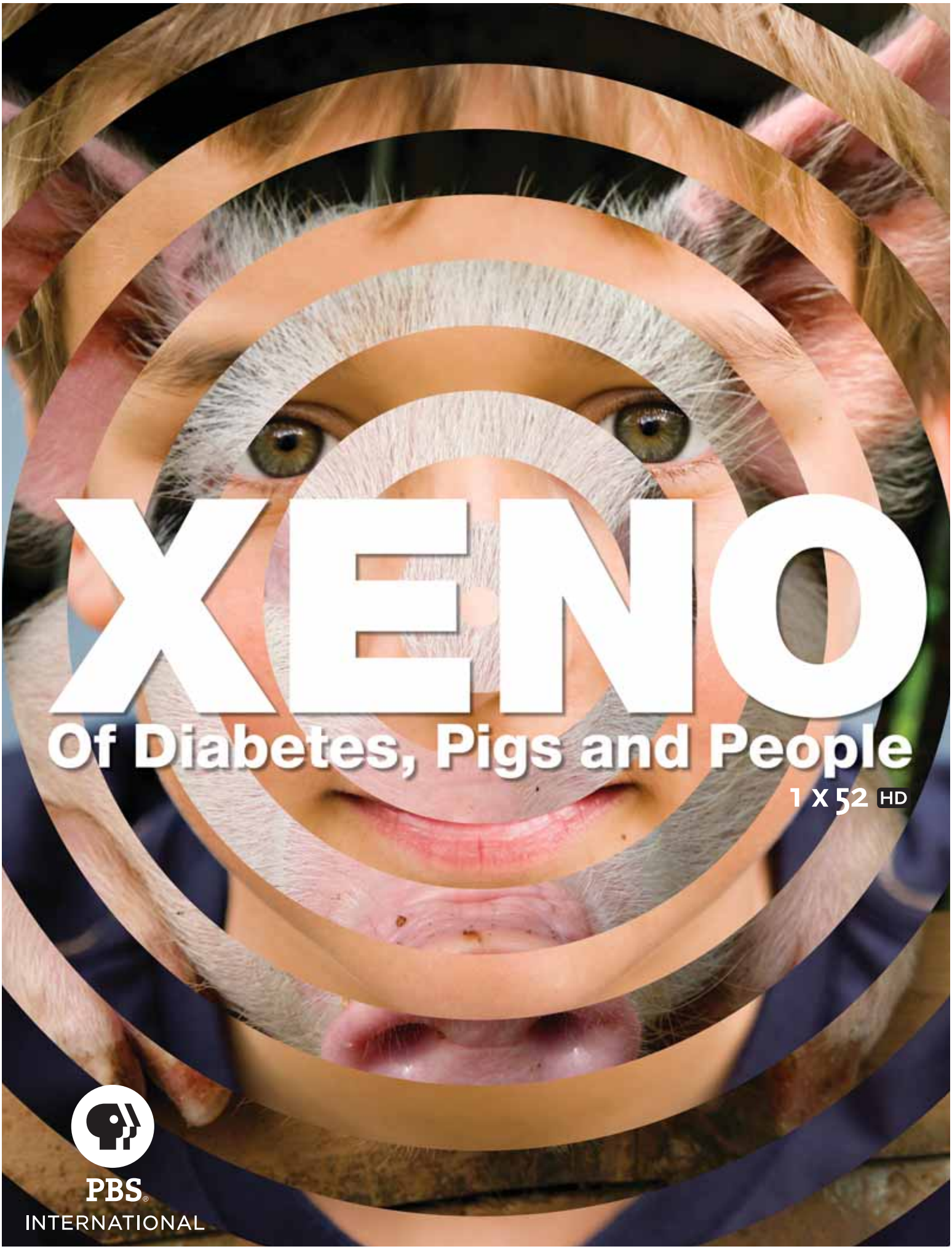
XENO
Of Diabetes, Pigs and People
1 X 52 HD
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New Zealand physician-turned-researcher Professor Bob Elliott has spent the past 50 years trying to cure Type 1 diabetes—a devastating variant of the disease that afflicts more than 20 million people in the world. Karen Skinner is one of these people. With this disease, her future could include blindness, amputations, kidney failure, dialysis, or an early death.

Different from other types of diabetes, whose patients are stereotyped as middle-aged and overweight, Type 1 diabetes is an autoimmune disease that often attacks the young and fit. The body turns against itself, killing the cells in the pancreas that produce insulin. Without insulin, the body can no longer burn sugar for energy. In the days before synthetic insulin was available, a Type 1 diabetic would normally die within weeks of a diagnosis.

In the 1960s, a young Bob Elliott set out find a cure for this disease. After years of dedicated research and countless experiments, he finally found a solution: by providing a coating to the insulin-producing cells, he could hide them from the recipient's immune system, thus preventing rejection from the recipient. Furthermore, he concluded that it is possible to implant cells from anyone—or anything—into a patient's body. Xenotransplantation—extracting cells from one species and implanting them into another—has become a reality at last.

Pig insulin is almost identical to the human version, so Elliott chose pigs as the donor animals. In the mid-1990s, he implanted encapsulated pig pancreatic cells into two patients. The experiment was crude, but the results were encouraging. Watching from the sidelines, Karen Skinner saw the first glimmer of hope that she might be cured someday.

Then disaster struck. British researchers discovered that potentially deadly viruses buried in pig DNA can be made to infect human cells in the lab. Furthermore, these porcine endogenous retroviruses have been found in every pig tested anywhere in the world. Health officials slapped an immediate worldwide ban on xenotransplants.

Anywhere, it turned out, but the remote Auckland Islands, located between New Zealand and Antarctica. Here, one herd of pigs has effectively been in quarantine for two centuries—repeated tests confirmed that these pigs are indeed the most sterile mammals on the planet. After three frustrating years of persuading the health safety regulators to lift the ban, Elliott finally obtained the permission for the first full clinical trial of his encapsulated pig cells.

Karen Skinner was selected as the first human recipient. Fully aware of the risks, she decided to proceed with the procedure—she has far more to gain than to lose. The film follows her as she prepares for the procedure, receives the xenotransplant, and waits for the new cells to start producing insulin inside her.

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CREDITS

Producers: Malcolm Hall & Paul Trotman
Director: Malcolm Hall & Paul Trotman
Writers: Malcolm Hall & Paul Trotman

Photo Credit: Pig, idiz; Boy, hocus-focus.

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