



Güncel Aşılar:

ZONA

Dr. Süda TEKİN

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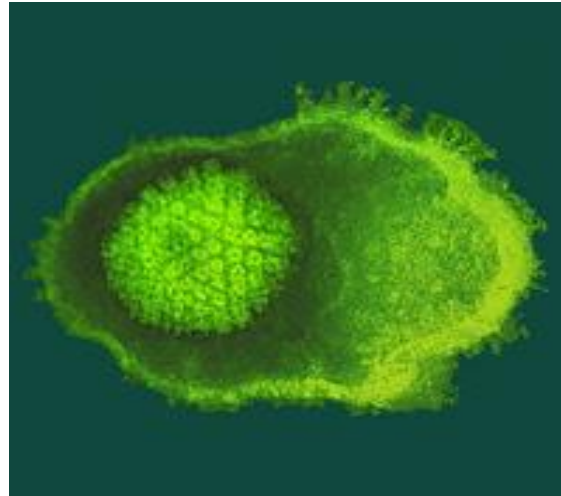
İnfeksiyon Hastalıkları ve Klinik Mikrobiyoloji Bölümü



Neler konuşulacak?

Herpes Zoster

- ❖ Epidemiyoloji
- ❖ Patogenez
- ❖ Komplikasyonları
- ❖ Zoster aşıları
- ❖ Sorular & Katkı

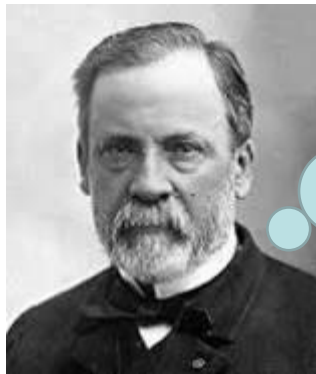


İnfeksiyon hastalıklarından korunmada
iki yöntem;



➤ **Sanitasyon**

➤ **İmmünizasyon**



When meditating over a
disease,
I never think of finding a
remedy for it, but, instead,
a means of **preventing** it.

Louis Pasteur
(1822-1895)



Özel gruplar...



Don't forget,
adults need
vaccines, too!



Varicella-Zoster Virus (VZV)

➤ Su çiçeği



➤ Herpes zoster;

*Zona zoster

*Dissemine zoster

Varicella-Zoster Virus (VZV)

➤ Su çiçeği



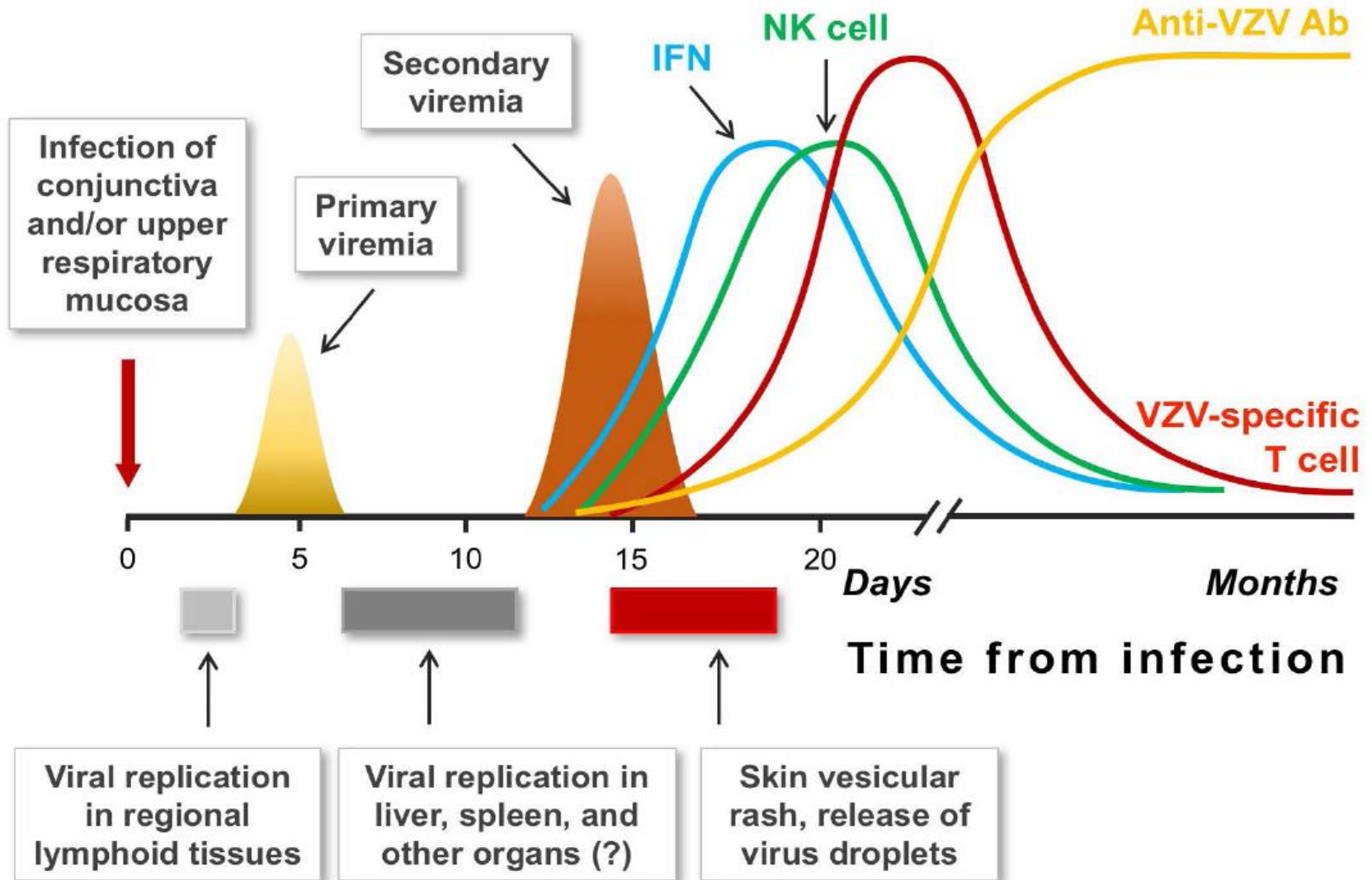
➤ Herpes zoster;

*Zona zoster

*Dissemine zoster



VZV Yaşam Döngüsü



Epidemiyoloji

- ✓ Yıllık Herpes Zoster (HZ) insidansı **3.4/1000**
- ✓ Yaşam boyu kişinin zona geçirme riski **~%20-30**
- ✓ > 50 yaş insidans artmakta
 - 9. dekatta insidans **11/1000**
 - **85** yaşına kadar zona geçirme riski **%50**
- ✓ İmmün kompetan hastada **rekürrens riski <%6**

Insinga RP, et al. *J Gen Intern Med* 2005; 20:748-53.
Yawn BP, et al. *Mayo Clin Proc* 2007; 82: 1341-9

BMJ Open Burden of herpes zoster in 16 selected immunocompromised populations in England: a cohort study in the Clinical Practice Research Datalink 2000–2012

Emad A. Yanni,¹ Germano Ferreira,² Morgane Guennec,³ Yassine El Hahi,⁴

BMJ Open 2018;8:e020528.

