

If a conflict arises between a Clinical Payment and Coding Policy and any plan document under which a member is entitled to Covered Services, the plan document will govern. If a conflict arises between a CPCP and any provider contract pursuant to which a provider participates in and/or provides Covered Services to eligible member(s) and/or plans, the provider contract will govern. "Plan documents" include, but are not limited to, Certificates of Health Care Benefits, benefit booklets, Summary Plan Descriptions, and other coverage documents. Blue Cross and Blue Shield of TX may use reasonable discretion interpreting and applying this policy to services being delivered in a particular case. Blue Cross and Blue Shield of TX has full and final discretionary authority for their interpretation and application to the extent provided under any applicable plan documents.

Providers are responsible for submission of accurate documentation of services performed. Providers are expected to submit claims for services rendered using valid code combinations from Health Insurance Portability and Accountability Act approved code sets. Claims should be coded appropriately according to industry standard coding guidelines including, but not limited to: Uniform Billing Editor, American Medical Association, Current Procedural Terminology, CPT® Assistant, Healthcare Common Procedure Coding System, ICD-10 CM and PCS, National Drug Codes, Diagnosis Related Group guidelines, Centers for Medicare and Medicaid Services National Correct Coding Initiative Policy Manual, CCI table edits and other CMS guidelines.

Claims are subject to the code edit protocols for services/procedures billed. Claim submissions are subject to claim review including but not limited to, any terms of benefit coverage, provider contract language, medical policies, clinical payment and coding policies as well as coding software logic. Upon request, the provider is urged to submit any additional documentation.

Allergen Testing

Policy Number: CPCPLAB013

Version 1.0

Approval Date: Sept. 13, 2024

Plan Effective Date: Jan. 1, 2025 (Blue Cross and Blue Shield of Texas Only)



Description

The plan has implemented certain lab management reimbursement criteria. Not all requirements apply to each product. Providers are urged to review Plan documents for eligible coverage for services rendered.

Reimbursement Information:

1. Specific IgE in-vitro allergy testing **may be reimbursable** in **any** of the following situations:
 - a) In lieu of skin testing for an INITIAL allergy screen.
 - b) When skin testing is contraindicated (see **Note 1**),
 - c) When further treatment decisions would be impacted by confirmation of sensitivity in individuals for whom direct skin testing results are not consistent with the history of an anaphylactic or other severe reaction to an allergen.
2. When limited to allergens chosen for testing based on an individual's history, physical examination, and environment, specific IgE in-vitro allergy testing (up to 20 allergen specific antibodies per year) **may be reimbursable**.
3. In-vitro testing for total serum IgE **may be reimbursable** in **any** of the following situations:
 - For individuals with moderate to severe asthma,
 - For Individuals with signs or symptoms of allergic bronchopulmonary aspergillosis.
4. To monitor for allergy resolution in children and adolescents with an initial positive food allergen result(s), annual re-testing for the same food allergen(s) **may be reimbursable**.
5. In the absence of a new clinical presentation, routine re-testing for allergies to the same allergens (except where specified above) **is not reimbursable**.
6. The Antigen Leukocyte Antibody test/ALCAT **is not reimbursable**.
7. For individuals with signs or symptoms of allergies, basophil activation flow cytometry testing and in-vitro testing of IgG, IgA, IgM, and/or IgD **are not reimbursable**.
8. In-vitro allergen testing using bead-based epitope assays (e.g., VeriMAP Peanut Dx) **is not reimbursable**.

9. For all situations, in-vitro testing using qualitative specific IgE multi-allergen screen that does not identify a specific allergen **is not reimbursable**.

