

Veterinary

technicians:

Nursing animals to health

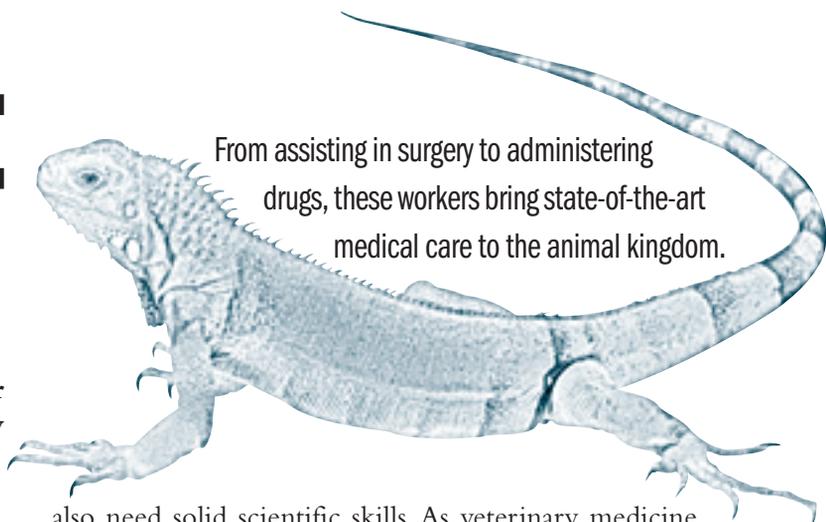
by Henry Kasper
and Olivia Crosby

Your puppy gets sick in the middle of the night, so you drive him to the animal hospital and carry him in. But the first medical professional you see probably isn't a veterinarian. A veterinary technician takes your puppy's history, asking you for a description of the animal's symptoms. He or she will take your puppy's vital statistics, including blood pressure and temperature, and decide how urgent the case is. If your puppy has trouble breathing, the veterinary technician can give CPR or an intubation and call for a veterinarian. You can relax, though: with a veterinary technician providing care, your puppy is in good hands.

Veterinary technicians are often called animal nurses because they care for animal patients the way nurses care for humans. But veterinary technicians' responsibilities extend beyond nursing, combining duties of many human healthcare jobs. In addition to providing general nursing, technicians help to administer and monitor anesthesia just as surgical nurses do, take x rays and sonograms like radiologic technicians, clean teeth like dental technicians, provide rehabilitation like physical therapy aides, monitor surgical equipment like surgical technicians, and conduct laboratory tests like clinical laboratory technicians.

Many people are attracted to veterinary technology because they love animals—and that's a good foundation for a veterinary career. But veterinary technicians

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From assisting in surgery to administering drugs, these workers bring state-of-the-art medical care to the animal kingdom.

also need solid scientific skills. As veterinary medicine becomes more advanced, the duties of technicians are becoming more complex and varied.

Learn more in this article about what veterinary technicians do and where they do it, the ups and downs of their work, the skills and training that they need, and their earnings and employment prospects. You'll also find hints for getting started in a veterinary career and sources for more information. The box on page 32 describes other animal-related jobs.

One occupation, many roles

Veterinary technicians, sometimes called veterinary technologists, work as part of a healthcare team. They are supervised by veterinarians, who diagnose disease and injury, prescribe treatments, and perform surgery on animals. Technicians also work with veterinary assistants, who groom and comfort animals, clean cages, and do other nonmedical work. The technician's job is to offer skilled, medical assistance to the veterinarian.

Nursing. In many cases, a veterinary technician's first step in caring for an animal is to give a general exam by looking for external parasites, anatomical problems, or other medical issues that should be brought to the veterinarian's attention. Technicians need to know what's considered normal for a wide variety of species and breeds. They talk to the animal's owner, asking specific questions to uncover symptoms.

