

Relieving Carpal Tunnel Syndrome

- What is carpal tunnel syndrome and what causes it?
- Assessment: Bodyreading alignment + evaluating use case posture
- Making and Presenting a Treatment Plan for Clients
- Treatment Demonstration
- Giving Homework: Examples of At Home Self Care for Carpal Tunnel

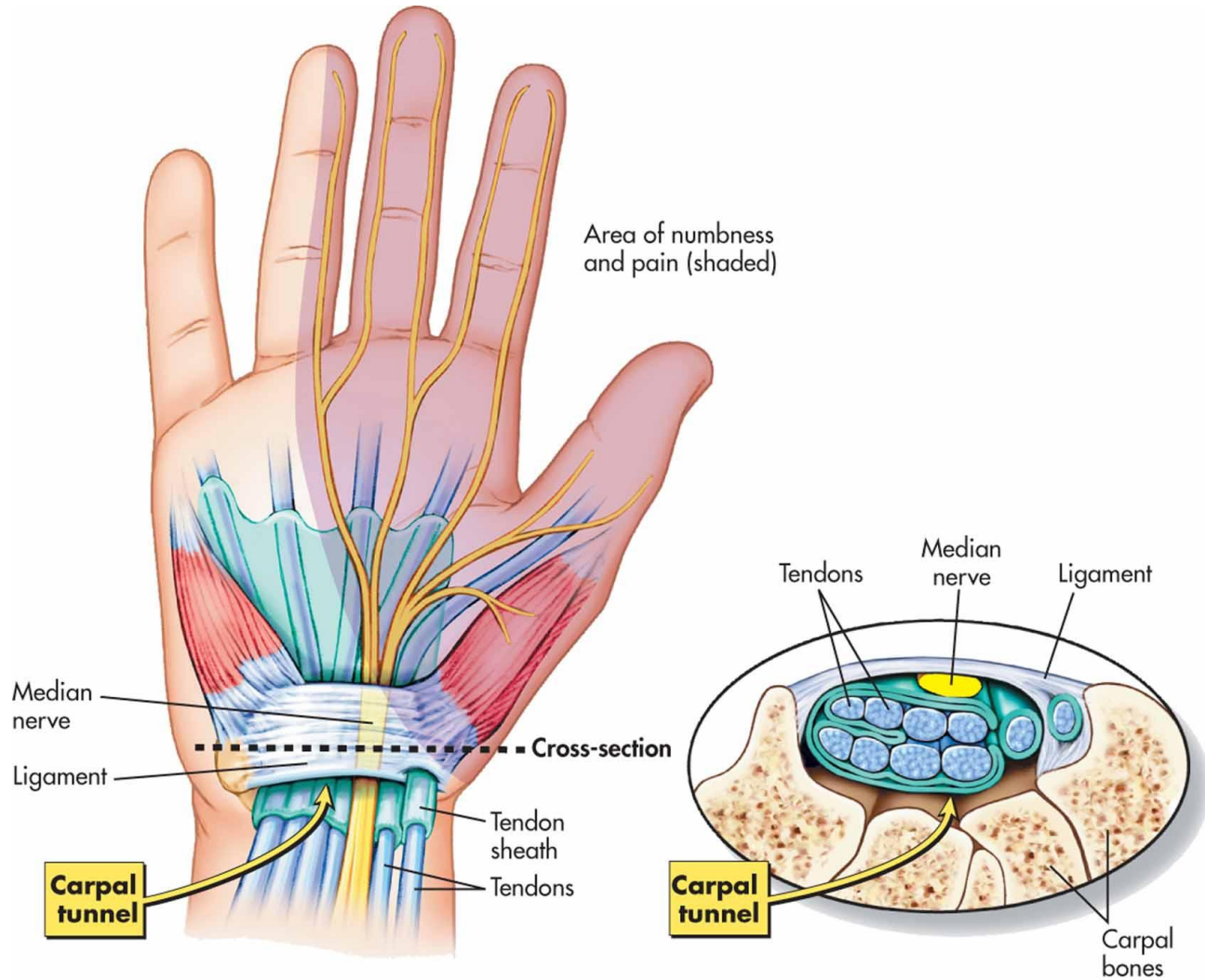
Note: these reference slides are available in the online course page