NOTES:

Note 1: Skin testing is **contraindicated** in the following situations:

- Patients who have certain skin conditions (e.g., dermatographism, urticaria, cutaneous mastocytosis, atopic dermatitis, severe diffuse psoriasis).
- Patient who are taking medications that may interfere with the treatment of anaphylaxis (e.g., Beta-blockers and Angiotensin Converting Enzyme inhibitors) or may impair skin test sensitivity (e.g., tricyclic antidepressants, antihistamines).
- Patients who are at high risk to testing (e.g., poorly controlled asthma, clinical history of severe reaction to minute amounts of allergen, cardiac arrhythmia, unstable angina).
- Patients who have experienced an anaphylactic event within the past one month.
- Uncooperative patients (e.g., small children, individuals with mental or physical impairments).

Procedure Codes

The following is not an all-encompassing code list. The inclusion of a code does not guarantee it is a covered service or eligible for reimbursement.

| Codes |
|--|
| 82784, 82785, 82787, 83516, 86001, 86003, 86005, 86008, 88184, 88185, 0165U, 0178U |

References:

AAAAI. (2012). Some Tests and Procedures Are Over or Misused to Diagnose and Treat Allergies, Asthma and Immunologic Disorders.
<https://www.aaaai.org/Aaaai/media/MediaLibrary/PDF%20Documents/Media/Choosing-WiselyT.pdf>

AAP. (2012). Allergy Testing in Childhood: Using Allergen-Specific IgE Tests.
<https://pdfs.semanticscholar.org/51a4/dfa0a84e4dc8b0893529a6197bd9b94bdbfe.pdf>

Abrams, E. M., Chan, E. S., & Sicherer, S. (2020). Peanut Allergy: New Advances and Ongoing Controversies. *Pediatrics*, 145(5), e20192102.
<https://doi.org/10.1542/peds.2019-2102>

- Adams, P. F., Kirzinger, W. K., & Martinez, M. (2013). Summary health statistics for the U.S. population: National Health Interview Survey, 2012. *Vital Health Stat* 10(259), 1-95. <https://pubmed.ncbi.nlm.nih.gov/25116371/>
- Ansotegui, Melioli, G., Canonica, G. W., Caraballo, L., Villa, E., Ebisawa, M., Passalacqua, G., Savi, E., Ebo, D., Gómez, R. M., Luengo Sánchez, O., Oppenheimer, J. J., Jensen-Jarolim, E., Fischer, D. A., Haahtela, T., Antila, M., Bousquet, J. J., Cardona, V., Chiang, W. C., . . . Zuberbier, T. (2020). IgE allergy diagnostics and other relevant tests in allergy, a World Allergy Organization position paper. *World Allergy Organ J*, 13(2), 100080. <https://doi.org/10.1016/j.waojou.2019.100080>
