Welcome to RSDSA:

RSDSA is a 36-year old not for profit organization. RSDSA’s mission is to provide support, education and hope to everyone affected by CRPS/RSD while we drive research to develop better treatments and a cure.

We invite you to join our community dedicated to working for you and your future. Being part of our RSDSA community is empowering. It’s a partnership with a power in numbers. We have a community of more than 39,000. We work to raise our community profile so that Congress, The National Institute of Health, pharmaceutical corporations, and insurers hear our collective voice!

We ask you to sign up for our free electronic eblasts at Join our Membership. When you do you will also receive our RSDSA Community Update Newsletter, information about RSDSA community events, fundraisers and other important information. Please join us on social media at Instagram, RSDSA Facebook, and Twitter.

RSDSA has a state-by-state listing of healthcare professionals interested in treating CRPS. Please call us at (203)877-3790 to obtain a listing for your state.

We also have 170 educational videos on our YouTube channel: RSDSA of America.

It’s easy to join our community. Just provide is with your email address and/or your telephone number and we will gladly enroll you. You are not alone in your fight against this horrific disorder. Please donate today by using the enclosed envelope or call us at (203)877-3790. If you choose not to join our community, please consider making a good will donation to cover the cost of our mailings. We keep your contact information confidential and do not share or sell.

Sincerely,

James W. Broatch, MSW
Executive Director and Vice President
Helpful links for individuals newly diagnosed CRPS

- [https://www.youtube.com/watch?v=b49DtFigbbw](https://www.youtube.com/watch?v=b49DtFigbbw) (good video for family and friends who may not understand)

- [https://rsds.org/wp-content/uploads/2020/05/Early-Treatment-of-Acute-CRPS.pdf](https://rsds.org/wp-content/uploads/2020/05/Early-Treatment-of-Acute-CRPS.pdf) (steroids are the go-to treatment for early onset CRPS)

- [https://rsds.org/how-crps-is-diagnosed/](https://rsds.org/how-crps-is-diagnosed/)


- [http://rsds.org/joinmembership/](http://rsds.org/joinmembership/) - Individuals can receive the newsletter via postal mail or email

- The Sajben article enclosed in this packet details good non-opiate medications (see attached above) (Medication Summary for Intractable Pain, CRPS/RSD)

- Watch Dr. Chopra’s video: [https://www.youtube.com/watch?v=EFjRv8yw3E4&t=61s](https://www.youtube.com/watch?v=EFjRv8yw3E4&t=61s) [https://www.youtube.com/watch?v=9fTqE-GFy3M](https://www.youtube.com/watch?v=9fTqE-GFy3M) (good non-threatening video on desensitization)

- [https://rsds.org/youve-been-diagnosed-with-crpsrd-now-what/](https://rsds.org/youve-been-diagnosed-with-crpsrd-now-what/) This page is the treasure trove of information. You can download or print our Adult and Pediatric information packets, view some excellent videos, and read an excellent overview article by Steven Bruehl.

- Link to our peer-reviewed journal articles: [https://rsds.org/existing-papers/](https://rsds.org/existing-papers/)

- Link to our YouTube videos of our conferences: [https://www.youtube.com/user/RSDSAofAmerica/](https://www.youtube.com/user/RSDSAofAmerica/)

- Free accredited on-line course for docs & nurses: [https://rsds.org/accredited-course-on-crps-for-mdsand-rns/](https://rsds.org/accredited-course-on-crps-for-mdsand-rns/)


- Other related websites and organizations: [https://rsds.org/related-web-sites/](https://rsds.org/related-web-sites/)

- Our blog: [https://rsds.org/blog/](https://rsds.org/blog/)

- Our patient assistance application-one-time $500 emergency patient financial grant: [https://rsds.org/jenkins-patient-assistance-fund/](https://rsds.org/jenkins-patient-assistance-fund/)

- [https://www.youtube.com/watch?v=wUnwbNslk1c&t=75s](https://www.youtube.com/watch?v=wUnwbNslk1c&t=75s) (warm-water therapy)

- [https://www.youtube.com/watch?v=iiaglUE6kxg&t=5s](https://www.youtube.com/watch?v=iiaglUE6kxg&t=5s) (Brain Retraining)
The Legacy of Jennifer Abramson’s Inspirational Life

All proceeds will be invested in RSDSA's Research Fund

**JEN’S GIFT** is a testimony to Jennifer Abramson’s brief but wonderful life. Jennifer lived only 31 years; yet for her short time she made a big impact. Her spirit lives on in *Jen’s Gift*. Her goal was to enlighten, transform people's thinking, and spread faith and hope in the infinite possibilities of this life.

*Jen’s gift will inspire you.* Her wisdom, clever humor and insights paired with her beautiful photos will make you laugh, smile, cry and maybe think about things in a new and different light.

May her gift inspire you and may you too be touched by her love and kindness.

Purchase at: [www.iensgiftbook.com](http://www.iensgiftbook.com)  
A book for all ages.
The human body is meant to move. Yet a person who experiences intense, persistent pain will probably move less and less over time. He or she is also likely to develop a number of “pain behaviors” such as lying down for long periods, using unusual postures to brace against the pain, or favoring one side of the body over another when moving. After a while, these pain behaviors take on a life of their own and actually add to the pain.

Long periods of immobility disrupt the body’s pain sensing mechanisms because pain perception relies on feedback from normal muscle activity, particularly the larger muscle groups of the body. Avoidance of activity under stimulates the large sensory nerves and results in more pain when movement is resumed. The habitual use of unusual postures results in secondary pain in other areas of the body as certain muscle groups go into chronic spasm while other muscle groups atrophy from lack of use. So rather than decreasing pain by avoiding certain patterns of movement, a person is actually increasing his or her pain as well as creating new pain.

A common pattern that I see in my pain patients is a burst of activity on a good day followed by several days of increased pain and immobility. As much as I preach consistently moderate activity, my patients habitually try to get everything done when they feel good. But when they do this, they get nothing at all done in the following two or three days. A prudent and effective pattern to follow is to do the approximately the same amount of physical activity each day. On “bad” pain days, you will have to push yourself, while on “good” days you will have to hold yourself back. If you do this, you will see that you get the same amount done as when you do a burst on Monday and nothing on Tuesday and Wednesday. If you do a little each day, you will get the same amount done without misery on Tuesday and Wednesday.

The following are some suggested techniques you can use to maximize you functioning:

- Keep an activity log for a two day period. Write down everything you do including quantity (how many dishes you washed) and how long you spent at it. You will probably be surprised at how much you do accomplish even though it feels to you as if you are doing little or nothing. Keeping this type of log will make you more aware of your patterns as well as help you set reasonable expectations. Challenge the artificial deadlines you set for yourself. What does it matter if the whole task is completed in one hour or one day, or in three hours or three days? How perfect does the work have to be? Learn to say, “That’s good enough.”
- Breathe while you move. Be aware of using your breath to support physical exertion instead of holding your breath again pain. Also be aware of the amount of energy you are using to accomplish a task as well as the quality of your movement. Replace short, quick intense movements with longer, slower, lighter movements. Elongate the muscles when dusting, scouring, or reaching, and low down to allow a full range of motion.
- Take frequent breaks. Every twenty minutes or so, change positions, change activity, or just rest. It may take you longer to do what you used to do in the blink of an eye. So What? It is important to learn to pace yourself.
- Schedule a rest period in the middle of the morning and the middle of the afternoon. A half-hour is usually effective, but some people take an hour or longer. If you have to nap, go ahead. But many people find that just relaxing, listening to music, taking a bath, daydreaming, or meditating is effective in extending their ability to function throughout the day. Go back to your activity log and find the natural breaks where you can insert rest periods. If you think there is not time to rest, you are trying to accomplish too much.
• Make conscious transitions between tasks. For example, if you are cooking dinner, take a few seconds to breathe and stretch between peeling the potatoes and molding the meat loaf. This allows you to release muscle tension and adjust your posture as well as tune into your physical effort in order to maintain a steady, easy pace.

• Put some type of regular physical exercise into your life. Don’t deprive your whole body of exercise and fitness because part of you is in pain. Yoga is excellent for person with pain because it increases flexibility and strength while focusing on breathing to support movement. Most yoga instructors will modify the poses to fit your needs. Walking and swimming are also good activities to keep the whole body healthy.

• Explore new recreational activities. If you used to play soccer or go skydiving for fun, you have to find new pursuits. Music, painting, gardening, creative writing, and handicrafts do not offer the same physical thrills, but they are relaxing and rewarding. Make time for fun even if you have not completed all the chores that need to be done.

If you have a chronic pain condition, you have to accept that much of your life has changed permanently. This does not mean your life is over. It just means that you can’t do things the way you used to before the pain set in. If you set realistic goals, learn to pace yourself, maintain a moderate level of daily activity, and engage in pleasurable pursuit, you will be able to have a full life.
How to Obtain the Best Medical Care for CRPS

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If you are reading this, it unfortunately means you or a friend or loved one have been diagnosed with complex regional pain syndrome (CRPS). This article is not about diagnosing and treating CRPS but rather about how to obtain the best medical care for this diagnosis.

There are lots of good reasons to obtain the best medical care possible for this diagnosis. First and foremost is that early quality treatment has the best chance of resulting in the best outcome. Second, the wrong treatment can actually lead to a worsening of this condition. Third from a practical standpoint your insurance coverage may be limited and thus getting the right treatment first which is covered is very important.

There is both good and bad news. We will start with the bad news. Many of you will not have adequate insurance coverage to provide the absolute best care for CRPS. Problematic as well is that even with good insurance coverage, treatment available in your local community may not be ideal or even available. With that said, the good news is that if you will take time to educate yourself about your CRPS condition, you have a much greater chance of getting what you need to get better and to manage this condition.

While some treating physicians may focus on medications and interventional procedures (i.e., injections, device implantation, etc.), and these can certainly be an important part of treatment, the best treatment is approached from a biopsychosocial perspective by an interdisciplinary team of treaters. This means treating you as a whole person and paying attention to both the physical and psychological aspects of chronic pain. This approach involves coordinated medical care with a treatment team, other than yourself and significant others, including a physician pain specialist, a physical and/or occupational therapist and a psychologist.

In this type of biopsychosocial approach, it is critical that the person with CRPS, become educated about the condition and be the "Caption of the Ship" when it comes to managing medical care. Being passive and leaving it all up to the doctors and therapists just won't work. The person with CRPS needs to understand about his or her condition and how to treat it. That means becoming informed and educated. Whatever therapy is provided, it will not be enough if the CRPS patient doesn't "practice" what they are taught 24/7 both at home and away from the doctor and the therapy center.

The ideal setting for treatment is where the physician is a rehabilitation oriented pain specialist and not just a doctor focused on prescribing pills and doing procedures (i.e., nerve blocks, implanted devices, etc.). This means ideally, that the physician works closely with a physical and/or occupational therapist and a psychologist with expertise in treating CRPS. It is always best if they work out of the same facility as a team (this is called interdisciplinary) but even if they are in separate offices, it is important that they communicate and work together as a team (this is called multidisciplinary).

Getting back to the issue of education, while some physicians and therapists feel threatened by an educated patient who is knowledgeable and asks questions—and you need to be careful not to make the treater feel uncomfortable—it is perfectly okay to be educated about your problem and ask questions. High qualities treaters enjoy questions and are not threatened by knowledgeably patients. Have you read up about CRPS? Have you made yourself familiar with the usual medications and treatments prescribed for this condition?
Here are some other things to consider when you are evaluating obtaining the best treatment for CRPS.

1. Identify other individuals with this condition in your community to find how they have done with their treatment and who they have treated with. Does their physician, physical therapist and psychologist listen to them and provide effective treatment? Are they being provided education about the condition and a good home program to expand and work on what they are learning when they're in therapy?
2. Tell your primary care family physician that you are familiar with the diagnosis and want to make sure you are being referred to a pain physician who is rehabilitation oriented and not someone who focuses on prescribing medications and injections and other invasive treatments.
3. Interview the doctor and therapist to see if they are truly familiar with and experienced in treating CRPS. Is the medical care provided truly coordinated between the various disciplines?
4. Ask the physical therapist how commonly they treat people with CRPS and if they are familiar with some of the more recent graded motor imagery approaches such as mirror box therapy.
5. If there is no physical therapist in your community that consistently treats people with CRPS, ask to treat with the therapist that sees the most people with chronic pain. Many of the same pain management skills can be applied to managing CRPS.
6. As you speak with the physical therapist, see how willing they are to provide full answers to your questions. Quality CRPS treatment requires a lot of education and your therapist should be eager to provide you with the answers to your questions.
7. Many psychologists deal with symptoms like depression and anxiety, but ideally, the psychologist needs to be trained in pain management. It is very important that they use cognitive behavioral therapy (CBT) as part of their therapy as CBT has been found to be highly effective for managing pain. Cognitive behavioral therapy is a form of psychological treatment that focuses on examining and changing the relationships between maladaptive or faulty thoughts, feelings and behaviors. The RSDSA website http://rsds.org is a great source of information. Another source of good information is The American Chronic Pain Association (www.theacpa.org) in general and the ACPA Resource Guide to Chronic pain Medications and Treatment (http://www.theacpa.org/Consumer-Guide) in particular.
Tips for Managing Complex Regional Pain Syndrome

September 11, 2015 by Jim Ducharme, MD, CM, FRCP

Complex regional pain syndrome (CRPS), previously known as reflex sympathetic dystrophy (RSD), is a chronic neuropathic pain condition that can arise from trauma of any kind. It can be the result of something as minor as a blood draw that initiates a reaction. The condition arises more frequently than many emergency physicians may realize: roughly 3 percent of patients suffering a Colles fracture develop CRPS. Often the traumatic event cannot be remembered, and CRPS has been associated with trauma happening anywhere from a day to a year after the event. Its most consistent feature, however, is how often physicians fail to make the diagnosis on initial presentation. Furthermore, our lack of understanding about how to manage the severe pain that occurs during acute flare-ups of this chronic condition worsens the suffering that many patients with CRPS endure over decades.

Early Diagnosis Is Key

As can be seen with diabetic neuropathy, CRPS has both a sensory and an autonomic dysfunction. Unlike patients with diabetic neuropathy, both will be present from the start. Not only do patients suffer from intense pain that does not correspond to a specific nerve distribution, they also suffer visible changes as the result of their autonomic dysfunction.

Initially, the involved painful area (usually part of an extremity) becomes red, warm, and edematous; it is often initially misdiagnosed as cellulitis. The presence of severe allodynia (pain induced with a nonpainful stimulus such as light touch) should make the physician consider the true diagnosis. It is very important that CRPS be diagnosed early on because active treatment can reverse and eliminate the condition. Treatment includes neuropathic analgesics (eg, tricyclics, gabapentinoids) combined with active physiotherapy and mindfulness. Many patients who develop this condition will come to the emergency department with their painful condition when it begins, so the emergency physician needs to be able to diagnose and refer appropriately. I personally diagnose two to three new cases per year in my emergency medicine practice.
Failure to treat within the first weeks of symptom onset will allow the physical changes to start. The involved area will develop dystrophic skin changes: a shiny, thin, erythematous appearance. Underlying muscles atrophy so that the involved area becomes wasted in appearance over time. Typical burning neuropathic pain persists. If left untreated (or if poorly treated), CRPS can spread, involving larger parts of the body.

**Treating Flare-ups**

Patients will also present to the emergency department because of an acute flare-up of their chronic pain. CRPS can become acutely more painful because of N-methyl-D-aspartate (NMDA) activity and hyperresponsiveness to NMDA. NMDA is a neurotransmitter present in the dorsal horns and spinothalamic tracts, and it is the number-one initiator of wind-up in acutely painful conditions. With CRPS flare-ups, it is almost as if wind-up starts over again. The burning pain becomes acutely worse; pain is severe and unresponsive to almost all analgesics. Opioids will not control the pain of a flare-up unless given in a quantity that would make the patient somnolent. Opioids should not be considered a first-line treatment in this situation. It is recognized that many patients with CRPS ask for opioids for their severe pain. As with any patient asking for opioids when suffering from a chronic pain condition, this can create distrust and a stressful environment. Increasingly, national patient groups are educating patients that opioids will not be effective.

Given the cause of the pain flare-up, the treatment needs to be directed at stopping the NMDA activity. This is best accomplished with ketamine, an NMDA antagonist. A patient can only receive intravenous ketamine in a hospital environment, so emergency physicians need to be able to recognize and treat these severe pain flare-ups.

**Treatment Is Straightforward:**

1. Initial bolus of 0.2–0.3 mg/kg of ketamine infused over 10 minutes. Giving this dose as an IV push will produce a high rate of dissociative side effects (up to 75 percent of patients) and should be avoided. Almost diagnostic is the patient’s response: severe pain should be resolved by the end of the 10-minute bolus.

