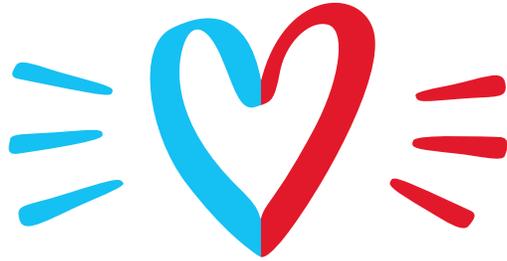


Love ANIMALS?



SUPPORT ANIMAL
RESEARCH™



FEATURING
DR. TEMPLE
GRANDIN

Love animals? Support animal research. (whaaat!?!) Is it possible to do both? If someone you know is dying of cancer, yes. If a pet animal is suffering from a rare disease, yes. And if you work in research, of course! (More about that later.) But if you're on the fence or haven't thought about it, please turn the page →



3 BENEFITS OF ANIMAL RESEARCH

Fertility drugs to get pregnant

Prenatal testing for birth defects

Chemotherapy for canine cancer

INTRODUCTION

Animal testing for medical reasons (not for new beauty products) is a good thing.

It's a way to make sure the prescription drugs we take or give to our pets are effective and safe.

It's a method of perfecting surgical procedures, such as deep brain stimulation so epileptic patients can have a more normal life.

And yes, it's a really complicated issue.

That's why we put together this booklet. To help everyone understand the goals, benefits, and regulation of animal research.

We hope you'll take the time to read it from cover to cover.

Some people think animal research is conducted exclusively for our benefit. Actually, it helps companion animals live longer, too!



HEART DISEASE

Heart valve replacement surgery has saved hundreds of millions of people and it's the result of animal research.



VISION LOSS

A surgical procedure perfected on animals is a common fix for cataracts, the world's leading cause of blindness.



MUSCULAR DYSTROPHY

In research with dogs, an experimental drug shows promise in slowing damage to muscles. And potentially growing new muscles!



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HOW ANIMAL RESEARCH HELPS PEOPLE

When you're ill or injured, virtually everything the doctor, nurse, paramedic, pharmacist, or other health care provider can give you was made possible by animal research.

These medications, medical devices, surgeries, treatments, and therapies include the following:

Anesthesia, Antacids, Antihistamines, Asthma Inhalers, Athlete's Foot Cream, Blood Pressure Medicine, Chemotherapy, Cholesterol Drugs, Cold Medicines, Contact Lenses, CT Scans, Deep Brain Stimulation For Parkinson's, First Aid Creams, Heart Transplants, Heart Valves, Heart-Lung Machine, Hemorrhoid Creams, Hip Replacement Surgery, HIV Drugs, Insulin For Diabetes, Kidney Dialysis, Kidney Transplants, Laxatives, Migraine Medicines, Pacemakers, Penicillin, Poison Ivy Cream, Prostate Cancer Medicines, Tick-borne Disease Antibiotics, Transplant Rejection Drugs, Ulcer Medications, plus Vaccines for Cervical Cancer, Meningitis, Mumps, Tetanus, and Whooping Cough.

Phew. That's a lot to be grateful for. But there's much more! We'd have to use a font <THIS SIZE> to list all the other procedures and medications.



BLINDNESS

The pet parents of a dog who lost his sight to cancer enrolled him in an experiment to test a new drug. His sight was restored overnight!



