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Carpal Tunnel Syndrome: A Menace to Health

Repetitive wrist motions, many of which are an intrinsic part of a flight attendant's daily routine, can result in an occupational disability.

by
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An increase in carpal tunnel syndrome (CTS) related injuries among cabin flight attendants has focused attention on this potentially disabling occupational hazard. Efforts are being made by the medical community in treating and preventing CTS from disabling employees who, because of their jobs, are prone to this condition. Flight attendants are among these employees.

Painful Condition Disables

Carpal tunnel syndrome is a painful condition that results from the compression of the median nerve as it passes through a tunnel at the wrist (Figure 1). The median nerve provides sensory, motor and autonomic (independent) function to the thumb, the next two fingers and half of the fourth finger.

Symptoms commonly include pain, numbness, tingling, swelling, stiffness and burning sensations in the hands and fingers. Some patients may feel discomfort radiating upward from the wrist to their shoulders, and even to the root of the neck. Such discomfort may cause the afflicted person to wake in the middle of the night.

An afflicted person's hand may also feel stiff in the morning. Workers often experience loss of grip strength or the ability to distinguish between hot and cold — all of which can interfere with job performance and ease of accomplishing assigned tasks. Additionally, impairment caused by the debilitating effect of CTS produces reduced muscle control, resulting in clumsiness, weakness

and difficulty in performing simple motor tasks.

Job-related Causes Described

Flight attendants are prone to CTS because of unnatural and repeated wrist flexing. Also, motions that cause the wrist to deviate from the neutral (or straight) position, as well as repeated gripping and squeezing, can lead to median nerve compression (Figure 2).

A flight attendant's job is highly task-oriented. Repetitive wrist movements, from pouring coffee to serving food trays to moving service carts to turning dials, contribute to CTS.

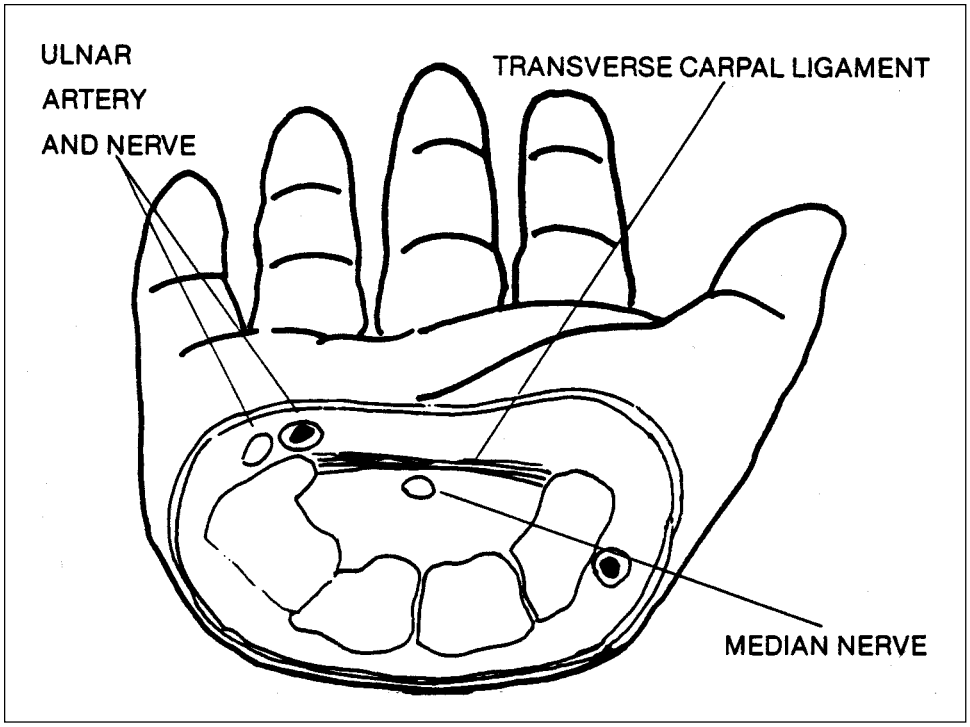


Figure 1

Such hand and wrist movements are made many times in the course of a flight attendant's work schedule and are influenced by length of flight, type of aircraft, inflight service scheduled, number of passengers and cabin equipment used. It would be difficult to determine the exact number of hand/wrist movements made during a typical work schedule, but it is fair to assume the number of hand/wrist movements required in providing cabin service is above average in relation to many other occupations.

The condition does not develop overnight — damage is cumulative and occurs as a result of repeated exposure. Although the onset of symptoms occurs slowly, the effects can be debilitating, with expensive consequences for employers and employees alike.

CTS Treatment May Require Surgery

Suggested treatments for CTS fall into two categories: non-surgical and surgical.

If a flight attendant suspects problems due to CTS, he or she should consult a physician. Delaying medical attention may result in permanent nerve damage. Commonly, the initial non-surgical conservative treatment is a hand splint, which immobilizes the wrist and limits finger motion, thereby minimizing pressure on the median nerve. Patients are often prescribed aspirin or anti-inflammatory drugs, and they are asked to reduce hand activity for a period of time.

Usually, after a period of six to eight weeks of conservative treatment, the patient will be evaluated. If satisfactory relief is not achieved, surgical decompression of the median nerve may be necessary.

