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The cortical control of speech articulation

Speaking is one of the most complex actions we perform, and although nearly all of us learn to do it effortlessly, little is known about the cortical control of speech articulation. Here, we used high-resolution, multi-electrode recordings directly from the cortical surface during the production of consonant-vowel syllables to understand how the human brain controls speech articulation. We present results on the functional, dynamic organization of speech sensory-motor cortical activity controlling individual articulators and generating syllables. We describe results of single-trial cortical prediction of speech (formant decoding) and examine how the activity generating a speech segment depends on surrounding segments.