



**CALIFORNIA STATE SCIENCE FAIR
2004 PROJECT SUMMARY**

Name(s) Julie A. Hicks	Project Number J0315
Project Title Can We Talk? Comparing Electronic-Larynx and Tracheoesophageal Speech	
Abstract Objectives/Goals The purpose of my study was to determine which method of speech was better understood by the "average" person: electronic-larynx (EL) or tracheoesophageal prosthesis (TE) speech. Methods/Materials I made a digital recording of a male (electronic-larynx) and female (TE prosthesis) speaker as they read aloud twelve words and phrases from a speech intelligibility test. Next, I randomly selected one hundred males and female subjects ages twelve years and up. Each subject listened to the digital recording and wrote down the words and phrases that they heard. Responses were marked correct or incorrect. Results I found that there was no significant difference between how well my subjects understood either speaker on the words section of my test. Both speakers were very difficult to understand. However, my data showed a significant difference on the phrases section. The subjects were able to understand the TE speaker using phrases better than the EL speaker at a confidence level of 90%. Conclusions/Discussion My conclusion is that my data and statistics supported my hypothesis that the TE speaker would be better understood than the EL speaker. Because communication is essential to our daily lives, my project taught me that it is important for laryngectomees to be understood no matter how they communicate.	
Summary Statement I compared how well "average" people understood two methods of speaking commonly used by individuals who have had their larynx removed due to cancer.	
Help Received Laryngectomee speakers volunteered from the San Diego New Voice Club; Katrina Jenson (speech pathologist, SD VA Hospital) helped with project suggestions and loaned me a voice prosthesis; Dad helped with statistics;	