Typing can be dangerous to your health.

Welcome to SBH Bronx Health Talk, produced by SBH Health System and broadcast from the beautiful studios at St Barnabas Hospital in the Bronx. I'm Steven Clark.

According to experts who study workplace efficiency if you type 40 words a minute you end up pressing 12,000 keys an hour or nearly one hundred thousand keys in an eight hour day. It takes an estimated eight ounces of force to depress one key with almost 16 tons of force exercised by your fingers.

That's why it's hardly surprising that carpal tunnel syndrome or CTS affects over 5 million U.S. workers. It's the leading occupational hazard of the computer age, responsible for more days off from work than any other non-fatal injury and for about a third of all repetitive injuries in the workplace. It's also one of the most common surgical procedures in America. With us today to talk about CTS is Dr. Christopher Koontz a, hand surgeon at St. Barnabas Hospital. Welcome Dr. Koontz. So what exactly is Carpal Tunnel Syndrome?

Carpal Tunnel Syndrome is typically the compression of the median nerve at the wrist. Generally it's from inflammation or like you were talking about, repetitive use. Basically the tissue around the nerve becomes so compressive that the nerve itself becomes less functional and you can end up with nerve damage.

Now I know they talk about typing being a cause of this condition but you can also get it for other reasons as well, right?

Right, workplace injuries such as using a jackhammer, people who work in construction,a lot of people in those type of fields present with carpal tunnel but people with diabetes, people with other autoimmune diseases will come in. Basically anything that will cause inflammation around the nerve itself will cause compression. It can be from changes as you age, where ligaments become more stiff. Anything like that can also contribute to it do.

Do most people don't get it because of spending a lot of time typing?

I don't think a lot of people get it from typing but that is one of the common causes I think depending on what study you look at. There are people who say that workplace doesn't have that much of a factor into it but other people say obviously that it does so it's hard for me to say exactly but I think people with other especially around saying St. Barnabas people with other comorbidities tend to have more common presentation.

So what are the common symptoms?

Typical symptoms are going to start with numbness and tingling in the fingers, usually in the thumb, index and middle finger. Often times in half of the ring finger. You usually start at the fingertips and as time passes it will start to progress more and more down the hand. Once the numbness and tingling it'll start being intermittent as time passes and as the nerve dysfunction becomes worse then it'll become more constant and people will talk about non-stop numbness and tingling that doesn't ever go away. That will typically progress into a burning pain that people feel at night they'll wake up at night feel like they have to shake out their hands, but they're not quite sure why. That burning pain will typically be the complaint that drives people to actually come in and seek help. The last thing that you'll see is going to be muscle weakness and that's when you really have some nerve damage as opposed to just nerve symptoms. So when you have irritation early that's when you get the numbness and tingling but as the nerve becomes more and more compressed and actually starts to die then you start to have muscle weakness and you'll see the muscles in the hand will start to atrophy or get smaller and that'll be another sign that things have gotten a little more severe.

So it's not a condition that you should just sort of suck up and live with it you should get it checked out?

Absolutely. The problem is that people usually wait too long so when they come in they're already at the point of having irreparable nerve damage. That's one of the things that I tell people is that me doing a surgery for you may not make all the symptoms go away you have, but the important thing is to stop it from progressing because if you go from numbness, burning pain, things like that to actual weakness, that can affect your use of the hand and that could lead to a

hand that doesn't work in the way that you want it to.

Right, if you're getting it through excessive typing say do you get in both hands?

It's typically in both hands. It's usually one hand will be worse than the other. Often times, people don't even realize that they have it in the other hand because which ever hand is more symptomatic they think that's the only one and then when you actually do the testing you'll see that they have some degree on both sides.

How do you diagnose it?

Clinically, there's a few tests we can do. While those are pretty reliable obviously in this day and age we have to have you know more solid testing so we usually use an EMG, which is electromyography. We study the conduction of the nerve and how fast it's actually moving and conducting a signal, which is typically done by Physiatry.

I assume that surgery is not the first treatment, right?

It depends on what stage you are. If you come in and you have mild carpal tunnel there's things that we can do to try to alleviate your symptoms such as night time splinting, occupational therapy, dealing with sources of inflammation and also treating the comorbidities so if you have uncontrolled diabetes and we treat that that may alleviate the symptoms. Once you start getting to the moderate and severe levels at that point you really want to start treating it because if you wait any longer again you can get to the level of irreparable nerve damage. Usually I tell people when they're at moderate that's when we should actually do the surgery because that's when they will see the best benefit of having the nerve treated. If they wait to severe again they have symptoms that may be irreversible.

