



Fig. 1. Shows a complete 'suck' cycle; the baby is shown in median section. The baby exhibits good feeding technique with the nipple drawn well into the mouth, extending back to the junction of the hard and soft palate (the lactiferous sinuses are depicted within the teat though these cannot be visualised on scans).

- 'Teat' is formed from the nipple and much of the areola, with the lacteal sinuses, which lie behind the nipple, being drawn into the mouth with the breast tissue. The soft palate is relaxed and the nasopharynx is open for breathing. The shape of the tongue at the back represents its position at rest, cupped around the tip of the nipple.
- The suck cycle is initiated by a welling up of the anterior tip of the tongue. At the same time, the lower jaw, which had been momentarily relaxed (not shown), is raised to constrict the base of the nipple, thereby 'pinching off' milk within the ducts of the teat (these movements are inferred as they lie outside the sector viewed in ultrasound scans).
- The wave of compression by the tongue, moves along the underside of the nipple in a posterior direction, pushing against the hard palate. This roller-like action squeezes milk from the nipple. The posterior portion of the tongue may be depressed as milk collects in the oropharynx.
- & e. The wave of compression passes back past the tip of the nipple and pushes against the soft palate. As the tongue impinges on the soft palate the levator muscles of the palate contract raising it to seal off the nasal cavity. Milk is pushed into the oropharynx and is swallowed if sufficient has collected.
- f. The cycle of compression continues and ends at the posterior base of the tongue. Depression of the back portion of the tongue creates negative pressure drawing the nipple and its milk contents once more into the mouth. This is accompanied by a lowering of the jaw which allows milk to flow back into the nipple.

In ultrasound scans it appears that compression by the tongue, and negative pressure within the mouth, maintain the tongue in close conformation to the nipple and palate. Events are portrayed here rather more loosely to aid clarity.

Evidence for the former suggestion is provided in the cineradiographic films of Ardran, Kemp and Lind (1958a) (generously made available for viewing by Dr G.Ardran). One film depicts a baby at the moment of becoming detached from the breast. This is preceded by the sudden appearance of an air pocket in the oro-pharyngeal space (back of the mouth), with an equally sudden and marked retraction of the nipple in the mouth, and the general relaxation of the tissues of the mouth (tongue, soft palate). Following a momentary pause, the nipple is released by the infant.