

National  
Organization of  
Mothers  
Of  
Twins  
Clubs, Inc.

SUBJECT:

GENETIC FACTORS IN THE PRESENCE,  
SEVERITY AND TRIGGERS OF ASTHMA

RESEARCHER:

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DATE:

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**PURPOSE:** The Family Health Survey examined relationships among aspects of asthma and other illnesses that have not been studied before.

**METHOD:** Parents of twins contacted through NOMOTC completed a FAMILY HEALTH SURVEY. Forty-one identical and 55 same-sex fraternal twins at least 2 years old were included, in which at least one had asthma.

BACKGROUND INFORMATION:

1. Parents of twins provided the data using the Family Health Survey provided by the researchers.
2. The survey contained two items to measure:
  - A. Asthma Severity--Parents estimated the frequency and severity of asthma attacks each child would experience if medication were discontinued for a year.
  - B. Trigger Impact--Parents estimated how often each of 12 circumstances seem to accompany or contribute to the attack. The circumstances were common asthma triggers: air pollution, allergy problems, cigarette smoke, stress or worry, anger, excitement, laughter, high or low environmental temperature, high humidity, respiratory infections, nighttime hours and physical activity.

RESULTS:

1. For the presence of asthma, the study confirmed that heredity plays a role in development of asthma, with 67% of identical twins and only 29% of fraternal pairs both had asthma.
2. For severity of asthma, data analysis showed that asthma severity ratings were significantly correlated for the identical but not the fraternal pairs, thus indicating that heredity may affect the severity of an individual's asthma condition.
3. For the triggers of asthma, correlations were higher for identicals than fraternal twins for only three triggers--anger, respiratory infection, and physical activity--but not for any of the other triggers, suggesting these three may have a genetic basis.

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**CONCLUSION:**

These findings provide evidence that heredity influences the severity of children's asthma and the impact of specific triggers in their asthma attacks.

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