Are there surgery options?

There are surgery options. The surgery that I typically do is an endoscopic carpal tunnel release which means that rather than using the older practice of

making a maybe a two, two and a half centimeter incision in the palm, now we're making a smaller incision at the wrist and using a camera to visualize the ligament which needs to be released

And it's a relatively quick surgery?

The surgery itself is probably somewhere between 5 to 15 minutes. If we are able to do it the endoscopic way and recovery is actually pretty fast as well generally people can start to use their hand maybe three days after surgery and by the tenth day sutures come out and they're free to use their hand however they wish.

Is there rehab after that?

Most people don't need rehab because again it's a smaller procedure. We're just releasing a ligament. There's nothing that needs to heal or anything like that so people typically don't develop stiffness. Obviously there are some people who do and we have facilities here that can offer. Especially here where we have a certified hand therapist who is well versed in treating carpal tunnel.

And is it under local or general anesthesia?

Usually we do it with local sedation. There are people who would need general but that's very rare. In some cases we can actually do it just local without even doing sedation, but this is obviously going to be patient preference.

Now in general again if you're getting it because of ergonomic factors is there anything preventively that you can do?

I don't have a good answer for that unfortunately because again there are studies that have looked at that and in my opinion the data is just not reliable enough to say that doing those things will definitively help. That being said anecdotally a lot of people do get relief from changes they make in their workplace with different positioning of their wrists and their forearms and in those cases it can help. It's just not something I can say reliably.

So is it sometimes like bad mechanics. You know like you talk about pitchers who pitch with bad mechanics and they end up having Tommy John surgery? Is that like that?

It can be. If you really spend a lot of time with your wrists kind of flexed then that can compress the nerve. So if you're doing something that would kind of correct that that could help. And that's the idea that splints are when you wear them at night they take your hand out of that position of compressing the nerve to a position of kind of opening up the nerve and taking off that pressure so that would kind of be a mechanical type.

I guess carpal tunnel is probably the most common surgery you do, right?

It's one of the most common, yeah.

What other surgeries are you doing?

Trigger fingers are pretty common, which is just a tendonitis where people come in with a finger that's stuck and painful. Around this area we get a lot of trauma because it's a level one trauma hospital so we do a lot of fractures, arthritis we can treat as well. There's a lot of procedures that we have for especially thumb arthritis which would probably be the most common.

It's interesting about trigger fingers. I have a friend who's a dentist. I don't know if it's the occupational hazard for dentists but he had a trigger finger. How do those happen?

So basically it's the same idea as the carpal tunnel but instead of the nerve being compressed it's the tendon so for whatever reason the tendon itself is larger than it normally would be and the tendon itself in the finger is traveling through a tunnel so when either the tunnel gets too small or the tendon gets too big, the finer starts to stiffen up. The more that that happens then the inflammation continues to get worse. So if you had some way to get rid of that fluid then you could probably improve this which is why we initially start with conservative measures in terms of cortisone steroid injections. Often times, this will give people relief, sometimes will be permanent relief.

That's also done endoscopically too, right?

That we don't do endoscopically. There are versions of the surgery that are done endoscopically but I think that the amount of time and incision size that you're saving is not really enough in my mind to justify the cause of using a new piece so in this case we can just do the surgery, we can do it fast. There's no issues with the camera. There's no issues with towers things like that we can do the surgery and the recovery. Again is three days.

I guess again you're talking about trauma surgeries that's where rehab really plays a major role. I would think when you're dealing with people who've had significant hand injuries and you do the surgery and I know the physical therapy aspect for hands is a very specialized area and St Barnabas does have that capability here.

Oh absolutely, like you're saying I think that rehab, especially in trauma, is more important than even the surgery. The surgery is just putting things back together but the patient themselves has to heal for one, has to be compliant with the therapy. It's really going to be up to them if they are aggressive and they work hard to try to gain function back. Those patients typically have a better outcome. People who are not compliant with therapy or hesitant to go or don't want to work hard when they're there don't have as good of an outcome. So I think therapy probably is more important than like I said the surgery.

Well thank you Dr. Koontz for being here and for joining us today. For more information on services available at SBH Health System visit www.sbhny.org and thank you for joining us today on SBH Bronx Health Talk. Until next time.