

## **Secondary Injury Prevention and Farming From a Wheelchair**

During 2006-2007, the National AgrAbility Project Staff conducted a focus group and interviewed thirteen farmers who experienced a spinal cord injury and farm using a wheelchair. Farming with a spinal cord injury in a wheelchair can be more dangerous and can lead to additional injuries.

Often these additional injuries, which we call “secondary injuries” are related to the limitation and/or occur more often because the farmer/rancher may attempt farm/ranch work tasks that exceed his/her limitations and the wheelchair designs do not adequately accommodate the farmer/rancher. A secondary injury might be as simple as a cut, or as severe as a bone fracture requiring medical attention and time off work.

Issues these thirteen farmers had were reported or discussed during the focus group/interviews and are summarized below.

These thirteen farmers who had a spinal cord injury farming in a wheelchair, reported a variety of secondary injuries that had occurred while performing farm tasks. The most common issues reported by these farmers included:

- Falls during transfers;
- Overuse injury of upper extremities;
- Burns, and;
- Temperature sensitivity.

The following is a list of suggestions resulting from comments made by the thirteen farmers who had spinal cord injuries. Hopefully these suggestions will help others better understand the day-to-day issues surrounding farming with a spinal cord injury, using a wheelchair, and to help prevent secondary injuries for these and other farmers/ranchers with similar limitations.

- Overuse injuries to the upper extremity is the most common secondary injury reported by all manual wheelchair users. It is suggested that farmers using manual wheelchairs are at a higher risk of an overuse injury due to the forces required to push the wheelchair around rough rural terrain. Unfortunately, powered mobility devices are rarely prescribed and paid for by insurance companies for farmers who experience paraplegia. Used power chairs can be obtained through state assisted technology programs. In addition, there is an argument that a power chair should be considered a work vehicle for a farmer and a necessary worksite accommodation that could potentially be funded by vocational rehabilitation.
- Advances in new power wheelchair designs and manual wheelchair designs can reduce these overuse injuries, when traveling over rough terrain. These advances include chairs with a lower center of gravity, increase power, shock absorbers and better suspension, mid-wheel drive and front wheel drive, bigger casters, a gear push bar design and longer battery life.
- Transferring to and from a wheelchair is also a leading cause of falls resulting in secondary injuries experienced by farmers. Level transfers, side transfers and short transfer distances are recommended. Unfortunately, transferring to and from a tractor lift or to and from the tractor seat can be challenging to due to limited space inside the tractor. The use of an overhead grab bar, transfer board or transfer platform can reduce potential falls. In addition, having an additional person present as a spotter to assist with the transfer process can be helpful.
- Scrapes, nicks, and bruises can occur during the transfer process. While it is not always possible to prevent bumps and scrapes, padding these areas or wearing extra padding on one's body can help reduce these injuries. It is important to note that scrapes, nicks, and bruises that are not attended to, can lead to life-threatening pressure ulcers. Scrapes and bruises can also occur in the tractor cab. When riding over rough terrain, lower extremities can inadvertently come in contact with the controls in the tractor, resulting in scrapes or bruises. One farmer found wearing kneepads protected his legs. Another farmer found that wearing a leg restraint prevented bruising to his legs. Adding pipe installation, around hand control lever extenders for the clutch and brakes can also prevent bruising.
- Forward, sideways, and backward falls are a frequent occurrence among farmers who use a wheelchair. Lap belts are recommended in all wheelchairs. Anti-tippers on the back of a chair can prevent the chair from tipping over backwards. Unfortunately, these tippers can get hung up on weeds or other obstacles around the farm. Reaching or lifting objects on

the side of the chair can cause the chair to tip over sideways. Chairs with more camber in the wheels can reduce the risk of sideways tipping. Small casters in front of the chair can cause the chair to tip forwards when hitting a rock, hole, or threshold. Several farmers recommended that larger casters be installed on the front of the chair.

- A two way communication system is recommended for all farmers with a mobility impairment. In many areas, cell phones are the most popular choice. Ensuring that the battery is fully charged, or having a backup battery is critical when farming alone. Twelve Volt adapters can be purchased for cell phones, and can be inserted into the cigarette lighter inside the truck cab or tractor cab in case there is no backup battery. In those areas that have “dead zones” and cell phone reception weak, two-way FM radios can be an effective solution. These radios have multiple channels and can transmit up to 10 miles away.
- Farmers frequently carry materials on their laps while they push their chair. Often the items that they carry may be too heavy or can be very hot resulting in an injury. Protective clothing should be worn to prevent potential burns and heavy items should be transported using other means such as a cart on wheels that could be pushed.
- In addition to a power wheelchair, some farmers are able to transfer to a utility vehicle. The [National AgrAbility web site](#) has more information to help farmers in selecting the most appropriate utility vehicle for their needs.
- “Slow down and take time to think things through” is a frequent statement that farmers who use a wheelchair suggest. Being in a hurry, being tired, and not thinking resulted in numerous secondary injuries.
- Carry a fire extinguisher in the tractor cab at all times. Farmers state that if a fire was to occur, that there would be no time to operate the tractor lift. In addition, one farmer stated that if a fire occurred in the engine, the fire could quickly spread to the cornstalks and that he wouldn't have a chance. Therefore it was recommended to carry a fire extinguisher in the tractor or combine at all times.
- Tips to prevent secondary injuries related to tractor lifts and hand controls can be found on the [National AgrAbility web site](#).