



Highly Commended

Science Writing

Year 7-8

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Government
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Department for Education



Does radiation make superheroes?

Introduction:

Radiation has many theories that when a human being is exposed to ionizing waves, the radiation gives you superpowers. There have been many movies based on the dangerous radiation waves such as, Spiderman, the incredible hulk, fantastic four and many more.

There are two types of radiation waves ionizing and non-ionizing waves (www.ansto.gov.au, 2020). The ionizing radiation waves are the more dangerous waves to deal with. Humans come in some sort of contact with non-ionizing radiation waves every day, the unlucky people who come in contact with ionizing waves go to hospital from radiation burns.

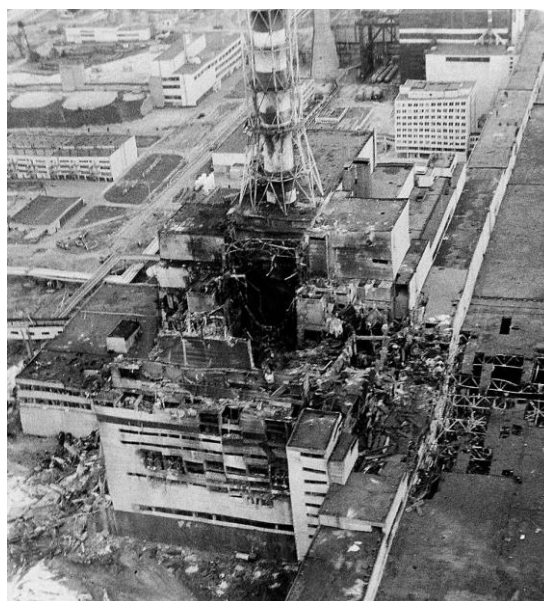
Middle section:

Radiation came in all sorts of sources, microwaves, radio waves, heaters, the sun, etc. these examples listed are all examples of non-ionizing radiation waves, or waves that don't harm. Ionizing radiation waves are recognized in ultraviolet, x-rays and gamma rays, are the common known ionizing waves(www.ehs.washington.edu, 2020). When a human comes in contact with x-rays, they have broken a bone or in extreme pain, usually they come in contact with the x-rays when at the hospital. Both types of radiation are an invisible danger. The only way to pick up radiation waves is via a special device made to detect radiation waves, known as a Geiger-Mueller meter.

Every year the average Australian receives 1,500 to 2,000 μSV per year. This is quite a low dose compared to other places in the world, for example in UK people receive an average of 7,800 μSV every year, again it is still a low percentage. Low percentages of non-ionizing radiation do not cause any harm (www.ansto.gov.au, 2020). When someone decided to travel via airplane, they would be more exposed to non-ionizing radiation. If someone traveled by airplane from Adelaide to Canada, they would receive 160 μSV more than a normal day (www.ansto.gov.au, 2020).



(www.bbc.co.uk, 2020)



([pinterest.com](https://www.pinterest.com), 2020)

Chernobyl used to be a nuclear power plant founded in northern Ukraine. On April 26th, 1986 Chernobyl nuclear reactor exploded, which caused to evacuating anyone in range of a few miles away (www.history.com, 2020). The explosion released dangerous ionizing radiation waves into the atmosphere, leaving a large portion of the globe abandoned (www.history.com, 2020). Within the first 18 hours of the explosion nothing had been done to evacuate the area of the explosion, this is so because none of the lokaal Sovjet hiërarchie had the courage to declare the reactor dead (www.history.com, 2020). At the site of the Chernobyl explosion there were less than 100 deaths, but still after the Chernobyl disaster, approximately 4,000 people have died due to the intensity of the radiation which led to later cancer then eventually death (www.wikipedia.com, 2020).

The evacuation zone is the red area on the map to the right.

When the local soviet hierarchy came around a released that the problem of the nuclear explosion was incredible dangerous and life threatening, did they realize they had to evacuate the area for a few miles. At the time of the Chernobyl explosion with in a 60km range of Chernobyl there was approximately 115,000 and 135,000 people living there before the time of the explosion.

When someone is permitted to enter a radiation site, they have to carry a radiation detector. The radiation detector measures the different radiation waves, whether its electromagnetic, light, gamma, nuclear waves. When the radiation reads a high number of radiation, it would not be a good Idea to travel into a high level of radiation, this could cause cancer and would have to go to hospital (www.history.com, 2020). When someone has come in contact with ionizing radiation waves, the most likely cancer that that someone would receive is skin cancer. Skin cancer is a cancer which lies in the skin and the growth of abnormal cells in the outer skin layer, this happens when the DNA is damaged and unprepared, this causes mutations in the skin, these skins cells duplicate themselves rapidly. This normally leads to serious burns and pain when the skin is touched or moved in some sort of way (www.wikipedia.com, 2020).

Conclusion:

Does radiation make superheroes? The answer is no it can't, if exposed to a high level of ionizing radiation, causes cancer and may lead to death if not treated properly. This is known due to the information that was received in the Chernobyl nuclear power plant disaster, which occurred on the 26th of April 1986 in Chernobyl, Ukraine. Radiation was leaked over Ukraine, there was no result in any 'superheroes' heard of; therefore, radiation does not create superheroes.

Word count: 802 words.

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