❖ Toplam 16 merkezden

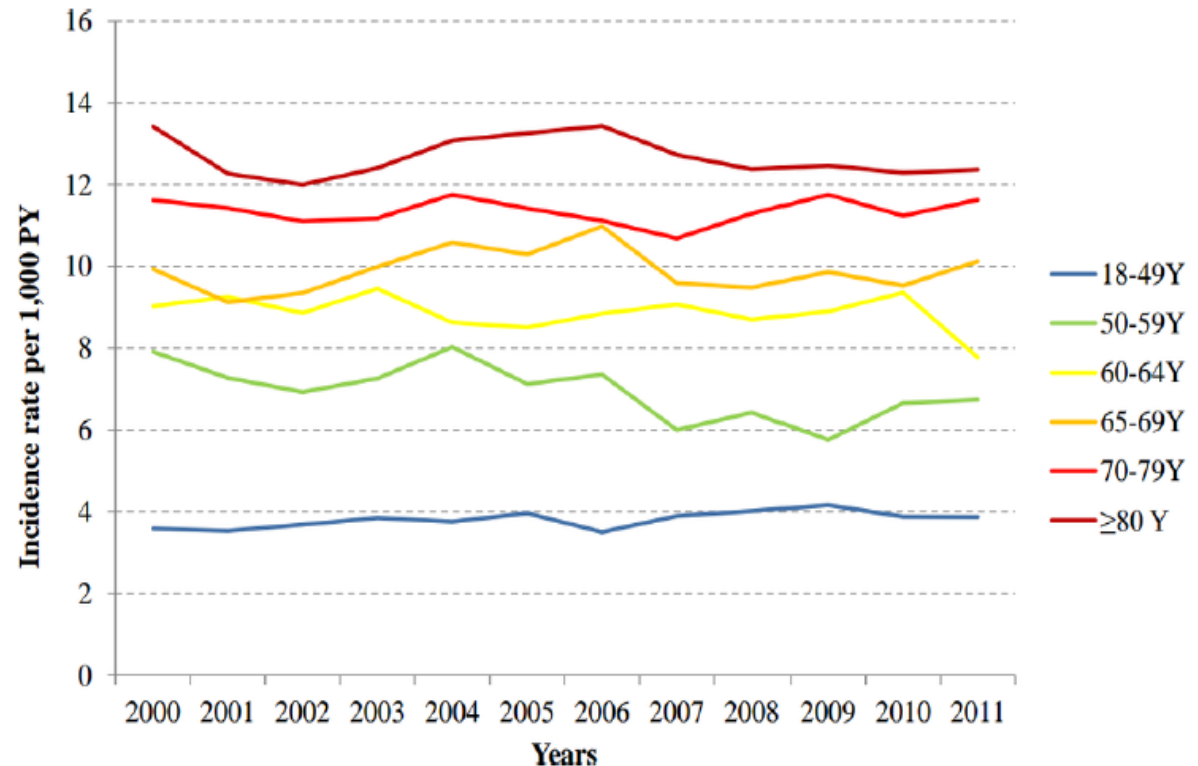
621 588 hasta

➤ İmmün

baskılanmış İH: **7.8/1000**

➤ İmmün normal

İH: **6.2/1000** /yıl

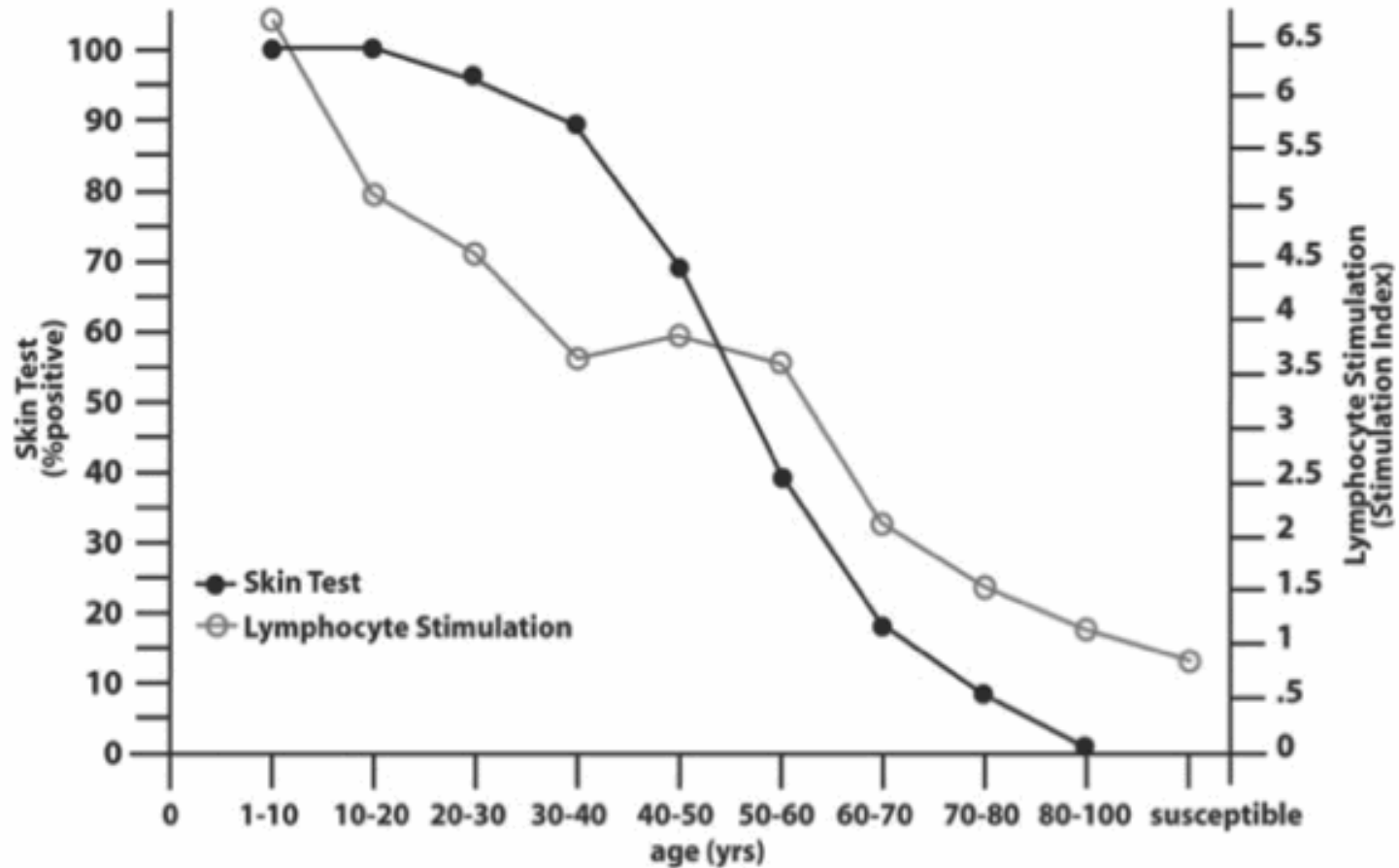


Herpes Zoster Risk faktörleri

- ❖ Yaş ; **>65** yaş; 1000 kişide **10**
- ❖ **Hücrese**l immün yetmezlik
- ❖ Irk (**siyah ırk** > beyaz ırk)
- ❖ Cinsiyet (**kadın** > erkek)
- ❖ Stres
- ❖ Travma
- ❖ **Ailede** zona geçirme öyküsü