2. An infusion of ketamine (0.2 mg/kg/hr) for four to six hours. Although the medical literature for this is almost nonexistent, clinical experience has shown that an infusion of this duration resets the NMDA activity to baseline. Patients can return home on their usual medications, with the expectation that the flare-up, which can normally last weeks, will be over. Return rates for the same flare-up after ketamine treatment approach zero. For readers who feel four to six hours is too long, I encourage them to try shorter periods (two or three hours) and publish their results. No discharge prescription from the emergency department will be required.

Patients do not require admission, and they should not receive opioids. They do require the acute ketamine intervention, or they will suffer severe pain for weeks as a result of the flare-up. To date, there is no other effective treatment for a CRPS pain flare-up. Some researchers have studied an infusion of 5 mg/kg of lidocaine over a 60-minute period as an alternative treatment plan, but results are variable. Referral of newly diagnosed patients to physiotherapy and a comprehensive pain program is critical.

With better understanding of CRPS, emergency physicians will know when and how to intervene. Concern over drug seeking should be allayed, allowing appropriate care to be provided.
Medication Summary for Intractable Pain, CRPS/RSD

By Nancy Sajben, MD

The following blog post was written on 11/6/16 by Nancy Sajben, MD for her website. You can visit her website by [https://painsandiego.com/2016/11/06/medication-summary-for-intractable-pain-crpsrsd/](https://painsandiego.com/2016/11/06/medication-summary-for-intractable-pain-crpsrsd/).

I spoke only briefly this morning at the RSDSA conference but there is so much to add. Most importantly, thanks to RSDSA for helping so many people with CRPS. They fund pain research, they are starting a free children’s camp, and now offer physicians one hour free CME (http://rsds.org/accredited-course-on-crps-for-mds-ph-d-s-and-rns/) teaching about CRPS.

Holistic view, 36 points – that’s how I view caring for brain and nerves, very similar to the details used by UCLA Alzheimer’s Research Unit. In June 2015, I posted on their work on [memory loss. dementia](https://painsandiego.com/2015/06/27/dementia-memory-loss-brain-atrophy-not-always-alzheimers-disease-we-are-all-at-risk/). We know chronic pain means inflammation in the brain, excess of proinflammatory cytokines. CT scans show memory loss and brain atrophy in those with chronic low back pain. Can this inflammation lead to Alzheimers? Even if it doesn’t, why not maximize what we know we can do to help brain. As I view it, simply be meticulously detailed in giving the central nervous system (CNS) the best chance to relieve or prevent pain or disease.

Below is a brief list.

To find detail and sometimes depth, check the alphabetical lists on either side column [on Nancy Sajben’s website] until you see the category or tag when I first posted on that. Or simply plow through 7.5 years of detail with references. You do the work to check the side columns as I have no time to embed links below, taken from throughout this site.

For now just a list of medication players that may be strikingly important in trying to bring intractable pain into remission even after 20 years. Yes, even chronic for decades. The list applies to intractable pain of all causes. I omitted listing standard interdisciplinary approaches commonly used by every pain specialist around the world. My patients have failed all those.

Some patients with CRPS combine my medications with ketamine infusions.

For those who remain on opioids, ultra-low dose naltrexone (10 to 60 mcg three times daily) can significantly reduce pain, reduce opioid induced hyperalgesia, reduce windup, and thus reduce the dose of opioid needed to give improved relief. Opioids cause pain and trigger pro-inflammatory cytokines that create more pain. I strongly recommend slowly, gently tapering off opioid, and remaining off for 3 weeks before the following is trialed:

1. Vitamin D is anti-inflammatory. Important. Helps pain, depression. If bone loss is an issue, you will not absorb calcium from food if D is low. Mayo Clinic’s publication in 2012 showed more morphine is needed for pain if D is low. Huge literature of its benefit for depression. First topic I posted on – it is that important.74.

2. Vitamin B6 can cause burning pain from scalp to toe, a toxic neuropathy. It can be toxic to brain. It is loaded in tons of soft drinks, “energy” drinks, and supplements.

3. MTHFR mutation may be present. Body cannot process the B12 and folic acid you are eating or taking in supplement. A simple blood test, costly. Treatment is as simple as buying methyl folate and methyl B12 – no prescription needed. Folic acid in particular is profoundly important for one of the major energy cycles in the body. Can cause multiple conditions, some fatal, all from one single cause.

4. Minocycline 100 mg/day is the dose I use but higher doses could be given. It is used daily for decades for acne. I may prevent spread of CRPS if given before surgery, dental work, even minor procedures. I start 24 hours before, and continue for days after full recovery from surgery.

5. Testosterone in either male or female is depleted by opioids, it may be depleted by stress. Low T is a risk for depression, weakness and osteoporosis.
7. Dextromethorphan – reduces hyperexcitable glutamate
8. Oxytocin
9. Memantine – double the Alzheimers dose for CRPS. Like ketamine, it blocks the NMDA receptor.
10. Lamotrigine
11. Palmitoylethanolamide (PEA, PeaPure) a glial modulator, also acts on mast cells. A food supplement. No Rx. Your body makes it. Plants make it. Capsules & cream
12. Ketamine via nasal spray, under tongue combined with IV or not, works on glutamate-NMDA receptor. Not an essential drug. Where ketamine has stopped working, patients have become pain free after years of CRPS.
13. Creams combinations, so many. Most of my CRPS pts very much like Mg++/guai 10% each. You may or may not trial various combinations lido/keto/keta, etc. Numerous. DMSO 50%.
14. Medical Marijuana (CBD, THC, terpenes) Marijuana saves lives
(Marijuana saves lives)Entire issue of Science, November 4, 2016, devoted to pain. NAC and alpha lipoic acid are noted by research from the Netherlands.

Appendicitis

If it has not burst, treat it like the infection that it is. Surgery may never be needed. I posted details of publications early 2016 with a case report. That young man was being rolled into the OR, instead was discharged 100% better without surgery 2 days later.

Medications target 3 main systems, as discussed at the conference

The opioid receptor – opioids create pain. They trigger glia to produce pro-inflammatory cytokines. Opioid induced hyperalgesia may occur. Cannot be used with low dose naltrexone.

The glutamate NMDA receptor – ketamine, memantine.

Glia, the innate immune system – glial modulators.

Before they see me, my patients have failed all prior therapies even ketamine coma. I view it like football. You have one guy running down the field with one ball. Do you want to win the game? You've dealt with this for years. Let's not prolong it. Hit it with my main choice of meds all at once. Jump on it. What if you get 10% relief – will you even notice 10% after many years of severe pain? But if you get 10% from each of 5 meds, then you are talking 50% relief as a start. Address those 3 main pain systems – even without ketamine – and I have posted a case report after 20 years and 3 suicide attempts before seeing me, she has been pain free for about 4 years as I recall. A surgeon nicked her sciatic nerve when she was 27. Two years ago, pain free, running on her treadmill, she twisted her ankle. She has permanent foot drop from the sciatic nerve injury, but even spraining her ankle did not flare her CRPS. Twenty years of CRPS, pain free for about 4 years. And ultimately, years ago, she was tapered off all the drugs with one exception: LDN lifelong.

Most importantly, I did not have time to relay a very special message from my patient in Brooklyn: “Surround yourself with friends and family who love you. Never give up hope.” She had her first 2 or 3 pain free days this week, as she slowly increases doses of medication. She’s not yet at maximal effect and even then there can be increases. Sending love and courage.

MOVEMENT

Watch this on the RSDSA video [to be posted soon], afternoon speakers, the parents of young ones who had RSD discussed today all the toys and games they had to devise to slowly force yourself to move through the pain, every single day, several times a day, all day, begin to move the body as much as you can. Set goals and slowly, at a pace you set, do the work. Make progress. Go forward. Keep moving. Do whatever you can to keep moving.

RSD support groups are essential and I am glad to see the RSDSA list (http://rsds.org/find-a-support-group-near-you/) of so many throughout the country. There is so much more. Indeed, at least 36 points discussed on June 2015.

Disclaimer

The material on this site is for informational purposes only.
It is not legal for me to provide medical advice without an examination.
It is not a substitute for medical advice, diagnosis or treatment provided by a qualified health care provider.
From One Family to Another- A Pediatric CRPS Journey

By Guest Bloggers Bobby and Lauren Geller

The Gellert’s daughter, Zoe, has faced CRPS head on. She has been inspired to do some great things. See what Zoe and the Gellert family are doing and what they learned about pediatric CRPS.

“Dad! You need to come home. The doctor said nothing is broken or torn, but I still can’t put my foot on the floor. It feels like someone is sticking a knife through my heel and it’s burning inside”.

These were the words of our 11-year-old daughter, Zoe Gellert, who the day before was involved in a crush injury to her right ankle. Zoe was immediately non-weight bearing and was describing pain symptoms that made no sense based on the findings from her X-rays and MRI. She was diagnosed with Complex Regional Pain Syndrome six weeks later. For my wife and I, this was the first moment in our lives that ‘brought us to our knees’. Having a child that is constantly in pain with symptoms that got worse over time was a devastating situation that immediately threw us into acute survival mode to obtain the best and most immediate treatment for our daughter.

Zoe is very intelligent, passionate and determined – a born leader. Over the past nine months since her injury, Zoe has learned an incredible amount about herself and her disorder. Today, although Zoe is fully functional and playing sports, she continues to manage her daily pain with techniques that she has learned and that she is enthusiastic about sharing with other kids that are suffering. Zoe is committed to creating overall awareness about pediatric CRPS and to raising money to help fund vetted treatment and research projects and to help support parents seeking financial assistance for their child’s necessary treatments. Attached below is a detailed video of Zoe’s story that we would like to share. We hope that you enjoy it and that it is inspirational for you or someone that you know with CRPS. If you would like to email Zoe, please contact her at zoesheroes@icloud.com. We hope to hear from you!

My wife and I are very grateful that within three months of Zoe’s injury she was diagnosed, admitted into the hospital for intensive multi-disciplinary treatment and was released from the hospital walking without any support. However, the feeling of being ‘a fish out of water’ is still very fresh for us. Being thrown into the abyss of CRPS – whether during the pre-diagnosed, treatment or recovery stages – is completely overwhelming. Throughout our research, it was very important to us to consider treatment options that were non-narcotic, non-invasive – but aggressive and appropriate for a child. There were always many things to consider and everyday brought new challenges. So below, we feel compelled to highlight and share what we have learned about pediatric CRPS and what has worked for us and our family thus far in our journey…

Top 20 dos, DON’Ts, SUGGESTIONS AND PRACTICALITIES FOR PEDIATRIC CRPS*

- Do not apply ice
- Do not cast or immobilize
- Do not get a flu shot
- CRPS can spread throughout the body over time without treatment
- Emotional stress can increase the baseline pain endured daily
- Blood tests do not support or exclude the diagnosis – which is clinical and primarily based through observation of a variety of classic symptoms
- Thermography may be the most effective non-invasive diagnostic tool
• If your child must have an IV or get a shot, use the smallest needle possible – sometimes called a butterfly needle
• Discuss with your doctor administering an appropriate dosage of Ketamine along with any anesthesia during surgery
• Your child must be encouraged to stay engaged in everyday life activities while in pain – endure as much daily physical activity or physical therapy as your child can tolerate
• Continually touch, rub and desensitize the affected area – this will facilitate the circulation of blood and oxygen flow and eventually reduce pain
• Recovery is mostly about function over pain – explain to your child that he/she will not hurt himself/herself – if your child can function while in pain he/she will feel in control of the pain and the pain level will be reduced
• Do not ask your child about the pain he/she is feeling
• If your child complains about the pain, be sensitive, acknowledge the pain and distract him/her with homework, chores, physical or social activity – but move on from the conversation
• Your child must accept and surrender to the pain without letting the pain identify who he/she is – do not allow your child to mentally cut off the affected area from his/her body
• Seek a Cognitive Behavioral therapist so your child has someone other than you to talk with about what they are going through and to learn visual pain management techniques
• All family members should be encouraged to discuss with a therapist how they are coping with the affected family member’s diagnosis
• Do not allow CRPS to take over the household or to be the main topic of conversation with family, friends and work colleagues
• Consider Osteopathy and Homeopathy as regular, not alternative, treatment options
• Five books to read:
  • Get Out of Your Mind and Into Your Life – Spencer Smith and Steven C. Hayes
  • Conquering Your Child’s Chronic Pain – Lonnie K. Zeltzer M.D.
  • The Mind Body Prescription – John E. Sarno M.D
  • The Power of Now – Eckhart Tolle
  • Fulford’s Touch of Life – The Healing Power of the Natural Life Force – Dr. Robert Fulford

* We are parents, not doctors; hence, we are not making any representations or warranties regarding the above information which is based solely on the results of our own research and experiences.

As you saw in the video, Zoe created a GoFundMe site. Please click on the link if you are able to make a tax-deductible donation and/or please share the GoFundMe site on your Facebook page or any other social media outlet. We thank you in advance for your support and for your donation.

We also have an Instagram account – called “Zoesheroes” – that it would be super if you would “like” and follow us on our journey!

With appreciation and gratitude,

Lauren and Bobby Gellert
Outcomes of Children With Complex Regional Pain Syndrome After Intensive Inpatient Rehabilitation

Valerie Brooke, MD, Steven Janselewitz, MD

Objective: To examine the effectiveness of an inpatient treatment program on eliminating pain and increasing function for children with complex regional pain syndrome.

Design: A retrospective chart review and follow-up telephone survey.

Setting: A tertiary care hospital.


Intervention: Intensive inpatient physical and occupation therapy in conjunction with psychological counseling, art therapy, recreational therapy, and child life specialists who focused on improving physical function and conditioning, stress management, and the development of self-efficacy related to pain and stress.

Main Outcome Measurements: Resolution of pain and restoration of full function by patient or family report.

Results: All the children had failed various prior treatment approaches: 34% had resolution at the time of discharge; 78% of admissions and 89% of those with follow-up had eventual resolution of pain; and 95% had full restoration of physical function at a median time from start of treatment of 2 months. Seven had recurrence and 5 were able to resolve the recurrence without further intervention from the medical community.

Conclusions: Intensive inpatient rehabilitation is effective for children with complex regional pain syndrome. Additional studies are necessary to compare this treatment with other approaches.

INTRODUCTION

Children with pain out of proportion to any initiating injury, or amplified pain, can pose both a diagnostic and a therapeutic challenge for physicians. Some children have autonomic signs such as swelling or changes in skin temperature or color, which lead to a diagnosis of complex regional pain syndrome type 1 (CRPS-1), formerly referred to as reflex sympathetic dystrophy (RSD) [1]. Other physicians have also used the term reflex neurovascular dystrophy (RND) [2-7]. Pain conditions in children without autonomic signs have been referred to as diffuse idiopathic pain syndrome, localized idiopathic pain syndrome, psychogenic pain, psychosomatic pain, pseudodystrophy, growing pains, primary fibromyalgia syndrome, or fibromyalgia [7-15].

Many different treatment approaches have been attempted for these pain conditions in children, including nonsteroidal anti-inflammatory drugs [16-20], steroids [16,19,21-23], prostacyclin analog [12], pamidronate infusion [24], splinting or immobilization [18,20,25,26], transcutaneous electrical nerve stimulation (TENS) [17-19,26-30], sympathetic nerve blocks [6,19,22,25,26,30,31], and spinal cord stimulation [14], all with varying degrees of pain resolution and functional restoration. The most commonly used treatment for children with CRPS-1 is physical therapy (PT). A few studies show the effects of a single treatment modality for the treatment of these pain conditions. Frequently, multiple modalities are used simultaneously, which make it difficult to determine the effectiveness of any single treatment.

The few previous studies of children treated primarily with inpatient or outpatient therapy show rates of long-term full resolution that ranged from 60% to 100% [2,32-34].
Bernstein et al [2] reviewed charts of 23 children with RSD who had been treated with intensive outpatient PT of 2 to 3 PT sessions per day. Twelve patients had resolution of their pain, and 20 patients had full functional restoration after a mean follow-up time of 2.4 years. Blau [32] indicated full resolution of pain and function in 10 children with RSD after PT, with no patient spending more than 2 days in the hospital. The mean follow-up time was 1.1 years.

Sherry et al [33] studied children with CRPS-1 with either home-based exercises or inpatient therapy. Outcomes after a mean of 5.25 years showed pain resolution in 88% and functional restoration in 98%. Sherry did not elaborate on how many patients received inpatient versus outpatient therapy and drew no conclusion as to whether one was better than the other. A later study by Sherry [10] also included children with more diffuse musculoskeletal pain as well as patients with CRPS-1. Treatment consisted of an average of 2 weeks of intensive inpatient or outpatient PT, followed by a 1-hour daily home program performed for another 2-8 weeks. He reported that 80% of children had no pain and were fully functional after 1 month of treatment, with 15% having some pain but full function, and 5% with no improvement at all. At the 5-year follow-up, 90% of patients were free of pain and fully functional.

Lee et al [34] provided treatment of 1-hour weekly outpatient PT with cognitive behavioral therapy for 6 weeks or 3 hours of outpatient PT per week with cognitive behavioral therapy for 6 weeks. At follow-up, both groups had improvements in pain and function, with no significant difference between the groups, which suggests that more hours of PT may not improve outcomes. All the patients contacted at a mean follow-up of 2.5 years had resolution of their pain and restoration of function.

