allergen was nickel, and fragrances. In this study, Allergic contact dermatitis is more common in women than in men.

**Conclusions:** Approximately 25 chemicals appear to be responsible for as many as one half of all cases of allergic contact dermatitis. These include nickel, preservatives, dyes, and fragrances. In this study Allergic contact dermatitis is more common in women than in men. This predominantly is a result of allergy to nickel, which is much more common in women than in men in most countries. In elderly individuals, the development of allergic contact dermatitis may be delayed somewhat, but the dermatitis may be more persistent once developed. Individuals may develop new allergies.

### 368 Better Protection from Eczema Among Turkish Migrants’ Children Carries Over from Preschool Age to Adolescence

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**Background:** In a cross-sectional study of preschool children born in Germany we found significantly reduced rates of atopy, eczema and asthma among Turkish migrants’ children than among their domestic peers (Clin Exp Allergy. 2002;32:526–531). About 10 years later we re-examined children from this study population in order to investigate whether better protection from atopy among Turkish migrants’ children persists into adolescence.

**Methods:** The setting of the original survey was screening for school eligibility in an inner-city district of Berlin/Germany. The participants were preschool children with double German or double Turkish citizenship. The main outcome measures were IgE to common aeroallergens (CAP system Phadia, Phadiatop 3 0.35 kU/L) and 1-year prevalence of allergic disease symptoms (ISAAC questionnaire in German and Turkish language). All available adolescents from the first survey were included in the follow-up survey.

**Results:** 147 German and 154 Turkish adolescents were included. Rates of allergic sensitization tended to be lower among Turkish migrants’ children than among their domestic peers (7.0% vs 13.8%; P = 0.008). CPT were positive for allergens with 1:1024 to 1:128 dilutions in 22% (18/82) with 1:64 to 1:16 dilutions in 63% (52/82) and with 1:8 to 1:2 dilutions in 11% (9/82). Three subjects had negative SPT. Allergen threshold dose to trigger a response in the skin was lower than in the eye for all 3 allergens tested (P < 0.0001).

**Conclusions:** Reactivity to aeroallergens in provocation tests requires higher allergen dose for CPT than SPT. Positive SPT with standardized allergen extracts is predictive of clinical relevance in the diagnosis of allergic conjunctivitis.

### 370 Correlation Between Skin Prick Test and Mast Results in Patients with Chronic Rhinitis

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**Background:** Among methods to confirm the allergic causes of chronic rhinitis, the most common and the most reliable method is skin prick test, followed by MAST, which is reported to be compatible to skin prick test, with acceptable sensitivity and specificity. This study was designed to confirm whether MAST is reliable test in diagnosing allergic rhinitis.

**Methods:** Retrospective chart review was conducted with chronic rhinitis patients who visited Yeouido St. Mary’s Hospital between January 2010 and June 2011. Subjects were selected with whom the results of skin prick test and MAST were found.

**Results:** One hundred and ninety three subjects, 111 male and 82 females, were included and the mean age was 30.08 (range 6–77). MAST was performed for 422 patients of all age and skin prick test was performed for 56 allergic patients including histamine and control.Subjects who have one or more positive allergen in skin prick test were 132, and positive in MAST were 104. Sensitivity was 63.16%, specificity was 65.57% and efficiency was 63.92%.Number of positive allergen in skin prick test was 2.42 in average and among positive subjects, 3.53. In MAST, positive allergen count was 2.1 in average and among positive subjects, 4.0. Positive rates per common allergens in skin prick test were as follow; Dermatophagoides farinae 79.69% (106 subjects), Dermatophagoides pteronyssinus 68.42% (91 subjects), oak pollen 12.78% (17 subjects). Positive rates per common allergens in MAST were as follow; Dermatophagoides farinae 69.52% (73 subjects), Dermatophagoides pteronyssinus 59.05% (62 subjects), house dust 50.48% (53 subjects). Skin prick test result was analyzed as from negative to 6+, according to relative size of the allergen wheal compared with histamine wheal and MAST result was analyzed as from negative to class 6, according to the concentration of the solution. When we defined correlation as difference between positive count in skin prick test and class in MAST were less than 2, the correlation rate in Df was 65.80%, 59.07% in Dp.

