

Loss of Resistance to Chronic Infections in Aging Patients

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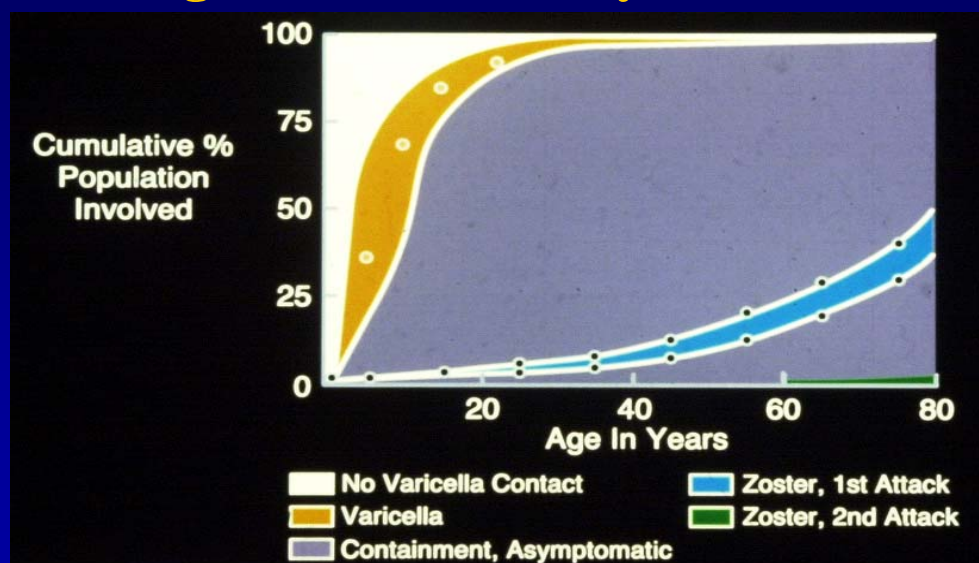
Common chronic infections that increase or worsen with aging

- **Herpes Zoster**
- **Tuberculosis**
- **Hepatitis C**
- **H. Pylori**
- **Hepatitis B**



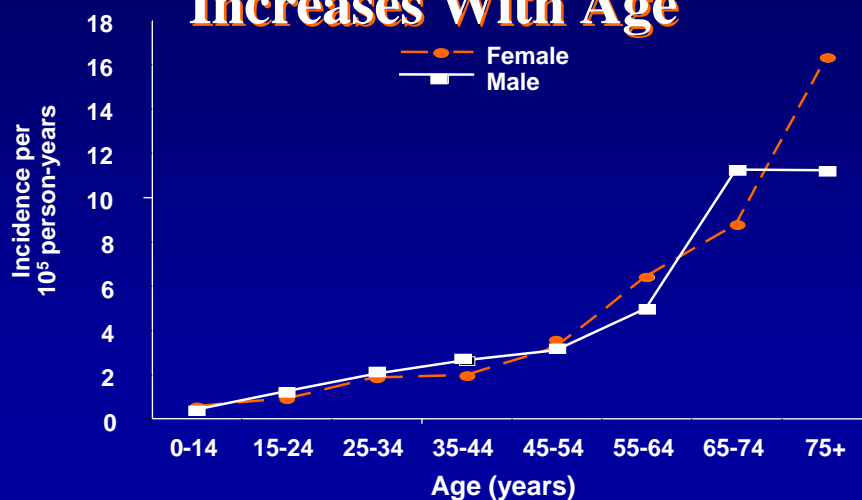
Photo provided courtesy of Dr. Kenneth Schmader, Duke University and Durham VA Medical Centers

Age-related Activity of VZV



Weller. *N Engl J Med.* 1983;309:362.

Incidence of Herpes Zoster Increases With Age



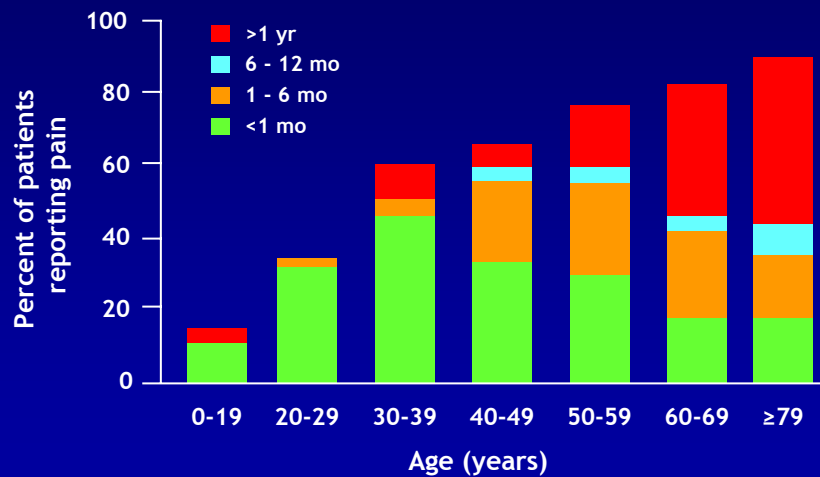
Modified from Donahue JG, et al. *Arch Intern Med* 1995;155(15):1605-1609.

