



CALIFORNIA SCIENCE & ENGINEERING FAIR 2019 PROJECT SUMMARY

Name(s) Eleanor Addison	Project Number J2101
Project Title Sunscreen: Protection or Poison?	
<p style="text-align: center;">Abstract</p> <p>Objectives This project was done to determine if recent studies suggesting that sunblock is harmful to coral reefs are true.</p> <p>Methods Over a period of weeks raise Brine shrimp (as a proxy for coral reefs) from eggs in homemade hatchery. Expose 10 shrimp in a Petri dish to a 1cm square swab of one of 9 sunblock brands, 3 household chemicals, or 1 control, and record the health condition every hour over 36 hours for each.</p> <p>Results Zinc-based sunblocks were found to be the least harmful to brine shrimp, while sunblocks containing oxybenzone or octinoxate were the most. Surprisingly, shampoo (which has not gotten as much press) was found to be even more harmful. In addition, cost was not related to environmental harm.</p> <p>Conclusions All sunscreens tested were found to be harmful to sea life (as represented by Brine shrimp). Zinc-based sunblocks were less harmful than oxybenzone and octinoxate-based blocks, concurring with recent media reports. Interestingly, at equal concentrations, household shampoo proved to be even more of a threat to Brine shrimp, implying sunscreen is not the only danger beach-goers may bring to the world's coral reefs.</p>	
Summary Statement Using Brine shrimp as a proxy for coral, this study explores the harmfulness of sunscreen to sea life.	
Help Received My dad assisted me by recording some of the data in the middle of the night, helping me order the materials, and helping me with the paper-cutter to cut sheets to glue on the project display board.	