



California Science Center
CALIFORNIA STATE SCIENCE FAIR
2001 PROJECT SUMMARY

Your Name (List all student names if multiple authors.) Suneil E. Nyamathi	Science Fair Use Only S1321
Project Title (Limit: 120 characters. Those beyond 120 will be ignored. See pg. 9) The Effect of Smoking on Chromosomal Damage	Division _ Junior (6-8) <u>X</u> Senior (9-12)
Preferred Category (See page 5 for descriptions.) 13 - Pharmacology / Toxicology	
Abstract (Include Objective, Methods, Results, Conclusion. See samples on page 14.) Use no attachments. Only text inside these boxes will be used for category assignment or given to your judges.	
<p>Objective: The objective of this project was to compare DNA strand damage in sperm of 5 smokers as compared to a non-smoker; and of 5 men who were enrolled in a Smoking Cessation Program who either quit smoking or continued to smoke.</p> <p>Materials and Methods: Sperm was collected at Time 1, at 6 and 12 weeks after enrolling in a Smoking Cessation Program. DNA damage was assessed by a COMET assay, which measured the DNA head intensity, tail length and tail moment, which is the ratio DNA head intensity and tail length. DNA strand breakage is usually repaired by the sperm or by the egg at fertilization. Sometimes, however, the damage cannot be corrected or is incorrectly repaired thus making an abnormality in the offspring.</p> <p>Results: Data showed that smokers when compared to a non-smoker had greater DNA strand damage at all time points. In addition, smokers who quit smoking when compared to smokers who continued smoking had improved DNA integrity at 6 and 12 weeks after enrollment in a Smoking Cessation Program.</p> <p>Conclusion and Discussion: These findings suggest that smoking cessation might lead to recovery from smoking-induced DNA damage. If improvement in DNA damage does occur when a man stops smoking, this would be important information to convey to a smoker who is planning to have a family.</p>	
Summary Statement (In one sentence, state what your project is about.) The purpose of my project was to compare DNA strand damage among smokers, non-smokers, and smokers who quit.	
Help Received in Doing Project (e.g. Mother helped type report; Neighbor helped wire board; Used lab equipment at university X under the supervision of Dr. Y; Participant in NSF Young Scholars Program) See Display Regulation #8 on page 4. Used lab equipment at UCLA under supervision of Dr. Wendie Robbins	