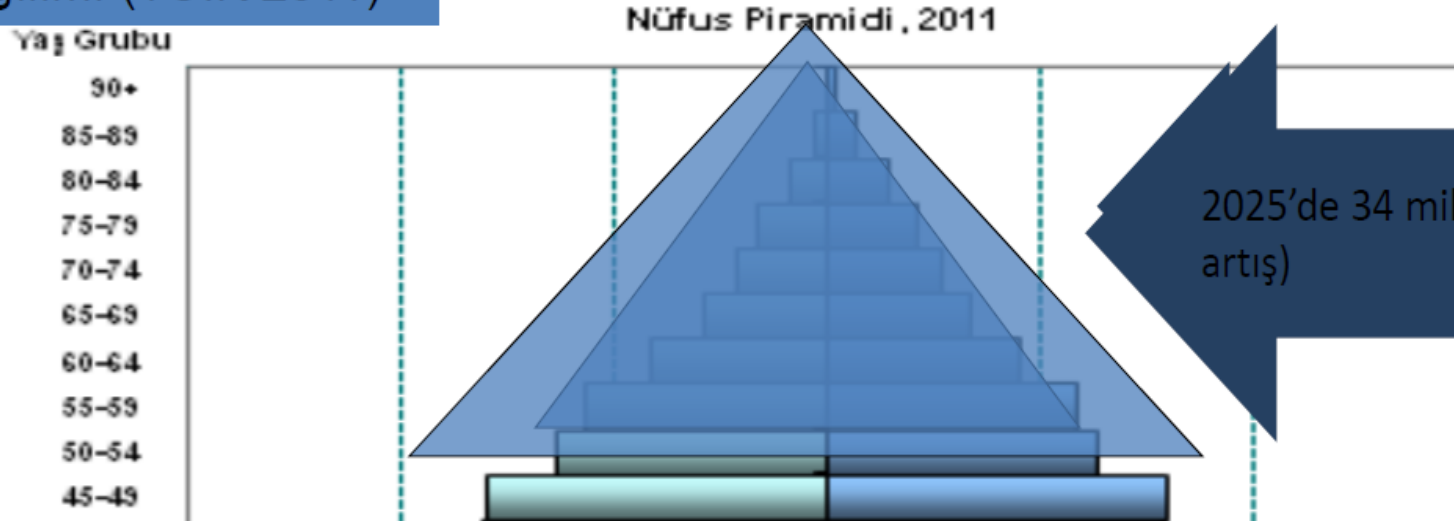
Yaşlanmayla birlikte hücresel immünite azalıyor



From Plotkin et al Vaccines 2008; Data from Burke et al Arch Intern Med 1982

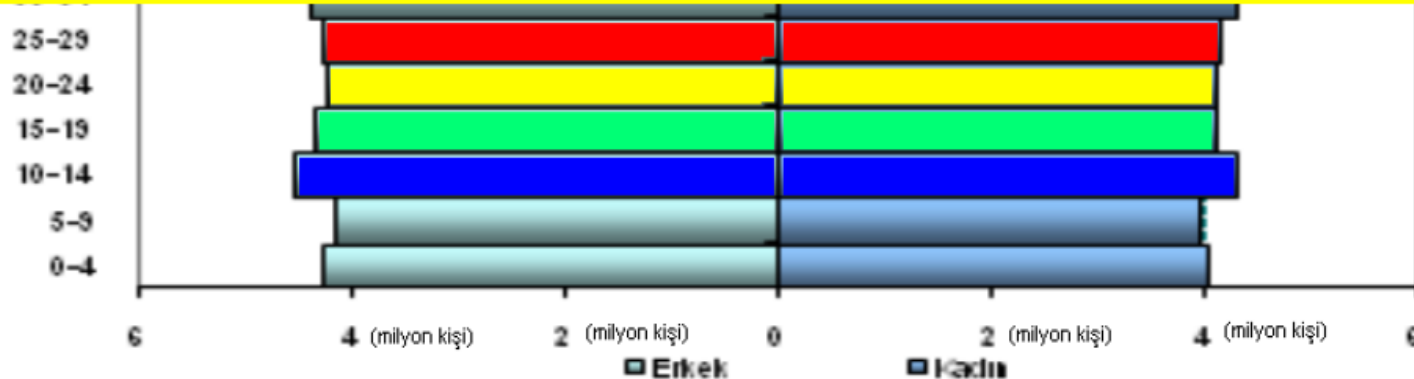
Türkiye’de 50 yaş üstü nüfus artıyor

Türkiye Nüfusu yaş dağılımı (TUİK 2011)



2025’de 34 milyon (%85 artış)

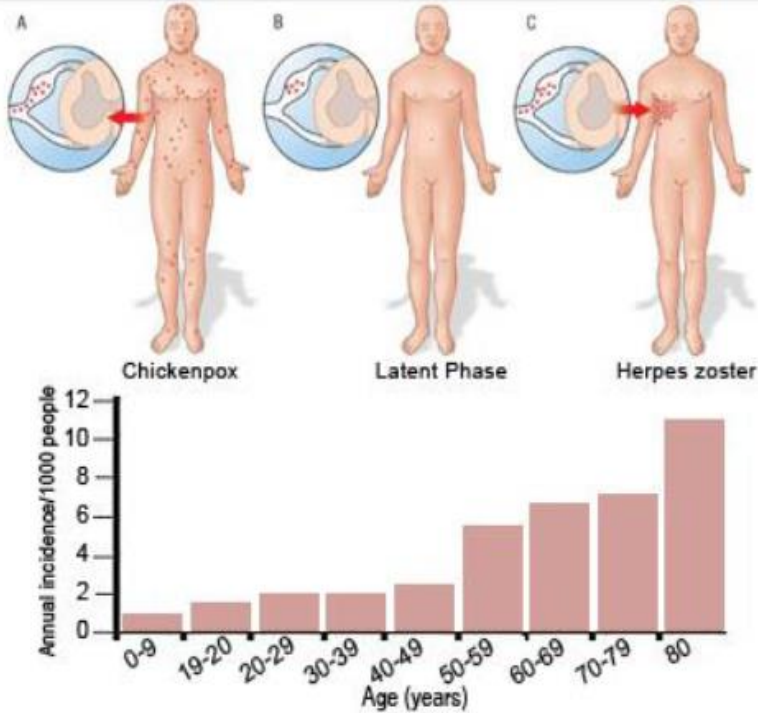
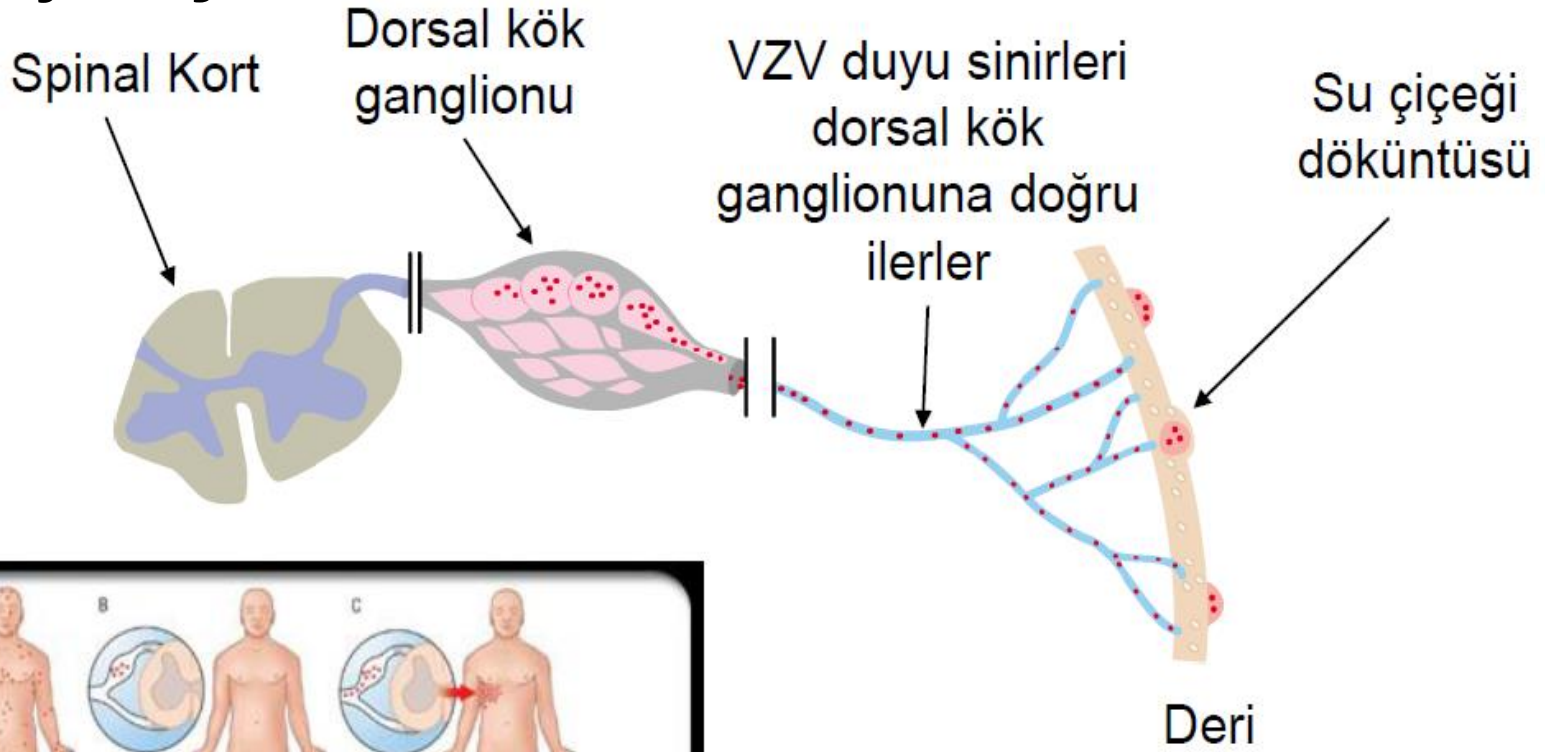
Nüfus yaşlandıkça, daha fazla zoster vakasıyla karşılaşmayı bekleyebiliriz !!!



