



**CALIFORNIA STATE SCIENCE FAIR
2007 PROJECT SUMMARY**

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| Name(s) Claire M. Haines | Project Number J1513 |
| Project Title Pure Glucosamine Sulfate vs. Glucosamine Chondroitin: Which Is the Most Effective Treatment for the Arthritic Horse? | |
| <p style="text-align: center;">Abstract</p> <p>Objectives/Goals My objective was to test the effectiveness of pure glucosamine, which is an amino derivative of sugar, versus a glucosamine which has the additive chondroitin, which is made from shark cartilage. Which would help improve the flexibility and balance of the test subjects, four arthritic horses?</p> <p>Methods/Materials Four horses were selected for use in this three week study, based on observable evidence of arthritis in each horse. Each day, two horses were given one cup of grain with 2 ounces of pure glucosamine and two horses were given one cup of grain with 2 ounces of glucosamine with chondroitin. Flexions tests begin by holding up each of the horses legs and bending it as much as possible, holding the position for at least one minute. Observe and record the degree which the horse is able to bend his or her leg. The horse is trotted out immediately after the hoof is put down. The off steps (slight limping and/or stumbling, for example) are counted and recorded. Repeat process for all legs and all horses. Repeat the test 1-2 times weekly and observe and record changes in the horse's condition.</p> <p>Results All horses in this study showed positive results. I noticed changes in appearance and behavior. The horses were more supple and moved much better during flat work. By the end of the study, all the horses had fewer observable off steps. In particular, Breeze showed considerable improvement in his back left leg and Count improved drastically in his back right leg. These two horses were given the glucosamine with chondroitin so I would have to say the supplement with the additive had a slight edge.</p> <p>Conclusions/Discussion Glucosamine is worth the money. An arthritic horse can not be ridden to the best of his or her ability because that kind of pain leads to limping and poor balance. Most horses, like most humans, will suffer some degree of arthritic pain in their lifetime. As in humans, it is important to treat this condition so your horse can have a happy and long life. My study proves that this is possible. I hope I can find a way to test this supplement on humans, as there is much discussion and controversy over glucosamine's effectiveness on humans. I know that the physiology of the horse is very different from a human's but if we can learn what works with the horse, maybe some of what we test and learn will help with human sufferers of arthritis.</p> | |
| Summary Statement This experiment showed that glucosamine supplements, both pure and with chondroitin, improves the health and condition of the arthritic horse. | |
| Help Received Many thanks to Rich and Lauren Allen for letting me use Sweet Dreams, Count and Breeze in this study. Thanks to my own sweet horse, Poco, for being such a good sport. Thanks to my mom and dad who helped with the transportation, funding for the supplements and trot out on very rainy days. | |