

STEVE KAGEN, M.D.

HIGHLIGHTS

- CNN Allergy Consultant (1995-2002)
- Winner Environmental Protection Agency's 2005 Children's Environmental Health Recognition Award for creating The Allergy Family® Guide 5th grade educational program
- Voted by Wisconsin physicians as one of "Best Doctors in America"
- Chairman of Allergen Standardization Committee of the American Academy of Allergy, Asthma, and Immunology
- Director Certified Diagnostic Allergy - Immunology Lab (AllerLab®)
- Elected U.S. House of Representatives in 2006 and 2008 – WI District 8.

ALLERGY RESEARCH

- U.S. Patent for the discovery of worldwide Dust Mite Allergen
- Standardized vaccine treatments for Allergen Immunotherapy
- Developed new Venom Immunotherapy technique for Bee Sting Allergy
- Discovered and sequenced Insect Allergens
- First in the World to Clone and Express an allergenic protein in bacteria
- Only clinic in America with polymerized ragweed and grass vaccines proven to be the safest allergy injection treatments
- Discovered allergens in frog, buckwheat, eggplant, almond, and spices
- Discovered Cross-Reactive Allergens between foods and rubber latex
- Proved Helicobacter pylori may cause Hives
- Discovered a possible cause of Crohn's Disease (Copepods)
- Demonstrated Mite vaccines do not contain Prion proteins
- Daily Pollen and Mold Spore Monitoring of NE Wisconsin (1992 – 2013)

CURRICULUM VITAE

U.S. CITIZEN BIRTH PLACE - Neenah, WI

EDUCATION

Undergraduate University of Wisconsin
Madison, WI
B.S. Honors Molecular Biology 1972

Medical School University of Wisconsin School of Medicine
Madison, WI 1972 -1976

Internship & Residency Northwestern University School of Medicine
Chicago, IL
Internal Medicine 1976 -1979

Fellowship Medical College of Wisconsin
Milwaukee, WI
Allergy – Immunology 1979 -1981

BOARD CERTIFICATION

American Board of Internal Medicine	September 1979
American Board of Allergy & Immunology	October 1981
Diagnostic Laboratory Immunology	October 1988

UNIVERSITY AFFILIATIONS

Assistant Clinical Professor
Division of Allergy & Clinical Immunology
Department of Medicine
Medical College of Wisconsin
Milwaukee, WI

PROFESSIONAL SOCIETIES

Fellow, American Academy of Allergy, Asthma & Immunology
Fellow, American College of Allergy, Asthma & Immunology
Member, Wisconsin Allergy Society
Member, Wisconsin State Medical Society

ALLERGY-IMMUNOLOGY SPECIALTY COMMITTEES

American Academy of Allergy, Asthma & Immunology:

Insect Allergy Committee Latex Allergy Committee

Aerobiology Committee

Allergen Standardization Committee, Chairman

BOARD OF DIRECTORS

Joint Council of Allergy, Asthma and Immunology 1988-1992

PROJECTS

Author and Project Director “Helpful Hints” on Kleenex Packages

Author, Project Director Allergy Relief Guide

National Pollen Network® (NPN®)

A national pollen and mold information service with distributions to television and print media

Aeroallergen Animations: computer animations of North American pollens and mold spores.

The Allergy Family® Guide

An interactive educational 5th grade school program about allergies and asthma.

The Aeroallergen PhotoLibrary™ of North America

Interactive CD and website-based audio and slide program focused on airborne allergens.

U.S. PATENT: DUST MITE ALLEGEN

U.S. patent awarded to Steven L. Kagen, M.D. and R. Muthiah, PhD for discovery of major allergen in the dust mite, *L. destructor*. U.S. Patent No. 5,236,834, Allergenic Molecules from *Lepidoglyphus Destructor*. Worldwide patent issued in August 1993.

FOX CITIES CHILDREN’S MUSEUM

Creative developer of The Allergy Arcade™ in Appleton, Wisconsin – an interactive educational exhibit designed to teach children and parents about the world of allergy and asthma.

CNN ALLERGY CONSULTANT

Exclusive source of daily allergy information to CNN from 1995 to 2002.

THE WEATHER CHANNEL

Dr. Kagen provided daily national pollen and mold graphics to The Weather Channel, educating the public about the importance of aeroallergens as causes of asthma, sinus headaches, and hay fever.

