



## Anna Chen Arroyo, MD MPH

Clinical Associate Professor, Medicine - Pulmonary, Allergy & Critical Care Medicine

### CLINICAL OFFICE (PRIMARY)

- **Atherton Allergy, Asthma, and Immunodeficiency Clinic**

3351 El Camino Real Ste 201

Atherton, CA 94027

Tel (650) 723-3200 Fax (650) 503-0169

### Bio

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#### BIO

Anna Chen Arroyo, MD, MPH, is a board-certified allergy/immunology physician and clinical researcher. She is the section chief of Allergy, Asthma, and Immunodeficiency in the Division of Pulmonary, Allergy and Critical Care Medicine and the medical director of the Allergy, Asthma, and Immunodeficiency Clinic at Stanford Health Care. She specializes in diagnosing and treating allergic conditions, with a focus on severe asthma, maternal asthma, and drug (including chemotherapy) allergies.

Dr. Arroyo's clinical research focuses on early life risk factors for allergic disease development and how allergic diseases impact people across the lifespan. She is also interested in studying how allergic diseases affect the Asian American population and hormonal influences on allergic diseases. She has published her original research in peer-reviewed scientific journals, such as *The Journal of Allergy and Clinical Immunology: In Practice* and *The Journal of the American Medical Association (JAMA)*. She has also presented at national conferences, including annual meetings for the American Thoracic Society and the American Academy of Asthma, Allergy, and Immunology. Dr. Arroyo is a member of the American Academy of Asthma, Allergy, and Immunology, the American Thoracic Society, and the American College of Allergy, Asthma, and Immunology.

#### CLINICAL FOCUS

- Allergy and Immunology
- Drug allergy
- Asthma

#### ACADEMIC APPOINTMENTS

- Clinical Associate Professor, Medicine - Pulmonary, Allergy & Critical Care Medicine
- Member, Maternal & Child Health Research Institute (MCHRI)

#### ADMINISTRATIVE APPOINTMENTS

- Clinical Instructor, Division of Internal Medicine, University of California San Francisco (UCSF) Fresno, (2015-2016)

- Clinical Assistant Professor of Medicine, Division of Pulmonary, Allergy, and Critical Care Medicine, Stanford University School of Medicine, (2019-2023)
- Attending Hospitalist Physician, VA Central California Health Care, (2015-2016)
- Section Chief, Allergy, Asthma, and Immunodeficiency, Division of Pulmonary, Allergy, and Critical Care Medicine, (2024- present)
- Medical Director, Allergy, Asthma, & Immunodeficiency Clinic, Stanford Health Care, (2020- present)

## BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Member, American Thoracic Society (2023 - present)
- Member, American College of Allergy, Asthma, and Immunology (2016 - present)
- Member, American Academy of Asthma, Allergy, and Immunology (2016 - present)

## PROFESSIONAL EDUCATION

- Medical Education: Stanford University School of Medicine (2012) CA
- Fellowship: Brigham and Women's Hospital Allergy and Immunology Fellowship (2019) MA
- Board Certification: Allergy and Immunology, American Board of Allergy and Immunology (2018)
- Board Certification: Internal Medicine, American Board of Internal Medicine (2015)
- Residency: Stanford University Internal Medicine Residency (2015) CA
- MPH, University of California at Berkeley (2012)

