

Carpal Tunnel Syndrome Awareness

COMMUNITY AWARENESS

Vedika Kanaki, Isha Suba, Bhanu Surabi
Upadhyayula

Secondary Division – Chapter #32411
Mountain House High School, California

Ages: 16-60

Total Expected Interactions: 25,360

Research: Carpal tunnel syndrome occurs when the median nerve is significantly compressed, narrowed, or pinched. The risk of contracting this condition increases by age, but there are many other contributing factors such as medical conditions, injuries, activities, and gender (John Hopkins Medicine, 2016). CTS has similar symptoms to other conditions such as rheumatoid arthritis, cervical radiculopathy syndrome, cubital tunnel syndrome, and De Quervain's tenosynovitis. The specific symptoms of CTS can include tingling sensations, numbness, pain, and inflammation but can become more severe over time if left untreated (National Institute of Neurological Disorder and Stroke, 2020). After an appropriate prognosis is made, various treatments will also be available depending on the severity of their case and the patient's personal medical history. The different methods to treat this condition include, but are not limited to, wrist splints, anti-inflammatory drugs, and open carpal tunnel surgery (Cleveland Clinic, 2019). To prevent CTS, simple lifestyle changes such as changing sleeping positions can be made. In addition, individuals should practice stretches recommended by credible sources. Although CTS can have long-lasting effects, learning about the condition can prevent severe cases of carpal tunnel.

Selection of the Campaign Issue: Carpal tunnel syndrome (CTS) is a condition that impacts over 8 million people each year. Yet, very few adults and teenagers are aware of what this condition is and how everyday activities are increasing their risk for contracting this condition (Orthopedic Center of Arlington, 2021). With the ongoing pandemic and stay at home orders throughout the country, people of all age groups are stuck indoors and spending long periods of time on technology. Continuously typing or playing video games without taking the proper precautions can increase everyone's risk

of developing CTS now or in the future. Women especially are almost 3 times more likely to develop carpal tunnel compared to men (National Institute of Neurological Disorders and Stroke, 2020). With an increasing number of people becoming at risk for carpal tunnel syndrome, we chose to educate our community about this condition through our community awareness campaign.

Goals and Objectives: Our project had three main objectives. Our first objective was to educate the community about the symptoms, causes, prevention methods, and treatments of carpal tunnel syndrome. The second objective was to promote awareness about the condition amongst more people. Lastly, our third objective was to get the community involved in practicing prevention methods to reduce risk of carpal tunnel syndrome.

Accomplishments, Effectiveness, Impact, and Partnerships: To accomplish our goal, we partnered with several organizations in our area. Our article in Mountain House Matters is approximated to reach more than 23,000 people in Mountain House/Tracy (a majority of them being adults). We also reached many adults through our educational page on Facebook, which has 83 likes and has reached over 2,200 people. To raise awareness about CTS and its prevention methods in a younger population, we also created an account on Instagram (which has 118 followers). By posting our flyers, infographics, website updates, and youtube videos on these social media platforms, we were able to provide adults and teencagers with information on carpal tunnel syndrome that is both easy to access and understand. To educate teenagers at Mountain House High School (MHHS) about preventative stretches related to carpal tunnel syndrome, we held two virtual informational workshops, with 19 participants, and published an

article about CTS in the MHHS Mustang Messenger Blog. Furthermore, our partnership with the Foundation of Medical Relief on Children (FIMRC) has helped us spread awareness about CTS in teenagers throughout the world as the organization circulates our flyers and youtube videos through their social media platforms. We have been able to reach 900+ people through this partnership. To ensure that the information that we are circulating is accurate, we also partnered with Dr. Sejal Patel (general physician) and Dr. Denisse Neilson (certified hand therapist) to learn more in-depth about how carpal tunnel syndrome is managed by health professionals. Our interviews with these doctors were published on our youtube channel and accumulated 66 views. In total, our youtube channel has published 6 videos and has 251 views with 38 subscribers. Our website which published updates on all of our projects and flyers received 74 views. Our most recent project is a call to action encouraging our community to send in pictures of them practicing one of the various prevention methods mentioned in our content. Through our campaign, we were able to raise awareness about carpal tunnel syndrome in approximately 25,360 people and educate them about the symptoms, treatment, and prevention methods of this condition.

Project #1

December 22

83 Followers
Reached 2200 People

Our first activity was social media-based. Our following on this Facebook page is primarily adults. We have posted various flyers, infographics, and promoted our youtube videos on this page to raise awareness about carpal tunnel syndrome.

