Protecting People

The Role of Animal Research in Vaccine Development

BRAD
A project of Americans for Medical Progress

Animal Research for Human Vaccines

Animal research is crucial for the development and safety testing of vaccines. Before vaccines are given to humans, they are first evaluated in animals to assess their effectiveness and potential side effects. This ensures that the vaccine can be safely given to people.

Examples of Human Vaccines Developed with Animal Research

- **Polio Vaccine:** The development of the polio vaccine, which has nearly eradicated the disease globally, relied heavily on research involving monkeys to test the safety and efficacy of the vaccine.
- **MMR Vaccine** (Measles, Mumps, and Rubella): Animal studies were used to determine the safety of the live-attenuated viruses used in the MMR vaccine.
- **COVID-19 Vaccine:** Animal models, especially rhesus monkeys, were integral in early trials for the COVID-19 vaccine, helping to confirm the vaccine's effectiveness in generating an immune response and its safety profile.

Animals in Vaccine Research

Various species play a role in vaccine development, including mice, rabbits, and monkeys. Mice are often used for initial testing due to their genetic similarities to humans, while monkeys are used in more advanced stages of research to assess immune responses.

BRAD
A project of Americans for Medical Progress

Animal Research for Pet Vaccines

Pet vaccines protect not only the animals but also their human families. Animal research helps ensure that vaccines are effective in preventing diseases like rabies, parvovirus, and distemper, which can be life-threatening to pets and sometimes transmissible to humans.

Examples of Pet Vaccines Developed with Animal Research

- **Rabies Vaccine:** The rabies vaccine, which is essential for both humans and pets, was developed through studies involving dogs, cats, and other mammals to test safety and efficacy.
- **Parvovirus Vaccine:** Animal models, including dogs, were key in the development of vaccines that prevent parvovirus, a highly contagious and often fatal disease in dogs.
- **Canine Distemper Vaccine:** Canine distemper, a viral disease that affects dogs, is controlled through the use of vaccines developed with the help of animal research, particularly in ferrets and other carnivorous animals.

Ensuring Pet Safety

Pet vaccine trials are carefully designed to ensure minimal risk to animals. Research is regulated by ethical standards that prioritize the welfare of animals, ensuring that the benefits of vaccine development far outweigh any potential harm.

BRAD
A project of Americans for Medical Progress

Animal Research for Livestock Vaccines

Livestock, such as sheep, cattle, pigs, and poultry, are essential for global food production. Vaccines developed through animal research help prevent the spread of diseases that can devastate entire animal populations, including zoonotic diseases which can pass from animals to humans.

Examples of Livestock Vaccines Developed with Animal Research

- **Foot-and-Mouth Disease (FMD) Vaccine:** FMD is a highly contagious disease that affects cloven-hoofed animals. Vaccine development has relied on research involving cattle, sheep, and pigs to test safety and efficacy before widespread use.
- **Bovine Tuberculosis (TB) Vaccine:** Cattle are often used to test vaccines against bovine tuberculosis, which can infect both animals and humans, leading to severe health risks and economic losses.
- **Avian Influenza Vaccine:** Poultry is particularly vulnerable to avian influenza, which can cause widespread outbreaks. Research in birds and other animals has led to the development of vaccines that prevent the spread of this disease to both animals and humans.

Public Health and Economic Impact

Livestock vaccines are not only important for animal health but also for ensuring food security. Preventing the spread of diseases like FMD and tuberculosis can reduce the need for culling infected animals, thus protecting food supplies and the livelihoods of farmers and ranchers.