

## The Latest Developments in Veterinary Technology

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### DESCRIPTION

Major technological advances have been made in the field of veterinary medicine over the past 20 years. Many new instruments and procedures are adopted from human medical practice. These advances have not only resulted in better treatments, but also faster and more accurate diagnoses. From MRIs and ultrasound to the Amplatz catheter lock for dogs, there are many new technologies that enable veterinarians to better diagnose and ultimately rescue sick animals.

### Magnetic Resonance Imaging (MRI)

MRI era has been extraordinarily influential with inside the development of human neuroscience. Veterinarians are now using image technology to watch the brain of pets and other animals. However, powerful technology is not limited to brain explorations. RMIS are also very effective in obtaining scans of orthopedic structures and soft fabric before surgery. Seeing what is happening inside the animal before going into surgery, a veterinarian can reduce the possibility that whatever is wrong during the procedure.

### Ultrasounds

While MRIs are powerful, they are also very expensive. To get an accurate picture, the animal must remain completely calm, so anesthesia is required. The high costs and the need for anesthesia make it difficult to use MRI methods widely. However, ultrasound imaging technology is much cheaper and can be widely adopted by veterinarians. If someone you know is pregnant, you may recognize the word "ultrasound". If the fetus is developing in the mother's body, then ultrasound is the preferred method to take pictures of the fetus. Today, however, they are used by cardiologists to take 3D and even 4D images of a patient's heart. The advantage of ultrasound is that it does not require anesthesia and is relatively inexpensive to perform.

### Laparoscopy

Laparoscopic procedures use a small room and a light source that can be inserted into the abdominal or thoracic cavity to see

inside the body. This is another example of a human medicine technology that fits the animal kingdom. These procedures are less invasive than most surgical operations and produce a clear image. The first widely reported laparoscopic procedure was in 2011 when Scotland's Royal Zoological Society used it to eliminate the sick seam of lunar bears.

### Micro fracture detection

One of the greatest threats to the health of thoroughbred racehorses is a bone failure. During training, horses often develop microscopic bone cracks that can quickly become fatal fractures. To prevent this from happening, researchers have developed a method to detect sound waves that produce these microfices. Early detection is fundamental for the preventive care of success of the health of equine bones.

### 3-D printing

The ability to print three-dimensional objects is one of the most insensitive topics of technology today. This rapid-prototyping process has been applied to veterinary practice to create bone models of information collected by calculated tomography scanner. Furthermore, models help to educate pet owners on the anatomy and physiology of their pets.

### Recombinant DNA

Recombinant DNA has laid the foundation for many advances in biotechnology. Before it was discovered, it was difficult to manufacture protein preparations such as insulin, growth hormone and prolactin. rDNA not only enables cheaper and more efficient drug production, but also opens up the possibility of gene therapy. Such a procedure would allow veterinarians to replace missing or defective genes in animals to treat a range of different diseases. However, they encountered many ethical issues, as experts debated the possible effects of changing animal genomes. With the intense discussion and continuous advancement of rDNA technology, scientists are now discussing the possibility of changing animals and their feed through biotechnology.

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