CARPAL TUNNEL SYNDROME
A COMPREHENSIVE GUIDE FOR THE MASSAGE THERAPIST

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This course was developed to help expand the knowledge and skills of massage therapists with respect to the subject of carpal tunnel syndrome.

It is the responsibility of the massage therapist to determine which principles and theories contained herein are appropriate with respect to his/her personal limitations and scope of practice.

The information in this course has been carefully researched and is generally accepted as factual at the time of publication. The Institute for Advanced Therapeutics, Inc. disclaims responsibility for any contradictory data prior to the publication of the next revision of this course.

NOTE: In this book and test, the use of the words patient and client can be interchanged. In this book and test, the use of the words massage therapist, therapist, and practitioner can be interchanged.

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TABLE OF CONTENTS

COURSE DIRECTIONS
MAILING INSTRUCTIONS
COURSE OBJECTIVES
OVERVIEW
SIGNS AND SYMPTOMS
CAUSES AND RISK FACTORS
EXAMINATIONS AND TESTS
NON-SURGICAL TREATMENT OPTIONS
SURGICAL TREATMENT OPTIONS
PREVENTION
INSTRUCTIONS FOR COMPLETING THE TEST
CARPAL TUNNEL SYNDROME: A COMPREHENSIVE GUIDE FOR THE MASSAGE THERAPIST TEST
TEST ANSWER CARD/COURSE EVALUATION
GLOSSARY
REFERENCE LIST
COURSE DIRECTIONS
HOW TO BEST PROCEED WITH THIS COURSE

Each chapter should be approached systematically in a careful and objective manner. It is important to master each chapter before going on to the next. Relax, take your time, and go at your own pace. As 4 credits of continuing education are rewarded after successfully completing this course, the reading of this manual and completion of the test questions should not take less than 4 hours. Only after you have successfully mastered all the material in the course should you proceed to the test questions.

COMPLETING THE TEST

Read each question carefully before answering. Keep in mind that each question has only one correct answer. The test consists of 40 questions. For a passing grade, you must correctly answer 32 questions. We encourage your input and would welcome any suggestions to improve our course or test questions.

INFORMATION FOR CERTIFICATION

In order to receive your 4 hours of continuing education credit, you must be a registered purchaser of this course. Please notify us of any address or name changes as we keep permanent records for certification and licensure.

COURSE OBJECTIVES

Upon completion of this course, you will be able to:

1. List the signs and symptoms of carpal tunnel syndrome.
2. Identify the causes and risk factors for developing carpal tunnel syndrome.
3. Describe tests to detect damage to the median nerve and diagnose carpal tunnel syndrome.
4. Discuss the pros and cons of many non-surgical and surgical treatment options for carpal tunnel syndrome.
5. List steps that can be taken to help prevent carpal tunnel syndrome.
Carpal tunnel syndrome, the most common of the repetitive motion disorders, is a medical condition produced by compression and entrapment of the median nerve in the wrist. The median nerve is a pencil-sized cord containing thousands of nerve fibers. The flexor tendons which control finger movement and the median nerve are contained within a tunnel-like structure called the carpal tunnel. Each tendon is surrounded by a protective covering called the synovial sheath. Certain medical conditions or highly repetitive use of the hands may cause this sheath to swell. As pressure within the carpal tunnel increases, the median nerve may press up against the transverse carpal ligament producing carpal tunnel syndrome. (See bottom transverse wrist section in the above illustration). The most common symptoms are numbness, tingling, or pain in the fingers.

Although anyone can develop carpal tunnel syndrome, women are more commonly affected by a ratio of 3 to 1, most often between the ages of 29 and 62. Each year, approximately 100,000 new cases of carpal tunnel syndrome are diagnosed. Heightened public awareness of carpal tunnel syndrome has unquestionably benefited many people.

This syndrome has been the focus of much debate over recent years due to suggestions that occupations requiring continuous repetitive motions of the hands may be at higher risk. Although there are many reasons for developing this swelling...
of the tendon, it can result from repetitive and forceful movements of the wrist during work and leisure activities.