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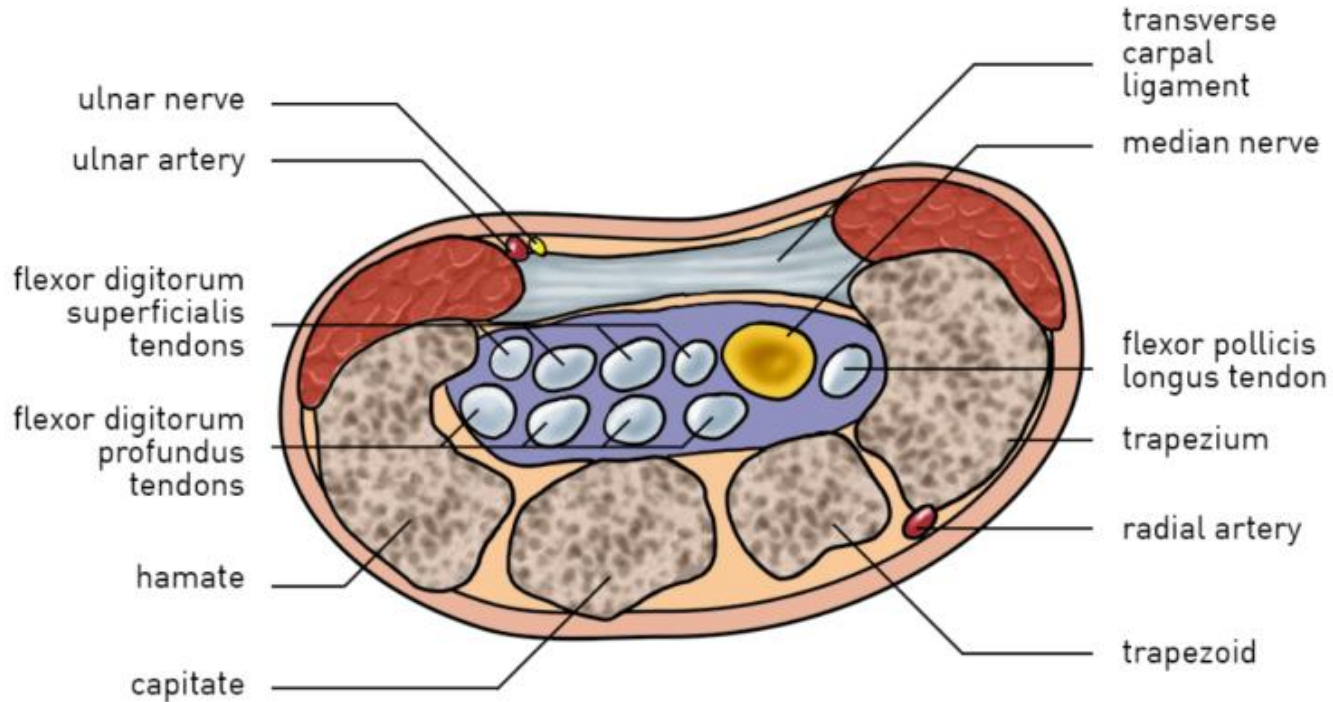
- What is Carpal Tunnel Syndrome and What Generally Causes it?

So, what is Carpal Tunnel Syndrome specifically?

- **Carpal Tunnel Syndrome presents as pain in the wrist, forearm, and hand that can range from dull to very sharp**
- **Additionally, carpal tunnel syndrome often presents with numbness and/or tingling in the thumb, index, middle, and ring fingers and that side of the hand and palm**
- **The symptoms are caused by compression of the median nerve inside of the carpal tunnel formed by the wrist bones - in general the compression is caused by inflammation of the finger and thumb flexor tendons that pass through the carpal tunnel**

