

Referred Itch (*Mitempfindung*)

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Some people taste musical sounds, others feel colours or see sounds [1]. Of the many somatic sensations to which man is heir, synaesthesiae are among the most intriguing. Synaesthesia is an involuntary physical experience of a cross-modal sensory linkage; it affects about 1 in 1,150 females and 1 in 7,150 males [2].

'Itch' derives from 9th century Old English *giccan*, akin to Old High German *jucchen*, to itch. 'Referred itch' or *Mitempfindung* is analogous, though not strictly a cross-modal sensation. It affects approximately 1 in 5 healthy individuals. One patient reported, 'when I scratch a small area on the right cheek I feel a sharp pricking pain for a moment on the front of my chest near the right nipple. It repeats 3 or 4 times, immediately after each scratch but then fatigues and won't recur, till a later time.'

Its location and referral are inconstant. A scratch below the knee has been referred to the ipsilateral scapula; a scratch on the outer border of the foot may evoke the sensation in the abdomen. Crucially, the affected areas seem not to correspond to known sensory somatic afferents.

In 1844 Johannes Muller [3] used the name *Mitempfindung* (or *Mitempfindungen*), but it was earlier described in 1733 by Stephen Hales [4], the English priest who was also the first to measure blood pressure via a canula in a horse's leg.

Martin noted [5] that physicians have described their own referred sensations. Sherrington could produce dysaesthesiae at both elbows just above the medial epicon-

dyle by pressing over the sternum. Philip Evans [6], physician at Great Ormond Street Hospital, found that a simple prick to the thumb produced a prickling feeling of the tongue on the same side. He sampled 41 persons, predominantly hospital staff, who replied 'Yes' when asked: 'When you scratch a pimple or insect bite have you felt a pricking or itching sensation anywhere?'

A variant example has been reported in a patient after cardiac transplantation, he had intense coughing spells triggered by stimulation of the right external ear.

Sinclair [7] elicited referred sensation of this type in 8 of 30 Oxford medical students. The stimulus could be needle pricking, pinching with forceps, injection of hypertonic saline or heat. Trigger points could be precise, sometimes even 2 mm in size. With repeated pinching a refractory period of a few hours was found. Local anaesthetic at the stimulation point stopped it.

Mitempfindung is physiological and harmless. Schott's [8] review found only 4 allegedly 'pathological' instances: related to zoster and brachial plexus lesions. Recognition of referred itch allows unqualified reassurance.

Its mechanism is unknown. There seems no correspondence to 'acupuncture points', which are similarly without anatomical explanation. Speculation is that a branch of an afferent axon may travel unusually widely apart in the nervous system during embryogenesis; the stimulus at the end of one branch is interpreted as coming from a point of ending of the other.

References

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