

Chapter 13

Allergic Contact Dermatitis

Mari Paz Castanedo-Tardan & Kathryn A. Zug

REFERENCES

1. Mark BJ, Slavin RG: Allergic contact dermatitis. *Med Clin North Am* **90**:169, 2006
2. Cohen DE, Moore MM: Occupational skin disease. In: *Environmental and Occupational Medicine*, 4th edition, edited by WN Rom, SB Markowitz. Philadelphia, PA, Lippincott-Williams & Wilkins, 2007, p. 617
3. Rajagopalan R, Anderson R: Impact of patch testing on dermatology-specific quality of life in patients with allergic contact dermatitis. *Am J Contact Dermat* **8**:215, 1997
4. Thyssen JP et al: The epidemiology of contact allergy in the general population—prevalence and main findings. *Contact Dermatitis* **57**:287, 2007
5. Mirshahpanah P, Maibach HI: Relationship of patch test positivity in a general versus an eczema population. *Contact Dermatitis* **56**:125, 2007
6. Schnuch A et al: Epidemiology of contact allergy: An estimation of morbidity employing the clinical epidemiology and drug-utilization research (CEDUR) approach. *Contact Dermatitis* **47**:32, 2002
7. de Waard-van der Spek FB, Oranje AP: Patch tests in children with suspected allergic contact dermatitis: A prospective study and review of the literature. *Dermatology* **218**:119, 2009
8. Diepgen TL, Coenraads PJ: The epidemiology of occupational contact dermatitis. *Int Arch Occup Environ Health* **72**:496, 1999
9. Fregert S: Occupational dermatitis in a 10-year material. *Contact Dermatitis* **1**:96, 1975
10. Keil JE, Shmunis E: The epidemiology of work-related skin disease in South Carolina. *Arch Dermatol* **119**:650, 1983
11. Mathias CG: Occupational dermatoses. *J Am Acad Dermatol* **19**:1107, 1988
12. Mathias CG: The cost of occupational skin disease. *Arch Dermatol* **121**:332, 1985
13. Bureau of Labor Statistics (BLS) U.S. Department of Labor: *Workplace Injuries and Illnesses – 2008*, <http://www.bls.gov/iif/oshwc/osh/os/osnr0032.pdf>, accessed Mar 14, 2010
14. Meding B, Swanbeck G: Prevalence of hand eczema in an industrial city. *Br J Dermatol* **116**:627, 1987
15. Bryld LE et al: Hand eczema in twins: A questionnaire investigation. *Br J Dermatol* **142**:298, 2000
16. Clark SC, Zirwas MJ: Management of occupational dermatitis. *Dermatol Clin* **27**:365, 2009
17. Rietschel RL et al: Relationship of occupation to contact dermatitis: Evaluation in patients tested from 1998 to 2000. *Am J Contact Dermat* **13**:170, 2002
18. Hogan D, Ledet JJ: Impact of regulation on contact dermatitis. *Dermatol Clin* **27**:385, 2009
19. De Groot AC et al: The role of contact allergy in the spectrum of adverse effects caused by cosmetics and toiletries. *Contact Dermatitis* **19**:195, 1988
20. Lundov MD et al: Contamination versus preservation of cosmetics: A review on legislation, usage, infections, and contact allergy. *Contact Dermatitis* **60**:70, 2009
21. Fernández Vozmediano JM, Armario Hita JC: Allergic contact dermatitis in children. *J Eur Acad Dermatol Venereol* **19**:42, 2005
22. Zug KA et al: Contact allergy in children referred for patch testing: North American contact dermatitis group data, 2001–2004. *Arch Dermatol* **144**:1329, 2008
23. Schafer T et al: Epidemiology of contact allergy in adults. *Allergy* **56**:1192, 2001
24. Magnusson B, Moller H: Contact allergy without skin disease. *Acta Derm Venereol Suppl (Stockh)* **59**:113, 1979
