

## Medical Quiz : Medical ethics

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Question 1: In 2018, this German automaker was forced to apologise when the New York Times discovered that, in 2014, ten monkeys were forced to inhale exhaust from its vehicles to demonstrate that freshly developed diesel engines were less toxic than previous models, all in an effort to promote the company. Furthermore, the car utilised in the experiment was designed to emit less pollution than vehicles on the road. Can you name the company?

Answer 1: Volkswagen

Question 2: In 1932, a group of African-American farmers, in Alabama, were lured with free medical care, meals, and funeral insurance to participate in a medical study without divulging that it was about the evolution of untreated syphilis. The study, which was supposed to last six months, spanned 40 years, during which time the subjects infected with the disease and were not treated with penicillin, despite the fact that it was proven to be an efficient treatment in 1940. Can you name the trial and the disease these poor farmers were infected with.

Answer 2: Tuskegee Syphilis Study; Syphilis

Question 3: This physician conducted most of his in the 1950s at Willowbrook State School, a school for children with intellectual disabilities. In a course of 15 years, he intentionally infected numerous children from the school with hepatitis, and published some revolutionary findings for the scientific community. Can you name the physician?

Answer 3: Dr Saul Kruger

Question 4. The cells belonging to this lady are worth their weight in gold. They have contributed to the advancement of scientific research on many fronts, from the development of a polio vaccine to decoding the human genome. However, this African-American woman who died in 1951 of an aggressive cancer never benefited from the culture of her cells, taken without her consent. Her heirs only learned about 25 years later that her body had contributed so much to science, without any compensation. Who are we talking about?

Answer 4: Henrietta Lacks

Question 5: Created in 1930, this special unit of the Japanese Army was tasked the development of biological weapons that could spread the plague or typhus. Members of the unit, directed by microbiologist Shiro Ishii, vivisected Chinese prisoners and exposed them to deadly viruses. It is estimated that this unit killed tens of thousands of people during the Second Sino-Japanese War. Can you name this infamous unit?

Answer 5: Unit 731

Question 6. In 1939, 22 orphans in Iowa were subjected to an experiment on stuttering and language development. Divided into two groups, the children received different forms of therapy—positive and negative. While half of them were encouraged and congratulated for their fluency in speaking, the other half were humiliated for every little mistake in their speech. Some of the children who received the negative reinforcement developed language difficulties and psychological scars that lasted their entire lives. The study was deemed so troubling that the peers of its author, Dr Wendell Johnson, gave it a special name while referring to it. In 2007, seven of the subjects received financial compensation from the University of Iowa for the trauma they endured. Can you guess the name the study was referred to?

Answer 6: Monster Study.

Question 7. In 1971, the American psychologist Philip Zimbardo wanted to demonstrate that certain social situations can induce behaviours that go against an individual's personal values, especially in a prison environment. Eighteen subjects were selected and randomly separated into two categories: prisoners and guards. The subjects in the study quickly adapted to their roles and the guards developed authoritarian behaviours, despite nothing justifying their position of

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authority. The prisoners, on the other hand, accepted the cruel treatment despite being allowed to leave the study at any time. This social experiment inspired the 2015 film of the same name. Can you name the experiment.

**Answer 7: The Stanford Prison Experiment.**

Question 8. At the beginning of the 1960s, an American psychologist undertook a study where he told volunteer participants to give electric shocks to “students” (who were actually actors). The volunteers were led to believe that they were testing learning methods but, in reality, the study was testing the volunteers’ degree of willingness to follow an order that was contrary to their morality. Told to memorize a list of words and then recite them, the students were given an electric shock by the volunteers when they made an error, with the shocks increasing in magnitude for each wrong answer. If a volunteer hesitated in giving the shock, the experimenter would prod them to complete the experiment, with increasing forcefulness. The result of the study was troubling—62.5% of the volunteers completed the experiment, meaning they administered all the levels of shocks up to 450 volts after being prompted by the experimenter.

**Answer 8: The Milgram Experiment. Dr Stanley Milgram.**

Question 9. In 1953, this US agency was responsible for conducting two radiation related experiments in the University of Iowa, which will be considered as grossly unethical by today's standards. The first one involved exposing pregnant women to radioactive iodine, then studying their aborted embryos in order to understand the effects of radiation on pregnancy. The second experiment involved administering, orally or through injection, radioactive iodine to 25 newborns in order to measure the accumulated iodine in the babies’ thyroid glands. Following widespread criticism, this agency was abolished in 1974.

**Answer 9: United States Atomic Energy Commission (AEC)**

Question 10. He co-invented Retin-A, the acne medication, with James Fulton. However, he is more known for his infamous experimenting on inmates at Philadelphia’s Holmesburg Prison, which led to a well-documented scandal years later. The experiments intentionally exposed humans to pathogens and dioxin, and later became a textbook example of unethical experimenting on humans. Though the tests required constant biopsies and painful procedures, none of the inmates experienced long-term harm. Can you name this American dermatologist?

**Answer 10: Albert Montgomery Kligman (March 17, 1916 – February 9, 2010).**

## Bibliography

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