In addition, veterinary technicians provide direct care, administering prescribed medicines or vaccinations



Photo courtesy of University of Wisconsin-Madison School of Veterinary Medicine

Among a veterinary technician's job tasks is caring for sick animals.

orally or by injection. Like nurses, technicians place IVs and other tubes in animals when needed. That can be a challenge when working with small or unusual species; it takes skill to put an IV in an iguana, after all. Veterinary technicians have to restrain the animal to keep it still, whether it is a squirming ferret or a nervous goat.

If an animal patient is in intensive care or is admitted for observation, the veterinary technician monitors it closely. The technician offers food and water to animals that are not eating well and provides comfort.

Technicians take animals' temperature, blood pressure, respiration, EKG readings, and other vital statistics. They collect samples by drawing blood, scraping skin, or collecting bodily fluids and waste.

And veterinary technicians keep careful records. They note their observations and treatments on patient charts. They take inventory of prescription drugs and other medical supplies, updating the stock as necessary to keep these provisions current.

Analysis. Veterinary technicians test for signs of disease in the samples of blood, urine, and tissue they collect from animals. Bodily fluids are examined through a microscope, for example, to identify bacteria, toxins, parasites, or nutrient deficiencies. And tissue cells are cultured and checked for signs of cancer or other abnormalities.

Performing a test may take several steps, such as mixing samples with chemicals to see what they contain or spinning samples in a centrifuge, a machine that rotates vials at high speed, to isolate certain proteins. Analyzing test samples is a little like detective work, with technicians looking for clues about what's wrong with an animal. Veterinarians rely on the results to make the right diagnosis.

Taking sonograms and x rays is another common technician task. Veterinarians use sonograms to find abnormalities and tumors in organs and soft tissue. They read x rays to check for broken bones or to see if an animal has eaten something harmful. An x ray can reveal, for example, one of the more common causes of stomach ailments: the patient ate socks, coins, or some other indigestible substance.

Diagnostic imaging requires knowledge of anatomy. Veterinary technicians must know where to find each organ, and locations differ from one species to another. The animal receives anesthesia for the test, or the technician holds or ties the animal to keep it still while the x ray is taken. But x raying animals is difficult for another reason, too; technicians can't say, "OK, now, iguana, hold your arm just like that," for instance, the way x ray technicians can with a person.

Anesthesia. Animals often are put under general anesthesia for common procedures, such as teeth cleaning—which veterinary technicians usually perform—x rays, and, of course, most surgeries. Veterinary technicians prepare and administer the anesthesia.

Under a veterinarian's supervision, technicians choose the type and dose of anesthesia based on the animal's species, breed, and weight, among other factors. The technician constantly monitors the anesthetized patient to make sure it is unconscious, but not under too deeply.

Surgery. Helping in the operating room goes beyond anesthesia. Technicians prepare the animal by calming it, cleaning or shaving it, and giving it medicine. They collect the medical instruments the veterinarian will use and position the patient on the table. During surgery, technicians give veterinarians the proper instruments and monitor the patient, watching more than 10 vital signs at the same time. Sometimes, technicians "scrub in" to an operation and offer other help, perhaps holding the animal in place.

After surgery, the veterinary technician watches the animal closely before and after the anesthesia wears off. Especially important is making sure that the animal is

not in pain, a job task some technicians say is among the most rewarding. Because an animal cannot talk about how it feels, keeping it comfortable requires careful observation: watching how the animal is breathing, whether it is whining, how it holds itself, and

“ People don’t always realize the number of different things veterinary technicians do. ”

—Deneen Cordell, certified veterinary technician
Urbana-Champaign, Illinois

whether its pupils are dilated, for example. The technician reports his or her findings to the veterinarian.

Technicians also clean and disinfect operating rooms and medical instruments to exacting standards and perform routine maintenance on surgical equipment.

Human communication. A veterinary technician’s work extends to people as well as to animals. Technicians often spend more time with people and their animals than veterinarians do. They write after-care instructions for animal owners, calm owners’ fears, and answer questions. Some veterinary technicians give advice on animal training. In fact, some specialize in animal behavior.