SIGNS AND SYMPTOMS

A majority of patients with carpal tunnel syndrome first notice numbness and tingling of the hand in a median nerve distribution (thumb, index, middle, and part of the fourth finger). Initially, the sensations are more pronounced at night and, at times, may awaken the patient from sleep. Sometimes, the symptoms of carpal tunnel syndrome are temporary. At other times, the symptoms persist and progress. The earliest signs of carpal tunnel syndrome are sensory in nature. As the syndrome progresses, findings are motor in nature. Symptoms associated with carpal tunnel syndrome include:

- Numbness, tingling, or pain in the thumb, index, or ring fingers.
- Symptoms in the hand or wrist that disrupt sleep.
- Symptoms initially worse at night and early in the morning.
- Aching pain extending into the forearm or possibly even up to the shoulder.
- Redness or swelling of the forearm and hand.
- Weakened hand and finger grip.
- Trouble grasping or dropping objects more frequently.
- Pain or burning in the wrist or fingers.
- Increased or decreased sense of touch.
- “Clumsiness” or poor coordination of the hands and fingers.
- Difficulty making a fist.
- Difficulty fastening buttons or unscrewing bottle tops.
- Limited range of motion of the wrist.
- Shrinking in size of the thumb on the affected side.

The vast majority of carpal tunnel syndrome cases get better with treatment resulting in no permanent damage to the median nerve. Symptoms may improve by themselves under the following circumstances.
When repetitive motions of the hands that have caused the symptoms are stopped or changed.

After diseases that have caused or contributed to the condition have been adequately treated or cured.

After pregnancy.

After conservative treatment is followed.

In rare instances, permanent damage to the median nerve may result making use of the hand difficult. The thumb muscles may become weakened and waste away making it difficult to grasp or hold objects. Feeling and coordination may be lost in the fingers and hand. Sometimes, sharp shooting pains can be felt in the forearm. Surgical and/or non-surgical options may prevent further damage or restore feeling and coordination in the fingers and hand. The earlier the condition is diagnosed, the better chance of preventing permanent damage to the median nerve.

Call a doctor if you:

1. Notice weakness, numbness, tingling, or pain in your fingers or hands.
2. Notice you are dropping things more frequently than usual.
3. Lost sensation in your fingers or hands.
4. Notice recent decreased thumb strength.
5. Notice loss of pinch strength when pinching an object between your thumb and first finger.
6. Notice recent difficulty with simple hand movements such as brushing your hair or teeth, holding a fork, or tying your shoelaces.
7. Notice you are having trouble writing legibly lately.
8. Notice recent difficulty when opening jars or containers.

**CAUSES AND RISK FACTORS**

**NON-OCCUPATIONAL**

There are many causes of carpal tunnel syndrome. Any condition that reduces the size of the carpal tunnel can cause this syndrome. The following non-
occupational factors can predispose one to developing carpal tunnel syndrome. These conditions and situations may increase pressure in the carpal tunnel resulting in compression of the median nerve.

1. Fluid accumulation in the tunnel.
2. Bony or ligamentous changes in the tunnel.
3. Inflammation of the tendon sheaths in the tunnel.
4. Tumors.
5. Diabetes mellitus.
6. Hypothyroidism.
7. Rheumatoid arthritis.
8. Acromegaly.
10. Lupus.
11. Multiple sclerosis.
15. Sarcoidosis.
16. Wrist cysts.
17. Wrist fractures or dislocations.
18. Pregnancy.
19. Use of oral contraceptives.
20. Hormonal changes or menopause.
21. Regularly sleeping with the wrist held in an acutely bent position.
22. Regularly engaging in repetitive and forceful movements of the wrist during leisure activities.
23. Multiple myeloma.
24. Leukemia.

Some of the sports or hobbies that require repetitive hand motions putting one at risk for developing carpal tunnel syndrome include:

1. Knitting.
2. Golf.
3. Fishing.
5. Needlepoint.
6. Tennis.
7. Rowing.
8. Archery.
9. Racquetball.
11. Skiing.
12. Ping-pong.
13. Hockey.
15. Gymnastics.

OCCUPATIONAL

Carpal tunnel syndrome is a common work-related injury. When related to repetitive maneuvers, carpal tunnel syndrome is also known as a repetitive stress injury. In the workplace, carpal tunnel syndrome can be brought on by rapid, repetitive use of the hand and fingers for many hours at a time, on a daily basis. Occupations that require repeated flexion/extension of the wrist, strong gripping, awkward hand positions, mechanical stress on the palm, or use of vibrating tools are particularly at risk for developing carpal tunnel syndrome. Research by the National Institute for Occupational Safety and Health (NIOSH) indicates that job tasks involving highly repetitive manual acts, or necessitating wrist bending or other stressful wrist postures, are connected with incidents of carpal tunnel syndrome or related problems. The more risk factors involved, the greater the chance of developing the condition.

