

Snouting, pouting and rooting

Primitive oral reflexes are always accorded space in neurological textbooks and, excuse the pun, paid lip service to in clinicopathological conferences. The terminology is confusing and the reflexes are often misinterpreted. They can however, be occasionally diagnostically useful. There is a profusion of terms in the literature including 'snout', 'pout' and 'rooting reflexes', and often inadequate distinction is made between primitive behavioural responses and brisk facial myotactic reflexes.

The primitive oral reflexes include sucking and rooting. These are appropriate motor responses in the infant to ensure adequate feeding at the breast. They are subsequently inhibited as the infant matures, but can re-emerge with frontal lobe damage or diffuse cerebral cortical damage. They may be seen in relative isolation in frontal lobe degenerations and frontal lobe tumours. The **sucking reflex**, evoked by placing an object such as a spatula in the mouth, is usually only seen in severely

demented patients or those with diffuse damage, for example post cerebral anoxia. The sucking reflex is rarely of clinical diagnostic value.

Rooting reflexes can be seen in patients with frontal syndromes and usually in the context of other frontal reflexes, such as a grasp reflex, instinctive grasp reaction or utilization behaviour. It is usually best to start with the visual rooting reflex. This can be done by asking the patient to look at the head of a tendon hammer, which is brought towards the mouth. Initially the mouth may open and if the tendon hammer moved to the side, then the lips will turn in that direction (Fig. 1a). One can then go on to elicit a tactile rooting reflex, which may be present if the visual reflex is absent. A finger or the handle of the tendon hammer is drawn across the upper or lower lip in a lateral direction and the lips will move as if

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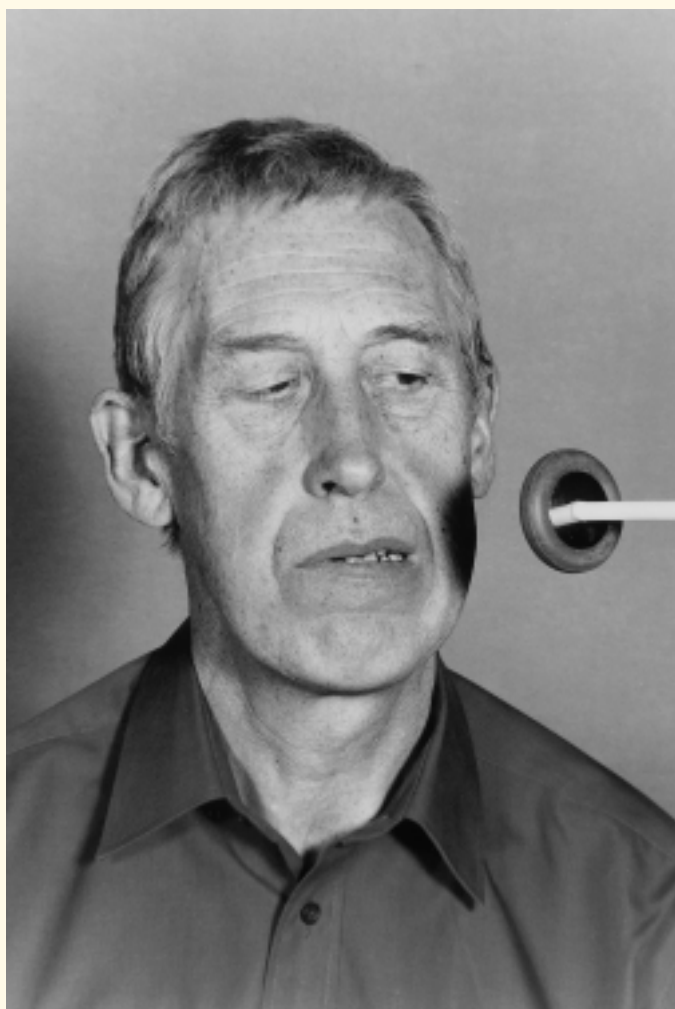


Figure 1(a)