Advances in hand surgery for CTS have reduced the patient's recuperative period. The "closed-hand" carpal-tunnel-release operation is beginning to replace the more traditional "open-hand" procedure, which involves an incision that opens both the palm and the wrist.

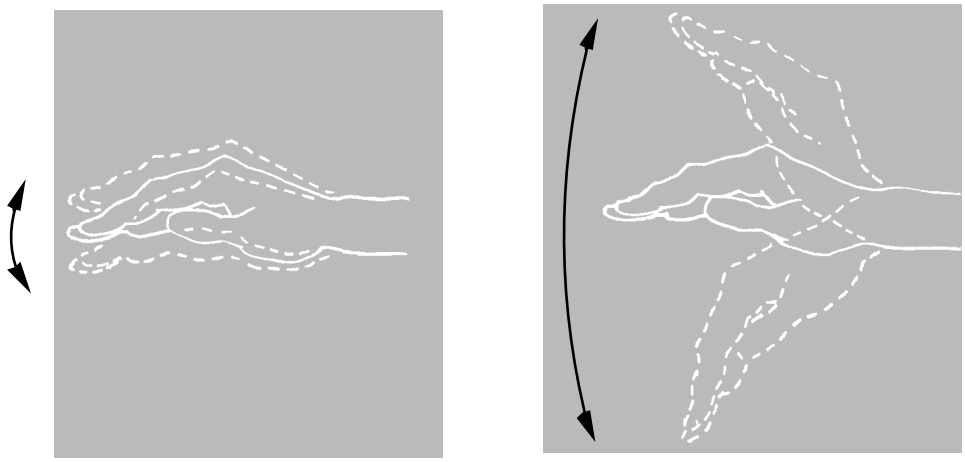
The closed-hand procedure uses local anesthesia and a small, three-quarter-inch incision through which the surgeon divides the carpal ligament with a special instrument. Once the ligament is divided, pressure on the underlying median nerve is relieved.

With the closed-hand procedure, both wrists may be repaired at the same time. Immediate use of the hands following surgery is encouraged and a fairly short recovery period is involved — usually two to six weeks. The simultaneous surgery also reduces time away from work.

Crew Members Can Take Preventive Measures

In considering preventive measures, the focus should be placed on the workplace, i.e., the aircraft cabin. Flight attendants must be made aware of exactly what aggravates the CTS condition and how the symptoms can be relieved. On-the-job prevention is best accomplished by reducing stresses that can cause CTS.

Wrist Movement Leading To Carpal Tunnel Syndrome



The potential for developing carpal tunnel syndrome is reduced when the wrist is held near the neutral (or straight) position. When job-induced pressure is applied to the wrist near its maximum flexion or extension, however, the incidence of carpal tunnel syndrome is found to increase.

Figure 2

Proper body mechanics must be practiced to prevent injury, particularly when working with cabin equipment such as service carts.

Flight attendants should report any inflight service equipment that produces an unsatisfactory operating situation. For example, service carts designed with hand brakes that require a flight attendant to maintain constant flexion of the wrist on the brake release bar while moving the cart (pushing or pulling) from one location to another can produce harmful effects. Design changes or the installation of new equipment cannot be accomplished overnight, but management must know what equipment and procedures may contribute to on-the-job injuries.

Poorly maintained equipment must also be reported to ensure that it is made to operate properly. If a cabin maintenance logbook is not available to report discrepancies, consideration might be given to establishing a procedure to report discrepancies. An airline's "eyes and ears" on the line are the flight attendants who can be instrumental in effecting changes to benefit their working environment. Job rotation involves performing duties that are less stressful and require shorter periods of time (reducing repetition). It is difficult to do this, however, considering the flight attendant occupation. Several factors govern where a flight attendant works on an aircraft, what duties are associated with each duty position and how often a flight attendant works during a specific time period. An individual's personal efforts to control CTS also continues away from the work environment. CTS sufferers need to avoid repetitive motion such as typing, playing tennis, bowling, etc., because these activities further aggravate the condition.

Occupational therapists suggest avoiding use of the wrist in a bent or twisted position for long periods of time. They also advise that the whole hand — not just the thumb and forefinger — should be used to grasp objects.

Specialists recommend that ergonomics — adapting the workplace to the worker — be used to effect changes to reduce workers' exposure to hand/wrist movements that contribute to CTS. Ergonomics has long played an important role in aircraft design and operation, but with more emphasis on the flight deck. However, greater attention is being focused on the cabin and the flight attendant's working environment, especially from the standpoint of body mechanics. ♦

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About The Author

Jeanne M. Elliott has been involved with the aviation industry for more than 25 years in varying capacities relative to cabin safety, crew member training, inflight supervision, in-cabin inspection/surveillance, and program development and management.

Her career has encompassed early work with the U.S. Federal Aviation Administration (FAA) as an air carrier cabin safety specialist. This position allows the FAA a closer liaison with the airline industry in developing and enhancing the safety role of the flight attendant in the areas of crashworthiness and survivability.

Elliott has written about occupant/crew member safety and protection in publications distributed worldwide. She participates with industry organizations dedicated to cabin safety and occupant survival and is affiliated with a major international air carrier.

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