



**CALIFORNIA STATE SCIENCE FAIR
2013 PROJECT SUMMARY**

| | |
|---|---------------------------------------|
| Name(s) John F. Gomez | Project Number J2112 |
| Project Title Are Helmets Really Safe? | |
| Abstract Objectives/Goals The objective of this experiment was to test the protective abilities of three select helmets that represent the three different levels of lacrosse helmets, beginner, intermediate, and advanced. Methods/Materials The helmets used for the experiment were the clh, clh2, and the Pro7 lacrosse helmets. Each one of these helmets was put on Styrofoam head which had paintballs evenly placed and labeled in areas covering the head to represent where the brain would be. The helmets were hit 40 times each with a concussion causing force of 20 mph. The number of paintballs popped in each area was recorded after each test and all broken paintballs were replaced. Results The results from each of the three helmets were compared by calculating the number of paintballs popped. The Pro7 far surpassed the other helmets in protective abilities and revealed a considerable gap between the qualities of the individual helmets. The Pro7 only had eight paintballs pop out of all the trials and surpassed the clh which had 32 paintballs pop. The clh2 was in the middle of the other two helmets with 15 popped paintballs throughout all the tests. The helmets didn't have any observed internal/external damage after the tests. Conclusions/Discussion Although all three helmets were comparable, the tests showed that one helmet did rein superior over the other helmets. The Pro7 did out preform the other helmets and would be the smartest choice for any player as far as protective abilities. This helmet will protect against concussion the best and minimize damage to each player's brain. All players should be recommended to play with this helmet to improve their safety and the safety of the game. | |
| Summary Statement In this experiment, three popular lacrosse helmets were tested for their ability to protect against impact to improve the safety of lacrosse players and the sport of lacrosse. | |
| Help Received Parents proof read my report; Dr. Amayr answered some of my questions; Mrs. Gillum my science fair teacher helped guide me through science fair | |