



**Headline:** Animals Have Feelings Too

**Subhead:** A U of G expert has paved the way for pain management in surgical and critical care treatment of companion animals. Her innovative research has influenced veterinarians across the globe and helped ensure no animal suffers unnecessary pain.

**Body of story:**

It wasn't that long ago that people believed animals didn't feel pain. But Prof. Karol Mathews knew differently.

Over the span of her 30-year career in emergency and critical care medicine at the Ontario Veterinary College she has been dedicated to preventing companion animals from experiencing pain.

With the constant financial support from Pet Trust, Mathews has conducted decades of research aimed at providing proper pain management. The clinical studies professor's findings have ultimately changed animal hospital procedures and practices to ensure an animal's pain is controlled in the best possible way.

"When I graduated from the Ontario Veterinary College (OVC) in the 1980s, it was still not common practice to give animals pain killers after surgery," said Mathews. "So during my veterinary surgical training, I began to test the safety and efficacy of non-steroidal anti-inflammatory analgesics (NSAIDs) as an option for post-operative pain in the student surgical laboratory."

Prior to this, only opioids, such as morphine, were used for pain management, but in many places opioids weren't always available because of the potential for theft, she said.

"The injectable NSAIDs were produced during the mid-1980s, giving us the opportunity to study this class of painkillers."

Over a series of studies, Mathews examined the impact of the drugs on the animal's health, how effective they were in managing pain and what the side effects were when mixed with certain anesthetics. She tested NSAIDs designed for animals,

including flunixin, meglumin, ketoprofen, meloxicam and carprofen as well as drugs designed for humans, including ketorolac.

“I didn’t want the animals to feel any pain so as the products came out, I examined how well they worked,” said Mathews. “Even though these drugs were available to veterinarians, they often hadn’t been assessed for efficacy in managing pain after surgical procedures, which can result in different levels of pain, so I tested them.”

In the end, Mathews was able to determine that certain NSAIDs can be effective for a broad spectrum of pain, especially because they have a dual role of reducing inflammation as well as lowering the pain sensation traveling to the part of the brain where the pain message is sent. She found they were most beneficial for post-operative orthopedic, soft tissue and cancer pain. As a result of her findings, these drugs are now commonly used.

Mathews then turned her attention towards reducing the pain experienced by animals in the OVC emergency and critical care service where she was promoted to service chief in 1989.

“I saw a lot of medical pain,” she said. “There were animals with pancreatitis, inflammatory bowel disease and kidney and bladder disease. All of these diseases can be very uncomfortable. There were also animals coming in that had been traumatized and in extreme pain so I decided to branch out to researching pain management for non-surgical patients.”

Again, she investigated what type of drugs would work best in reducing animal suffering. With emergency and critical care cases, Mathews had numerous factors to consider since these animals were often coming in with many complications.

“Many of these animals has organs that had been jeopardized and, therefore, NSAIDs could not be used.”

She also studied different treatments and procedures animals in emergency and critical care experience and worked at making them less painful. She tested sedatives and painkillers that would work best to prevent pain in animals on ventilators; investigated how long a catheter can remain in an animal to prevent unnecessary painful replacements; and developed an easy method of inserting a feeding tube that would allow an animal to get the proper nutrition while in hospital and at home.

“Some of my research for patients in our intensive care unit was taken from what they did with babies staying in intensive care,” said Mathews. “Just like babies, animals feel pain but can’t communicate it so we need to do what we can to prevent them from hurting in the first place.”

All her research and experience has led to her current position as chair of the Global Pain Council for the World of Small Animal Veterinary Association.

In this role, Mathews, along with fellow world veterinary experts, are developing pain management guidelines for veterinarians across the globe. The aim of these guidelines is to raise the standard of pain management in small animals by demonstrating how to assess pain and all the different ways of managing pain.

“In North America and Western Europe, veterinarians are licensed to use all the drugs available to humans, but in other areas of the world they don’t have the same access to drugs. We have to give alternatives to drugs like opioids and develop protocols for all the different places in the world based on each area’s circumstance.”

Mathews is hopeful this guideline will improve the way animals’ pain is treated around the world.

“The fact that we have a Global Pain Council shows how far we have come in understanding pain in animals. We now appreciate the degree of pain animals can feel.”