ALLERNET.COM

Creator and owner of Allernet.com® - a website designed to provide the general public with useful allergy and asthma information along with referral services to Certified allergy specialists throughout the United States at: www.allernet.com

DISTINCTIONS

In 1988, Dr. Kagen became one of the first physicians in Wisconsin to be Board Certified in Diagnostic Laboratory Immunology.

BEST DOCTOR IN AMERICA

Voted by Wisconsin physicians as one of the "Best Doctors in America"

AWARDS

- Winner 1996 Founder's Award Fox Cities Children's Museum
- Winner 2004 Community Outreach Award from the American Academy of Allergy, Asthma and Immunology for The Allergy Family Guide® - a 5th grade allergy and asthma education program.
- Winner Environmental Protection Agency's 2005 Children's Environmental Health Recognition Award for The Allergy Family Guide, for "protecting children from environmental risks, fundamental to making the world a healthier place, now and for future generations."
- Winner 2005 Abstract of Distinction at Federation of Clinical Immunology Societies for
"Superior safety of polymerized allergen vaccines:
Zero systemic reactions during 55,000 injections of polymerized ragweed and grass vaccines in 500 allergy patients.
Clin Immunol 2005; S1:55."

AUTHOR

The Aeroallergen PhotoLibrary of North America.

Steve Kagen, M.D., Walter Lewis, PhD and Estelle Levetin, PhD. 2004

Allergy InsideOut® Steve Kagen, M.D. 2004

SCIENTIFIC PUBLICATIONS

Interleukins

1. Soluble mediators of cellular immunity: partial characterization of Blastogenic Factor. Honors Thesis, University of Wisconsin, 1972

Marijuana Asthma

2. Kagen SL, Fink JN, Sohnle P and Kurup VP. Marijuana smoking as a source of Aspergillus exposure. In Proceedings of the 37th Annual Meeting of the American Academy of Allergy, March 1981, San Francisco, CA, p. 63.
3. Kagen SL, Sohnle P, Kurup VP and Fink JN. Aspergillus: An inhalable contaminant of marijuana. New England Journal of Medicine. 1981;304:483-84.

Fabric Softener

4. Kagen SL, Fink JN, Schlueter DP, et al. Anti-Induced Asthma static agent as a cause of small airway disease. In Proceedings of the 37th Annual Meeting of the American Academy of Allergy, March, 1981, San Francisco, CA, P. 30.

Hypersensitivity

5. Kagen SL, Fink JN, Schlueter DP, Kurup VP, Pneumonitis and Fruchtman R. Streptomyces albus: A new cause of hypersensitivity pneumonitis. J Allergy Clin Immunol. 1981;68:295-99.

Allergic Aspergillosis

6. Kagen SL, Cohen SH and Kurup VP. Ketoconazole therapy of allergic bronchopulmonary aspergillosis. Presented at the International Congress of Allergology and Clinical Immunology. London, England, 1982.

Diagnostic Allergy

7. Cohen SH and Kagen SL. Cimetidine and allergy skin testing. Annals of Internal Med. 1981;96:787.

Fabric Softener Lung

8. Kagen SL, Schlueter DP, Cohen SH. Induction of small airways disease by a fabric softener.

Marijuana Asthma

9. Kagen SL, Kurup VP, Sohnle PG, and Fink JN. Marijuana smoking and fungal sensitization, *J Allergy Clin Immunol.* 1983;71:389-93.

Smoking & Asthma

10. Kurup VP, Resnick A, Kagen SL, Cohen SH and Fink JN. Allergic fungi and actinomycetes in smoking materials and their health implications. *Mycopathologia.* 1983;82:61-4.

AIDS

11. Nunnink JC, Wiedmeyer J, Hank J, Kagen SL and Sondel PS. Characterization of a possible suppressive factor in AIDS. *UCLA AIDS Symposium, Salt Lake City, Utah, 1983.*

Insect Allergy

12. Kagen SL, Yunginger J, and Johnson R. Lake fly allergy: Incidence of chironomid sensitivity in an atopic population. In *Proceedings of the 40th Annual Meeting of the American Academy of Allergy & Immunology, March, 1984, Chicago, IL.*
13. Kagen SL. Inhalant insect allergy. In *Monograph on Insect Allergy, 1986; pp 93-102.* (Levine MI and Lockey RF Eds) D. Lambert Associates, Pittsburgh, PA.

