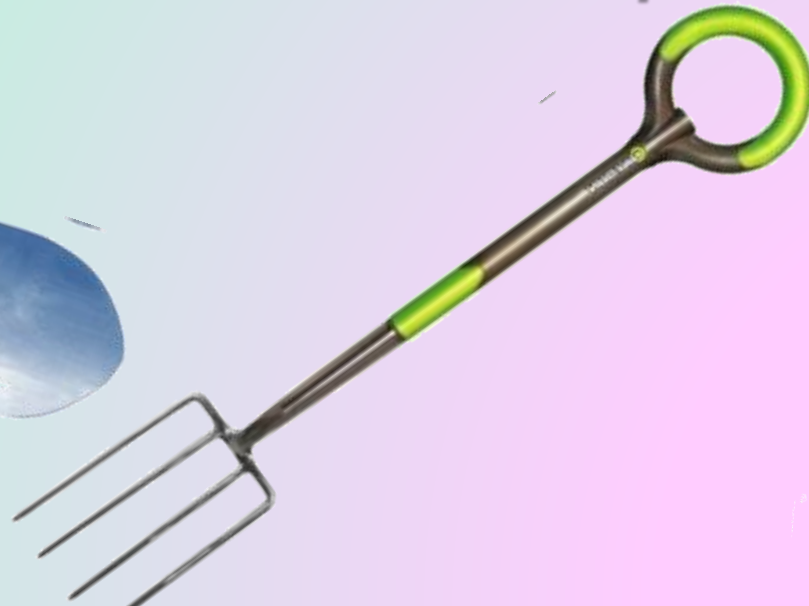


The gardening life – Tools to make it easier



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Pre-assessment

- 1. “Ergonomic tools” are designed to meet the needs of all gardeners (True/False)**
- 2. An ergonomic tool should not usually weigh more than**
 - 1. 10 lbs**
 - 2. 3 lbs**
 - 3. 6 lbs**
- 3. One should never sit while gardening (True/False)**



Pre-assessment (2)

4. Alcohol is not a good idea to prevent dehydration, but tea is excellent (true/false)
5. When using readily available herbicides such as RoundUp™ personal protective equipment is usually (select one of these):
 1. Long sleeves and long pants
 2. Long pants and short sleeves
 3. Short sleeves and closed shoes
 4. Closed shoes, but socks are not important

What do gardeners do?

- Bend
- Dig
- Haul
- Kneel
- Mix
- Plant
- Prune
- Pull
- Rake
- Scout
- Twist
- Water
- Worry



Isn't gardening supposed
to be a leisure activity?



Do we always bend well?



Digging!



