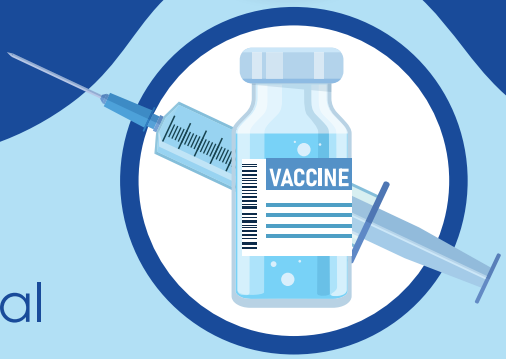
PNEUMO SHOTS



SILVER SHIELDS: Understanding Immunosenescence and pneumococcal vulnerability in adults

Why Do Adults Require Vaccination?[1]

- Immunosenescence impairs resistance to infections.[1]
- Chronic illnesses increase the susceptibility to infections.[1]
- Childhood vaccinations may fail to provide long-term benefits.[1]
- The epidemiology of diseases is evolving due to the emergence and resurgence of conditions such as tuberculosis and malaria.[1]
- Healthcare personnel and travelers are at increased risk of contracting infections.[2,3]

Immunosenescence Makes the Elderly Susceptible to Illnesses

Interplay between immunosenescence and age-related diseases

The age-related decline in innate and adaptive immune functions, which reduces the ability to combat new bacterial infections, is known as **immunosenescence**.[4]

The accumulation of endogenous and exogenous physiological stress with age triggers low-level systemic inflammation, referred to as **inflammaging**.[4]

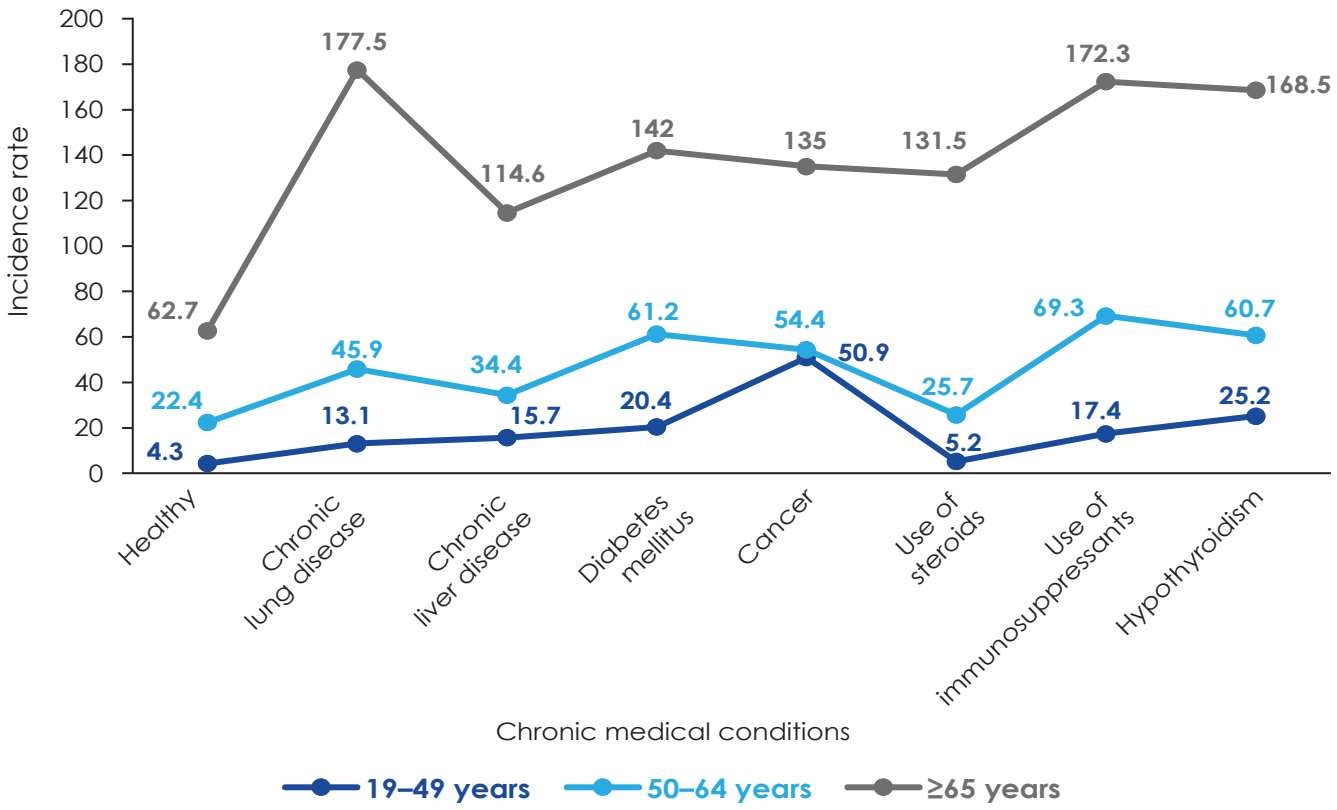
Uncontrolled immunosenescence + Inflammaging + Comorbid conditions → **Lead to reduced responses to vaccination[4]**