## Publications

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### PUBLICATIONS

- **Allergic disease prevalence among Asian American children in Northern California.** *The journal of allergy and clinical immunology. In practice*  
Feng, C., Mudiganti, S., Yan, X. S., Mitchell, D., Chen, M., Liu, A. Y., Palaniappan, L., Arroyo, A. C.  
2024
- **Recommended Vaccines for Immunocompetent Older Adults: Work Group Report of the AAAAI Allergy and Asthma in Older Adults Committee.** *The journal of allergy and clinical immunology. In practice*  
Slimovitch, J., Lockey, R. F., Arroyo, A. C., Smith, A., Ballow, M., Baptist, A. P., Teng, M., Nanda, A., Mullur, J., Allakhverdi, Z., Nyenhuis, S. M., Cardet, J. C.  
2026
- **Demographic Factors Influencing Pediatric Food Allergy Treatment Decisions**  
Knihtila, H., Shaw, B., Hernandez, J., Arroyo, A., Tirumalasetty, J.  
MOSBY-ELSEVIER.2026
- **Biologic use for allergic diseases among Asian American adults in a Northern California healthcare system**  
Feng, C., Mudiganti, S., Yan, X., Mitchell, D., Tran, N., Wong, P., Palaniappan, L., Arroyo, A.  
MOSBY-ELSEVIER.2026
- **Characterization of Food Protein-Induced Enterocolitis Syndrome among Asian American Children.** *Annals of allergy, asthma & immunology : official publication of the American College of Allergy, Asthma, & Immunology*  
Feng, C., Wong, P., Mudiganti, S., Yan, X., Mitchell, D., Tran, N., Palaniappan, L., Arroyo, A. C.  
2025
- **Atopic Dermatitis Prevalence among Asian American and Pacific Islander Children: A Retrospective Study in a Northern California Healthcare System.** *Journal of the American Academy of Dermatology*  
Dahabreh, D., Lo, J. C., Chandra, M., Chiou, A. S., McCleskey, P. E., Darbinian, J. A., Ko, J., Arroyo, A. C.  
2025
- **Associations Of Air Pollution And Heat With Asthma Healthcare Visits In California Counties - An Ecological Study**  
Tirumalasetty, J., Lim, J., Eggert, L., Arroyo, A., Nassikas, N.  
MOSBY-ELSEVIER.2025: AB309

- **Safety Outcomes of a One-Bag Chemotherapy/ Monoclonal Desensitization Protocol and Outpatient Transition**  
Jiang, S., Afzal, S., Zhu, L., Tran, N., Arroyo, A., Liu, A.  
MOSBY-ELSEVIER.2025: AB2
- **Characterization of Food Protein-Induced Enterocolitis Syndrome among Asian American Children**  
Feng, C., Wong, P., Mudiganti, S., Yan, X., Mitchell, D., Palaniappan, L., Arroyo, A.  
MOSBY-ELSEVIER.2025: 36
- **Greenhouse Gas Emissions and Costs of Inhaler Devices in the US.** *JAMA*  
Tirumalasetty, J., Miller, S. A., Prescott, H. C., DeTata, S., Arroyo, A. C., Wilkinson, A. J., Rabin, A. S.  
2024
- **Ethnic Variation in Asthma Prevalence across Childhood in the Asian American and Pacific Islander Population.** *Chest*  
Costantini, J. G., Lo, J. C., Ko, J., Chandra, M., Huang, P., Darbinian, J. A., Arroyo, A. C.  
2024
- **Social Determinants of Health and Allergic Disease Prevalence Among Asian American Children.** *Journal of racial and ethnic health disparities*  
Le, A., Bui, V., Chu, R., Arroyo, A. C., Chen, M., Bacong, A. M.  
2024
- **Prevalence of allergic diseases among Asian American children in a Northern California healthcare system**  
Feng, C., Mudiganti, S., Yan, X., Mitchell, D., Chen, M., Liu, A., Palaniappan, L., Arroyo, A.  
MOSBY-ELSEVIER.2024: AB250
- **Predicting Penicillin Allergy from Patient-Reported Data: A Multi-Site Prospective Study from The United States Drug Allergy Registry**  
Blumenthal, K., Ramsey, A., Phillips, E., Gonzalez-Estrada, A., Accarino, J., Banerji, A., Stone, C., Otani, I., Khan, D., Chow, T., Liu, A., Arroyo, A., King, et al  
MOSBY-ELSEVIER.2024: AB228
- **PEN-FAST Assessment Using Patient-Reported Reaction Histories in a Multi-Site Prospective United States Cohort**  
Accarino, J., Phillips, E., Banerji, A., Ramsey, A., Gonzalez-Estrada, A., Stone, C., Otani, I., Khan, D., Chow, T., Liu, A., Arroyo, A., King, A., Zhang, et al  
MOSBY-ELSEVIER.2024: AB241
- **Asthma heterogeneity amongst Asian American children: the California Health Interview Survey.** *Annals of allergy, asthma & immunology : official publication of the American College of Allergy, Asthma, & Immunology*  
Chen, M., Bacong, A. M., Feng, C., Kikuta, N. T., Datir, R. R., Chen, S., Srinivasan, M., Camargo, C. A., Palaniappan, L., Arroyo, A. C.  
2023
- **Risk of Incident Asthma among Young Asian American, Native Hawaiian, and Pacific Islander Children from Age 3 to 7 years in a Northern California Healthcare System.** *The Journal of pediatrics*  
Arroyo, A. C., Ko, J., Chandra, M., Huang, P., Darbinian, J. A., Palaniappan, L., Lo, J. C.  
2023: 113802
- **Maternal Hypertensive Disorders of Pregnancy and the Risk of Childhood Asthma** *ANNALS OF THE AMERICAN THORACIC SOCIETY*  
Arroyo, A., Robinson, L. B., James, K., Li, S. M. S., Hsu, S., Dumas, O., Liu, A. Y., Druzin, M., Powe, C. E., Camargo, C. A.  
2023; 20 (9): 1367-1370
- **Association between severe bronchiolitis in infancy and age 6-year lung function.** *Respiratory medicine*  
Mehta, G. D., Arroyo, A. C., Zhu, Z., Espinola, J. A., Mansbach, J. M., Hasegawa, K., Camargo, C. A.  
2023: 107401
- **US Drug Allergy Registry (USDAR) grading scale for immediate drug reactions.** *The Journal of allergy and clinical immunology*  
Khan, D. A., Phillips, E. J., Accarino, J. J., Gonzalez-Estrada, A., Otani, I. M., Ramsey, A., Arroyo, A. C., Banerji, A., Chow, T., Liu, A., Stone, C. A., Blumenthal, K. G.  
2023
- **The relation of prenatal acid suppressant medication exposure to severe bronchiolitis and childhood asthma.** *Pediatric pulmonology*  
Arroyo, A. C., Robinson, L. B., James, K., Li, S., Faridi, M. K., Powe, C. E., Camargo, C. A.

