

# Atopic Dermatitis in a Population Based Twin Series

## Concordance Rates and Heritability Estimation

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We compiled all like-sexed twin pairs ( $N=592$ ) of school-age in a geographically limited area of Denmark (1). A mailed questionnaire relating to atopic dermatitis resulted in a response rate of 0.98. A total of 88 twin individuals had answered either "Yes" or "Do not know" to the question of atopic dermatitis among the included responders. These questionnaire probands and their co-twins were clinically examined. A definite diagnosis of atopic dermatitis was made in 69 twins from 48 twin pairs (22 monozygotic twin pairs and 26 dizygotic twin pairs). The zygosity diagnosis was determined by a system of 18 polymorphic genetic markers, which gives rise to a frequency of misclassification of less than 1.0%. The concordance rates of atopic dermatitis were calculated to:

	<i>Monozygotic</i>	<i>Dizygotic</i>
Pairwise concordance rate	0.77	0.15
Proband concordance rate	0.86	0.21

which gives a statistically significant difference ( $8 < 0.001$ ) between MZ and DZ twin pairs. The cumulative incidence rate (0–7 years) increased significantly from 0.03 (birth cohort 1960–64) to 0.10 for those born between 1970 and 1974. The computation of the genetic determination gave very high values, which indicates a strong genetic component. However, environmental factors must also have influenced the disease as the population frequency of atopic dermatitis has risen 3-fold within the last 15 years. Furthermore, the heritability might be overestimated due to genetic heterogeneity and/or the effect of major genes (2).

## REFERENCES

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2. Schultz Larsen F. Atopic dermatitis. Etiological studies based on a twin population. Doctoral thesis. Odense University. In press.

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