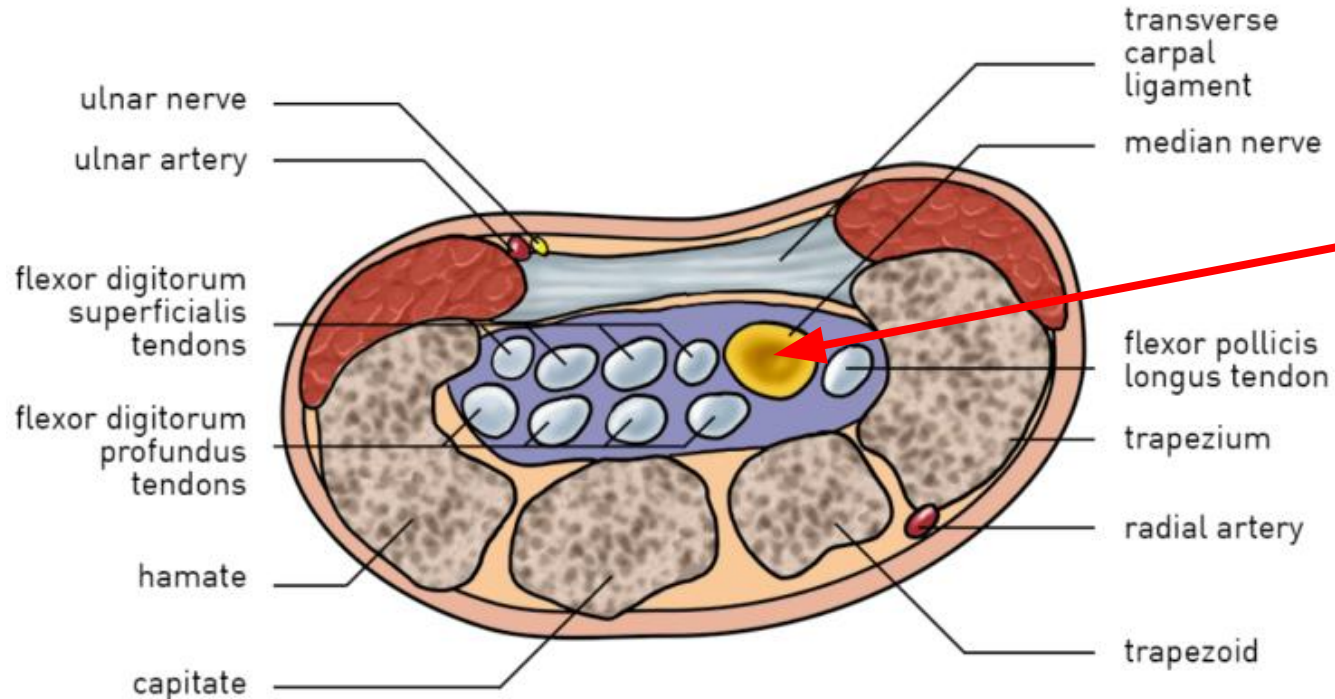


- The image below shows a cross section of the wrist, and as you can see, there are a LOT of structures running through the carpal tunnel (the area that is purple)



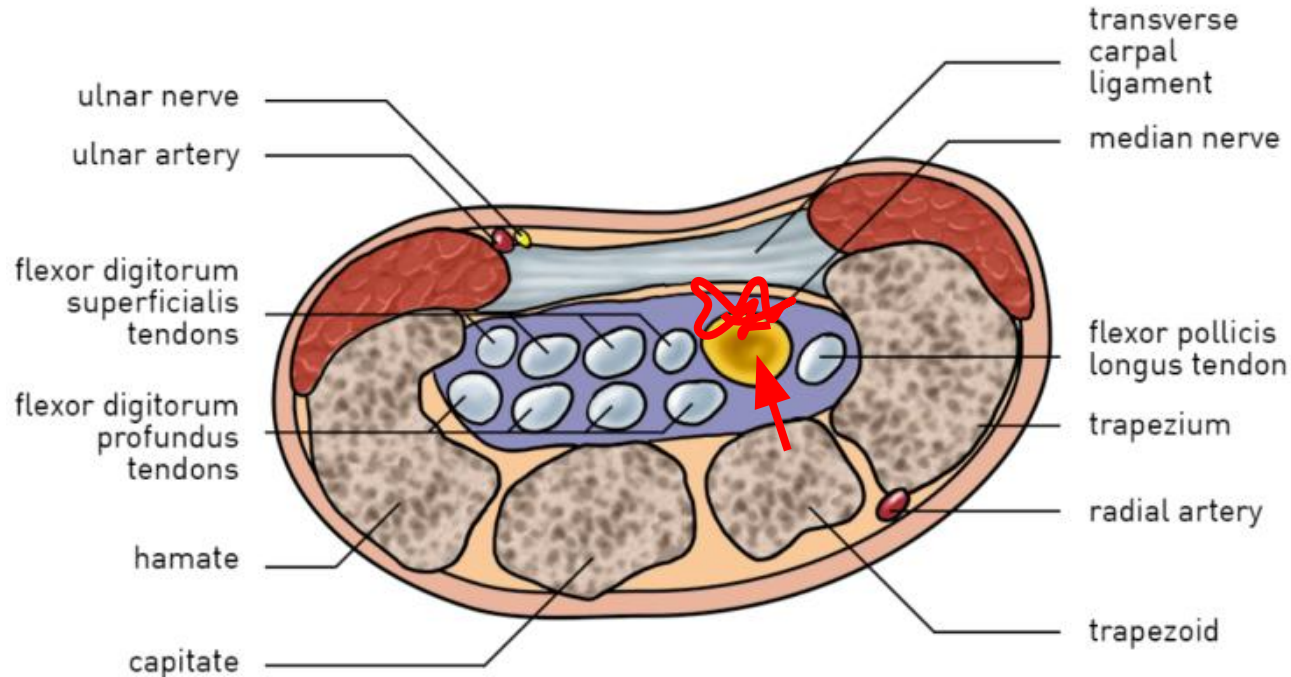
In a healthy wrist, the median nerve (in yellow on the cross section image) has enough space to function and glide along the structures next to it without compression, even during wrist flexion and extension