Although some of these studies used inpatient treatment, the studies did not look at this treatment approach exclusively. The aim of our study was specifically to evaluate the outcome of an inpatient rehabilitation treatment program of intensive rehabilitation therapies followed by a home program for children with complex regional pain syndrome.

**METHODS**

After institutional review board approval was obtained, a retrospective chart review included 33 admissions for inpatient treatment of complex regional pain syndrome at a tertiary care hospital between February 2007 and July 2010. Exclusion criteria limited data collection to first-time admissions, which eliminated 1 repeat admission for a total of 32 unique admissions and subjects for this study.

The diagnosis of CRPS-1 was made by 1 of 3 pediatric physiatrists working at the clinic and hospital with experience in diagnosing and treating children with CRPS-1. The diagnosis was based on symptoms of pain, focal or diffuse, hyperesthesia or allostynia, swelling, changes in skin color or temperature, decreased mobility or function, effects of prior treatment approaches, and lack of other diagnoses. These signs and symptoms form the basis for the diagnosis of pediatric CRPS-1 as suggested by Stanton et al [20], which include pain out of proportion to the inciting event combined with evidence of neurovascular dysfunction as manifested by dependent edema, dependent rubor, skin mottling, hyperesthesia to light touch, skin temperature changes, altered perspiration, and/or changes in patterns of hair growth. Patients were admitted for treatment based on diagnosis, patient and family willingness to enter treatment, and approval from insurance.

Admission and discharge data for pain and functional status were obtained by chart review. Pain was rated on a 0-10 numerical rating scale, with 0 being no pain and 10 being the worst possible pain. Data on long-term outcomes were obtained by a follow-up telephone survey completed 6 months or more after discharge. The telephone questionnaire included questions regarding the number of recurrences, resolution methods for any recurrences, any further treatment provided after discharge, and pain and functional levels on the day of the telephone interview. The parents were interviewed, unless the child was older than age 18 years at the time of the telephone interview, in which case the patient was interviewed.

**Treatment**

Inpatient lengths of stay varied depending upon the needs of the child and response to treatment, but all children participated in 5 hours of therapy per day, 5 days per week. The 3 hours of daily PT included timed, high-intensity aerobic activities, lower and upper extremity strengthening, core strengthening, stretching or yoga, and balance or coordination activities. Aerobic activities included the treadmill, stationary bike, step-ups on a bench, sprints, and various nontypical mobility activities. The patients were required to beat the previous day’s timed aerobic activities by 1 second before moving to the next activity. Daily occupational therapy included 2 hours of exercises such as push-ups, sit-ups, plank exercises, or using an upper extremity bike. Desensitization exercises, such as brushing, towel-ling, lotion rubbing, or fluidotherapy, were performed on the affected extremity for 15 minutes twice a day. Also, during the weekdays, the patients performed school activities for 30 minutes, had psychological counseling that taught stress management and pain coping skills, and had 30 minutes of self-directed PT on their own in the evenings. Additional services included art therapy, recreational therapy, and child life therapy. A few children were referred for a psychiatric consultation. Weekend therapy included 2.5 hours of PT and occupational therapy on Saturday, plus 45 minutes of self-directed therapy on both weekend days. Family visitation was limited. Each patient was given an individualized home therapy program.
after discharge, with the expectation to perform 45 minutes each weekday, and 90 minutes on each weekend day, until full functional activity was established.

Either before or shortly after admission, the patients were weaned off any medications being taken for CRPS-1. The patients were allowed to take acetaminophen or ibuprofen for headaches or soreness. The patients were discharged once they had reached their best performance on the above activities and demonstrated an ability to perform their home program.

RESULTS

Patient characteristics are depicted in Table 1. The mental health diagnoses at admission included depression (6 children), anxiety (9), attention-deficit/hyperactivity disorder (3), somatization or conversion disorder (2), eating disorder (1), and posttraumatic stress disorder (2). An additional 4 children were seen by a psychiatrist during their inpatient treatment and were diagnosed with general anxiety disorder (3), dysthymia (2), and depression (2). School absences were recorded for 28 children (88%), which ranged from missing several days due to the pain, to being home schooled secondary to pain and immobility. Five children (16%) had a previous diagnosis of chronic headaches or migraines.

Signs and symptoms on the day of admission, location of pain, and previous treatments are listed in Tables 2, 3, and 4, respectively. All the children had at least 1 prior treatment approach, although typically more. Functionally, 8 children (25%) required the use of crutches for ambulation, and 4 (13%) used a wheelchair, and 3 (9%) were non–weight-bearing secondary to pain. The admission median pain rating was 8.5 (range, 5-10). The average length of stay was 19 days, with a range of 8-32 days.

All the children completed inpatient treatment. At discharge, the pain rating dropped to a median of 2 (range, 0-10). Eleven children (34%) had complete resolution of their pain at discharge (Figure 1). No child required the use of crutches or wheelchairs, although 5 (16%) were unable to participate in physical or sports activities. One of these 5 had limitations secondary to focal atrophy, not due to pain, and one had limitations due to hemiplegic cerebral palsy. Nineteen families (59%) were successfully contacted for the follow-up telephone survey. The remaining 13 families were lost to follow-up due to disconnected telephone numbers (3), failure to answer telephone calls (6), or nonresponse to messages (4). The average time to survey follow-up was 21 months, with a range of 6-43 months.

Of the 21 children who continued to have pain on discharge, 14 (67%) had resolution of their pain at a median of 2 months (range, 1-11 months) (Figure 1). Four who had pain on discharge were lost to follow-up. Of the 19 children who participated in the follow-up telephone survey, 3 never had pain resolution, with 2 reported a current pain level of 2, and one reported a level of 6. These rates were less than their admission ratings, with reductions of 7, 3, and 2. Overall, 25 children had resolution of their pain. This is 78% of admissions and 89% of those with known outcomes.

Relapses occurred in 7 children (37%), including 1 relapse, or flare, in a patient whose pain improved but did not resolve after treatment. Six patients achieved full resolution of the recurrence. Five achieved resolution with home-based exercises learned during their inpatient treatment. One patient required additional outpatient therapy. The child with the flare was admitted for a second intensive therapy program, which resulted in reduction of the pain but still failed

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<th>Table 1. Patient characteristics</th>
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<td>Girls, n (%)</td>
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<td>Boys, n (%)</td>
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<td>Mean age (range), y</td>
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<td>Mean duration of symptoms before treatment (range), mo</td>
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<td>History of injury or trauma, n (%)</td>
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<td>History of psychological diagnosis, n (%)</td>
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<td>Perfectionist or overachiever personality traits, n (%)</td>
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<th>Table 2. Signs and symptoms on day of admission</th>
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<td>Pain</td>
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<td>Hyperesthesia</td>
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<td>Skin color changes</td>
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<td>Temperature changes: hot or cold</td>
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<td>Swelling</td>
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<th>Table 4. Previous treatments</th>
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<td>n (%)</td>
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<td>Nonsteroidal anti-inflammatory drugs</td>
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<td>Opiates</td>
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to achieve resolution. Although counseling was recommended for nearly all the children after discharge, only 5 participated, all of whom had eventual resolution of their pain.

Three children had additional treatment for their CRPS-1 after discharge. One child began with a personal trainer after discharge as well as treatment by a naturopath and an acupuncturist, with eventual full resolution of pain. Two children saw other allopathic physicians after discharge for their pain. One child had full resolution of pain 11 months after discharge and after seeing a pediatric rheumatologist who used the same therapeutic techniques as in this study. The other child saw a pain center physician, attempted biofeedback with no resolution of pain, received a diagnosis of nonepileptic seizures, and never had pain resolution. One child continued with outpatient PT after discharge for focal muscle atrophy. Of the 5 children who reported functional limitations on the day of discharge, 3 children continued to report physical activity limitations on the day of the follow-up survey. However, one was due to hemiplegic cerebral palsy, one to new knee instability, and one to CRPS-1.

**DISCUSSION**

CRPS-1 occurs in both the adult and pediatric populations, but it differs in several respects. Pediatric CRPS has a 6:1 female:male ratio, whereas adults have a female predominance of 2:1 [14,35]. Children also tend to have symptoms in the lower extremities 3-6 times more frequently than in the upper limbs, whereas adults more frequently have upper extremity involvement [14,35]. In addition, children tend to have less-pronounced neurologic or sympathetic symptoms [35]. In our experience, children have not developed nail or hair growth changes. Adults have quite variable rates of recovery and frequently have long-term disability, whereas children are more likely to have complete resolution.

Many of our pediatric patient characteristics follow the pattern of previous reports and studies of children with complex regional pain syndrome, including the female predominance of patients [2,4,6,13,15,16,19,20,23,31-34,36-38], lower extremity involvement greater than upper extremity [2,5,8,13,15,18-20,23,33,34,36,37,39], and not always having an inciting event or trauma [2,3,5,6,15-17,20,23,31,33,34,36,38,39]. Previous reports showed an average age of 10.7 years at onset of CRPS-1 symptoms, whereas others reported median ages of 12, 13, or 14 years [4,23,33,38]. Previous reviews also reported an average duration of CRPS-1 before treatment of 6.3 months, or medians of 2, 4, 5, and 12 months [4,17,20,33,38]. In our sample population, the average age of onset of CRPS-1 was 13.3 years, and the median number of months before inpatient treatment was 9 months, both of which were higher than most previous published reports. The higher duration of symptoms before inpatient treatment could be explained by a delay in diagnosis, attempts at other treatments, or a delay in getting approval for inpatient treatment.

Our pain resolution rate is similar to prior studies on outpatient and inpatient therapy intervention, which ranged from 60%-100% [2,32-34]. Our high functional restoration rate is also similar to these studies but lacks a validated and thorough measure. We found a median time to resolution of pain of 2 months (range, 1-11 months) (Figure 1). For studies that reported time to resolution, the range was 2 weeks to 2.5 years [16,17,20,21,25-29,31,36,40,41,42]. Recurrences of CRPS-1 symptoms occurred in 7 of the 19 children contacted for follow-up in this study. This percentage of recurrences (37%) is not uncommon, and falls within a similar percentage range reported in previous studies [2,3,5,6,10,17,20,26,30,33,36-38,41,42]. Recurrences were found to occur either in the original area or the limb, or occasionally occurred in a new location. Regardless, the skills learned in inpatient rehabilitation were effective in resolving pain and dysfunction in 5 recurrences and kept these children from having to seek out further medical interventions.

Many researchers in previous studies have suggested that there is a strong psychological association in children who have complex regional pain syndrome [2,4,20,23,30,32,37-39]. Despite this association, causality cannot be substantiated, for several reasons. As noted by Bruelh and Carlson [43] and Lynch [44], the previous studies were not prospective trials, and they lacked control groups, had small sample sizes, and did not always have valid Diagnostic and Statistical Manual of Mental Disorders—III (DSM-III) diagnoses, which relied instead on statements of personality characteristics. Our study found the same associations but also had the same limitations. It also was difficult to make any assumptions regarding the relationship of mental health to complex regional pain syndrome, because depression and anxiety can occur as a result of chronic pain. Sherry et al [38] notes this in their reviews, with understanding that a preceding depression can lead to chronic pain or that the distress of a chronic pain syndrome can lead to depression. The high prevalence
of psychological diagnoses in children with CRPS-1 require skilled professionals to treat the mental issues at the same time the therapy is working to decrease pain and increase function.

Three children in our study with known outcomes did not resolve their pain, which limits the ability to compare them with the children who did resolve their pain. However, it is interesting to note the characteristics of the 3 children who seemed to have failed our inpatient treatment program. First, these children had unusual pain distributions. The first one with diffuse pain covering the face, chest, back, and bilateral legs, as well as complaints of chronic fatigue. She had no initiating injury, no known history of a psychiatric diagnosis but did have a history of hyperflexibility. At discharge, this child reported a change in pain rating from 5 to 2, and, at follow-up, a pain rating of 2, which suggests at least an initial response to treatment. At follow-up, she also continued to report functional limitations, including an inability to sit or move for long periods of time.

The second child had right upper quadrant abdominal pain after a resection of a local nodular hepatic hyperplasia. In addition, this child also had autonomic changes in her feet, as well as numbness on her abdomen. She went on to receive treatment at another clinic and was subsequently found to have nonepileptic seizures. Unlike the first patient, she did not report any immediate decrease in her pain; she reported both an admission and discharge pain rating of 8. At long-term follow-up, her pain rating had decreased to 6, although she continued to miss school and participated in very limited physical activities. The third child had back and bilateral posterior leg pain with significant headaches. His back and leg pain, but not his headaches, improved after treatment, with a reported change from 9 to 2. However, his pain did not resolve, and he was readmitted for a second inpatient stay after injury resulted in worsened CRPS-1. His pain improved after the second stay but did not fully resolve.

The limitations of our study are similar to those in earlier studies on children with CRPS-1. The number of study participants is small; there are no control groups for comparison; and not all children participated in the follow-up survey. Even though our rates of resolution of pain and restoration of full function are encouraging, further study is required to determine whether outpatient therapy is more or less effective than intensive inpatient therapy or other treatment approaches.

CONCLUSION

The results of our study suggest that intensive inpatient rehabilitation, which consists of physical, occupational, and psychological therapy, without the use of other medical intervention and followed by a home program, is effective for children with complex regional pain syndrome even when other approaches have failed. Additional studies are necessary to compare this treatment with other approaches.

UNCITED REFERENCES

This section consists of references that are included in the reference list but are not cited in the article text. Please either cite each of these references in the text or, alternatively, delete it from the reference list. If you do not provide further instruction for this reference, we will retain it in its current form and publish it as an “un-cited reference” with your article [40].

ACKNOWLEDGMENTS

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REFERENCES


Management of Pediatric Patients With Complex Regional Pain Syndrome

Robert T. Wilder, MD, PhD

Abstract: This review summarizes current information about diagnosis and treatment of complex regional pain syndrome (CRPS) in children. Although it has been widely held that CRPS in children is intrinsically different from adults, there appear to be relatively few differences. However, there is a marked preponderance of lower extremity cases in children. Historically, psychological factors have been invoked to explain the genesis and persistence of CRPS in children, but the evidence is not compelling. Treatment outcome studies are limited but indicate that children generally respond to a primary focus on physical therapy. Multidisciplinary treatment reports are particularly encouraging. The general perception that children have a milder course may relate to the potentially greater willingness of children to actively participate in appropriately targeted treatment rather than to innate differences in the disease process itself. Recurrence rates appear higher in adults, but response to reinstitution of treatment seems to proceed efficiently. Clinical judgment dictates the extent of medication or interventional therapy added to the treatment to facilitate rehabilitation. In many ways, the approach to the treatment of children mirrors that of adults, with perhaps greater restraint in the use of medications and invasive procedures. The rehabilitation of children with CRPS, like that of adults with CRPS, needs further rigorous investigation.

Key Words: complex regional pain syndrome, pediatric


DEMOGRAPHICS

In children less than 18 years of age, complex regional pain syndrome (CRPS) type 1 develops most commonly in girls, with the incidence rising at or just before puberty. The lower extremity is more commonly affected than the upper, with a ratio of about 5:1. Type 1 CRPS seems to be more common among Caucasian children. I have noted this association in my practice at both Children’s Hospital, Boston, and at the Mayo Clinic, Rochester. To exclude sampling bias, physicians at Children’s Memorial Hospital in Chicago and Children’s Hospital Medical Center in Cincinnati were also polled (personal report from S. Suresh, Children’s Memorial Hospital, Chicago, IL, and K. Goldschneider, Children’s Hospital Medical Center, Cincinnati, OH). Although these hospitals have a substantial proportion of minority patients, the same association was seen there. Bernstein et al also reported this association: 18 of 23 patients in their report were Caucasian, 4 Hispanic, and 1 black. This may not be unique to children, however as Allen et al reported a similar distribution in adult patients: 91% (107 of 118) of their population was Caucasian.

CRPS type 2 is found with roughly equal incidence in both boys and girls and has been noted in children as young as 3 years of age. Interestingly, however, even though brachial plexus injury during delivery is common and can lead to longstanding motor weakness, neonates with Erb’s palsy do not generally develop pain in the extremity.

DIAGNOSIS

The diagnosis of CRPS remains a clinical one based on appropriate findings in the history and physical examination. Pain, particularly with allodynia, and signs of autonomic instability either historically or on examination are required to make this diagnosis. The pain should be out of proportion to the inciting event, if any, and is usually distally generalized in the extremity. Pathologic processes that might explain the pain must be excluded. There are no laboratory tests that can absolutely confirm or exclude this diagnosis.