Incidence of Herpes Zoster

- 1.2 to 4.8 cases per 1000 person-years in adults of all ages
- Approximately 11.8 cases per 1000 person-years in adults 60 years of age and older
- 29.4 to 51.5 per 1000 person-years in HIV infected individuals

Gnann J et al. *N Engl J Med*. 2002;347:340-346; Thomas SL et al. *Lancet Infect Dis* 2004;4:26-33; Oxman et al. *NEJM*. 2005;352:2271-84; Schmader K in Arvin & Gershon "Varicella-Zoster Virus, 2000

Prevalence and Duration of Postherpetic Neuralgia Increase With Age

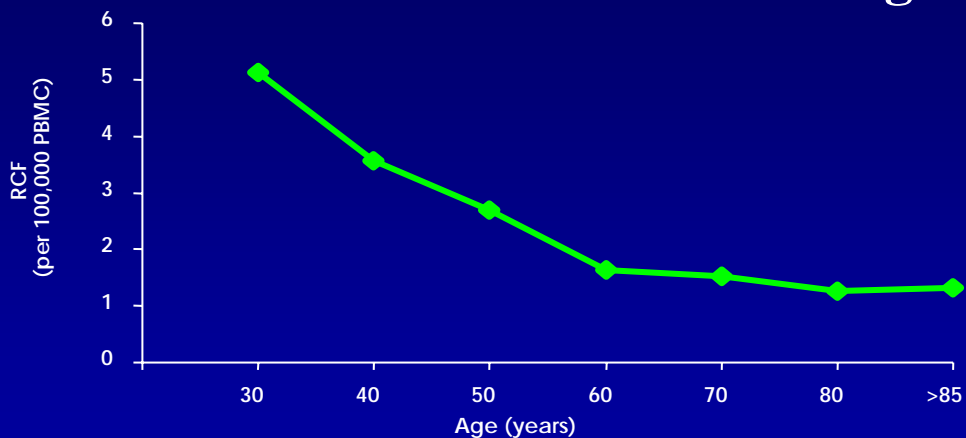


Kost R et al. N Engl J Med. 1996;355:32-42.

Role of Immunity in Herpes Zoster and Aging

- With aging, VZV-specific cell-mediated immunity (CMI) declines, while antibody does not

CMI to VZV Decreases With Age

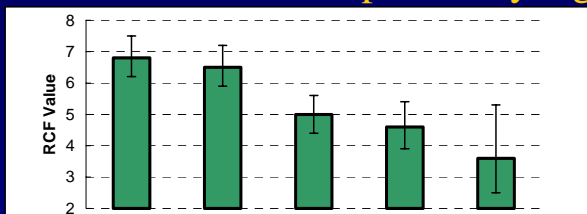


CMI=cell-mediated immunity
 PBMC=peripheral blood mononuclear cell
 RCF=responder cell frequency
 VZV=varicella-zoster virus

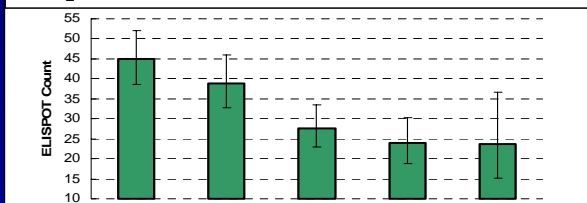
Adapted from Levin M et al. Unpublished results.

Baseline VZV Immune Responses by Age Group

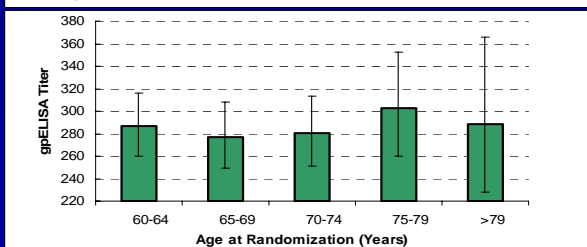
Responder Cell Frequency



ELISPOT Interferon-gamma



VZV gp ELISA



Levin et al.
 VZV-Specific Immune Responses in Elderly Recipients of a Herpes Zoster Vaccine. In Press, J. Infect Dis