- Ansotegui, Melioli, G., Canonica, G. W., Gomez, R. M., Jensen-Jarolim, E., Ebisawa, M., Luengo, O., Caraballo, L., Passalacqua, G., Poulsen, L., Savi, E., Zuberbier, T., Villa, E., & Oppenheimer, J. (2020). A WAO - ARIA - GA(2)LEN consensus document on molecular-based allergy diagnosis (PAMD@): Update 2020. *World Allergy Organ J*, 13(2), 100091. <https://doi.org/10.1016/j.waojou.2019.100091>
- Bahri, R., Custovic, A., Korosec, P., Tsoumani, M., Barron, M., Wu, J., Sayers, R., Weimann, A., Ruiz-Garcia, M., Patel, N., Robb, A., Shamji, M. H., Fontanella, S., Silar, M., Mills, E., Simpson, A., Turner, P. J., & Bulfone-Paus, S. (2018). Mast cell activation test in the diagnosis of allergic disease and anaphylaxis. In *J Allergy Clin Immunol* (Vol. 142, pp. 485-496 e416). <https://doi.org/10.1016/j.jaci.2018.01.043>
- Bernstein, I. L., Li, J. T., Bernstein, D. I., Hamilton, R., Spector, S. L., Tan, R., Sicherer, S., Golden, D. B., Khan, D. A., Nicklas, R. A., Portnoy, J. M., Blessing-Moore, J., Cox, L., Lang, D. M., Oppenheimer, J., Randolph, C. C., Schuller, D. E., Tilles, S. A., Wallace, D. V., . . . Weber, R. (2008). Allergy diagnostic testing: an updated practice parameter. *Ann Allergy Asthma Immunol*, 100(3 Suppl 3), S1-148. [https://doi.org/10.1016/s1081-1206\(10\)60305-5](https://doi.org/10.1016/s1081-1206(10)60305-5)
- Beyer, K., & Teuber, S. S. (2005). Food allergy diagnostics: scientific and unproven procedures. *Curr Opin Allergy Clin Immunol*, 5(3), 261-266. <https://doi.org/10.1097/01.all.0000168792.27948.f9>
- BioSpace. (2021). *AllerGenis Allergy Diagnostic Company to Present Significant Milestones at the Biotech Showcase(TM) 2021*. <https://www.biospace.com/article/allergen-is-allergy-diagnostic-company-to-present-significant-milestones-at-the-biotech-showcase-tm-2021/>
- Boyce, J. A., Assa'ad, A., Burks, A. W., Jones, S. M., Sampson, H. A., Wood, R. A., Plaut, M., Cooper, S. F., Fenton, M. J., Arshad, S. H., Bahna, S. L., Beck, L. A., Byrd-Bredbenner, C., Camargo, C. A., Jr., Eichenfield, L., Furuta, G. T., Hanifin, J. M., Jones, C., Kraft, M., . . . Schwaninger, J. M. (2010). Guidelines for the Diagnosis and Management of Food Allergy in the United States: Summary of the NIAID-Sponsored Expert Panel Report. *J Allergy Clin Immunol*, 126(6), 1105-1118. <https://doi.org/10.1016/j.jaci.2010.10.008>
- Caglayan Sozmen, S., Povesi Dascola, C., Gioia, E., Mastroilli, C., Rizzuti, L., & Caffarelli, C. (2015). Diagnostic accuracy of patch test in children with food allergy. *Pediatr Allergy Immunol*, 26(5), 416-422. <https://doi.org/10.1111/pai.12377>
- Cardona, V., Ansotegui, I. J., Ebisawa, M., El-Gamal, Y., Fernandez Rivas, M., Fineman, S., Geller, M., Gonzalez-Estrada, A., Greenberger, P. A., Sanchez Borges, M.,