- The median nerve generally sits between the flexor pollicis longus tendon, the flexor digitorum superficialis and profundus tendons, and the transverse carpal ligament - although the nerve can sit more on top of the index and middle finger flexor superficialis tendons in some clients



When the flexor tendons become inflamed from **constant overuse and/or an injury**, they can compress the median nerve either constantly, or intermittently during flexion or extension movements

- When inflamed, the finger flexor tendons can push the median nerve against the transverse carpal ligament, compressing it, and potentially causing a variety of nerve compression symptoms including achy and sharp pain, numbness, tingling, and loss of grip strength



Some Basic Concepts That You & Clients Need to know

- Due to the finger flexor tendons being “white” tissue structures (mostly connective tissue, little to no blood vessels) they take a lot longer to heal as compared to muscles, skin, and other tissues that have plenty of bloodflow
- Like other types of injuries to “white” tissue, bracing the area and avoiding activities that put pressure on it are required to allow the body enough time to fully heal and “shrink” the inflammation of the tendons that are causing the median nerve to be compressed
- The quickest way to heal any “white” structure is to eliminate all activities that use it, give it 2-8 weeks to heal while slowly reintroducing activities starting with very limited amounts of time and slowly increasing time until they can be performed normally without symptoms
- This can be very difficult to stick to if your work involves regular repetitive motions such as typing for long periods, thus making the possibility of re-injury and recurring symptoms much more likely

Some Basic Concepts That You & Clients Need to know

- **Many fitness activities can exacerbate the problem by adding stress to the flexor muscles including motions in plank and “tabletop” positions as well as yoga poses such as downward dog, etc.**
- **Weightlifting activities can also exacerbate the condition due to needing the “grip” the weights, barbells, kettlebells, handles, ropes, etc**
- **Massage therapists are also prone to carpal tunnel syndrome especially if they perform techniques that involve gripping tissues (petrissage for instance) or bending the wrist**
- **Other activities that are prone to carpal tunnel syndrome are playing a musical instrument, painting, hair styling, cooking and serving food, construction work, gaming and many others**

Some Basic Concepts That You & Clients Need to know

- **Activities that put the wrist in a non-neutral position under stress are more likely to lead to symptoms as flexing or extending the wrist stretches the tendons in the carpal tunnel and also pushes them against the transverse carpal ligament**
- **Therefore, modifying regular activities so that the wrist stays in a neutral position will help heal faster**
 - Getting a wrist rest that lifts the wrist while typing
 - Switching plank hand position from palm on the floor to a fist (with cushioning)
 - Changing the angle of activities to allow force to come more from the elbow and shoulder than the wrist
- **In addition to rest, support bracing can help speed up the recovery including kinesio tape, and wrist braces**

Examples of Wrist Braces

Adjustable brace



Compression Gloves



Example of a Brace Using Kinesio Tape



What causes the inflammation of the flexor tendons that precede Carpal Tunnel Syndrome?

- Like other “white” tissue conditions (plantar fasciitis, achilles tendonitis, tennis elbow, etc) the inflammation (ie the “itis”) of the tendons in the carpal tunnel is usually caused by long term wear and tear from repetitive stress activities
- These activities cause subtle micro tears in the tendons throughout the workday that build up over weeks, months, and years, reaching the point at which the body can no longer fully heal the tendons during sleep at night

What causes the inflammation of the flexor tendons that precede Carpal Tunnel Syndrome?

