



**CALIFORNIA STATE SCIENCE FAIR  
2006 PROJECT SUMMARY**

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| <b>Name(s)</b><br><b>Sarah L. Barr</b>  | <b>Project Number</b><br><b>S1002</b> |
| <b>Project Title</b><br><b>The Effect of Age at First Menstruation on Ovarian Cancer Development</b>  |                                       |
| <b>Abstract</b><br><b>Objectives/Goals</b><br>The purpose of this experiment was to test whether there is any correlation between the age of first menstruation in a girl who develops ovarian cancer, and the girl's age when the cancer develops.<br><b>Methods/Materials</b><br>I gathered data for my project by using the Internet to contact ovarian cancer support groups and message boards. I created a simple questionnaire to gather specific pieces of data which included the age at first menstruation, the age at cancer development, type of cancer, and whether or not the subject had given birth. All responses to the questionnaire were anonymous and received via email or message board postings. The questionnaire was posted on six different websites, and responses either came back as a reply to the posting, or were sent to the Hotmail account I specially created for data collection. Materials used in the project (other than the display board) were a computer connected to the Internet and a printer with, of course, ink and paper.<br><b>Results</b><br>The data collected implied that the later a girl first menstruated, the earlier the age at which she would develop ovarian cancer. And conversely, the data implied that the earlier the age of first menstruation, the later the age of ovarian cancer development. However, possibly because of the limited amount of data, these results were not statistically significant.<br><b>Conclusions/Discussion</b><br>Ovarian cancer is the fifth deadliest cancer for females, and has been called the silent killer because its symptoms are similar to other symptoms females experience on a monthly basis (e.g. abdominal swelling, bloating, indigestion, back pain, fatigue, constipation...) Although the limited data was not statistically significant, the results imply a possible inverse correlation between age of first menstruation and age of ovarian cancer development. At minimum, these findings suggest a direction for further study. |                                       |
| <b>Summary Statement</b><br>My project examined the possible relationship between the ages a girl first menstruates and ovarian cancer develops, and the results implied that as the age at first menstruation increased, the age of ovarian cancer development decreased.  |                                       |
| <b>Help Received</b><br>My science teacher guided me; my dad assisted me in making sure I was safe when I posted on the Internet; people at the American Cancer Society told me where to go for data; and teachers, peers, and parents helped edit my drafts.   |                                       |