



# Investigación sobre la importancia de la Veterinaria en los diferentes campos profesionales

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21/09/24

## **Introduction**

Veterinary medicine plays a crucial role in multiple professional fields, encompassing not only animal health care but also public health protection, food safety, and species conservation. Veterinarians are essential in the prevention and control of zoonotic diseases, which can be transmitted between animals and humans, as well as ensuring that animal-derived products are safe for consumption.

Furthermore, their work in research and the development of new therapies and vaccines contributes to advancements in medicine and biotechnology. In the conservation field, veterinarians are dedicated to the rehabilitation of endangered species and ecosystem management, highlighting the interconnection between animal, human, and environmental health. This multidisciplinary approach underscores the importance of veterinary medicine as an essential profession for global well-being.

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## **“ "The Importance of Veterinary Medicine in Various Professional Fields"”**

To begin with, what is veterinary medicine? Veterinary medicine, also known as *albeitería*, is the application of medicine to animals. It involves the prevention, diagnosis, and treatment of diseases, disorders, and injuries in animals. A specialist in this field is known as a veterinarian, veterinary doctor, or veterinary surgeon (veterinary medicine in the feminine form), or *albeiter*. The scope of veterinary medicine is broad and covers all species, both domestic and wild. In some Spanish-speaking countries, the professional dedicated to agricultural productivity is called a *zootecnic*, a profession that is not equivalent to that of a veterinarian. The technical professional is referred to as a veterinary technician or veterinary nurse."



The veterinary doctor (also known as a veterinary surgeon) is a university-trained professional responsible for animal health, with education equivalent to a bachelor's degree (in Spain). The professional role is similar to that of a medical doctor for humans. In the Spanish language, these health professionals are also referred to as 'doctor,' even if they have not obtained a doctoral degree.

Among the functions performed by the veterinary surgeon are the diagnosis and treatment of non-human animal diseases, improving animal performance and productive livestock management, overseeing the production, distribution, and quality of animal-derived food products intended for human consumption (bromatology), epidemiology and public health, research, and teaching.

## Branches of Veterinary Medicine

Veterinary medicine is also divided into more than 20 branches, and professionals can work in various settings such as research laboratories, zoos, poultry farms, clinics, and many other sectors. Each of the following branches requires additional specialization beyond a degree in veterinary medicine and animal science. These are the branches



**Veterinary Anesthesiology:** Specialists in this branch are responsible for administering anesthesia before and after surgical procedures, including cesarean sections in cases of complicated births, whether through epidural injections or drip infusions to control dosing. Since some animals may be allergic to certain anesthetics, the specialist in this field must be prepared to handle and resolve any complications promptly throughout the medical intervention.

**.Veterinary Analgesia:** Veterinarians working in this branch are responsible for managing chronic pain and pain caused by injuries and accidents using specialized medications.



**Animal Welfare:** To achieve the goal of providing a better quality of life for animals, experts in this branch advise and recommend best practices for the care of animals of all species to individuals, governments, zoos, universities, and other stakeholders.

**Veterinary Behavior:** Veterinary behaviorists use their medical and behavioral knowledge to assist patients with needs that go beyond basic behavioral issues. They work to help animals relax and feel comfortable, including with specifically designed medications, in stressful situations such as moving from one environment to another."



### **Veterinary**

**Pharmacology:** Just like human medications, pharmacological treatments for animals must undergo rigorous research studies and regulatory processes before being released to the market. Veterinary pharmacologists have extensive knowledge related to drug development, proper use, and potential interactions in concurrent treatments..

**Veterinary Dentistry:** Oral health in animals is just as important as it is in humans. Although animals do not care about having aesthetically perfect teeth, their oral health is vital, as poor dental health could lead to malnutrition and affect other systems, such as the digestive system. Veterinary dentists are responsible for cleaning, adjusting, and extracting teeth through oral surgeries as needed..

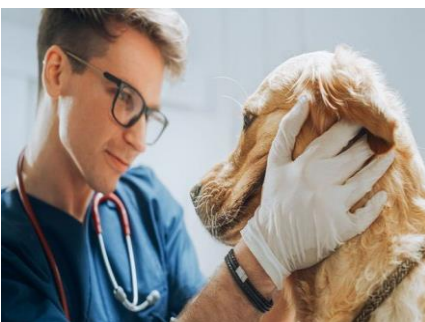




**Veterinary Dermatology:** Climate change and pollution affect the skin of many animals and can cause rashes or eruptions. Skin diseases experienced by animals vary significantly depending on the species. Consequently, veterinary dermatologists must have expertise in various types of treatment and also knowledge in internal medicine, immunology, and allergy, as certain dermatological issues may stem from other health problems.

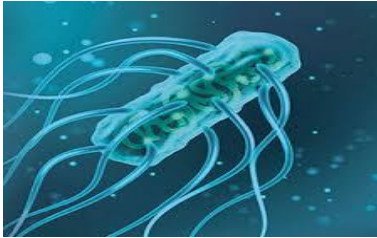
### **Emergency and Critical Care Veterinary**

**Medicine:** Since animals cannot clearly express if they are in pain from an injury or a potentially life-threatening health condition, veterinarians in the emergency and critical care branch must be prepared to provide immediate medical attention in high-pressure situations. Therefore, this is a challenging but highly rewarding field..



**Internal Medicine:** These specialists are highly trained to treat uncommon or complex diseases. Pet owners typically consult these veterinarians when their pets require advanced treatments. Internal medicine professionals can, in turn, specialize in veterinary cardiology, neurology, oncology, or pulmonology..

