



## Anna Chen Arroyo

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

### CLINICAL OFFICE (PRIMARY)

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

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### Bio

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#### BIO

Dr. Arroyo specializes in the treatment of allergic conditions including drug allergy and asthma. She has a special interest in understanding health and healthcare disparities in allergic diseases and how allergies change over a person's lifetime.

#### 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

- 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)

#### 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
- **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. 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*

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- 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