

Genesis Villa & Jasmine Garcia

Infrared Radiations vs. Thermal Conduction for Hair Permanence to Reduce Pili Damage

Hair is what defines your identity, and helps identify where you came from or where you were born. We wanted to look at hair scientifically. We were interested in hair because women spend millions of dollars on hair care products. We wanted to find another way so that women wouldn't damage their hair. We examined the cuticles and the cortex of hair under a microscope before and after using a curling iron. We examined different ethnicities of hair and repeated the measurements many times. Then we compared the effects of a curling iron to an infrared lamp. When doing this experiment we created an equation that we called GVJG that says damage is inversely proportional to the amount of hair:

$$y = (\text{Temperature} * \text{Damaged Hair}) / \text{Quantity of Hair}$$

Y is the independent variable representing temperature, and heat applied stays the same, the quantity of hair is the dependent variable changed after we applied heat. Our data showed facts that weren't in cosmetology books which are important. We found out that when curling hair with a curling iron, the less hair you curl, the more damage you will have. We found that about 30 pieces of hair will not become damaged as much. We found out that especially in blond hair, the damage is more noticeable because the hair turns dark. From our research we concluded that cosmetology books should talk about hair damage, and women can be aware of the physical and chemical damage to their hair with frequent curling.