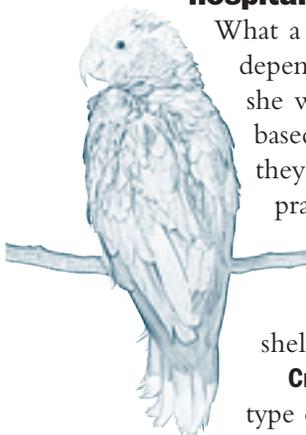
Many technicians supervise other animal-care workers and entry-level technicians. And veterinary technicians who work at veterinary teaching hospitals



Animal wellness checks may include taking a cat’s blood pressure.

show veterinary students how to insert catheters, give injections, and perform other procedures.

Picking a practice: Gerbils or giraffes, hospital or humane society



What a veterinary technician’s job is like depends, in large part, on where he or she works. Veterinary practices vary, based on the size and type of animals they treat and the size and type of practice the veterinarian runs. And the tasks required in a veterinary practice differ from those that a technician performs in animal shelters or laboratories.

Creatures great or creatures small. The type of animal treated has a big effect on what kind of veterinary tasks are performed in a given practice. According to a 2002 survey by the American Veterinary Medical Association, the most common practices are those that exclusively treat small animals, such as dogs, lizards, and gerbils.

A small-animal practice presents unique challenges for veterinary technicians, such as figuring out how to monitor a bird’s blood pressure and breathing. Most patients are pets—dogs, cats, and rodents, and, less frequently, songbirds and small reptiles—whose owners require reassurance and explanations.

Technicians who work with large animals face different obstacles as they treat livestock and large wildlife. For example, getting a horse positioned for an x ray or an operation is a lot more complicated than placing a dog on the surgery table. Large-animal technicians need to understand pulleys and restraints, but they also need to know about calming and leading the animals and convincing them to cooperate. These technicians might clean hooves or wrap legs, knees, and tails to help them heal.

Large-animal technicians often follow the veterinarian outdoors to farms and ranches. They help to corral and restrain the animals and take samples from them. Keeping tools and samples sterile takes special care in this environment.

Technicians also work in wildlife and exotic-animal practices. These include standard veterinary hospitals that see exotic pets, wildlife refuges, and zoos and aquariums. Zoo technicians see the most varied and strange animals. Wildlife refuge technicians usually see local creatures and often spend time on physical

Photo courtesy of University of Wisconsin-Madison School of Veterinary Medicine

rehabilitation. They might find ways to encourage a wolf cub to exercise a hurt leg, for example.

Some technicians work in “mixed” practices that see all types of patients.

Specialize or generalize. Practices also vary by the types of animal problems they treat. A technician who prefers variety and a fast-paced environment, for example, might choose an emergency and critical-care setting. There, veterinary technicians treat very sick and injured animals and provide intensive care. Shifts run around the clock.

At a full-service clinic or hospital with many veterinarians and technicians, veterinary technicians can specialize in one type of procedure. Technician specialties include anesthesia and surgery, diagnostic imaging, dentistry, and animal training.

A technician’s tasks also depend on the specialties of the veterinarians in the practice. At teaching hospitals and special clinics, veterinarians concentrate on one area, such as dermatology, internal medicine, or orthopedics. Technicians who work with them see complicated cases and learn specialized techniques.

Many hospitals are developing new specialties to provide new levels of care. Examples include clinics that focus on physical therapy and diet.

Veterinary technicians in a small practice with one or two veterinarians might see every type of technical work, but they do not perform as many specialized procedures. And if the practice has few workers, the veterinary technician might chip in with nonmedical duties, such as cleaning cages, answering phones, and doing laundry.

Shelters. Some technicians work in animal shelters or humane societies, helping to provide basic medical care to abandoned animals. Services include spaying and neutering animals and setting up pet adoptions.