- Senna, G., Sheikh, A., Tanno, L. K., Thong, B. Y., Turner, P. J., & Worm, M. (2020). World allergy organization anaphylaxis guidance 2020. *World Allergy Organ J*, 13(10), 100472. <https://doi.org/10.1016/j.waojou.2020.100472>
- Carlsson, M., Thorell, L., Sjolander, A., & Larsson-Faria, S. (2015). Variability of total and free IgE levels and IgE receptor expression in allergic subjects in and out of pollen season. *Scand J Immunol*, 81(4), 240-248. <https://doi.org/10.1111/sji.12270>
- Cell Science Systems. (2023). Identify food and chemical sensitivities with the Alcat Test. <https://cellsciencesystems.com/providers/alcat-test/>
- Chang, & Guarderas. (2018). Allergy Testing: Common Questions and Answers. *Am Fam Physician*, 98(1), 34-39. <https://www.aafp.org/pubs/afp/issues/2018/0701/p34.html>
- Chow, A. W., Benninger, M. S., Brook, I., Brozek, J. L., Goldstein, E. J., Hicks, L. A., Pankey, G. A., Seleznick, M., Volturo, G., Wald, E. R., & File, T. M., Jr. (2012). IDSA clinical practice guideline for acute bacterial rhinosinusitis in children and adults. *Clin Infect Dis*, 54(8), e72-e112. <https://doi.org/10.1093/cid/cir1043>
- Davila, I., Valero, A., Entrenas, L. M., Valveny, N., & Herraiez, L. (2015). Relationship between serum total IgE and disease severity in patients with allergic asthma in Spain. *J Investig Allergol Clin Immunol*, 25(2), 120-127. <https://pubmed.ncbi.nlm.nih.gov/25997305/>
- Depince-Berger, A. E., Sidi-Yahya, K., Jeraiby, M., & Lambert, C. (2017). Basophil activation test: Implementation and standardization between systems and between instruments. *Cytometry A*, 91(3), 261-269. <https://doi.org/10.1002/cyto.a.23078>
- Dramburg, S., Hilger, C., Santos, A. F., de Las Vecillas, L., Aalberse, R. C., Acevedo, N., Aglas, L., Altmann, F., Arruda, K. L., Asero, R., Ballmer-Weber, B., Barber, D., Beyer, K., Biedermann, T., Bilo, M. B., Blank, S., Bosshard, P. P., Breiteneder, H., Brough, H. A., . . . Hoffmann-Sommergruber, K. (2023). EAACI Molecular Allergy User's Guide 2.0. *Pediatr Allergy Immunol*, 34 Suppl 28, e13854. <https://doi.org/10.1111/pai.13854>
- Dykewicz, M. S., Wallace, D. V., Amrol, D. J., Baroody, F. M., Bernstein, J. A., Craig, T. J., Dinakar, C., Ellis, A. K., Finegold, I., Golden, D. B. K., Greenhawt, M. J., Hagan, J. B., Horner, C. C., Khan, D. A., Lang, D. M., Larenas-Linnemann, D. E. S., Lieberman, J. A., Meltzer, E. O., Oppenheimer, J. J., . . . Steven, G. C. (2020). Rhinitis 2020: A practice parameter update. *J Allergy Clin Immunol*, 146(4), 721-767. <https://doi.org/10.1016/j.jaci.2020.07.007>
- FDA. (2016). *Xolair Label*. https://www.accessdata.fda.gov/drugsatfda_docs/label/2016/103976s5225lbl.pdf
- Fonacier, L., Bernstein, D. I., Pacheco, K., Holness, D. L., Blessing-Moore, J., Khan, D., Lang, D., Nicklas, R., Oppenheimer, J., Portnoy, J., Randolph, C., Schuller, D., Spector, S., Tilles, S., & Wallace, D. (2015). Contact dermatitis: a practice parameter-update 2015. *J Allergy Clin Immunol Pract*, 3(3 Suppl), S1-39. <https://doi.org/10.1016/j.jaip.2015.02.009>
- Genova. (2023). Allergix® IgG4 Food Antibodies 90 - Serum. <https://www.gdx.net/product/allergix-igg4-food-antibodies-90-food-sensitivity-test-serum>

