



**CALIFORNIA STATE SCIENCE FAIR
2009 PROJECT SUMMARY**

Name(s) Malak J. Alamad	Project Number J1301
Project Title To Breastfeed or Not to Breastfeed	
Objectives/Goals I wanted to find out if healthy full term children between the ages of 10 and 12 who were breastfed for the first six months of their life are smarter than healthy full term children between the ages of 10 and 12 who were formula fed for the first six months of their life.	
Abstract	
Methods/Materials 1.I will need sixty full term healthy children between the ages of 10 to 12, thirty females and thirty males. For each group, 15 subjects who were exclusively breastfed for the first six months of their life, and fifteen who were exclusively formula fed for the first six months of their life. My method of sampling was Stratified Random Sampling, where the population was divided into four strata, breastfed male ages 10-12, formula fed male ages 10-12, breastfed female ages 10-12 and formula fed females ages 10-12. Within each stratum any member had the same chance of being included in the sample. 2.Sixty Signed forms from the parent of each child approving to give the test to their child. 3.A standardize intelligence test appropriate for ages 10 to 12. 4.A quite place for each child to take the test at. 5.A chart to convert the results of the test into Intelligence Quotient for each child.	
Results I drafted graphs for the I.Q.s of the breast fed children and of the formula fed children and compared my results. I found that healthy full term breastfed children are smarter than their formula fed peers by an average of (8) I.Q. points.	
Conclusions/Discussion I hypothesized that breastfed children would be smarter, and my hypothesis was right! Breast milk contains the ideal ratio of fats, amino acids and other nutrients that baby needs for brain and nervous system development. These ingredients provide the ideal basis for the "hard-wiring" component of a person's intelligence. So the correlation between breast feeding and intelligence is that breast feeding allows the child to reach a higher genetic potential of intelligence. Other factors in nature also help a child to reach a higher genetic potential, and that was clear in the high I.Q. scores that were scored by the formula fed children. It is important to note that in breastfed children whose genetic potential for intelligence is at an average, breastfeeding will not allow them to have a higher I.Q., it will only help them reach the maximum potential. That too is clear in the low I.Q. scores that breast fed children scored.	
Summary Statement The effect of breastfeeding on intelligence.	
Help Received Mother helped to double check the I.Q. test corrections .	