



**CALIFORNIA STATE SCIENCE FAIR
2014 PROJECT SUMMARY**

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Project Title The Effect of Radiations on Planaria in Lieu of Human Skin Cells	
Abstract Objectives/Goals This experiment was conducted to discover the effects of five different types of radiation on the regeneration process of planarians. Over 50% of planarian genes are parallel to those of humans, and especially parallel skin cells. Based on previous experimentation, radiation has been proven to entice mutations in the planarians and stunts in their growth, thus slowing down their regenerative processes. Methods/Materials 110 Planarians were cut into 5 mm. halves and then kept under observation during their regeneration process for 10 days. A group of 10 planarians were exposed to a single type of radiation for 5 minutes, followed by another group of 10 planarians that were exposed to a single type of radiation for 10 minutes, each day. A total of 110 planarians were exposed to radio waves emitted from a cellular device, microwaves emitted from a microwave oven, infrared waves emitted from a kitchen stove, visible light emitted from a light bulb, and UVC light emitted from a UVC Light to replicate sunlight. Results After exposing the planarians to radiation emitted from radio waves, microwaves, infrared rays, visible light, and UVC rays, we discovered the planarians continued to somewhat react in the expected manner. While the planarians exposed to visible light, microwave, and radio wave radiation grew at a slower rate and developed to a smaller size, the planarians exposed to UVC and infrared radiation could not withstand the radiation and disintegrated almost immediately. However, all of the planarians affected by the heat of the radiation experienced mutations in the form of darkened cells and a fatter appearance. Conclusions/Discussion This amount of exposure to radiation is similar to that which humans experience on almost a daily basis, which should spark concern for human health because of the negative consequences experienced by the planarians. Planarians regenerate their bodies, while humans regenerate their liver, skin, and eye cells, which can be subject to mutations when exposed to these common amounts of radiation. Humans living in the common household without caution often come in contact with cell phones, microwave ovens, light bulbs, sunlight, and kitchen stoves, which can cause the development of cancerous cells.	
Summary Statement Regenerating planaria were exposed to different radiations in place of human skin cells to depict the effect of radiation emitted by common household items.	
Help Received None.	