25. Thyssen JP et al: Temporal trends of preservative allergy in Denmark (1985–2008). *Contact Dermatitis* **62**:102, 2010
26. Jordan WP Jr, King SE: Delayed hypersensitivity in females. The development of allergic contact dermatitis in females during the comparison of two predictive patch tests. *Contact Dermat* **3**:19, 1977

27. Dotterud LK, Smith-Sivertsen T: Allergic contact sensitization in the general adult population: A population-based study from northern Norway. *Contact Dermatitis* **56**:10, 2007
28. Dotterud LK, Falk ES: Metal allergy in north Norwegian schoolchildren and its relationship with ear piercing and atopy. *Contact Dermatitis* **31**:308, 1994
29. Larsson-Stymne B, Widstrom L: Ear piercing—A cause of nickel allergy in schoolgirls? *Contact Dermatitis* **13**:289, 1985
30. Mattila L et al: Prevalence of nickel allergy among Finnish university students in 1995. *Contact Dermatitis* **44**:218, 2001
31. Jensen CS et al: Decrease in nickel sensitization in a Danish schoolgirl population with ears pierced after implementation of a nickel exposure regulation. *Br J Dermatol* **146**:636, 2002
32. Robinson MK: Population differences in skin structure and physiology and the susceptibility to irritant and allergic contact dermatitis: Implications for skin safety testing and risk assessment. *Contact Dermatitis* **41**:65, 1999
33. Khumalo NP, Jessop S, Ehrlich R: Prevalence of cutaneous adverse effects of hairdressing: A systematic review. *Arch Dermatol* **142**:377, 2006
34. Cronin E: *Contact Dermatitis*. Edinburgh, UK, Churchill Livingstone, 1980, p. 5
35. De Groot A: Allergic contact dermatitis. In: *Eczema*, edited by R Marks. London, UK, Martin Dunitz, 1992, p. 104
36. Mozzanica N: Pathogenetic aspects of allergic and irritant contact dermatitis. *Clin Dermatol* **10**:115, 2002
37. Riemann H, Schwarz T, Grabbe S: Pathomechanisms of the elicitation phase of allergic contact dermatitis. *J Dtsch Dermatol Ges* **1**:613, 2003
38. Janeway CA et al: *Immunobiology: The Immune System in Health and Disease*, 6th edition. New York, NY, Garland Science Publishing, 2005, p. 544
39. Ishizaki K et al: Th1 and type 1 cytotoxic T cells dominate responses in T-bet overexpression transgenic mice that develop contact dermatitis. *J Immunol* **178**:605, 2007
40. Saint-Mezard P et al: Allergic contact dermatitis. *Eur J Dermatol* **14**:284, 2004
41. Veien NK: Ingested food in systemic allergic contact dermatitis. *Clin Dermatol* **15**:547, 1997
42. Elsaie ML, Olasz E, Jacob SE: Cytokines and Langerhans cells in allergic contact dermatitis. *G Ital Dermatol Venereol* **143**:195, 2008
43. Saint-Mezard P et al: The role of CD4+ and CD8+ T cells in contact hypersensitivity and allergic contact dermatitis. *Eur J Dermatol* **14**:131, 2004
44. Gober MD, Gaspari AA: Allergic contact dermatitis. *Curr Dir Autoimmun* **10**:1, 2008
45. Vocanson M et al: Effector and regulatory mechanisms in allergic contact dermatitis. *Allergy* **64**:1699, 2009
46. Marks JG, DeLeo VA: *Contact and Occupational Dermatology*. St Louis, MO, Mosby-Year Book Inc., 1992
47. Rietschel RL, Fowler JF Jr: *Fisher's Contact Dermatitis*, 6th edition. Hamilton, Ontario, BcDecker Inc., 2008
48. Lachapelle JM, Maibach HI: *Patch Testing and Prick Testing: A Practical Guide*. Berlin, Germany, Springer-Verlag, 2003
49. Schnuch A, Szliska C, Uter W, IVDK: Facial allergic contact dermatitis. Data from the IVDK and review of literature. *Hautarzt* **60**:13, 2009