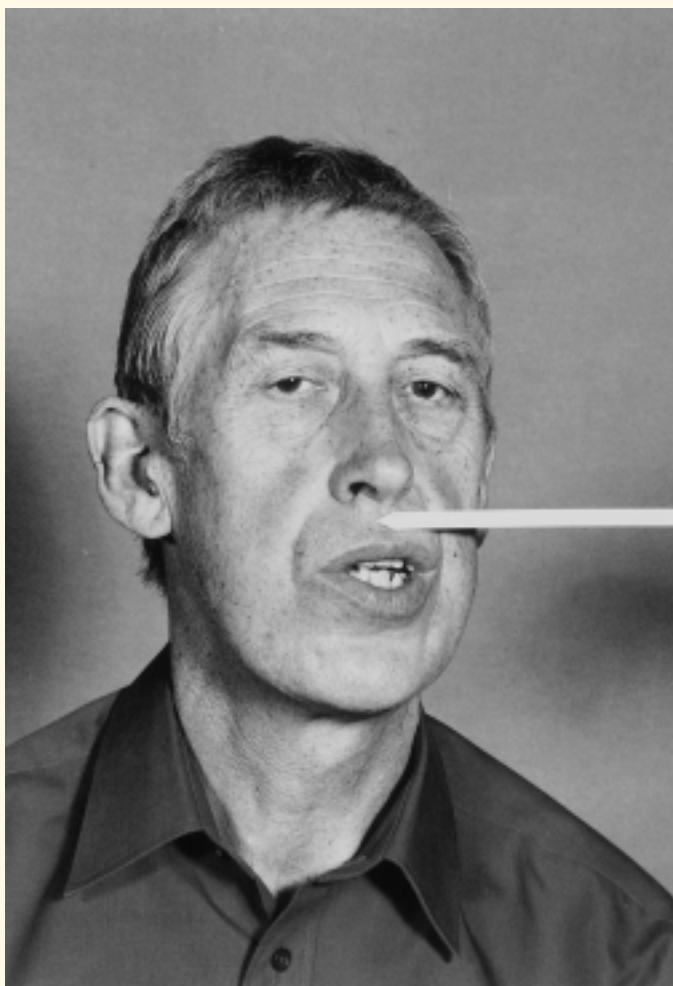


Figure 1(b)

to take the object in the mouth (Fig. 1b). This movement is slow in response to the stimulus, and physiologically quite distinct from a myotactic reflex of the orbicularis oris, see below (Ekbohm *et al.* 1952).

It is suggested that the **snout reflex** should really be reserved for the reflex elicited by a constant pressure on the philtrum (Paulson 1977), which results in a puckering of the lips and is essentially a variation of the tactile rooting response (Fig. 2a). These rooting responses can be diagnostically useful in patients in whom apathy is a feature of a frontal lobe syndrome and who have normal neuroimaging. Occasionally one is unsure whether such patients suffer primarily from an affective disorder or an underlying frontal degeneration. The detection of a rooting reflex will direct one towards the latter.

Quite distinct from these primitive behavioural responses is the increased **myotactic stretch reflex** of the orbicularis oris, which is found in association with other evidence of a brisk facial jerk. This can be elicited by tapping a spatula placed over the lips (Fig. 2b) or by tapping the orbicularis oris directly (Fig. 2c). There is a brisk pouting response, and the term 'pout reflex' is probably best reserved for this brisk facial jerk, indicative of a bilateral upper motor neurone lesion. It is possible for both a pout and rooting reflex to be combined in one patient. Pout reflexes are seen with any bilateral upper motor neurone lesion, such as amyotrophic lateral sclerosis, multiple sclerosis or intracerebral small vessel disease. Patients with a brisk pout reflex due to small vessel disease often also have a spastic pseudo-smile (Critchley 1986). Small vessel disease is a common comorbidity in the elderly and careful attention to snouting, pouting and rooting can help to elucidate the underlying cause of cognitive impairment.