İmmünitenin rolü

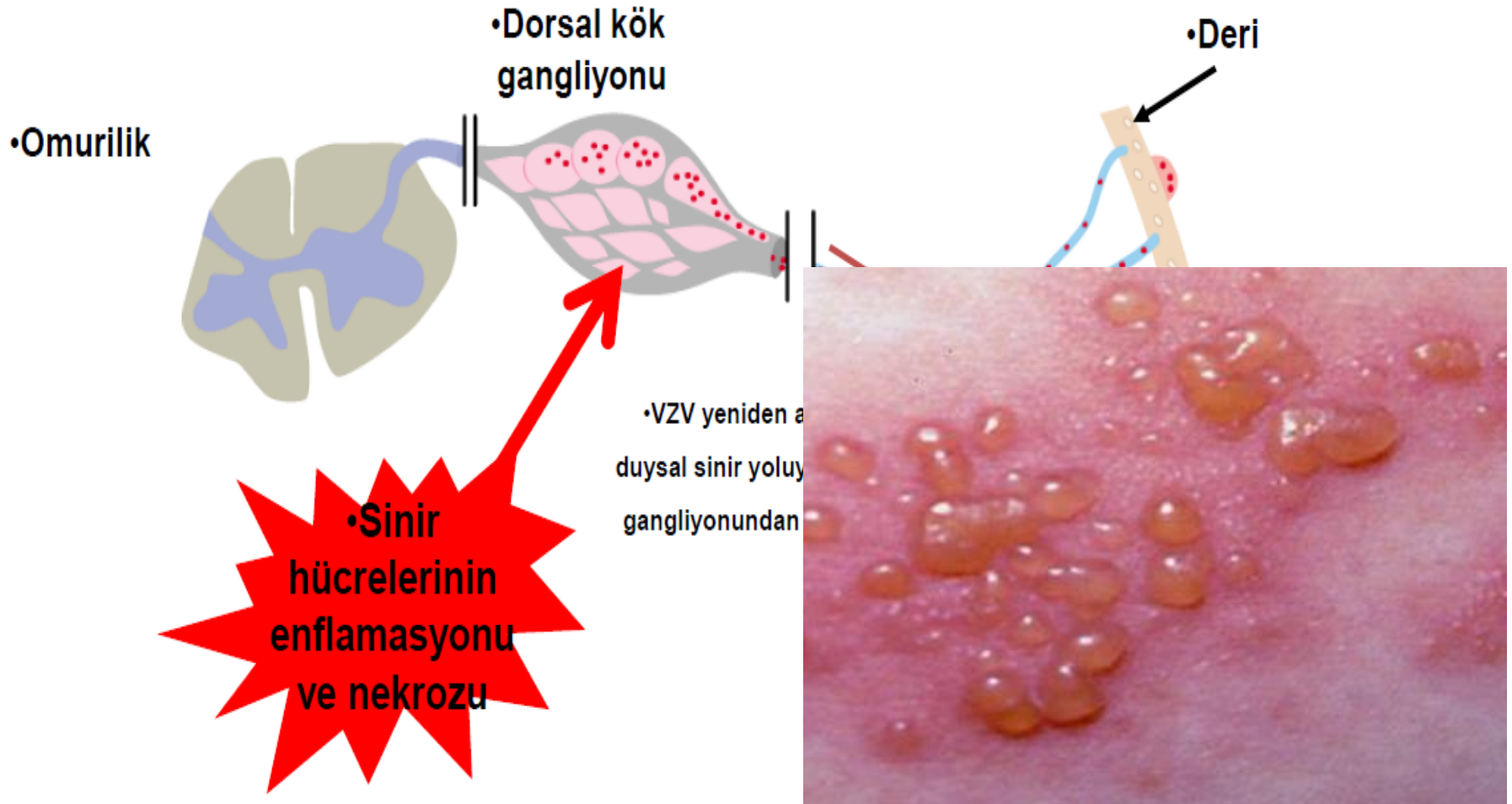
- **Humoral** / antikor ilişkili immünitenin rolü **yok**
- Herpes zoster yüksek VZV antikor düzeylerine rağmen ortaya çıkar
- **Hücre sel immünite** önemli!
- Zona sonrası yüksek antikor titrelerinin oluşması ciddi klinik tablo ve PHN oluşmasıyla ilişkili bulunmuş.