**Methods:** 56 subjects (29 ± 11.4 years) with ocular allergy and sensitized to dust mites and/or grass pollens were recruited for the study. Standardized extracts of Dermatophagoides pteronyssinus (Der p 1 83.8 mcg/mL), Blomia tropicalis (Blo t 5 462.5 ng/mL) and Lolium perenne (Phl p 5 399.2 mcg/mL) were used for skin test end point titration. Increasing 2-fold allergen dilutions were tested in forearms until no skin reaction was elicited. The end point was considered the dilution immediately above that one. Conjunctival provocation test (CPT) was performed with progressive doses of allergen (1:32, 1:16, 1:8, 1:4, 1:2) to the involved allergen. All tests were performed after obtaining written informed consent and out of grass pollen season. Subjects should be asymptomatic and off allallergic medication.

**Results:** Of 82 conjunctival tests (30 Lp; 26 Bt; 26 Dp), 76% (62/82) occurred with 1:8 to 1:2 dilutions, 18% (15/82) with 1:32 to 1:16 dilutions and 6% (5/82) were negative. CPT were positive in 76% of subjects with Der p 1 (10.5–41.9 mcg/mL), Blo t 5 (57.8–231.3 ng/mL) and Phl p 5 (49.9–199.6 mcg/mL). SPT were positive for allergens with 1:1024 to 1:128 dilutions in 22% (18/82), with 1:64 to 1:16 dilutions in 63% (52/82) and with 1:8 to 1:2 dilutions in 11% (9/82). Three subjects had negative SPT. Allergen threshold dose to trigger a response in the skin was lower than in the eye for all 3 allergens tested (P < 0.0001).

**Conclusions:** Reactivity to aeroallergens in provocation tests requires higher allergen dose for CPT than SPT. Positive SPT with standardized allergen extracts is predictive of clinical relevance in the diagnosis of allergic conjunctivitis.

### 369 Comparison of Skin and Conjunctival Reactivity to Aeroallergens

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**Background:** Diagnosis of allergic conjunctivitis (AC) is based on symptoms and positive skin prick test (SPT) to common aeroallergens. Allergens identified by SPT may not be clinically relevant to the eye. This study aims to compare the skin and conjunctival allergic responses to dust mites and grass pollen.

**Methods:** 56 subjects (29 ± 11.4 years) with ocular allergy and sensitized to dust mites and/or grass pollens were recruited for the study. Standardized extracts of Dermatophagoides pteronyssinus (Der p 1 83.8 mcg/mL), Blomia tropicalis (Blo t 5 462.5 ng/mL) and Lolium perenne (Phl p 5 399.2 mcg/mL) were used for skin test end point titration. Increasing 2-fold allergen dilutions were tested in forearms until no skin reaction was elicited. The end point was considered the dilution immediately above that one. Conjunctival provocation test (CPT) was performed with progressive doses of allergen (1:32, 1:16, 1:8, 1:4, 1:2) to the involved allergen. All tests were performed after obtaining written informed consent and out of grass pollen season. Subjects should be asymptomatic and off allallergic medication.

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**Conclusions:** Reactivity to aeroallergens in provocation tests requires higher allergen dose for CPT than SPT. Positive SPT with standardized allergen extracts is predictive of clinical relevance in the diagnosis of allergic conjunctivitis.

**Abstracts**
Conclusions: The correlation between MAST and skin prick test is not high enough to use MAST as a diagnostic test for allergic rhinitis. The more study to confirm the reliability of MAST should be conducted.

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Cutaneous Response to Patch Tests with Dermatophagoides Farinae and Dermatophagoides Pteronyssinus in Patients with Chronic Rhinitis
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Background: Rhinitis is characterized clinical by chronic runny nose, sneezing, nasal itching, congestion and postnasal discharge, among other symptoms. It's classified as allergic and non allergic. Skin prick testing is the principal diagnosis method for allergic rhinitis. However, there is a group of patients with chronic rhinopathy that have negative skin tests, the objective of this study was to determine the cutaneous response to patch tests with Dermatophagoides farinae and Dermatophagoides pteronyssinus in patients with chronic rhinitis.

Methods: It was a cross-sectional, observational and descriptive study. We included patients over 18 years old. They were divided into 3 groups; Group A patients who came for the first time with a history of chronic rhinopathy over 18 months of evolution and positive skin tests for aeroallergens; group B patients with chronic rhinitis with at least one year of evolution and negative skin tests; group C healthy volunteers. Patch test with farinae and pteronyssinus were done in the subjects of all 3 groups, with readings at 48 and 72 hours.