Moreover, it is apparent that this hazard is not confined to a single industry or job but occurs in many occupations, especially those in the manufacturing sector. Jobs involving cutting, small parts assembly, finishing, sewing, and cleaning seem predominantly associated with this syndrome. The factor common in these jobs is the repetitive use of small hand tools.

Carpal tunnel syndrome can also be due to trauma from repetitive work such as that of supermarket checkers, assembly line workers, meat packers, typists, accountants, and writers. As such, there is a higher risk of developing carpal tunnel syndrome in the following occupations:

◆ Massage therapist.
◆ Data entry clerks or those who work at a computer terminal.
◆ Assembly-line workers.
◆ Dentists and dental hygienists.
◆ Letter sorters.
◆ Hairdressers.
◆ Cashiers or supermarket checkers.
◆ Garment workers.
◆ Drillers.
Carpal tunnel syndrome can usually be diagnosed by your doctor following a complete medical history and physical examination looking for potential causes and effects of the syndrome. Clues such as weakness, sensory change, functional change, and muscular wasting are sought clinically. Further testing may be done if symptoms are severe.

Some medical conditions that affect the hands or wrists can mimic the symptoms of carpal tunnel syndrome so it is important that your doctor rule out such conditions including:

1. Fracture.
2. Dislocation.
4. Ganglion cyst.
5. Poor circulation.
6. Raynaud’s phenomenon.
7. Epicondylitis.
8. de Quervain disease.

Evaluation begins with your doctor obtaining a thorough history of the problem noting the following in particular:

1. Any prior history of injuries to your hands or arm.
2. Pre-existing medical illnesses or conditions that may predispose to carpal tunnel syndrome.
3. Description of the symptoms.
4. Workplace risks.
5. Activities at home that may be causing the symptoms.
6. Exercise or sports-related activities that may be causing the symptoms.

Your doctor may perform the following tests to detect damage to the median nerve and diagnose carpal tunnel syndrome.

Tinel’s sign – With your palm up, the doctor will tap over the median nerve at the wrist. The presence of an electric-like shock or tingling in one or more fingers indicates damage to the median nerve.

**TINEL’S TEST**

Phalen’s sign – This test can be performed several ways. Your doctor may ask you to hold your wrist down in a bent position for one minute. Another method of performing this test is by placing the backs of the hands together and acutely flexing the wrists for one minute. If the symptoms are reproduced or worsened during testing, damage to the median nerve is suggested.

**PHALEN’S TEST**
Electromyogram or nerve conduction velocity studies – If there is any doubt concerning the diagnosis, this form of testing is usually performed. Small electrodes are placed on the skin over the wrist to stimulate the median nerve. This study measures the amount of time it takes for a signal to cross the carpal tunnel. Slowing of this signal transmission may indicate damage to the median nerve. Many experts question the accuracy and effectiveness of this form of testing as it may not increase the accuracy of the diagnosis. It should also be noted that some people with carpal tunnel syndrome will have a normal test result.

Blood tests – Your doctor may perform blood tests to rule out conditions that may be causing or aggravating carpal tunnel syndrome. Some of the tests that may be performed include:

2. Thyroid hormone levels.
3. Protein analysis.
4. Complete blood counts.
5. Arthritis profile.
X-rays – Your doctor may perform x-rays to rule out fractures or arthritic conditions in the wrist or hand that may mimic the pain of carpal tunnel syndrome.

NON-SURGICAL TREATMENT OPTIONS

Fortunately, most people suffering from symptoms of carpal tunnel syndrome will completely recover and avoid re-injury by making lifestyle changes and the adhering to the following behavior modifications.

1. Making changes in the way they complete repetitive tasks.
2. Decreasing the frequency of repetitive movements.
3. Increasing the amount of rest time away from repetitive tasks.

If addressed early, there is a good chance the symptoms of carpal tunnel syndrome will disappear. Your treatment will be based on the severity of your symptoms or whether there is any nerve damage. The following are several non-surgical treatment options for carpal tunnel syndrome. Your doctor will determine which options are best for you.

REST
Once your doctor identifies the activity that triggered the onset of carpal tunnel syndrome, it is important that steps be taken to avoid engaging in that activity. Taking frequent breaks from repetitive tasks may also be beneficial. Resting the wrist allows the swollen and inflamed tendon sheaths to shrink thus relieving pressure on the median nerve.