50. Furman D, Fisher AA, Leider M: Allergic eczematous contact-type dermatitis caused by rubber sponges used for the application of cosmetics. *J Invest Dermatol* **15**:223, 1950
51. Duarte I, Fusaro M, Lazzarini R: Etiology of para-phenylenediamine sensitization: Hair dye and other products. *Dermatitis* **19**:342, 2008
52. Chan YC, Ket S, Goh CL: Positive patch-test reactions to para-phenylenediamine, their clinical relevance and the concept of clinical tolerance. *Contact Dermatitis* **45**:217, 2001
53. Katugampola RP, Statham BN, English JS: A multi-center review of hairdressing allergens tested in UK. *Contact Dermatitis* **53**:130, 2005
54. Patel S et al: Patch test frequency to p-phenylenediamine: Follow up over the last 6 years. *Contact Dermatitis* **56**:35, 2007
55. Parsons LM: Glyceryl monoethoxyglycolate. *Dermatitis* **19**:E51, 2008
56. Castanedo-Tardan MP, Zug KA: Patterns of cosmetic contact allergy. *Dermatol Clin* **27**:265, 2009
57. Fowler J Jr et al: Gold allergy in North America. *Am J Contact Dermat* **12**:3, 2001
58. Rietschel RL et al: Common contact allergens associated with eyelid dermatitis: Data from the North American contact dermatitis group 2003–2004 study period. *Dermatitis* **18**:78, 2007
59. Nedorost S, Wagman A: Positive patch-test reactions to gold: Patients' perception of relevance and the role of titanium dioxide in cosmetics. *Dermatitis* **16**:67, 2005

60. Guin JD: Eyelid dermatitis: Experience in 203 cases. *J Am Acad Dermatol* 47:755, 2002
61. Lim SW, Goh CL: Epidemiology of eczematous cheilitis at a tertiary dermatological referral center in Singapore. *Contact Dermatitis* 43:322, 2000
62. Zoli V et al: Allergic contact cheilitis. *Contact Dermatitis* 54:296, 2006
63. Ophaswongse S, Maibach HI: Allergic contact cheilitis. *Contact Dermatitis* 33:365, 1995
64. Francalanci S et al: Multicenter study of allergic contact cheilitis from toothpastes. *Contact Dermatitis* 43:216, 2000
65. Fisher AA: Contact stomatitis, glossitis, and cheilitis. *Otolaryngol Clin North Am* 7:827, 1974
66. Freeman S, Stephens R: Cheilitis: Analysis of 75 cases referred to a contact dermatitis clinic. *Am J Contact Dermatol* 10:198, 1999
67. Strauss RM, Orton DI: Allergic contact cheilitis in the United Kingdom: A retrospective study. *Am J Contact Dermatol* 14:75, 2003
68. Schram SE, Glesne LA, Warshaw EM: Allergic contact cheilitis from benzophenone-3 in lip balm and fragrance/fragrances. *Dermatitis* 18:221, 2007
69. Aguirre A et al: Allergic contact cheilitis from a lipstick containing oxybenzone. *Contact Dermatitis* 27:267, 1992
70. Serra-Baldrich E et al: Lipstick allergic contact dermatitis from gallates. *Contact Dermatitis* 32:359, 1995
71. Lazzarini R et al: Frequency and main sites of allergic contact dermatitis caused by nail varnish. *Dermatitis* 19:319, 2008
72. Jacob SE, Castanedo-Tardan MP: A diagnostic pearl in allergic contact dermatitis to fragrances: The atomizer sign. *Cutis* 82:317, 2008
73. de Groot AC et al: Formaldehyde-releasers: Relationship to formaldehyde contact allergy. Part 2. Formaldehyde-releasers in clothes: Durable press chemical finishes. *Contact Dermatitis* [Epub ahead of print], 2010
74. Cohen D et al: Clothes make the (wo)man: Diagnosis and management of clothing dermatitis. *Am J Contact Dermatol* 12:229, 2001
