Answering difficult questions

Animal research remains a controversial topic. Many people will have strong opinions and may believe myths and pseudoscience perpetuated in the media. You may be asked difficult questions about animal research, your work, your opinions and the public debate about animal research. Remember our aim is foremost to inform, not necessarily influence. Not everyone will agree that animal research is necessary and justified for medical breakthroughs, but hopefully everyone can understand, and agree on, the facts.

Below are examples of difficult questions we are often asked about animal research and our strategies for answering them. These are general guidelines to be adapted to suit your own presentation style. Every situation is different, so feel empowered to use your best judgement of the level of information and length of debate suited to the situation.

Questions looking for more information and reassurance.

- *What happens to the animals after you have used them?*
- *How much do the animals suffer?*
- *Why don't you use alternatives instead?*
- *Why are the numbers [of animals used in research] going up?*

These questions may feel pointed, but often come from a lack of knowledge. This may be the first time this person has really thought about why and how animals are used in medical research. They want to know that animal welfare is important not just because of legal requirements, but because **you** personally care about your lab animals. The average person usually guesses hundreds or thousands of animals are used in research annually, so hearing 4.2 billion procedures were carried out in 2015 can be shocking.

- Focus on the facts. Reassure them that legislation, AWERBs and professional standards ensure animals are only used when there is no alternative and the benefit to alleviate human suffering is judged to be worth the cost to lab animals.
- Be honest. As much as possible is done to improve animal welfare, but there is still a cost to animals and most animals are humanely killed for further study of their tissues.
- If you feel comfortable doing so, use a personal example from your work and speak from your perspective. Even if the person disagrees, they can't argue with your experience and feelings.

- Avoid being pulled into a lingual framework of animal "suffering". Use neutral language, such as animals experiencing "distress, stress or discomfort". Reiterate that anaesthesia and painkillers are used where appropriate. If your research studies pain, be honest and explain the goals of the research to understand and end pain.

Ethical/ moral questions.

- *Do you think animals have any rights?*
- *Why is it ethical to test on an animal, but not on a person?*
- *Why don't you use murderers / rapists / pedophiles instead?*

Understandably many people, just like you, care deeply about animals and are concerned about the welfare of lab animals. Unlike you, they don't have personal experience of caring for lab animals. Inevitably what they imagine and what they may have heard in the media is much worse than actual research. They may not understand the science of why animals are needed in research and legal protections regulating animal use. They may not have thought about the human rights issues of using people in research (or know the terrifying history). Views of "right" and "wrong" can be very personal, so it can be tempting to avoid the sticky subject of ethics altogether. However focusing on just the science can dehumanise you and make it appear that you don't care about the welfare of lab animals.

- Utilitarian ethics, and the Animals (Scientific Procedures) Act 1986, balances the cost of research to lab animals with the potential benefits to people in knowledge and medical treatments.

- Emphasise that research is **only** permitted when there is no alternative. If you can replace an animal, you **must**.

- This perspective assumes that animals have the right to be cared for (the Five Freedoms), but that animals do not have the same rights as people. For example, it is acceptable to own an animal as a pet, but would be unacceptable and illegal to own a human slave.

- You may want to reiterate that we can agree on the facts and disagree on the ethics. This is our perspective and that of the law, but if you do not agree that animals have different rights than people, then you cannot agree with animal research.

- People are used in research at the stage of clinical testing, with about 15 people used for every lab animal. By law, all medicines must first be tested on animals for safety to protect the human rights of people who volunteer for drug trials.

Questioning the validity of the science and effectiveness of the law.

- *How can animals help if they are so different from people?*
- *Don't animals and people suffer from different diseases?*
- *What about side effects in people, doesn't that show that animal tests don't work?*
- *What about the animals that are used just out of curiosity?*
- *What about all the animals that get used, but where there isn't any medical advance?*
- *We may have needed animal research in the past, but why do we need it now that medicine is so advanced?*
- *If animal research is effective, how come there still isn't a cure for AIDS?*
- *How come Thalidomide happened?*
- *What about the Northwick Park disaster?*
- *If the law is so effective, how come nobody has been prosecuted?*

These questions stem from a poor knowledge of how scientific research is conducted and regulated. Even in an audience of adults, those outside of science careers may not have studied science since secondary school. Of those polled by MORI in 2014 63% felt "uninformed about science and scientific research" and 31% wrongly believed that cosmetic animal testing (banned in 1998) still took place in the UK. There may also be a sense of distrust of scientists and regulations; MORI found only 35% felt "rules [on animal use in scientific research] are well enforced" and 65% "wouldn't be surprised if some animal research went on behind closed doors without a license".