- Once this “tipping point” is reached, normal daily activities will trigger enough inflammation to increase the size of the tendons in the carpal tunnel and cause compression on the median nerve
- Depending on how long the issue has been going on un-addressed, it may take days, to weeks, and even months to fully resolve and allow normal activities without triggering symptoms
- Even after symptoms abate, the condition can remain highly vulnerable to relapses if the client disengages with self-care practices such as regular stretching, taking breaks throughout the workday and repetitive stress activities, and others

The most important thing that you & clients need to know:
It's not likely to heal on its own...

- **Once triggered, it is very unlikely that carpal tunnel syndrome will heal on its own, especially if the client cannot easily take a longer break from triggering activities**
- **Many seemingly simple daily activities that are difficult to avoid all require using the flexor tendons including washing dishes, cooking, doing laundry, putting away groceries, etc, making it very easy to re-trigger inflammation and restart a cycle of symptoms**

The most important thing that you & clients need to know:
It's not likely to heal on its own...

- I've worked with 100's of clients with carpal tunnel syndrome (and related pain patterns such as tennis elbow, golfer elbow, text thumb, etc) and in most cases recovery has required a period of disengaging in activities in addition to the on the table work to provide long term relief
- The good news is that the condition is highly treatable with a combination of bodywork, self care, and short term use of anti-inflammatory medications like ibuprofen

The most important thing that you & clients need to know: It's not likely to heal on its own...

- The one case I've run across where surgery was required involved a client who practiced piano 3-4 hours per day and simply refused to disengage with that activity in order to let herself heal.
- Bodywork treatments did provide short term relief but since she continued to engage in the triggering activity, could not provide a lasting solution.
- There is a surgical intervention that can be performed that cuts the transverse carpal ligament to relieve compression on the median nerve, but this should be used only as a last resort or in cases where the nerve compression has existed so long that there is a danger of long term nerve damage if not addressed immediately (which was the case with the piano playing client above).

The most important thing that you & clients need to know:
It's not likely to heal on its own...

- **The surgery for carpal tunnel syndrome has pros and cons, and while likely to provide immediate relief, the problem can come back later, and potentially worsen as the client doesn't learn any of the necessary self care practices needed, and the 1st stage problem of tendon inflammation hasn't been directly addressed.**
- **Therefore, it is vastly preferable that clients make the changes necessary to treat the condition without surgery**

Relieving Carpal Tunnel Syndrome

- Assessment: Bodyreading alignment +
evaluating use case posture

Carpal Tunnel Often Doesn't Have Outward Signs

- **Unlike many other conditions that will more easily correlate to outward postural signs, carpal tunnel syndrome doesn't always “look” like anything that you can pick up from bodyreading analysis**
- **That being said, there are some outwards signs that may indicate that a client is dealing with symptoms even if they don't mention it during intake such as:**
 - **Head forward posture**
 - **Protracted shoulders**
 - **Tight biceps that don't allow the elbow to rest fully open**
 - **A tendency for the client to self massage their elbows, wrists, and/or hands**

Usually clients are aware they have carpal tunnel and are coming in for it specifically

- In general, clients who have carpal tunnel are aware of it and are coming to you for specific relief for the condition
- Most clients with the condition mention it early during intake, and often it is the first thing they mention
- They may also mention some related conditions such as (if they don't asking if these exist is good follow up):
 - Golfer's or tennis elbow
 - Shoulder pain
 - Neck pain
 - Headaches
 - TMJ or jaw tension

How to Dial in your Intake for Better Results

- **Since carpal tunnel is an RSI (repetitive strain injury) it is helpful to get as clear a picture as you can of the client's use cases and habits**
- **This will help determine the most likely aggravating activities and give a better prediction for what course of treatment may be needed**
- **In general, carpal tunnel syndrome symptoms can be lessened to eliminated in 3-5 sessions if clients can follow a well designed self care program that includes stopping aggravating activities and then slowly reintroducing them**

Useful Intake Questions

1. What symptoms are you experiencing? (pain that is sharp or dull, numbness, tingling, loss of grip)
2. On a scale from 1-10, how severe are they? (1 being annoying, 10 being totally debilitating)
3. Are the symptoms constant or intermittent?
4. What activities seem to exacerbate them? (if client doesn't know, offer several one by one and see if that helps them choose)
5. How long have you been experiencing symptoms?
6. What other treatments have you tried?
7. If you have tried other treatments, do they help and to what degree?