75. Vestey JP et al: An analysis of 501 consecutive contact clinic consultations. *Contact Dermatitis* 15:119, 1986
76. Zug KA et al: The value of patch testing patients with a scattered generalized distribution of dermatitis: Retrospective cross-sectional analyses of North American Contact Dermatitis Group data, 2001 to 2004. *J Am Acad Dermatol* 59:426, 2008
77. Lachapelle JM: Dermato-allergologie de contact. *Nouv Dermatol (Strasbourg)* 20:450, 2001
78. Fisher AA: *Contact Dermatitis*, 2nd edition. Philadelphia, PA, Lea and Febiger, 1973
79. Andersen KE, Hjorth N, Menne T: The baboon syndrome: Systemically induced allergic contact dermatitis. *Contact Dermatitis* 10:97, 1984
80. Veien NK et al: Oral challenge with metal salts (II): Various types of eczema. *Contact Dermatitis* 9:407, 1983
81. Salam TN, Fowler JF Jr: Balsam-related systemic contact dermatitis. *J Am Acad Dermatol* 45:377, 2001
82. Walker SL, Ferguson JE: Systemic allergic contact dermatitis due to ethylenediamine following administration of oral aminophylline. *Br J Dermatol* 150:594, 2004
83. Cusano F et al: Clinicopathologic features of systemic contact dermatitis from ethylenediamine in cetirizine and levocetirizine. *Dermatology* 213:353, 2006
84. Lerbaek A, Menné T, Knudsen B: Cross-reactivity between thiurams. *Contact Dermatitis* 54:165, 2006
85. Kitamura K et al: Cross-reactivity between sensitivity to thimerosal and photosensitivity to piroxicam in guinea pigs. *Contact Dermatitis* 25:30, 1991
86. Kornik R, Zug KA: Nickel. *Dermatitis* 19:3, 2008
87. Thyssen JP, Johansen JD, Menné T: Contact allergy epidemics and their controls. *Contact Dermatitis* 56:185, 2007
88. Meding B: Epidemiology of nickel allergy. *J Environ Monit* 5:188, 2003
89. Hostynek JJ: Sensitization to nickel: Etiology, epidemiology, immune reactions, prevention, and therapy. *Rev Environ Health* 21:253, 2006
90. Kalimo K, Mattila L, Kautiainen H: Nickel allergy and orthodontic treatment. *J Eur Acad Dermatol Venereol* 18:543, 2004
91. Kerosuo H et al: Nickel allergy in adolescents in relation to orthodontic treatment and piercing of ears. *Am J Orthod Dentofacial Orthop* 109:148, 1996
92. Wöhrl S et al: Mobile telephone as new source for nickel dermatitis. *Contact Dermatitis* 56:113, 2007
93. Schram SE, Warshaw EM, Laumann A: Nickel hypersensitivity: A clinical review and call to action. *Int J Dermatol* 49:115, 2010

94. Thyssen JP et al: Prevalence of nickel and cobalt allergy among female patients with dermatitis before and after Danish government regulation: A 23-year retrospective study. *J Am Acad Dermatol* 61:799, 2009
95. Larsen WG: How to test for fragrance allergy. *Cutis* 65:39, 2000
96. Schnuch A et al: Contact allergy to farnesol in 2021 consecutively patch tested patients. Results of the IVDK. *Contact Dermatitis* 50:117, 2004
97. de Groot AC, Frosch PJ: Adverse reactions to fragrances: A clinical review. *Contact Dermatitis* 36:57, 1997
98. Tomar J et al: Contact allergies to cosmetics: Testing with 52 cosmetic ingredients and personal products. *J Dermatol* 32:951, 2005
99. Api AM: Only Peru Balsam extracts or distillates are used in perfumery. *Contact Dermatitis* 54:179, 2006
100. Larsen WG: Perfume dermatitis. *J Am Acad Dermatol* 12:1, 1985
101. Prystowsky SD et al: Allergic hypersensitivity to neomycin. Relationship between patch test reactions and "use" tests. *Arch Dermatol* 115:713, 1979