Pulling



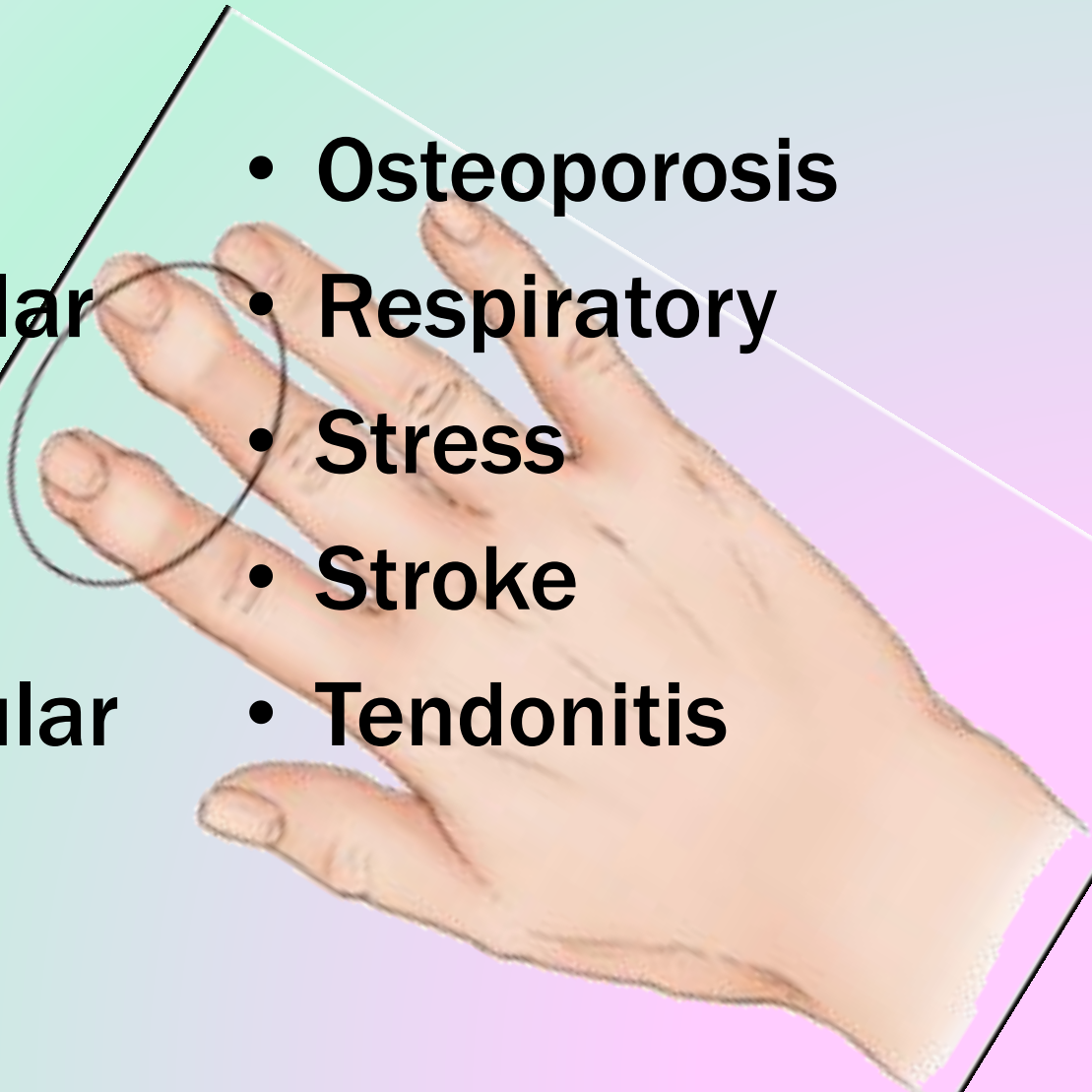
We should know:

- Push, don't pull
- Try to stand straight
- Avoid “Smart phone neck”
- None of us is as flexible as we wish/used to be



What are some limiting physical issues?

- Arthritis
- Cardiovascular
- Diabetes
- Medications
- Neuromuscular
- Old injuries
- Osteoporosis
- Respiratory
- Stress
- Stroke
- Tendonitis



TOOLS

- **Fork**
- **Gloves**
- **Hoe**
- **Hose**



- **Knife**
- **Pruners**
- **Shovel**
- **Trowel**

“Ergonomic” definition

- The science that deals with designing and arranging things so people can use them easily and safely
- The parts or qualities of design that make it easier to use

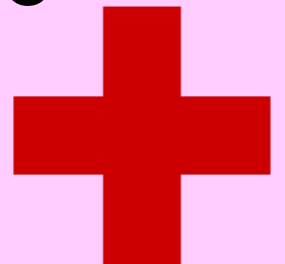


What makes a tool ergonomic?

- **Just because it says “ergonomic” doesn’t mean it’s right for all users**
- **It’s not ergonomic for you if it’s uncomfortable for you**

What should an ergonomic _____ do?

- Enhance the performance, productivity and quality of your work
- Reduce or eliminate your discomfort, fatigue or physical stress while you use it
- Prevent accidents or injuries while doing task



What makes a tool ergonomic

- **Ideally – bend the tool, not the wrist**
- **Able to use with one hand?**
- **Should be less than 3 pounds**
- **Tool's center of gravity aligned with center of hand**



Characteristics of ergonomic tools

- **Handles are padded, with a non-slip texture**
- **Handle diameter should be ≥ 1.5 "**
- **Spring &/or ratcheting action**
- **Shaft of long tools is bent so upper part is more horizontal**
- **Second hand grip along shaft**