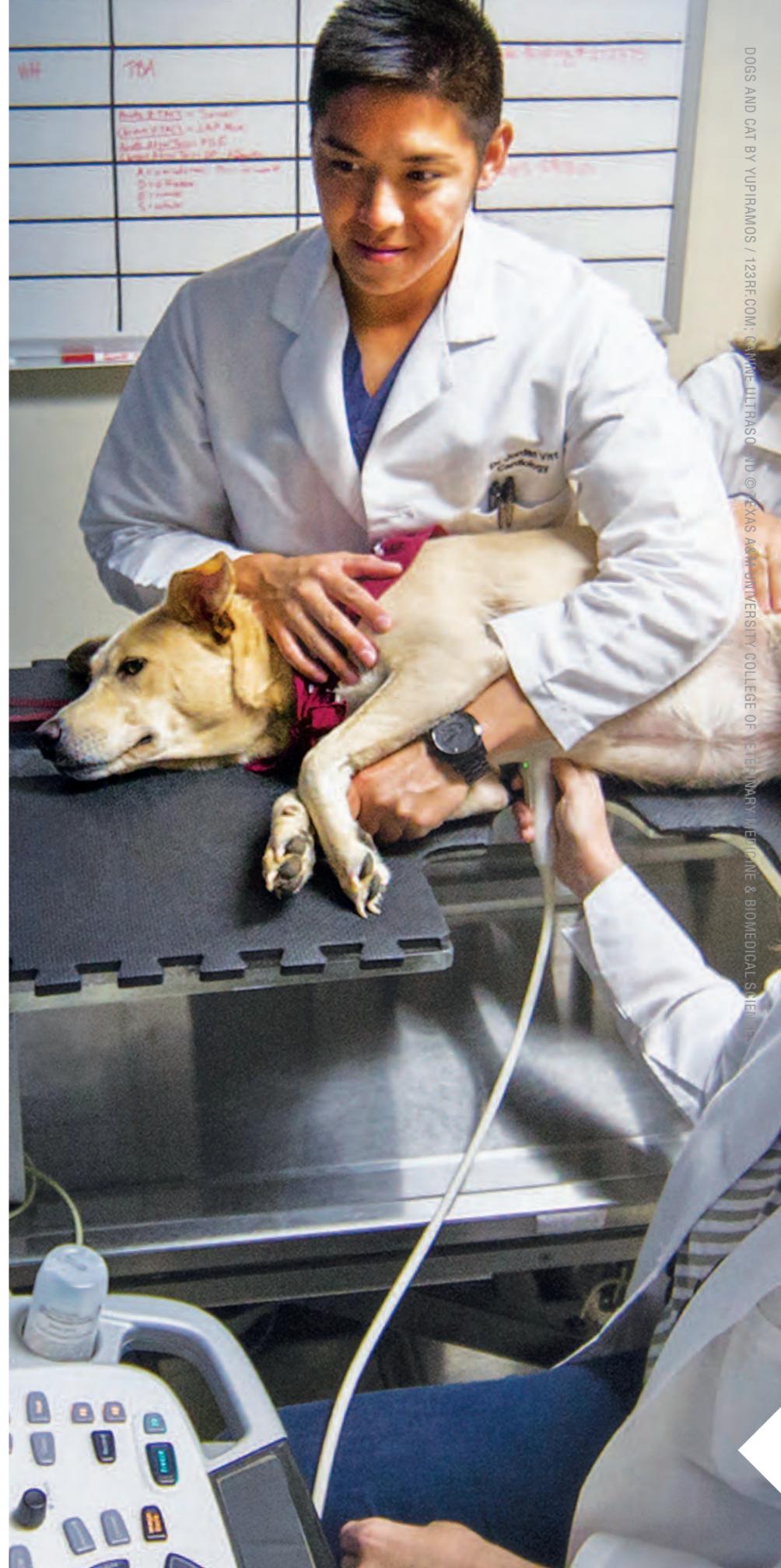
CAT HEART DISEASE

An incurable cardiac condition may soon be curable. Using a new drug tested on lab animals, scientists made the defect disappear!



CANINE BONE CANCER

Osteosarcoma is extremely aggressive. Animal research has led to a new treatment that's more than doubled the number of survivors!