- Be sure to explain terms and concepts throughout your presentation. Avoid jargon when possible. Asking the group to define a term for you can be a very good way to gauge their level of understanding, eg. when might you have a local anaesthesia?

- They may mistakenly believe that animals are physically very different from people. Explain the biological similarities of all mammals and how differences can lead to a better understanding of a particular problem or illness.

- They may misunderstand, or misrepresent, how science works; PETA stated if animal research is effective then "…we should have a cure for everything, including the common cold…". Use examples to show how science (slowly) progresses from an idea to a medical treatment through testing and research. The discovery and production of insulin from dogs to treat diabetics is a great case study.

- Questions about what went wrong in public medical disasters, such as Thalidomide causing birth defects, show concern for how research is regulated. Ultimately they want

reassurance that research really is safe, that regulations are tight and that the law is followed.

- If you don't know the details of a particular incident, bring it back to your own experience. Such as "I'm not familiar with that case. In my lab, we do X, Y and Z to ensure animal and patient safety."
- If you know the particulars, explain what happened and how things have changed to ensure it won't happen again. In the 1950s it wasn't known that medications could pass from mother to embryo in utero, so Thalidomide wasn't tested on pregnant lab animals. Reproductive and toxicology studies are now an essential part of drug development to ensure drug safety.

Personal questions, asking about your views and experience

- *Do you ever pretend you do a different job?*
- *Would you use **YOUR** pet?*
- *Is there an animal you wouldn't use?*
- *What is the worst thing you have ever done to an animal?*
- *If animals are so necessary why do people say you don't need them? Are they liars?*
- *What do you think about the people who are anti-animal research?*

As the popularity of celebrity news shows, people are interested in hearing about other people. They be asking out of general curiosity. You have an unusual and interesting job and they want to hear about the life of a lab tech or researcher. Alternatively questions about what you think or what you would do may be asked to check if you're being honest; "gotcha" questions aimed to catch you out.

- Be as honest. Try not to dodge the question outright by just sticking to the science. "My pet cat would be unsuitable for most genetic studies, as she is of unknown breed and is spayed." Though true, this sounds like you're trying to avoid the question.
- If you feel comfortable doing so, speak from your perspective and use examples from your work. It's ok to show that you're human and that your emotions sometimes impact your work. For example, "I strongly support animal research and value the work we're doing, but my pet is my baby. Its illogical and emotional, but I would find it very hard to use my pet in research."

- Avoid being pulled into a negative framework, such as describing the "worst" thing. Use neutral language and reframe your answer. Such as, "The most difficult thing for me is when I have to put an animal down."

- Public support for animal research is generally strong, 68% by MORI, but be careful not to demonise anti-vivisectionists. Your opposition is likely in the room. Remaining respectful of those with opposing views shows your ability to listen to new information and keeps the conversation at the level of adult transaction.

Confrontational comments that frame animal research in a negative way.

- *Do you ever feel guilty about what you do?*
- *How do you sleep at night?*
- *I just think that it is wrong to hurt innocent animals and the people who do it are evil!*

Extreme activism has not been prevalent in the UK since the 1990s when leaders of more violent tactics were prosecuted and imprisoned. From polls of public opinion against violent protest and our own experience speaking about animal research across the country, presenting your views and experience should not put you in any danger. However your personal safety is always of the utmost importance, so read situation individually.

Though directed at you, these comments are not personal. Remember that as the speaker, you are an authority figure, and it may have been very difficult and emotional for them to speak up.

- Be careful not to escalate with an emotional or highly defensive response. Remain calm. Keep the conversation informative, open and logical at the level of adult transaction.

- Thank the person for their interest and passion on the subject. "I can see that you're very passionate about the subject. That's great. We're very passionate about what we do too."

- Avoid being pulled into a negative framework of strong and judgemental language - torture, suffering, evil, disgusting, guilty.

    - *"Actually I'm really proud of the work that I do. Our research could save lives."*

Accept that not everyone will agree, and its ok to have different opinions.

> *"Animal research is a complex issue and there are always going to be strong opinions. Though I believe, and my organisation believes, the benefits to alleviate human suffering balance the cost to lab animals, you may not agree with that. And if you don't, then you cannot agree with animal research. And that's ok. You can agree with me on the science and disagree on the ethics. Next question?"*

FAQ

The following is a compilation of the more challenging frequently asked questions. More information can be found by following the hyperlinks and on our website:

http://www.understandinganimalresearch.org.uk/resources/faqs/

http://www.understandinganimalresearch.org.uk/how/myths-and-facts/

http://www.understandinganimalresearch.org.uk/news/communications-media/why-testing-on-prisoners-is-a-bad-idea/

http://www.animalresearch.info/en/resources/faqs/

http://www.animalresearch.info/en/designing-research/misconceptions/

Questions looking for more information and reassurance.