Make anything non-slip

**A spray of canned rubber on a handle
decreases the tendency to slip**

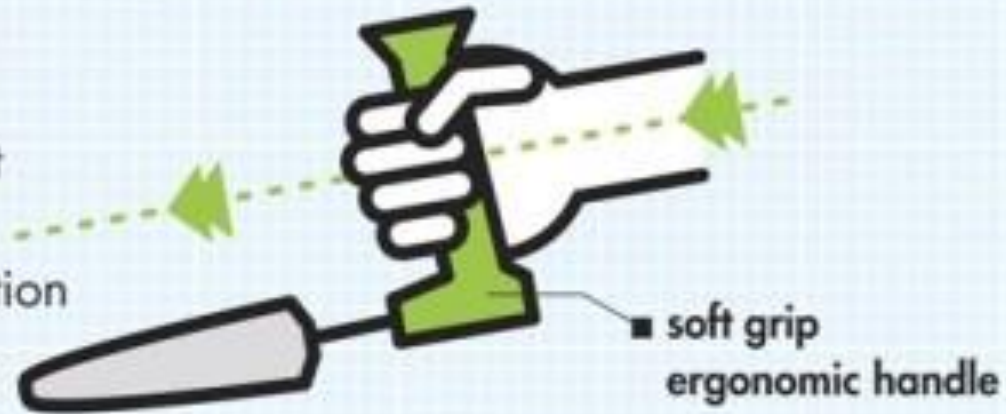
Also comes in cans for dipping handle



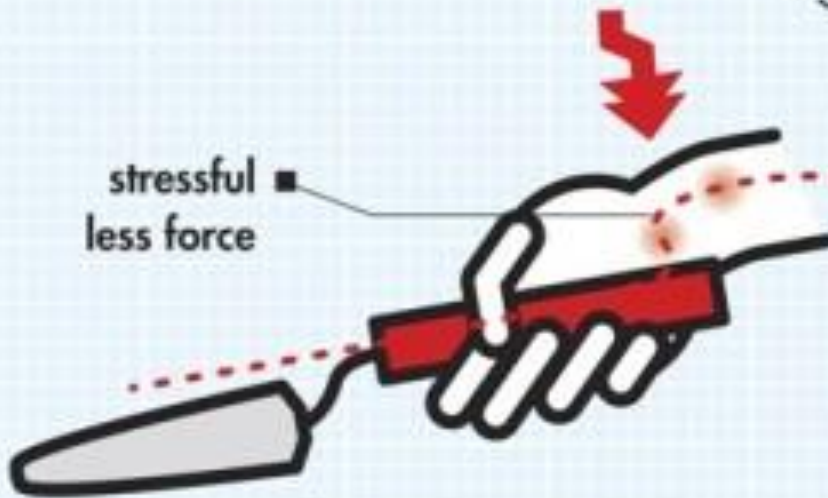
From arthritissupplies.com

GOOD

hand and wrist
in neutral,
stress-free position



stressful
less force



POOR

stretched tendons
on upper wrist;
compressed tissues
on lower wrist;
callouses on palm

