Under the leadership of Hildegund C.J. Ertl, M.D., The Wistar Institute’s Vaccine Center continues to be the world leader in the development of vaccines to prevent, treat and diagnose rabies in humans as well as in animals.

The need for improved and new approaches to combat rabies remains a top public health priority. Rabies is a potent killer, taking the lives of nearly 55,000 people worldwide each year—nearly 30,000 in India, alone. Children are the most likely victims of rabies, and rabid dogs account for the majority of cases.

Current Wistar Rabies Vaccines in Widespread Use

Two Wistar-developed vaccines are the most widely used in areas around the world to prevent rabies infection.

**Wistar’s therapeutic human vaccine protects people once they are bitten by a rabid animal. It is used widely today in the United States and Europe.**

This therapeutic vaccine is nearly 100 percent effective in preventing infection when given promptly as part of post-exposure treatment. It is also given to people at high risk of exposure, including veterinarians and wildlife officers. Today, it is widely used in the United States and Europe.

It was developed in the 1960s and ‘70s by three renowned Wistar researchers: Tadeusz Wiktor, V.M.D., Hilary Koprowski, M.D. (former Wistar Institute Director), and Stanley A. Plotkin, M.D. (now professor emeritus). Their vaccine improved upon earlier vaccines used during the early 20th Century, which had a direct lineage to the first human rabies vaccine administered by Louis Pasteur in the late 1800s. These earlier vaccines were not always effective, caused multiple side effects, and were extremely painful to administer.

In contrast, the Wistar vaccine prompts a stronger immune response that makes it almost 100 percent effective in preventing rabies while causing fewer side effects and being considerably less painful to administer.
NEW WISTAR APPROACHES TO COMBAT RABIES

Three new vaccines are currently in development with promise both for humans and animals.

A preventative human vaccine with the potential to produce long-lasting immunity.

Dr. Ertl's innovative new vaccine technologies drive Wistar's latest rabies vaccine. It is a genetic vaccine, which uses a modified chimpanzee adenovirus (harmless to humans) to transport genes that encode rabies proteins. While these proteins do not cause disease, they do attract the attention of the immune system.

The adenovirus-based vaccine is less expensive to produce, maintain, and distribute than the current human rabies vaccines, so it may become feasible and cost-effective to administer the vaccine as a preventive measure to children in areas where rabies is still common. Wistar is currently partnering with a Chinese company to develop this vaccine for human trials in China, where rabies remains a serious problem.

A preventative canine vaccine that may produce lifetime immunity.

In most of the world, bites from rabid dogs are the primary cause of rabies in people. Currently, dogs require an annual rabies booster shot to maintain immunity against infection. In much of the world, this is an unavailable luxury. Wistar's researchers are developing a new vaccine for dogs, based on adenovirus technology, that will offer lifetime rabies immunity with a single shot. Wistar is currently seeking support for a joint venture to further test and produce this vaccine.

A rapid, inexpensive test for diagnosing rabies in the field.

In regions without quick access to diagnostic laboratories, this type of test could become a potent lifesaver. In collaboration with Wistar Adjunct Professor Charles E. Rupprecht, D.V.M., Ph.D., the Vaccine Center is in the early stages of developing a diagnostic test that would rapidly and inexpensively test animals to determine if they have rabies and to determine if a potentially-exposed human requires further treatment.