



**CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY**

Name(s) Alexander M. Lopez	Project Number J1016
Project Title What Angle of Impact Has the Most Effect on Making a Bruise?	
Abstract Objectives/Goals My project was to determine what angle of impact has the most effect on making a bruise. I believe a direct hit has the greatest impact to the skin test models. Methods/Materials I made three skin test samples that are identical in size and shape. The material use to make and construct the skin test sample describes the function of the anatomy of the skin. I created an apparatus called a bruise maker to create the bruise and control the impact of the skin test models. I followed my test procedure for all angle cases to ensure repeatability. I tested 3 skin test models at 0 (direct impact), 10, 20, 30 and 40 degrees. Results The results showed that the impact from the weight on the front side of the papillary dermis (cotton round) where similar in size for all angles. I measured the blue stain from the papillary dermis and could see where the impact occurred on each test samples. On the backside of the papillary dermis, the blue stain was much larger for 0 degree than any other angle on each test sample. After 5 minutes, the data showed that the blue stain were larger at 0 degrees than any other angle. Conclusions/Discussion A direct hit at 0 degrees rupture more capillaries and damages more tissues than any other degrees as shown in my test models. An interesting observation was for all cases, that the front impact of the tissue was small in size but double in size underneath the skin.	
Summary Statement My project was to determine what angle of impact has the most effect on making a bruise.	
Help Received Dad helped me out on reinforcing the bruise maker and getting his opinion.	