What happens to the animals after you have used them?

At the end of most scientific studies, the animals are humanely killed so that a full examination of their tissues can show the effect of the treatment. If this is not necessary, the animal might be used in another experiment, and very occasionally animals are rehomed.

How much do the animals suffer?

Most animal research involves little more than injections, taking small blood samples, feeding or breeding studies. By law, researchers must work to minimise the suffering of animals in laboratories. This might be by using analgesia or anaesthesia to alleviate pain during or after a procedure, or it could be providing enrichment for animals in order to encourage mental stimulation and prevent boredom. 95% of procedures are classified as mild or moderate.

It is in researchers' interests to make sure animals suffer as little as possible; stressed animals are less likely to produce reliable results. All animal research must pass an ethical evaluation which weighs up its pros and cons and decides whether it is justified. The research then has to be approved by Home Office Inspectors, who are all doctors or vets and who ensure that high welfare standards are applied.

Why don't you use alternatives instead?

Whenever possible, we do; if you can replace an animal, you must. However, it has proved very difficult to develop non-animal methods to replace the use of animals in research and testing. Most progress has been made in the replacement of animals in safety testing. Once non-animal methods have been developed and validated, and are accepted by the regulatory authorities world wide, then they must be used in preference to the animal tests. Animal experiments are just one method in biological and medical research - research can also be done using cells, tissues, people, and high tech equipment. Some people regard these methods as alternatives, but they are really complementary methods that are used alongside animal research to answer different sorts of questions. Animal research and testing accounts for a small proportion of all biomedical research and testing.

Why are the numbers [of animals used in research] going up?

The Home Office statistics on the number of animals used in procedures is indicative of the amount of medical research being done in the UK. More research means new medicines, new treatments and better health for people, pets and wildlife.

Ethical/ moral questions.

Do you think animals have any rights?

There are some people who believe that animals have equivalent rights to human beings. This would rule out their use as food, for clothing, in circuses etc. Some animal rights activists even believe that keeping animals as pets is like slavery. Clearly, as about 90% of people in most cultures eat meat, most do not believe that animals have such rights. Most people accept that animals have a right to be treated humanely, and that people have responsibilities towards animals to make sure they are properly cared for. This acceptance of the animal welfare ethic is quite different from giving animals equivalent rights to humans.

Why is it ethical to test on an animal, but not on a person?

Most people accept that, if animals are looked after properly in laboratories, and used in minimum numbers only when necessary, then it is ethically acceptable to use animals in medical research. If we stopped using animals, then it is difficult to see where the solutions to today's medical problems are going to come from. Is it right to deny these treatments to the patients who are suffering now and in the future? That would be the result if animal research were to be abolished immediately as called for by the animal rights groups.

Why don't you use murderers / rapists / paedophiles instead?

All people, even convicts, have human rights. The Human Rights Act 1998 (HRA) ensures "the right to life" and abolished capital punishment (the death sentence) in the UK. Since untested new medical treatments could potentially be lethal, the law requires safety testing on animals

before new medicines can be trialled on people. An important part of most animal studies is examination of tissues and organs post mortem (after death), which would bring up a number of moral issues.

In addition to the ethical and legal arguments against medical research on prisoners, prison populations would not produce robust results. In an experiment scientists strive to change only one variable to ensure observed results correlate only to that changed variable, rather than some other factor within the population or environment. While lab animals can be bred to have a similar genetic make-up and kept in standardised conditions, prison populations have diverse and often unknown medical histories. These variables would undermine and invalidate any conclusions drawn from such a mixed population.

Increasingly lab animals are genetically altered to create more accurate animal models and to better understand the role of specific genes. In 2015 half of all procedures involved the creation and breeding of genetically modified animals and 64% of experimental procedures involved genetically altered lab animals. To study the impact of turning a gene on or off a researcher may need to study the inheritance and effects of a gene over multiple generations. This simply would not be possibly in prison populations. Ethically any prison-born offspring of a guilty prisoner should be treated as innocent (and thus not eligible to research) and practically human reproduction takes 9 months to produce one baby, and then another 15-17 years for the offspring to reach sexual maturity. Mice can reproduce in 20 days, and the offspring are sexually mature within 6-8 weeks. A researcher can study the inheritance and effects of a gene over multiple generations of mice within a single year – the same research would take a lifetime to conduct in humans.

Questioning the validity of the science and effectiveness of the law.

How can animals help if they are so different from people?
Don’t animals get different diseases?

Obviously there are differences between animals and people. But under the skin, the biology of humans and other animals, particularly mammals, is remarkably similar. We have the same organs, controlled by the same nerves and hormones, as many other species. Where there are differences, researchers know about them, and such differences can actually help scientific understanding of a particular problem.