VZV latent yerleşimi

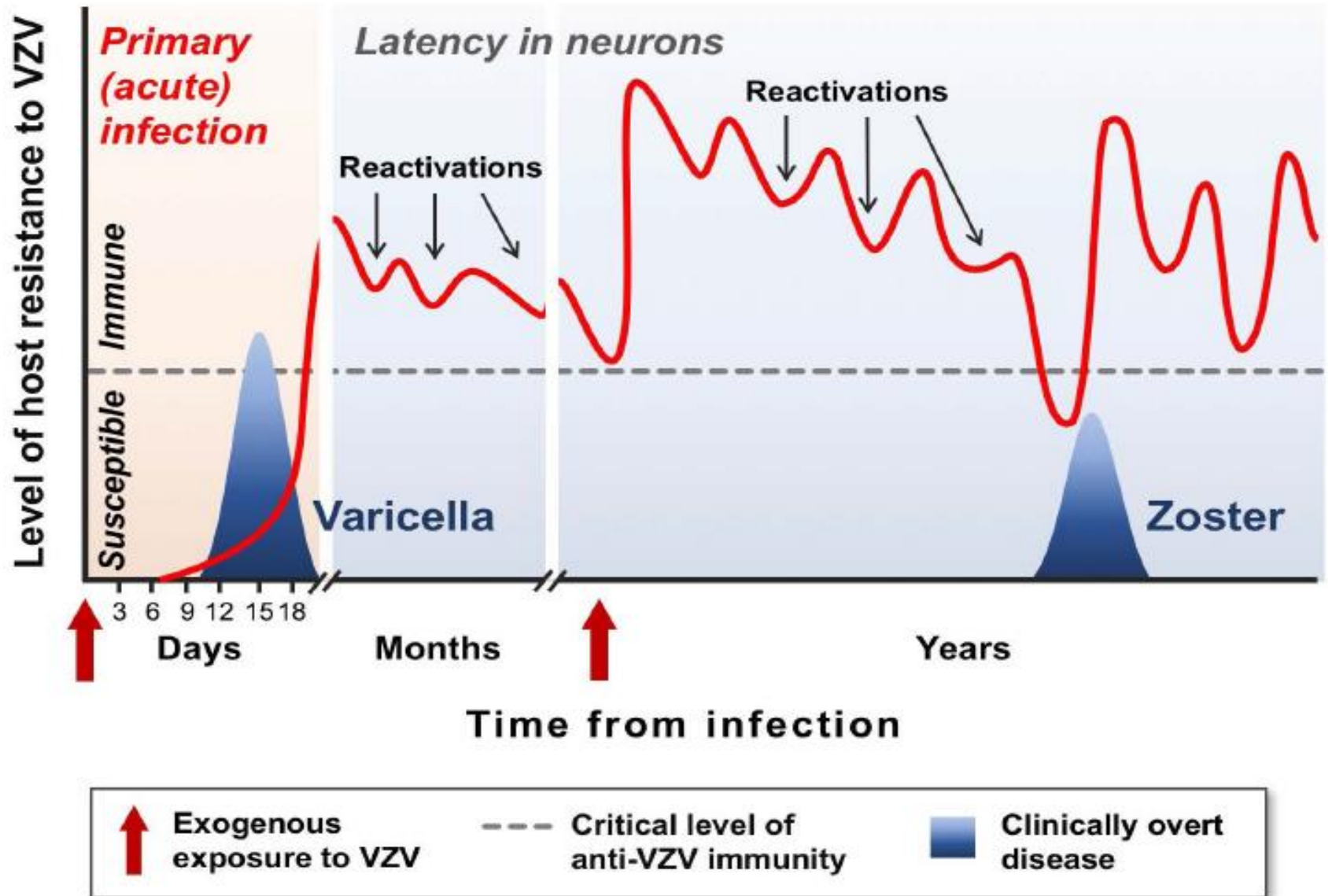


VZV dorsal kök ganglionlarında latent olarak yerleşir

Herpes Zoster, VZV reaktivasyonu sonucu oluşur



VZV'e karşı hücresel immünitenin zamanla değişimi



Herpes Zoster

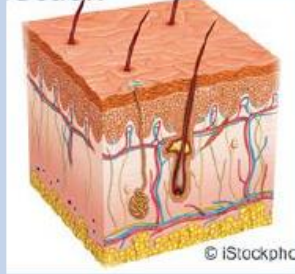
- Tek dorsal kök veya kraniyal sinir ganglionunda reaktivasyonuylu oluşur.
- Veziküler döküntü dermatomal yayılım gösterir



- Torasik bölge %**50-62**
- Oftalmik zoster %12-21
- Lomber %10-14
- Servikal %11-14
- Sakral bölge %2-8

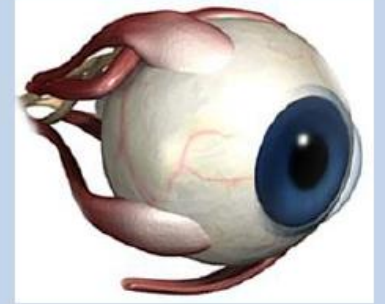
Komplikasyonlar

1- Kutanöz²



- Skarlaşma
- Bakteriyel süperenfeksiyon

2- Oftalmik^{1,2}



- Görme kaybı
- Ağrı
- Yüz skarı
- Keratit

3- Yaygın Hastalık²



- Kutanöz Yayılım
- Visseral Tutulum
(Myokardit, Perikardit,
Artrit, Hepatit, Pnömoni)

4- Nörolojik^{1,2}



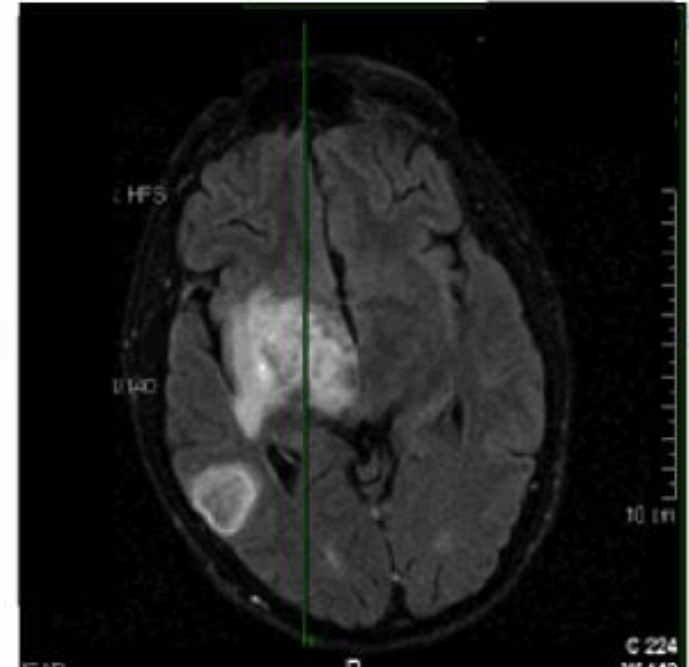
- Postherpetik Nevralji
- Diğer (Ensefalit, İnme,
İşitme kaybı, Kraniyel ve motor
sinir kaybı, Bell's paralizi,
Ramsey Hunt Sendromu...)

1. Harpaz R et al. *MMWR Recomm Rep*. 2008;57(RR-5):1-30.¹

2. Oxman MN. *Varicella-Zoster Virus: Virology and Clinical Management*. Cambridge University Press; 2000:246-275.

Komplikasyonlar

HIV Pozitif hastada koryoretinit
ve
multifokal vaskülit



Risk of Stroke Following Herpes Zoster: A Self-Controlled Case-Series Study

Clinical Infectious Diseases 2014;58(11):1497–503

Sinéad M. Langan,^a Caroline Minassian,^a Liam Smeeth, and Sara L. Thomas

Table 2. Age-Adjusted Incidence Ratios for Stroke in Risk Periods Following Zoster

Outcome and Risk Period	No. of Cases	IR ^a (95% CI)
Stroke (all types)	6584	
Risk period after zoster		
1–4 wk	90	1.63 (1.32–2.02)
5–12 wk	149	1.42 (1.21–1.68)
13–26 wk	215	1.23 (1.07–1.42)
27–52 wk	303	0.99 (.88–1.12)

