# Flexible enhancement of task-relevant sounds by distinct cortical populations

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Attention is a flexible process that selectively enhances sensory coding of task-relevant sound attributes (pitch, space, timbre). So far, most studies have investigated how attention affects cortical responses during tasks involving stimuli of a single attribute. Here, we explore how attending to different attributes of the same stimulus can flexibly reshape population responses. Specifically, we demonstrate that attention to the location or pitch of a complex stimulus enhanced the representation of the task-relevant features in distinct feature-selective neuronal subpopulations, while simultaneously modulating their pre-stimulus spontaneous activity. Our findings suggest that specific suppression of pre-stimulus activity could be a signature of gain modulation through context-dependent population dynamics.