



# The Disturbing History of Human Experimentation

## A Revolutionary Idea

In 1796, English doctor Edward Jenner routinely treated patients for smallpox, a devastating disease that killed 3 out of every 10 patients and left survivors with scars, often severe. At the time, there was a common belief that people who caught cowpox were immune to smallpox. Unlike the deadly smallpox virus, cowpox was a mild viral infection seen mostly in cows. It was not unusual for milk maids to contract smallpox on their hands after milking infected cows, resulting in uncomfortable sores that lasted about a week.

While treating a cowpox-infected milk maid, Jenner had an idea. He broke open one of the sores on her hand and extracted puss. Then, he scratched the puss into the arm of an 8-year-old boy and waited. The child became mildly ill with cowpox and was fine a week later.

In the next step of his human experiment,

Jenner infected the same boy with the smallpox pathogen. To his relief, the boy did not get smallpox. It looked like Jenner's theory that cowpox caused immunity to smallpox was true, but he needed more evidence to be sure. So, Jenner did the same experiment with several other children, including his own infant son.

Jenner had discovered the world's first vaccine, a word derived from the Latin word for cow, *vacca*. Though undoubtedly disturbing, this huge medical breakthrough – and hundreds of others – would never have been possible without human experimentation.

Today, medical experimentation on human beings is highly regulated. Professionals who use human subjects for experimentation must follow a strict code of ethics that were designed to protect subjects. But this was not always the case.

## The First Human Experiments

Some of the earliest recorded human experiments can be traced back to 331 B.C. when Greek physicians Herophilus and Erasistratus performed public dissections on criminals. At the time, these early autopsies were considered sadistic. Most people believed that post-mortem dissection, no matter the reason, would anger the gods.

Soon after, autopsies of all types were strictly banned, making Herophilus's findings about the systems of the body one of the only works of its kind for centuries. It wasn't until the 18th century that autopsies became legal in England,



*Cowpox sores on a patient's forearm*



only to be carried out on the bodies of executed criminals.

## The Nuremberg Code

Human experimentation remained taboo through the 20th century where typically those thought to be less than human, like prisoners and the mentally ill, were used as subjects. Some of the most horrifying human experiments in recorded history were performed by Nazi doctors in concentration camps during the Holocaust. Their unwilling subjects were Jews from across Europe, prisoners of war, and the disabled.

Under the guise of medical research, “patients” were subjected to unimaginable horrors. In one experiment at Dachau concentration camp, prisoners were forced to sit in tanks of freezing water for hours before undergoing various treatments for hypothermia. Other experiments involved intentionally infecting prisoners with diseases like malaria or other deadly bacteria in order to study their effects on the body, test

different treatments, or try out potential vaccines. Often, these experiments resulted in pain, disfigurement, permanent disability, and death. Today, they’re regarded as medical torture.

Following the end of World War II, the Nuremberg trials were a series of trials that prosecuted German officials and military leaders who participated in the Holocaust and other war crimes. In one of these trials known as the Doctor’s Trial, several German doctors who were accused of the medical torture of prisoners argued that there was no law differentiating between legal and illegal human experimentation.

As a result, the Nuremberg Code was written, outlining ten points of ethics that should be followed when conducting medical research. These points included voluntary consent, avoidance of physical and mental suffering, and the ability of human subjects to end treatment at any time.

However, the Nuremberg Code was never officially adopted as law by any nation or association. Many doctors, including some in the U.S., assumed that this code only applied to war crimes, and medical testing on prisoners and other patients that defied the Nuremberg code continued for decades. Some of these tests were even funded by the U.S. government.

The Nuremberg Code is considered to be crucially important to the field of clinical research ethics and human rights in general. Today, experimentation and research in the U.S. involving human subjects are regulated by seventeen federal agencies, including the Department of Health and Human Services and the Food and Drug Administration. Due to these regulations, many pharmaceutical trials (testing of new drugs on human subjects) by U.S. drug companies are conducted in foreign countries.

Despite its disturbing history, human experimentation is necessary in developing new treatments and medicines. After all, someone has to be the first to receive a transplant, vaccine, or life-saving drug.

## The Nuremberg Code

### VOLUNTARY CONSENT

1. The voluntary, well-informed, understanding consent of the human subject in a full legal capacity is required.

### SCIENTIFIC STUDIES

2. Experiment should aim at positive results for society and be necessary.

### PRIOR KNOWLEDGE

3. Experiment should be justified based on previous knowledge.

### INJURY & SUFFERING

4. Experiment should be set up in a way that voids unnecessary physical and mental suffering and injury.  
5. Experiment should NOT be conducted when there is reason to believe in risk of death or serious injury.

### PROTECTION

6. Risk of experiment should never exceed human benefit.  
7. Preparations and facilities must adequately protect the subject against the experiment’s risks.

### QUALIFIED RESEARCHERS

8. Researchers must be fully trained and scientifically qualified.

### FREEDOM TO WITHDRAW

9. Participants must be free to immediately quit at any time and for any reason.

### TERMINATION OF STUDY

10. Researchers must stop experiments at any point when continuation could result in harmful consequences to the participant.