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An unexpected advantage of whiteness in horses: the most horsefly-proof horse has a depolarizing white coat

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White horses frequently suffer from malign skin cancer and visual deficiencies owing to their high sensitivity to the ultraviolet solar radiation. Furthermore, in the wild, white horses suffer a larger predation risk than dark individuals because they can more easily be detected. In spite of their greater vulnerability, white horses have been highly appreciated for centuries owing to their natural rarity. Here, we show that blood-sucking tabanid flies, known to transmit disease agents to mammals, are less attracted to white than dark horses. We also demonstrate that tabanids use reflected polarized light from the coat as a signal to find a host. The attraction of tabanids to mainly black and brown fur coats is explained by positive polarotaxis. As the host's colour determines its attractiveness to tabanids, this parameter has a strong influence on the parasite load of the host. Although we have studied only the tabanid¨Chorse interaction, our results can probably be extrapolated to other host animals of polarotactic tabanids, as the reflection¨Cpolarization characteristics of the host's body surface are physically the same, and thus not species-dependent.

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