Many animals suffer quite naturally from the same diseases as humans, and can be used to study those diseases e.g. asthma and diabetes in cats and dogs. In other cases, researchers can use an 'animal model' of a disease which is close to the human condition.

What about side effects in people, doesn't that show that animal tests don't work?

Safety testing of new drugs involves non-animal tests, animal tests and human trials. The animal tests provide vital information which prevents the poisoning of human volunteers who take part in trials. Drugs are usually tested on many more people than animals. If side effects show up only after the drug has been marketed and prescribed to hundreds of thousands of people, it is because they are very rare. So rare that the human trials on several thousand people would not discover them.

What about the animals that are used just out of curiosity?

Unnecessary animal experiments are very unlikely in the UK for the following reasons:

- The strict controls on animal research, in the Animals (Scientific Procedures) Act 1986, do not allow animals to be used to obtain information that is obtainable by other means.
- Research using animals is very expensive because the animals are costly to buy or breed, to house, and to care for, and the work itself is slow and labour intensive.
- Funds for biomedical research are limited, so each research proposal is rigorously assessed by panels of experts. Trivial, irrelevant or repetitive work will not attract funding.

What about all the animals that get used, but where there isn't any medical advance?

Science is all about learning from direct observation. Even if a study has a negative result, such as a new drug found to be ineffective, we've ruled out a treatment option that doesn't work and are better able to focus on alternatives which may be beneficial. More information may be needed for the full impact of research, such as the identification of cancer-causing papilloma viruses in rabbits in 1933 leading to the HPV vaccine in 2006, over 70 years later.

We may have needed animal research in the past, but why do we need it now that medicine is so advanced?

Animals are used when there is a need to find out what happens in the whole living body, which is far more complex than the sum of its parts. Whilst scientists and doctors know a lot about how the individual cells and body systems function, the way that they interact is not yet well understood. To develop new therapies and procedures to treat disease and improve the health of animals and people, we need to understand more about the body's systems, working out the details of which cells and organs interact, and how genes control the behaviour of cells. Only then will we be able to develop treatments for disease which do not interfere with the normal function of the body. It is very difficult, and in many cases simply not yet possible, to develop non animal methods to replace the use of living animals.

If animal research is effective, how come there still isn't a cure for AIDS?

HIV has been difficult to tackle because the virus fools the body's immune system. It is true that we do not yet have an effective vaccine. Some leading researchers are now suggesting that more basic research should be done before trialling vaccines in patients – which does remain the ultimate goal of research. However, animal studies were crucial in identifying the virus, for developing diagnostic tests, and for producing therapies such as anti-retrovirals that have prolonged millions of lives. These medicines mean that HIV can be a manageable chronic condition rather than an automatic death sentence, as it was in the 1980s.

If animal testing works, how come Thalidomide happened?

Animal rights groups often blame the thalidomide tragedy on animal testing. At that time (in the 1950s) it was not known for a drug to affect the fetus without affecting the mother. So thalidomide was never tested on pregnant animals before being prescribed to pregnant women. If it had been, the same birth defects would have shown up in the animals - as they did subsequently - and thalidomide would never have been used by pregnant women.

What about the Northwick Park disaster? Doesn't that prove animal tests don't work?

TGN1412 is one of the newer 'biological' medicines. None of the tests done before the clinical trial predicted its tragic side-effects. The expert inquiry described the human blood cell tests as a 'striking failure', and the clinical trial itself was poorly designed. Testing the safety and effectiveness of such treatments is more difficult than most medicines, but many biologicals which have been developed in animals, like Herceptin, are already saving lives.

There are around 300 clinical trials every year in the UK. Yet the kind of problem seen at Northwick Park Hospital is very rare, partly because animal and other tests are so good at discovering problems. To suggest that we abandon some tests because they are not 100% perfect is like saying that we should stop wearing seatbelts because they do not prevent all injuries.

If the law is so effective, how come nobody has been prosecuted?

In the UK, the use of animals is research is regulated by the Animals (Scientific Procedures) Act 1986 (ASPA), updated to include European Directive 2010/63/EU in 2013. The Home Office regulates the licensing of establishments, personnel and projects; Researchers adhere to ethical, scientific and legal guidelines, requiring that laboratory animals are treated well and used in minimum numbers. Inspectors from the Home Office, all qualified vets and doctors, make regular visits to all animal facilities, usually without warning, to monitor compliance. Investigations of infringement of these laws are conducted by the Animals is Science Regulation Unit (ASRU), which publishes recommendations and anonymised reports of substantial investigations to inform best practice across the sector.