

# California AgrAbility



## California AgrAbility Program

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OR

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**1-800-477-6129**

<http://calagrability.ucdavis>

*CalAgrAbility is a partnership between the University of California Farm Safety Program (Cooperative Extension) and the California Arthritis Foundation Pacific Region Sacramento/ Central Valley Office.*

Arthritis Foundation  
Pacific Region: Sacramento/  
Central Valley Office  
3040 Explorer Drive, Ste 1  
Sacramento, CA 95827  
916 368-5599



## *Finding Solutions for Californians Farming with Injuries and Disabilities*

### *Keep it Simple ... Small Solutions for Big Jobs*

California AgrAbility works with injured and disabled farmers, ranchers, and workers and their families. According to our statistics, over 20,000 disabling injuries occur on California farms each year. Our farmers and their employees experience a wide range of injuries and illness and some use special equipment to help them continue farming safely.

CalAgrAbility's motto is "keep it simple, keep it cheap." Assistive or adaptive technology (AT) does help our farmers. Some use wheelchairs to successfully farm. With some help from modified equipment, not much can stop these farmers and workers from their harvest. AT reduces the need to rely on others to perform essential tasks to keep the farm operational.

Adaptive controls can be used on various farm machines, including tractors, balers, combines, and trucks, to accommodate injuries and disabilities. Properly selected AT, as well as changes to work environment, will make it easier to perform farm tasks safely.

One of the most common conditions reported by CalAgrAbility farmers and workers is *arthritis*, especially in the hands, legs and back.

Arthritis can make gripping small objects a challenge for farmers. Turning door and machinery keys can be troublesome as the joints in the fingers are twisting as the key turns and it is hard to hold onto. According to Tennessee AgrAbility, bolting a strip of PVC through the hole in the key makes it easier to grip. Arthritis Foundation recommends using larger handles and knobs, which can be adapted as controls or switches on machinery, as well as on doors.



Figure 1: PVC Key Extender (AgrAbility Project Adaptive Controls for Tractors and Machinery, T. Prather, UCCE, U. of Tennessee, 2003)

**DISCLAIMER:** The University of California provides technical assistance to aid farmers in finding appropriate machine modifications, and for liability reasons UC does not design, fabricate, and install machinery controls. The modifications shown here are only to illustrate possible approaches to farm machinery accessibility for individuals with disabilities. Only licensed, experienced professionals should design and install controls modifications on cars, trucks, and other highway motor vehicles.

## Keep it Simple ...

### RESOURCES

#### AbleData

AbleData provides objective information about assistive technology products and rehabilitation equipment

<http://www.abledata.com/abledata.cfm>

#### Foresight Services LLC

Home Of The StaFast Hitch

616-897-0479

Ned & Heidi Stoller

[stollerned@postpro.net](mailto:stollerned@postpro.net)

<http://www.farmeasier.com/>

#### California AT Network

California Dept. of Rehabilitation

1- 800-390-2699

TTY: 800-900-0706

[info@atnet.org](mailto:info@atnet.org)

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



CalAgrAbility equipment operators with limited gripping capabilities (i.e., quadriplegia, arthritis, amputated fingers) also use AT, such as steering knobs, spinners, or similar devices to make steering easier and safer. (Fig. 2)



Figure 2: Steering Wheel Spinner Knob (*MobilityWorks*)

Other steering devices may be more comfortable and appropriate depending on the individual's needs. (Figures 3 & 4)



Figures 3 & 4: Grip Knob and Thumb Grip may work well for some farmers ([www.mobilityworks.com](http://www.mobilityworks.com))

For sore knee joints and other lower mobility challenges, getting up on and down from large machinery can be painful. Most factory-installed steps on tractors are 18"-24" from the ground, making it difficult to mount safely. Many manufactures of large equipment make add-on kits to attach steps and grab bars. (Fig. 5)



Figure 5: Add-on tractor steps can make mounting large machinery less painful and dangerous ([www.fyi.uwex.edu](http://www.fyi.uwex.edu))

When considering purchasing an add-on step kit, make sure it includes the grab bar. Kits are also made for right- and left-handed users. (Figure 6)



Figure 6: Left-Handed Kit: Add-on steps are made for right- and left-handers. [www.abilenemachine.com](http://www.abilenemachine.com)

## Keep it Simple ...

### RESOURCES

#### Bridging Horizons

[http://www.agrability.org/Resources/Bridging\\_Horizons/index.cfm](http://www.agrability.org/Resources/Bridging_Horizons/index.cfm)



