

# Wrist Injury Prevention

Tendonitis and carpal tunnel syndrome are common soft tissue inflammation disorders of the wrist. Each day we use the muscles and tendons in the wrist and hand to perform various upper extremity tasks. The physical stress and strain to these muscles and tendons can produce microscopic wear and fatigue to these tendons and muscles. As long as the amount of fatigue is lower than the body's ability to recover, the soft tissues in the wrist will remain healthy. But too much strain and fatigue, coupled with too little repair, can lead to an inflammation. Carpal tunnel syndrome is a nerve compression disorder caused by inflammation of the soft tissues that pass through the carpal tunnel in the wrist.



## Lifestyle Causes

- **Dehydration:** Healthy muscles are comprised of at least 70% water. Dehydration causes muscle fatigue, strain, tendonitis, and other disorders of the movement system. Soda pop is not water, it's liquid junk.
- **Poor Nutrition:** Eating too many "empty" calories that don't contain the nutrients our body needs is a primary cause of injuries and disorders of the movement system. Tobacco contains toxins that increase inflammation.
- **Inflammation:** Inflammation causes many lifestyle-related disorders, including heart disease and movement system disorders. Too much sugar and fat within our diet can contribute to inflammation.
- **Fatigue:** Adequate amounts of rest and sleep are very important ingredients for our health.
- **Poor Fitness:** Poor levels of physical fitness increases the risk of disease and injury.

Prevention is a **shared** responsibility! The company is responsible for a safe work environment and procedures, and all workplace athletes are responsible for using their body properly and keeping their body fit for work.



**Ergonomics** is about working smarter! An ergonomics improvement process is part of management's commitment to maximize efficiency and to limit worker fatigue and discomfort.

**Proper warm-up & body mechanics** will reduce daily fatigue and give you more energy left over at the end of the day! We are ALL athletes in life, so we need to warm-up like athletes to improve our performance and to reduce risk of injury. We should also plan to work smarter... not harder! Proper body mechanics should always be used to avoid excessive fatigue and injury.



**Drinking plenty of water** is one of the most important things you can do for your health! Healthy muscles are comprised of at least 70% water. Dehydration of the muscles and tendons is a primary cause of muscle fatigue, strain, tendonitis, and other disorders of the movement system. How much water do you need every day? Your Body Weight ÷ 2 = # oz. of water per day (Example: 160 pounds ÷ 2 = 80 oz. of water per day)

**Healthy eating** is one of the most important weapons that we have to fight against injury and illness. The foods we choose to eat determine what our bodies look like on the outside and how well our body functions on the inside. Eat fewer "empty" calories from dead foods, and eat more calories from living foods. Living foods include fruit, vegetables, nuts, and seeds. Living foods are harvested. Dead foods are processed and not good for you.



Adequate amounts of **rest and sleep** are very important ingredients for our health. When we don't get enough sleep, increased release of stress hormones raises the level of inflammation in the body. If rest and sleep deficits persist, we become more vulnerable to injuries and chronic diseases. Sleep experts generally agree that most adults require between 6.5-9 hours of sleep each day to maintain optimal health and safety.

We need to maintain our **physical fitness** levels to prevent injuries and illness. There's a correlation between poor levels of physical fitness and increased risk of disease and injury. The lower the level of fitness, the higher the risk of injury. Four types of exercise for your fitness plan: 1) Aerobic or cardiovascular exercise, 2) strength training, 3) stretching exercise, and 4) relaxation exercise.



Workplace athletes can use **ice or cold therapy** to control fatigue and soreness after activity. Ice application should be between 15 to 20 minutes applied directly onto the skin of the affected area. An initial aching will be felt when the ice is on the skin. After 5 minutes, this should go away as the ice takes effect. Ice is a great anti-inflammatory! Never use heat after activity.

**Vitamin & mineral supplements** are not a substitute for healthy eating, but they can fill in the gaps and help combat fatigue and inflammation. Experts recommend three daily supplements: 1) a quality multivitamin and mineral supplement, 2) a vitamin D supplement with calcium and magnesium, and 3) omega-3 fatty acids



# Wrist Stretching and Fitness Exercises

Wrist and Finger Stretching Exercises: Perform 3-5 times per day



Hold hands together in front of your face with elbows outward. Slowly lower hands downward keeping your fingers pressed together. You should feel a stretch from your fingers, into your wrists and up to your elbow. Hold stretch for 20 seconds, relax and repeat.



With your arm straight out as shown, gently pull your fingers and wrist upward with other hand. You should feel a gentle stretch from your wrist to your elbow on the lower side of your forearm. Gently pull back on your thumb. You may also benefit from stretching one finger at a time as shown (bottom). Hold each stretch for 20 seconds, relax and repeat.



Place hands on floor (top) or table top (bottom) with fingers pointing backwards toward your body. Gently and slowly lean forward with elbows straight, placing increased weight on your wrists to perform the stretch. You should feel a gentle stretch from your wrist to the inside of your elbow and forearm. Hold stretch for 20 seconds, relax and repeat.



With your opposite stabilize all fingers except the one you are exercising. Actively flex (bend) and extend (straighten) the finger at the middle joint 10 - 15 times. Repeat for each finger individually.



Slide your thumb across the palm toward the little finger, then wrap your fingers around the thumb. Gently bend wrist downward, you should feel a gentle stretch on the top (extensor tendon) of the thumb and wrist. Hold the stretch for 20 seconds, relax and repeat.

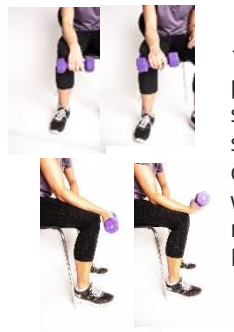


Use some putty or a sponge (shown) to warm-up and increase blood flow to your wrist and fingers prior to work activity. Gently squeeze the putty 10 - 15 times for the fingers and thumb. You can also hold the sponge under warm running water while you squeeze for the added benefit of moist heat.

Wrist Fitness Exercises: Perform 2-3 times per week



Grasp dumbbell or resistance band in one hand with palm down. Slowly rotate to a palm up position, then return to the starting position. Perform 2 sets of 12 reps for each arm.



1) Grasp dumbbell or resistance band with palm down. Lift wrist upward (top picture) and slowly return to the starting position as shown. Perform 2 sets of 12 reps. 2) Grasp dumbbell or resistance band with palm up. Lift wrist upward (bottom picture) and slowly return to the starting position as shown. Perform 2 sets of 12 reps.

This handout is general injury and illness prevention educational information and is not medical advice. If the employee requires medical attention, a competent health care provider should be consulted. Although every precaution has been taken in the preparation of this information, no liability is assumed for injury, personally or otherwise resulting from the use of information contained herein.