

CHAPTER ELEVEN

COMPUTER-RELATED MUSCLE, TENDON, AND JOINT INJURIES

Now that you've learned to do the MouseKeyDo™, you may want to know more about the discomfort you've been feeling and which MouseKeyDo™ techniques are especially helpful for them. In this chapter, we'll talk about repetitive strain injury to your muscles, tendons and joints. In the following chapter, we'll discuss RSI involving your nerves.

To reduce the risk of pain in your neck and shoulders, stay within these recommended ranges of movement:

Neck Flexion: 0°-15°
(bending forward)

Shoulder Flexion:
0°-25°
(forward reach)

To understand how RSI happens, you need some basic understanding of anatomy. When you want to make a motion, big or small, your brain sends a message down your nerves to tell your muscles to contract. The muscles, which are made up of cells and fibers, are attached to tendons, which are bands of dense, tough, very strong tissue connecting the muscles to the bones. Every tendon is surrounded by a protective covering called a tendon sheath (or synovial sheath), a double-walled tube with a thin film of synovial fluid that acts as a lubricant to allow the tendon to glide along smoothly. When your muscles contract, the tendons pull the bones along, and you move.

Joints are the places where two bones meet. Inside every joint is a smooth surface covering called cartilage and more lubricating synovial fluid, both of which make it easier for bones to rub together without pain. Sacs called bursae, which are filled with an oily fluid, further reduce friction by cushioning muscles against each other and the bones. Finally, ligaments connect bone to bone.

When something in your posture or typing habits interferes with the way all these parts work together, you end up in pain. As you read through this chapter and the next, look for the symptoms you're experiencing to find out what adjustments and MouseKeyDo™ techniques are worth extra attention.

MOUSEKEYDO'S

To prevent neck pain:

- Be sure to use proper form for the unsupported tripod sit.
- Don't bend your neck more than slightly forward; tuck in your chin and use a forward pelvic rock instead.
- Move from the pelvis to the torso and limbs.
- Upper arms swing forward and back like a pendulum.

Neck Pain

What it is: myofascial neck pain

Symptoms:

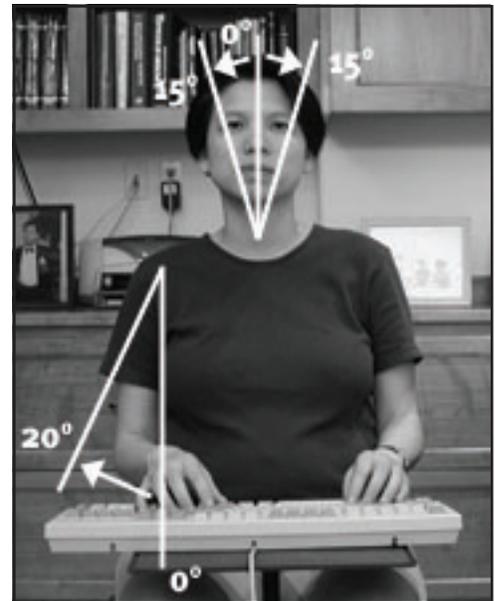
- pain or muscle spasms in the neck, shoulder, and/or upper back
- headaches
- difficulty sleeping
- numb hands and/or arms

Associated movements:

- poor posture
- prolonged or extreme neck flexion (bending forward) or extension (craning forward from the chin)
- reaching far in front of you

Possible computer-related causes:

- keyboard or mouse too high, too low, or too far away
- monitor too high, too low, or too far away
- poor vision or bifocals



To reduce the risk of pain in your neck and shoulders, stay within these ranges of movement:

Neck Sideways: 0°-15°
(either direction)

Shoulder Abduction: 0°-20°
(sideways reach)

MOUSEKEYDO'S

To prevent shoulder pain:

- Upper arm swings forward and back like a pendulum.
- Keep upper arms at your sides with minimal reaching to reduce shoulder strain.
- Use a pelvic forward rock instead of reaching out.
- Use a pelvic side rock or pelvic shift instead of reaching to the side.

Shoulder Pain

What it is: shoulder impingement, bursitis, and/or tendinitis — inflammation of the muscle tendons or the bursae at the outer edge of the collarbone.

Symptoms:

- shoulder pain
- weak arm and shoulder
- inability to lift the arm above shoulder height

Associated movements:

- repetitive reaching overhead
- repetitive reaching to the front or the side



Neck and shoulder pain can be felt at the base of the skull, in the neck, chest, and back as well as the top of the arm.

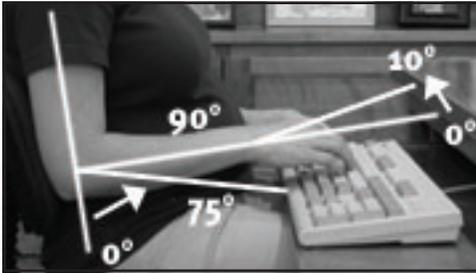
Possible computer-related causes:

- keyboard too high or too far away
- mouse too high or too far away
- arm rests too high
- frequent overhead reaching (for binders, books, files, etc.)

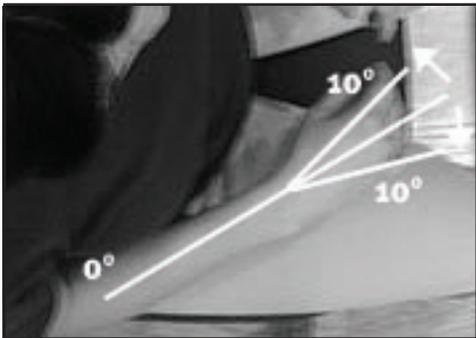
Sore Outer Elbow, Top Forearm, and Wrist

What it is: lateral epicondylitis, also known as “tennis elbow” or “programmer’s elbow” — injury to the tendons and muscle that extend the wrist and fingers and turn the palm of your hand upward.

