

Does the appendix serve a purpose in any animal?

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Julie Pomerantz, wildlife veterinarian and program officer for the Wildlife Trust's North American Conservation Medicine Initiative, offers the following explanation:

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As a specific anatomic structure, the appendix has been described in only a few species. In humans and apes, it is a thin, tubular structure (hence the name vermiform, or "worm-like," appendix) located at the apex of the cecum, a blind pouch near the beginning of the large intestine. Scientists have also identified appendix-like structures in other species of primates, but these structures have not been well characterized. Rabbits and some rodents have appendices, and it is research on these species that has begun to shed some light on the mystery of the organ's function.

Previously it was thought that the sack-like rabbit appendix served primarily as a reservoir for the bacteria involved in hindgut fermentation. That explanation, however, did not account for the absence of an appendix in other animals with similar digestive systems or for its presence in humans. When researchers examined the appendix microscopically, they found that it contains a significant amount of lymphoid tissue. Similar aggregates of lymphoid tissue occur in other areas of the gastrointestinal and are known as gut-associated lymphoid tissues (GALT). The functions of GALT are poorly understood, but it is clear that they are involved in the body's ability to recognize foreign antigens in ingested material.

Thus, although scientists have long discounted the human appendix as a vestigial organ, there is a growing body of evidence indicating that the appendix does in fact have a significant function as a part of the body's immune system. The appendix may be particularly important early in life because it achieves its greatest development shortly after birth and then regresses with age, eventually coming to resemble such other regions of GALT as the Peyer's patches in the small intestine. The immune response mediated by the appendix may also relate to such inflammatory conditions as ulcerative colitis. In adults, the appendix is best known for its tendency to become inflamed, necessitating surgical removal.

FURTHER READING:

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