2023

- **Asthma heterogeneity amongst Asian American children: the California Health Interview Survey**  
Chen, M., Bacong, A., Kikuta, N., Datir, R., Chen, S., Camargo, C., Srinivasan, M., Palaniappan, L., Arroyo, A.  
MOSBY-ELSEVIER.2023: AB75
- **Cohort study of early life environmental factors and risk of decreased lung function at age 6 years in children with a history of severe bronchiolitis**  
Mehta, G., Arroyo, A., Espinola, J., Mansbach, J., Zhu, Z., Hasegawa, K., Camargo, C.  
MOSBY-ELSEVIER.2023: AB116
- **Maternal exposures to acid suppressant medications or antibiotics and infant food allergy in a bronchiolitis cohort**  
Arroyo, A., Mehta, G., Qi, Y., Espinola, J., Robinson, L., Rudders, S., Sullivan, A., Camargo, C.  
MOSBY-ELSEVIER.2023: AB173
- **Cohort Study of Maternal Gestational Weight Gain, Gestational Diabetes, and Childhood Asthma.** *Nutrients*  
Dumas, O., Arroyo, A. C., Faridi, M. K., James, K., Hsu, S., Powe, C., Camargo, C. A.  
2022; 14 (23)
- **No allergy left behind The importance of food allergy in longitudinal cohorts** *ANNALS OF ALLERGY ASTHMA & IMMUNOLOGY*  
Robinson, L. B., Arroyo, A., Mehta, G. D., Rudders, S. A., Camargo, C. A.  
2022; 129 (2): 140-141
- **Infant exposure to acid suppressant medications increases risk of recurrent wheeze and asthma in childhood.** *The journal of allergy and clinical immunology. In practice*  
Robinson, L. B., Arroyo, A. C., Qi, Y. S., Geller, R. J., Bauer, C. S., Hasegawa, K., Sullivan, A. F., Camargo, C. A.  
2022
- **The importance of understanding anaphylaxis among older adults.** *Annals of allergy, asthma & immunology : official publication of the American College of Allergy, Asthma, & Immunology*  
Arroyo, A. C., Camargo, C. A.  
2022; 129 (1): 7-8
- **Asian American Patients With Allergic Diseases: Considerations for Research and Clinical Care.** *The journal of allergy and clinical immunology. In practice*  
Chen, M., Feng, C., Liu, A. Y., Zhu, L., Camargo, C. A., Arroyo, A. C.  
2022; 10 (4): 950-952
- **Prenatal exposure to acid suppressant medications and risk of allergen sensitization.** *Pediatric allergy and immunology : official publication of the European Society of Pediatric Allergy and Immunology*  
Robinson, L. B., Arroyo, A. C., Geller, R. J., Sullivan, A. F., Camargo, C. A.  
2022; 33 (3): e13760
- **Maternal hypertensive disorders of pregnancy and the risk of childhood asthma**  
Arroyo, A., Robinson, L., James, K., Li, S., Hsu, S., Liu, A., Druzin, M., Powe, C., Camargo, C.  
MOSBY-ELSEVIER.2022: AB88
- **Road Less Traveled: Drug Hypersensitivity to Fluoroquinolones, Vancomycin, Tetracyclines, and Macrolides.** *Clinical reviews in allergy & immunology*  
Zhu, L. J., Liu, A. Y., Wong, P. H., Arroyo, A. C.  
1800
- **No allergy left behind - the importance of food allergy in longitudinal cohorts.** *Annals of allergy, asthma & immunology : official publication of the American College of Allergy, Asthma, & Immunology*  
Robinson, L. B., Arroyo, A. C., Mehta, G. D., Rudders, S. A., Camargo, C. A.  
2021
- **Emergency department visits for vaccine-related severe allergic reactions among US adults: 2006-2018.** *Annals of allergy, asthma & immunology : official publication of the American College of Allergy, Asthma, & Immunology*  
Arroyo, A. C., Robinson, L. B., Cash, R. E., Blumenthal, K. G., Camargo, C. A.  
2021

