

ATOPY AND CONTACT SENSITISATION: RELATIONSHIP REASSESSED

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Question:

What is the relationship between atopy and contact sensitisation?

Figure 1. Contradictory conclusions from previous studies (compare the table below). Possible causes: 1) ill-defined and/or unrepresentative study groups, 2) atopy mainly defined by history (subject's and researcher's bias).

"PREVENTS"	"PROMOTES"	"NEITHER"
<i>Jones et al. 1973: "Allergic contact sensitivity to the poison ivy-oak family is infrequent in patients with atopic dermatitis"</i>	<i>Rudzki et al. 1984: "Atopic disease is distinctly more frequent in nickel-sensitive subjects"</i>	<i>Cronin et al. 1970: "Atopics are no more likely to develop an allergic contact dermatitis than patients with other types of endogenous eczema such as seborrheic or nummular eczema"</i>
<i>Rudzki and Grzywa 1975: "Patch test in atopics is less frequently positive than in all patients with dermatitis"</i>	<i>Dotterud and Falk 1995: "Positive patch tests were significantly more frequent in atopic than in non-atopic children"</i>	<i>Nielsen and Menne 1996: "Contact sensitization is independent of enhanced IgE response"</i>
<i>de Groot 1990: „Adult atopics seen in dermatological practice who present with dermatitis are less frequently contact sensitized than such patients who are non-atopic”</i>	<i>Manzini et al. 1998: "Atopy represents a predisposing factor for contact hypersensitivity"</i>	<i>Mortz et al. 2002: "No association was found between contact allergy and atopic dermatitis or inhalant allergy"</i>

This study:

Well-defined, homogenous population

5 vocational schools – in each 1 random class;
in total 135 students – 73 females and 62 males,
18-19 years old.

Objectively measurable markers

"Atopy":

- positive skin prick tests (16 aeroallergens)
- Phadiatop
- total IgE >120 kU/l

"Contact sensitivity"

- patch tests (ICDRG)

Statistical analysis

- Fisher's exact chi-square test
- odds ratios



Figure 2. Study sites.

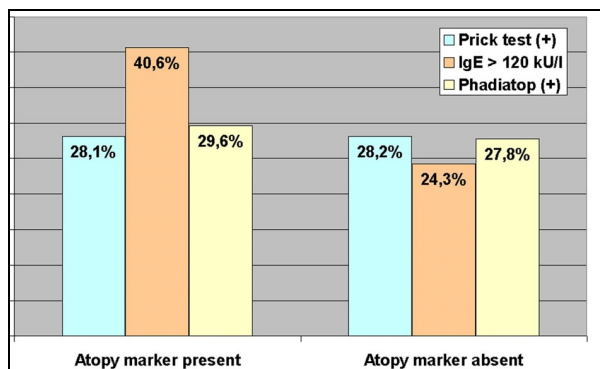


Figure 3. Atopy markers in patch test-positive versus -negative persons.

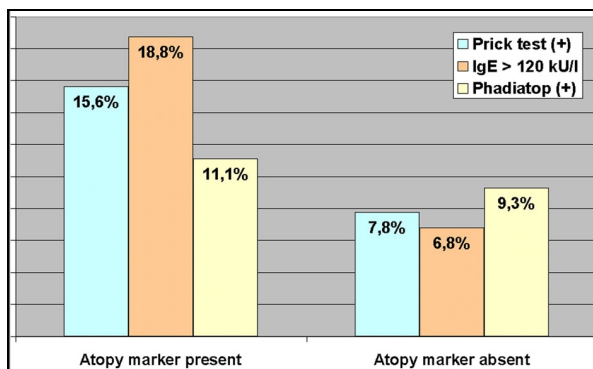


Figure 4. Atopy markers in nickel-positive versus -negative persons.

Results:

- Positive prick test: 23.7% (95% CI: 16.5-30.9%)
- Positive Phadiatop: 20.0% (95% CI: 13.3-26.7%)
- Total IgE >120 kU/l: 23.7% (95% CI: 16.5-30.9%)
- Positive patch tests: 28.1% (95% CI: 20.6-35.7%)
- No significant relationship between atopy and patch tests
- Significant correlation between gender and patch test results (regarded here as a „positive control” for the study design)

Conclusion:

In the general population, there is no (or negligible) correlation between atopy and contact sensitisation.

Comment:

Previously, only one study was carried out with the use of objective atopy markers (prick test and IgE). The study population included random residents of Copenhagen County. The conclusion was “*Contact sensitisation is independent of enhanced IgE response*” (Nielsen and Menne 1996), which is in line with the above results.

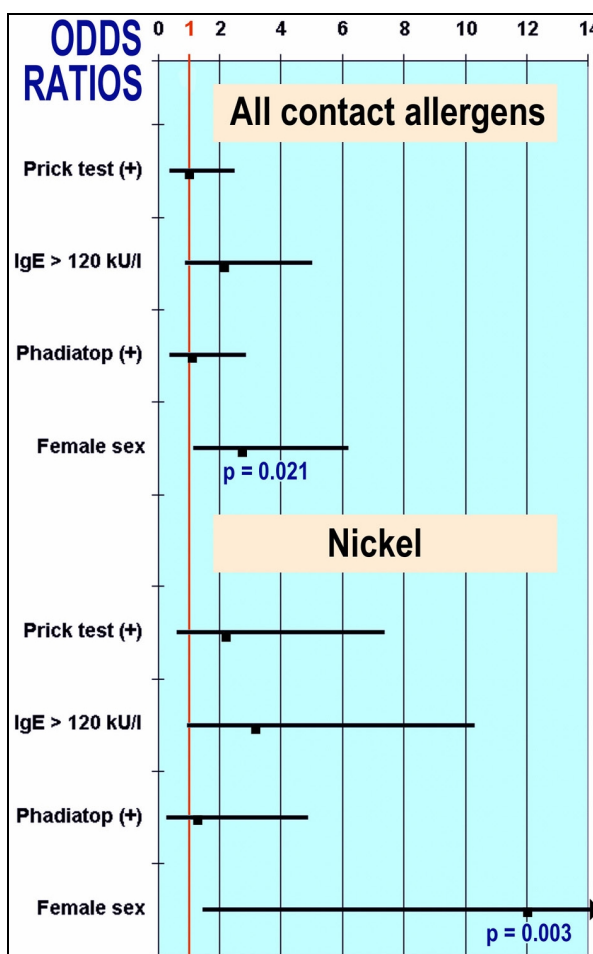


Figure 5. Relationship between atopy markers and contact sensitisation.

These data derive from the “Lublin Study” (All-Polish Study on Risk Factors for Occupational Allergic Diseases among Farming Students) financed by the Polish State Committee for Scientific Research (Grant No. 6 P05D 028 20).