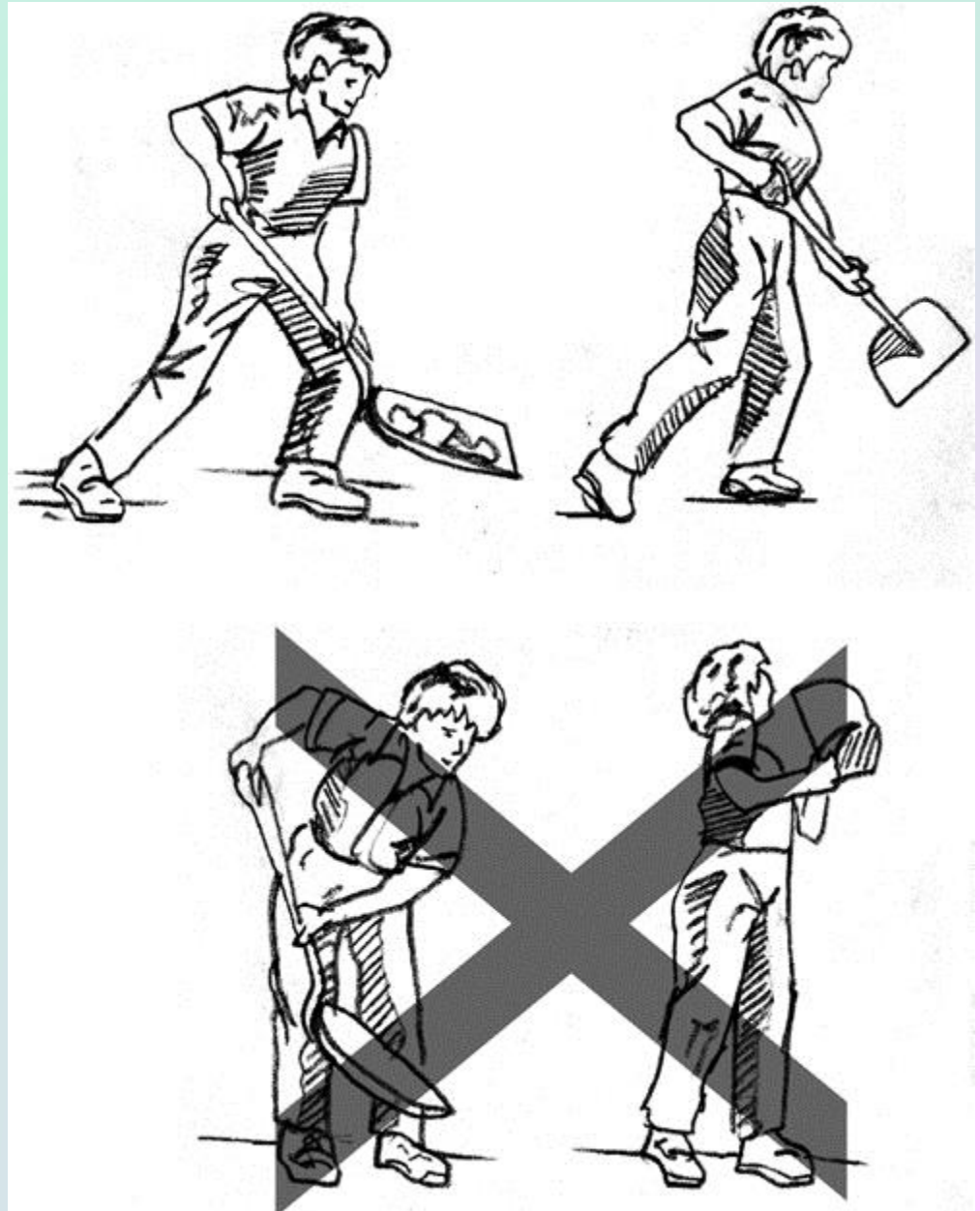
Weeding

- Prevention – mulch, or weed cloth & mulch
- Tools such as Cobra™
- If you're using an old hoe, consider retrofitting the handle with tape, padding, rubber grips