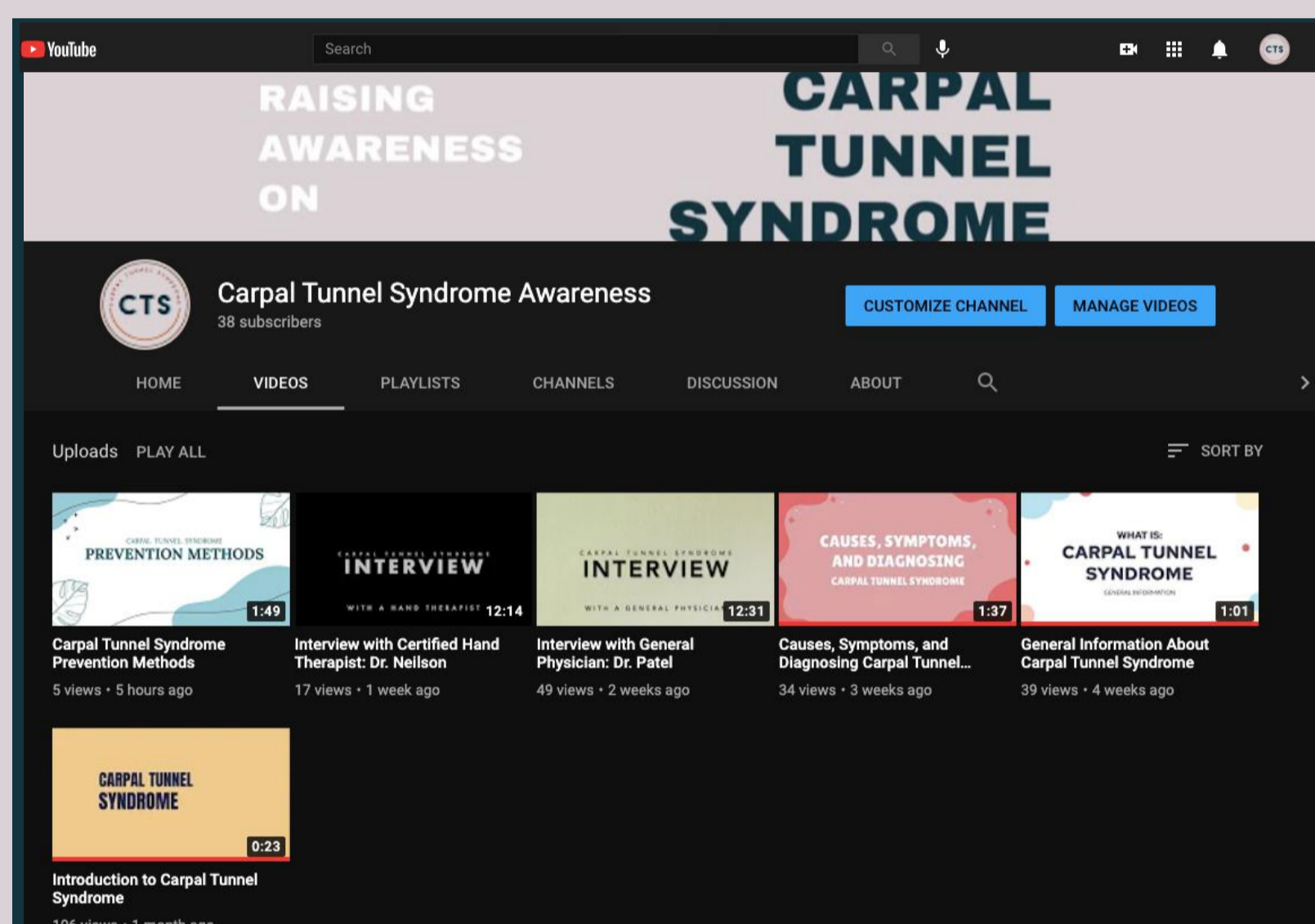


Project #2

January 2nd

38 Subscribers
251 Views

We created a youtube channel which contains several short videos created by us about CTS. These videos explore general information, symptoms, treatments, and prevention methods of CTS.