Occupational Insect Allergy & Asthma

14. Kagen SL, Yunginger J and Wynn SR. Occupational respiratory allergy due to caddisfly aeroallergens. *J Allergy Clin Immunol.* 1986;77:169

Insect Allergen Immunotherapy

15. Kagen SL, Yunginger J, Wynn SR and Swanson MC. Midge-specific IgE and IgG responses during lake fly desensitization: An open trial. *J Allergy Clin Immunol.* 1986;77:140.
16. Kagen SL. Inhalant allergy to arthropods: Insects, arachnids, and crustaceans. *Clin Rev Allergy.* 1990; 8:99-125.

Caddisfly Allergens

17. Kagen SL, Koshte V, and Aalberse R. Cross-reactivity of caddisfly-specific IgE antibodies with arthropoda and mollusca. *Allergy Proceedings.* 1988;9:289.

Cross-Reactivity

18. Koshte VL, Kagen SL and Aalberse R. Cross-reactivity of IgE antibodies to caddisfly with arthropoda and mollusca. *J Allergy Clin Immunol.* 84:174-83, 1989.

Cloning of Insect Allergens

19. Kagen SL and Siebert P. Cloning of insect aeroallergens: midge hemoglobins. Allergy Proceedings. 1988;9:281.

Rapid Desensitization to Venom

20. Bernstein D, Mittman RJ, Kagen SL, Korbe BS and Bernstein IL. Safety and efficacy of rapid venom immunotherapy (RVIT) for treatment of Hymenoptera-sensitive patients. J Allergy Clin Immunol. 1989;83:227.

Fire Ant Allergy

21. Kagen SL and Muthiah R. Fire ant anaphylaxis: Allergen characterization and partial amino acid sequence of Sol i II and Sol i III. Ann Allergy. 1990;64:75.

Guidelines for Diagnosis of Occupational Lung Disease

22. Bush R and Kagen SL. Guidelines for the preparation and characterization of high molecular weight allergens used for the diagnosis of occupational lung disease. J Allergy Clin Immunol. 1989;84:814-19.

Rapid Desensitization to Venom

23. Bernstein D, Mittman RJ, Kagen SL, Korbee L, Enrione M and Bernstein IL. Clinical and immunologic studies of rapid venom immunotherapy in Hymenoptera-sensitive patients. J Allergy Clin Immunol. 1989;84:951-59.

Food Allergens: Buckwheat

24. Muthiah R and Kagen SL. Food Allergens: Characterization of major buckwheat carbohydrate dependent allergens. J Allergy Clin Immunol. 1990;85:151.

Insect Allergens: Hemoglobins

25. Kagen SL and Muthiah R. Insect allergens: Characterization and partial sequencing of a caddisfly hemoglobin. J Allergy Clin Immunol. 1990;85:152.

Allergen Vaccine Stability

26. Muthiah R and Kagen SL. Allergens as enzymes: Degradation of cat and ragweed allergens by house dust mite allergen extract. J Allergy Clin Immunol. 1990;85:151.

27. Kagen SL, Isaacson B and Muthiah R. Polymerized ragweed vaccine: Retention of all epitopes. J Allergy Clin Immunol. 1991;87:188.

28. Knoll R, Kagen SL and Muthiah R. Allergens as enzymes: Failure of HSA to protect degradation of grass allergens by mold extracts. J Allergy Clin Immunol. 1991;87:188.

Barn Allergy: Storage Mite Allergens

29. Muthiah R, Miller M and Kagen SL. Barn allergy: Isolation and characterization of the major allergens of storage mites: *L. destructor*. *J Allergy Clin Immunol*. 1991;87:326.

Insect Allergy

30. Baur X, Liebers V, Mazur G, Becker WM, Kagen SL, Kawai K. Immunologic cross-reactivity of hemoglobins in the Diptera family Chironomidae. *Allergy* 1991;46:445051.

Fire Ant Allergy

31. Knoll R, Kagen S and Muthiah R. Non-specific reactivity of fire ant whole body extract in the diagnosis of fire ant allergy. *J Allergy Clin Immunol*. 1992;89:51.

Immunization Screen

32. Muthiah R, Kagen S, Hildeman D and Knoll R. New Immunization screen reveals under-immunization of patients attending allergy & asthma clinics. *J Allergy Clin Immunol*. 1992;89:490.

Protective Levels to Fire Ant Venom

33. Kagen S, Muthiah R, Hildeman D, Knoll R and Friedman S. Fire ant anaphylaxis: Initial determination of fire ant-specific IgG antitoxin levels. *J Allergy Clin Immunol*. 1992;89:716.