A group from Belgium including Herregods, Francx, Chappel, and others has argued that disturbed vascular scintigraphy with increased pooling in the initial phase and hyperfixation on bone scintigraphy is necessary on bone scan to make the diagnosis of CRPS. In contrast, most other authors find that bone scans are quite nonspecific for the diagnosis of CRPS. Multiple authors have found that in patients meeting the clinical diagnosis, bone scan may show either hypofixation or hyperfixation or may be normal. This is not to say that bone scans are not useful in working up the patient with signs and symptoms of CRPS; however, the primary utility is in ruling out some underlying orthopaedic abnormality that might be triggering the neurovascular changes rather than diagnosing CRPS.
TREATMENT

CRPS in pediatric patients has always been considered different from CRPS in adults. Early large series of CRPS (or reflex sympathetic dystrophy, as it was known at the time) suggested that the syndrome was extremely rare in children.\textsuperscript{14,15} Sporadic early reports of children with CRPS first appeared in the 1970s. Several of these patients had spontaneous resolution.\textsuperscript{16,17} This led to the suggestion that no treatment should be performed for children with CRPS. The rationale was that all treatments carry risks and side effects, and for a self-limited disease these should be avoided.\textsuperscript{17} Other authors used treatment strategies very similar to those used in adults, including sympathetic blocks, antidepressants, vasodilators, steroids, and so forth, generally with complete resolution of the disease.\textsuperscript{15,17-19} Between these two extremes was a group of authors recommending conservative treatment consisting primarily of physical therapy (PT) either with\textsuperscript{18,20} or without\textsuperscript{7} concomitant use of transcutaneous electrical nerve stimulation (TENS). The overall impression is that CRPS is more easily treated in children than in adults. This impression is challenged by later reports from Wilder et al,\textsuperscript{1} Stanton et al,\textsuperscript{3} and Greipp\textsuperscript{21,22} showing that a percentage of children will have long-term pain and disability even with aggressive therapies such as sympathetic-chain catheters, and antidepressant and anticonvulsant medications.

Physical Therapy

A recent report by Sherry et al\textsuperscript{5} contradicts this pessimistic viewpoint. Using a program consisting exclusively of PT up to 6 hours per day, without any blocks or medications, they reported a cure rate of over 90%. These impressive results are similar to those Bernstein et al\textsuperscript{4} reported for PT alone two decades earlier. Murray et al\textsuperscript{23} also reported similar results using PT as the primary treatment modality: 40 of 46 patients resolved with intensive PT alone.

A major school of thought is that PT is the treatment modality that offers a chance for resolution of CRPS in either adults or children.\textsuperscript{24} All other therapies, when used, should be prescribed with the goal of facilitating the basic PT regimen. From this hypothesis one would predict that more intensive PT would provide faster and more complete resolution of CRPS. Although nonrandomized trials of intensive PT by Sherry et al,\textsuperscript{5} Murray et al,\textsuperscript{23} and others would seem to support this, a recent prospective randomized trial by Lee et al\textsuperscript{22} does not. In this study patients were assigned to once-weekly or three-times-weekly outpatient PT along with a baseline of weekly cognitive-behavioral sessions. Results for both groups were good, with pain scores decreasing to near zero and function improving, but no statistically significant difference was found between the two groups. This may have been limited by small sample size (13 per group) or because the actual amount of exercise performed may have been similar between the two groups. Curiously, the trend was for more complete resolution in the once-weekly group.

TENS

TENS is a noninvasive physical modality that may provide excellent analgesia for some patients. It has been described in several case reports and series.\textsuperscript{1,26-32} None of these series describe TENS as universally effective, and there are no prospective, blinded trials of efficacy. In view of the modest cost, generally high acceptance by children, and remarkable safety of this device, it is almost always worthwhile giving a trial of TENS as part of a multidisciplinary approach to CRPS.

Biobehavioral and Psychological Treatments

Much has been written about psychological aspects of children with CRPS. Authors have invoked psychological contributions to the disease; since the earliest case reports of CRPS in children appeared, Carron and McCue, in their 1972 description of a child with CRPS, stated that they made "the usual referral to psychiatry and for sympathetic blocks."\textsuperscript{15} Some authors have even presumed that CRPS is entirely a psychological or psychosomatic disease process.\textsuperscript{33} Presumably they are confused because CRPS crosses dermatomes and areas of innervation by single nerves to form a distally generalized stocking-and-glove distribution. The marked allodynia and pain far out of proportion to the original inciting injury, if any, have also caused many practitioners to question whether CRPS has an organic basis or is of purely psychological origin.

There is scarce evidence that children with CRPS are psychologically unique. Sherry and Weisman\textsuperscript{34} studied 21 families of children with CRPS. These were generally high-achieving, compliant children. They found that in virtually all cases there was significant parental enmeshment with the patient. Beyond that, they found that multiple different stressors were present in these children, including marital conflict between the parents (n = 12), significant school problems (n = 13), and sexual abuse (n = 4). Testing revealed no major psychopathology, except for one child who scored high in somatization. Sherry and Weisman suggested that CRPS is frequently a stress-related disease, and the therapeutic approach must take these psychosocial factors into account. One difficulty with this study is that appropriate control groups were not tested with equal thoroughness. Children with new-onset arthritis were compared in terms of global assessment, but the other psychological tests were not reported for this control group. A healthy control group was not included.

A case series by Brommel et al\textsuperscript{35} also found psychological dysfunction in children with CRPS. They concluded that the despair of the patients about their reflex sympathetic dystrophy expressed unsolved fears of early childhood. Again, no control groups were studied. Stanton et al,\textsuperscript{2} in reviewing a series of patients with CRPS, noted that 83% of the patients given psychological evaluations had "significant emotional dysfunction." This was not further defined, although they also noted a great deal of stress in the lives of the patients. In contrast, Vieyra et al\textsuperscript{36} performed a preliminary study comparing
patients with CRPS to children with migraine headaches and 21 normal controls. Contrary to expectations, no differences in family functioning were found among the three groups. Unfortunately, this work was never published in a peer-reviewed journal. A literature review by Lynch et al in 1992 and recent prospective psychological studies of CRPS in adults also support that these patients are not psychologically unique from others with chronic pain. In isolated cases, psychological factors may indeed have a predominant role in the etiology of CRPS. Jaworowski et al reported CRPS in a 12-year-old who developed simultaneously a conversion disorder; her identical twin also developed an identical conversion disorder.

Whether or not psychological dysfunction exists prior to the onset of CRPS, psychological, cognitive, and behavioral strategies are often used as part of the treatment of children with CRPS. Case reports of successful treatment of CRPS with cognitive and behavioral strategies began to appear in the 1980s. There are no prospective placebo-controlled trials of cognitive and behavioral therapies in the treatment of CRPS, either in adults or children. Their use is extrapolated from case reports and prospective series for other pain states, notably headache. Wilder et al reported that 57% of their patients who received such training benefited from it and continued to use this treatment modality. Stanton et al, however, found that psychological interventions were not consistently effective. This was felt to be due to the short time for interactions with the therapist during the patient's inpatient admission. Lee et al used cognitive and behavioral therapy as part of their baseline treatment of CRPS patients who were randomized to receive one or three sessions per week of PT. Compliance with attending the sessions was good and overall results were good, but the specific effect of the cognitive and behavioral treatments was not broken out. Sherry et al did not use formal cognitive or behavioral treatments in his series of 103 patients treated with intensive PT, but they did refer 77% for psychological counseling, either individual or family. The results from the counseling were not measured or studied.

**Sympathetic Blocks**

In previous years many authors have equated sympathetically mediated pain with CRPS. During the 1993 consensus conference that eventually led to the new taxonomy of CRPS, there was widespread agreement that the pain of CRPS could be sympathetically maintained, sympathetically independent, or some combination of both that could change over time. Sympathetic blocks may help define the proportion of pain that is sympathetically mediated at that time and may be of therapeutic benefit, but they do not confirm or revoke the diagnosis of CRPS. When sympathetic blocks are used in the treatment of childhood CRPS, several authors have proposed the use of indwelling catheters rather than repeated single injections. There are several reasons to prefer this technique. First, accurate placement of a lumbar sympathetic block is facilitated by use of fluoroscopy. Minimizing radiation exposure is appropriate for children. Second, many children and adolescents require heavy sedation or a brief anesthetic for the placement of these blocks. Minimizing the number of anesthetics required is also useful. Third, the goal of the sympathetic block is not to "treat" the CRPS per se, but rather to provide adequate pain relief that the patient can effectively engage in PT. An indwelling sympathetic-chain catheter, when effective, provides continuous pain relief without motor or sensory dysfunction and can be highly effective in allowing PT to proceed. These patients are generally hospitalized. Indeed, one advantage of the indwelling catheter is that it mandates hospitalization, which may allow more intensive PT than is available on an outpatient basis. Single-shot sympathetic blocks need to be coordinated with the PT sessions so that the patient is pain-free during the sessions. Indwelling epidural catheters, although often effective in relieving the pain, cause sufficient motor and/or sensory block that the patient cannot effectively participate in PT. This may be counterproductive, as any immobilization of the limb appears to worsen CRPS. Use of clonidine or opioids along with low concentrations of local anesthetic in the epidural catheters may avoid this problem, but this may not provide adequate analgesia. Several authors who emphasize intensive PT as the sole treatment modality for childhood CRPS actually recommend against the use of sympathetic blocks. They have reported success motivating their patients to participate in PT despite ongoing pain and allodynia. Others have used blocks to improve compliance in patients unwilling or unable to participate in PT secondary to pain. At present there are no prospective trials directly comparing outcomes in pediatric CRPS with or without sympathetic or epidural blockade.

**Medications**

There are also no prospective randomized clinical trials of any medications in the treatment of CRPS in children. Case reports and case series have reported success with tricyclic and other antidepressants, anticonvulsants (particularly gabapentin), steroids (either systemically or as part of an intravenous regional technique), nonsteroidal anti-inflammatory agents, and opioids, both systemic and neuraxial. A good deal of controversy exists about drug therapy for this condition. Many authors have found steroids to be of no benefit. Those who stress the value of intensive PT suggest that no medications are appropriate. The rationale is that all medications may have side effects and the potential for morbidity. As they are not necessary in the view of these authors, they should be avoided. Sherry et al stopped all medications at the start of the PT program. A direct comparison of intensive PT with or without any of these medications is lacking.
Neurosurgical Techniques

A few children with CRPS fail to respond to multiple treatment approaches, including the stepwise multidisciplinary approach used by Wilder et al.\textsuperscript{1} and Lee et al.\textsuperscript{25} and the intensive PT approach used by Sherry et al.\textsuperscript{5} These children and their parents will often seek multiple medical opinions and undergo increasingly invasive and dangerous procedures in their quest for pain relief. Two types of neurosurgical procedures have been used in these patients: spinal cord stimulation (SCS) and sympathectomy. There is moderate evidence supporting the use of SCS in the treatment of CRPS in adults. Retrospective series by Kumar et al.\textsuperscript{58} and Kemler et al.\textsuperscript{35} and a later prospective series by Kemler et al.\textsuperscript{60} all show efficacy in terms of sustained pain reduction of modest proportions. Pain thresholds are not changed by SCS.\textsuperscript{51}

No series of children undergoing SCS have been reported, although I know of at least a half-dozen children who have undergone SCS for CRPS. Results have been mixed, ranging from modest improvement in pain and function to a worsening of pain, with explantation of the system. SCS has an advantage over sympathectomy in that it is nondestructive and completely reversible.

Sympathectomy, either chemical or surgical, has been reported in children with CRPS. Disadvantages of this procedure include the fact that it is appropriate only for the sympathetically mediated portion of the patient’s pain, that it is irreversible and may cause sympathalgia, and that long-term physiologic effects of lumbar sympathectomy on adolescent girls are not well characterized. In a mixed series of adults and children, Bandyk and Johnson\textsuperscript{62} reported an initial 10% failure rate. With 30-month follow-up, long-term results showed a reduction in pain relief overall to 25% excellent relief (pain scores < 3 of 10), and 50% with pain that was moderately reduced from before the block. Wilder et al.\textsuperscript{1} reserved the use of sympathectomy for patients with impeding loss of function from cellulitis complicating massive peripheral edema. The three patients undergoing these procedures did not have improvement in pain scores despite improvement in circulation and edema.

Complementary and Alternative Medicine

Randomized, blinded trials showing the efficacy of acupuncture are also lacking in CRPS. One such study has been performed, but there was improvement in both groups, with no statistical difference between groups.\textsuperscript{63} There are studies showing a surprisingly high acceptance rate for acupuncture therapy among children.\textsuperscript{64,65} There are also case reports of benefit to this therapy.\textsuperscript{66} It is rational to think that acupuncture, by its mechanisms of raising endogenous opioids and acting as a counter-stimulant to “close the gate” on spinal cord transmission of pain signals, might be of benefit in this disorder. Well-blinded studies are difficult to design, however, so obtaining definitive proof of efficacy may be slow in coming.

Although many patients may have used herbal remedies and nutritional supplements, there are no studies or even case reports of their efficacy. Most herbal remedies contain active biochemistry. They may in deed benefit some patients, but they may also have significant interactions with any medications that might be prescribed, and may have toxicity in their own right.

CONCLUSIONS

CRPS in children has been widely held to be intrinsically different from that in adults. This has been based on both demographics and a perception that children may have a milder course or a better response to conservative treatments. Other than the marked preponderance of lower extremity CRPS in children and adolescents, the demographics do not seem at all that different for children than adults. A female preponderance exists for both groups. Both appear to have Caucasian predominance. Psychological factors are often invoked in pediatric CRPS, including enmeshment of the patient and parents and a degree of overachievement.

Although this certainly may play a predominant role in some cases, the available evidence is not compelling that children with CRPS are unique compared with either other children with chronic pain or adults with CRPS. Finally, as regards the perception that children have an easier course than adults do, the evidence is not strong. Certainly, several series have reported children responding to courses of intensive PT alone. Nonetheless, the consensus is that PT is the definitive treatment of adults with CRPS as well as children. I have been unable to locate any series of intensive (5-6 hours per day) PT programs for adult patients analogous to that reported by Sherry et al.\textsuperscript{5} Series using less-intense PT, as reported by Wilder et al.\textsuperscript{1} or Lee et al.,\textsuperscript{25} give results similar to a stepwise multidisciplinary treatment plan in adults.\textsuperscript{67} The apparent mildness of pediatric CRPS may be due to a greater willingness of children to actively participate in appropriate PT more than to an innate difference in the disease process itself.

The potential for recurrence of CRPS is often of great concern to children with this syndrome and to their parents. Studies have shown a fairly high rate of recurrence in the same limb after successful treatment or spread to another limb concurrent with the initial diagnosis.\textsuperscript{5,25} Recurrence occurred in approximately 30% to 50%\textsuperscript{25} of patients, a much higher rate than the rate of 1.8% per patient-year reported for adults.\textsuperscript{68} Although recurrence is common, it generally seems to respond more readily to physical therapy and related treatments than the initial episode.\textsuperscript{5,25} A case report by Tong and Nelson\textsuperscript{69} illustrated that for some children the recurrent bouts of CRPS may be as severe as or even more severe than the original.

In summary, although not definitively proven, PT leading to active normal use of the involved extremity is generally held to be the single most effective therapy in the treatment of CRPS. Children may be willing to participate in PT, despite the associated pain, with proper motivation. In general, however, the clinician’s job is to
help provide adequate analgesia to speed progress in PT. A stepwise, multidisciplinary approach is generally in the patient’s best interest, starting with minimally invasive modalities such as TENS and biobehavioral pain management techniques. Acupuncture may be useful at this point, too, if there is a practitioner available in the community who has experience working with children. If needed, medications with a proven track record in neuropathic pain management can be added, such as the tricyclic antidepressants (nortriptyline or amitriptyline) or anticonvulsants (gabapentin and others). Children taking these medications need to be monitored carefully for side effects to optimize the risk/benefit ratio. Sym pathetic blocks can be useful to accelerate recovery; they are unlikely to be effective monotherapy for CRPS, but they do play a role as a way to help a patient work more actively in an ongoing PT program. Using the above approach, most patients will have an excellent response. For those who cannot sustain improvement despite an ongoing exercise program, neurosurgical techniques such as SCS or, in highly selected cases, sympathectomy may be useful. These techniques are not guarantees of success, and they should be used only as part of a multidisciplinary program stressing exercise and rehabilitation.

REFERENCES


Children and adolescents suffering from complex regional pain syndrome (CRPS), also known as reflex sympathetic dystrophy (RSD), need understanding and support to maintain a sense of normalcy. A student’s condition may vary from day to day, and the persistent pain associated with CRPS is invisible, so many health care professionals and school personnel may assume the child is faking and may doubt his or her pain.

If you visit the RSDSA website, there are several stories from young women who, in spite of the terrible pain caused by CRPS, are achieving their goals and living fulfilling lives. Yvonne writes, “My life is going to be full of adjusting and changing, but I will never let CRPS stop me from living my life.”

We want to help you understand how you can help children who have CRPS, either by simply being supportive or helping make accommodations and modifications in the school environment. Your support and understanding can determine whether our children succeed or fail.