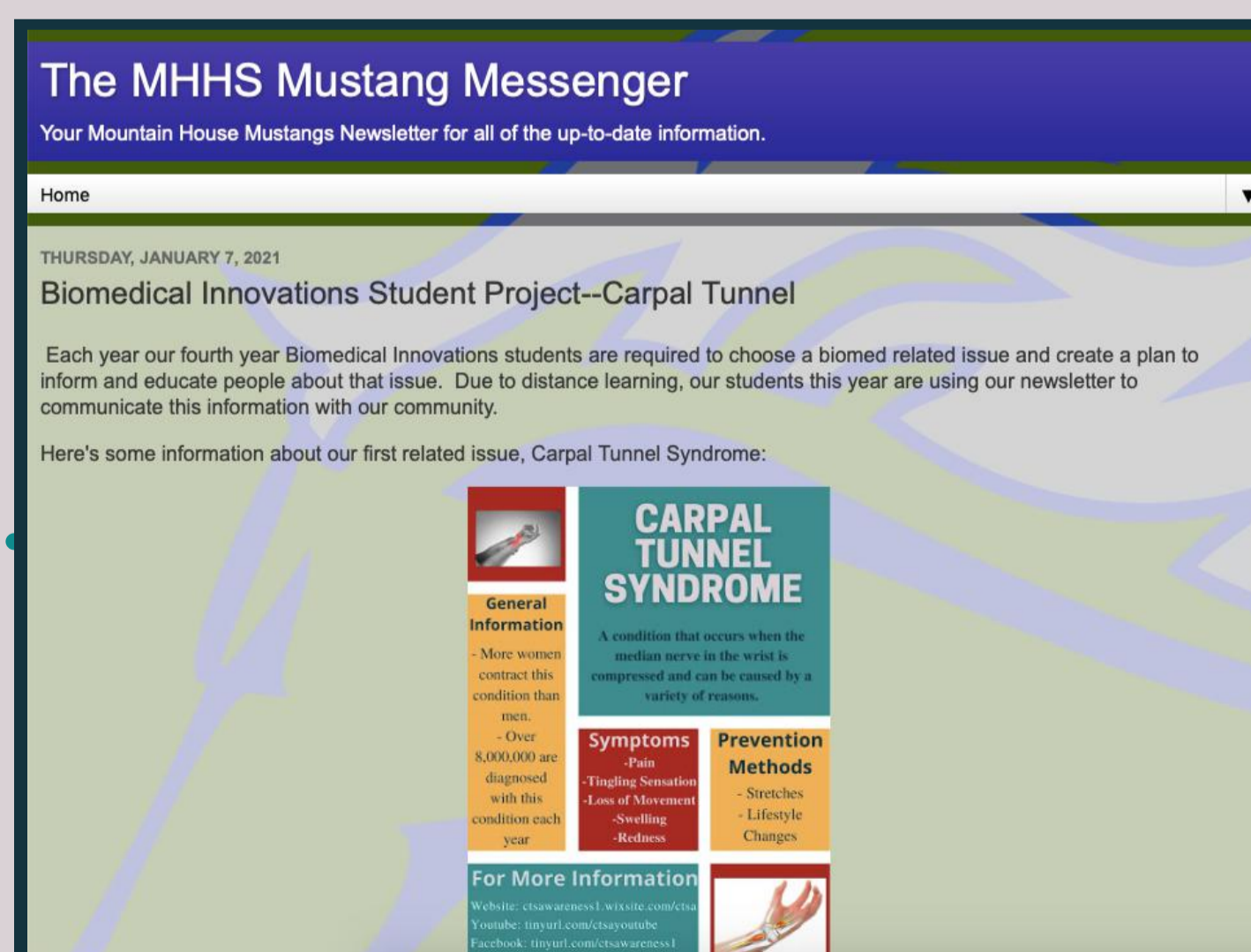


Project #3

January 7

759 Interactions

Our first flyer and introduction youtube video were shared on our school newsletter. This helped send general information out to the community in order to generate in more interest and spread awareness.



CARPAL TUNNEL SYNDROME

Prevention Methods/Stretches

HEALTHY LIVING

- HEALTHY LIFESTYLE(NO SMOKING, HEALTHY EATING)
- AVOID SLEEPING POSITIONS IN WHICH WRISTS BEND
- REST YOUR HANDS DURING REPETITIVE ACTIVITIES
- FREQUENTLY STRETCH, HANDS, AND WRISTS
- IMPROVE YOUR POSTURE AND BODY MECHANICS

TENDON SLIDE

THE STRETCH BEGINS WITH A STRAIGHT HAND, WHICH MOVES INTO A HOOK FIST, FOLLOWED BY A FULL FIST, AND ENDS IN A STRAIGHT FIST (HARVARD HEALTH, 2014).



by Scott Leighton / CC BY
(https://www.health.harvard.edu/pain/can-you-avoid-carpal-tunnel-syndrome)

WRIST EXTENSION

START WITH YOUR ARM STRAIGHTENED AND YOUR WRIST FLEXED UPWARD. THEN, USING YOUR OPPOSITE HAND GENTLY APPLY PRESSURE ACROSS THE PALM AND PULL TOWARDS YOU UNTIL YOU FEEL THE STRETCH. HOLD THIS POSITION FOR 15 SECONDS.



by American Academy of Orthopaedic Surgeons / CC BY
(https://orthoinfo.aaos.org/globalassets/pdfs/a00789_theapeutic-exercise-program-for-carpal-tunnel_final.pdf)

WRIST FLEXION

START WITH A STRAIGHTENED OUT ARM. THE PALM IS FACING DOWN AND THE FINGERS ARE ALSO POINTING DOWN. GENTLY PULL YOUR HAND TOWARD YOUR BODY UNTIL YOU FEEL A STRETCH ON THE OUTSIDE OF YOUR FOREARM



by American Academy of Orthopaedic Surgeons / CC BY
(https://orthoinfo.aaos.org/globalassets/pdfs/a00789_theapeutic-exercise-program-for-carpal-tunnel_final.pdf)

FOR MORE INFORMATION VISIT

Facebook: [tinyurl.com/ctsawareness1](https://www.facebook.com/ctsawareness1)
 Youtube: [tinyurl.com/ctsayoutube](https://www.youtube.com/ctsayoutube)
 Website: [ctsawareness1.wixsite.com/ctsa](https://www.ctsawareness1.wixsite.com/ctsa)

Carpal Tunnel Syndrome

MILD

- Last for less than a year
- Very little weakness in the hand
- Can be treated without surgery
- Slight tingling, numbness, or itching amongst the fingers.



MODERATE

- Lasts shorter or longer than a year
- Signs of weakness in the hand
- Can also be treated without surgery
- The numbness and tingling gets worse and can cause irritation while trying to sleep.