Allergen Immunotherapy

34. Kagen SL. Other indications for administration of allergy immunotherapy: Insects, fire ants and therapeutic agents. *Immunology and Allergy Clinics of North America*. 1992;12:177-97.

Rapid Venom Immunotherapy

35. Bernstein JA, Kagen SL, Bernstein DI and Bernstein IL. An extended experience indicating that rapid venom immunotherapy (RVIT) is safe for treatment of Hymenoptera (Hym) anaphylaxis. *J Allergy Clin Immunol*. 1993;91:563.

Polymerized Midge Allergen Immunotherapy

36. Knoll R, Kagen SL, Muthiah R and Hildeman. Polymerized midge allergen immunotherapy (PMAIT): clinical reduction in early and late phase reactivity and prevention of rhinitis and asthma morbidity. *J Allergy Clin Immunol*. 1994;93:251.

Polymerized Grass Allergen Immunotherapy

37. Hildeman D, Muthiah R and Kagen SL. Successful polymerized grass allergen immunotherapy (PGAIT): failure of in vitro measurements to correlate with clinical outcomes. *J Allergy Clin Immunol*. 1994;93:251.

Polymerized Ragweed Allergen Immunotherapy

38. Hempel D, Muthiah R, Hildeman D and Kagen SL. Polymerized ragweed allergen immunotherapy (PRAIT): failure of anti-idiotypic antibody (AIA) to predict clinical outcomes. *J Allergy Clin Immunol.* 1994;93:251.

Helicobacter Pylori

39. Zondlo J, Muthiah R, Knoll R and Kagen SL. Helicobacter pylori (Hp): a new cause of urticaria (U) and exercise-induced anaphylaxis (EIA) -identification of Hp allergens. *J Allergy Clin Immunol.* 1994;93:220.

Allergen Extract Stability

40. Kagen SL, Muthiah R and Knoll R. Allergens as enzymes: a two-year study of aqueous allergen extract stability and the deleterious effect of mixing allergen extracts together. *J Allergy Clin Immunol.* 1994;93:253.

Frog-induced Anaphylaxis

41. Muthiah R, Kagen SL and Hempel D. Frog-induced anaphylaxis (ANA): isolation and characterization of the major frog allergen, which is cross-reactive with cod parvalbumin. *J Allergy Clin Immunol.* 1994;93:209.

Rapid Venom Immunotherapy

42. Bernstein JA, Kagen SL, Bernstein DI and Bernstein LB. Rapid venom immunotherapy is safe for routine use in the treatment of patients with Hymenoptera anaphylaxis. *Annals of Allergy Asthma Immunol.* 1994;73:423-8.

Flaxseed-Induced Anaphylaxis

43. Muthiah R, Louthain L, Knoll R and Kagen S. Flaxseed-induced anaphylaxis: another cross-reactive carbohydrate food allergen. *J Allergy Clinic Immunol.* 1995;95:370.

Helicobacter pylori

44. Kagen S, Zondlo A, Zondlo J and Muthiah R. Helicobacter pylori and allergic disease: characterization of Helicobacter allergens. *J Allergy Clin Immunol.* 1995;95:255.

Insect Allergy

45. Kagen SL and Chapman M. Allergy to inhalants of arthropods: insects and arachnids. In *Monograph on Insect Allergy.* 1995;95:370. (Levine MI and Lockey RF Eds). D. Lambert Associates, Pittsburgh, PA.

Eggplant Anaphylaxis

46. Muthiah R, Zondlo A, Zondlo J and Kagen S. Eggplant anaphylaxis: isolation of the major allergens and demonstration of cross-reactivity with other Solanaceae. *J Allergy Clin Immunol.* 1996;97:334.

Aerobiology

47. Kagen S, Muthiah R, Knoll R, Graphos G and DeStasio B. Aerobiology: Grass pollen forecasting models. J Allergy Clin Immunol. 1996;97:217.

Mannose Binding Protein Deficiency

48. Kagen S, Muthiah R and Slupianek J. Mannose binding protein deficiency is more frequent than IgA deficiency. J Allergy Clin Immunol. 1997;99:S396

Allergy to Acacia in Synthroid

49. Muthiah R, Kagen S, Zondlo A and Zondlo J. Hidden allergens in medications: Allergy to acacia in Synthroid tablets. J Allergy Clin Immunol. 1997;99:S492.

Latex & Food Anaphylaxis

50. Kagen SL and Muthiah R. Latex and Food induced Anaphylaxis: Oregano, Dill, Sage and Carrot Cross-React with Natural Rubber Latex. J Allergy Clin Immunol. 1998;101:S208.