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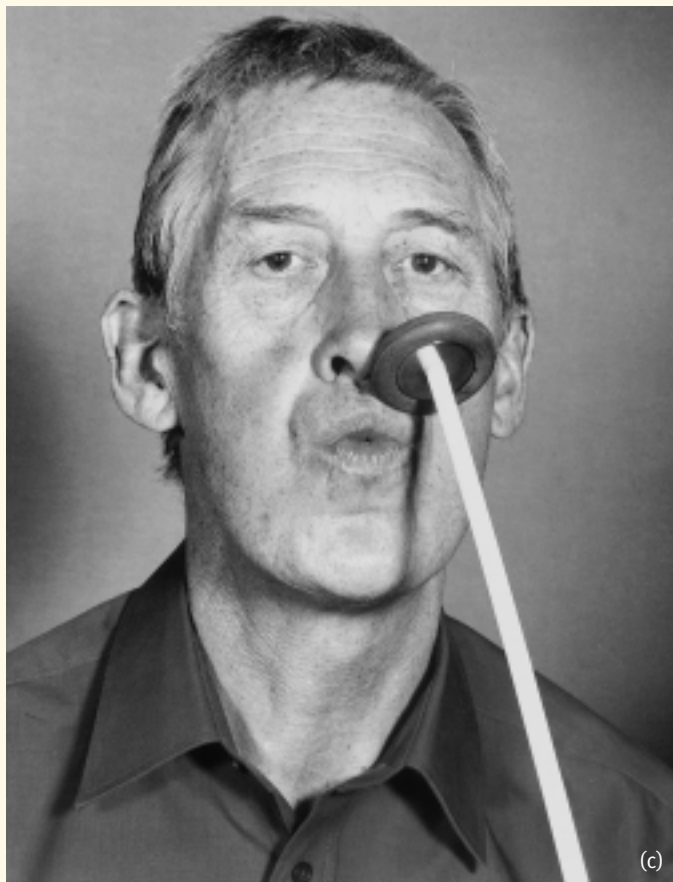
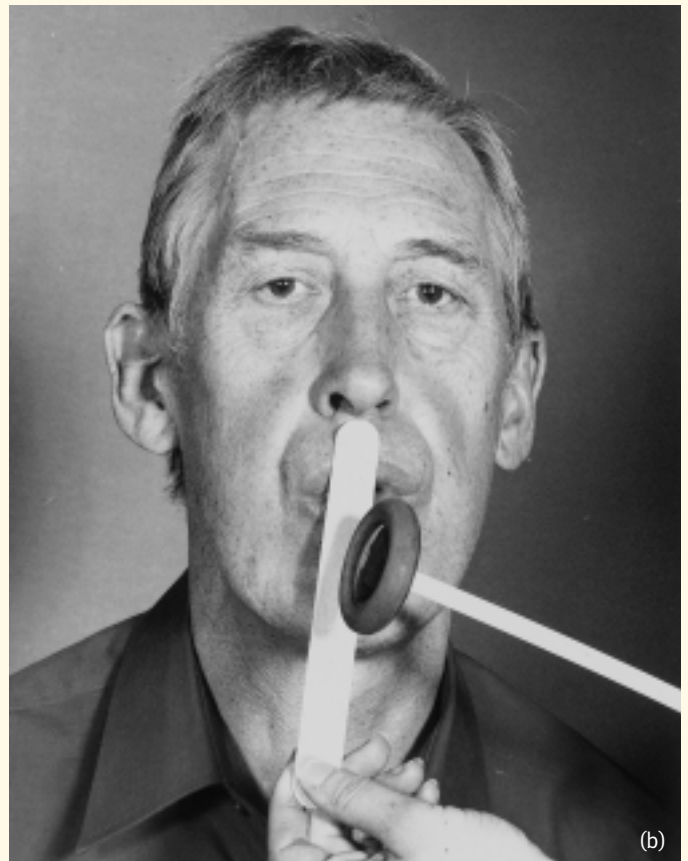


Figure 2

There is a profusion of terms in the literature including 'snout', 'pout' and 'rooting reflexes', and often inadequate distinction is made between primitive behavioural responses and brisk facial myotactic reflexes