SEVERE

- Lasts longer than a year
- Prominent signs of weakness in the hand
- Symptoms will be prominent during the day as well
- Common hand activities will be hard to complete
- Can only be treated by open carpal tunnel surgery



CARPAL TUNNEL SYNDROME

Do's and Don'ts

- ✓ **Do** Stretch Before Working Out
- ✓ **Do** take regular breaks during strenuous wrist activities
- ✓ **Do** practice preventative stretches
- ✓ **Do** take breaks every 30-45 mins from electronics
- ✓ **Do** maintain good general health
- ✗ **Don't** sleep in incorrect positions placing strain on the wrists
- ✗ **Don't** completely stop using the wrist and hand
- ✗ **Don't** strain your wrists and fingers carrying heavy items
- ✗ **Don't** use fingers and thumbs to support body weight

CARPAL TUNNEL SYNDROME

A condition that occurs when the median nerve in the wrist is compressed and can be caused by a variety of reasons.

General Information

- More women contract this condition than men.
- Over 8,000,000 are diagnosed with this condition each year

Symptoms

- Pain
- Tingling Sensation
- Loss of Movement
- Swelling
- Redness

Prevention Methods

- Stretches
- Lifestyle Changes

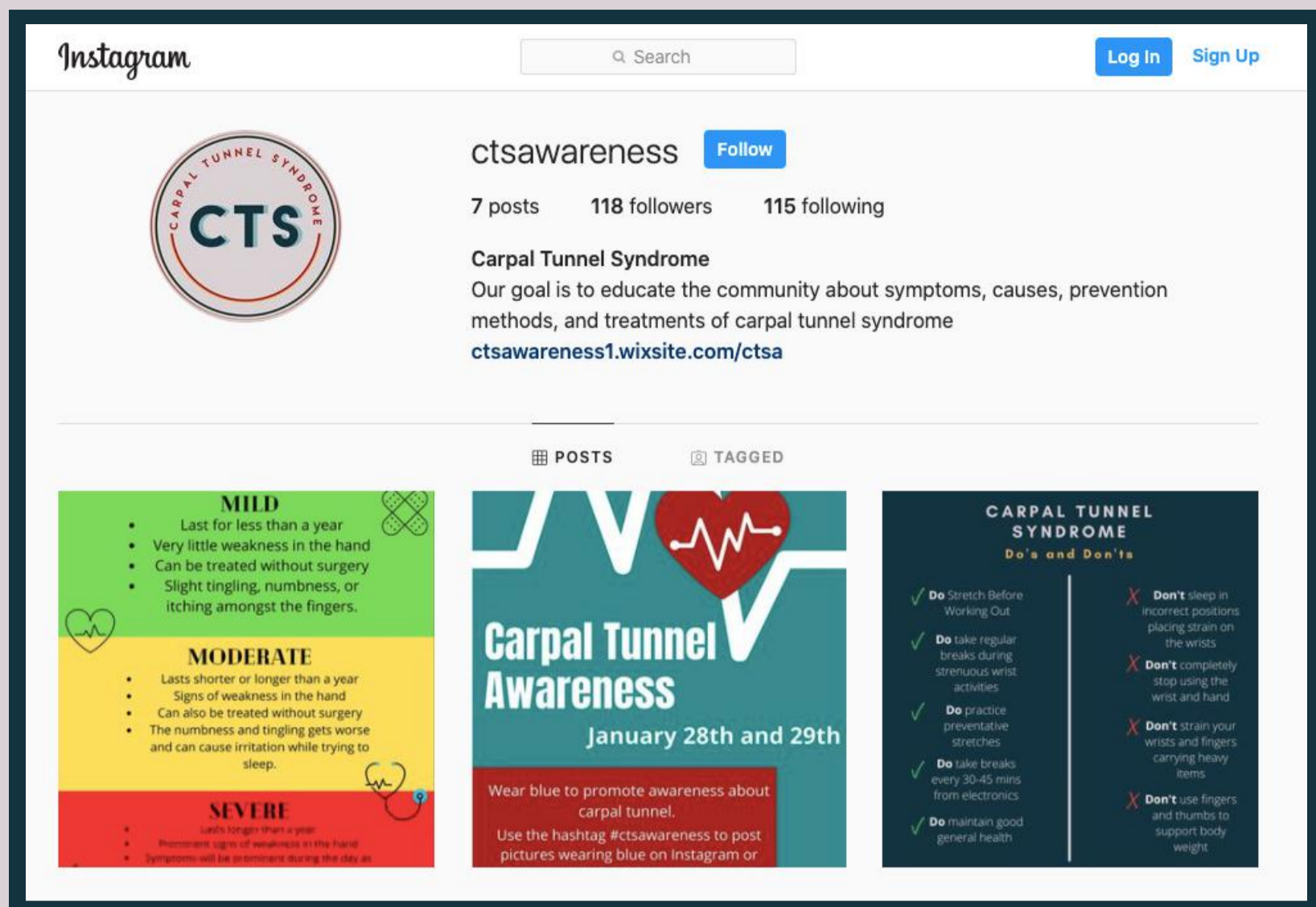
For More Information

Website: [ctsawareness1.wixsite.com/ctsa](https://www.ctsawareness1.wixsite.com/ctsa)
 Youtube: [tinyurl.com/ctsayoutube](https://www.youtube.com/ctsayoutube)
 Facebook: [tinyurl.com/ctsawareness1](https://www.facebook.com/ctsawareness1)



Flyers

These are the flyers and infographics used in our various projects. We posted these on our social media platforms, website, and spread them to the community through our partnership.