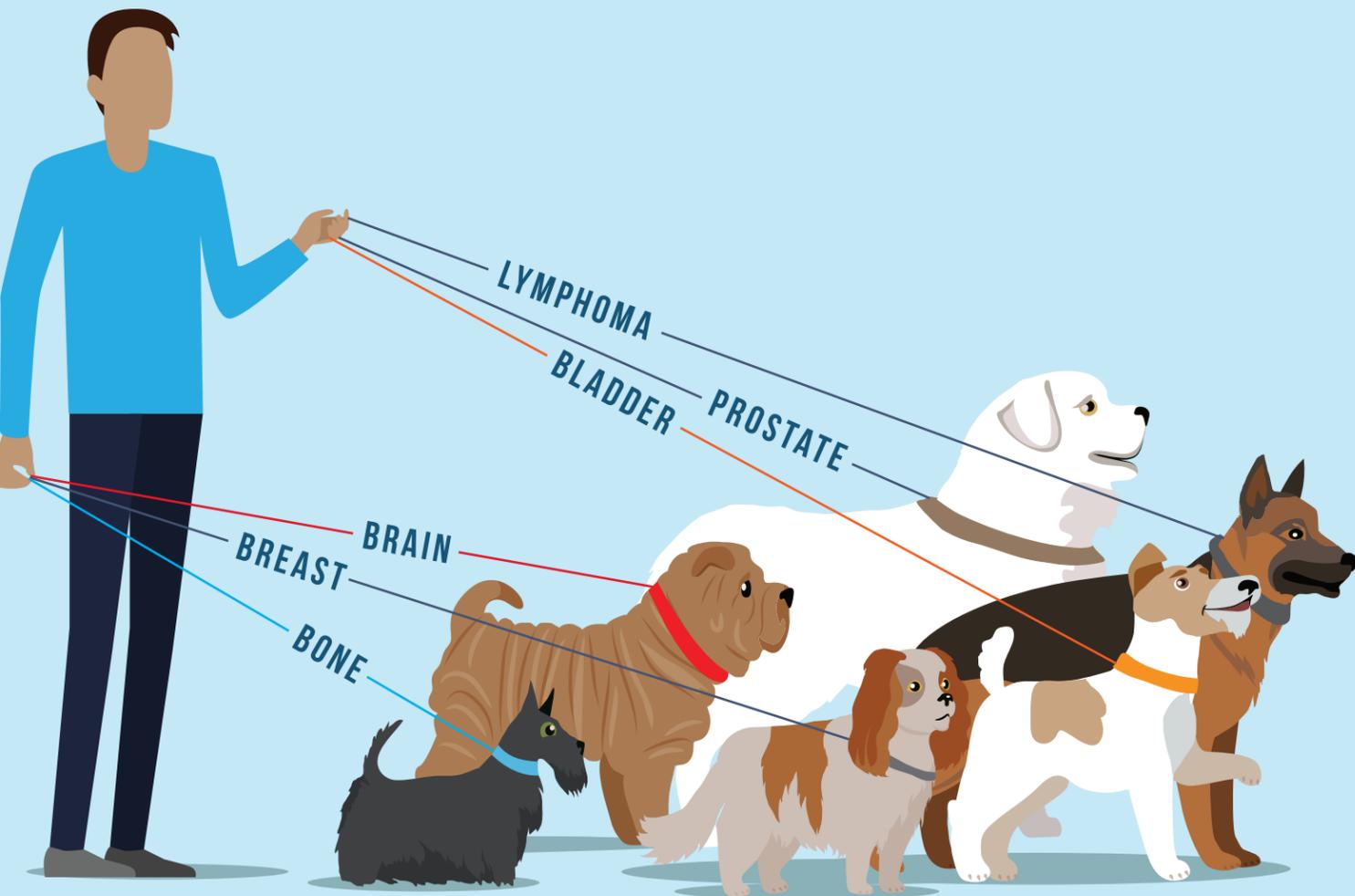
HOW ANIMAL RESEARCH HELPS PETS

Animal research has improved and saved the lives of countless companion animals.

Some prime examples are listed here:

- Vaccines to prevent distemper, feline leukemia, infectious diarrhea (parvovirus), infectious hepatitis, kennel cough, cat flu, rabies, and tetanus.
- Veterinary medicines for kidney problems, cancer, heart disease, infections, and pain.
- Technologies like ultrasound, CT, and MRI to help diagnose potentially deadly diseases.
- Life-saving emergency care for dogs and cats hit by cars.
- Advanced surgical procedures for organ transplants, pacemakers, and to treat joint and ligament distress in cats and dogs.
- Nutritional products to help puppies and kittens grow into healthy dogs and cats.

Following successful heart bypass surgery, a Labrador retriever gets a cardiac ultrasound.