WRIST BRACE OR SPLINT

If symptoms are particularly troublesome at night, your doctor may recommend wearing a wrist brace or splint at night to prevent movement of the wrist. The brace or splint can also be used during the day. This may minimize or prevent pressure on the median nerve by keeping the wrist in a neutral position. When the wrist is neither bent forward nor back, maximum room in the carpal tunnel is provided.

EXAMPLE OF NEUTRAL WRIST POSITION

YOGA

If approved by your physician, try yoga. A study by researchers at the University of Pennsylvania found yoga to be more effective than wrist braces in treating the symptoms of carpal tunnel syndrome. Yoga incorporates stretching the muscles and ligaments with improved posture; both beneficial in preventing or alleviating the symptoms of carpal tunnel syndrome.
If symptoms persist despite use of a wrist brace or splint, your doctor may recommend a non-steroidal anti-inflammatory drug or NSAID. Anti-inflammatory medications help control swelling of the tendon sheaths thus reducing the symptoms of carpal tunnel syndrome. On the downside, possible side effects of these medications include gastrointestinal upset and stomach ulcers. To reduce the risk of side effects, anti-inflammatory medications should be taken with food and not on an empty stomach.

In addition to prescription non-steroidal anti-inflammatory drugs, over-the-counter ibuprofen and aspirin are commonly recommended. Aspirin is known not only to block the production of prostaglandin resulting in decreased pain, but reduce swelling. Prolonged aspirin use can be associated with adverse side effects so be sure to consult with your physician before embarking on this form of therapy.

Diuretics, commonly known as water tablets, may be prescribed when medical conditions known to cause fluid retention are suspected to be causing or aggravating the symptoms of carpal tunnel syndrome.

Thyroid medicine should be prescribed, if necessary, prior to any treatment specifically directed at carpal tunnel syndrome.

Some reports suggest pyridoxine, commonly known as vitamin B6, can be effective in relieving some of the symptoms of carpal tunnel syndrome. Vitamin B6 is important for nerve conduction and acts on collagen and elastin fibers in the body. It also acts as a diuretic and can help reduce excess fluid retention. Supplementing with 100 mg of vitamin B6 for at least three months may be beneficial in some cases. Although medication can be very effective in temporarily relieving the pain of carpal tunnel syndrome, it is noted that only 1 out of 5 patients treated with medication as the only form of therapy remains pain-free in a year’s time.

Some physicians may recommend hand and wrist exercises as a form of conservative treatment for mild carpal tunnel syndrome symptoms. Check with your doctor and find out if exercises are indicated and what kind of exercises are recommended for you.
Massage may be suggested by your physician to help reduce the symptoms of carpal tunnel syndrome and increase the space between the carpal bones of the hands.

INJECTIONS

If the above measures fail to control the symptoms of carpal tunnel syndrome or there is evidence of nerve damage such as a weak thumb or profound numbness, your doctor may recommend an injection of corticosteroid into the carpal tunnel. Corticosteroids can be administered by mouth or directly injected into the affected area. The medication may help reduce swelling in the area relieving pressure on the median nerve. These injections usually provide only temporary relief of symptoms.

It should be noted, however, that corticosteroids should be used with caution in patients with diabetes due to the tendency to affect blood sugar levels.

SURGICAL TREATMENT OPTIONS

It is estimated that surgeons perform over 260,000 carpal tunnel release surgeries each year, almost half of them work-related. Surgery to reduce pressure on the median nerve is usually considered only if all of the non-surgical treatments fail to control the symptoms of carpal tunnel syndrome. Fortunately, only a small percentage of carpal tunnel syndrome patients require surgery.

The procedure, known as a carpal tunnel release, can be performed using a local anesthetic in an outpatient setting. Complications are rare and over half of the people who have the surgery find relief from their symptoms. The expected recovery time is usually less than a month and usually leaves only a small scar.
The operation is carried out to reduce pressure on the median nerve by making a small incision in the transverse carpal tunnel ligament.

The procedure can be performed by “classic” open incision technique where a small incision is made in the palm of the hand over the region of the transverse carpal ligament. The surgeon then cuts or frees the ligament to allow more room for the median nerve in the carpal tunnel.

An alternative technique called endoscopic carpal tunnel release usually is performed by the surgeon through two smaller incisions instead of one slightly larger incision. A fiberoptic camera is inserted into the incisions to direct the surgeon with minimal invasion. The newer endoscopic procedure may result in a shortened recovery time but the majority of surgeons prefer the “classic” open incision technique because of a slightly increased risk of nerve injury associated with endoscopic carpal tunnel release surgery.