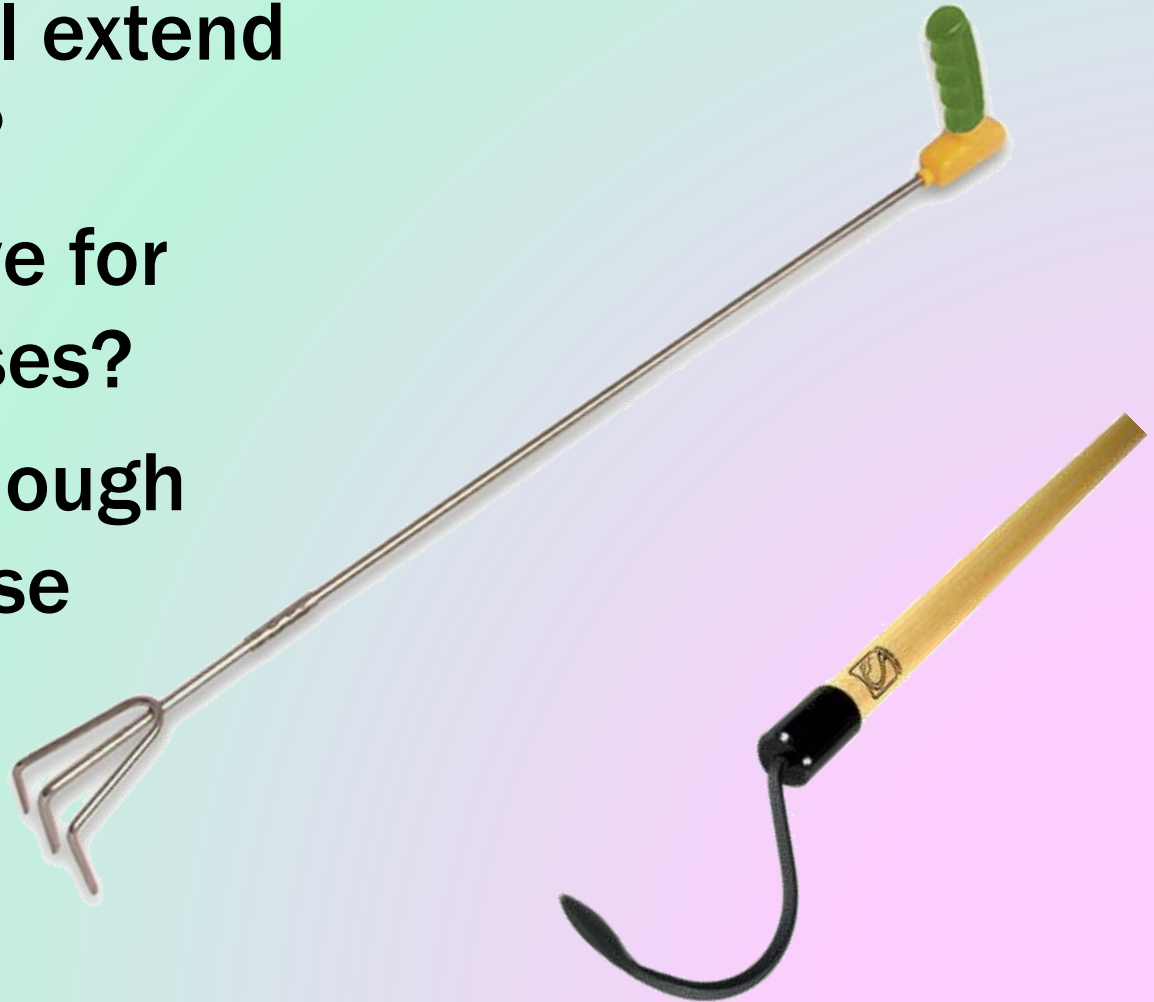
Digging

**Our bodies are
not really
meant to twist
with heavy
loads**



Weeding & Cultivating

- Can the tool extend your reach?
- Is it effective for your purposes?
- Is it light enough for you to use easily?



Do you have to buy everything new?

- **No**
- **Retrofit whenever you can**
 - Tape
 - Handles
 - Rubber grips
- **There are adaptors for several kinds of tools**



Adapt what you have

- Rake with Peta adaptive handles



Adapt existing tools



- **Handle attached midway down shaft**

Not just gardening...

fishing



A long handle must be long enough

- “Backsaving handle”
- Attach to long handled tool



Other adaptors



Keeping track of tools

- **Paint tools a bright color so they stand out**
- **Place ribbon on the handle**



Sitting is often a good idea



Carrying tools

- An apron with pockets
- A toolbelt
- A gardener's apron
- A bucket apron



When buying tools

- Look for light, yet sturdy (& affordable)
- How does it feel in your hand?
 - Weight
 - Right size?
 - Can you maintain “neutral position”?
- Is the long handle *long enough* so you don't need to bend over?
 - Consider telescoping handles



Neutral position

- <https://medical-dictionary.thefreedictionary.com/neutral+position>



Climbing?

- **Is your ladder stable?**
- **Have your tools at hand**
- **Keep your cell phone with you**





*Hauling
anything in a
one-wheeled
wheelbarrow
can be
daunting*



*A two wheeled
wheelbarrow
has better
stability*

4 wheels are best



*Repurposing (if
the kids aren't
using it)*



Where to garden

pots



Just keep track of watering



Drip irrigation to pots



When watering by hand

- Consider a smaller, lighter watering can
- 1 gallon of water weighs 8.8 lbs.
- A full 2 gallon can weighs 17.6 lbs. *plus* the weight of the can itself



Hoses vary

- They come in different weights
- Which can you carry easily?



Watering wand



- Where you control on & off
- Gives better reach in the garden

Raised beds

- Materials appropriate for your climate
- As high (deep) as you need



Wood lasts in the desert!



Different heights, shapes



Is it a raised bed? A big pot?





