

Body Mechanics Presentation



Use a Cart for Transportation

The cart is a better choice than the wheelbarrow. Cart allows more trips with less effort and less stress.

Compare the wheel location on the wheelbarrow vs. the cart:

- On the wheelbarrow, notice how far forward the wheel is. This requires the full load to be lifted before moving, and the single front wheel on the wheelbarrow makes it less stable. If the wheelbarrow tips, injury can occur trying to right the load. Be certain not to overload.
- On the cart, notice the wheels are positioned under the load bearing the weight and less lifting is required, which means less stress on the body to move.

The multi-tool cart on the right allows you to move long, bulky tools in one trip and store them upright, which is safer than trying to balance tools on top of a cart/wheelbarrow or carrying them in your arms.

Use Cart for Transport



BEST CHOICE

Roll
Rather
Than
Carry

Push vs. Pull

- Whenever possible, push objects rather than pull them.
- You generate more force by utilizing your body weight to push rather than pull.
- You recruit more muscles by using both arms and sharing the load by pushing rather than pulling.
- Pulling requires you to twist your trunk, while pushing does not.

Push vs. Pull



Lifting

- In the right photo, the gardener is lifting using predominantly her back muscles, causing the back to curve and be stressed. In the left photo, she is able to keep her back straight and lift with the legs by straightening her hips and knees.
- When lifting, be sure to face the object you are about to lift. Squat down, bending with your hips and knees and not your back.
- Push your buttocks out behind you (shortstop position). Your knees should not be in front of your toes due to increased stress on the knee joints.
- Have/hold the objects as close to you as possible.
- Do not hold your breath while lifting.
- Lift the object straightening your hips and knees.

Lifting



Lifting

- If turning with a load, rotate the whole body and step to turn. Do not twist your trunk to turn. If possible, consider lightening the load being lifted. Ask for help.
- In the photo on the right, the gardener is not facing the item being lifted (or put down) forcing her to twist her trunk. The object is also too far away from her body. On the left, you see the proper initial position for lifting (or final position for setting it down).
- Note: If standing for a long time, put one foot up on a low stool or other stable object to ease the pressure on the lower back. Alternate leg positions.

Lifting



Shoveling

- The gardener on the right is shoveling incorrectly – note the straight knees and rounded back.
- The gardener on the left is lifting while straightening hips and knees; not using her back to lift.
- Use a shovel with a smaller tool head to reduce the load and keep the tool sharp.

Shoveling



Shoveling

- Placement of soil: In the right photo the gardener is twisting her trunk to place soil in a container that is located away from the digging hole.
- In the left photo, the gardener stepped to directly face the receptacle with the soil on the shovel.
- Use appropriately sized tool ends. Note: a shovel that has an oversized head will hold a load of soil that is too heavy to be lifted comfortably. Keep tool ends sharp so that less effort is needed to cut through the soil or plant roots.

Shoveling



Weeding & Planting

- In the right photo, the gardener is bending over with straight legs putting stress on the legs and back. This position also puts stress on the neck.
- In the left photo, notice how the gardener is kneeling with one knee on the ground, the other leg bent with foot flat on the ground, and is able to position his forearm on the thigh. This helps to take pressure off the back muscles and allows for a better neck position.
- Alternate leg positions periodically.

Weeding & Planting



Weeding

In this photo, the gardeners are weeding with hoes.

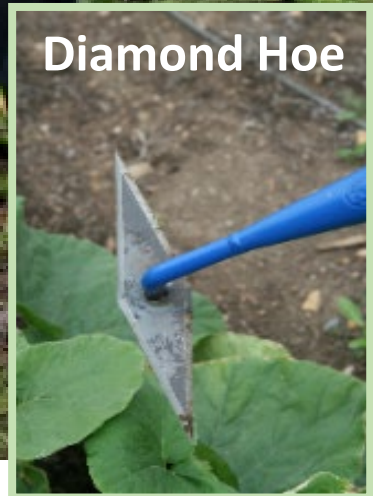
Note that the shaft of the hoe should be long enough to allow an upright posture, resulting in less use of back and hip muscles to maintain that posture against gravity.

The gardener on the right, who is using a diamond hoe (inset picture), has the best position. The blade of the diamond is small and very sharp resulting in efficient cultivation and less need to move the soil.

Weeding



Best



Diamond Hoe

Weeding

Note how the use of a back-saving handle on the shaft of a hoe results in less forward bending and less stress on the back.

While both hoes have a handle, in the right photo the gardener is grasping the shaft of the hoe as she would if there was no handle, and you can see that she is less upright and bent over.

Back-Saving Grip



Sit To Do Some Tasks

If standing tires you or causes pain and sitting is more comfortable for you, consider sitting rather than standing when you do a task.

There are a variety of seating options available.

Using extended reach tools or child size tools will help you reach the ground and limit your need to bend.

Sit to Do Some Tasks



Sit To Do Some Tasks Weeding

Note how straight this gardener's back remains while weeding in a seated position.

Sit to Do Some Tasks

Weeding



Planting - Use Better Methods

- Better option for planting seeds – make or buy seed tapes, use pelleted seeds, dial seed sower, or suction seed sower.
- Commercial seed tapes are available in limited varieties, but homemade seed tapes are a good winter project.
- Using tools like these can reduce the need to bend later to thin crops, so less stress on your back.
- If you experience fatigue or pain when using just one hand (dominant), try switching to your non-dominant hand for a while when planting seeds or pulling weeds.

Planting - Use Better Methods



Planting Seed from Standing Position

Stress to the back can be avoided by using a standup seeder; reduces the need to bend or thin crops later.

This standup seeder is home made using a piece of PVC pipe, a clamp, and a dowel. The dowel extends beyond the end of pipe for making a hole or furrow.

