

NON-ERGONOMIC WORK PRACTICES

Improper work practices attributable to a lack of training, lack of supervision and assessment of work conditions, and a lack of commitment to safe work practices by both employees and supervisors result in a wide range of injuries in this category. One large class of non-ergonomic work practices are “Cumulative Trauma Disorders” (CTDs), most commonly related to carpal tunnel syndrome and repetitive motion injuries associated with keyboard use. Other examples include tendinitis or bursitis. Of the various types of non-ergonomic work practices, veterinary employees are most likely to experience repetitive motion and lifting hazards as well as static posture cumulative trauma during the course of daily tasks in the practice.

Understanding Ergonomic Risk Factors

Recognizing risk factors in the workplace is the first step in reducing potential injuries. Four basic activities increase the likelihood of upper body and low back cumulative trauma injury:

- Working in an awkward position such as standing with the body at a right angle to the floor while leaning over a low surface. Example: washing or grooming patients.
- Working in a stationary position with arms extended. Example: dental scaling procedures.
- Repetitive or narrow range of motion activities. Example: computer billing or data entry.
- Forceful exertions. Example: lifting heavy patients or supplies.

Once identified, it's easy to see how these everyday tasks can result in injury—from lower back strain to tendinitis in the arms, wrists, and hands.

To reduce injuries relating to ergonomics:

- **Stretch!** Like the animals that we care for, starting the day off with a nice long stretch is good for the body and should be part of the daily routine. Stretching increases blood flow and increases the body's range of motion. Stretch often throughout the day to help your circulation, ease muscle tension, and keep stiffness from setting in.
- **Stay hydrated.** Drink plenty of water or other healthy liquids throughout the day to maintain proper hydration levels.
- **Sit or stand tall.** Be cognizant of seated or standing posture and routinely correct it to sit or stand up straight. This improves posture and the negative effects of prolonged sitting or standing on the body.
- If a job or job task involves static posture or repetitious tasks, try to move between various tasks that lessen their duration, and thus the accumulation of stress on the body. Take micro breaks to rest and return to a neutral posture for a few seconds at a time.
- If you are seated for most of the day, take advantage of breaks to exercise, such as a short walk during lunch. If performing active tasks, remember to rest periodically to allow muscles to relax.
- **Adjust your chair** so your feet are on the floor and your knees are at, or slightly below, hip joint level. The chair height should allow your elbows to be bent at a near 90-degree angle with your hands positioned correctly on the keyboard. Often a foot rest is necessary to obtain the optimal seated height.
- **Make sure your back is adequately supported** by adjusting the seat back (lumbar) rest up or down. Adjusting the height of the back rest to match your lumbar area will transfer some of your seated weight from your back and upper legs to the frame of the chair, improving your posture.
- **For desktop computer keyboards,** check to see if your elbows (when held at the side of your body) are the same height as the home row keys on the keyboard. Readjust the chair height as needed so that your elbows and hands are at about the same height.
- If you have an adjustable-height computer keyboard, use the tray mechanism to move it up or down until you can position the home keys at your elbow height.

- Position the monitor screen so the top of it is at eye level or slightly lower, looking slightly down toward the information in the center with your head properly balanced. Tilt the screen slightly if needed to prevent glare.
- If you wear bifocals, check with your eye doctor to see if your lower bifocal correction is right for monitor-viewing distance.
- Check your monitor screen for brightness and contrast. If necessary, use an anti-glare filter and keep the screen surface free of dust.
- When typing information from documents, use a document holder or stand. Place it so you can read the documents at a similar distance and angle as the monitor screen.
- Items on your desk should be placed based upon their use. Place frequently used items, such as your computer mouse or trackball, within reach of your hands while your elbows form a near 90-degree angle at your side, with your wrists straight. Adjust the location of these items or your orientation to them as needed.
- Items that you use occasionally, such as your telephone or calculator, should be reachable in an arc with both hands with your elbows nearly straight. If using them for an extended period, reposition them closer to you rather than reaching.
- For heavy and rarely used items such as reference books, you should stand up and use two hands to reach them.

