



**CALIFORNIA STATE SCIENCE FAIR
2003 PROJECT SUMMARY**

Name(s) Janna E. Nikkel	Project Number J0523
Project Title Can Chelating Calcium Improve Circulation?	
Abstract Objectives/Goals The reason I became interested in chelation is because I have an uncle who has diabetes that has caused him to have poor circulation in his legs. Chelation was a treatment mentioned to him that could improve his circulation. Objective: My objective was to find out if EDTA could chelate calcium. I hypothesized that calcium could be chelated. Methods/Materials I chose to chelate eggshells because of their calcium content. For my control trials I placed one eggshell in each of the three jars that contained 100ml of sterile water. Then I took another three eggshells and placed each of them in a jar of 100ml sterile water with 3 grams of EDTA. I noted the changes in the eggshells over a period of fourteen days. Results 1. For my three control trials I observed no changes in the three eggshells that were just in sterile water. 2. For my three trials with the eggshells in EDTA I observed great changes. I observed the edges of the three eggshells had dissolved, leaving only the membrane. Also, the three eggshells thinned and had a soft, slimy feeling. However they did not dissolve completely. Conclusions/Discussion 1. The eggshells dissolved because the molecule of EDTA freed its two hydrogen atoms that then allowed the calcium atom to latch on to where the hydrogen had been. 2. After chelating the eggshell for fourteen days the changes were getting to be minimal. This was because there was only a certain amount of EDTA so there could only be a certain number of hydrogen atoms to chelate the calcium. Therefore the chelation process could not go on indefinitely. 3. If calcium deposits cause atherosclerosis disease then I think it is a possibility that it could be treated successfully with chelation treatments since I have observed that calcium can be chelated.	
Summary Statement My project shows that EDTA chelates calcium and how that could possibly be related and beneficial for treating atherosclerosis.	
Help Received My mother helped me understand chelation and atherosclerotic disease; Dr.J. advised me about my procedure.	