaching your left arm over your head
6. Hold for a count of 10
7. Repeat above 10 more times

Back Stretch

The Pelvic Tilt (If you participated in childbirth education classes you are acquainted with this exercise)

This exercise can be done anytime you are lying on a flat, hard surface. The first time you do the pelvic tilt you may be surprised to notice how tight your back muscles are and how good it feels to stretch them out.

The pelvic tilt also strengthens your lower abdominal muscles.

1. Start on your back with your knees bent and your feet flat on the floor.
2. As you exhale, contract your abdominal muscles, pushing your belly button towards the floor and flattening your lower back.
3. Hold 5 seconds.
4. Inhale and relax
5. Repeat 10 times.

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