Some cancers we have in common with dogs

MEDICAL CONDITIONS PEOPLE AND PETS SHARE

The list is a lot longer than you think.

Allergies, anemia, arthritis, and asthma.

Botulism, bronchitis, cataracts, deafness, diabetes, epilepsy, and glaucoma.

Heart disease, hemophilia, hepatitis, hypertension, infertility, and influenza.

Leukemia, lung disease, lupus, Lyme disease, malaria, and measles.

Narcolepsy, nerve damage, rabies, rubella, scoliosis, and skin diseases.

Tetanus, tuberculosis, ulcers, and Yellow fever.

And of course the big C.

Did you know cancer is the most common cause of death in dogs?¹

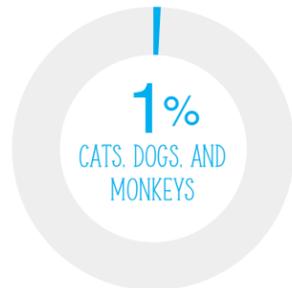
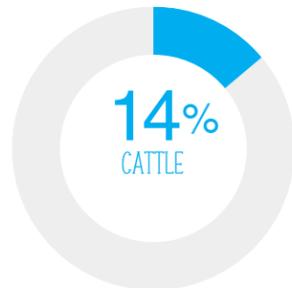
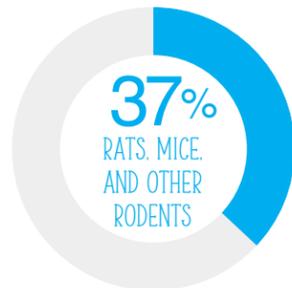
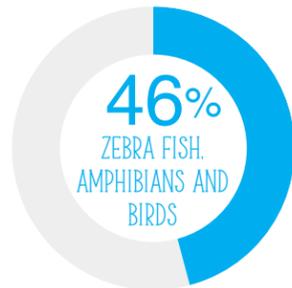
Today, physicians and veterinarians are working together—sharing research results and other information—to find a cure for both species.²

With cancer, early detection is key! So take your best friend for a “nose-to-tail” checkup every 12 months.



To see what's going on in Canada's research institutions, turn the page →

LAB ANIMALS BY SPECIES APPROXIMATION



LIVING CONDITIONS

- Living spaces are carefully designed to meet the specific needs of every lab animal species.
- Specially trained veterinarians oversee their well-being and medical care.
- Temperature is monitored 24/7, including weekends and holidays.
- Lab animals drink clean, purified water.
- The air they breathe is significantly cleaner than the air inside our homes.
- They eat healthy because an expert nutritionist monitors their diet
- Primates regularly snack on fruits and veggies cut into bite-sized pieces.
- Environmental enrichment (like the example shown here) helps promote psychological well-being.

Humane and responsible animal care standards are detailed in Guidelines of the Canadian Council on Animal Care (CCAC).³



LAB PEOPLE ♥ THEIR LAB ANIMALS

From the associate animal care technician to the Nobel Prize-winning scientist plus everyone in between, all make the physical, physiologic, and behavioral needs of lab animals a top priority.

Why?

- Because it's good science. Well-treated animals provide more meaningful and reliable research results. More reliable research results could reduce the number of animals needed for research.
- Because treating lab animals with the most dignity and compassion possible just comes naturally!
- And because it's the law.

Research scientists actively observe the three Rs:

- REDUCE the number of animals used in testing.
- REFINE procedures to minimize pain and distress.
- REPLACE animals with alternatives when possible.

CANADA'S RESEARCH REGULATIONS ARE AMONG THE STRICTEST ON THE PLANET

Among its many mandates, anesthetics must be used for potentially painful procedures. And painkillers are used after surgery unless the research doesn't allow it.

For example, in a study of pain relief for cancer patients, the animals endure some discomfort and distress.

Each institution must have an Animal Care Committee (ACC) to review research proposals and to ensure the use of animals is necessary.

Scientists must explain why alternatives such as computer simulations won't work. And must reassure committee members their research doesn't duplicate previous studies unnecessarily.



There are more than 9,000 strains of laboratory mouse models available today to help scientists achieve their research goals.