- Greenhawt, M., Shaker, M., Wang, J., Oppenheimer, J. J., Sicherer, S., Keet, C., Swaggart, K., Rank, M., Portnoy, J. M., Bernstein, J., Chu, D. K., Dinakar, C., Golden, D., Horner, C., Lang, D. M., Lang, E. S., Khan, D. A., Lieberman, J., Stukus, D., & Wallace, D. (2020). Peanut allergy diagnosis: A 2020 practice parameter update, systematic review, and GRADE analysis. *J Allergy Clin Immunol*, *146*(6), 1302-1334. <https://doi.org/10.1016/j.jaci.2020.07.031>
- Greer, F. R., Sicherer, S. H., & Burks, A. W. (2019). The Effects of Early Nutritional Interventions on the Development of Atopic Disease in Infants and Children: The Role of Maternal Dietary Restriction, Breastfeeding, Hydrolyzed Formulas, and Timing of Introduction of Allergenic Complementary Foods. *Pediatrics*, *143*(4). <https://doi.org/10.1542/peds.2019-0281>
- Hamilton, R. (2023). *Allergen sampling in the environment - UpToDate* (P. S. Creticos & A. Feldweg, Eds.) <https://www.uptodate.com/contents/allergen-sampling-in-the-environment>
- Hamilton, R. G., Matsson, P. N., Hovanec-Burns, D. L., Van Cleve, M., Chan, S., Kober, A., Kleine-Tebbe, J. R., Renz, H., Magnusson, C., & Quicho, R. (2015). Analytical Performance Characteristics, Quality Assurance and Clinical Utility of Immunological Assays for Human IgE Antibodies of Defined Allergen Specificities.(CLSI-ILA20-A3). *Journal of Allergy and Clinical Immunology*, *135*(2), AB8. <https://doi.org/10.1016/j.jaci.2014.12.961>
- Hammond, C., & Lieberman, J. A. (2018). Unproven Diagnostic Tests for Food Allergy. *Immunol Allergy Clin North Am*, *38*(1), 153-163. <https://doi.org/10.1016/j.iac.2017.09.011>
- He, Y. T., & Reisacher, W. R. (2019). Sensitivity, specificity, and predictive value of oral mucosal brush biopsy for the diagnosis of peanut allergy. *Int Forum Allergy Rhinol*, *9*(6), 624-628. <https://doi.org/10.1002/alr.22302>
- Hemmings, O., Kwok, M., McKendry, R., & Santos, A. F. (2018). Basophil Activation Test: Old and New Applications in Allergy. *Current Allergy and Asthma Reports*, *18*(12), 77. <https://doi.org/10.1007/s11882-018-0831-5>
- Hoffmann, H. J., Santos, A. F., Mayorga, C., Nopp, A., Eberlein, B., Ferrer, M., Rouzair, P., Ebo, D. G., Sabato, V., Sanz, M. L., Pecaric-Petkovic, T., Patil, S. U., Hausmann, O. V., Shreffler, W. G., Korosec, P., & Knol, E. F. (2015). The clinical utility of basophil activation testing in diagnosis and monitoring of allergic disease. *Allergy*, *70*(11), 1393-1405. <https://doi.org/10.1111/all.12698>
- Jackson, K. D., Howie, L. D., Akinbami, L. J., & CDC. (2013). Trends in Allergic Conditions Among Children: United States, 1997-2011. NCHS Data Brief. No 121. <https://www.cdc.gov/nchs/products/databriefs/db121.htm>
- Kim, S. Y., Kim, J. H., Jang, Y. S., Choi, J. H., Park, S., Hwang, Y. I., Jang, S. H., & Jung, K. S. (2016). The Basophil Activation Test Is Safe and Useful for Confirming Drug-Induced Anaphylaxis. *Allergy Asthma Immunol Res*, *8*(6), 541-544. <https://doi.org/10.4168/air.2016.8.6.541>
- Klemans, R. J., van Os-Medendorp, H., Blankestijn, M., Bruijnzeel-Koomen, C. A., Knol, E. F., & Knulst, A. C. (2015). Diagnostic accuracy of specific IgE to components in diagnosing peanut allergy: a systematic review. *Clin Exp Allergy*, *45*(4), 720-730. <https://doi.org/10.1111/cea.12412>

