

# Speech and Hearing: Integration with other senses\*

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## *Abstract*

*The functional connections between voice and hearing are varied and articulated, spanning physiological, neuroanatomical and neuropsychobiological domains. For example, patients with significant hearing loss often display changes in voice, as well as alterations in breathing, phonation, and articulation. Although these systems develop independently from an embryological point of view – the phonatory system, with its pivotal organ the larynx, originates from the laryngotracheal diverticulum around the 28th day of intrauterine life, while the auditory system is the first sense to develop, becoming active around the sixth month of foetal life and allowing for an early, rudimentary contact with the outside world – their interdependence in function is undeniable. This article aims to explore the connections, anatomical and neurophysiological, between voice, hearing and the remaining senses.*

**Keywords:** hearing, voice, speech, neuroanatomy, multisensory integration.

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