Risk of Stroke Following Herpes Zoster: A Self-Controlled Case-Series Study

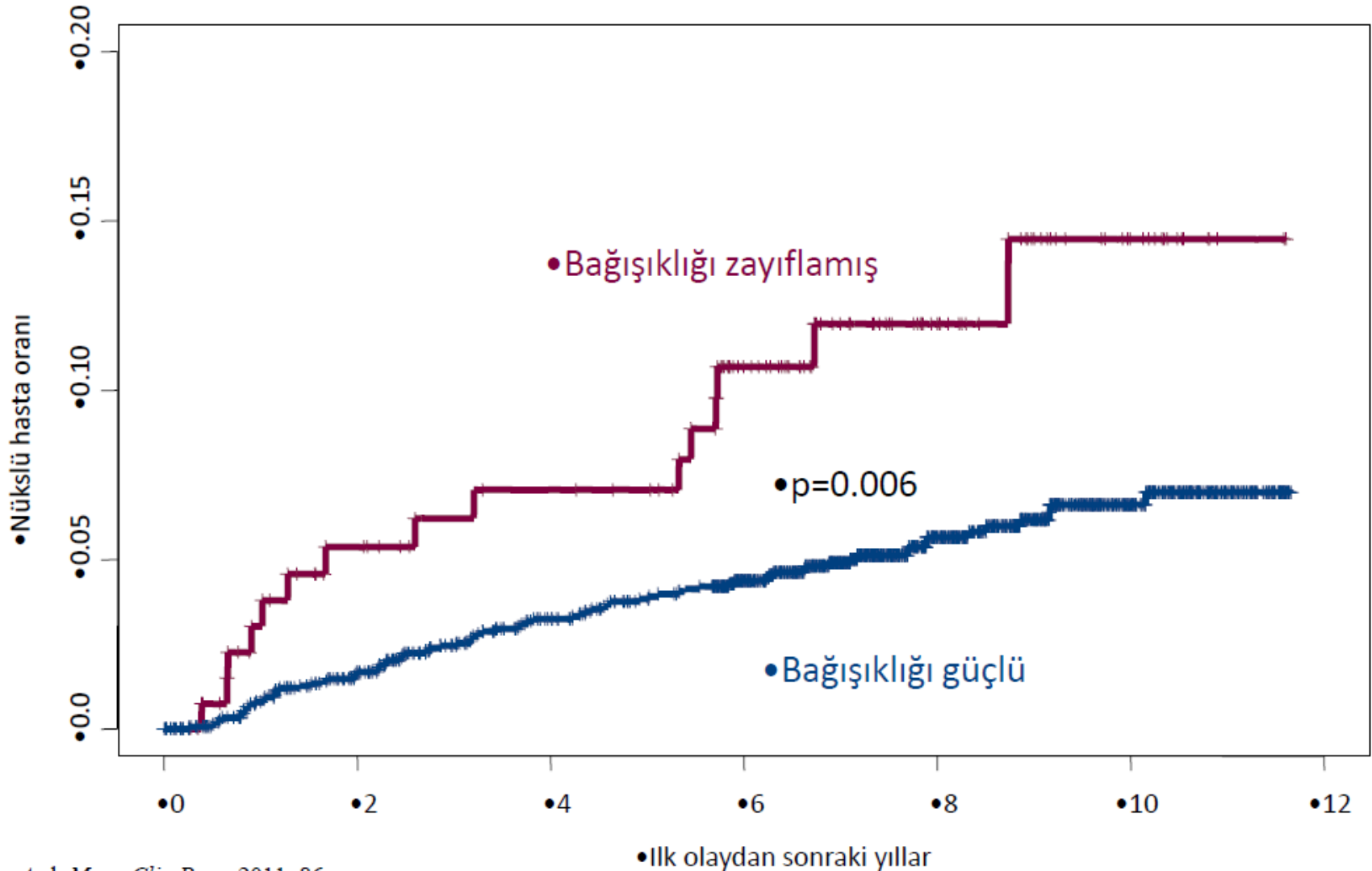
Clinical Infectious Diseases 2014;58(11):1497–503

Sinéad M. Langan,^a Caroline Minassian,^a Liam Smeeth, and Sara L. Thomas

- Oftalmik zoster sonrası 5-12 haftalarda inme riski **>3 kat**
- Eğer antiviral tedavi almamış ise oftalmik zoster sonrası inme riski **> 5 kat**

Table 1				
Site of zoster				
Risk period post zoster				
27–52 wk	164	1.06 (.93–1.25)		0.69 (.74–1.07)
Ophthalmic	299			
Risk period post zoster				
1–4 wk	3	1.26 (.40–3.96)	3	3.27 (1.02–10.44)
5–12 wk	12	2.57 (1.43–4.62)	10	5.47 (2.80–10.71)
13–26 wk	12	1.55 (.86–2.79)	3	1.00 (.31–3.18)
27–52 wk	10	0.70 (.37–1.33)	6	1.12 (.48–2.59)

Nüks; Bağışıklığı baskılanmış kişilerde daha yüksek



BMJ Open Burden of herpes zoster in 16 selected immunocompromised populations in England: a cohort study in the Clinical Practice Research Datalink 2000–2012

Emad A. Yanni,¹ Germano Ferreira,² Morgane Guennec,³ Yassine El Hahi,⁴

BMJ Open 2018;8:e020528.

Table 3 Proportion of patients with HZ with PHN, at least one HZ complication other than PHN, or vascular complications as assessed within 90 days of HZ onset, HES-CPRD, 2000–2011

Type of complications	IC cohort (N=21 146)		IC-free cohort (N=18 583)	
	n (%)	95% CI	n (%)	95% CI
PHN	2253 (10.65)	10.24 to 11.08	1690 (9.09)	8.68 to 9.52
HZ complications other than PHN (overall)	623 (2.95)	2.72 to 3.18	436 (2.35)	2.13 to 2.57
Ocular	411 (1.94)	1.76 to 2.14	299 (1.61)	1.43 to 1.8
Neurological other than PHN	137 (0.65)	0.54 to 0.77	85 (0.46)	0.37 to 0.57
Disseminated	12 (0.06)	0.03 to 0.1	1 (0.01)	0 to 0.03
Other complications	69 (0.33)	0.25 to 0.41	54 (0.29)	0.22 to 0.38
Vascular complications				
Stroke	88 (0.42)	0.33 to 0.51	105 (0.57)	0.46 to 0.68
Transient ischaemic attack	52 (0.25)	0.18 to 0.32	30 (0.16)	0.11 to 0.23
Optic neuritis, vascular retinitis	9 (0.04)	0.02 to 0.08	5 (0.03)	0.01 to 0.06
Myocardial infarction	36 (0.17)	0.12 to 0.24	23 (0.12)	0.08 to 0.19

Postherpetik nevralji

- PHN **yaşlılarda** önemli
- Başlangıçtan 90 günden sonra devam eden veya gelişen **şiddetli ağrı**
- >80 yaş vakaların 1/3'ü etkilenir.

- **Duyusal anormallikler:**

- Allodini (ağrısız uyarılarla ağrı)
- Postherpetik skarlaşma
- Parestezi: Yanma, karıncalanma
- Disestezi: Dokunma duyusunda değişiklik
- Hiperestezi: Ağrıya aşırı yanıt
- Kaşınma