102. Uter W et al: The European baseline series in 10 European countries, 2005/2006—results of the European surveillance system on contact allergies (ESSCA). *Contact Dermatitis* 61:31, 2009
103. Zug KA et al: Patch-test results of the North American contact dermatitis group, 2005–2006. *Dermatitis* 20:149, 2009
104. Sasseville D: Neomycin. *Dermatitis* 21:3, 2010
105. Andersen KE, White IR, Goossens A: Allergens from the standard series. In: *Contact Dermatitis*, edited by PJ Frosch, T Menné, JP Lepoittevin. Berlin, Germany, Springer, 2006, p. 453
106. Phillips DK: Neomycin sulfate. In: *Practical Contact Dermatitis*, edited by JD Guin. New York, NY, McGraw-Hill Inc., 1995, p. 167
107. Biebl KA, Warshaw EM: Allergic contact dermatitis to cosmetics. *Dermatol Clin* 24:215, 2006
108. Scheman A et al: Contact allergy: Alternatives for the 2007 North American contact dermatitis group (NACDG) standard screening tray. *Dis Mon* 54:7, 2008
109. Sasseville D: Hypersensitivity to preservatives. *Dermatol Ther* 17:251, 2004
110. Eiermann HJ et al: Prospective study of cosmetic reactions: 1977–1980. *J Am Acad Dermatol* 6:909, 1982
111. Adams RM, Maibach HI: A five-year study of cosmetic reactions. *J Am Acad Dermatol* 13:1062, 1985
112. De Groot AC: Contact allergy to cosmetics: Causative ingredients. *Contact Dermatitis* 17:26, 1987
113. Brant WT: *The Metallic Alloys: A Practical Guide for the Manufacture of All Kinds of Alloys, Amalgams, and Solders, Used by Metal-workers: Together with Their Chemical and Physical Properties and Their Application in the Arts and the Industries*. London, UK, Henry Cary Baird & Co., 1896
114. Marks JG Jr, Elsner P, DeLeo VA: *Standard Allergens and Contact Occupational Dermatology*, 3rd edition. Philadelphia, PA, Mosby, 2002, p. 65
115. Katz BE, Fisher AA: Bacitracin: A unique topical antibiotic sensitizer. *J Am Acad Dermatol* 17:1016, 1987
116. Sood A, Taylor JS: Bacitracin: Allergen of the Year. *Dermatitis* 14:3, 2003
117. Van Ginkel C, Rundervoort G: Increasing incidence of contact allergy to the new preservative 1,2-dibromo-2,4-dicyanobutane (methyl-dibromoglutaronitrile). *Br J Dermatol* 132:918, 1995
118. Johansen JD et al: Decreasing trends in methyl-dibromo glutaronitrile contact allergy – following regulatory intervention. *Contact Dermatitis* 59:48, 2008
119. Zapolanski T, Jacob SE: para-Phenylenediamine. *Dermatitis* 19:E20, 2008
120. Leysat SD et al: Two cases of cross-sensitivity in subjects allergic to paraphenylenediamine following ingestion of polaronil. *Dermatology* 206:379, 2003
121. Arroyo MP: Black henna tattoo reaction in a person with sulfonamide and benzocaine allergy. *J Am Acad Dermatol* 48:301, 2003
122. Neri I et al: Childhood allergic contact dermatitis from henna tattoo. *Pediatr Dermatol* 19:503, 2002
123. Chung WH et al: Clinicopathologic features of skin reactions to temporary tattoos and analysis of possible causes. *Arch Dermatol* 138:88, 2002
124. Wahlberg JE: Patch testing. In: *Textbook of Contact Dermatitis*, 3rd edition, edited by RJG Rycroft, T Menne, PJ Frosch, JP Lepoittevin. Berlin, Germany, Springer, 2001, p. 458
125. Allergen Patch Test - T.R.U.E. TEST [Product Information] Mekos Laboratories, <http://www.truestest.com> Hillerød, Denmark, 2007, accessed Mar 10, 2010
126. Geier J et al: Patch test reactions at D4, D5, D6. *Contact Dermatitis* 40:119, 1999

127. Davis MD et al: Delayed patch test reading after 5 days: The Mayo Clinic experience. *J Am Acad Dermatol* 59:225, 2008
