CALIFORNIA STATE SCIENCE FAIR
2002 PROJECT SUMMARY

Name(s)

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Project Number

22834

Project Title

Contrasting Cardiac and Old Brain Responses to Aldehydes and Phenols

Abstract

Objectives/Goals

The objective is to determine whether the mental connation of smells correlates with the heart's response to the scents of aldehydes (primarily fruit and flower based) and phenols (primarily leave, bark, or root based).

Methods/Materials

Create 25 surveys, for an equal amount of test subjects, ranging in age from 14-83. Choose 7 commonx scents ensuring that each subject would be familiar with them. Use coffee to serve as a scent neutralizer. Apply scents to wood pieces to keep the subject oblivious to the smell until inhalation. Use a stopwatch to control length of inhalation. Measure the collective blood pressure and pulse of the subjects with a Sphygmomanometer.

Results

Collectively, emotional and mental response was more positive to the aldehydes (vanilla, orange blossom, and rose). The aldehydes were more reminiscent of perfumes and the home (e.g. breakfast, candles, etc.) Most aldehydes kept levels blood pressure and pulse rates constant. The phenol scents (eucalyptus, cinnamon, peppermint, and pine) were usually perceived as cleaners, medicines, or unknowns, ultimatex creating a stressing or putrid image. The stronger phenol smells actually served to lower blood pressure. The addition of genetic hypertension and hypoglycemia subjects showed even greater extremes in the lowering of blood pressure.

Conclusions/Discussion

My conclusion is although people may be conditioned to distaste certain smells, the body has reactiox dissimilar than what one feels that they can ultimately control.

Mesopotamians used of incense and fragrance to create feelings of security and mask the undesirable x life. The impact of scents has been able to manipulate emperors (Antony and Caesar) and promote general health benefits for all social groupings. The further understanding of human anatomy has led to using smells to promote consumerism, increase job productivity, and increase metabolic desires. Continued awareness has encouraged medical research to look into the benefits aromatherapy. Currentx studies including increasing memory in Alzheimer#s patients; lowering hypertension levels; and usingx smells to aid the blind.

Summary Statement

To discover neurological and cardiovascular individual human response to specific smells this research was conducted

Help Received

My family/Biology teacher Steve Levy- edit/layout/focus; Bev Simmons/Bill Gordon/Persis Newland/Lori Paley- expert advise on aromatherapy; Susan Mokhtari, (Administrative Research Assistant at the American Heart Association)/Dr. Michael Steppe/Dr. Richard Sugerman- medical implications.

Preliminary