Results: A total of 37 patients were studied, mean age 26.1 years. Twenty two were male subjects (60%). The mean length of chronic rhinopathy was 10.8 years. Six patients had positive patch test to any of the mites tested; 2 (33%) in group A, 2 (33%) in group B and 2 (33%) of the control group, but it was not statistically significant (P > 0.05).

Conclusions: Although the results were not statistically significant, there were patients with chronic rhinitis wich had positive patch test for mites. This sensitization could be clinically significant for those patients.

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Skin Prick Test Reactivity Compared to Serum Specific IGE by ISAC in Patients With Rhinitis
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Background: Microarray technique is promising in allergy diagnosis. The aim of this study was to compare SPT with specific-IgE by microarray in a group of patients with rhinitis.

Methods: Cross-sectional study, 101 participants with rhinitis diagnosed according to ARIA (89.1% with asthma); age range 6 to 15 years. SPT was done with Dermatophagoides pteronyssinus (Dp), Blattella germanica (Bg), cat and dog allergenic extracts (IPI ASAC Brasil); a mean wheal diameter of ≥2 mm greater than the negative control was considered positive. Sera were analysed for allergen specific IgE antibodies to Dp (Der p 1, Der p 2), Bg (Bla g 1, Bla g 2, Bg a 2, Bla g 4, Bg a 5), cat (Fel d 1, Fel d 2) and dog (Can f 1, Can f 2) allergens using a microarray system (ImmunoCAP ISAC, PMD, Austria), considered positive ≥0.3 ISU (ISAC standardized units). Categorical variables were shown as percentage and differences between the 2 methods verified by chi-square test; P < 0.05 was considered significant.

Results: SPT was positive to Dp in 88.1% whereas ISAC was positive to Der p 1 in 74.2% (P < 0.001) and Der p 2 in 73.3% (P < 0.01) respectively. Sensitivity of SPT was 97% and specificity was 38%. The remaining allergens caused less SPT reactions (cockroach 25.7%, cat 22.8%, dog 27.7%) and these were associated with lower detection of specific-IgE by ISAC respectively Bla g 1 (0.9%, P = 0.09), Bla g 2 (0%), Bla g 4 (0%), Bla g 5 (0.9%, P = 0.55); Fel d 1 (16.8%, P < 0.01), Fel d 2 (0.9%, P = 0.06); Can f 1 (4.9%, P = 0.53), Can f 2 (2.9%, P < 0.001).

Conclusions: SPT remains the favored method to detect IgE-mediated sensitivity to aeroallergens. SPT was highly sensitive for Dp though less specific in comparison with the IgE microarray to Der p 1 and Der p 2 allergens.

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Alteration of Smell in Patients with Persistent Allergic Rhinitis
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Background: A high percentage of patients with moderate-severe persistent allergic rhinitis (PAR) also show symptoms related to impaired smell (21–23%).Olfactory dysfunction can have a significant impact on quality of life (QoL) in these patients. The high frequency of this subjective condition not always reflect the magnitude of the problem experienced by PAR-patients in real life and usually goes unnoticed. The aim of this study was to assess the olfactory dysfunction in patients with PAR and seek the association with the PAR-severity, sleep disturbance and QoL.

Methods: We studied 50 patients with physician-diagnosed PAR consulting a tertiary medical centre, 33 (66%) were female and 17 (34%) male. Mean age 43 years old, compared with 20 healthy volunteers. Clinical history and assessment of severity based on ARIA criteria, skin prick tests with mite mix, mould and polllens, QoL questionnaire for allergic rhinoconjunctivitis (Juniper RQLQ) were done in addition the Epworth Sleepiness Scale (ESS) and the Connecticut smell test (CST) were performed in every patient.

Results: In patients with PAR, 30% had mild PAR and 70% the moderate/severe form.48% of the patients studied had abnormalities of smell. We found an alteration of smell in 18% of mild-PAR and 60% in the severe/moderate patients (P < .006).There was no statistically significant relationship between olfactory impairment and sleep disturbance with the ESS (P < .85), nor in the alteration of smell in patients with polypos detected at physical examination (P < .57) or the relationship between impaired smell and smoking (P < .36).Patients with moderate/severe PAR also had alterations in QoL. Nasal obstruction was the most important parameter (70%) associated with the QoL worsening.

Conclusions: This study shows the impact of PAR on the olfactory dysfunction. An association between smell impairment and the severity of nasal symptoms was found. Smell impairment plays an important role in worsening QoL. CST is a tool that could be used in patients with PAR.