**Arrange special transportation if traveling on a crowded, bumpy school bus is too difficult.**

**For older students, provide a designated handicapped parking space.**

**Arrange for the student to meet with the school counselor on a regular basis.**

Special Services for Those Who Can’t Go to School

Students with CRPS may qualify for special services, such as a 504 plan or an Individual Education Plan (IEP).

**Section 504**

Section 504 of the Rehabilitation Act of 1973 is a civil rights law that prevents discrimination against individuals with disabilities from any institution that receives federal funds from the U.S. Department of Education. Some private schools that do not receive federal funding may be exempt from Section 504. According to the United States Department of Education, a student qualifies for Section 504 protection if he or she has “a physical or mental impairment that substantially limits one or more major life activities.”

**Individual Education Plan**

An Individualized Education Plan (IEP) is developed in accordance with the Individuals with Disabilities Education Act (IDEA), which governs special education. IDEA has a number of eligible categories, including Otherwise Health Impaired (OHI). The criteria for an OHI designation is “limited strength, vitality, or alertness, including a heightened alertness to environmental stimuli, that results in limited alertness with respect to the educational environment, that (a) is due to chronic or acute health problems… and (b) adversely affects a child’s educational performance.”

**More Information**

US Department of Education, Office of Civil Rights

Protecting Students With Disabilities:
http://www.ed.gov/about/offices/list/ocr/504faq.html

National Dissemination Center for Children with Disabilities (NICHCY)

Individuals with Disabilities Education Act (IDEA)
http://www.nichcy.org/Laws/IDEA/
Disabilities: http://www.nichcy.org/Disabilities/Laws:
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3 http://www2.ed.gov/about/offices/list/ocr/504faq.html#protected


**Helping Youth with CRPS Succeed School**

“**At the evaluation meeting, one of your questions should be ‘What are WE going to do to help my child?’**”

—Dorothy Switalski

Children and adolescents suffering from complex regional pain syndrome (CRPS), also known as reflex sympathetic dystrophy (RSD), need understanding and support to maintain a sense of normalcy. A student’s condition may vary from day to day, and the persistent pain associated with CRPS is invisible, so many health care professionals and school personnel may assume the child is faking and may doubt his or her pain.

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**Arrange special transportation if traveling on a crowded, bumpy school bus is too difficult.**

**For older students, provide a designated handicapped parking space.**

**Arrange for the student to meet with the school counselor on a regular basis.**

I hate CRPS. I hate the pain. I get it from it. But, I am done letting it run my life. From now on, it is not in charge. I am. Life is to be lived.”

—Karen Richards, age 11

**Individual Education Plan**

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http://www.nichcy.org/Laws/IDEA/
Disabilities: http://www.nichcy.org/Disabilities/Laws:
http://www.nichcy.org/Laws/


3 http://www2.ed.gov/about/offices/list/ocr/504faq.html#protected

What is CRPS?

CRPS is a neuroinflammatory syndrome characterized by pain in one or more limbs and/or ankles, feet, abdomen, or hands, which is usually not due to any part of the body can be affected. The pain, described as burning or sharp, typically appears after a traumatic event, such as a broken bone, sprain, sports injury, automobile accident, or bad fall. There is often coldness and swelling in the affected limb(s) as well as allodynia (a painful response to a normally innocuous stimulus). The pain is disproportionate to the original injury and is present long after the original trauma has healed. CRPS is more common among pre- and adolescent girls than boys by about 5 to 1. It is usually seen in girls who engage in sports, dancing, or gymnastics.

Although the cause of CRPS is unknown, onset of injuries, trauma, psychological stress, nutritional factors, and hormones are possible contributors. CRPS is thought to reflect overreaction of the autonomic nervous system, leading to transmission of pain signals after the initial injury. As there are no single test for CRPS, the diagnosis is made clinically over the course of time. Other interventions that can be practiced as needed include:

✔ Attend school daily whenever possible.
✔ Permit the student to go to the nurse when needed (may be experiencing a pain flare-up).
✔ Limit the use of over-the-counter medications.
✔ Be allowed to walk in the back of the classroom or in the hallway periodically without disruption to others to stretch and move for pain reduction.
✔ Establish routines and schedules for learning and extracurricular activities.
✔ Be as independent as possible in completing assignments.
✔ Be encouraged to practice normal activities.

Other interventions that can be practiced as needed include:

Psychological intervention for child and family to assist with adjustment to home and community, behavioral interventions, and emotional support.

Relaxation techniques and cognitive-behavioral exercises/strategies.

Monitoring for “overactive” behaviors, over-scheduling, apathy and reduced motivation and/or initiation, and anxiety, depressed mood, and/or inflexibility.

Students with CRPS and School

For those students who are able, we recommend the following:

Physical/exercise therapy of the affected body part is the most effective treatment for pediatric CRPS. This therapy desensitizes and restores function—strength, endurance, and range of motion. Mind-body techniques, such as relaxation, biofeedback, and self-hypnosis, are helpful for pain management and can alleviate the fear of movement often seen in people with CRPS. Psychological interventions to help with coping and emotional responses, and family therapy, to promote adaptive parental/familial responses, can also be valuable. Medications, nerve blocks, and interventional measures, such as a tunneled epidural catheter or spinal cord stimulator, can also be used to facilitate and accelerate progress in physical therapy. A comprehensive coordinated interdisciplinary approach for CRPS management will provide the best results in the majority of children.

Limiting Stress

Because stress is a known cause of exacerbation of this syndrome, academic schedules and curricula may have to be modified, including:

1. Schedule all classes on one level or provide student with key to the elevator.
2. Implement flexible homework and make-up work policies (homework and tests are a major cause of additional stress).
3. If a student is unable to write, modify normal test taking, and allow additional time for tests.
4. Reduce school time if necessary and students may be late due to pain flare-ups and supplement with home-based instruction and tutoring.
5. If mobility is impaired, credit the student’s physical/occupational therapy as the requirement for gym (if the school has a pool, allow the student to use the pool during gym).
This issue was funded by a donation in memory of Ronni Jill Zager by her parents Lawrence and Judy Zager

Read Dr. Joshi’s article on Centralization of Pain on page 10

AN INTERVIEW WITH COCO VANDEWEGHE: TENNIS PRO AND CRPS WARRIOR

By LAUREN BENTLEY

Staying active while battling chronic pain can be extremely challenging. Some days, simply getting dressed can feel equivalent to running a marathon. The RSDSA recently sat down with Coco Vandeweghe, an American professional tennis player and CRPS warrior. At the age of just 28 years old, this California girl has certainly accomplished a lot. From Wimbledon to the U.S. Open, Coco has competed all over the world and, in 2017, earned herself a spot as one of the top ten tennis players in the world. Not only does she have one of the strongest serves in the industry, her drive to persevere through CRPS is equally as strong. Check out Coco’s tips for managing an active lifestyle and career while having CRPS.

1. Please give us a glimpse of your background and career as a professional athlete

a. I come from a family of athletes, so I was always surrounded by sports my entire life. I have an older brother and when I was child, I did what most other younger siblings did and followed my big brother around. That’s actually how I landed in tennis. He enrolled in lessons and I just tagged along. My mom saw that I had a pretty good eye and skill at a young age, so we decided to pursue it further. I didn’t fully turn pro in tennis at a super young age, like so many other tennis players do, which I think has helped me tremendously over the course of my career. I try to maintain a life outside of tennis because that grounds me as a person, especially when you are on the road 35-40 weeks a year.

2. What do you love about playing tennis?

a. Tennis is amazing because it takes you to places all over the world and introduces you to a number of different cultures and traditions. When I was younger and first traveling on tour, I didn’t appreciate the new places that I was introduced to. However, I now always take time in between matches to walk around the cities and explore as many new things as possible. I love tennis because it’s an individual sport, and as much as I love team tennis competitions, I love that if I win or lose the match, it all falls on me. There is nothing better than walking out onto the court and then walking off with a win.

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CALL FOR AUTHORS & IDEAS
Do you have a personal story, art, or knowledge to share with the CRPS community? Did one of these articles resonate with you? Is there a special topic you would like to see included in the RSDSA Community Update? We would love to hear from you. Please email your thoughts to info@rsds.org.

SPECIAL THANKS
We would like to acknowledge our Corporate Partners whose generosity helps to underwrite issues of the RSDSA Community Update. Our Corporate Partners include Abbott, Baker Family Charitable Trust, Center for Pain Management, Edelman, Krasin & Jaye PLLC, Grünenthal, Law Office of Scott Callahan, Sutliff and Stout, NoPainHanna, Oska, Shirley Ryan Ability Lab, Vitalitus and Michael & Lynn Coatney.

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Zoe’s Heroes
Zoe’s Heroes (https://rdsr.org/crps-pediatric-family-journey/) is a not-for-profit organization whose mission is to raise awareness and money for pediatric CRPS to fund vetted treatment & research projects and to provide financial assistance for treatments. When the US Pain Foundation withdrew their financial support for this summer’s Courageous Kid’s Camp for children in pain, Zoe’s Heroes stepped up and agreed to help RSDSA, The Coalition for Pediatric Pain, and Knock out RSD to finance this year’s camp. This wonderful organization created by Zoe Gellert and her parents also financed our pediatric CRPS accredited video for physicians, nurses, and physical therapists.

Fundraising for the Courageous Kid’s Camp for Children in Pain
Recently, we surprised our eldest son and celebrated his birthday in San Diego. One of our pleasant surprises was that our grandchildren Britten, aged 13 and Mazie, aged 11 Broatch had been filling their “penny pigs” to help send children in pain to camp this summer. Please consider donating your spare change or request a “penny pig” to join them and many others in sending children with CRPS and other pain syndromes to the CCK camp this year. Please email us at info@rdsr.org or call 877-662-7737.

Free Accredited Online Courses on Pediatric and Adult CRPS
Often, individuals with CRPS ask us how they can get involved in promoting greater awareness of CRPS in the medical community. RSDSA has developed free accredited courses for medical professionals on the diagnosis and treatment of pediatric and adult CRPS. We will gladly send you postcards about the courses to distribute to medical professionals in your community along with guidelines for hospitals, emergency departments, and dentists on how to care for people with CRPS. Please email us at info@rdsr.org or call 877-662-7737.

Anti-Inflammatory Cookbook
RSDSA is creating a cookbook filled with anti-inflammatory recipes that can assist with CRPS! If you’re interested in submitting a recipe, please fill out the form found here: http://bit.ly/3b7tPbS or email us at info@rdsr.org or call 877-662-7737 and we’ll send you a form.

James W. Broatch
My Journey with CRPS
BY KELLY HODGKINS • KELLY@PURPLEMOOKITING.COM

My journey with Complex Regional Pain Syndrome (CRPS) began in 2008. I experienced incredible pain in my wrist that interfered with my ability to use my right arm. I went to my family doctor who referred me to an orthopedic surgeon. The surgeon diagnosed me with having a ganglion and recommended it be surgically removed. Following this surgery, my pain increased, and I was referred to a hand specialist in Johannesburg, who, after conducting several tests, scans and shots of cortisone, operated on me again. This time, they removed three centimeters of inflammation and prescribed six months of rest and rehabilitation.

I was on a cocktail of potent anti-inflammatories and painkillers, none of which made an iota of difference. My occupational therapist and physiotherapist worked tirelessly to help me regain my movement and relieve my pain. Six months on, the hand specialist offered to fuse the bones in my right arm or remove the nerves. I was shattered! I couldn’t believe that was the answer.

I was in excruciating pain and spent most days in bed or on the couch crying. Physically, I was a wreck. No longer able to write, I completed my BBA degree through “writing” my exams orally. Unable to relax through any of my hobbies, I relied heavily on my horse Texie. He knew I was in pain and spent time just sitting with me, no need for a rope or saddle.

I did my best to work, but it was a disaster. I could barely manage a few hours on a good day.

By divine intervention, an associate of my mother referred me to a local neurologist. Dr. Sacoor took the time to understand my pain and checked me into hospital for two days of extensive testing. On the evening of the second night, Dr. Mohomed, a specialist physician, and rheumatologist came in diagnosed me with Complex Regional Pain Syndrome. I was his first patient!

When I came into the care of Dr. Mohomed, the relief was astonishing! Just to know what was wrong, that I wasn’t dying or crazy, and have someone in the medical world believe and understand me were answers to my prayers! To this, he added a treatment program which, after a few trials and errors, settled as 60mg of Cymbalta (Duloxetine) once a day and a chronic anti-inflammatory. I experienced migraines for the first time when I developed CRPS so he prescribed a migraine medication, Naramig. It took six months to feel the improvement take full effect, but it was amazing to know we were working on it!

The medication made me tired and nauseous so my homeopath doctor, Dr. Makris, worked hard to find herbal remedies to alleviate the symptoms and help my liver function. She did a fabulous job!

WANTED

Individuals to:

✓ Set up a collection canister in your local grocery/convenience store.
✓ Plan an event with the help of RSDSA by emailing us at info@rsds.org.
✓ Fill up a Penny Pig with your spare change to help RSDSA sponsor children in pain at summer camp.
✓ Help educate health care professionals by promoting the availability of our accredited courses on adult and pediatric CRPS.
✓ Blog for our weekly Tuesday’s Burn. Do you have a story or experience to share?
✓ Write an article for the RSDSA Community Update.
✓ Promote awareness of CRPS by sharing your story with TV or newspapers (we can help you).
✓ Share your story of hope. Inspire others who are struggling as you have.
✓ Join our peer-to-peer program (see our back cover).
To this, I added a bio kineticist (a physical therapist in America). Bryce is a friend and, while he didn’t know much about CRPS when I was diagnosed, he was prepared to learn. He helped me to get fit again, have my brain understand where my right arm is within space, and taught me exercises to release tension building in my muscles and reduce pain. I also regularly saw a psychologist, Gail, to help work through the trauma and grief that comes with having a chronic condition as well as how to set healthy expectations and boundaries.

Now, at 32 years old, I am so much healthier. I’m still on the Cymbalta and homeopathic medication but the anti-inflammatory aren’t necessary. My pain levels are lower than they’ve been in eleven years. I’m back working nearly a full day in my marketing consultancy alongside my mum, just as I had dreamed I would as a child. I get to ride my horse and I’m back to doing the hobbies I love such as drawing, knitting, gardening and playing piano.

Bryce, who I see once a week, has created a program that ensures I maintain what muscle strength and mobility I have as well as stabilizing weak points. He works slowly and within my capabilities, extending them bit by bit, to avoid a flare-up of my CRPS. Charting my progress is very rewarding and it’s given me a sense of control and hope that I can prevent deterioration and restore what has been lost. It also keeps the rest of me fit and healthy.

My psychologist continues, less frequently now, to be a great resource to lean on when it feels like I’ve leaned on my friends enough. Sometimes it helps to vent to somebody else who has a bit more distance.

I’ve learned what I can do on flare days including spending time in the field with my horse as well as with my dog at home. Grooming both of them calms me and does great rehab on my hands. They don’t need me to speak, they just know what I’m feeling. My horse, in particular, adjusts his behavior to compensate for my arm and my pain. He guards the arm for me and takes responsibility for me when I’m riding to ensure I don’t fall off. Reading, movies and audible books are such great distractions.

Regular prayer, Bible reading, and soul searching have guided me through the really tough times along with amazing friends and family. Having a support system that understands my needs and adjusts to my condition has been invaluable! I keep in touch with their lives through social media and instant messaging on days when talking or leaving the house is too much.

I find reading medical journals, magazines, blogs, websites, and Twitter feeds helps me feel active and a part of a broader community. It keeps me in touch with progress that is being made and reminds me that I am not alone with the problem. Sometimes others with the same problem phrase it differently to me, cast a new light on it or just allow me to empathize with them.

I still get frustrated, scared, angry, tired, lonely and sad. Having a chronic pain condition reorganizes your life without your permission and makes planning tricky. It takes a lot of explaining, forethought and effort to stay well enough. But, 11 years on, I look back and am amazed at all I can do now, how much research is available and how much I’ve gained from it. Who knows what the next 11 years will hold! So now I am also hopeful, excited, faith-filled and joyful.

Kelly Hodgkins

I’m looking for joy despite the pain and limitations of CRPS.
I love being a brand strategist in my own business, Purple Mookiting, alongside my mum.
I find sanity through God and my horse, Moonglo Texas, my beautiful GSD Teddy and my friends.
I love to read and enjoy volunteering with a number of organisations.
An Interview with RSDSA Vice President, Sharon Weiner

BY KELLY HODGKINS • KELLY@PURPLEMOOKITING.COM

Sharon Weiner, Vice President of RSDSA, is the embodiment of the organization’s mission to provide support, education, and hope to all affected by the pain and disability of CRPS/RSD. Her voice bubbles with enthusiasm as she discusses the work she is doing to connect and engage with those affected by CRPS and share information about the syndrome.