Project #4

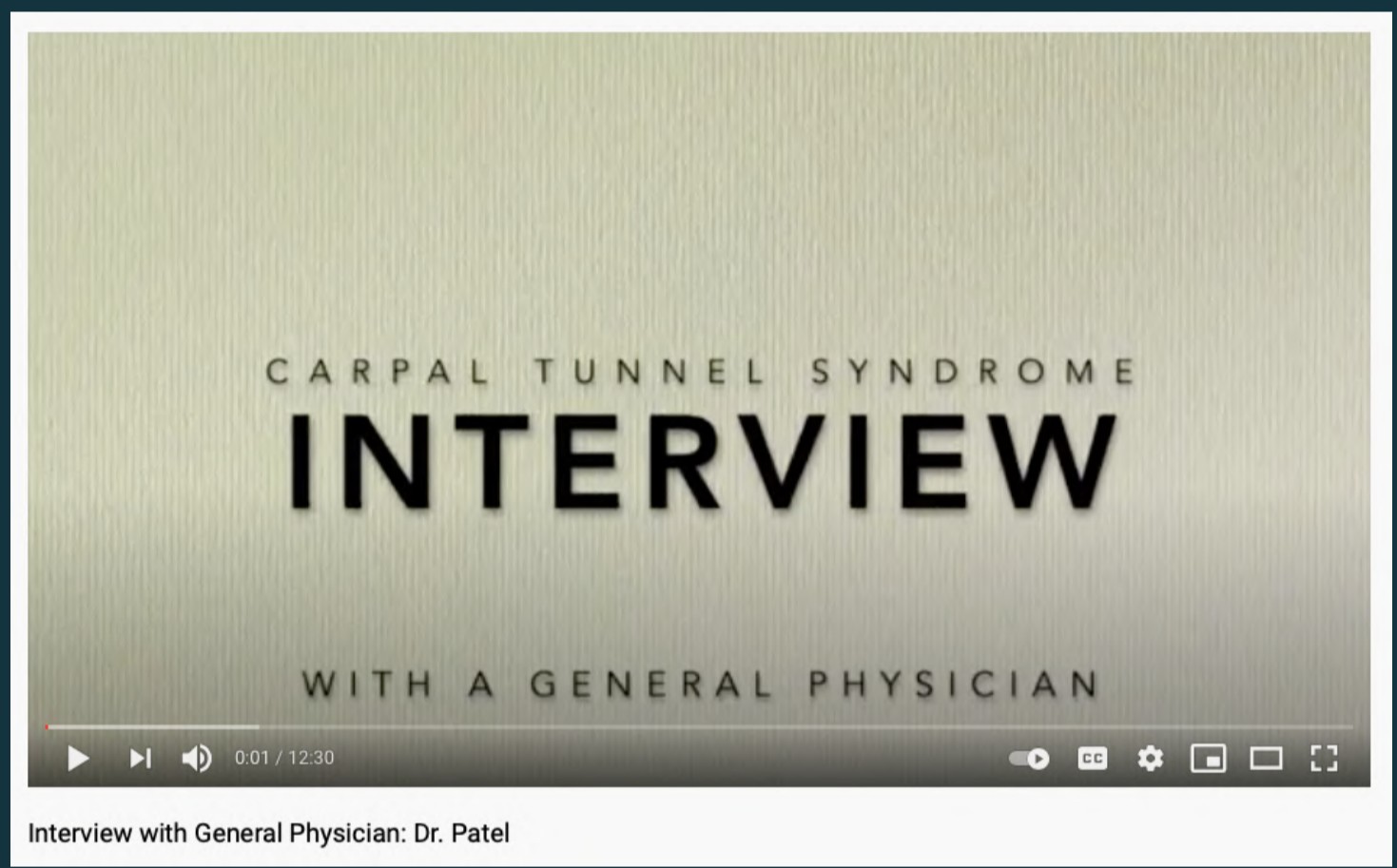
January 17
 118 Followers

Our following on this Instagram account is primarily teenagers ages 14-19. We have posted various flyers, infographics, and YouTube videos (all created by us) on this page to raise awareness about carpal tunnel syndrome within a younger age group.