How to Dial in your Intake for Better Results

- **Assuming the client is involved in some form of repetitive stress inducing activity such as typing, it can be very helpful to ask them to mime the activity and to look for any postural or ergonomic improvements that can be made such as:**
 - When sitting to type is their torso, spine, and head well balanced on their Sitz bones in gravity, and if not, what would help this to be achieved?
 - Do they need to lift their arms at the shoulders to type? (ideally the humerus should hang from the shoulder joint vertically in gravity allowing the shoulder to relax)
 - Do they need to bend their elbows past 90 degrees to hold a typing position?
 - Do they need to bend their wrists to type?
 - Is their screen placed so that they don't have to shift their head forward to read?
 - If their repetitive activity is playing an instrument, food prep, bartender or barista, alter the questions above to suit their activity - the goal is to identify "extra" effort that the body is engaged in that is not necessary for the activity and work towards making the movement(s) as easy and efficient as possible

How to Dial in your Intake for Better Results

- **Any inefficiencies that you identify will often indicate places on the body where good myofascial release work will do wonders for the client and speed up their ability to make good postural changes**
- **These need to be backed up with awareness homework for clients to help them find more efficient postures to work in and notice when they fall into old patterns**

How to Dial in your Intake for Better Results

- **Based on the answers a client gives you, they can help you craft a basic outline of proposed treatments and self-care practices**
- **For less severe symptoms that haven't been going on too long, most clients can find long term relief in 1-3 sessions, if they can also take more breaks during the activities, and do a small amount more of self care such as stretching more and the occasional anti-inflammatory**
- **For more severe symptoms that have been going on for a while, clients may need 6-10 sessions, a partial to total stop in aggravating activities, and a set regimen of self care practices including stretching, PT exercises, regular contrast bathing, and a slow reintroduction of activities until they can be performed without symptoms restarting**

How to Dial in your Intake for Better Results

- **Since each client's case likely sits somewhere between these two potentials, it is often helpful to present both to clients and let them know they'll likely land somewhere in the middle**
- **You will usually get more clarity as to how long treatments will take after you see the results of the first session or two and it will help the client to know that you will be continually evaluating their progress and altering the treatment plan to suit their specific case**

How to Dial in your Outtake for Better Results

- **Most clients will feel better immediately after a treatment, but some will feel “beat up” or not sure and may need a day or two to assess**
- **Outtake questions are just as important as intake questions to help determine if the treatments and overall plan are working such as the following:**
 - **How much better do you (or don't you) feel? (a bit, to a lot, to “cured”)**
 - **Are you going to be able to partially or totally pause the most likely activities that are causing this over the next 2-6 weeks? Or are there simply some things like typing that will be unavoidable?**
 - **Can you set aside 15-20 minutes a day for self care practices?**

How to Dial in your Outtake for Better Results

- **Some clients will already be keeping a close watch on their symptoms and seeing what makes them better or worse and you should encourage these clients to keep sharing this data with you throughout treatment**
- **Other clients will need to be encouraged to start keeping a symptom journal to help identify the worst aggravating activities and best self care practices**

How to Dial in your Outtake for Better Results

- **Most clients need to be made aware that progress and relief don't generally follow a perfectly straight line, ie even as things start to improve there may be “bad days” or flare ups**
- **The goal is bringing the overall level of symptoms down over time while providing more support to the client that they can practice on their own so that they can manage flare ups better**
- **When they start feeling better, most clients (and let's face it, us too) stop doing self care practices, or push too hard into activities causing a flare up or restart of their symptoms cycle**

How to Dial in your Outtake for Better Results

- **Thankfully, having gotten better before, they are better equipped to know what to do when symptoms restart and can usually manage without the same frequency of treatments**
- **Clients will appreciate you saying directly that your goal is to “get them to the point where they don’t need you anymore” - giving them the idea that you aren’t trying to rope them into endless treatments will make them less resistant to the need for multiple sessions to truly get to long term relief of symptoms**

Be Clear on the Difference Between an Assessment and a Medical Diagnosis

- In NYC, a licensed massage therapist is not ethically allowed to call anything they find a “diagnosis” and this is likely true in most localities (check your local licensure regulations). We *are* allowed to make a professional assessment of client conditions and to treat based on this assessment without needing a formal medical diagnosis beforehand.
- We want to be very clear with our clients that we are giving them a professional assessment but that they will need to seek a diagnosis from a doctor or physical therapist to confirm the assessment in order to qualify for possible insurance coverage for physical therapy (and in rarer cases surgery)