- Knight, V., Wolf, M. L., Trikha, A., Curran-Everett, D., Hiserote, M., & Harbeck, R. J. (2018). A comparison of specific IgE and skin prick test results to common environmental allergens using the HYTEC™ 288. *Journal of Immunological Methods*, 462, 9-12. <https://doi.org/10.1016/j.jim.2018.07.005>
- Kowal, K., & DuBuske, L. (2021, 05/03/2021). *Overview of in vitro allergy tests*. <https://www.uptodate.com/contents/overview-of-in-vitro-allergy-tests>
- Kowal, K., & DuBuske, L. (2022, 11/30/2022). *Overview of skin testing for allergic disease - UpToDate*. <https://www.uptodate.com/contents/overview-of-skin-testing-for-allergic-disease>
- Lieberman, P., Nicklas, R. A., Randolph, C., Oppenheimer, J., Bernstein, D., Bernstein, J., Ellis, A., Golden, D. B., Greenberger, P., Kemp, S., Khan, D., Ledford, D., Lieberman, J., Metcalfe, D., Nowak-Wegrzyn, A., Sicherer, S., Wallace, D., Blessing-Moore, J., Lang, D., . . . Tilles, S. A. (2015). Anaphylaxis--a practice parameter update 2015. *Ann Allergy Asthma Immunol*, 115(5), 341-384. <https://doi.org/10.1016/j.anai.2015.07.019>
- Mowad, C. M. (2006). Patch testing: pitfalls and performance. *Curr Opin Allergy Clin Immunol*, 6(5), 340-344. <https://doi.org/10.1097/01.all.0000244794.03239.8e>
- NASEM. (2016). *Finding a Path to Safety in Food Allergy: Assessment of the Global Burden, Causes, Prevention, Management, and Public Policy* (Finding a Path to Safety in Food Allergy: Assessment of the Global Burden, Causes, Prevention, Management, and Public Policy, Issue. <http://dx.doi.org/10.17226/23658>
- Nelson, H. S. (2001). Variables in Allergy Skin Testing. *Immunology and Allergy Clinics*, 21(2), 281-290. [https://doi.org/10.1016/S0889-8561\(05\)70206-X](https://doi.org/10.1016/S0889-8561(05)70206-X)
- NICE. (2011, February 23, 2011). *Food allergy in under 19s: assessment and diagnosis*. National Institute for Health and Care Excellence (NICE). <https://www.nice.org.uk/guidance/cg116/chapter/Recommendations#ige-mediated-food-allergy>
- NICE. (2020). ImmunoCAP ISAC 112 for multiplex allergen testing. <https://www.nice.org.uk/guidance/dg24/chapter/1-Recommendations>
- NICE. (2021). Asthma: diagnosis, monitoring and chronic asthma management. <https://www.nice.org.uk/guidance/ng80>
- Oppenheimer, J., & Nelson, H. S. (2006). Skin testing: a survey of allergists. *Ann Allergy Asthma Immunol*, 96(1), 19-23. [https://doi.org/10.1016/s1081-1206\(10\)61034-4](https://doi.org/10.1016/s1081-1206(10)61034-4)
- Pawankar, R., Holgate, S. T., Canonica, G. W., Lockey, R. F., & Blaiss, M. S. (2013). *WAO White Book on Allergy | World Allergy Organization*. <https://www.forskasverige.se/wp-content/uploads/WAO-WhiteBook-2013.pdf>
- Rietschel, R. L. (1997). COMPARISON OF ALLERGIC AND IRRITANT CONTACT DERMATITIS. *Immunology and Allergy Clinics*, 17(3), 359-364. [https://doi.org/10.1016/S0889-8561\(05\)70314-3](https://doi.org/10.1016/S0889-8561(05)70314-3)
- Sampson, H. A., Aceves, S., Bock, S. A., James, J., Jones, S., Lang, D., Nadeau, K., Nowak-Wegrzyn, A., Oppenheimer, J., Perry, T. T., Randolph, C., Sicherer, S. H., Simon, R. A., Vickery, B. P., Wood, R., Bernstein, D., Blessing-Moore, J., Khan, D., Nicklas, R., . . . Wallace, D. (2014). Food allergy: a practice parameter update-

