



CALIFORNIA STATE SCIENCE FAIR  
2014 PROJECT SUMMARY

|   |                                    |
|---|------------------------------------|
| <b>Name(s)</b><br>Alyssa L. Pompan  | <b>Project Number</b><br><br>34100 |
| <b>Project Title</b><br>My Joints Crack: Should I Be Worried?   |                                    |
| <p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b><br/>         The goal of this study is to better understand joint cracking. This experiment analyzes differences between the sexes, which joints are involved, what percent of people are "crackers " and whether or not there are associated symptoms. The hypothesis of this experiment was that most people crack their joints due to stiffness. This experiment will hopefully allow us to better understand the phenomenon of joint cracking.</p> <p><b>Methods/Materials</b><br/>         250 detailed surveys were distributed to males and females of ages 13 and over. The survey incorporated many questions about cracking joints as mentioned in the section above.</p> <p><b>Results</b><br/>         66% of people surveyed crack their joints: 75% of individuals under age 30, 60% of those between 31 and 50, and 41% of individuals older than 50. The most common reasons for all males to crack their joints was habit as it was for females ages 13 to 30. For females 31 and older stiffness was the main reason. The majority of people have not experienced pain or swelling, or received treatment. The study suggests that older people crack their joints less.</p> <p><b>Conclusions/Discussion</b><br/>         The study showed that approximately 2 out of 3 people crack their joints. Both males and females share the same pattern in terms of body parts, with the knuckles being the most common followed by the neck and back. Habit was the most common reason in the males followed by stiffness, whereas the results were reversed for females. When age is considered, 75% of people younger than 30 crack their joints. In patients between 30 and 50, 60% crack their joints. In the older than 50 category, only 41% of people crack their joints. This suggests that as people get older they are less likely to crack their joints. There were very few cases of pain and swelling. Overall, there was not a significant difference between the sexes.</p> <p>The hypothesis was that the main reason for cracking would be "stiffness." However, the most common reason was "habit," with stiffness a close second. The vast majority of all people were not cracking their joints for pain relief. Given that there are so few individuals that have pain and swelling, it appears that there is no medical issue. More subjects would be needed to draw definite conclusions.</p> <p>In summary, cracking of joints seems to be a very common phenomenon and a habit that people may eventually outgrow. Cracking of joints appears to be safe without any significant, harmful effects.</p> |                                    |
| <b>Summary Statement</b><br>The purpose of this experiment was to investigate different aspects of the phenomenon of cracking joints.   |                                    |
| <b>Help Received</b><br>My Science Teacher, for her help and guidance, the 250 participants who completed the surveys, my dad, mom, and brother for helping me distribute the surveys and getting my supplies.  |                                    |