Nazi human experimentation was a series of medical experiments on large numbers of prisoners, including children, by Nazi Germany in its concentration camps mainly in the early 1940s, during World War II and the Holocaust. Chief target populations included Romani, Sinti, ethnic Poles, Soviet POWs, disabled Germans, and most prominently of all Jews from across Europe.

Nazi Physicians and their assistants forced prisoners into participating; they did not willingly volunteer and no consent was given for the procedures. Typically, the experiments resulted in death, trauma, disfigurement or permanent disability, and as such are considered as examples of medical torture.

At Auschwitz and other camps, under the direction of Eduard Wirths, selected inmates were subjected to various hazardous experiments that were designed to help German military personnel in combat situations, develop new weapons, aid in the recovery of military personnel who had been injured, and to advance the Nazi racial ideology. Aribert Heim conducted similar medical experiments at Mauthausen. Carl Værnet is known to have conducted experiments on homosexual prisoners in attempts to “cure” homosexuality.

After the war, these crimes were tried at what became known as the Doctors’ Trial, and revulsion at the abuses perpetrated led to the development of the Nuremberg Code of medical ethics.

1 Experiments

According to the indictments at the Subsequent Nuremberg Trials, these experiments included the following:

1.1 Experiments on twins

Experiments on twin children in concentration camps were created to show the similarities and differences in the genetics of twins, as well as to see if the human body can be unnaturally manipulated. The central leader of the experiments was Josef Mengele, who from 1943 to 1944 performed experiments on nearly 1,500 sets of imprisoned twins at Auschwitz. About 200 people survived these studies. The twins were arranged by age and sex and kept in barracks between experiments, which ranged from injection of different dyes into the eyes of twins to see whether it would change their color to sewing twins together in attempts to create conjoined twins.

1.2 Bone, muscle, and nerve transplantation experiments

From about September 1942 to about December 1943 experiments were conducted at the Ravensbrück concentration camp, for the benefit of the German Armed Forces, to study bone, muscle, and nerve regeneration, and bone transplantation from one person to another.

Sections of bones, muscles, and nerves were removed from the subjects without use of anesthesia. As a result of these operations, many victims suffered intense agony, mutilation, and permanent disability.

1.3 Head injury experiments

In mid-1942 in Baranowicze, occupied Poland, experiments were conducted in a small building behind the private home occupied by a known Nazi SD Security Service officer, in which “a young boy of eleven or twelve [was] strapped to a chair so he could not move. Above him was a mechanized hammer that every few seconds came down upon his head.” The boy was driven insane from the torture.

1.4 Freezing experiments

In 1941, the Luftwaffe conducted experiments with
the intent of discovering means to prevent and treat hypothermia. There were 360 to 400 experiments and 280 to 300 victims indicating some victims suffered more than one experiment.\[9\]

Another study placed prisoners naked in the open air for several hours with temperatures as low as −6 °C (21 °F). Besides studying the physical effects of cold exposure, the experimenters also assessed different methods of rewarming survivors.\[11\] “One assistant later testified that some victims were thrown into boiling water for rewarming.”\[9\]

The freezing/hypothermia experiments were conducted for the Nazi high command to simulate the conditions the armies suffered on the Eastern Front, as the German forces were ill-prepared for the cold weather they encountered. Many experiments were conducted on captured Russian troops; the Nazis wondered whether their genetics gave them superior resistance to cold. The principal locales were Dachau and Auschwitz. Dr Sigmund Rascher, an SS doctor based at Dachau, reported directly to Reichsführer-SS Heinrich Himmler and publicised the results of his freezing experiments at the 1942 medical conference entitled “Medical Problems Arising from Sea and Winter.”\[12\] Approximately 100 people are reported to have died as a result of these experiments.\[13\]

1.5 Malaria experiments

From about February 1942 to about April 1945, experiments were conducted at the Dachau concentration camp in order to investigate immunization for treatment of malaria. Healthy inmates were infected by mosquitoes or by injections of extracts of the mucous glands of female mosquitoes. After contracting the disease, the subjects were treated with various drugs to test their relative efficiency.\[14\] Over 1,200 people were used in these experiments and more than half died as a result.\[15\]

1.6 Immunization experiments

At the German concentration camps of Sachsenhausen, Dachau, Natzweiler, Buchenwald, and Neuengamme, scientists tested immunization compounds and serums for the prevention and treatment of contagious diseases, including malaria, typhus, tuberculosis, typhoid fever, yellow fever, and infectious hepatitis.\[16\]