Relieving Carpal Tunnel Syndrome

- Making a Treatment Plan for Clients & Treatment Demonstration

Common Goals for Carpal Tunnel Sessions

- **Explain the condition and educate the client as to the likely possibilities and impacts it will have including what to expect in order to improve it - this is one of those conditions where client education is equally if not more important than table work**
- **Myofascial release of all musculature of the forearm, and any additional fascial chains that are restricted in the upper arm, shoulder, and neck (see next slide for more detail)**
- **Identify additional joints and muscle groups throughout the body that are overcompensating for poor ergonomics**

Common Goals for Carpal Tunnel Sessions

- Lengthen and free up all 3 major muscle groups in the forearm from each other (similar to treating compartment syndrome in the lower leg) - flexors, extensors, and rotators
- Improve gliding of flexor tendons in the sheaths behind the transverse carpal ligament
- Create freedom and gliding of the thumb muscles and distinguish them from the flexors and rotators of the forearm
- Improve ROM in the elbow to allow it to rest more fully open
- Improve ROM in the shoulder joint
- Improve ROM and placement of the shoulder girdle

Special Goals for Carpal Tunnel Sessions

- **Improve cervical curvature and decompress brachial plexus outlet**
- **Work to relieve head forward posture Balance head on top of spine**
- **Improve pelvic alignment to give support for the spine and head to align vertically in gravity when sitting**

Consider working entirely in Supine in first session so that you can easily communicate with client while working

- Establishing good communication on what intensity level the client is experience with myofascial release work, as well as how painful or not ROM assessments are is important, especially during the first session
- Doing the first session in supine will allow you to more easily talk with the client, as well as notice changes in breathing and facial expressions
- In addition, supine allows for a great range of motion in the shoulder and arm than prone and gives you an opportunity to start with ROM tests on the affected wrist(s) so that the client feels like you are immediately addressing their main concern
- For our example treatment, we'll start with those, then switch to working on quads and major hip flexors to improve sitting posture, then coming back to direct work on the entire arm

Consider Swapping some “Table Time” for more time to explain the condition and give homework practices

- While the hands-on treatments *are* important, the client’s understanding of the condition and the need to make significant short and medium term lifestyle changes is *equally, if not more important*
- Be willing to spend less time on the table and more time explaining the anatomy involved, talking through their daily habits to look for contributing factors, and spend time to make sure they have a solid grasp of self care practices to do on their own at home
- For a normal 60 minute session, I’d give at least 10 minutes of this over to the above

Proposed Treatment Sequence: 50 minutes in supine

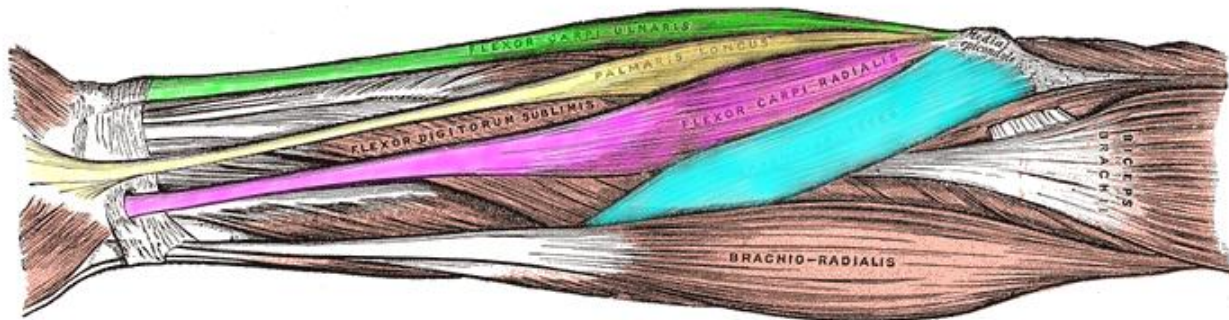
- ROM tests on the affected wrist(s), some basic opening stretches and traction of the arms
- Fascial release of front line of the leg from knee up to hip to release hip flexion (explain to the client that we are starting here to improve sitting posture then working up towards the arm)
- Pin & stretch releases of psoas and iliacus
- Hold release for diaphragm
- Cross body fascial release of pec majors
- Fascial release of pecs from shoulder to sternum while trying to help shoulder girdle ease backwards (upper spiral lines pull on obliques and wrap through the shoulder girdle)

