

# How testosterone regulates singing in canaries

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Testosterone controls specific features of birdsong in two distinct regions of the canary brain that resemble the human motor cortex, according to a study published in *The Journal of Neuroscience*. The research points to a role for sex hormones in the regulation of this complex behavior that is more precise than merely increasing motivation to sing.

Canaries form a new song in the fall that becomes stable during the spring breeding season, when [testosterone levels](#) are high. This process parallels vocal development in humans, which begins with babbling in the first months of life and stabilizes after puberty.

Beau Alward and colleagues investigated the effects of testosterone on birdsong by blocking its receptors in two key brain regions involved in singing. Using male canaries, the authors found that the robust nucleus of the arcopallium (RA) regulates the production of song units such as syllables and trills (rapid repetition of a particular syllable type), while HVC regulates syntactical features such as how often a syllable type is used and the duration of trills. These results suggest that [testosterone](#) contributes to the canary's ability to learn a new song each year.

**More information:** Dissociable effects on birdsong of androgen signaling in cortex-like brain regions of canaries, *Journal of Neuroscience* (2017). [DOI: 10.1523/JNEUROSCI.3371-16.2017](https://doi.org/10.1523/JNEUROSCI.3371-16.2017)

Provided by Society for Neuroscience

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