Adults Aged ≥50 Years With Multiple Chronic Conditions Increase Pneumococcal Disease Risk[6]

Indian data: As per the LASI report, **26%** of older adults aged 45 years and above have a single morbidity condition, while **18%** have multimorbidity.[5]

Age and chronic medical conditions together significantly increase the pneumococcal disease incidence rates.[6]

Pneumococcal disease incidence rates by age group and chronic medical condition[6]



Vulnerability to Infections in 18–49-Year-Olds

Smoking

10.7% of current smokers are older than 15 years.[7]

Alcohol

39% of current drinkers are aged between 18 and 49 years.[8]

Diabetes

People **<35 years** old are at high risk of diabetes.[9]

Cardiovascular diseases

Half of the CVD-related deaths occur in people aged **<50 years.**[10]

CVD: Cardiovascular disease; LASI: Longitudinal Ageing Study in India.

Comorbid conditions such as diabetes and asthma, along with alcohol consumption and smoking, increase the risk of pneumonia in adults aged 18–49 years.[11–13]

Hence, vaccinating adults **≥18 years** with underlying medical condition is warranted.[11–13]

Adults aged 18–49 years with chronic medical conditions[6]

Increased risk of pneumococcal diseases[6]

All adults above 50 years of age[6]

Harmonized API Guidelines for Pneumococcal Vaccination[14]

Age

Recommended for all adults, especially those with high-risk conditions irrespective of age except during pregnancy

All adults aged ≥50 years: PCV13 followed by PPSV23; 1 year later

18–49 years: Single dose of PCV13 first followed by PPSV23 after 1 year (in at-risk) or 8 weeks later (in high-risk conditions)

API: Association of Physicians of India; PCV13: 13-valent pneumococcal conjugate vaccine; PPSV23: 23-valent pneumococcal polysaccharide vaccine.

References: 1. Koul PA, Swaminathan S, Rajgopal T, *et al*. Adult immunization in occupational settings: a consensus of Indian experts. *Indian J Occup Environ Med*. 2020;24(1):3-15. **2.** Health care workers, including public health researchers & medical laboratorians. Available at: https://wwwnc.cdc.gov/travel/yellowbook/2024/work-and-other- reasons/health-care-workers. Accessed on: 25 July 2024. **3.** Travel-related infectious diseases: A guide for health care professionals. Available at: https://netec.org/2023/08/08/travel-related-infectious-diseases-a-guide-for-health-care-professionals/. Accessed on: 25 July 2024. **4.** Soegiarto G, Purnomosari D. Challenges in the vaccination of the elderly and strategies for improvement. *Pathophysiology*. 2023;30(2):155–173. **5.** Longitudinal Ageing Study in India (LASI). Available at: https://lasi-india.org/public/documentation/LASI-EXECUTIVE_SUMMARY- 3-1-2021.pdf Accessed on: 13 August 2024. **6.** Fukuda H, Onizuka H, Nishimura N, *et al*. Risk factors for pneumococcal disease in persons with chronic medical conditions: Results from the LIFE study. *Int J Infect Dis*. 2022;116:216–222. **7.** Ministry of Health and Family Welfare Government of India. Global Adult Tobacco Survey (GATS): Fact sheet; 2016-2017. Available at: https://ntcp.mohfw.gov.in/assets/document/surveys-reports-publications/GATS-2-FactSheet.pdf . Accessed on: 25 July 2024. **8.** Pillai A, Nayak MB, Greenfield TK, *et al*. Patterns of alcohol use, their correlates, and impact in male drinkers: A population-based survey from Goa, India. *Soc Psychiatry Psychiatr Epidemiol*. 2013;48(2):275–282. **9.** Nagarathna R, Bali P, Anand A, *et al*. Prevalence of diabetes and its determinants in the young adult Indian population—Call for yoga intervention. *Front Endocrinol (Lausanne)*. 2020;11:507064. **10.** Dalal J, Hiremath MS, Das MK, *et al*. Vascular disease in young Indians (20-40 years): Role of ischemic heart disease. *J Clin Diagn Res*. 2016;10(9):OE08–OE12. **11.** Shea KM, Edelsberg J, Weycker D, *et al*. Rates of pneumococcal disease in adults with chronic medical conditions. *Open Forum Infect Dis*. 2014;1(1):ofu024. **12.** Pneumococcal disease: Causes and how it spreads. Available at: https://www.cdc.gov/pneumococcal/about/risk-transmission.html. Accessed on: 02 July 2024. **13.** Torres A, Blasi F, Dartois N, *et al*. Which individuals are at increased risk of pneumococcal disease and why? Impact of COPD, asthma, smoking, diabetes, and/or chronic heart disease on community-acquired pneumonia and invasive pneumococcal disease. *Thorax*. 2015;70(10):984–989. **14.** Indian consensus guidelines on adult immunization. Available at: https://apiindia.org/reader/immunization. Accessed on: 07 July 2024.

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