Laboratories. Veterinary technicians may work at research facilities instead of veterinary clinics. These workers care for animal test subjects and take, prepare, and examine samples. They might, for example, help to run a clinical trial of a new veterinary or human drug. Technicians also may concentrate entirely on laboratory work, conducting specialized tests that are sent to testing services by veterinarians.

Veterinary work: Often rewarding, sometimes beastly

What is it really like to be a veterinary technician? Those who are happy in their work say they cannot



Photo by Peggy Fischer, DVM, courtesy of San Diego Mesa College

The first step in collecting specimen samples is to corral the animal.

imagine liking another job as much as they do this one. And for most technicians, having “warm fuzzies” about the job comes from the warm fuzzies that they treat. That’s because, not surprisingly, veterinary technicians are fond of animals. They enjoy interacting with them and seeing them get better. Caring for animals is what draws and holds most technicians to the career.

The occupation has intellectual rewards, too. Variety in work and species keeps veterinary technicians interested and challenged. This variety is especially pronounced in mixed practices, where technicians see all types of animals, including large, small, and exotic ones. University hospitals, too, provide diversity because technicians at these practices see difficult or unusual cases, and these hospitals are usually the first to develop and test new techniques.

Technicians in every setting help to solve challenging diagnostic puzzles. Even though veterinarians ultimately decipher animals' diagnoses, the tests that veterinary technicians run provide essential clues.

On a practical level, veterinary technician careers offer flexible schedules. Many technicians work part time, in the evenings, and on weekends.

But as in all careers, veterinary technicians face difficulties. Technicians often perform smelly and dirty procedures, such as fecal examination—hardly the most glamorous part of the job. On the other hand, such tasks can be interesting, and they are important: the veterinarian's diagnosis usually depends on how well the tests are performed. Squeamishness cannot keep technicians from collecting and testing urine, blood, or skin samples, either.

Working with animals presents real dangers, too. Veterinary technicians' patients are often panicked and ready to lash out defensively. The veterinary team works together to keep everyone safe, but accidents happen. Technicians can be bitten, kicked, or scratched. If they ignore precautions, technicians also are exposed to diseases, some of which can be passed from animals to humans.

As in all service jobs, veterinary technicians often have to deal with difficult humans. Owners can be impatient or uncooperative, but technicians must do their best to remain calm and professional at all times.

The drawback most commonly cited by veterinary technicians, however, is the need to euthanize animals who are suffering or whose condition will not improve.

Veterinary technicians often assist with euthanizing pets and other animals and with comforting the owners. At humane societies, technicians might perform these procedures themselves.

Also difficult for veterinary technicians is seeing abused, neglected, or abandoned animals. But technicians often have the chance to intervene in these situations, by finding an adoptive home.

Earnings

Veterinary technicians and technologists had median hourly earnings of \$10.78—about \$22,340 annually for full-time workers—in 2001, according to the Bureau of Labor Statistics (BLS). That means that 50 percent of those workers earned more than that amount, and 50 percent earned less. The highest paid 10 percent earn more than \$15.97 an hour. The lowest paid 10 percent earned \$7.65.

Earnings varied by industry, with technicians and technologists who worked in government earning the most: a median of \$17.18 an hour. Close behind were hourly earnings for the few who worked in the drug industry, at a median of nearly \$17. Veterinary technicians and technologists who worked in colleges and universities, including veterinary teaching hospitals, earned a median of \$13.43 per hour. Most worked in veterinary services and earned a median of \$10.65 an hour.

The American Veterinary Medical Association also conducted a survey of technician earnings in 2001. The association found that, among technicians working in private veterinary practices, those who worked in horse-treating practices earned the most, with median hourly earnings of \$13. Those who worked in practices that treated small animals exclusively earned the second highest hourly amount at \$12. Technicians who worked at exclusively large-animal practices, except in practices treating horses, earned the least: \$10 an hour.