To reduce the risk of pain in your elbows, forearms, and wrists, stay within these ranges of movement:



Elbow: 75°-90° (straight down is 0°)
Wrist Extension: 0°-10° (upwards)



(Shown from above)
Wrist Sideways: 0°-10° (either direction)

Symptoms:

- pain and tenderness on the outside of the elbow
- pain and fatigue on the fleshy top part of the forearm

Associated movements:

- wrist extension
- “sideways wrists”
- reaching and curling fingers
- lifting and dropping individual fingers

Possible computer-related causes:

- pounding the keys
- using old home row
- straining to reach shift/enter/backspace keys
- resting on the wrist rest while typing
- gripping the mouse too hard

MOUSEKEYDO'S

To prevent lateral epicondylitis:

- Keep wrist neutral or slightly extended.
- Keep hands soft — paws, not claws.
- Type lightly, with just enough pressure to depress keys.
- Don't use the wrist rest while typing.
- Drop, Beat, and Roll™ on the keyboard.
- Drop, Drape, and Skate™ on the mouse.



“Tennis elbow” pain begins at the elbow joint and may be felt all the way down to the wrist.

MOUSEKEYDO'S

To prevent medial epicondylitis:

- Paws, not claws.
- Keep wrists relaxed and neutral or slightly extended.
- Type lightly.
- Avoid the wrist rest while typing.
- Don't squeeze the mouse.
- Drop, Drape, and Skate™ on the mouse.

Sore Inner Elbow, Bottom Forearm, and Wrist

What it is: medial epicondylitis, also known as “golfer’s elbow” — injury to the tendons that flex (curl) the wrist and fingers and turn the palm of your hand downward.

Symptoms:

- pain and tenderness on the inside of the elbow
- radiating pain along the palm side of the forearm

Associated movements:

- extreme wrist extension
- “sideways wrists”
- overcurling fingers into a claw

Possible computer-related causes:

- pounding the keys
- using old home row
- resting on the wrist rest while typing
- gripping the mouse too hard
- gripping things with a pinching motion



Pain begins in the elbow joint and radiates down the inside of the arm.

MOUSEKEYDO'S

To prevent thumb pain:

- Keep thumb relaxed and at the side of your hand.
- Keep thumb pad facing the index finger.
- Hit the space bar with alternating thumbs or another finger.
- Keep wrists neutral or slightly extended.
- Type lightly.
- Paws, not claws.
- Don't grip the mouse.
- Drop, Drape, and Skate™ on the mouse.

Thumb Pain

What it is: De Quervain's tenosynovitis — swollen thumb tendons.

Symptoms:

- pain or stiffness in the thumb or thumb side of the wrist
- numb back of the hand on the thumb side of the hand

Associated movements:

- extreme wrist extension
- “sideways wrists”
- pointing the thumb up
- pressing the thumb down

Possible computer-related causes:

- pounding the keys (especially the space bar)
- clicking the laptop mouse button with the thumb
- using old home row
- straining to reach shift/enter/backspace keys
- resting on the wrist rest while typing
- gripping the mouse too hard



Thumb pain originates from swollen tendons in the wrist. The pain is felt up the side of the wrist and along the thumb.

Finger Pain

What it is: stenosing tenosynovitis, also known as “trigger finger”

Symptoms:

- finger pain on the palm side
- finger stiffness
- finger locks in a curled position

Associated movements:

- curling your fingers too much, too hard, or too often

Possible computer-related causes:

- pounding the keys
- using old home row
- resting on the wrist rest while typing
- gripping the mouse too hard

Painful Wrist Lump

What it is: a ganglion cyst

Symptoms:

- firm lump on the back of the wrist
- moving the hand, wrist, or finger at the site of the lump is painful and difficult

Associated movements:

- repeatedly extending and collapsing the wrist
- repeatedly straightening and curling the fingers

Possible computer-related causes:

- using old home row
- resting on the wrist rest while typing

MOUSEKEYDO'S

To prevent finger pain:

- Keep fingers loose and jiggly.
- Paws, not claws.
- Drop, Drape, and Skate™ on the mouse.
- Drop, Beat, and Roll™ on the keyboard.

MOUSEKEYDO'S

To prevent ganglion cysts:

- Keep wrists neutral or slightly extended.
- Avoid “sideways wrists.”
- Paws, not claws.
- Keep fingers, hands, and wrists relaxed.

MOUSEKEYDO'S

To prevent sore, swollen thumb:

- Keep thumb relaxed and at the side of your hand.
- Hit the space bar with alternating thumbs or another finger.
- Avoid gripping things with a pinching motion.
- Drop, Drape, and Skate™ on the mouse.

Sore, Swollen Base of Thumb

What it is: arthritis of the carpometacarpal (CMC) joint

Symptoms:

- pain and swelling at the base of the thumb

Associated movements:

- extreme wrist extension
- “sideways wrists”
- pointing the thumb up
- stretching the thumb too far toward or away from the palm
- pressing the thumb down

Possible computer-related causes:

- resting on the wrist rest while typing
- pounding the keys (especially the space bar)
- clicking the laptop mouse button with the thumb
- using old home row
- straining to reach shift/enter/backspace keys
- gripping the mouse too hard



CMC joint arthritis begins at the base of the thumb and radiates pain up to the knuckle and down to the wrist.