

Is it possible for
zombies to exist?



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Do zombies really exist? And is mankind in danger of developing zombies?

Humans are considered as an apex predator, as we have greater intelligence and adaptability compared to other living beings; making us unique. As living beings, human has the most impressive immune system compared to other animals, however we can also suffer through several illnesses no matter how serious or not the disease is, such as catching a cold is the most common an individual can have in their life time; whereas other disease such as due to virus and faulty in neurons can be life threatening. Zombies in movies and cartoons seem quite fascinating and somehow horrifying by the way they eat human flesh. Many people, including me often wonder what if there is a possibility of the existence of zombies, wouldn't life be quite exciting, challenging, and terrifying. 'Zombie' was a word that first appeared in 1819, where the historian named Robert Southey mentioned in his book called "History of Brazil". However, unlike in movies and fictional stories, 'zombies' were not referred as a monster that consumes human flesh; but was suggested to be a human lacking self-awareness, conscience, intelligence and a soul. Zombies are usually considered as human who undergo a biological change for example due to viruses and parasites, resulting in them to become catatonic. Researchers have shown that there are several factors that can lead to a human behaving like a zombie, therefore a possibility of inventing zombies, but is it true? Since technology, researches and the human world are revolving and developing in a rapid pace, is it possible to invent zombies? (Zombie Biology) (Zombie Research Society)

Neurotoxin

Majority of the population has an idea about what fictional zombies really are, however less know the actual facts about zombies. In countries such as Haiti, zombies are considered real. The main causation is due to religious beliefs such as magic and witchcraft for example use of voodoo. They were said to be people brought back from the dead or controlled through the use of magic.

However in 1980s a scientist named Wade Davis researched a valid scientific reason behind this horror; he found out that a strong chemical was used to create zombies. A victim claimed that he was poisoned and buried alive, afterwards he had been forced and drugged to work in a sugar plantation with other slaves who was treated in a similar way. The victims were poisoned by a neurotoxin called tetodotoxin, these are poisons that effects the nervous system and the brain due to faulty in neurons, resulting a person's body functions to slow down to the point where they can be categorised as being dead.

These harmful chemicals can be found in nature environment, for example lead which are a metal, puffer fish and many more. These usually stops inhibiting of chemicals and interferes the receptors, stopping the impulses to be transmitted or causes faulty transmissions. A neurotoxin may also destroy the neurons; the level of damage caused depends on the dosage of neurotoxin and can also affect the immune system. Therefore this is evidence that answers the question is it possible to create zombies? (NJC) (Wise Geek) (Live Science)

Toxoplasma gondii

Another reason for risk of invention of zombies is by toxoplasmosis; this is often a parasitic disease caused by *Toxoplasma gondii* (T. gondii) parasite and often lives in cats, which might arise in a carnivore like human affecting the immune system.

Studies have shown that about one-third of the world's population can be infected. One case includes a 20 year old healthy man was diagnosed to have swollen glands previously for several months. Later on, the patient was known to have enlargement cervix, right inguinal lymph nodes and occipital of about 4cm, which is the bone at the back of our head. After several tests and analysis, he reported that he ate raw kibbe (spiced uncooked beef or lamb with grains). The patient was diagnosed with acute toxoplasmosis.

These risks can be due to consuming infected or raw meat, or through transfer of genes from the mother to the foetus in her womb. Often, this disease doesn't show many symptoms to the sufferer; therefore they are not usually aware of this disease. Sufferers of this infection usually are more prone to additional infection throughout their lifetime. This infection can result in lymph nodes, throat or armpits to swell, which can further lead to severe symptoms such as fever, muscle aching, sore throat and tiredness. Toxoplasmosis can lead to more severe state if the sufferer has a weakened immune system such as due to cancer or HIV or due to intake of immunosuppressant drugs, because their body cannot fight the infection. This can also result in a permanent brain and eye damage, which can also be fatal. (NHS) (NJC) (Journal of Medical Case Reports)

Rabies

Rabies virus is another threatening factor, this viral disease targets and attacks the spinal cord, brain and central nervous system. These are initially caused by animals scratching or biting a person, and spreads towards the spinal cord through the neurons. Furthermore, this virus spreads rapidly to the brain and begins to replicate in the brain cell, which destroys them. This causes the virus to spread throughout the body, especially to the salivary glands; which causes saliva or foam production to increase.

Studies has shown that the above 50, 000 deaths has occurred every year, mostly in Africa and Asia continents.

This is because rabies not only affects our physical health but also our mental health. Some symptoms include fever, chills, fatigue, lack of appetite, headaches, anxiety, irritability, sore throat, etc. Sufferers also tend to experience pain in the location of the infection. This infection can be severe as they can be either furious rabies or paralytic rabies. Furious rabies tends to result in a sufferer having odd and hyperactive behaviour such as aggression, hallucinations, fever, hydrophobia, photophobia and many more. Another type of rabies is paralytic rabies, which is in result of muscle weakening, loss of sensation and paralyzed muscles. Due to muscle failure, they have risk of dying or fall into coma due to either heart or lung failure. Therefore this is another disease to consider; as these represent similar characteristics to zombies. (NHS) (How Stuff Works) (WHO)

Nanobots

Development of technology has lots of potential advantages; however it also has some disadvantages which need attention. Nanobots or Nano-Robotics

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are advanced technology which are nanometre scaled, this idea of invention was suggested by Richard Feynman. Planning and researches began to build this for use of treatment and biological purposes such as to cure cancer by destroying the cancer cells. These nanorobots have capability to either replicate themselves. The nanobots are programmed and designed in a way for it to function even after a person has died. The person has to swallow it, to enable it to travel through the bloodstream and reach the necessary faulty area that needs to be treated.

Richard P. Feynman has admitted in 'There's Plenty of Room at the Bottom' that "it is rather a difficult program, but it is a possibility." (Richard Feynman Nanotechnology Lecture, 2014)

This sentence sound simple yet point to be considered it determines the result of the research that has been conducted, there possible risk of nanobots not functioning properly. In addition, scientists from Harvard University have created nano-cyborg. These are both electronics and living cells; activities of it and organs in the body can be monitored by computer. The result they receive was, it still operated for about one month even after the living being was dead. Controlling this technology can have an outweighed risk of harming the organs especially the nervous system interrupting the neuron activity and mutating instead of destroying cancer cells. In order for it to work effectively, large quantities are needed however nanobots with another one are harmful. Therefore risk of creating a zombies. (NJC) (Scribd) (Extremetech)

Overall, there are several factors such as result from certain biological factors, chemicals and technology in human body, or due to a disease, which can result a human being behaving like a zombie. It is unlikely that all the population of human being would develop rabies, parasites in their body, have nanobots in them or neurotoxins infecting them.

Rabies is dangerous, and is initially caused by animals scratching or biting a person. T. Gondii which is often known as parasite, these are often transferred from cats. Tetodotoxin can be found in nature world, however not found in every single geographical area. Nanobots are yet being researched and chances are that it may not be used. Therefore although there are risks of human being prone to these disasters, there are low chances of it invading every single individual.

And also due to natural selection, this means there is large variation among the human population. Therefore high allele frequency, therefore some individuals are likely to be resistant to some of these factors. We also are in modern century where technology and medicine can possibly cure most disease. And I would like to state that zombies are not real, yet us human has the power to invent possibly anything. Every problem has its solutions. Therefore to sum up my point, mankind do have few possibility of developing zombies, however because of many factors of our own such as our environment we live in, the chances are very low.

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