Industry sources suggest that veterinary technicians with experience, supervisory duties, or specialized skills and certificates earn more than other technicians do, no matter what the type of industry or practice.

Employment and outlook

In 2000, there were 49,400 veterinary technicians and technologists employed, according to BLS. More than 93 percent worked in the veterinary services industry, which includes veterinary clinics, offices, and hospitals. About 2.5 percent worked in schools, including teaching hospitals, and just over 1 percent were in government,



Photo courtesy of University of Wisconsin-Madison School of Veterinary Medicine

Before technicians can perform routine procedures, they must calm the patient.

often inspecting farm animals, helping with medical research, or caring for military service animals.

According to the 2002 survey of veterinarians by the American Veterinary Medical Association, more than 60 percent of veterinary practices were exclusively small-animal oriented.

Future prospects. Between 2000 and 2010, BLS projects that employment of veterinary technicians overall will grow from 49,400 jobs to 68,800 jobs. That is a growth rate of 39 percent—much faster than the average for all occupations.

In addition to having opportunities from job growth, new veterinary technicians also are expected to find jobs left open by technicians who permanently leave the occupation. Taken together, job growth and the need to replace other workers are projected to create more than 3,000 jobs annually from 2000 to 2010 for new veterinary technicians.

One reason employment prospects are so favorable is that pet owners are increasingly willing to pay for advanced medical care for their animals. The types of care available continue to grow in number, leading to new tests and treatments and spurring the need for technicians. The pet population overall also is expected to increase slowly through 2010.

Most veterinary technician jobs will continue to be

in the veterinary services industry, which includes the veterinarian offices and clinics and veterinary hospitals that treat pets and large animals. But there will be some opportunities in biomedical facilities, drug manufacturing companies, diagnostic facilities, and humane societies. Competition for jobs in zoos and aquariums will continue to be high because the few jobs in those facilities attract many candidates.

What it takes: Skills, training, and licensure

Veterinary technicians need good mathematics skills for calculating drug dosages and the rates at which fluids travel through IVs. Technicians also measure animals' weight and height. Veterinary technicians suggest developing those skills with high school classes in arithmetic, algebra, and science.

Communication ability also is important for writing patient charts and for speaking with owners, animals, and coworkers. These skills can be developed by taking classes in English, speech, and nearly any other liberal arts subject, as well as by writing letters, journals, and reports.

Scientific aptitude helps, too. Veterinary technicians use laboratory tools, such as microscopes, to perform laboratory tests, and they need to understand animal anatomy and physiology.

Beyond book knowledge of math, English, and science, veterinary technicians need to be expert observers. They look for subtle clues in an animal's movements to gauge its comfort and predict its behavior.

Creativity is another plus, especially for technicians who work with many species. For instance, a veterinary technician might use half a syringe holder to make a tiny footbath for a ferret.

And most technicians need to be able to do many tasks at once. The ability to "multitask" is essential because technicians might have to work with 10 patients at once or keep track of many vital signs at once during a surgery.

Physical skill also is needed in most technician jobs. It takes some strength to lift a 100-pound dog into position, for example, even with help. Other work requires a delicate touch, including filling medicine droppers or finding a vein on a hamster.

Education. For technician hopefuls who have developed the skills, getting trained is the next step. Many veterinary technicians have an associate degree in veterinary technology or animal health. Technicians with the best job prospects are those who have attended one



Photo courtesy of University of Illinois College of Veterinary Medicine

Veterinary technicians use mathematics to monitor the rate at which medicines flow through an IV.



Photo courtesy of University of Illinois College of Veterinary Medicine

Working as part of a team, technicians and other specialists help veterinarians during surgery.

of the schools in the United States that is accredited by the American Veterinary Medical Association. In fact, many States require veterinary technicians to have this degree in order to work in the State.

Associate degrees usually are awarded following 2 years of full-time study after high school. Many veterinary technology programs also require a summer internship. Students learn basic math and chemistry, along with animal anatomy—the locations and names of bones and organs—and physiology—how those bones and organs function. Mixing classroom instruction and hands-on work, students also learn medical procedures and the reasons behind them.

