Concussion Care Centre of Virgina
Medical Psychology & Rehab Neuropsychology

Psychophysiologic Treatment Protocol
Reflex Sympathetic Dystrophy

- **(1)** Extremity temperature biofeedback for anywhere from 25-50 sessions, beginning with the effected extremity, but often involving bilateral synchronization training involving both the effected & non-effected extremity. The three basic training phases (The 3R's) include: (a) increasing **R**esting baseline temperature across sessions; b) reducing **R**eactivity, or the intensity of temperature decrease reactions in response to stress/ challenge (e.g., light touch or massage or ??), and; (c) shortening the latency of **R**ecovery period for bringing temperature back to pre-challenge baseline and strengthening this recovery response.

- **(2)** Incremented activity programming, designed similarly to graded exposure behavioral programs for anxiety. This involves a strict checklist approach, beginning with tolerable increments (e.g., blowing on the toe one time) and gradually increasing (e.g. touching toe lightly with finger) over days, weeks and months (e.g., applying lotion; applying lotion with slight massage for X seconds); pressure from baring partial weight for a fraction of a second; bearing weight for 2 seconds; take 2 steps with partial weight bearing; take four steps with full weight bearing). As with graduated exposure programs, the philosophy is that the patient should not experience great pain (cf. anxiety) increase, as this will sabotage physiological adaptation / success. Hence, instruction is given to back off if pain increases abruptly. Also, lots of encouragement and support is provided, and family members are usually coached on how to coach, including any effective phrases that have been developed.

- **(3)** Lots of psychoeducation re: generalized stress response and their focal / localized sympathetic vascular response (individualized to their symptomatology based on physician input, bone scan and other tests and baseline surface temperature readings, etc.), identification of major stresses/red flags, setting up a simple self-monitoring program for these red flags, identifying a stress reducing self-control remediation, etc., along with a rationale involving "re-setting" their sympathetic system response.

- **(4)** Cognitive behavioral psychotherapy laden with shaping of incremental expectancies, accurate comparisons, etc., to reduce hopelessness, shape accurate self-monitoring, self-evaluation, and self-reinforcement for the tiniest of progressive steps. Provide Martelli's cognitive behavioral re-education package that includes "The Five Commandments of Rehabilitation", and generic and individualized posters to support the facilitative, attitudinal, motivational components of therapy (e.g, the 3 P's: a **P**lan, **P**ractice, a **P**romotional attidude). In addition, specific emotional desensitization efforts,to “Calm the catastrophic reaction” and assist with emotional splinting, are indicated.

- **(5)** Coordination with treating medical staff to ensure consistency of approach, rationale, explanation, etc. This is critical, as many MD's, PT's and others employ trial and error approaches that are incompatible with graduated exposure/ incremental activity strategies. This protocol is most acceptable to biopsychosocially minded (versus dualistic or reductionistic), flexible and patient medical staff.

➢ (6) In terms of conceptualization, the thrust of current efforts in chronic pain management seem to be moving toward "desensitization" or calming down to unstick or wind down the CNS, through combination treatments, typically including several or all of the following:

- Desensitizing Medications (e.g., Anti-epiletic drugs, Tizanidine HCL, Amytal)
- Desensitizing Peripheral CNS Procedures (e.g., EMG Biofeedback; Various Relaxation Procedures)
- Desensitizing Behavioral Activity Procedures (e.g., graduated exposure / graduated activity programs)
- Desensitizing Psychotherapeutic Procedures (e.g., emotional desensitization of catastrophic reaction to injury and pain and other fears and trauma; splinting of emotional reactions; calming the catastrophic reaction)
- Desensitizing Neurophysiologic Procedures (EEG Biofeedback or EEG Driven Stimulation and adjunctive procedures such as sound and light (AudioVisualStimulation) and CranioE-lectrotherapy Stimulation (which has remarkable empirical support with over 50 controlled studies and a metaanalysis indicating 2X treatment size effects versus sleep medications) and Transcranial Magnetic Stimulation (all of which produce roughly13-15 Hz EEG Patterns).

I've had a few over the years, always feet, and used a combination of the following, in the context of inpatient and outpatient physiatric care, of the following with success ranging from poor (first attempt and treatment interrupted attempt) to modest or good (2 attempts). I did get excellent and fairly quick results in one case, but don't think they were accurately diagnosed (e.g., no bone scan; probably just a weaker sympathetic maintained pain response syndrome that had not progressed to RSD).

A case study using this protocol, including functional performance measures, baseline, reactivity and recovery skin temperature values, and psychological/ emotional status measures, is being conducted at another site.

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