ANIMAL RESEARCH WITH DOGS

The number of dogs involved in research is small (less than ½ of one percent). But their impact on human and animal health is enormous.

- 8 of the 10 most common prescription drugs were developed with dogs.
- Many treatments initially developed for us also help our pets.
- Today, a number of research studies benefits a lot more animals directly.

“But can’t you just use rats and mice?” you may ask. No, not really. The path from concept to cure is complicated.

After using cell cultures, tissue samples, and computers, investigators must add animal models to their study.

Most start with mice and rats. When they get positive results, they advance to an animal model that more closely resembles humans. That’s where dogs usually come in.

We share more than 4 out of 5 genes with dogs. Which is why canines are so essential to medical progress.

Dogs are more than man’s best friend. They’re also man’s best research partner. These beagles live together and have playtime every day!



ANIMAL RESEARCH WITH CATS

Cats have helped scientists gain a better understanding of cardiac disease, diabetes and vision loss.

Now, researchers are conducting studies with cats to conquer Alzheimer's, cancer, and more than 200 inherited diseases.

(And because these diseases are common to both species, medical breakthroughs may benefit both!)

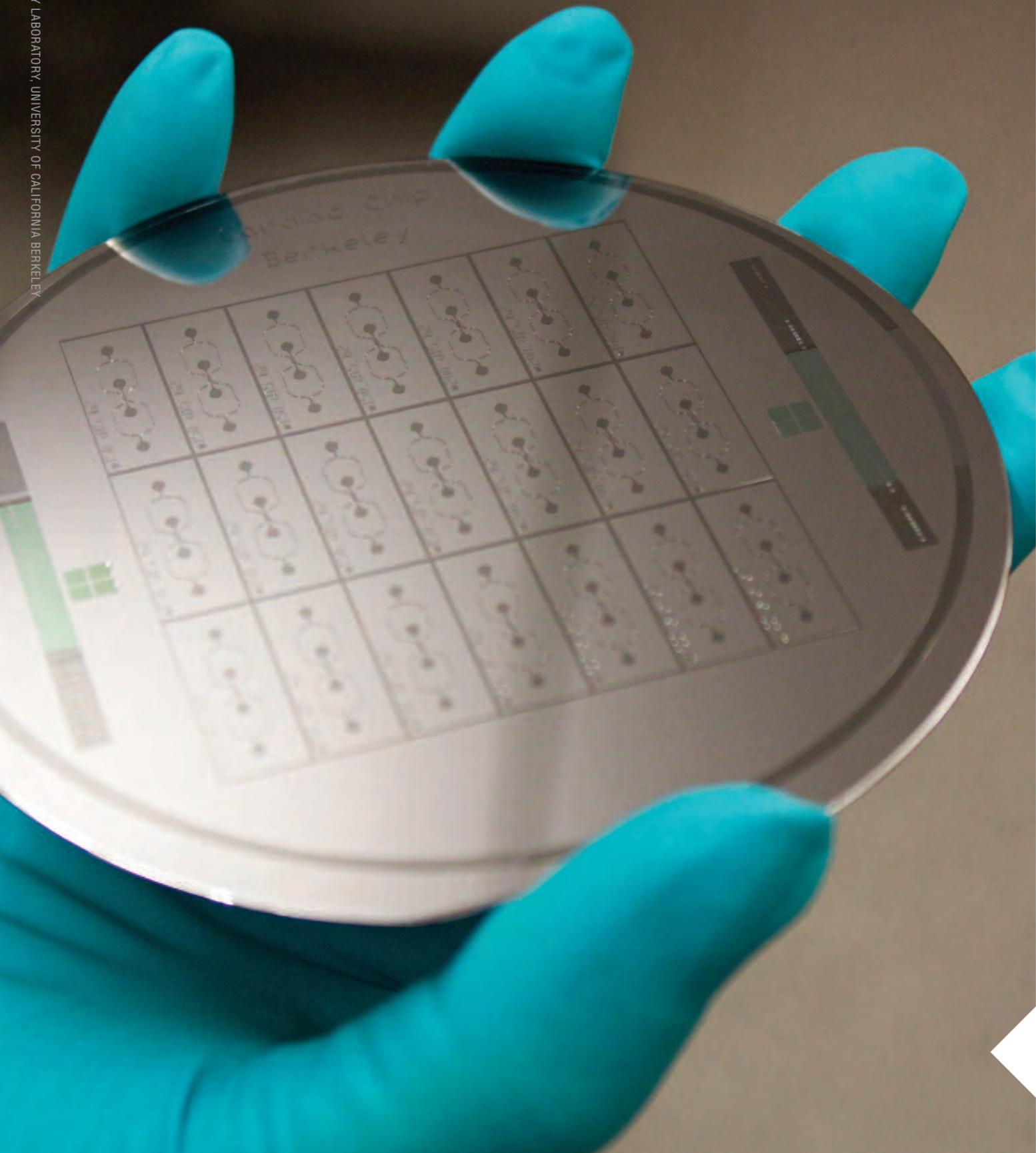
True or False?