The following table is provided to the public by the American Veterinary Medical Association (AVMA) and can be accessed at: <https://www.avma.org/KB/Policies/Pages/Introduction-to-Ergonomics-Guidelines-for-Veterinary-Practice.aspx>

Ergonomics Guidelines for Veterinary Practice

Risk factors that could lead to Musculoskeletal Injury	Examples* of Tasks relevant to veterinary medicine
1) Awkward Postures	
a) Working with the hand(s) above the head, or the elbow(s) above the shoulder, for extended time periods that could cause muscle fatigue and injury.**	Floating teeth; rectal palpations; dystocias; prolapse repair; stocking shelves
b) Working with the neck, back or wrist(s) bent more than 30 degrees for extended time periods that could cause muscle fatigue and injury.**	Dystocias; colic surgeries; palpations; floating teeth; venipuncture; grooming; kennel and stall cleaning; data entry
c) Squatting or kneeling for extended time periods that could cause muscle fatigue and injury.**	Bleeding swine; surgeries performed while kneeling
d) Sustained position for extended time periods that could cause muscle fatigue and injury.**	Surgery; dentistry; driving a vehicle; tasks that require a static posture
2) High Hand Force	
a) Pinching an object and applying more than 2 pounds of force per hand for extended time periods that could cause muscle fatigue and injury.**	Large animal abdominal surgeries
b) Gripping an object and applying more than 10 pounds of force per hand for extended time periods that could cause muscle fatigue and injury.**	Ear tagging; restraint

3) Highly Repetitive Motion	
a) Repeating the same motion with the neck, shoulders, elbows, wrists, or hands with little or no variation every few seconds for extended time periods that could cause muscle fatigue and injury. **	Palpation; administration of injections; dental work; grooming/trimming; surgical procedures; venipuncture and blood collection
b) Performing intensive keying for extended time periods that could cause muscle fatigue and injury.**	Data entry
4) Forceful Exertions	
Sustained or static forceful muscle contractions restrict blood flow to an area which can have an adverse effect on the local nerve tissue	Patient lifting, restraining, and positioning; carrying equipment; large animal foot and leg work; carrying feed and other products; dystocias
a) Repeatedly lifting heavy objects until muscle fatigue occurs which could lead to musculo-skeletal injuries.**	Patient lifting, restraining, and positioning; carrying equipment; large animal foot and leg work; carrying feed and other products; dystocias
b) Infrequently lifting heavy objects until muscle fatigue occurs which could lead to musculo-skeletal injuries.**	Patient lifting, restraining, and positioning; carrying equipment; large animal foot and leg work; carrying feed and other products; dystocias
5) Moderate to High Vibration	
a) Using motorized equipment, percussive tools (scalers) or other hand tools that typically have moderate to high vibration for extended time periods which could cause muscle fatigue and injury.** b) Specifically with hand tools white finger or trigger finger injuries can be sustained from the force applied to the trigger and handle of the tool	Equine dentistry (using motorized equipment); power grinding hooves
6) Repeated Impact	
a) Impacting with the hand or knee repetitively for extended time periods that could cause muscle fatigue and injury.**	Unlikely to occur in a veterinary care environment, but acknowledged as a risk factor
** Muscle fatigue is a variable that can occur at different levels depending on individual body physique and conditioning.	

ERGONOMIC SAFETY QUESTIONS

Can the work be performed without eyestrain or glare to the employees?

Does the task require prolonged raising of the arms?

Do the neck and shoulders have to be stooped to view the task?

Are there pressure points on any parts of the body (wrists, forearms, back of thighs)?

Can the work be done using the larger muscles of the body?

Can the work be done without twisting or overly bending the lower back?

Are there sufficient rest breaks, in addition to the regular rest breaks, to relieve stress from repetitive-motion tasks?

Are tools, instruments and machinery shaped, positioned and handled so that tasks can be performed comfortably?

Are all pieces of furniture adjusted, positioned and arranged to minimize strain on all parts of the body?

ADDITIONAL TRAINING RESOURCES

More information about common injuries in veterinary practices can be accessed at cvma-inline.net in the "Workplace Safety" section.

Cal/OSHA Guide to Ergonomics in the Workplace: https://www.dir.ca.gov/dosh/dosh_publications/EasErg2.pdf