

Brightly colored bird bills indicate good health

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Troy Murphy has found female bill colour reflects the health of the bird. Females with more colourful bills have higher antibody levels, indicating greater strength and the ability to fight off invaders.

"This is so exciting because it means a bird facing a rival with a colourful [bill](#) will be able to assess the rival's [health](#) and thus assess whether the rival will have lots of energy to invest in a fight," says Dr. Murphy, who conducted his research at the Queen's University Biological Station. "This information can then influence the decision to fight or flee – and, if to flee, how fast it should flee."

The colour of a female bird's bill is strongly correlated with immunoglobulin antibodies, a component of the immune system in [birds](#). Upon infection, these antibodies allow other immune cells to recognize the diseased cells and destroy them.

Dr. Murphy, who is currently an assistant professor (Biology) at Trinity University in Texas, also discovered there is no relation between immune capacity and male bill colour suggesting elaborately coloured bills have very sex-specific roles.

"Murphy's recent results add to a long tradition of bird behavioural ecology research at our biological station" says Station Director Stephen Loughheed. "Results like Dr. Murphy's clarify our understanding of how behaviour, colour and song are used in critical interactions among individuals, especially contests between members of the same sex and

courtship between members of opposite sex."

The results of this research will be published in an upcoming issue of *Physiological and Biochemical Zoology*.

Provided by Queen's University

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