DUM risk faktörleri

❖ İleri ya

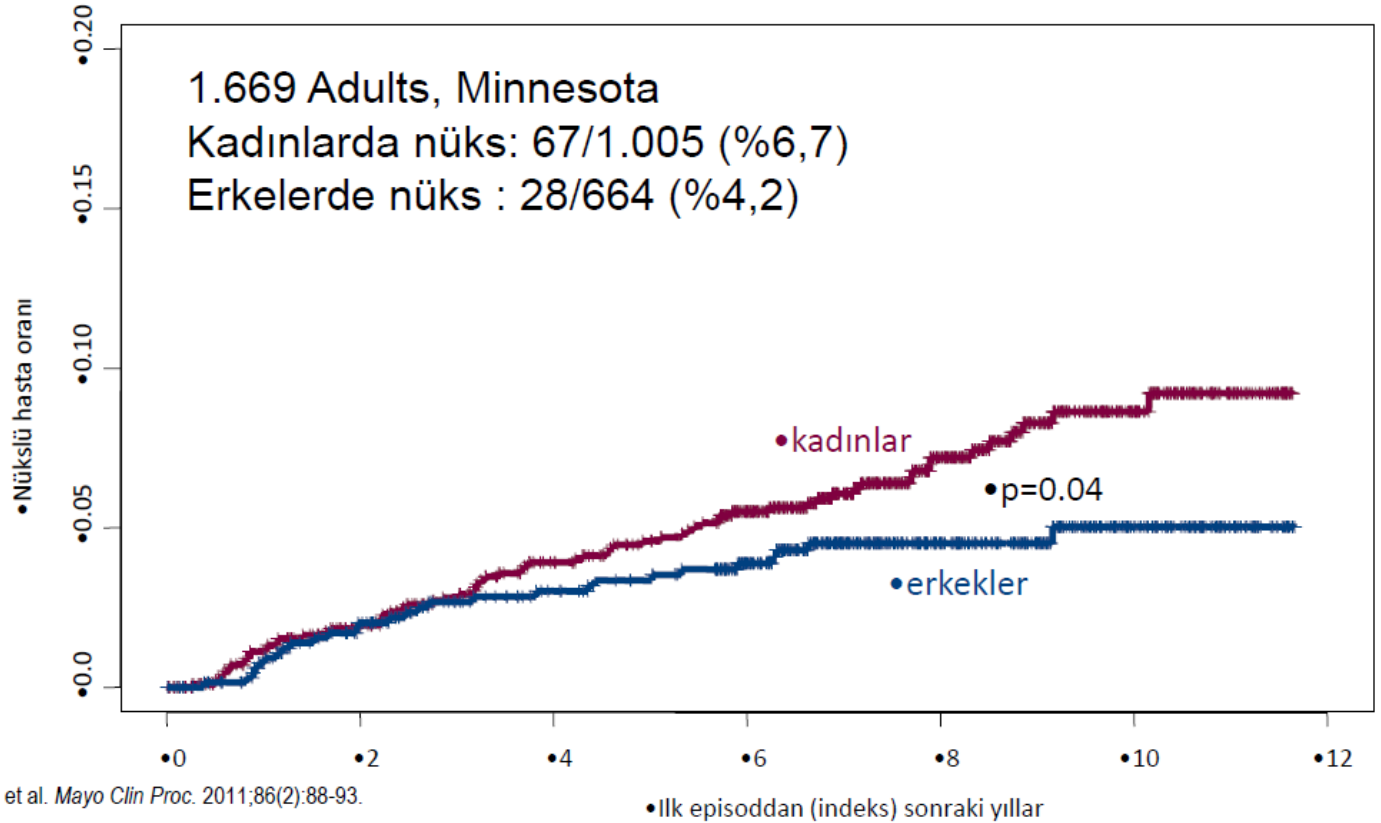
❖ Şidde

❖ Ciddi

❖ Prodr

❖ Kadın

❖ Oftalmik zoster



Johnson R, et al. *Int J Infect Dis* 2007;11: 43-8
Jung BF. *Neurology* 2004;62:1545-51
Cohen JI, et al. *N Engl J Med* 2013;369:255-63

İnfeksiyon hastalıklarından korunmada

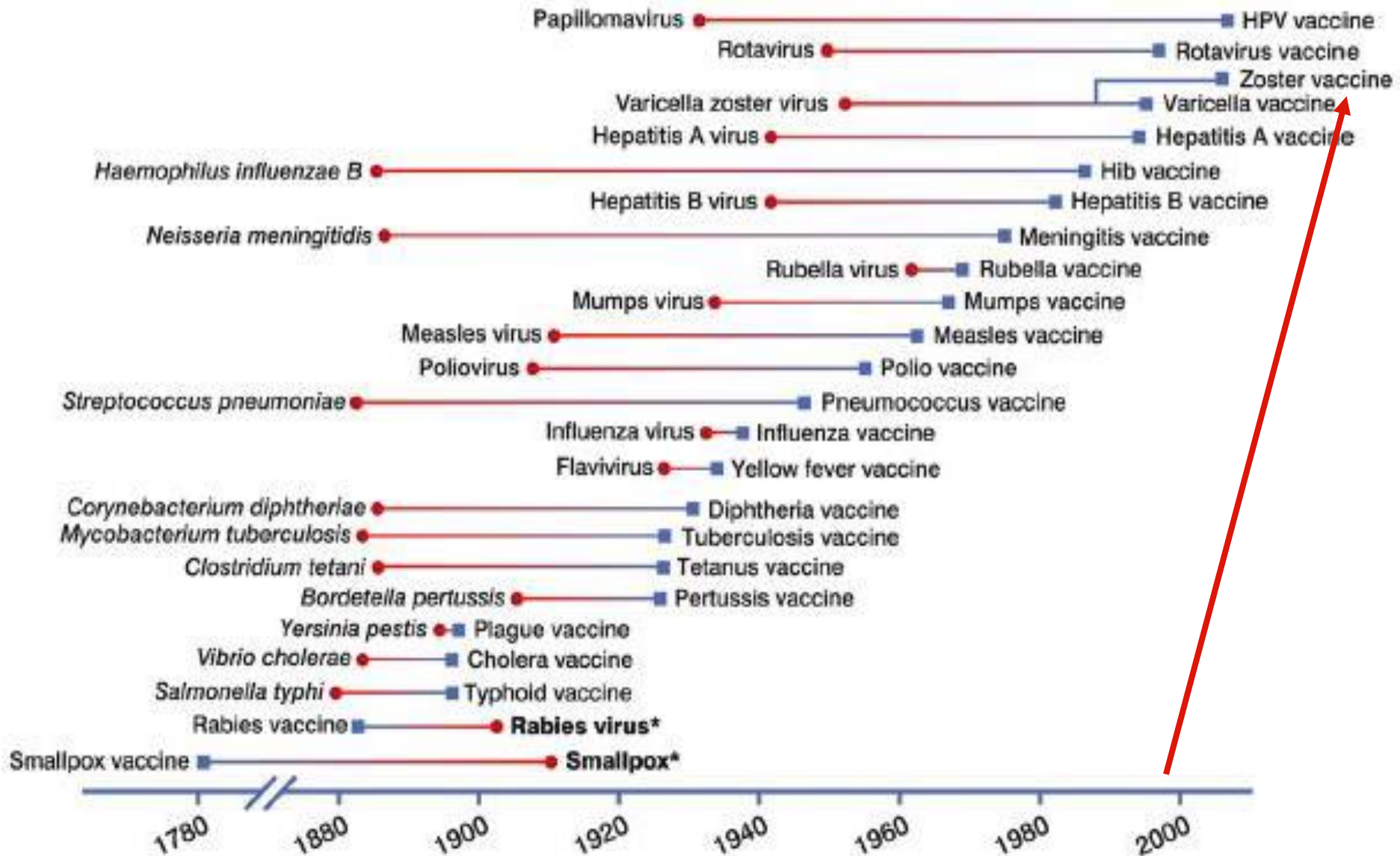
iki yöntem;

➤ Sanitasyon

➤ İmmünizasyon



Aşılar



*During the development of the rabies and smallpox vaccines, it was discovered that the infectious agent was not a bacterium, although viruses would not be directly observed until the 1930s

Zoster Aşısı



1. Canlı aşı: FDA 2006 (≥ 60 yaş, 2011 ≥ 50) onaylı
(Zostavax®, Merck)

❖ İçinde yüksek konsantrasyonda **canlı Oka VZV**
aşı suşu içermekte

❖ **>60 yaş** yetişkinler (2008 CDC ACIP öneri)

❖ **Tek doz**

❖ Herpes zoster atağını 60-69 yaş arasında **%63.9** azaltır
>70 yaş oran **%37.6**

❖ Postherpetik nevraljiyi **%67** azaltmakta

Canlı aşı

Persistence of the Efficacy of Zoster Vaccine in the Shingles Prevention Study and the Short-Term Persistence Substudy (STBS)

K. E. Schmader,¹ M. N. Oxman,² M. J. Levin,³ G. Johnson,⁴ J. H. Zhang,⁴ R. Betts,⁵ V. A. Morrison,⁶ L. Gelb,⁷ J. C. Guatelli,² R. Harbecke,² C. Pachucki,⁸ S. Keay,⁹ B. Menzies,¹¹ M. R. Griffin,¹² C. Kauffman,¹³ A. Marques,¹⁰ J. Toney,¹⁴ P. M. Keller,¹⁵ X. Li,¹⁵ I. S. F. Chan,¹⁵ and P. Annunziato,¹⁵ for the Shingles Prevention Study Group