Unable to write due to pain in her right hand, Sharon began her journey to being diagnosed with CRPS in 1996. Originally misdiagnosed, she bounced from doctor to doctor undergoing tests and physical therapy but saw no improvement. The pain was excruciating, and she recalls asking her husband to please just knock her out for a break from it. Finally, a physical therapist suspected the real condition and referred Sharon to a pain specialist who diagnosed her with CRPS. The relief of being diagnosed, and no longer feeling crazy, was huge but the doctor explained how life altering the syndrome is and Sharon fast realized life wouldn’t be returning to normal any time soon, if ever. As a mother of two who worked full time, she consistently found herself in the hospital being treated for her extreme pain made worse but just living her busy life. Her pain specialist gave her six months to adjust her life or he would no longer treat her. Sharon made the tough decision to quit her job, as heartbreaking as it was to make.

Sharon sought a new positive focus while finding her balance with her CRPS and being an awesome mom. Being a natural learner, she looked for more information about CRPS/RSDS and support. Her first experience with a support group was depressing rather than helpful and, being a go-getter, she decided to investigate starting her own support group. After she attended an RSDSA conference in 1997, she began her first group in New Jersey under the auspices of her non-profit organization, Living with RSDS. Her objective was to create a safe space in which CRPS patients could discuss how to do life with CRPS, share information on how to adjust to it and support each other. Sharon commented that “Part of the challenge of CRPS is there is no ‘one size fits all’ treatment. Each person has to find the combination of medication, diet, exercise and lifestyle that works for them. The support group allows people to discuss what works and what doesn’t and creates a platform for professionals to share what they know.”

Sharon emphasizes how rewarding she finds running the support group. “It doesn’t matter how many people attend. It’s about the quality of the discussion and knowing that it’s positively affecting those in the group and bringing hope to a difficult situation.” She shares a powerful story of receiving a note from an anonymous attendee that simply said, “this group saved my life.” With CRPS being known as the “suicide disease,” it’s hard to quantify the impact and importance of these support groups.

Meeting once a month, the groups don’t only focus on the medical aspects of CRPS, they discuss all the aspects of life with CRPS, such as raising kids and even self-defense. They create a community of people who “get it.” Her first group gained such traction she began another in a different area and then added a virtual support group for people who are not able to travel. The CRPS support group program has continued to grow and there

“She reassures me, she’s not always upbeat, she allows herself to be sad, but doesn’t wallow, she finds what she can control and the things she can do, and she does it!”
are now over 60 CRPS support groups, in-person and online. Read more about the support groups in the Spotlight On Support section.

Sharon identified young adults, ages 21 to 31 years old, as needing a different kind of support group. In 2016, with the backing of RSDSA, Sharon and Sue Pinkham started a young adult weekend where 10-15 people traveled to a fun venue. Sharon remarks “Often times, the attendees arrive with no hope and no support system. They don’t know how they are going to tackle the ‘normal life’ things such as driving, working and studying. They don’t know how to find their independence with CRPS.” The weekend is designed to teach them how to navigate the world while having CRPS through art therapy, community building and advocacy sessions as well as excursions. Sharon speaks to attendees about creating a life worth living with CRPS and finding the things you can do rather than what you can’t do.

Realizing the strain group facilitators take, Sharon began a program to support them. She has created a place to be encouraged and explore new ideas. There is also a grant program to support these group facilitators, which is run by Sharon, to help set up more of these groups and keep them running. It funds many of the expenses we don’t think about that make these groups possible such as handouts and snacks. As an additional resource, Sharon is hoping to publish a book on how to facilitate these groups in 2020.

Sharon is also an incredible advocate for CRPS awareness and education. She champions it throughout her home state of New Jersey by taking every opportunity to share about it such as setting up educational displays and planting gardens to draw attention to the syndrome.

When asked about her life outside of CRPS and work, she exclaimed, “I’m a hobby enthusiast!” She loves reading, cooking, creating art and gardening, all paced to what her CRPS allows her to do each day. She has also created beautiful habits, such as making a list of three to five things she has to do in a day and calls “everything else is gravy.” This helps her prioritize and creates a sense of achievement at the end of each day. Each Friday morning she goes to see a movie. She calls it therapy, a time to take her mind off her pain once a week. It’s an apt example of how Sharon has created pockets of joy in the hard day to day life with a chronic condition like CRPS. She has adapted to each challenge CRPS has given her. She reassures me, she’s not always upbeat, she allows herself to be sad, but doesn’t wallow, she finds what she can control and the things she can do, and she does it!

Through each story Sharon shared, I saw the theme of compassion. She sees the needs of those suffering with CRPS and seeks a way to make it better for them through support and education. What she has achieved, and continues to do, is truly inspiring.

EASY WAYS TO GIVE

- Make RSDSA your charity of choice on GoodSearch.com and use that instead of Google.
- Use AmazonSmile.com and make RSDSA your charity of choice while shopping online.
- If you’re selling things on eBay, you can give a portion of the profits straight to RSDSA.
- Set up a collection canister in your local grocery store.
- Plan an event with the help of RSDSA by emailing us at jkrassner@rsds.org

HAVE YOU THOUGHT ABOUT YOUR LEGACY?

Are you looking for a long-term way to make a meaningful difference in the lives of people with CRPS?

Please consider making a planned gift to RSDSA today. Planned giving options include:

- Gifts of Stocks and bonds.
- Including RSDSA as a beneficiary in your life insurance policy.
- Including RSDSA as a beneficiary in your will.

Tax benefits apply to each of these options. Please contact your attorney or a financial advisor. For more info, contact RSDSA at info@rsds.org or go to https://rsds.org/donate/
Your struggles don’t have to be lonely or a family struggle! There are good people out there to help!

BY CHRISTOPHER SKINNER

I’m a Christian man with full body Complex Regional Pain Syndrome (CRPS). I’ve had full body CRPS for about a year now. I was playing basketball with two students at a drug and alcohol rehabilitation school, where I served as a student advisor/teacher, when I was forcefully pushed from behind, causing me to fall into a heavy stage bench. This caused me to tear my rotator cuff, hit my head, and hurt my neck. Either this event or the surgery about five months later caused me to develop CRPS in my entire right arm and I believe my neck, although I had never looked into any further into that beyond having an MRI. I have experienced significant spread of CRPS over the past six years. As far as diagnosis goes, my orthopedic surgeon was hinting at that fact for a while. However, I wasn’t officially diagnosed until my birthday by a Worker’s Compensation Independent Medical Evaluation doctor about a year and a little under 2 months later. I didn’t fully understand the diagnosis for about three years after that and now there are still a lot of things that “defy any logic!”

I have been fighting for some assistive devices since 2015 and other devices since June 2018. Bills and everything else got way ahead of us. Sometimes you have to reach out for assistance, even if you have a lot of pride due to a previous situation. This is the purpose of this article. Never be ashamed to ask for help if you need it. The first time we received help was from the RSDSA Jenkins Patient Assistance Fund. I thank God each and every day for the help they provided with our heating during a long winter. Perhaps the greatest gift was the gift of a person reaching out to me. I was stuck in the phase “maybe this is as good as it gets” for a really long time. Most of the ideas were shot down by the fastest gun in the east, but one stuck which led me to another method of help. This person knows who she is and I’m forever in her debt as I am firmly the “Engineer behind my own healthcare.” She also taught me that, “Physical illness is not a weakness of yourself. Rather, a weakness of the body and strength is measured by your heart and your mind.”

When someone offers their help and support, don’t shut them out due to pride.

When I was injured in 2013 and later in June of 2018, I was prescribed the wheelchair accessible van and electric wheelchair. I’d been fighting ever since for OT items and PT items including the ramp, and a lift chair. The current law in New York for Worker’s Compensation may not allow for a wheelchair accessible van in full. Many of my falls were a result of going up or down our stairs. Even though NY Worker’s Compensation law 442.3 was on my side, the bills were submitted, causally related, and not paid or challenged within 45 days for my wheelchair and the van. I could’ve been all set up by the end of August for these two items.

 Needless to say, I was left with no other option than to ask for help - which I am so happy that I did. I learned about the Grace Ridge Church through a program that
they did at the Damascus School and learned at the Area of the Aging that every once in a while, they did projects like wheelchair accessible ramps for those in need. I contacted my fourth-grade teacher that I knew went to the church, who then contacted George Maxson from the Grace Ridge Church. A few days later, I received a phone call from George saying that out of dozens of people, I was chosen for the project.

Mrs. Alexander and her husband were both teachers of mine and I sent just a five-paragraph message explaining what I had and what was going on. George came to our house and I thought it would just be for a wheelchair ramp, but then he asked what else needed to be done. Our house was built in 1806, I believe, but it’s in great shape for its age. However, there is quite a bit of work that needs to be done to our house to fix it 100 percent. Back in my prime, I would have been able to do much of the work, but I’m not a Spring chicken at 38.

The greatest gift George gave to us was inviting the family to 3:16 fest in Honesdale, PA. Brit Nicole spoke to my family, which sparked a significant change. Their mission group was going to come earlier, so George was able to bring several guys together to make the ramp functional until the Men’s mission group from the First Presbyterian Church in Endicott, NY was able to come to finish the ramp. The men from the Grace Ridge Church came here on Saturday morning and didn’t complain once about using their days off to help my family and me.

I won’t say there weren’t hiccups but I’ve never seen a more patient bunch of men. We will never forget what they did for us. Then November came and I was able to educate individuals from the First Presbyterian Church in Endicott, NY about CRPS and other struggles that we face on a daily basis. The added struggles that each of us face can make our lives harder and even unbearable. The men that took the time to come here prayed with our family on a daily basis, listened to my testimony, prayed over me, and allowed our boys to work right alongside them while sharing their lives with them.

When they were done, we had working electric in our basement again, trees cut up out of our yard, a beautiful wheelchair ramp, our old windows covered with plastic, a clean yard and newer furniture. Perhaps the greatest gift of all was a brand new bible with explanatory text at the side. Each of the men signed the bible with a special message not just for me, but for our entire family. Chris shared a special bible verse for the boys and it has become my new favorite verse. Each man shared a piece of themselves in some way that touched us forever. One way I’m able to deal with a flare better is with God’s help and that’s through reading the bible, listening to Christian music, listening to sermons, or by reaching out to friends for help. Here’s a photo of some of the men who helped us out. The wheelchair ramp is unfortunately covered up, but the work by their hands is impeccable. Pastor Tim is missing from the photo. Vinnie Canosa who took the photo from Grace Ridge, and the other men from Grace Ridge Church are also missing except for George Maxson was with us the entire time. Thank you to everyone and God bless all of you!
Central Sensitization

BY JAY JOSHI • DABA, DABAPM, FABAPM
NATIONAL PAIN CENTERS, NATIONAL PAIN CENTERS, VERNON HILLS, IL

There are four types of pain: Nociceptive pain, Neuropathic pain, Inflammatory pain, and Central Pain Amplification or Central Sensitization. Ask most physicians if they can identify all four subtypes and you will find that the majority cannot. Even worse, a significant number of physicians have not even heard of central sensitization and cannot define it. This is important because it helps explain why most physicians do not understand Complex Regional Pain Syndrome (CRPS). They simply do not understand the fundamentals of the pathophysiology. It also helps explain why there seems to be a resistance with coverage from insurance companies.

Central sensitization is a manifestation of activity-dependent plasticity due to an increase in synaptic strength, driven to a substantial extent, by N-methyl-d-aspartic acid glutamatergic receptors. Central sensitization occurs after noxious stimuli, peripheral inflammation, and nerve injury in the spinal cord and higher brain centers. It involves multiple presynaptic and postsynaptic changes producing changes in transmitter release and action, as well as synthesis of novel neuromodulators. Central sensitization is produced not only by increases in excitability but also by a reduction in inhibitory transmission due to reduced synthesis or action of inhibitory transmitters and to a loss of inhibitory interneurons, which may produce a persistent enhancement of pain sensitivity. In addition, altered gene expression in dorsal horn neurons, microglial activation, and thalamic and somatosensory cortex changes occur in central sensitization. Many features of central sensitization resemble those that are responsible for memory.

Types of central sensitization include anxiety, chronic pain (in general), CRPS/RSD, depression, fibromyalgia, headaches, opioid induced hyperalgesia, phantom limb pain, and Post Traumatic Stress Disorder (PTSD). Simply stated, CRPS is a regional manifestation of central sensitization. Obviously, the pathophysiology and comorbidities of CRPS is far more complex, hence the “C” in CRPS! You can read more about central sensitization and CRPS on my website at www.nationalpain.com or watch videos at www.youtube.com/nationalpaincenters. There have been countless reports by patients stating that physicians, other healthcare providers, and insurance companies do not believe that CRPS and central sensitization exist. I would like to address that as I perceive those statements as either ignorant or fraudulent.

We will briefly discuss two current cases. The first is a patient that fractured her wrist at work, which required surgical intervention. She developed CRPS as a result. Her delayed insurance approvals and inability to work resulted in anxiety and depression, forms of central sensitization. Fortunately, she has received 100% relief of her CRPS and central sensitization symptoms with ketamine infusions. She has been able to get married and hold a job now due to the relief of her symptoms. Her previous employer is still pretending that she does not have CRPS and is fighting her legally. They hired an anesthesiologist who is well known nationally as an “IME Whore” (a physician that conducts fraudulent Independent Medical Exams sponsored by the insurance company/employer). On record, he stated that central sensitization does not exist and is a made-up diagnosis. If this were true, CRPS would not exist and even more dramatically, the brain and spinal cord would not exist. The great irony is that this unethical physician sees patients with central sensitization and CRPS routinely and performs ketamine infusions (albeit, poorly).

The second patient was rear-ended while driving on the job. Her injuries required cervical fusion and extensive physical
therapy. She developed CRPS as a result of the accident. She is a government employee so her workers compensation case is handled by the Department of Labor (DOL). Certain individuals at the DOL have delayed her treatment and created multiple hurdles for her, increasing her anxiety and depression, thus worsening her central sensitization and CRPS pain. In an effort to sabotage her case, one of the DOL employees forced her to have multiple IMEs in the hopes that they would discount her injuries and make a false conclusion that she does not have CRPS and central sensitization. This strategy backfired as the IMEs (and her other physicians) have all stated that she has CRPS. Because the DOL is a government agency, she cannot sue the DOL and it appears that the employee that has tried to harm her and discriminate against her may be immune to prosecution and legal liability.

I am confident that most of the readers of this article can relate to these case reports. Know this: you are not alone. There are many treatments available for central sensitization and CRPS that can help people live more normal lives with more good days than bad days. The biggest hurdles are physician education, ignorance (or maybe arrogance), and fraudulent insurance company decisions regarding treatment coverage. There is a need for continued advocacy and a strong collective voice. Here is to hoping that 2020 will be a turning point for patients with CRPS and central sensitization!

Facilitator Support Group: Spotlight Tip

BY SHARON WEINER
SLWEINER@HOTMAIL.COM

When I run into the issue of planning or running out of ideas for a topic for a support group meeting, whether it be next month’s meeting or one that is months away, I sometimes look into the monthly or daily national awareness observance calendars. There are many different awareness listings that can be related to living with CRPS. Usually, there will be an abundance of information available leading up to and during that awareness month. Who wouldn’t want to celebrate Slow Cooker Month by sharing healthy and quick prep recipes? The awareness observances can also tie into fundraising, awareness or advocacy projects.

You can find different awareness observance calendars here:

Healthfinder.gov
Motivators.com
Nationaldaycalendar.com

For submissions for tips or support group accomplishments, please email Sharon Weiner at: fsg.rdsda@gmail.com

ABOUT THE AUTHOR
Dr. Jay Joshi is a nationally recognized board certified Anesthesiologist and fellowship trained Interventional Spine and Pain Management physician who has distinguished himself via his solid reputation, education, experience, and leadership roles in national activities, including Advisory Boards, Educational and CME Programs, Publications, Speaking Events, and Consulting.

He is considered a National “Key Opinion Leader” in pain management and he has presented to a variety of audiences, both large and small, over 600 times. Internationally, he has worked in the Department of Substance Abuse at the World Health Organization in Geneva, Switzerland. He has been featured on major TV networks, Radio, Print, and the Internet.

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Vitalitus: the small American company responsible for the Palmitoylethanolamide revolution

BY EDDY CARDENTEY • President and CEO

Vitalitus, a small family-owned company founded in 2014, is single-handedly responsible for sparking the Palmitoylethanolamide revolution in the United States. The company realized early on that there was a wonderful and naturally occurring molecule being used successfully overseas to help patients with various kinds of neuropathies. This molecule had an enormous potential to help many in the U.S., but very few doctors even knew about it. What’s more, those that were aware of this had to endure long shipping times, high shipping costs, and customs uncertainty when importing it from the Netherlands. Given these factors, Vitalitus felt it was its duty to produce and distribute the highest-quality PEA this side of the Atlantic.