Proposed Treatment Sequence: 50 minutes in supine

- **Trigger point releases for pec minor, sliding under pec major while trying to glide scapula into a more neutral position**
- **Fascial release of serratus anterior**
- **ART release of subscapularis**
- **Fascial release of coracobrachialis, biceps brachii, and brachialis**

- While we will work on many of the muscles in the forearm in this session, it's not necessary to single out and work on every possible structure that exists in the forearm in any single session
- As you are working and starting to assess where ROM limitations exist, you'll be able to better target which exact muscles are most contributing to a specific client's condition
- For this session 1, we'll work on most of the main muscles that affect the wrist, palm, and fingers, but not all

Superficial muscles of the anterior forearm



Pronator teres



Flexor carpi ulnaris



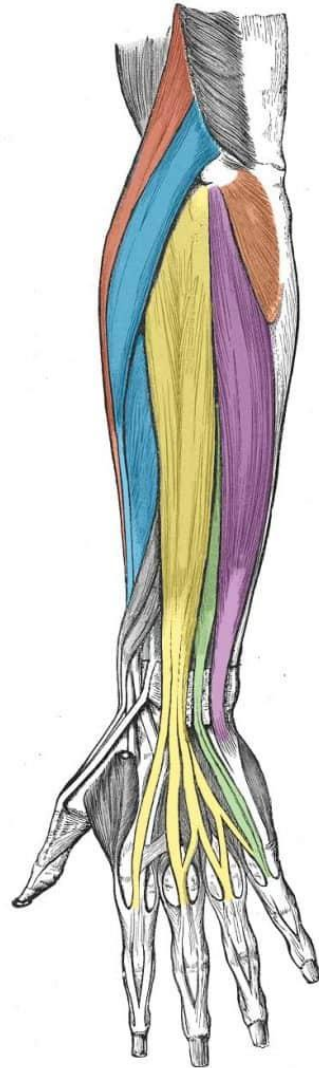
Flexor carpi radialis









Palmaris longus

Proposed Treatment Sequence: 50 minutes in supine Anterior Forearm Sequence

- **ART releases of anterior forearm flexors with client making and releasing a fist**
- **ART releases of anterior forearm rotators with client making and release a fist while rotating and releasing the hand**
- **Fascial release of brachioradialis**
- **Apply PNF stretches to the forearm flexors**



-  **Brachioradialis**
-  **Extensor carpi radialis longus and brevis**
-  **Extensor digitorum**
-  **Extensor digiti minimi**
-  **Extensor carpi ulnaris**
-  **Anconeus**

Proposed Treatment Sequence: 50 minutes in supine Posterior Forearm Sequence

- **ART releases of posterior forearm extensors with client pressing palm down while lifting fingers with the goal of helping the brain to separate wrist flexion from finger extension**
- **ART releases of posterior forearm rotators with client making and release a fist while rotating and releasing the hand**
- **Apply PNF stretches to the forearm extensors**
- **Gentle traction to the entire arm using the hand cupped in both of your hands to decompress the wrist and elbow**

Proposed Treatment Sequence: 50 minutes in supine

- **Neck sequence - if time is limited work on SCM and scalenes only then apply gentle cervical traction and ROM techniques**
- **End with a suboccipital hold**

Relieving Carpal Tunnel Syndrome

- Giving Homework: Examples of At Home Self Care for Carpal Tunnel Syndrome

Client Homework Practices (demonstrate/explain each)

- **“Aikido” wrist and hand stretches - client should perform these multiple times a day on breaks from typing**
- **Self pin & stretch releases that client can do on their own at end of day**
- **Wall stretch for forearm flexors and anterior fascial line of arm**
- **Contrast bathing protocol**

Bracing Support

- Kinesio taping as bracing to support abs while healing: <https://amzn.to/4biRkNi>
- Full wrist brace: <https://amzn.to/4bjQzTT>
- Lighter wrist brace: <https://amzn.to/3RPHoDz>

* Full disclosure, these links are amazon associates links - Bodyworks DW does get a small commission from sales

Relieving Carpal Tunnel Syndrome

- Q & A
- How to download slides, get your certificates, when video will be available
- Our upcoming 2 day live workshops on ribcage & shoulders!