N

Materials



Plastic –

- Can look like almost any material
- Holds water well
- Low cost
- Might not last in very dry climate
- Select thicker walled plastics

Wood

- Good drainage
- Rustic appearance
- Can be expensive



Planting in bags



Raised beds – handy, not perfect

- **Smaller rooting area than large garden plot**
- **Soil/mix**
 - **Heats faster than a garden plot**
 - **Chills faster than a garden plot**
 - **Dries faster than a garden plot**



Planting can be a chore...

Make your own seed tape (something to do in between gardening seasons)

- **Take 1" strips of paper or any easily biodegradable material**
- **Glue seeds of choice to paper with flour & water glue (or other biodegradable glue)**
- **Glue seeds at proper spacing, not pre-thinning spacing**
- **Considerably less work later**
- **When planting, place the strip on the soil and cover to desired depth**



Labeling the tape is a good idea



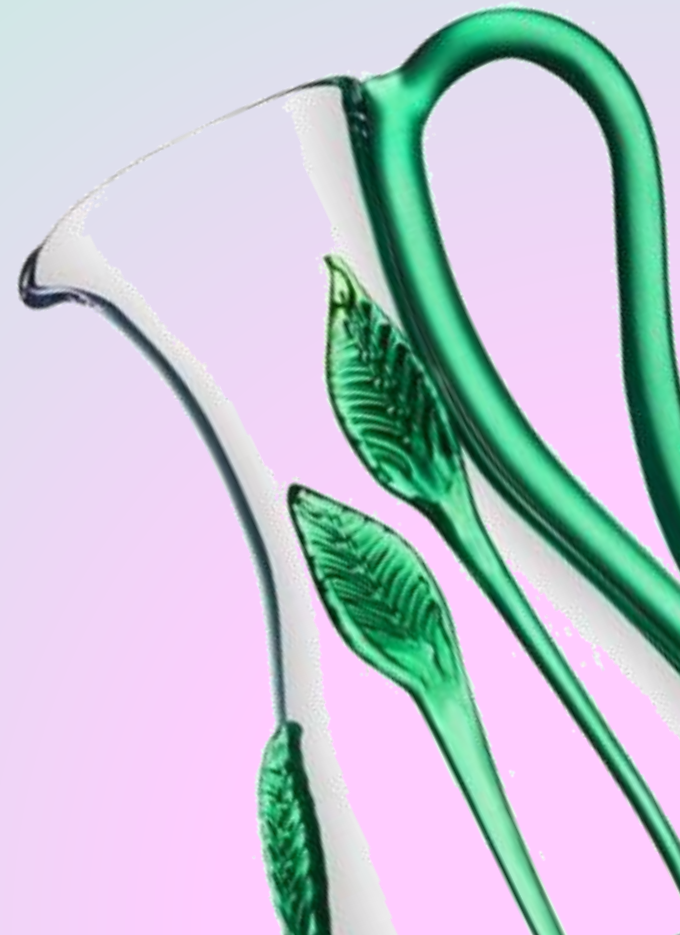
Water (for you, not the plants)

- **Women tend to have less water (i.e. more fat) than men**
- **Thirst is NOT a good indicator of hydration state**
- **By the time you're thirsty, you're dehydrated**



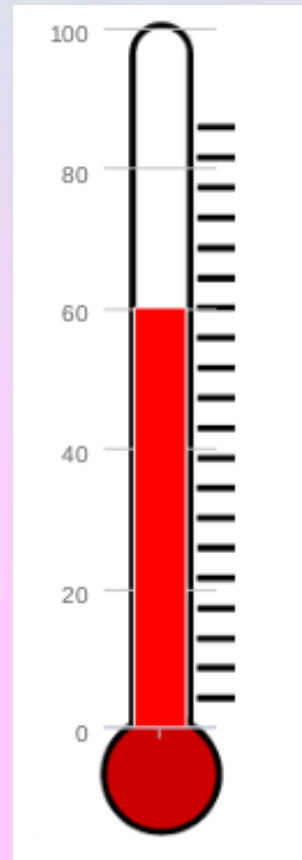
Hydration

- It's not hard to become dehydrated in a dry climate
- Can have many causes
 - Too much exercise
 - Too little water
 - Diabetes



Dehydration can lead to:

- **Muscle fatigue**
- **Loss of coordination**
- **Inability to regulate body temperature**
- **Heat illness (e.g., cramps, heat exhaustion, heat stroke)**
- **Decreased energy and athletic performance**



Rehydration

- Usual advice is drink 6 – 8 glasses of water daily
- Alcohol and caffeinated beverages are not helpful
- If in a sweaty situation, remember to replenish electrolytes (salts)



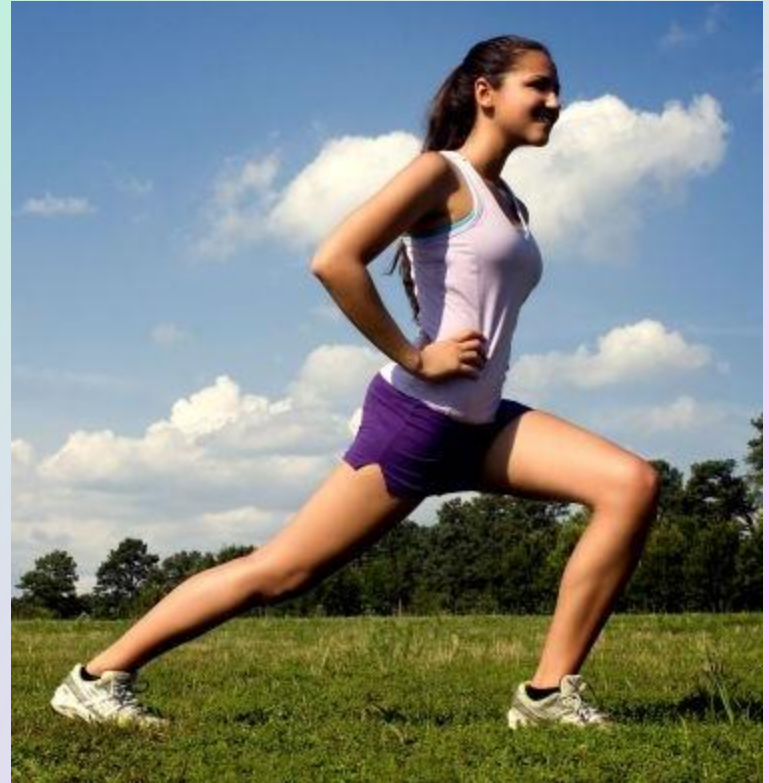
Injury prevention in the garden

- Start slow
- Do stretches first
- Don't bend at the waist
- Kneel on a cushion
- Sit on a low stool
- Keep tools sharp



When squatting

- Don't have your knee extend over your toes
- Try to keep most of your weight toward your back



Injury prevention (cont.)

- Use thigh and butt muscles to lift heavy items (e.g. bags of soil or fertilizer)
- Carry heavy items close
- Don't do any repetitive motion task for more than 20 minutes



You shade your plants, then shade yourself too!



Skin protection

- **Skin cancer can be life threatening!**
- **It's not just a case of protecting against injury!**
- **If you're working outside, remember that the sun is not necessarily your friend!**

Protect your skin

- **Wide brim Hat**
- **Gloves**
- **Sunscreen**



Sunscreen or Sunblock

According to the American Academy of Dermatology it is important to use a broad-spectrum product



Avobenzene (also known as Parsol 1789) - a chemical barrier
Zinc Oxide – a physical barrier
Titanium Dioxide – a physical barrier



Remember

- Minimize unprotected exposure to the sun
- Apply and reapply protection



If using any pesticides

**Cover your hands
& arms**

No!



- Tank tops
- short sleeves
- Shorts
- Bare feet
- sandals

No!



Yes



- Long sleeve shirt
- Long pants
- Socks
- Closed shoes



Don't be afraid to ask for help

- This glazed, full, clay pot is heavy and might be impossible to move alone.
- Pot lifter is ~ \$30
- Requires 2 people



Soaker hose



Summary



Continued

- Buy garden supplies in quantities you can easily lift and carry
- Take frequent breaks and rotate between jobs to decrease strain on back and motion
- Be conscious of twisting motions. They can cause back strains, especially when throwing mulch or shoveling soil.
- Be aware of situations that could lead to a fall, such as loose gravel
- Protect yourself from the sun



Post-assessment

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Questions?

Thanks for listening!