- **Early Introduction of Food Allergens and Risk of Developing Food Allergy** *NUTRIENTS*  
Yakaboski, E., Robinson, L. B., Arroyo, A., Espinola, J. A., Geller, R. J., Sullivan, A. F., Rudders, S. A., Camargo, C. A.  
2021; 13 (7)
- **Emergency department revisits and rehospitalizations among infants and toddlers for acute allergic reactions.** *Allergy and asthma proceedings*  
Robinson, L. B., Arroyo, A. C., Cash, R. E., Rudders, S. A., Camargo, C. A.  
2021; 42 (3): 247–56
- **Trends in emergency department visits and hospitalizations for acute allergic reactions and anaphylaxis among US older adults: 2006-2014.** *The journal of allergy and clinical immunology. In practice*  
Arroyo, A. C., Robinson, L. B., Cash, R. E., Faridi, M. K., Hasegawa, K., Camargo, C. A.  
2021
- **Trends in U.S. emergency department visits for anaphylaxis among infants and toddlers: 2006-2015.** *The journal of allergy and clinical immunology. In practice*  
Robinson, L. B., Arroyo, A. C., Faridi, M. K., Rudders, S., Camargo, C. A.  
2021
- **Evaluation of Allergic Diseases in Transgender and Gender-Diverse Patients: A Case Study of Asthma.** *The journal of allergy and clinical immunology. In practice*  
Arroyo, A. C., Sanchez, D. A., Camargo, C. A., Wickner, P. G., Foer, D.  
2021
- **Trends in U.S. hospitalizations for anaphylaxis among infants and toddlers: 2006-2015.** *Annals of allergy, asthma & immunology : official publication of the American College of Allergy, Asthma, & Immunology*  
Robinson, L. B., Arroyo, A. C., Faridi, M. K., Rudders, S. A., Camargo, C. A.  
2020
- **Allergic sensitization during early life: Concordance between ImmunoCAP and ISAC results.** *The journal of allergy and clinical immunology. In practice*  
Arroyo, A. C., Robinson, L. B., Geller, R. J., Rudders, S. A., Sullivan, A. F., Hasegawa, K. n., Camargo, C. A.  
2020
- **Prenatal exposure to acid-suppressant medications and the risk of recurrent wheeze at 3 years of age in children with a history of severe bronchiolitis.** *The journal of allergy and clinical immunology. In practice*  
Robinson, L. B., Chen Arroyo, A. J., Dantas, M. A., Espinola, J. A., Sullivan, A. F., Camargo, C. A.  
2019
- **Where do children die from asthma? National data from 2003 to 2015** *JOURNAL OF ALLERGY AND CLINICAL IMMUNOLOGY-IN PRACTICE*  
Arroyo, A., Chee, C., Camargo, C. A., Wang, N.  
2018; 6 (3): 1034–36
- **Occupational exposures and asthma prevalence among US farmworkers: National Agricultural Workers Survey, 2003-2014.** *The journal of allergy and clinical immunology. In practice*  
Arroyo, A. J., Robinson, L. B., Downing, N. L., Camargo, C. A.  
2018
- **Staphylococcal infections in children, California, USA, 1985-2009.** *Emerging infectious diseases*  
Gutierrez, K., Halpern, M. S., Sarnquist, C., Soni, S., Arroyo, A. C., Maldonado, Y.  
2013; 19 (1): 10-20
- **The association between insurance status and emergency department disposition of injured California children.** *Academic emergency medicine*  
Arroyo, A. C., Ewen Wang, N., Saynina, O., Bhattacharya, J., Wise, P. H.  
2012; 19 (5): 541-551