Five years later, Vitalitus is still the premiere producer of PEA in the United States. Over the years, they’ve perfected their patent-pending formula to manufacture the most bioavailable form of the product, making it significantly more effective than competitors’ PEA. Vitalitus PEA can be taken orally as a capsule, but it’s also designed so that the capsule can be opened and the powder poured directly under the tongue. This is helpful for customers with various malabsorption ailments or other gastrointestinal issues. Since this method bypasses the GI tract and first pass metabolism in the liver, it can also be highly effective for other customers as well. Vitalitus PEA contains no synthetic excipients and is packaged in vegetarian hypromellose capsules. It is not made from soy, peanuts or any common allergens, so it is safe to use for people with various food allergies.

The product was first thought of as an endocannabinoid, but it is more properly defined as a cannabimimetic autacoid, since it’s a nuclear factor agonist normally produced by healthy tissue at an injury site. PEA acts as a messenger molecule and downregulates the inflammatory action of glia cells and mast cells, reducing the release of histamines, NGFs and pro-inflammatory cytokines in the degranulation process. As such, its usefulness for neuropathies is not by blocking the pain signal, but rather by gradually reducing the neuropathic inflammation that, in many cases, causes it. Based on the cell receptors it binds to, it is said to mimic the action of certain cannabinoids, but structurally the molecule is a fatty acid amide and very different from classic cannabinoids such as THC or CBD. This is why it is of special interest to customers who may respond well to classic cannabinoids, but are unable to use them due to employment drug screenings or living in a state where THC and/or CBD are not legalized for medicinal purposes. PEA is not psychoactive and will not test positive in a cannabinoid screen because it is not structurally one.

In addition to the Vitalitus PEA capsules, a topical cream was also developed by the company. This topical cream is meant to deliver PEA directly to localized affected tissues. In addition to PEA, the cream also contains myrrh, frankincense, and a number of other natural compounds used since ancient times to help with pain and inflammation.

Vitalitus PEA can be purchased online only from Vitalitus.com, although the company’s website lists the locations of practitioners, pharmacies, and other select locations where the product can be purchased. To purchase Vitalitus PEA, go to http://vitalitus.com or scan the following QR code with your phone:
3. When were you first diagnosed with CRPS? What were the initial signs that told you something was wrong?
   a. I had been dealing with some ankle and foot injuries for a few months at the time we discovered the injury was worse than we initially thought. Towards the end of 2017, I was playing a tournament in Hawaii and woke up one morning in extreme pain. I flew home ASAP. My mother took me to the emergency room because I was in serious pain. We went to a number of different specialists and it took some time before we finally came to a conclusion that it was CRPS.

4. Had you been familiar with this condition prior to diagnosis?
   a. I was not too familiar, but I had previously heard about CRPS. I had some family members who suffered from similar nerve damages but, in all honesty, I was no expert on it like I am today. As I mentioned, this is something that I will just have to manage over my career and it’s something that I will take head on.

5. Once diagnosed, how did you manage treating your CRPS? Were there any treatments you feel helped?
   a. The first thing that I did was rest and work out other muscles until the pain went away, and it was more tolerable just from a day-to-day perspective. There were days that my pain was so intense that I couldn’t walk. Mentally, I was really down, but I have such a great support team from my mom, brother and family that they were able to keep a positive outlook on it and always encouraged me to keep fighting. One of the first things I did was look at my tennis shoes and we decided that a wider model was vital for me since it helped with the pain and we were able to manage everything better. I also saw multiple doctors in New York and Las Vegas who specialized in this and we went over everything from vitamin intake to exercises. The most important thing I found that helped was time and rest which, to me, was the most frustrating because there was nothing else that I wanted more than to get back out on the court.

6. As a Star Athlete, what do you eat to maintain a healthy diet? Are there easy go-to meals you can share with our readers?
   a. I have a team at the gym I use in San Diego that helps oversee my diet especially when I am in training blocks where recovery and maintaining energy is crucial. When I’m at tournaments, we always try to eat clean meals with protein to help me compete the following day. I don’t have an “easy go-to meal” because the tournaments are all over the world, but I do have my favorite spots depending on where I am in the world!

7. How do you balance playing tennis professionally with having CRPS? What is your advice for helping our readers stay active?
   a. After the long process of getting diagnosed and after my medical team finally figured it out, I knew right away that this was something that I was going to have to deal with for the rest of my career. Some of my friends on tour have had career-ending injuries so I was very blessed and fortunate that I did not have to deal with that. However, it is something that I just have to manage which means changing my tournament schedules around, warming up properly and making sure that I have wide shoes, so the nerves don’t get damaged. Like I mentioned earlier, it’s all something that is manageable.

8. Do you have any tips for managing pain that you have learned over the years?
   a. The most important tip that I have is that you have to listen to your body. Before this injury, there were times that I would play through pain and I will still do that now, but it’s important for me more than ever now that I listen to my body. I have to properly warm up because I can’t afford to have another setback.

9. What are your tips for traveling with CRPS? How do you prepare to travel?
   a. The tips to traveling with CRPS are similar to what I do when I manage the pain of CRPS. Listen to the body and listen to the people around you who are the experts. I have a great physio who will help me in my warm-ups and cool-downs after and before every match.

10. What inspires you to get up and go every day?
    a. I just feel so lucky that I’m able to compete and play tennis again at a high level. This comeback has taken a lot of time and I am still nowhere close to where I once was and want to be. I know it will take time but that is what inspires me. I want to inspire people who have CRPS or other tough injuries that you can come back and it is not the end just because of a condition like CRPS.

11. What is one thing readers can take away from learning about your journey?
    a. When times get tough, there are always better times ahead. I went from being top 10 in the world to not being able to play tennis because I literally couldn’t walk without pain. Time heals and as long as you have a positive outlook on life, then it’s always worth the wait. During this time off, I’ve been able to develop friendships with people that I know will last a lifetime and it has given me a new outlook on what is important. I don’t get upset over the little things anymore because I remember not too long ago I was sitting on my couch just binge watching Netflix shows. I am just so appreciative of everything and I feel so lucky that I’m able to get back on the court again. I know this time around that I will get back into the top 10! I won’t stop fighting!
RSDSA YOUNG ADULT WEEKEND
Friday June 5th to Monday June 8th

RSDSA is excited to announce the first Young Adult Weekend of 2020! This event will be held in Philadelphia, PA from Friday June 5th to Monday June 8th. Young adults with CRPS from the ages of 21-31 will spend the weekend in this historic city with people that understand what they are going through to the fullest.

The Young Adult Weekends have been a great success and offer young adults with CRPS the chance to network, take part in workshops, learn about advocating for themselves, gain a support system and plenty of time to sight see and have one of a kind experiences.

We are asking participants to pay $250.00 for the weekend. With help from sponsors or donations, RSDSA will sponsor the additional costs for rooms, meals and speakers. Please note that all participants will likely be sharing rooms.

We have limited space so please let us know as soon as possible if you wish to attend. A $50.00 non-refundable deposit is required to reserve your spot or you may pay in full at the time of registration. Check or credit card is acceptable. Final payment of any outstanding balance is due by May 20, 2020 along with all emergency and information forms.

If you have any questions or concerns, please contact RSDSA YAW Committee at RSDSAYaWKND@gmail.com

We look forward to seeing you there!

Holiday Inn Express
1305 Walnut Street
Philadelphia, PA 19107
215-735-9300

RSDSA is also planning a Young Adult Weekend in Columbus, OH on August 7-9

Last year we successfully launched our Annual Fund on #GivingTuesday with a matching gift and a modest goal of $15,000. For RSDSA and our community an annual fund is an inevitable next step for our growth. Our annual fund will support both our stability and sustainability. Annual Funds support general operating expenses to meet the day to day needs of an organization and provide the seed money to support programming, personnel, and communications. For example, RSDSA has published the newsletter in both electronic and print versions at no charge to the community. It is mailed to over 13,500 community members at a cost of approximately $12,000.

Our Spring and End of Year appeals will be incorporated into the Annual Fund. Your donations support:

- Research for treatments and a cure
- Treating the Whole Person: Optimizing Wellness Conferences
- Two Young Adult Weekends a year
- Kids going to Courageous Kids Camp for free
- Emergency financial aid via the Jenkins Patience Assistance Fund

Please consider a donation.
I have CRPS card
RSDSA has revised and is reprinting its popular and informative I have CRPS card. The card explains what is CRPS, how it is diagnosed, describes the experience of having CRPS, and how each day is so unpredictable. The two-sided card pictured below can be obtained by calling RSDSA at 877-662-7737 or emailing info@rsds.org. We are asking that you consider making a small good-will donation to support our work.

What is CRPS?
Physicians do not know why CRPS develops or what causes it, but CRPS is a nerve disorder that usually occurs after a traumatic injury, surgery, sprain, fracture, or a period of immobilization. The principal symptom is chronic pain that is dramatically disproportionate to the original injury.

More than 150 years ago, Dr. Silas Weir Mitchell, a Union Army surgeon, first described the excruciating pain that we know as CRPS.

CRPS can lead to depression for those who can no longer work or participate in life the way they did before the onset of CRPS.

CRPS can lead to disability. CRPS can spread to other body parts that were not originally affected.

I may look “healthy,” but I often suffer unbearable, unrelenting, and burning nerve pain. The McGill pain scale rates the pain of people with CRPS higher than that of people with cancer, amputation, kidney stones, and childbirth.

My skin may swell, sweat, change colors, change temperature, or hurt to the slightest touch.

For some, lights, noise, or vibrations can cause disproportionate pain.

Here’s How You Can Help Us
My pain is real even though it is sometimes invisible and may not be readily apparent in my demeanor or activities.

I am learning various coping mechanisms to get through the day, but the chronic pain is always there. I have good and bad days; my pain may even change hourly, and I cannot predict how I will feel each day.

Sometimes it hurts to be touched anywhere so please ask before you touch me.

It is OK to ask me about CRPS. Better yet, visit www.rsds.org and learn all you can.

Poetry Corner

RSD
(Reflex Sympathetic Dystrophy)
By Melva Smith

I walk through the world
in a wounded haze
while my life is a maze of drugs and tears

I feel alone, helpless, lifeless, and confused
No friends can hold me,
no one can touch me
No one who understands
this pain from within

My heart says be free, run, and be me.
The pain consumes me,
the drugs they lose me.
My mind is gone, along with some
memories of yesterday.

Yesterday has come and gone,
now some memories say so long.
My heart weeps for someone to love.
My body yearns to be held but I am alone.
Walking in this cloudy haze.
Longing for a way to be me—to be free of

RSD

At times I’m angry, sometimes I am sad.
But I ask myself, why not try
something else instead?
Know you have God,
know you live,
know you have family

RSD

I’m going to fight!

Ms. Smith has published a book of poems - Peelin’ the Onion - which is available on Amazon for $14.
THE RSDSA provides support, education and hope to everyone affected by the pain and disability of CRPS/RSD while we drive research to develop better treatment and a cure.

REFLEX SYMPATHETIC DYSTROPHY SYNDROME ASSOCIATION
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P.O. BOX 502
MILFORD, CT 06460

TEL: 877.662.7737
FAX: 203.882.8362
WWW.RSDS.ORG

Don’t see an event near you?
Contact Jeri Krassner jkrassner@rsds.org to discuss planning an event in your area!

RSDSA UPCOMING EVENTS  WWW.RSDSA.ORG

**PEER TO PEER**
If you wish to take advantage of this program, please do the following.

- Please contact LindaLang@rsds.org
- Please provide your email, phone number and a little bit about yourself.

### MARCH

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<th>Date</th>
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<tr>
<td>3/28/2020</td>
<td>Ribbon of Hope Fundraiser - Mahopac, NY - Marianne DeMasi</td>
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<td>Ted Talk about Giving Back - Eric Moyal</td>
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<td>Saving Those Overwhelmed by Pain (S.T.O.P.) Family Fun Event - Montclair, VA - Christina Whearley</td>
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### JULY

### SEPTEMBER

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<td>5th Annual Long Island Awareness Walk Eisenhower Park, Long Island, East Meadow, NY</td>
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<tr>
<td>9/13/2019</td>
<td>Flame Out - Walk to Extinguish the Pain, Oakhurst, NJ - Linda &amp; Bob Hopkins</td>
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Turn hurt into help. Donate today. Call 877.662.7737 or visit www.rsd.org
WHEN YOUR CHILD’S PAIN WON’T GO AWAY
It could be Complex Regional Pain Syndrome

RSDSA is committed to assisting those who suffer from CRPS as well as the people who support them.

RSDSA offers emotional, financial and medical support to people suffering with CRPS. We can also provide referrals to pediatric rehabilitation programs. Please visit our website, www.rsds.org, if you are in need or have questions.

If you think you or someone you know has CRPS/RSD, please visit your physician and provide him or her with educational information about the disease. Much more can be accessed through our website. You may also contact us at 877-662-7737.

Stay connected with us by subscribing to our bimonthly newsletter, joining our community email news blasts, or visiting our Facebook page.

TREATMENT OPTIONS
Ultimately your physician will prescribe the best program to meet your child’s needs, but research has shown that physical therapy can be one of the most effective treatments for CRPS.

Other treatments, such as psychological support or medication may be needed, so consult your family physician as to the best course of action.

ADDITIONAL RESOURCES
CRPS is not life-threatening, but it can be highly disruptive and lead to excessive school absences if left untreated. Early diagnosis is key.

Once diagnosed, some students may require special school accommodations, such as ergonomic assessments, additional travel time between classes, revised schedules and possibly a helper’s aide.

Students who find their CRPS too painful to allow them to attend school may qualify for special services, such as a 504 plan or Individual Education Plan (IEP). For more information on available accommodations, contact your school’s health services coordinator.

RSDS.ORG
877-662-7737

RSDSA
Supporting the CRPS Community
YOu ARE YOUR CHILD’S BEST ADVOCATE

Your child frequently experiences severe pain following an accident, injury or other trauma. It may be accompanied by swelling, changes in skin color, temperature, or limited mobility. He or she is suffering, and other treatments have been ineffective. Worst of all, he or she may not be able to tell you what’s wrong. Your child could have CRPS (Complex Regional Pain Syndrome) which is also referred to as RSD (Reflex Sympathetic Dystrophy).

CRPS is a neurologic syndrome characterized by severe and often burning pain. While it affects nearly 200,000 people in the U.S., it is rarely mentioned in an initial diagnosis.

There is no gold standard for diagnosing CRPS. Only a careful and thorough exam and review of medical history by your physician can produce the proper diagnosis and recommended treatment. Pediatric CRPS is typically under-recognized and misdiagnosed by physicians, and you may have to advocate for proper testing.

THE FACTS

What is CRPS/RSD?
CRPS/RSD is a rare neurological disorder that causes severe inflammation in the sympathetic nervous system.

What Causes It?
It occurs after a trauma, such as a musculoskeletal or nerve injury, surgery or broken bone. Sometimes there isn’t an initiating event.

The trauma causes the sympathetic nervous system and immune system to malfunction. The nerves throughout the body misfire, overwhelming the brain with pain signals.

What Are the Affects?
CRPS is devastating. It causes severe pain, swelling and sensitivity. Many people are unable to walk, work, go to school, or wear clothes.

Who Can Develop CRPS?
Anyone can develop CRPS, regardless of race, age or gender. However, research shows that it is most common in women.

SIGNS & COMMON SYMPTOMS

This is not an exhaustive list, but symptoms may include:

- Constant pain described as deep, aching, burning or stinging
- If the pain is getting worse, not better, and if the pain is more severe than one would expect from the original injury it may be CRPS
- A prior trauma (fracture, sprain, surgery, etc.)
- Abnormal swelling
- Excessive sweating in the affected area
- Changes in skin color
- Noticeably altered skin temperature in the affected limb
- Weakness in affected limb
- Limited range of motion
- Paralysis or dystopia (muscle contractions resulting in abnormal positions)
- Allodynia (pain from stimuli that is not normally painful, such as the touch of fabric or wind blowing across skin)
- Hyperalgesia (excessive sensitivity to pain)
- Hair growth changes (coarser, darker, rapid growth, loss of hair)

WHAT TO TELL YOUR PHYSICIAN

During your child’s exam, ask your physician if he or she is familiar with CRPS. Also tell your doctor or clinician about any sprains, falls, surgery or other trauma your child has had recently. Provide them with information on timing, severity of pain and any other triggers you may notice.
Mirror Therapy and Other Brain Retraining Treatments

By Sarah M. Whitman, MD

The abnormalities in CRPS are not confined to the parts of a patient’s body which hurt, but are also found in the central nervous system, particularly the brain. Ongoing pain signals may cause disturbances in the brain’s “body map,” which is the internal representation of the body in the brain. Patients with CRPS often use the painful parts of their bodies less. This causes fewer signals of normal movement to feed back to the brain, lessening any opportunity to correct the abnormal body map.

However, this knowledge presents an opportunity for new treatment approaches, and exercises which retrain the brain can decrease pain.

Mirror therapy uses a patient’s visual system to register normal movement in the brain. The patient’s painful, difficult-to-move body part is hidden behind the mirror, while the contralesional body part is moved. The patient watches the reflection, and this simulates comfortable, easy movement. When successful, mirror therapy reverses abnormalities in the body map and decreases pain.