2014. *J Allergy Clin Immunol*, 134(5), 1016-1025.e1043.
<https://doi.org/10.1016/j.jaci.2014.05.013>
- Santos, A. F., Douiri, A., Becares, N., Wu, S. Y., Stephens, A., Radulovic, S., Chan, S. M., Fox, A. T., Du Toit, G., Turcanu, V., & Lack, G. (2014). Basophil activation test discriminates between allergy and tolerance in peanut-sensitized children. *J Allergy Clin Immunol*, 134(3), 645-652. <https://doi.org/10.1016/j.jaci.2014.04.039>
- Santos, A. F., Du Toit, G., Douiri, A., Radulovic, S., Stephens, A., Turcanu, V., & Lack, G. (2015). Distinct parameters of the basophil activation test reflect the severity and threshold of allergic reactions to peanut. *J Allergy Clin Immunol*, 135(1), 179-186. <https://doi.org/10.1016/j.jaci.2014.09.001>
- Santos, A. F., & Lack, G. (2016). Basophil activation test: food challenge in a test tube or specialist research tool? *Clin Transl Allergy*, 6, 10. <https://doi.org/10.1186/s13601-016-0098-7>
- Santos, A. F., & Shreffler, W. G. (2017). Road map for the clinical application of the basophil activation test in food allergy. *Clin Exp Allergy*, 47(9), 1115-1124. <https://doi.org/10.1111/cea.12964>
- Shamji, M. H., Kappen, J. H., Akdis, M., Jensen-Jarolim, E., Knol, E. F., Kleine-Tebbe, J., Bohle, B., Chaker, A. M., Till, S. J., Valenta, R., Poulsen, L. K., Calderon, M. A., Demoly, P., Pfaar, O., Jacobsen, L., Durham, S. R., & Schmidt-Weber, C. B. (2017). Biomarkers for monitoring clinical efficacy of allergen immunotherapy for allergic rhinoconjunctivitis and allergic asthma: an EAACI Position Paper. *Allergy*, 72(8), 1156-1173. <https://doi.org/10.1111/all.13138>
- Sicherer, S. (2017). *New guidelines detail use of 'infant-safe' peanut to prevent allergy*. <https://www.aappublications.org/news/2017/01/05/PeanutAllergy010517>
- Sicherer, S. H., Allen, K., Lack, G., Taylor, S. L., Donovan, S. M., & Oria, M. (2017). Critical Issues in Food Allergy: A National Academies Consensus Report. *Pediatrics*, 140(2). <https://doi.org/10.1542/peds.2017-0194>
- Siroux, V., Lupinek, C., Resch, Y., Curin, M., Just, J., Keil, T., Kiss, R., Lodrup Carlsen, K., Melen, E., Nadif, R., Pin, I., Skrindo, I., Vrtala, S., Wickman, M., Anto, J. M., Valenta, R., & Bousquet, J. (2017). Specific IgE and IgG measured by the MeDALL allergen-chip depend on allergen and route of exposure: The EGEA study. *J Allergy Clin Immunol*, 139(2), 643-654.e646. <https://doi.org/10.1016/j.jaci.2016.05.023>
- Soares-Weiser, K., Takwoingi, Y., Panesar, S. S., Muraro, A., Werfel, T., Hoffmann-Sommergruber, K., Roberts, G., Halcken, S., Poulsen, L., van Ree, R., Vlieg-Boerstra, B. J., & Sheikh, A. (2014). The diagnosis of food allergy: a systematic review and meta-analysis. *Allergy*, 69(1), 76-86. <https://doi.org/10.1111/all.12333>
- Sookrung, N., Jotikaprasardhna, P., Bunnag, C., Chaicumpa, W., & Tungtrongchitr, A. (2019). Concordance of skin prick test and serum-specific IgE to locally produced component-resolved diagnostics for cockroach allergy. *Ann Allergy Asthma Immunol*, 122(1), 93-98. <https://doi.org/10.1016/j.anai.2018.09.463>
- Spiriplex. (2023). Allergies. <https://spiriplex.com/allergies/>
- Stokes, J., & Casale, T. (2022, 11/22/2022). *The relationship between IgE and allergic disease*. <https://www.uptodate.com/contents/the-relationship-between-ige-and-allergic-disease>