Following surgery, exercise is often encouraged as soon as possible to help regain full function and mobility in the hands and wrists.

**PREVENTION**

There are many steps you can take to help prevent carpal tunnel syndrome. Knowing the risk factors will help you identify which activities are posing a risk. If you think you are at risk, you can often prevent carpal tunnel syndrome through proper hand positioning and hand exercises.

Some important tips to help prevent carpal tunnel syndrome are:

1. If possible, rotate job tasks on a regular basis to prevent overuse of the same muscles.
2. Reduce the number of motions involved in completing a repetitive task.

3. Reduce the amount of pressure you exert when completing a task.

4. Perform exercises to strengthen your hand and wrist.

5. Choose to utilize tools that reduce or eliminate the need for wrist bending.

6. Avoid the use of vibrating tools or insulate tools to reduce the vibration.

7. Take frequent breaks from using your hands throughout the workday.

8. Use tools that keep your wrist relaxed and in a neutral position.

9. Reduce time spent on hobbies requiring repetitive hand movements such as knitting and needlepoint.

10. To rest your wrists during breaks, use a support pad for your computer keyboard.

11. Avoid the use of too much salt if you have a tendency to retain fluid.

12. Stop any activity that produces pain or numbness in the fingers, hand, or wrist.

13. Consider switching to an ergonomically-designed workstation that reduces awkward wrist positions.

14. Consider implementing a plan of job rotation among workers.

15. Consider redesigning tools used to complete repetitive tasks.

16. Educate workers regarding carpal tunnel syndrome prevention.

17. Position your computer monitor directly in front of you and at eye level.

18. Use a keyboard with a soft-touch and do not pound the keys when typing.

19. Position your keyboard at elbow height or lower and use a keyboard drawer if necessary.

20. Avoid working in a cold environment as cold temperatures have been found to increase the risk of developing carpal tunnel syndrome.
21. When typing, keep your wrists in a straight position and move only your fingers.

22. Use appropriate force and relax your grip when performing tasks.

23. Cross-train and rotate workers across jobs.


25. If obese, take measures to reduce your weight.

26. If much of your time is spent writing by hand, use a thick pen with a soft grip.

27. If using a computer daily for extended periods of time, use a trackball instead of a mouse.

28. Use an ergonomically-designed chair with a height-adjustable seat and backrest, armrests, and wheels.

**AVOID REPETITIVE HYPEREXTENSION AND HYPERFLEXION**

As a massage therapist, you can do a great deal to protect yourself from getting carpal tunnel syndrome as a result of giving massages. Consider the following recommendations:

1. Utilize proper posture. Slouching shortens the neck and shoulder muscles. This can cause the nerves in the neck to compress which can eventually affect the wrist, hand, and fingers. If using a keyboard, remember to keep it at the same level as your elbows or slightly lower. This will help keep the wrist from bending too far up or down.
2. Adjust your massage technique to avoid awkward wrist positions and using intense pressure that can cause tendons to swell and press on the median nerve of the hand. Keeping the wrists and elbows straight will mean less pressure on the tendons and nerves in your hands. When using a vibrating massage tool, make sure you can grip the tool comfortably and the tool can absorb excess vibration. Repetitive use of vibratory machinery has been linked to carpal tunnel syndrome. When using any massage tool, be sure to keep your hands and wrists in alignment.

3. Keep yourself in good physical condition. Exercise and get plenty of rest to allow your body to replace nutrients and repair itself. Poor diet and a sedentary lifestyle may increase your risk of developing carpal tunnel syndrome.

4. If you experience pain, tingling, or numbness, discontinue working to allow time for healing. Do not attempt to massage clients until your symptoms have resolved completely.
5. Know your physical limitations.

6. When performing massage, keep your thumb in alignment with the rest of your hand and arm.

7. Use the weight of your body to accomplish deep work instead of just your fingers, wrists, and shoulders.

8. Avoid flexing the thumbs upwards.

9. Avoid suddenly increasing the number of massages you perform a week. Gradually increasing your workload will allow you to train physically making injury less likely.
10. Allow sufficient time between massages to relax and stretch. Take at least 15 minute breaks between clients to rest or perform stretching exercises. Also, alternate tasks when possible. For example, perform massage for 30 minutes then do some phone work or filing for 10 minutes. If you use a massage tool that vibrates or on which you exert a great amount of force, taking breaks is even more important.