Graded motor imagery is a step-wise program which breaks down movement into components. This allows a more gradual resumption of movement without producing pain. The components include right/left discrimination, imagined movement, and lastly actual guided movement.

Research has demonstrated mirror therapy to be effective in early CRPS, and graded motor imagery in chronic CRPS. These are exciting, effective treatments. Once a practitioner understands the underlying theory and how to implement the treatments, they can be used creatively in most patients with CRPS. An excellent website for more information is www.mirror.co.uk.

What People with CRPS Should Expect from Therapy

By Anita L. Davis, PT, DPT, MSM, D-AAPM

Before developing CRPS, chances are you have never had a major injury or illness, but now you may find yourself going from doctor to doctor and have a shelf full of medications. Some have worked, some have not, and others have had such side effects that you had to stop taking them. The doctors have talked about injections and maybe neurostimulators—and, by the way, now you need to start physical therapy.

The intent of therapy is to help you regain your strength and mobility, and even reduce your pain. There will be days you would rather not follow the home program or go to therapy, and moments that your pain increases and you question the reason for making yourself hurt even worse. In those moments, let your hope of recovery and the support of close ones cheer you to continue.

Therapeutic activities that involve walking, stepping, carrying, or lifting present their own challenges. The aim of these types of tasks is to simulate a normal, functional motion while allowing your nerves to adapt to the sensation by readjusting their sensitivity. The pain will increase with these tasks, since your nerves have become so sensitive that they overreact to what used to be normal. It takes time and repetition to retrain this response. Medical literature and clinical experience tell us that this ultimately leads to less pain within 10 to 14 days.

In the midst of performing these painful activities, you should have strategies to reduce the flare-up. Your therapist may share relaxation techniques, imagery, breathing, or other movements that can ease the pain. Learn these and use them—for in this you can gain confidence in your ability to control what has otherwise seemed uncontrollable.

Home Exercise Programs

A home exercise program is a select group of exercises or activities that a therapist designs. Frequency/participation in therapy sessions may vary from one week to the next, but what is done outside of therapy can have a significant impact on the patient’s overall progress. Following an individualized home exercise program can be an important component of treatment as it helps the patient continue to make progress in strength, endurance, movement and function in between therapy sessions.

Home exercise programs vary depending on your individual needs. Often home exercise programs will initially focus on scrubbing/weight loading and desensitization techniques to begin actively engaging the muscles in the affected area and help you manage your pain better. After the initial phase of scrubbing and desensitization, the home exercise program may be upgraded to focus on increasing range of active movement and improving strength.

Many home exercise programs will include functional activities in addition to stretches and exercises. Such activities may include drinking from a cup with the affected hand or wearing a shoe on the affected foot. Often these activities are based on tasks that the patient currently has difficulty performing. They may be things that you do for short periods of time frequently throughout the day to help you incorporate the affected area back into routine activities. Consistent participation in exercises/activities outside of therapy sessions, as directed by a therapist, may help the patient achieve his or her goals more quickly.

Treating Complex Regional Pain Syndrome

A Guide for Therapy

Reflex Sympathetic Dystrophy Syndrome Association
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Raising awareness of complex regional pain syndrome since 1984
What is Complex Regional Pain Syndrome
Complex Regional Pain Syndrome (CRPS) is a chronic pain syndrome. CRPS generally involves a dysfunctional response of the nervous system and may develop after a traumatic injury or a period of immobilization. CRPS is divided into two categories: Type I (formerly known as Reflex Sym pathetic Dystrophy) and Type II (formerly known as Causalgia).

What Does CRPS Look Like?
CRPS pain is often described as deep, aching, cold, and/or burning and is frequently associated with increased skin sensitivity. Pain is generally rated moderate to severe and is disproportionate to any inciting event.

Symptoms of CRPS can include abnormal swelling, atrophy of the affected skin color or temperature changes, abnormal sweating, limited range of motion, and movement disorders.

Evaluation of CRPS for Functional Rehabilitation
Principal areas to evaluate are range of motion, strength, edema, dexterity, skin/vasomotor changes, pain/sensation, the presence of abnormal guarding or protection postures/movements and active use of the extremity during activities. Barriers to movement that are important to assess include fear and avoidance, reliance on passive coping tools, lack of education on CRPS and motivation/readiness for change. If psychological distress such as depression and anxiety is noted, a psychological evaluation may be required.

Treatment Protocols
Treatment objectives for CRPS are to minimize edema, normalize sensation, promote normal positioning, decrease muscle guarding, promote use of active pain management skills and increase independence in all areas--mobility, work, leisure and activities of daily living (ADL). Education on CRPS, chronic pain and appropriate goals should be an emphasis early on and throughout treatment. Active movement and weight bearing exercises are emphasized. Treatment of CRPS can be painful and both mental and physical active coping tools are useful.

Edema is managed using specialized garments (Jobst® garments, Isotoner® gloves, Coban®) and manual lymph drainage and AROM (active range of motion) activities are also fundamental in managing edema. Elevation of the extremity can be effective; however it can sometimes become part of a cycle of guarding and disuse.

Desensitization techniques are implemented to assist with normalizing sensation to the affected area. This consists of progressive stimulation with very soft material to more textured fabrics or materials. Stimulation can be graded from light touch to deep pressure and from contact to movement to each material. Wearing jewelry, clothes and shoes on the affected areas are also ways to normalize sensation.

Contrast baths that gradually broaden the temperature difference between the two can work toward tolerance of heat or cold.1

Posture is an important component to consider in treating CRPS. Proper posture and alignment can minimize protective guarding of the extremity, promote balanced use of muscles and facilitate improved functional use of the affected extremity. Relaxation breathing and awareness can help to decrease guarded posturing.

Stress Loading consists of two principles: scrubbing and carrying. A stress loading program promotes active movement and compression of the affected joints for a minimum of 3-5 consecutive minutes, three or more times each day. Though stress loading may initially produce discomfort, this is not maladaptive. If the symptoms become extreme, after several days a decrease in symptoms will begin to be evident. Use of the affected extremity in daily tasks is encouraged throughout rehabilitation to inhibit muscle guarding and disuse atrophy.2

Sitting distal to the affected extremity in a back/fork motion while weight bearing through the extremity.4 The patient scrubs against a hard surface, keeping the bristles of the brush in constant contact with the surface, while maintaining constant pressure on the brush. The amount of weight placed through the affected extremity and the duration of the activity are gradually increased.

Scrubbing is performed using the patient in quadruped for upper extremity involvement and in elevated sitting or standing for lower extremity involvement.5 For upper extremity involvement, the patient lies on their stomach or is placed in a prone position on a scrub brush with the affected hand. For lower extremity involvement, a long Veleros® strap can assist in fastening the brush to the bottom of the affected foot.

Modifications can be made to enhance performance or compliance. For example, upper extremity scrubbing may involve standing at a table or counter. Patients with limited wrist extension may benefit from using a handled brush.2 The Dystrophile® can be used to gauge reliable performance. It is a device designed to facilitate consistent weight bearing and compliance during scrubbing by activating a light when the patient has reached the preset load.

Carrying or loading, is the second component in the stress-loading protocol. Small objects are carried in the hand on the affected side, progressing to a handled bag loaded with increasingly heavier weight. Carrying should be performed for a minimum of one hour each day, whenever the patient is standing or walking.6-5

The lower extremity can be loaded in a variety of ways: Walking is an important loading technique if care is taken to ensure weight bearing through the affected leg during gait, especially when an assistive device is used. Increased weight bearing can be accomplished with verbal/physical cueing or by having the patient carry a weighted object or bag on the affected side. Loading can also be facilitated by engaging the patient in activities that promote weight shifting and balance (i.e. standing on one foot) or by placing the unaffected foot onto a small footstool during static standing tasks.

Mind-Body Interventions facilitate stress reduction, desensitization of the nervous system and provide coping tools for dealing with pain. They include relaxation, meditation, guided imagery, biofeedback, hypnosis, and more. Mindfulness-based stress reduction (MBSR) is a form of meditation practices that is commonly used to help treat chronic pain. The practice of these interventions should begin immediately.

Bracing/Bracing is a set of rehabilitation processes used to treat pain and movement problems related to an altered nervous system, including the brain. The three different treatment techniques include limb laterality training, graded motor imagery exercises, and mirror therapy. These techniques are delivered sequentially or individually. This type of treatment is done over a long period of time and fast results should not always be expected.

Sprinting/Bracing is used in severe cases of CRPS. Sprinting or bracing may be utilized to promote increased functional use of the extremity. It involves placing the extremity in a functional position, or by placing the unaffected foot onto a small footstool during static standing tasks.

Functional Training begins once the patient is actively engaged in an edema management and stress-loading program. As the pain and edema decrease, the patient will be able to tolerate and participate in AROM, coordination, dexterity, and strengthening tasks. Proprioceptive neuromuscular facilitation (PNF) patterns are often well tolerated during treatment.8

The therapist can help the patient to gradually improve AROM and flexibility through gentle progression of active and active-resistive exercises or gait training. The patient should be encouraged to gradually return to daily life activities. These treatments and activities can be very painful and the therapist must understand and be able to explain the differences between pain and damage to allievate the fear of the patient. While these treatments should be done within the patient’s tolerance, the patient must understand that they will have to push through pain to achieve their goals. Care must be taken to ensure safety of the anatomical structures in insensate situations (as after a nerve block). Pacing and pain management techniques, such as appropriate rest breaks, alternating tasks, thermal or cold applications, diaphragmatic breathing, and relaxation techniques, can assist the patient in minimizing pain flares while participating in intensive rehabilitation.

Treatment Summary
The overall role of the therapist during rehabilitation of CRPS is to guide the patient through a program designed to minimize pain, edema, and maximizing functional use of the extremity. As CRPS varies greatly in severity and duration, it is very important for the therapist to demonstrate enthusiasm, support and encouragement of the patient during the treatment process.

The patient, in turn, must be actively involved in integration of treatment techniques into daily activities to achieve optimal function of the affected extremity.

References
THE RIGHT TREATMENT

CRPS is a multifaceted medical condition best managed by an interdisciplinary team coordinated by a physician or pain specialist with a special interest and experienced in treating CRPS. You must become the “captain” or CEO of your team. No one treatment works for everyone. Your first step is to educate yourself. RSDSA’s website has a very informative section, Diagnosed: Now What?

Your treatment goal is to reduce your pain while focusing on improving function. Other members of your team may include physical or occupational therapists, psychologists or counselors trained to help individuals learn how to manage their pain, anesthesiologists or interventional pain specialist (when warranted), and your support people.

Treatments may include: medications, topical medications, interventional therapies such as nerve blocks, intrathecal drug infusion, warm-water-therapy, physical and occupational therapies, psychological support, neurostimulation, IV ketamine or IVIG infusions or, participation in a clinical trial (clinicaltrials.gov).

THE DIAGNOSIS

There is no single diagnostic test for CRPS. Only a careful exam can produce the proper diagnosis.

RSDSA is committed to assisting those who suffer from CRPS as well as the people who support them.

RSDSA offers emotional, financial, and medical support to people suffering with CRPS. Please visit our website if you are in need.

If you think you or someone you know has CRPS/RSD, please visit your physician and provide him or her with educational information about the disease. Much more may be accessed on our website. You may also contact our organization.

WE ARE HERE TO SUPPORT YOU
- YOU ARE NOT ALONE -

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Website: http://rsds.org

Raising awareness of CRPS since 1984
**HOW CRPS CHANGED A CHILD’S LIFE**

Once a successful swimmer and a student council member, fourteen-year-old Natalia is now trapped in her body.

After a mild wrist sprain, Natalia’s fingers swelled into blood-red sausages. The pain prevented her from even holding a pencil.

Exactly a week after her thirteenth birthday, a neurologist finally diagnosed her with CRPS after many ER visits. In the following months, she was hospitalized more than a dozen times.

Just as she began to show improvement, a car collided with her school bus, and her CRPS spread. Pain covered every inch of her body; Natalia has not walked since.

Her parents have been unable to hold her hand or hug her for over a year.

Natalia’s story is not unique. In the U.S. alone, nearly 200,000 people suffer from CRPS, the most painful medical disorder. Like Natalia, these people need help.

**To receive help, they must be heard.**

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**THE FACTS**

**WHAT IS CRPS/RSD?**

CRPS/RSD is a rare neuro-inflammatory disorder that causes severe inflammation in the sympathetic nervous system.

**WHAT CAUSES IT?**

It occurs after a trauma, such as a musculoskeletal or nerve injury, surgery, or broken bone.

The trauma causes the sympathetic nervous system and the immune system to malfunction—the nerves throughout the body misfire, overwhelming the brain with pain signals.

**WHAT ARE THE EFFECTS?**

CRPS is devastating. It causes severe pain, swelling, and sensitivity. Many people are unable to walk, work, or wear clothes.

**WHO CAN DEVELOP CRPS/RSD?**

Anyone may have CRPS, regardless of race, age, or gender. However, research shows that it is most common in women.

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**WORKING FOR A CURE**

Since the Federal Drug Administration classified CRPS as a rare disease, RSDSA has been committed to finding a cure.

In 2014, RSDSA established the International Research Consortium, uniting forty-seven CRPS clinics and specialists worldwide to develop better treatments for the disease and to work toward a cure.

**COMMON SYMPTOMS**

- Pain described as deep, aching, burning, or stinging
- A prior trauma (fracture, sprain, surgery, etc.)
- Abnormal swelling
- Excessive sweating in the affected area
- Changes in skin color
- Noticeably altered skin temperature (increased or decreased) in the affected limb
- Weakness of affected limb
- Limited range of motion
- Paralysis or dystonia (muscle contractions resulting in abnormal positions)
- Allodynia (pain from stimuli that is not normally painful—the touch of fabric or the wind blowing)
- Hyperalgesia (excessive sensitivity to pain)
I have CRPS

What is CRPS?

- Physicians do not know why CRPS develops or what causes it, but CRPS is a nerve disorder that usually occurs after a traumatic injury, surgery, sprain, fracture, or a period of immobilization. The principal symptom is chronic pain that is dramatically disproportionate to the original injury.

- More than 150 years ago, Dr. Silas Weir Mitchell, a Union Army surgeon, first described the excruciating pain that we know as CRPS.

- CRPS can lead to depression for those who can no longer work or participate in life the way they did before the onset of CRPS.

- CRPS can lead to disability. CRPS can spread to other body parts that were not originally affected.

- I may look “healthy,” but I often suffer unbearable, unrelenting, and burning nerve pain. The McGill pain scale rates the pain of people with CRPS higher than that of people with cancer, amputation, kidney stones, and childbirth.

- My skin may swell, sweat, change colors, change temperature, or hurt to the slightest touch.

- For some, lights, noise, or vibrations can cause disproportionate pain.

Here’s How You Can Help Us

- My pain is real even though it is sometimes invisible and may not be readily apparent in my demeanor or activities.

- I am learning various coping mechanisms to get through the day, but the chronic pain is always there. I have good and bad days; my pain may even change hourly, and I cannot predict how I will feel each day.

- Sometimes it hurts to be touched anywhere so please ask before you touch me.

It is OK to ask me about CRPS.
Better yet, visit www.rds.org and learn all you can.
CRPS is a diagnosis of exclusion for anyone who suffers with moderate to severe pain that exceeds the scope of their original injury and who presents with some of the following characteristics:

- Pain is described as deep, aching, cold, burning, and/or increased skin sensitivity.
- The presence of an initiating noxious event (sprain, fracture, surgery, etc.).
- Continuing pain (moderate to severe) associated with allodynia (hypersensitivity), or hyperalgesia.
- Abnormal swelling in the affected part.
- Abnormal hair or nail growth.
- Abnormal skin color changes.
- Abnormal skin temperature (greater than 1°C asymmetry).
- Abnormal sweating.
- Limited range of movement, weakness, stiff joints, or other motor disorders (paralysis, dystonia, etc.).
- No single test can diagnose CRPS. Physical exam and medical history are the main criteria. Diagnosis is challenging and is made by ruling out other conditions.

Pain Scale

The RSDSA provides support, education and hope to everyone affected by the pain and disability of CRPS/RSD while driving research to develop better treatment and a cure.

SUPPORTING THE CRPS COMMUNITY

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PLEASE CONSIDER MAKING A DONATION
Thank you for considering a donation to RSDSA. Contributions like yours are the pillars supporting our financial foundation. By making an unrestricted gift, you enable RSDSA to host conferences for adults, sponsor Young Adult Weekends, and support research. Our conferences empower patients with current information to help them make better decisions for their health and optimize their wellness as they deal with CRPS. Thus, inspiring them with positivity and strength to take control of their illness and their life. RSDSA strives to make a difference in the lives of people affected by CRPS. We also provide emergency financial assistance for those that need help with medical expenses, as many people with CRPS/RSD are unable to work.

RSDSA is a 501(c)3 not for profit organization. All donations are tax-deductible.

Thanks to the generosity of donors like you, RSDSA has been fighting CRPS/RSD and supporting the CRPS/ RSD community for more than 35 years. We are grateful for your support!