

## Practicing Evidence-Based Veterinary Medicine: Challenge or Opportunity?

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As clinicians, we have the responsibility to practice veterinary medicine based on complete, objective, and up-to-date scientific evidence. But what happens when we do not have relevant evidence available to completely support our medical decision-making?

### THE EXAMPLE OF GONADECTOMY

A specific example of this challenge is the evidence in support of decisions for optimal age at canine and feline gonadectomy.

Making a recommendation for this optimal age based on research evidence alone is challenging—the collective body of published research includes studies that vary in quality and harbor inconsistent findings, variable comparison groups (ie, age groups), and too few or no studies for a particular health outcome.

In this context of making a specific clinical recommendation, other factors need to be considered, such as the priority for pet population control.

### MANY RECOMMENDATIONS, MUCH CONFUSION

Variability in research findings results in differing recommendations across the profession. For instance, the American Animal Hospital Association supports neutering cats as young as 8 weeks of age,<sup>1</sup> whereas the American Association of Feline Practitioners supports neutering cats at 6 to 14 weeks of age.<sup>2</sup>

Despite overlap in these recommendations, they are not the same and may contribute to confusion within the profession. Additionally, clinicians may recommend gonadectomy at other ages. According to a survey of New York state practitioners, 39% recommended gonadectomy no earlier than 6 months of age for client-owned cats.<sup>3</sup>

These recommendations by clinicians may be due to unsubstantiated beliefs about the appropriate age at which to neuter, findings from few studies with significant limitations, or the weighing of a specific health outcome as more important than other outcomes. Taken together, all these recommendations can be confusing for veterinarians and, in turn, can make client communications unclear.

### MARRIAGE OF EVIDENCE & EMPIRICISM

With an awareness of the spectrum in quality of population research, veterinarians still need to make recommendations or clinical decisions in the

absence of complete and relevant evidence. This is part of the art of practicing medicine: using the best available science and judiciously applying knowledge in a given clinical situation.

Clinical experience must also be incorporated into the decision-making process. Indeed, the combination of clinical experience and scientific evidence is likely to lead to the best treatment and control strategies for that given situation.<sup>4</sup> However, this marriage of evidence and empiricism has shortcomings, and veterinarians should be aware of them.

### THE LIMITATIONS OF EXPERIENCE

Relying only on clinical experience is subject to the bias of unique perceptions and previously held beliefs. For example, if a sick patient is presented, you may treat the patient the same way you had recently treated a similar case that recovered successfully. What you may have forgotten, though, is that you treated 2 other cases similarly in the past that did not have favorable outcomes.

Therefore, this treatment may or may not actually be the best approach, but you perceive that it is because you recalled the patient that made a full recovery. Additionally, you may consult other clinicians and pose a question to receive input about a clinical situation that is not addressed in the literature. Their responses are also subject to bias based on their own experiences and perceptions. It is important to understand this limitation when formalizing your clinical decision.

### FIVE STEPS TO EVALUATION

Given the ever-expanding volume of research available to us, and our limited time, it can be difficult to critically evaluate the peer-reviewed literature to address a specific clinical question. This past year, a method to efficiently examine the literature to address a clinical question was described in several *JAVMA* articles.<sup>4-7</sup>

Briefly, the authors recommend a 5-step process to access clinically relevant information more efficiently for your practice of medicine. This includes:

1. A review of the relevancy of the article
2. Significance of the results to your practice of medicine
3. Appropriate control for bias
4. Comparison group selection
5. Data handling and analysis.<sup>4-7</sup>

Investing time in understanding this process can help incorporate more scientific evidence into your practice and enable you to provide the best care possible to your patients.

### INTEGRATING NEW EVIDENCE

Clinicians can use strategies to efficiently access information from the peer-reviewed literature to aid in their practices, and they should be willing to implement changes when new information becomes available. Furthermore, clinicians should remain aware that cognitive biases could influence their medical decision-making.

Although the process of combining clinical experience and scientific evidence can be challenging, the tenets of evidence-based veterinary medicine can help guide clinicians by raising awareness of inherent limitations and providing knowledge and tools to help mitigate them.

Thoughtful integration of new evidence into practice decision-making can support effective communication between veterinary professionals and clients, while at the same time continually improving the quality of veterinary medicine.

### References

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