128. Wilkinson DS et al: Terminology of contact dermatitis. *Acta Dermato-Venereologica* 50:287, 1970
129. Foussereau J, Benezra C, Maibach HI: *Occupational Contact Dermatitis: Clinical and Chemical Aspects*. Copenhagen, Denmark, Munksgaard, 1982, p. 26
130. Suneja T, Belsito DV: Thimerosal in the detection of clinically relevant allergic contact reactions. *J Am Acad Dermatol* 45:23, 2001
131. Traidl-Hoffmann C, Ring J: Is there an in vitro test for type IV allergy discriminating between sensitization and allergic disease? *Clin Exp Allergy* 38:1412, 2008
132. Kern PS et al: Local lymph node data for the evaluation of skin sensitization alternatives: A second compilation. *Dermatitis* 21:8, 2010
133. Department for Environment, Food and Rural Affairs: *UK Government Position on Animal Testing in REACH*, www.defra.gov.uk/environment/.../reach-gov-position-animal-test090924.pdf UK, 2009, accessed May 21, 2010
134. Vandebriel RJ, Van Loveren H: Non-animal sensitization testing: State-of-the-art. *Crit Rev Toxicol* 40:389, 2010
135. Freedman S: Diagnosis and differential diagnosis. In: *Adams: Occupational Skin Disease*, 3rd edition, edited by RM Adams. Philadelphia, PA, W.B. Saunders Company, 1999, p. 189
136. Rietschel RL: Clues to an accurate diagnosis of contact dermatitis. *Dermatol Ther* 17:224, 2004
137. Wildemore JK et al: Evaluation of the histologic characteristics of patch test confirmed allergic contact dermatitis. *J Am Acad Dermatol* 49:243, 2003
138. Weiss G, Shemer A, Trau H: The Koebner phenomenon: Review of the literature. *JEADV* 16:241, 2002
139. Jensen CD, Paulsen E, Andersen KE: Retrospective evaluation of the consequence of alleged patch test sensitization. *Contact Dermatitis* 55:30, 2006
140. Bickers DR et al: The burden of skin diseases: 2004 a joint project of the American Academy of Dermatology association and the society for Investigative dermatology. *J Am Acad Dermatol* 55:490, 2006
141. Stern RS: Dermatologists and office base care of dermatologic disease in the 21st century. *J Investig Dermatol Symp* 9:126, 2004
142. Rietschel RL: Is patch testing cost effective? *J Am Acad Dermatol* 21:885, 1989
143. Skoet R, Zacharie R, Agner T: Contact dermatitis and quality of life: A structured review of the literature. *Br J Dermatol* 149:79, 2003
144. Holness DL: Results of a quality of life questionnaire in a patch test clinic population. *Contact Dermatitis* 44:80, 2001
145. Kadyk DL, Hall S, Belsito DV: Quality of life in patients with allergic contact dermatitis: An exploratory analysis by gender, ethnicity, age and occupation. *Dermatitis* 15:117, 2004
146. Woo PN, Hay IC, Ormerod AD: An audit on the value of patch testing and its effect on quality of life. *Contact Dermatitis* 48:244, 2003
147. Zug KA, Aaron DM, MacKenzie T: Baseline quality of life as measured by skindex-16+5 in patients presenting to a referral center for patch testing. *Dermatitis* 20(1):21, 2009
148. Veien NK, Hattel T, Lauberg G: Hand eczema: Causes, course, and prognosis II. *Contact Dermatitis* 58:335, 2008
149. Adiseh A, Meyer JD, Cherry NM: Prognosis and work absence due to occupational contact dermatitis. *Contact Dermatitis* 46:273, 2002
150. Holness DL, Nethercott JR: Is a worker's understanding of their diagnosis an important determinant of outcome in occupational contact dermatitis? *Contact Dermatitis* 25:296, 1991