The number of cats used in research and testing has dropped by more than 70% since numbers have been kept.

TRUE. This impressive statistic is true. And it's worth celebrating! Because researchers are just as concerned as you are about reducing the number of animals in research.

We look forward to the day when all cats will be in laps not labs. But to test the safety and efficacy of better cat foods, medications, and therapies, a relatively small number is still needed.

Did you know research with cats helped create cochlear implants—those tiny devices that give children with hearing loss a better chance of keeping up with other students and of fitting in? Well, now you know :)



ANIMAL RESEARCH ALTERNATIVES

Scientists in the Canada, US, UK, and Germany have been working on this challenge for decades. Which is why there are more non-animal methods now than ever before!

For many safety and toxicity tests, sophisticated tissue models and cell cultures have replaced guinea pigs, rabbits, and mice.

“Organs on microchips” can be used in toxicity testing, disease research and evaluating new drugs.⁴

And with state-of-the-art computers, scientists test new drugs and biologics.

But supercomputers running sophisticated computer programs can't accurately predict the weather, let alone accurately predict everything a new drug will do once inside you.

(sigh)

So for the time being, research with animals is still the surest path to discovering ways to prevent diabetes, better treatments for heart disease, and a cure for cancer.

Industry experts predict organ microchips may fully replace animal models in 15-20 years.



SUMMARY

Research scientists have made medical discoveries with animal models that would not have been possible otherwise.

We think they deserve our support and trust.

If you agree, please share this booklet with family and friends.

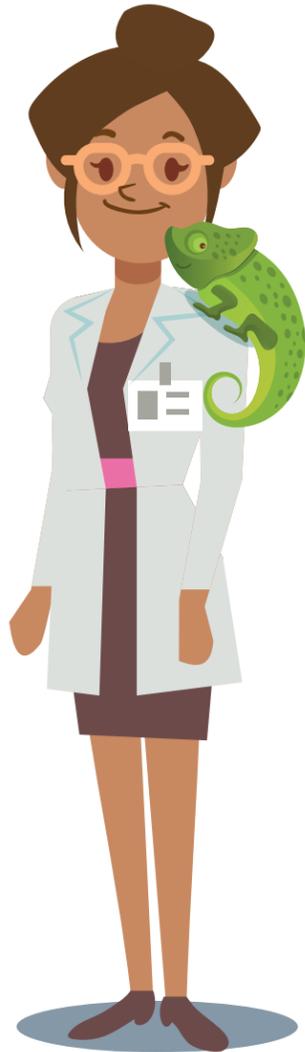
And if you post your thoughts online, be sure to add [#SupportAnimalResearch](#)

REFERENCES

Weblinks accessed February 2019

- 1 Gardner, Heather L.; Fenger, Joelle M.; London, Cheryl A. (2016). "Dogs as a Model for Cancer." Annual Review of Animal Biosciences. 4 (1):199-222.doi:10.1146/annurev-animal-022114-110911.
- 2 Burns, K. "Taking on Cancer." JAVMA 2014;244:140.
<https://www.avma.org/News/JAVMANews/Pages/140115a.aspx>
- 3 <https://www.ccac.ca/en/standards/guidelines/>
- 4 Al-Rodhan, Dr Nayef. "Organs-on-Chips Allow New Views of Human Biology." Scientific American. June 23, 2016.
scientificamerican.com/article/organs-on-chips-allow-new-views-of-human-biology/

Many research institutions, such as the University of Guelph, have programs in place that enable animals that have been used for research to find new homes after the experiments are over.