1.7 Mustard gas experiments

At various times between September 1939 and April 1945, many experiments were conducted at Sachsenhausen, Natzweiler, and other camps to investigate the most effective treatment of wounds caused by mustard gas. Test subjects were deliberately exposed to mustard gas and other vesicants (e.g. Lewisite) which inflicted severe chemical burns. The victims’ wounds were then tested to find the most effective treatment for the mustard gas burns.\[17\]

1.8 Sulfonamide experiments

From about July 1942 to about September 1943, experiments to investigate the effectiveness of sulfonamide, a synthetic antimicrobial agent, were conducted at Ravensbrück.\[19\] Wounds inflicted on the subjects were infected with bacteria such as Streptococcus, Clostridium perfringens (the causative agent in gas gangrene) and Clostridium tetani, the causative agent in tetanus.\[20\] Circulation of blood was interrupted by tying off blood vessels at both ends of the wound to create a condition similar to that of a battlefield wound. Infection was aggravated by forcing wood shavings and ground glass into the wounds. The infection was treated with sulfonamide and other drugs to determine their effectiveness.

1.9 Sea water experiments

From about July 1944 to about September 1944, experiments were conducted at the Dachau concentration camp to study various methods of making sea water drinkable. At one point, a group of roughly 90 Roma were deprived of food and given nothing but sea water to drink by Dr. Hans Eppinger, leaving them gravely injured.\[12\] They were so dehydrated that others observed them licking freshly mopped floors in an attempt to get drinkable water.\[21\]
1.10 Sterilization experiments

The Law for the Prevention of Genetically Defective Progeny was passed on 14 July 1933, which legalized the involuntary sterilization of persons with diseases claimed to be hereditary: weak-mindedness, schizophrenia, alcohol abuse, insanity, blindness, deafness, and physical deformities. The law was used to encourage growth of the Aryan race through the sterilization of persons who fell under the quota of being genetically defective.\[^{[22]}\] 1% of citizens between the age of 17 to 24 had been sterilized within 2 years of the law passing.

Within 4 years, 300,000 patients had been sterilized.\[^{[23]}\] From about March 1941 to about January 1945, sterilization experiments were conducted at Auschwitz, Ravensbrück, and other places by Dr. Carl Clauberg.\[^{[17]}\] The purpose of these experiments was to develop a method of sterilization which would be suitable for sterilizing millions of people with a minimum of time and effort. These experiments were conducted by means of X-ray, surgery and various drugs. Thousands of victims were sterilized. Aside from its experimentation, the Nazi government sterilized around 400,000 people as part of its compulsory sterilization program.\[^{[24]}\]

Intravenous injections of solutions speculated to contain iodine and silver nitrate were successful, but had unwanted side effects such as vaginal bleeding, severe abdominal pain, and cervical cancer.\[^{[25]}\] Therefore, radiation treatment became the favored choice of sterilization. Specific amounts of exposure to radiation destroyed a person's ability to produce ova or sperm. The radiation was administered through deception. Prisoners were brought into a room and asked to complete forms, which took two to three minutes. In this time, the radiation treatment was administered and, unknown to the prisoners, they were rendered completely sterile. Many suffered severe radiation burns.\[^{[26]}\]

1.11 Experiments with poison

Somewhere between December 1943 and October 1944, experiments were conducted at Buchenwald to investigate the effect of various poisons. The poisons were secretly administered to experimental subjects in their food. The victims died as a result of the poison or were killed immediately in order to permit autopsies. In September 1944, experimental subjects were shot with poisonous bullets, suffered torture and often died.\[^{[17]}\]

1.12 Incendiary bomb experiments

From around November 1943 to around January 1944, experiments were conducted at Buchenwald to test the effect of various pharmaceutical preparations on phosphorus burns. These burns were inflicted on prisoners using phosphorus material extracted from incendiary bombs.\[^{[17]}\]

1.13 High altitude experiments

Further information: Hubertus Strughold

In early 1942, prisoners at Dachau concentration camp were used by Sigmund Rascher in experiments to aid German pilots who had to eject at high altitudes. A low-pressure chamber containing these prisoners was used to simulate conditions at altitudes of up to 20,000 m (66,000 ft). It was rumored that Rascher performed vivisections on the brains of victims who survived the initial experiment.\[^{[17]}\] Of the 200 subjects, 80 died outright, and the others were executed.\[^{[12]}\]

