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Boosting vaccine power: how injection site matters

A location of the body surface where a vaccine is administered might be just as important as the vaccine itself. Our research explores how injecting a vaccine at a specific acupoint called "*Houhai*" can lead to a stronger immune response compared to other injection sites. The enhanced immune response elicited by vaccination in HA may be attributed to more lymphocytes activated. This finding could help improve the effectiveness of vaccines, especially for animals like dogs and pigs, which are crucial for both agriculture and public health.

What is the Houhai acupoint?

The *Houhai* acupoint is a specific spot located near the base of the tail in animals. In traditional Chinese medicine, acupoints are believed to be areas where the body's energy flows. While the concept of energy flow might sound abstract, modern science has shown that these points often have unique biological properties. In the case of the *Houhai* acupoint, it turns out to be a hotspot for lymphatic drainage.

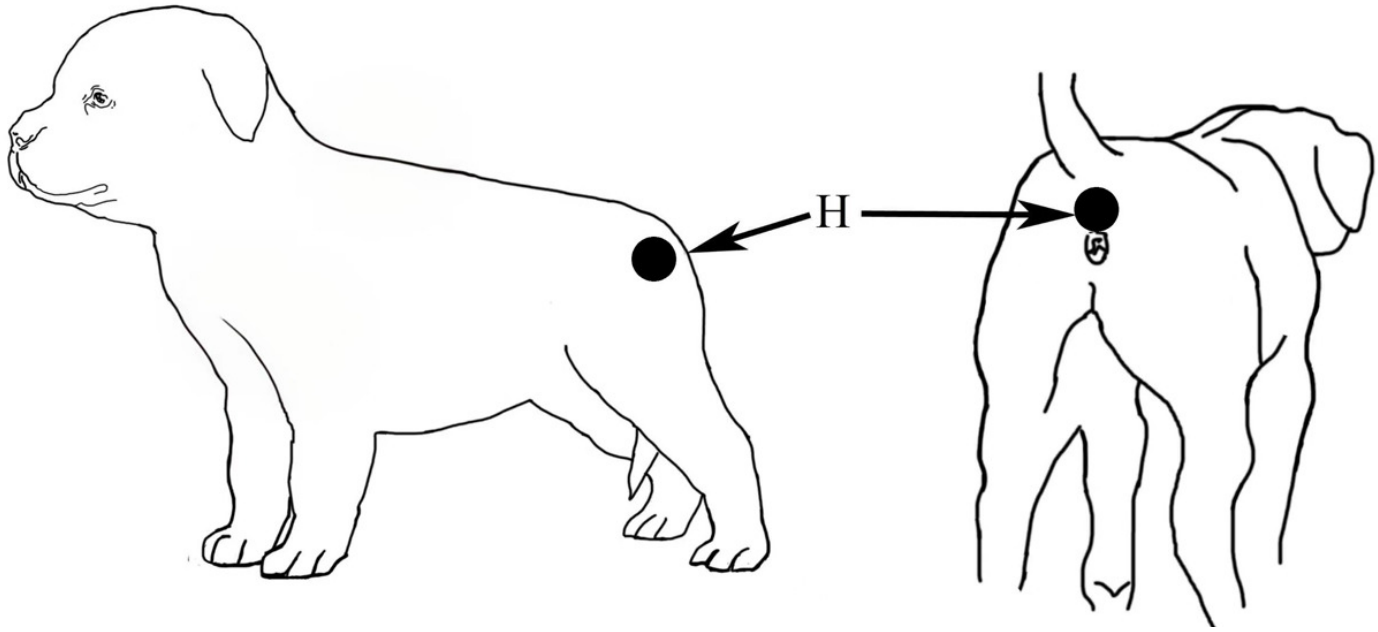

Fig. 1. Diagram of the Houhai acupoint.
A simple illustration showing the location of the Houhai acupoint near the base of the tail in a dog.

What is Lymphatic drainage?

The lymphatic system is a network of tissues and organs that help rid the body of toxins, waste, and other unwanted materials. It also plays a crucial role in the immune system by transporting immune cells throughout the body. Lymphatic drainage refers to the process by which lymph fluid, containing immune cells, is moved through this network.

When a vaccine is injected into the *Houhai* acupoint, it is quickly absorbed into the lymphatic system. This rapid absorption means that the vaccine can reach immune cells more efficiently, leading to a stronger and faster immune response.

Why does this matter?
A stronger immune response means that the body is better prepared to fight off infections. For vaccines, this could translate to higher effectiveness and longer-lasting protection. In our study, we found that vaccines injected at the *Houhai* acupoint resulted in higher levels of antibodies compared to other injection sites. Antibodies are proteins produced by the immune system to neutralize harmful pathogens like viruses and bacteria.

Implications for animal and human health
While our study focused on dogs, the findings could have broader implications. Dogs are not only important pets but also serve as valuable models for human health research. Understanding how the injection site affects vaccine efficacy could lead to better vaccination strategies for both animals and humans.

Improving vaccine effectiveness could help prevent outbreaks and protect public health. Similarly, for other infectious diseases, optimizing the injection site could enhance the overall success of vaccination programs.

Our research highlights the importance of considering the injection site when administering vaccines. By targeting the *Houhai* acupoint, we can potentially boost the immune response and improve vaccine efficacy. This simple yet effective approach could have significant benefits for both animal and human health, making vaccines more powerful tools in the fight against infectious diseases.

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Publication

Higher immune response induced by vaccination in Houhai acupoint relates to the lymphatic drainage of the injection site
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Res Vet Sci. 2020 Jun