Some technicians earn a bachelor's degree in animal health or veterinary technology. These workers often are given the title of veterinary technologist. They might perform more advanced tests and procedures and are often well placed for jobs in hospital management, scientific research, or work in a complex veterinary specialty, such as herd health or critical care.

Some technicians have no formal training beyond high school. Instead, they begin as veterinary assistants and gradually learn some technician skills on the job. Opportunities sometimes are limited for these technicians, however: some States do not allow a technician to practice before having earned an associate degree, and many employers prefer to hire applicants who have an associate degree.

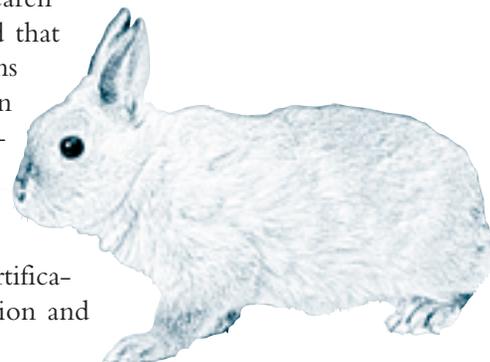
Licenses, registrations, and certifications. Most States require veterinary technicians to be licensed before they can work. Requirements vary for licensure, but about one-third of the States require veterinary technicians to have an associate degree from an accredited

veterinary technician program. Some States usually also require technicians to pass the National Veterinary Technician Exam. See the next section for information on how to find out about local regulations.

In addition to mandatory licenses, technicians can earn voluntary certifications issued by professional associations. The National Association of Veterinary Technicians in America offers the best-known certification. Certification requires an associate degree from an accredited veterinary technician program and a passing score on a multiple-choice exam—the same exam required for licensure in many States.

Technicians also can earn certifications in the anesthetic, emergency and critical care, and animal-training specialties. Each certification, offered by its own association, is available to technicians who have specific experience and who have received a passing grade on a specialty exam.

Employers at research facilities recommend that veterinary technicians who want to work in research earn certification from the American Association for Laboratory Animal Science. Certification requires education and



“ It’s important to observe a technician to see what’s involved before you commit to the training. ”

—Mike Patrick, certified veterinary technician
Tampa, Florida

experience in animal care, animal health, and facilities management, along with a passing score on an exam. The association offers three levels of certification, each with higher required levels of education and experience and a different exam.

Continuing education. To update skills and maintain certifications, technicians continue to attend seminars and courses, read professional journals, and learn on the job.

Examining further

If you think you might like to be a veterinary technician, explore your interest more thoroughly by getting



Animal options: Other occupations

Veterinary technician is just one of many occupations related to animals and health. The following are brief descriptions of some careers that might interest people who like animals. See the “Examining further” section in the article for tips on finding resources for learning more about these occupations.

Animal trainer. These workers train pets and wild animals, teaching commands and eliminating problem behaviors. Many trainers take courses and seminars to prepare for the occupation. Some are former veterinary technicians.

Groomer. Working for themselves and for retail stores, groomers clean, brush, and cut animals’ hair and fur. They also trim nails and apply pesticide treatments. Most groomers train on the job.

Kennel assistant. Kennel assistants clean, feed, groom, and supervise animals at boarding facilities and animal shelters. Most kennel assistants train on the job.

Pet sitter and exerciser. These workers feed, care for, and walk pets. A professional sitter often sees several pets each day. Most pet sitters and exercisers train on the job.

Ranch manager. Ranch managers care for livestock and oversee ranch activities and planning. Animal-related tasks include scheduling veterinary visits, observing and moving herds, and providing basic care. Many ranch managers have an associate or bachelor’s degree.

