

BUDAPEST CRITERIA	SYMPTOMS 3/4 (patient reports)	SIGNS 2/4 (found by doctor)
SENSORY	Hyperesthesia allodynia	Hyperalgesia to pinprick Allodynia to light touch and/or temperature sensation and/or deep somatic pressure and or joint movement
VASOMOTOR	Temperature asymmetry Skin color changes Skin color asymmetry	Temp. asymmetry >1 C Skin color changes Skin color asymmetry
SUDOMOTOR/ EDEMA	Edema Sweating changes Sweating asymmetry	Edema Sweating changes Sweating asymmetry
MOTOR/TROPHIC	Decreased range of motion Motor dysfunction (weakness, tremor, dystonia) Trophic changes (hair,nails,skin)	Decreased range of motion Motor dysfunction (weakness, tremor, dystonia (trophic changes (hair,nails,skin)

The Budapest Criteria is the diagnostic criteria used to diagnose someone with CRPS. It has gone through many revisions in the past due to researchers discovering new aspects of CRPS. Here is the current version used by knowledgeable doctors and researchers.

In general, CRPS is continuing regional pain with an initiating event (i.e. fracture, surgery, sprain, soft tissue injury). CRPS has pain disproportionate to an expected clinical course in magnitude and duration. For example, a sprained ankle or fracture that has not healed after the expected time and has continuing pain is a suspected case of CRPS.

Usually there is an inciting event or a trigger. In 65% of cases it is a trauma (injury, fall, fracture, sprain, etc.). Surgery accounts for 19% and spontaneous occurrence is 10% while other causes are only 6%.

In the clinical criteria, when the doctor is diagnosing the patient, the number of symptoms is 2 out of 4 and signs are 2/4. When using the Budapest criteria for research, the criteria are stricter requiring 3 out of 4 signs to be present for a diagnosis.

Brunner noted that the kind of initiating event does not predict the severity of the disease. For example, a major car accident or other severe injury did not mean someone would have a severe case of CRPS. In addition, latency (time it takes to appear) could be 4--6 weeks after the inciting event.

What makes CRPS so difficult to diagnose is that it resembles many other diseases.

CRPS: Diagnosis and Differential Diagnosis of CRPS

By Dr. Florian Brunner

HOW IS IT DIAGNOSED?

DIFFERENTIAL DIAGNOSIS (WHAT ELSE COULD IT BE?)

1. Infection: i.e. septic arthritis
2. Posttraumatic conditions i.e. fibrosis
3. Post-operative states i.e. how a limb looks after surgery.
4. Neuropathic pain states: another type of chronic pain syndrome
5. Bone diseases: osteomyelitis, bone edema(swelling)
6. Rheumatic diseases: rheumatoid arthritis, dactylitis
7. Vascular diseases: i.e. erythromelalgia (EM), symmetrical urtica, lymphedema
8. Psychological disorders
9. Rare cases i.e. bone metastasis, red thumb caused by tying string around thumb causing redness and swelling, thoracic outlet syndrome (TOS)

Finding CRPS is like a dog at border security with a sensitive nose sniffing out all the suitcases and finding the right one with the illegal substance. (This is why an expert is so important in diagnosis.)

There is **no test yet** so imaging (MRI, CT, bone scan) becomes the next best tool until a biomarker in skin or blood is found. Imaging provides a clue in early CRPS (less than one year) by way of a bone scan. It is NOT recommended that a bone scan be used after one year of onset. If patchy osteoporosis is found, it is a sign but doesn't fully diagnose CRPS due to its

complexity. Brunner does not recommend a bone scan due to its unreliability and low specificity. The sensitivity is .87 and specificity is .69.

However, it is crucial to use imaging to rule out any underlying disease. MRI specificity is also low meaning that there is a low chance of finding anything specifically related to CRPS but it can find other diseases that may be present. Therefore, diagnosing CRPS can be tricky and not easy for doctors who are not familiar with its signs and symptoms. (Again, it helps to have an expert who can tease out the finer points).

Due to the complexity of this disease, a clinical exam, medical history, and strict use of the Budapest criteria is recommended as well as using the list of differential diagnosis (What else could it be? Eliminating other diseases one by one leaves **CRPS, a diagnosis of exclusion**. To reach a diagnosis of chronic CRPS, doctors needed to consider the chronic aspects of CRPS and its signs and symptoms.

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