Project #5

January 26
 50 Views

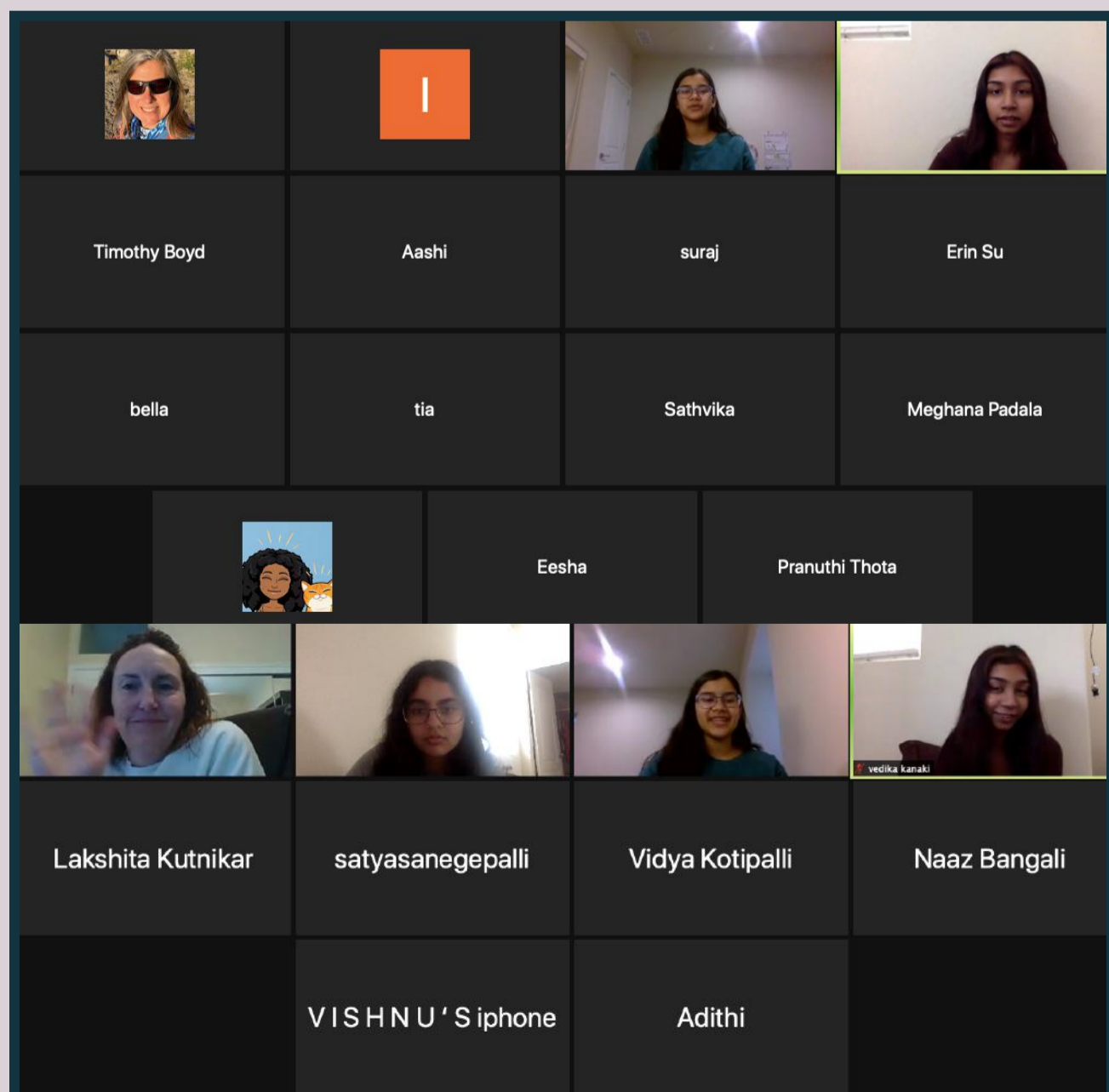
We conducted an interview over Zoom with Dr. Patel, MD (a general physician) to learn more in-depth about carpal tunnel syndrome and her experience treating this condition. Our interview was published on YouTube and circulated via social media.



Project #6

January 27th
 19 Members

We conducted 2 virtual workshops open to students and teachers of Mountain House High School. We discussed general information, prevention methods, symptoms, causes, and treatments of CTS followed by a game of Kahoot to test what the participants learned.



Project #7

February 3

17 Views

We partnered with hand therapist Dr. Neilson, CHT to ask more questions about carpal tunnel syndrome and her experience with this condition. We conducted a zoom interview which was recorded and posted to the public on our Youtube channel.



Project #8

In progress

989 Interactions
(expected: April-May)

We partnered with Foundation of International Medical Relief of Children (FIMRC) to spread our flyers (pg. 3) and youtube videos (project #2) to a wider population including international communities. This project is still in progress.



Project #9

In Progress

23,000 interactions
(expected release April)

We wrote an informative article about carpal tunnel syndrome and its causes, symptoms, treatments, and prevention methods. This article will be published in Mountain House Matters (a local newspaper).

What is Carpal Tunnel Syndrome?

Did you know that over eight million people are affected each year by carpal tunnel syndrome (CTS)? This condition occurs when the median nerve in the wrist becomes compressed. CTS starts off slowly, with mild symptoms including infrequent numbness and tingling. However, if left untreated CTS can turn into permanent nerve damage or require invasive interventions such as open carpal tunnel surgery. Despite the millions of people that contract this condition each year, many remain unaware of the causes and preventative measures of CTS or mistake it for a similar condition such as arthritis or a wrist sprain.