151. Kalimo K et al: Eczema school to improve compliance in an occupational dermatologic clinic. *Contact Dermatitis* 41:315, 1999
152. Jacob SE, Castanedo-Tardan MP: Pharmacotherapy for allergic contact dermatitis. *Expert Opin Pharmacother* 8:2757, 2007
153. Jackson EM: AAD drafts position statement to label fragrance allergens in cosmetics. *Cosmet Dermatol* 12:47, 1999
154. Funk JO, Maibach HI: Horizons in pharmacologic intervention in allergic contact dermatitis. *J Am Acad Dermatol* 31:999, 1994
155. Cohen DE, Heidary N: Treatment of irritant and allergic contact dermatitis. *Dermatol Ther* 17:334, 2004
156. Tuckermann JP et al: Macrophages and neutrophils are the targets for immune suppression by glucocorticoids in contact allergy. *J Clin Invest* 117:1381, 2007
157. Marks R: Adverse side effects from the use of topical corticosteroids. In: *Topical Corticosteroids*, edited by HI Maibach, C Surger. Basel, Switzerland, Karger, 1992, p. 170

158. Davis MD, El-Azhary RA, Farmer SA: Results of patch testing to a corticosteroid series: A retrospective review of 1188 patients during 6 years at Mayo Clinic. *J Am Acad Dermatol* **56**:921, 2007
159. Mimesh S, Pratt M: Allergic contact dermatitis from corticosteroids: Reproducibility of patch testing and correlation with intradermal testing. *Dermatitis* **17**:137, 2006
160. Jacob SE, Steele T: Corticosteroid Classes: A quick reference guide including patch test substances and cross reactivity. *J Am Acad Dermatol* **54**:723, 2006
161. Belsito D et al: A prospective randomized clinical trial of 0.1% tacrolimus ointment in a model of chronic allergic contact dermatitis. *J Am Acad Dermatol* **55**:40, 2006
162. Bhardwaj S et al: A double-blind, randomized, placebo-controlled pilot study comparing topical immunomodulating agents and corticosteroids for treatment of experimentally induced nickel contact dermatitis. *Dermatitis* **18**:26, 2007
163. Dannaker C, Maibach HI: Poison ivy and poison oak dermatitis. In: *Plants and the Skin*, edited by CR Lovell. Cambridge, MA, Blackwell Scientific Publications, Inc., 1993, p. 105
164. Rosen K, Mobacken H, Swanbeck G: Chronic eczematous dermatitis of the hands. A comparison of PUVA and UVB treatment. *Acta Derm Venereol* **67**:48, 1987
165. Simons JR, Bohnen IJ, Van Der Valk PG: A left-right comparison of UVB phototherapy and topical photochemotherapy in bilateral chronic hand dermatitis after 6 weeks' treatment. *Clin Exp Derm* **22**:7, 1997
166. Sharma VK, Chakrabarti A, Mahajan V: Azathioprine in the treatment of parthenium dermatitis. *Int J Dermatol* **37**:299, 1998
167. Verma KK, Bansal A, Sethuraman G: Parthenium dermatitis treated with azathioprine weekly pulse doses. *Indian J Dermatol Venereol Leprol* **72**:24, 2006
168. Quemeneur L et al: Immunosuppressive antimetabolites inhibit induction of contact hypersensitivity while lymphoablative drugs also prevent its expression. *Eur J Dermatol* **13**:540, 2003
169. Mehling A et al: Mycophenolate mofetil impairs the maturation and function of murine dendritic cells. *J Immunol* **65**:2374, 2000
170. Grandslun H, Erkkö P, Reitamo S: Long-term follow up of eczema patients treated with cyclosporine. *Acta Derm Venereol* **78**:40, 1998
171. Grandslun H et al: Comparison of cyclosporine and topical bethamethasone-17,21-dipropionate in the treatment of severe chronic hand eczema. *Acta Derm Venereol* **76**: 371, 1996