11. Adjust your massage table to a comfortable height and use proper body mechanics to avoid awkward wrist positions.

12. Do not suddenly decrease the amount of time you take between massages.
13. Use your elbow at times to create pressure when massaging instead of always using your thumbs.

14. If a particular technique causes you pain, try changing to a different technique.

15. Try hand exercises which can help relieve excess pressure on the tendons and nerves. When done daily, exercises can help strengthen wrist and hand muscles relieving strain due to repetitive motions. Do not perform the following exercises, however, if you have advanced carpal tunnel syndrome or if contraindicated by your physician.

Hand and finger stretch:

1. Make a fist.
2. Extend your fingers slowly.
3. Stretch your fingers as far apart as possible holding the position for 10 seconds.
4. Relax the hand.
5. Repeat the above sequence 10 times.

Wrist rotation exercise:

1. Make a fist.
2. Using your wrist as the center point, rotate the wrist down, then to the left, then up, then to the right putting the wrist through full range of motion.
3. Repeat the above sequence 10 times.
4. Repeat the above three steps rotating your wrist in the opposite direction.

END OF COURSE
GLOSSARY

acromegaly: A condition caused by chronic over-activity of the pituitary gland.
amyloidosis: A disease characterized by deposition of amyloid in various tissues and organs of the body.
carpal tunnel: A narrow passageway in the wrist through which the median nerve and the flexor tendons of the fingers and thumb pass.
corticosteroids: A steroid formed by the adrenal cortex.
de Quervain disease: fibrosis (formation of fibrous tissue as a reparative or reactive process) of the tendon sheath of the thumb.
diabetes mellitus: A disorder of carbohydrate metabolism characterized by inadequate secretion or utilization of insulin.
diuretics: Also known as water pills; used to reduce fluid retention in the body.
electromyelogram: Small electrodes are placed on the skin over the wrist to stimulate the median nerve. This study measures the amount of time it takes for a signal to cross the carpal tunnel. Slowing of this signal transmission may indicate damage to the median nerve.
endoscopy: Examination and/or surgery of the interior part of the body by introduction of a special instrument such as an endoscope through a small opening in the body.
epicondylitis: Referring to inflammation of the lateral humeral epicondyle, also known as tennis elbow.
ergonomics: A branch of ecology concerning the alteration of the workplace to reduce injury.
ganglion cyst: An abnormal sac containing fluid within fibrous tissue or, occasionally, muscle bone or a semilunar cartilage; usually attached to a tendon sheath in the hand or wrist.
gout: a disease causing painful inflammation of the joints.
hypothyroidism: A condition characterized by deficient activity of the thyroid gland.
leukemia: A disease characterized by an abnormal increase in white blood cells in the tissues of the body and often in the blood.
ligamentous: Referring to a ligament or ligaments (such as the transverse carpal ligament).
lupus: Referring to systemic lupus erythematosus; an inflammatory connective tissue disorder with variable features frequently including joint aches, weakness, and skin lesions.
median nerve: The nerve that passes through the carpal tunnel.
motor: Relating to or involving muscular movement.
multiple myeloma: A disease of the bone marrow characterized by the presence of numerous tumors in various bones of the body.
multiple sclerosis: A disease marked by hardening of tissues in the body.
NSAID: Non-steroidal anti-inflammatory drug. Medicine commonly used to decrease inflammation and reduce pain; e.g., aspirin or ibuprofen.
Phalen’s sign: A test performed by a physician used to detect damage to the median nerve and diagnose carpal tunnel syndrome.
**prostaglandin:** Any of a class of physiologically active substances present in many tissues of the body.

**Raynaud’s phenomenon:** A condition causing spasm of the digital arteries with blanching and numbness or pain of the fingers. The condition is often brought on by cold temperatures.

**rheumatoid arthritis:** A painful condition characterized by inflammation of the joints.

**sarcoidosis:** A chronic disease characterized by the development of nodules in lymph nodes, bone, lungs, and skin.

**synovial sheath:** The protective covering surrounding a tendon.

**tendon:** A fibrous cord or band of tissue that connects the fleshy part of the muscle with its bony attachment.

**tendonitis:** Inflammation of a tendon.

**tendon sheath:** A membranous covering over the tendon.

**Tinel’s sign:** A test performed by a physician used to detect damage to the median nerve and diagnose carpal tunnel syndrome.

**REFERENCE LIST**


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