The most at-risk individuals for carpal tunnel syndrome are people ages thirty to sixty. Several studies have discovered that women are at a higher risk than men. With the majority of this age group currently working from home during the pandemic, it is important that everyone is aware of how to prevent this condition. The Cleveland Clinic recommends that all individuals sleep with their wrists straight, avoid flexing their wrists continuously, take breaks from repetitive wrist activities, and stretch prior to exercising. For example, everyone should take breaks every thirty minutes while using a keyboard. Those with preexisting medical conditions such as diabetes should especially follow these general guidelines since they are at an even higher risk of developing CTS.

It is very important that anyone who feels frequent numbness/tingling in their wrist, has swollen fingers, or any other type of weakness in their hand see a healthcare professional immediately to investigate if these symptoms are the result of carpal tunnel syndrome. With an early diagnosis, the patient can have several nonsurgical treatment options such as wearing a wrist splint, non-steroidal drugs (including ibuprofen), and cortisone injections. However, if the condition progresses and is severe, the best treatment option is most likely open carpal tunnel surgery, which is more invasive than the other options. To avoid surgery or permanent nerve damage due to carpal tunnel syndrome, all at-risk individuals should practice the preventative measures (especially stretches) recommended by reliable sources such as Harvard Health or the American Academy of Orthopedic Surgeons.

For more information on carpal tunnel syndrome, please visit the following platforms:

Website: ctsawareness1.wixsite.com/ctsa

Facebook: tinyurl.com/ctsawareness1

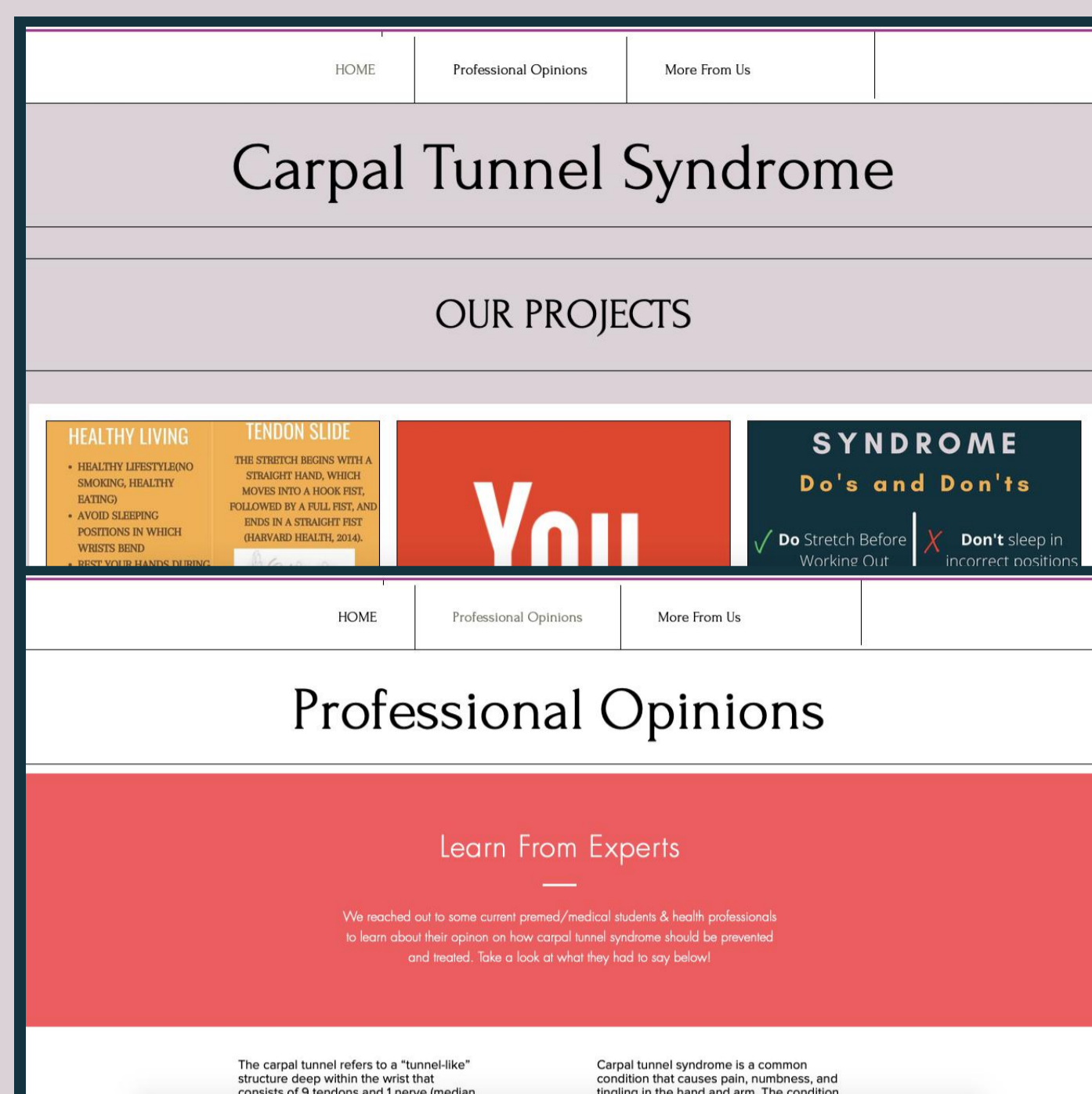
Youtube Channel: tinyurl.com/ctsayoutube

Project #10

February 2

74 Visits

Our website helped track and spread information about all our projects. Additionally, it shared the thoughts of various medical students and professionals about this condition to help our viewers gain a better understanding of carpal tunnel syndrome.



