

Shaping speech

Sue Buckley

Clear speech can often be challenging for people with Down syndrome. The shape of the hard palate in the top of the mouth influences speech production. A new paper reports detailed measures of the shape and size of the hard palate among children with Down syndrome.

Most children with Down syndrome have difficulty in developing clear speech. It is likely that the shape of the hard palate in the top of the mouth influences this as many speech sounds involve specific patterns of contact between places on the tongue and the hard palate. This is the view of Bhagyalakshmi and colleagues^[1] and they report the data from a research study designed to quantify the shape and size of the hard palate in individuals with Down syndrome. Many have observed that palate shapes may be different but there have been no objective studies which measure the differences.

As the researchers observe, it is possible to change the shape of the hard palate by expanding the palatal arch and this is a routine procedure in orthodontics. In order to investigate the value of changes



Does the shape of the hard palate effect speech sound production?

in the palate in this way on speech, some basic information on the typical shape and size of the palate in children with Down syndrome is an important starting point. In this study, a range of hard palate measurements were collected by making dental impressions for 48 children with Down syndrome (six to 16 years of age) and compared with the same measurements for the dental impressions of 48 typically developing comparison children. The paper presents detailed information on 7 different measurements used to describe the shape and size of the hard palate. For the majority of the measures, there was a significant difference between the two groups.

The paper concludes by identifying studies which indicate that the use of various inserted artificial palatal plates which a child may wear for limited periods each day can lead to improved speech sound articulation. There is some evidence of the effectiveness of orthodontic procedures to change the shape of the hard palate^[2] but there is a need for more research to identify how long the changes last and whether changing the shape of the hard palate does actually lead to improvements in speech.

Sue Buckley is at The Down Syndrome Educational Trust, Portsmouth, Hampshire, UK. e-mail: sue.buckley@downsed.org

doi:10.3104/updates.2050

1. Bhagyalakshmi G, Renukarya AJ, Rajangam S. Metric analysis of the hard palate in children with Down syndrome – a comparative study. *Down Syndrome Research and Practice*, 2007; 12(1):55-59
2. De Moura CP, Vales F, Andrade D, Cunha LM, Barros H, Pueschel SM, Clemente MP. Rapid maxillary expansion and nasal patency in children with Down syndrome. *Rhinology*. 2005; 43: 138-142.

down syndrome
research & practice

advertise

here

www.downsed.org/research-practice/advertise

tel +44 (0)23 9285 5330