IF YOU CARE ABOUT PEOPLE AND PETS, PERHAPS YOU SHOULD CONSIDER A CAREER IN BIOMEDICAL RESEARCH

Ghandi said, “the future depends on what you do today.” In the biomedical research industry, you’ll have a lot of good career options that can help improve the health of humans and animals alike. (Not all require a graduate degree. But jsyk, some require certification.)

HIGH SCHOOL DIPLOMA

Animal Care Technicians and Lab Animal Technicians provide food and water, clean housing, enrichment, and monitor animal health daily.

Animal Facility Supervisors oversee the animal facility setting. They make sure all laws and regulations are being obeyed.

Cage washers and **Facility Maintenance** team members keep research facilities and equipment clean, safe, and dependable.

Clinical Trials Associates organize the testing of technical procedures and new drugs on people.

Laboratory Assistants help technicians, veterinarians, and researchers inside a laboratory.

COLLEGE DEGREE (2- AND 4-YEAR)

Animal Behaviorists collect data on the activity and behavior of animals.

Animal Health Technicians monitor animal health and provide medical care as prescribed by a veterinarian.

Biomedical Engineers work in the practical application of engineering as it relates to health and medicine.

Computer Scientists and **Programmers** create and design programs for use in research.

Engineers design and create equipment, facilities, devices, and materials used in a research environment.

Medical Technologists perform laboratory tests in medical and hospital diagnostic laboratories.

Nutritionists design healthier diets for animals and humans plus study food-borne illnesses.

Pharmaceutical Technicians assist researchers in discovering and creating new medicines.

Pre-Clinical Trials Associates work with scientists to test new drugs and procedures on animals prior to testing on humans.

Regulatory Affairs Specialists maintain and enforce the laws and rules that govern the use of animals in all areas of research.

Research Associates and **Research Technicians** work with scientists, doctors, and veterinarians in labs assisting with animal studies, analyzing data, and maintaining equipment.

Statisticians use computers to help researchers design experiments and analyze the results.

Technical Writers record and publish the results of research, the protocols for research, and the specs and procedures for using new medicines and surgical advancements.

GRADUATE DEGREE

Laboratory Veterinarians provide medical care to animals, perform independent research, and consult and collaborate with research investigators.

Medical Doctors provide medical care to humans, improve procedures and surgical techniques, and make drug and medical treatment discoveries.

Researchers and Scientists study medical conditions and conduct studies in all fields of biomedical research to develop new medical techniques, devices, treatments, and medicines.



This booklet is a public education partnership between the Canadian Association for Laboratory Animal Medicine (CALAM), the Canadian Association for Laboratory Animal Science (CALAS), and the Foundation for Biomedical Research (FBR).

Partners endorse carefully regulated, ethical research with laboratory animals. This research is essential to learning about the biology, treatment and prevention of diseases, and conditions that cause suffering and death in people and animals.



Canadian Association for Laboratory Animal Medicine
CALAM-ACMAL.ORG

ACMAL is a small and supportive group of academic, government, pharmaceutical, and biomedical veterinarians committed to excellence in laboratory animal medicine and welfare for the global advance of science, health, and education.



Canadian Association for Laboratory Animal Science
CALAS-ACSAL.ORG

ACSAL is a national association that represents a diverse group of professionals including animal care attendants, animal health technicians, and veterinarians. For more than half a century, our members have worked to improve the lives of animals in our care.



Foundation for Biomedical Research
FBRESEARCH.ORG

FBR is America's most experienced nonprofit dedicated to improving human and animal health by educating the public and encouraging support for biomedical research.

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The Foundation for Biomedical Research expresses its utmost gratitude to Dr. Frederic Chatigny for his collaboration on this project. Both the English and French Canadian versions of this brochure would not have been possible without his dedication and skilled assistance.

Love Animals? Support Animal Research. Dr. Temple Grandin does!
She's an animal welfare expert and professor of animal studies
at Colorado State University.



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