#### Independent Living Centers

California Dept. of Rehabilitation  
<http://www.rehab.ca.hwnet.gov/ils/ILCLIS.T.HTM>



#### JAN - Job Accommodation Network

<http://askjan.org/>



If we only had eyes in the backs of our heads, a lot of back pain could be avoided! Hitching, plowing, and mowing require looking behind the tractor, which means twisting our upper body. This often exacerbates an existing back injury for farmers. In some tractors, a swivel seat pan can be added to help rotate the whole body to see behind the tractor. (Fig. 7)



Figure 7: Swivel Seat: Add to tractors. Reduce twisting ([www.FarmEasier.com](http://www.FarmEasier.com))

Not all tractors will accommodate a swivel seat. To reduce upper body turning, mirrors can be added inside and outside of the tractor cab to see what is happening behind the tractor.



Figure 8: Add mirrors... no turning to see behind tractor. ([www.agrability.org](http://www.agrability.org))

Another option to eliminate back injuries is installation of a remote camera onto the back of the tractor. A monitor is installed in the cab and shows a rear view and does not require upper-body twisting. (Figs. 9 & 10)



Figures 9 & 10: Add camera and screen to see behind you. (<http://www.farmeasier.com/camera.php>)

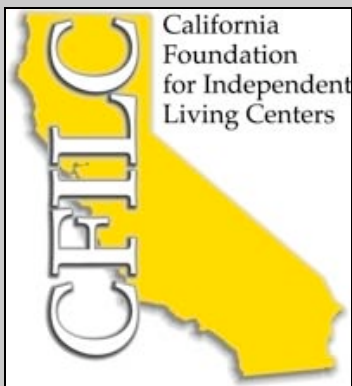
According to OSHA, many back/spine injuries fall into the category of "cumulative trauma disorders" (CTDs). While a serious injury may be caused by a single incident, the real cause is often the incident coupled with years of repetitive micro-trauma and ignoring or "working through the pain."

This occurs when the original injury is not allowed to heal properly and the injured area is continually stressed. (See OSHA's [Back Disorders and Injuries](#).)



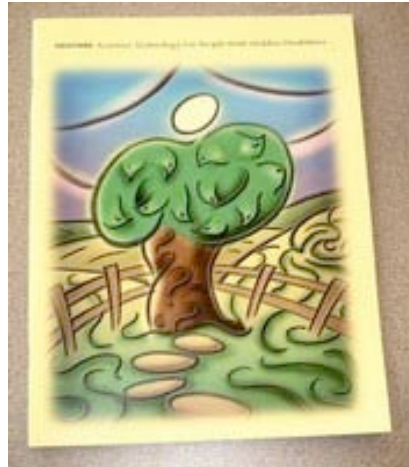
## Resources

**California Foundation  
Independent Living**  
1234 H St., Ste. 100  
Sacramento, Ca  
95814-2494  
916-325-1690  
TTY: 916-325-1695  
Fax: 916-325-1699  
[www.cfilc.org/](http://www.cfilc.org/)



## Keep it Simple ...

### Clear Solutions for Hidden Challenges ...



A 38-page booklet was developed to highlight new ideas and creative actions to assist individuals with conditions that “don’t meet the eye.” AT solutions are examined to aid folks with memory, attention and confusion issues as well as safety, task completion, and socialization. The book offers personal stories and AT strategies that might help. Funding sources and manufacturers are listed.

The booklet is available online and copies will be mailed upon request. Alternative formats are available. Go to: [Solutions: Assistive Technology For People With Hidden Disabilities](http://www.ndipat.org/publications/default.asp?ID=343).  
(<http://www.ndipat.org/publications/default.asp?ID=343>)

**McGyver to the Rescue!** Therese Willkomm, U. of New Hampshire Professor of Occupational Therapy, describes herself as “MacGyvette.” She has developed a book of “solutions for easier living, learning, working, and playing.” Most of her AT solutions are under \$100 because you can make them from inexpensive, ordinary items such as Plexiglas, PVC, and assorted tapes.

To Order “Assistive Technology Solutions in Minutes” go to:  
<http://www.iodbookstore.org/products/Assistive-Technology-Solutions-in-Minutes.html>

**About CalAgrAbility** ...The California AgrAbility Project’s primary goal is to help farmers, agricultural workers, ranchers and their families to continue working in agriculture regardless of physical limitations, impairments and disabilities. Staff will help conduct on-site assessments and identify appropriate assistive technologies to make the job safer and easier. This is supported by the NIFA under special project number 2010-415090-20751.

**1-800-477-6129**

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