1.14 Blood coagulation experiments

Sigmund Rascher experimented with the effects of Polygal, a substance made from beet and apple pectin, which aided blood clotting. He predicted that the preventive use of Polygal tablets would reduce bleeding from gunshot wounds sustained during combat or during surgery. Subjects were given a Polygal tablet, and shot through the neck or chest, or their limbs amputated without anaesthesia. Rascher published an article on his experience of using Polygal, without detailing the nature of the human trials and also set up a company to manufacture the substance, staffed by prisoners.\[^{[28]}\]

2 Aftermath

Many of the subjects died as a result of the experiments conducted by the Nazis, while many others were executed after the tests were completed to study the effects post mortem.\[^{[29]}\] Those who survived were often left mutilated, suffering permanent disability, weakened bodies, and mental distress.\[^{[12]}\]\[^{[30]}\] On 19 August 1947, the doctors captured by Allied forces were put on trial in USA vs. Karl Brandt et al., commonly known as the Doctors’ Trial. At the trial, several of the doctors argued in their defense that there was no international law regarding medical experimentation.

The issue of informed consent had previously been controversial in German medicine in 1900, when Dr. Albert Neisser infected patients (mainly prostitutes) with syphilis without their consent. Despite Neisser’s support from most of the academic community, public opinion, led by psychiatrist Albert Moll, was against Neisser. While Neisser went on to be fined by the Royal Disciplinary Court, Moll developed “a legally based, positivist contract theory of the patient-doctor relationship” that was not adopted into German law.\[^{[31]}\] Eventually, the minister for religious, educational, and medical affairs is-
sued a directive stating that medical interventions other than for diagnosis, healing, and immunization were excluded under all circumstances if “the human subject was a minor or not competent for other reasons”, or if the subject had not given his or her “unambiguous consent” after a “proper explanation of the possible negative consequences” of the intervention, though this was not legally binding.\[31\]

In response, Drs. Leo Alexander and Andrew Conway Ivy drafted a ten-point memorandum entitled Permissible Medical Experiment that went on to be known as the Nuremberg Code.\[32\] The code calls for such standards as voluntary consent of patients, avoidance of unnecessary pain and suffering, and that there must be a belief that the experimentation will not end in death or disability.\[33\] The Code was not cited in any of the findings against the defendants and never made it into either German or American medical law.\[34\]

2.1 Modern ethical issues

The results of the Dachau freezing experiments have been used in some modern research into the treatment of hypothermia, with at least 45 publications having referenced the experiments since the Second World War.\[35\] This, together with the recent use of data from Nazi research into the effects of phosgene gas, has proven controversial and presents an ethical dilemma for modern physicians who do not agree with the methods used to obtain this data.\[21\] Some object on an ethical basis, and others have rejected Nazi research purely on scientific grounds, pointing out methodological inconsistencies. In an often-cited review of the Dachau hypothermia experiments, Berger states that the study has “all the ingredients of a scientific fraud” and that the data “cannot advance science or save human lives.”\[35\]

Controversy has also risen from the use of results of biological warfare testing done by the Imperial Japanese Army’s Unit 731.\[36\] The results from Unit 731 were kept classified by the United States until the majority of doctors involved were given pardons.\[37\]

3 See also

- Jewish skeleton collection
- Karl Genzken
- Karl Gebhardt
- List of medical eponyms with Nazi associations
- List of Nazi doctors
- Nazi eugenics
- Project MKUltra (CIA)
- Shiro Ishii
- Unethical human experimentation in the United States

4 References


[28] Michalczyk, p. 96


5 Further reading

6 External links

- The Infamous Medical Experiments from Holocaust Survivors and Remembrance Project: “Forget You Not”
- United States Holocaust Memorial Museum – Online Exhibition: Doctors Trial
- United States Holocaust Memorial Museum – Online Exhibition: Deadly Medicine: Creating the Master Race
- United States Holocaust Memorial Museum – Library Bibliography: Medical Experiments
- Jewish Virtual Library: Medical Experiments Table of Contents

6.1 Controversy regarding use of findings

- "Citing Nazi 'Research': To Do So Without Condemnation Is Not Defensible"
- "On the Ethics of Citing Nazi Research"
- "Remembering the Holocaust, Part 2"
- "The Ethics Of Using Medical Data From Nazi Experiments"
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7.1 Text

- **Nazi human experimentation**

7.2 Images

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