

Figure 2. Ergonomically designed hand tool.

Tool handles are available with varying designs relative to diameter, attachment angles, coatings (anti-slip), contouring (finger grips), coverings (rubber cushioning), etc., that fit individuals better. Test tools before buying.

- Use wrist supports to keep wrist immobilized or in the neutral position.
- Don't push with the thumb, or if it is necessary, then keep it in its neutral position (the position it's in when hand is at rest) (Figure 3a, 3b, 3c). Wrap thumbs around handles to avoid positioning them lengthwise along handles.



Figure 3a. Flexed wrist position.



Figure 3b. Neutral wrist position

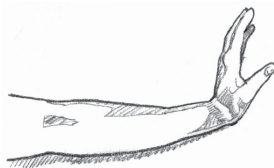


Figure 3c. Extended wrist position.

- Stop at the first sign of pain. See a physician if the pain is persistent.
- Decrease the rate of any repetitious task, and take frequent rests from gripping tasks such as pruning.

- Grasp, don't pinch tools, pots, etc. (Figure 4).
- Use a drip irrigation system to alleviate the need to drag hoses and sprinklers around the yard, reducing the strain on joints.



Figure 4. Don't pinch pots.

- Request exercises from your doctor to build up shoulder, mid-back and other muscles that may weaken when activities concentrate on other muscles. Also do conditioning exercises that strengthen the hand and arm muscles.

Using these techniques, many of the activities of gardening that can cause or aggravate carpal tunnel syndrome can be avoided.

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Gardening with carpal tunnel syndrome (CTS) can be very difficult, especially when a long day of shoveling, raking, or weed pulling leaves you with a painful or “tingling” hand or wrist. These aches and pains are often caused in part by improper techniques or tools used in gardening.

Repetitive motion injuries such as CTS result from performing a task or motion repeatedly without giving the body time to rest, recuperate and repair from the activity. These injuries may also be increased by awkward positions or postures, vibration, and using hands to pound or push on things.

With carpal tunnel syndrome, repetitive wrist and/or finger movements out of the neutral position (the slightly upward bent position where the least amount of strain is put on the wrist) can lead to injury. The injury occurs in the carpal tunnel (the area composed of small bones and an encircling ligament at the base of the hand) (Figure 1). Flexor tendons (the ten-

dons that generate finger movement) and/or the synovium (the lining of the carpal tunnel) become swollen and inflamed. These inflamed tendons then press against other body parts in the carpal tunnel, quite frequently against the median nerve.

The median nerve passes through the carpal tunnel, conducting impulses from the brain down the arm to the thumb, forefinger, middle finger and half of the ring finger. When pressed, numbness and tingling may occur. Blood flow through the carpal tunnel may also be reduced, often resulting in cold fingers.

Symptoms of CTS

- numb hands and fingers
- wrist and finger pain
- “pins & needles” sensation in fingers
- reduced grasping strength
- cold fingers

Gardening Activities associated with CTS

- weed pulling
- planting
- hoeing
- raking
- transplanting
- pruning

Factors contributing to CTS while gardening

The factors that contribute to this condition include:

- repeated wrist motions
- long periods of hand movements
- using poorly designed tools
- pounding or pushing with your hands

Women are also more prone to develop CTS than are men. In addition, CTS can be further aggravated or negatively influenced by the following conditions:

- age
- cool temperatures
- pregnancy
- rheumatoid arthritis
- diabetes
- vitamin B-6 deficiency

Preventing Pain from CTS while Gardening

It is possible to enjoy gardening without pain or risk of developing CTS by using the following simple techniques:

- Vary activities, and motions or tasks within those activities frequently.
- Take frequent rests from repetitive motions.
- Use the correct posture for all tasks.
- Use ergonomically designed tools that conform to your hand. Do not force your hand to adapt to poorly fitting tools (Figure 2).

Carpal Tunnel Syndrome

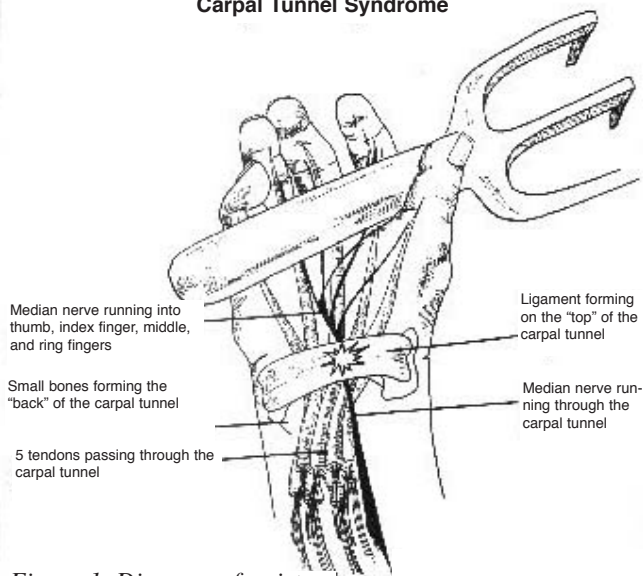


Figure 1. Diagram of wrist.