Planting – Seed from Standing Position



Planting Drill with Bulb Auger

This gardener is using a drill with bulb auger to reduce the stress on hands and wrists that would result from hand digging holes for bulbs.

This combination decreases the need to bend, resulting in less stress on the back, hips, and knees.

Planting Drill with Bulb Auger



Pruning

Exercise caution when using long-reach, extendable pruner for high branches.

Though enabling, these pruners do require extreme backward bending putting strain on the neck.

Use only for short periods of time and change positions often.

Pruning

Beware
of
Neck Bend



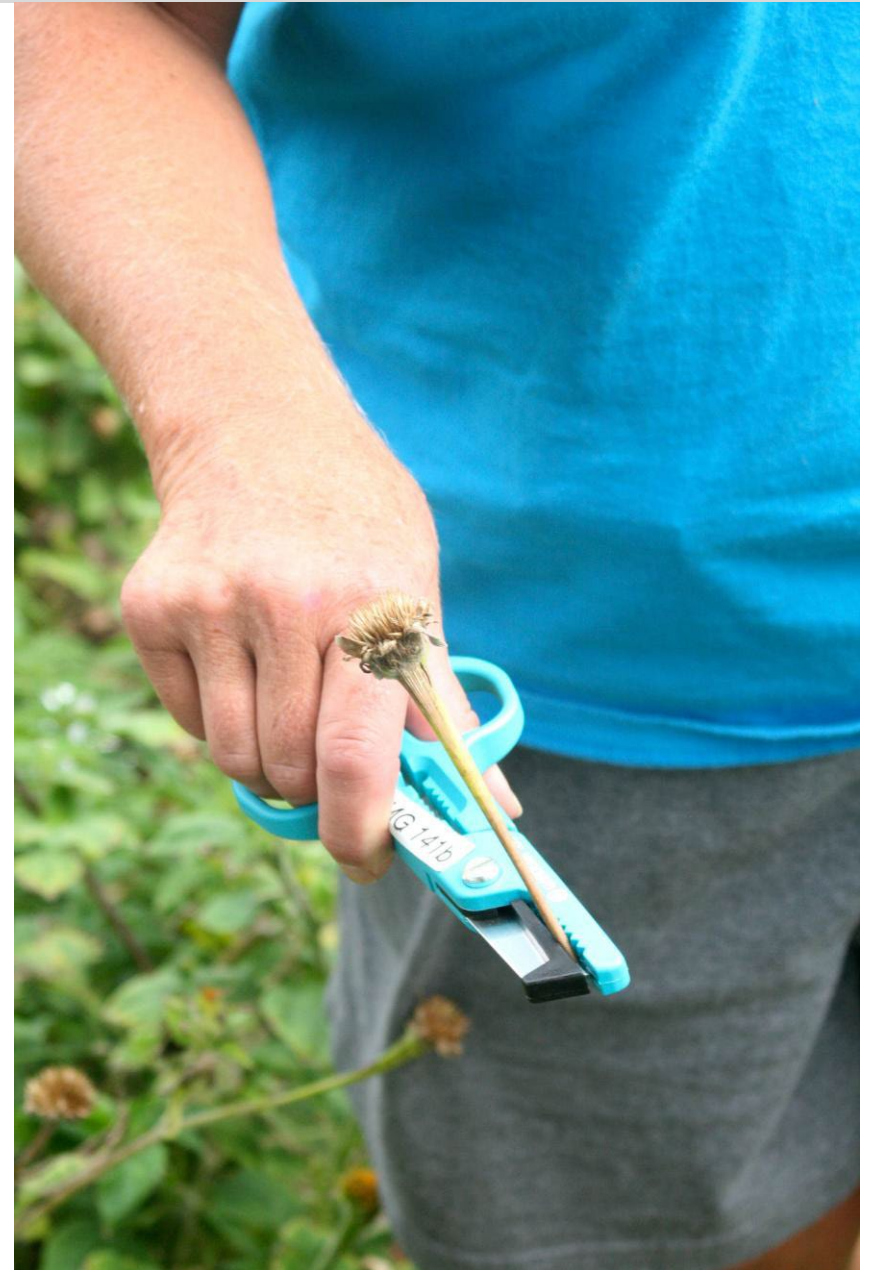
Pruning – Cut & Hold

The gardener is using a cut and hold pruner, which has a rubber or plastic piece along the cutting edge that prevents the release of the cut item.

Advantages:

- Eliminates bending to retrieve cut flower or branch
- Frees one hand if needed
- Eliminates reaching with a second hand (twisting) to hold the cut flower or branch so it doesn't fall.
- Reaching with both hands requires a weight shift to one side that could result in loss of balance and risk of fall.

Pruning – Cut & Hold



Raking

Dance with the rake - step forward and backward with it. *Do not bend forward and straighten the back and hips as you rake; this stresses the back, joints and muscles.*

Considerations while raking:

- Use a long-handled rake (same for a hoe).
- Don't use a rake with too large a head or try to move too large a pile.
- Add a back-saving handle on the shaft of the rake.
- Alternate your hold to each side of the body; changing hand positions will move the focus of the stress.

Raking

Dance with the Rake



Switch Tasks and Change Positions Often

- Change positions and activities frequently (heavy vs. light).
- Take frequent rest breaks.
- Listen to your body! If you have pain, stop that activity and/or change positions.
- While gardening, follow the advice of your therapist or doctor if applicable.

Switch Tasks and Change Positions Often



Garden Basics

Be prepared and remember to:

- Warm up muscles with exercise
- Wear a hat, sunglasses, and sunscreen
- Have your cell phone
- Carry water
- Carry tools to avoid trips
- Wear gloves that fit you!
- Is Tetanus shot current?

Garden Basics