- Suárez-Fariñas, M., Suprun, M., Kearney, P., Getts, R., Grishina, G., Hayward, C., Luta, D., Porter, A., Witmer, M., du Toit, G., Lack, G., Chinthrajah, R. S., Galli, S. J., Nadeau, K., & Sampson, H. A. (2021). Accurate and reproducible diagnosis of peanut allergy using epitope mapping. *Allergy*, *n/a*(*n/a*).
<https://doi.org/10.1111/all.14905>
- Tannert, L. K., Mortz, C. G., Skov, P. S., & Bindslev-Jensen, C. (2017). Positive Skin Test or Specific IgE to Penicillin Does Not Reliably Predict Penicillin Allergy. *J Allergy Clin Immunol Pract*, *5*(3), 676-683. <https://doi.org/10.1016/j.jaip.2017.03.014>
- Togias, A., Cooper, S. F., Acebal, M. L., Assa'ad, A., Baker, J. R., Jr., Beck, L. A., Block, J., Byrd-Bredbenner, C., Chan, E. S., Eichenfield, L. F., Fleischer, D. M., Fuchs, G. J., 3rd, Furuta, G. T., Greenhawt, M. J., Gupta, R. S., Habich, M., Jones, S. M., Keaton, K., Muraro, A., . . . Boyce, J. A. (2017). Addendum guidelines for the prevention of peanut allergy in the United States: Report of the National Institute of Allergy and Infectious Diseases-sponsored expert panel. *J Allergy Clin Immunol*, *139*(1), 29-44. <https://doi.org/10.1016/j.jaci.2016.10.010>
- Tschopp, J. M., Sistek, D., Schindler, C., Leuenberger, P., Perruchoud, A. P., Wuthrich, B., Brutsche, M., Zellweger, J. P., Karrer, W., & Brandli, O. (1998). Current allergic asthma and rhinitis: diagnostic efficiency of three commonly used atopic markers (IgE, skin prick tests, and Phadiatop). Results from 8329 randomized adults from the SAPALDIA Study. Swiss Study on Air Pollution and Lung Diseases in Adults. *Allergy*, *53*(6), 608-613. <https://doi.org/10.1111/j.1398-9995.1998.tb03937.x>
- Usmani, N., & Wilkinson, S. M. (2007). Allergic skin disease: investigation of both immediate- and delayed-type hypersensitivity is essential. *Clin Exp Allergy*, *37*(10), 1541-1546. <https://doi.org/10.1111/j.1365-2222.2007.02805.x>
- Werther, R. L., Choo, S., Lee, K. J., Poole, D., Allen, K. J., & Tang, M. L. (2012). Variability in Skin Prick Test Results Performed by Multiple Operators Depends on the Device Used. *World Allergy Organ J*, *5*(12), 200-204.
<https://doi.org/10.1097/WOX.0b013e31827e6513>
- Wise, S. K., Damask, C., Roland, L. T., Ebert, C., Levy, J. M., Lin, S., Luong, A., Rodriguez, K., Sedaghat, A. R., Toskala, E., Villwock, J., Abdullah, B., Akdis, C., Alt, J. A., Ansotegui, I. J., Azar, A., Baroody, F., Benninger, M. S., Bernstein, J., . . . Zhang, L. (2023). International consensus statement on allergy and rhinology: Allergic rhinitis - 2023. *Int Forum Allergy Rhinol*, *13*(4), 293-859.
<https://doi.org/10.1002/alr.23090>
- Wuthrich, B. (2005). Unproven techniques in allergy diagnosis. *J Invest Allergol Clin Immunol*, *15*(2), 86-90. <https://pubmed.ncbi.nlm.nih.gov/16047707/>
- Zug, K. A., Pham, A. K., Belsito, D. V., DeKoven, J. G., DeLeo, V. A., Fowler, J. F., Jr., Fransway, A. F., Maibach, H. I., Marks, J. G., Jr., Mathias, C. G., Pratt, M. D., Sasseville, D., Storrs, F. J., Taylor, J. S., Warshaw, E. M., & Zirwas, M. J. (2014). Patch testing in children from 2005 to 2012: results from the North American contact dermatitis group. *Dermatitis*, *25*(6), 345-355.
<https://doi.org/10.1097/der.0000000000000083>

Policy Update History:

| Approval Date | Effective Date; Summary of Changes |
|----------------------|---|
| 09/13/2024 | 01/01/2025: New policy. |