Veterinarian. Veterinarians diagnose and treat animals. They perform surgery and prescribe medicine. They often supervise technicians and assistants. Veterinarians attend veterinary school for 3 years, usually after completing a bachelor’s degree.

Veterinary assistant. Veterinary assistants help veterinarians to care for animals by cleaning cages and examination rooms, preparing food, grooming patients, and helping to restrain animals. Most veterinary assistants train on the job.

Veterinary clinic or hospital administrator. Administrators with business skills sometimes manage veterinary practices, kennels, or shelters. Training requirements include experience in veterinary medicine. Industry sources suggest that most veterinary clinic or hospital administrators have an associate or bachelor’s degree.

Veterinary medicine and equipment salesworker. Many veterinary technicians make a transition into this occupation, putting their knowledge and experience to use in a different but related way.

Wildlife biologist or ecologist. These workers conduct research into animal behavior and characteristics. Some run animal preserves, conservation efforts, or zoos. Most biologists and ecologists have a master’s or higher degree.

some practical experience. Consider visiting veterinary hospitals and observing technicians at work. Volunteering at an animal shelter is another option. So is caring for pets or joining animal-related clubs.

You also can learn more about veterinary technicians and other occupations related to animals by visiting libraries and career centers. Look for career books and periodicals covering animal health and veterinary technology.

One resource on hand in many libraries and career centers is the *Occupational Outlook Handbook*, which provides detailed information about hundreds of occupations. The *Handbook* also is available online at www.bls.gov/oco/home.htm. In addition, animal occupations are featured in “Wild jobs with wildlife:

Jobs in zoos and aquariums,” in the spring 2001 *Occupational Outlook Quarterly*. The article is also online at www.bls.gov/opub/ooq/2001/spring/art01.htm.

Career counselors are another good information source. They can help future veterinary technicians choose appropriate classes, find career resources, and uncover related internship and volunteer opportunities.

For information on local earnings of veterinary technicians and technologists, try the BLS Occupational Employment Statistics survey. Survey findings may be obtained online at www.bls.gov/oes or by calling (202) 691-6569.

Finally, professional associations provide information and advice about careers and training. The following is a list of some of the associations for veterinary technicians.

For general information about careers and certification, contact:

National Association of Veterinary Technicians in America

PO Box 224
Battle Ground, IN 47920
(765) 742-2216
www.navta.net

For information on careers in veterinary hospitals, including publications, contact:

American Animal Hospital Association
PO Box 150899
Denver, CO 80215-0899
(303) 986-2800
www.aahanet.org

For a list of accredited veterinary technician education programs, contact:

American Veterinary Medical Association
1931 N. Meacham Rd., Suite 100
Schaumburg, IL 60173-4360
(847) 925-8070
www.avma.org

For a list of State licensing requirements, contact:

American Association of Veterinary State Boards
4106 Central St.
Kansas City, MO 64111-2307
Toll free: 1 (877) 698-8482
(816) 931-1504
www.aavsb.org

For information about veterinary technician specialties, contact:

Association of Zoo Veterinary Technicians
c/o White Oak Conservation Center
67459 Owens Farm Rd.
Yulee, FL 32097
(904) 225-3396, ext. 3606
www.azvt.org

Other veterinary technician associations include the following:

Academy of Veterinary Technician Anesthetists
PO Box 426
Rossville, IN 46065
www.avta-vts.org



Photo by Peggy Fischer, DVM, courtesy of San Diego Mesa College

A technician's job duties, such as weighing herd animals, vary by size and type of veterinary practice.

Academy of Veterinary Emergency & Critical Care Technicians

6335 Camp Bullis Rd., Suite 23
San Antonio, TX 78257
www.avecct.org

Society of Veterinary Behavior Technicians

406 Branchway Rd.
Richmond, VA 23236
(804) 379-4702
www.svbt.org/index.htm

American Association for Laboratory Animal Science

9190 Crestwyn Hills Dr.
Memphis, TN 38125-8538
(901) 754-8620
www.aalas.org