Chinchilla Allergy

51. Muthiah R, Yablon B, Reddy, and Kagen S. Chinchilla Allergy: A new Cause of Animal Hypersensitivity. J Allergy Clin Immunol. 1999;103:93.

Anaphylaxis to PPD

52. Kagen S and Muthiah R. Anaphylaxis to PPD: Tuberculosis Skin Test Antigen Atopy. J Allergy Clin Immunol. 1999;103:149.

Almonds and Latex Allergy

53. Kagen SL and Muthiah R. Latex, Almond and Tobacco: Cross-Reactive Allergens. Annals Allergy, Asthma Immunol. 2000;84:146

Latex and Ginger Cross-React

54. Muthiah R, Peterson A and Kagen SL. Latex and Ginger Allergy. Annals Allergy, Asthma Immunol 2000;84:168.

Ladybug Allergy

55. Kagen SL and Muthiah R. Ladybugs: A New Cause of Allergy. Annals Allergy, Asthma Immunol. 2000;84:146.

Caddisfly Allergens

56. Muthiah R, Ptachinski K, Ludden D, Kagen SL Insect Allergens: Isolation of Caddisfly Allergens. J Allergy Clin Immunol. 2001;107:S14.

Kombu Anaphylaxis

57. Zondlo J, Muthiah R, Kagen S and Kagen M. Kombu Induced Anaphylaxis. *Annals Allergy Asthma Immunol.* 2002;88:118.

Ragweed Pollen

58. Muthiah R and Kagen S. Ragweed Pollen in the Spring Air. *Annals Allergy Asthma Immunol.* 2003;90:115.

Leaf Mites

59. Muthiah R, Arlian L and Kagen S. Leaf Mites: Viable Sources of Outdoor Aeroallergens. *Annals of Allergy.* 2003;90:115.

Ladybug Allergens

60. Muthiah R and Kagen S. Ladybug Allergy: Sequence of a Major Asian Beetle Allergen. *Annals of Allergy Asthma Immunol.* 2003;90:100.

Copepod Allergens

61. Kagen S, Muthiah R and Breteler K. Copepods: A New Worldwide Source of Allergens. *Annals of Allergy Asthma Immunol.* 2003;90:96.

Slim-Fast® Allergy

62. Muthiah R and Kagen S. Anaphylaxis induced by Slim- Fast: The perils of weight lost in two patients. *Annals of Allergy Asthma Immunol.* 2004;92:P48.

Poisonous Snake Venom Allergens

63. Kagen S and Muthiah R. Poisonous Snake Venom Anaphylaxis vaccination: A case report of a non-physician directed experiment. *Annals of Allergy Asthma Immunol.* 2004;92:72.

Midge Allergen Anaphylaxis

64. Gutin F, Kagen S, Muthiah R, Bahrainwala A. Severe protracted anaphylaxis to midge allergen in a 4 YO boy. *Annals of Allergy Asthma Immunol.* 2004;92:P171.

Allergen Extract Stability

65. 65. Kagen S, Muthiah R, Holinbeck J. A new and safer method for preserving allergen stability in human vaccines. *J Allergy Clin Immunol.* 2004;113;S110P.

Prion Proteins in Allergen Vaccines

66. Kagen S, O'Rourke K, Muthiah R, and Arlian LG. Prion proteins in vaccines intended for human use - mites, human serum albumin and mite colony feeds: No evidence of prion presence. *Annals of Allergy Asthma Immunol.* 2005; 94:175.

"Breakfast Square" Anaphylaxis

67. Kagen S and Muthiah R. Anaphylaxis associated with eating a Breakfast Square product.

Partial Sequences of Copepod-Derived Protein Antigens

68. Muthiah R, Kagen S and Burton RS. Copepods: Worldwide sources of allergens - partial sequences of three unique proteins. *J Allergy Clin Immunol* 2005; 115:S91.

Superior Safety of Polymerized Allergen Vaccines

69. Kagen S, Zondlo J, Muthiah R and Kagen M. Superior safety of polymerized allergen vaccines: Zero systemic reactions during 55,000 injections of polymerized ragweed and grass vaccines in 500 allergy patients. 2005. *Clin Immunol* 2005; S1:55.

Diagnostic Allergen Skin Testing

70. Focalin inhibits allergen and histamine skin testing. Kagen M, Nayeri Z and Kagen S. *J Allergy Clin Immunol.* 2013; in press.

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