**Laboratory Veterinary Medicine:** Animals used in laboratory testing require even more care and medical attention. Typically, these veterinarians guide scientists and researchers on the type of monitoring and hygiene conditions that should be provided to the animals.



**Veterinary Microbiology:** Veterinary microbiologists often lead the treatment of infectious diseases caused by bacteria, parasites, and other organisms, as these types of conditions often manifest in animals before they appear in humans.

**Veterinary Nutrition:** It has been shown that proper nutrition helps prevent diseases and promotes faster recovery. Veterinary nutritionists work with companies that manufacture animal food to design more balanced and healthy formulas.



### **Veterinary**

**Pathology:** These veterinarians are responsible for identifying and diagnosing uncommon diseases in animals through laboratory tests of tissues and bodily fluids. They also participate in the research and development of cutting-edge medications. Most of these specialists work in academic settings and government regulatory agencies.

**Preventive Veterinary Medicine:** Prevention is one of the best health strategies for both humans and animals. This is an inherently collaborative field of study that incorporates principles of epidemiology and public health.







**Veterinary Radiology:** Diagnostics using X-rays, ultrasound, and magnetic resonance imaging, which were once reserved for humans, are now widely used for animals as well. Of course, these tools had to be adapted by experienced radiologists so they can be used with animals of all sizes, from small cats to large elephants.

**Veterinary Surgery:** Routine surgeries, such as spaying and neutering, are a fundamental part of the tasks veterinarians perform daily. However, performing complex surgical procedures requires advanced specialization



**Veterinary Theriogenology:** This branch deals with the reproductive health of animals and performs everything from routine pregnancy checks to corrective surgical procedures. The work of theriogenologists is crucial for managing the reproduction of endangered species.

**Veterinary Toxicology:** Veterinary toxicologists play a crucial role in identifying harmful substances present in food products and the environment. These professionals develop effective treatments for animals poisoned by natural and chemical toxins, such as pesticides and fertilizers, as these substances pose a serious threat to the health of all living beings.



**Species-Specific Veterinary Medicine:** Unlike medical doctors, veterinarians have the option to specialize in a single animal species. If you choose to focus on treating one specific species, consider the following professional practices:

- **Avian Veterinary Medicine**
- **Canine Veterinary Medicine**
- **Feline Veterinary Medicine**
- **Beef and Dairy Cattle Veterinary Medicine**
- **Veterinary Apiculture**
- **Equine Veterinary Medicine**
- **Porcine Veterinary Medicine**



**Zoo Veterinary Medicine:** These veterinarians specialize in treating wild animals, whether in protected environments or in their natural habitat, and play a crucial role in conservation and environmental protection..

**Aquatic Veterinary Medicine:** Aquatic ecosystems play invaluable roles in protecting the planet. Aquatic animals recycle nutrients, purify water, mitigate flood risks in coastal communities, and maintain water flow at normal levels. Aquatic veterinarians diagnose, research, and assist marine animals to save them from strandings. In the past decade, water pollution has caused aquatic animals to die at an alarming and unprecedented rate, making the community education efforts of aquatic veterinarians crucial for preserving a reasonably acceptable natural balance.



Veterinary medicine also has various fields of practice. The fields of veterinary medicine are the areas in which the profession can be pursued through employment, self-employment, or entrepreneurship.

### **Agricultural                      and                      Livestock                      Sector**

In this area, veterinary animal scientists (veterinary zootecnists) are also highly relevant, as animal production is closely related to health when producing safe food for humans. These activities include monitoring vaccinations, controlling epidemic outbreaks when diseases occur in these populations, preventing and treating diseases, properly designing facilities, managing the distribution of animals at different stages of the production process, nutrition, and reproduction.



## Clinical

Working in 'Clinical' refers to all activities directly related to medicine: internal medicine, diagnosis and prevention of diseases, treatments, etc. These tasks can be performed in various settings.



## Laboratories



There are different types of laboratories where a veterinarian can practice: **Laboratorio de Biología molecular y/o genética**

- **Biotechnology Laboratories:** Such as reproductive biotechnology laboratories.
- **Microbiology Laboratory:** For collecting samples from animals with infectious processes and determining the microbiological agents causing the pathologies and their respective treatments. It is also widely used in research.

- **Parasitology Laboratory:** Where field-collected samples are analyzed to determine diagnoses and conduct research.
- **Pathology Laboratory:** Where macroscopic samples obtained from necropsies are analyzed to determine the diagnosis of uncertain pathologies.
- **Clinical Pathology Laboratory:** Where laboratory samples previously obtained from animals are processed to help achieve an accurate diagnosis.
- **Animal Facilities (Bioterios):** Where live animals are kept for conducting biological tests. These facilities are closely related to research.
- **Antivenom Production Laboratories:** Where snakes and other venomous animals such as reptiles and arachnids are kept to extract antivenoms used as antidotes for venomous bites or stings, which are requested and used in human medicine.
- **Research Laboratories on Various Topics:** In vaccine production, pharmaceuticals for human and animal use. For this type of work, it is essential for the veterinarian to have postgraduate studies in molecular biology and/or genetics.

## **Conclusión**

With all that has been mentioned, you now understand what the term 'veterinary medicine' means and its importance, as it is crucial for ensuring the health and well-being of animals and also helps protect ecosystems. It is also important to note that veterinarians do not only treat diseases and injuries in animals, but they also play a significant role in disease prevention, including diseases that can be transmitted to humans.

Veterinary medicine is essential for human life because, as mentioned, it not only ensures the well-being, food safety, and health of animals but also supports the production of food for human consumption, including meat, eggs, milk, hides, and other products derived from animals. This underscores the importance of being a veterinarian and animal scientist.

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