Community Partners

Project #11

March 23

TBD

In order to encourage our community members to take charge of their own lives, we held a practice prevention methods day. Using the resources we had created our community can send in pictures of themselves doing activities such as stretches, lifestyle changes and etc.

- Mountain House Matters (local newspaper)
- MHHS Mustang Messenger
- Foundation for International Medical Relief of Children
- Dr. Neilson, CHT
- Dr. Patel, MD
- Mountain House High School HOSA

References

- American Academy of Orthopedic Surgeons (2018, December). *Therapeutic Exercise Program for Carpal Tunnel Syndrome*. Retrieved from <https://orthoinfo.aaos.org/en/recovery/carpal-tunnel-syndrome-therapeutic-exercise-program/> (accessed November 30, 2020).
- Atroshi I, Gummesson C, Johnsson R, Ornstein E, Ranstam J, Rosén I. Prevalence of Carpal Tunnel Syndrome in a General Population. *JAMA*. 1999;282(2):153–158. doi:10.1001/jama.282.2.153
- Braun, K. (2010). *De Quervain's — A Cousin to Carpal Tunnel Syndrome*. Retrieved from <https://www.ncra.org/home/continuing-education/Ways-to-Earn-Continuing-Education/JCR-Article-Tests/article-tests/PDC-Test-De-Quervains-A-Cousin-to-Carpal-Tunnel-Syndrome> (accessed November 30, 2020).
- Cleveland Clinic. (2019, October 22). *Carpal Tunnel Syndrome*. Retrieved from <https://my.clevelandclinic.org/health/diseases/4005-carpal-tunnel-syndrome/management-and-treatment> (accessed November 17, 2020).
- Crozer Health (2020). *The Difference Between Arthritis and Carpal Tunnel*. Retrieved from <https://www.crozerhealth.org/health-resources/the-difference-between-arthritis-and-carpal-tunnel/> (accessed December 2, 2020).
- Faust, K., & Jennings, C. D. (2016 July). *Carpal Tunnel Syndrome*. Retrieved from <https://orthoinfo.aaos.org/en/diseases--conditions/carpal-tunnel-syndrome> (accessed November 17, 2020).
- Feuer, N. (2017, June 20). *Carpal Tunnel Syndrome vs. Cervical Radiculopathy*. Retrieved from <https://www.spine-health.com/conditions/neck-pain/carpal-tunnel-syndrome-vs-cervical-radiculopathy> (accessed December 2, 2020).
- Harvard Health Publishing (2014, August). *Can you avoid carpal tunnel syndrome?*. Retrieved from <https://www.health.harvard.edu/pain/can-you-avoid-carpal-tunnel-syndrome> (accessed November 30, 2020).
- Johns Hopkins Medicine. (2016 July). *Carpal Tunnel Syndrome*. Retrieved from <https://www.hopkinsmedicine.org/health/conditions-and-diseases/carpal-tunnel-syndrome> (accessed November 17, 2020)
- Kaiser Permanente(2020). *Physical exam for carpal tunnel syndrome*. Retrieved from <https://wa.kaiserpermanente.org/kbase/topic.jhtml?docId=hw212331> (accessed December 2, 2020)
- Massachusetts General Hospital (2016). *Acupuncture Improves Carpal Tunnel Outcomes*. Retrieved from <https://giving.massgeneral.org/acupuncture-carpal-tunnel/> (accessed December 1, 2020).
- Mid Dakota Clinic (2020). *Carpal Tunnel & Other Nerve Problems* Retrieved from <https://www.middakotaclinic.com/plasticsurgery/hand/CarpalTunnel/> (accessed December 1, 2020).
- National Institute of Neurological Disorder and Stroke. (March 2020). *Carpal Tunnel Syndrome Fact Sheet*. Retrieved from <https://www.ninds.nih.gov/Disorders/Patient-Caregiver-Education/Fact-Sheets/Carpal-Tunnel-Syndrome-Fact-Sheet> (accessed November 17, 2020).
- Potter, L. M. (2015, March 27). *7 Ways to Help Prevent Carpal Tunnel Syndrome*. Retrieved from <https://www.aurorahealthcare.org/patients-visitors/blog/7-ways-to-help-prevent-carpal-tunnel-syndrome> (accessed December 1, 2020).
- University of Michigan. (2019, June 26). *Open Carpal Tunnel Surgery for Carpal Tunnel Syndrome*. Retrieved from <https://www.uofmhealth.org/health-library/hw212359> (accessed November 17, 2020).