

# Clinical Algorithms

## Sensory disturbances

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In clinical practice patients often complain of sensory disturbance, but arriving at a satisfactory diagnosis may be difficult. The complaint is subjective and our ability to test objectively is limited. The tools of the trade comprise a pin, preferably a hatpin and certainly not a hypodermic needle, which penetrates the skin; cottonwool; a tuning fork 128 Hz (not 256 or 512 Hz, which are preferable for testing hearing), which can also serve to test cold sensation; and a two point discriminator (two orange sticks can be equally effective). Despite judicious use of these implements, however, in many patients complaining of numbness no abnormality can be found. This simply reflects our inability to test the function of many of the fibres carrying sensation.

### Points to note

(1) Continuous sensory disturbance affecting a given area is more important than transient symptoms except in stereotyped conditions, such as the nocturnal paraesthesiae of the carpal tunnel syndrome.

(2) A band like sensation is usually important and reflects dorsal column disturbance.

(3) Electric-like tingling sensations also originate in the dorsal columns, perhaps best typified by Lhermitte's sign, which can occur in subacute combined degeneration, cervical spondylosis, and tumour, as well as in multiple sclerosis.

(4) A deep aching pain can reflect spinothalamic involvement.

(5) Physiological areas of increased sensitivity are present at the groin, costal margin, and where the supraclavicular nerves border on the T2 dermatome over the upper chest. If this is not recognised one may assume wrongly that sensory abnormalities are present below these levels.

(6) Hyperaesthesia can reflect sensory disturbance just as much as hypoaesthesia.

(7) Trigeminal sensory upset should stop above the angle of the jaw.

(8) T2 dermatome does run down the inner aspect of the upper arm.

(9) In joint position sense testing the patient has a 50% chance of being correct. A significant deficit will be present, however, if it takes more than 5 mm of movement before the patient appreciates it.

(10) Pseudoathetoid movements of the outstretched fingers often reflect disturbance of the posterior column, although the patient may have little in the way of sensory complaint. This most often occurs in cervical spondylotic myelopathy and multiple sclerosis.

(11) Testing two point discrimination, vibration, and joint position sense is less subjective than testing for pinprick, temperature, and touch.

(12) If the patient does not complain of sensory disturbance it is unlikely that a major deficit is present, although there are exceptions.

(13) A dorsal column lesion may be associated with the loss of both vibration sense and joint position sense, whereas a lesion of the cortex is usually associated only with impairment of joint position sense.

### Distinguishing organic and non-organic sensory disturbance

(1) With a definite sensory level there is usually an area of altered sensation between the normal and abnormal. In a non-organic condition the transition is sudden.

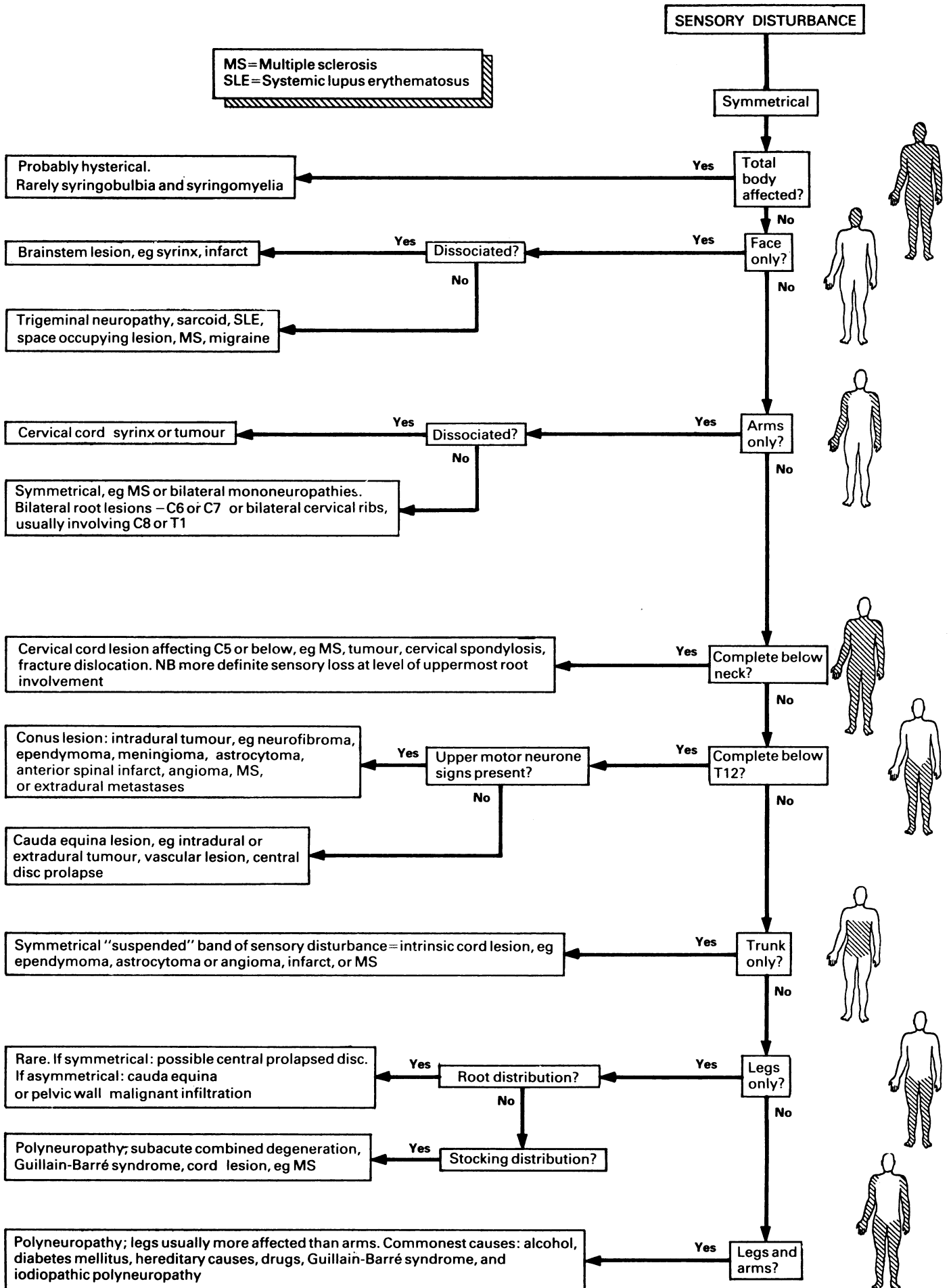
(2) Hysterical sensory loss does not follow the line of dermatomal distribution, which dips anteriorly on the trunk.

(3) In hysterical disturbance in a limb there may be total loss of vibration sense but normal joint position sense or pinprick loss but preserved temperature sensation. In addition, pseudoathetoid movements are usually absent despite gross posterior column disturbance.

(4) In organic spinothalamic loss a cut off circumferentially at the groin or armpit is exceptional.

When considering a patient with sensory disturbance, it is important to think anatomically since this should provide the vital clues to the cause. See chart.

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