Time Since Randomization Year	Vaccine Efficacy for HZ BOI	Vaccine Efficacy for Incidence of	Vaccine Efficacy for Incidence of
Year	Aşının etkinliği		
Year			% CI)
Year			
Year			
Year			
Year			
Year			
Year			
SPS			
Year			
Total	%50.1	%60.1	%39.6
STPS			
Years 3.3–7.8	50.1 (14.1–71.0)	60.1 (–9.8 to 86.7)	39.6 (18.2–55.5)
SPS + STPS			
Years 0.0–7.8	58.6 (48.6–66.6)	64.9 (47.4–77.0)	48.7 (42.0–54.7)

Long-term Persistence of Zoster Vaccine Efficacy (LTPS)

Vicki A. Morrison,¹ Gary R. Johnson,² Kenneth E. Schmader,³ Myron J. Levin,⁴ Jane H. Zhang,² David J. Looney,⁵ Robert Betts,⁶ Larry Gelb,⁷ John C. Guatelli,⁵ Ruth Harbecke,⁵ Connie Pachucki,⁸ Susan Keay,⁹ Barbara Menzies,¹⁰ Marie R. Griffin,¹¹ Carol A. Kauffman,¹² Adriana Marques,¹³ John Toney,¹⁴ Kathy Boardman,¹⁵ Shu-Chih Su,¹⁶ Xiaoming Li,¹⁶ Ivan S. F. Chan,¹⁶ Janie Parrino,¹⁶ Paula Annunziato,¹⁶ and Michael N. Oxman⁵; for the Shingles Prevention Study Group^a

	Aşının etkinliği		
	Hastalık yükü	HZ insidansı	PHN insidansı
60-69 yaş	%32.5	%20.2	%17.1
≥ 70 yaş	%42.5	%22.4	%49.7
Total	%37.5	%21.1	%35.4

Efficacy, Safety, and Tolerability of Herpes Zoster Vaccine in Persons Aged 50–59 Years

Clinical Infectious Diseases 2012;54(7):922–8

Kenneth E. Schmader,^{1,2} Myron J. Levin,³ John W. Gnann Jr,^{4,5} Shelly A. McNeil,⁶ Timo Vesikari,⁷ Robert F. Betts,⁸ Susan Keay,⁹ Jon E. Stek,¹⁰ Nickoya D. Bundick,¹⁰ Shu-Chih Su,¹⁰ Yanli Zhao,¹⁰ Xiaoming Li,¹⁰ Ivan S. F. Chan,¹⁰ Paula W. Annunziato,¹⁰ and Janie Parrino¹⁰

¹Duke University, ²Geriatric Research Education and Clinical Centers, Durham Veterans Affairs Medical Center, North Carolina; ³University of Colorado School of Medicine, Aurora; ⁴University of Alabama at Birmingham, ⁵Birmingham Veterans Affairs Medical Center, Alabama; ⁶Dalhousie University, Halifax, Nova Scotia, Canada; ⁷University of Tampere, Finland; ⁸United States Department of Veterans Affairs Maryland Health Care System, Baltimore, and ¹⁰Merck, Sharp, and Dohme Corp, W

(See the Editorial Commentary by

Background. Herpes zoster (HZ) has not been assessed in this population. The efficacy of zoster vaccine for preventing HZ in persons aged 50–59 years

Methods. This was a randomized, controlled trial conducted in North America and Europe. Subjects aged 50–59 years were randomized to receive zoster vaccine (ZV) (Zostavax; Merck) and followed for occurrence of HZ for 182 days postvaccination until accrual of ≥ 96 confirmed HZ cases (as determined by testing for varicella zoster virus DNA by polymerase chain reaction). Subjects were followed for all adverse events (AEs) from day 1 to day 42 postvaccination and for serious AEs (SAEs) through day 182 postvaccination.

Results. The ZV reduced the incidence of HZ (30 cases in vaccine group, 1.99/1000 person-years vs 99 cases in placebo group, 6.57/1000 person-years). Vaccine efficacy for preventing HZ was 69.8% (95% confidence interval, 54.1–80.6). AEs were reported by 72.8% of subjects in the ZV group and 41.5% in the placebo group, with the difference primarily due to higher rates of injection-site AEs and headache. The proportion of subjects reporting SAEs occurring within 42 days postvaccination (ZV, 0.6%; placebo, 0.5%) and 182 days postvaccination (ZV, 2.1%; placebo, 1.9%) was similar between groups.

Conclusions. In subjects aged 50–59 years, the ZV significantly reduced the incidence of HZ and was well tolerated.

Clinical Trials Registration. NCT00534248.

Herpes zosteri
önlemedeki aşı
etkinliği %69.8

Canlı Zoster Aşısı ile ilgili ACIP Önerileri

- **Antiviral** ilaçlar alan kişiler:
 - ✓ Aşı uygulanmadan en az **24 saat önce** ilaçlar kesilmelidir.
 - ✓ Bu ilaçlar zoster aşısı uygulandıktan sonra en az **14 gün sonra** kullanılmalıdır.
- **Şiddetli akut hastalığı** olan kişiler:
 - ✓ Akut hastalıkta, (yüksek ateş) aşılamamanın ertelenmesi düşünülmelidir.
 - ✓ Aktif, tedavi edilmeyen tüberkülozlu hastalarda aşılama ertelenmelidir.

Canlı Herpes zoster aşısı

- Aşı öncesi suçiçeği geçirme öyküsünün araştırılması gerekmez
- Varisella antikör testi yapılmaz
- Diğer aşılarla birlikte verilebilir
- Jelatin, neomisin veya diğer aşı
komponentlerine **allerji öyküsü** olanlara aşı
verilmemelidir.



Canlı aşı; Kontrindike

- Hematolojik malignite

(Hastalığı remisyonda olmayan ya da üç ay içinde sitotoksik KT alanlar)

- T hücresiyle ilgili immün yetmezliği olanlarda

(CD4 $\leq$ 200/mm³ ya da total lenfositlerin $<$ %15)

- Yüksek doz immünosüpresif tedavi

($\geq$ 2 hafta süreyle $\geq$ 20 mg/g prednizon ya da anti-TNF tedavisi) alanlar)

- Gebeler ve 4 hafta içinde gebelik planlayanlar



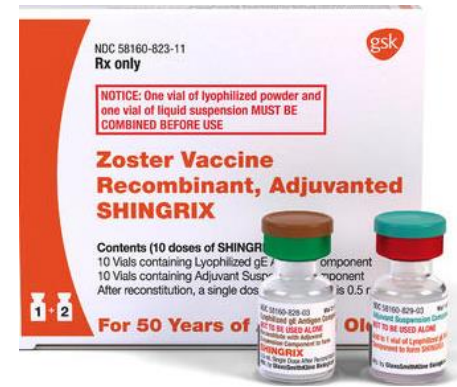
Zoster Aşısı

2. Rekombinant subünit aşı: FDA 2017

(*Shingrix*® GSK)

- ❖ **>50** yaş yetişkinler
- ❖ İki doz; **0- 2** veya **6.** aylar

- VZV glikoprotein E (**gE**) ile **AS01B** adjuvan sistemini içerir
- VZVgE, VZV'ye özgül **CD4+T-hücre** yanıtını ve rekombinant proteinlere karşı **antikor** üretimini uyarır



\$280-iki doz bedeli!

ORIGINAL ARTICLE

Efficacy of an Adjuvanted Herpes Zoster Subunit Vaccine in Older Adults

- Faz III çalışması, **15411** katılım
- VZV g E ve AS01B adjuvan içeren subünit aşı (HZ/su)
- ≥ 50 yaş
- İki doz aşı (bir ay arayla)
- Ortalama **3.2 yıl** takip edilmiş

Efficacy of an Adjuvanted Herpes Zoster Subunit Vaccine in Older Adults

	Aşının etkinliği (%95)
Total	96.2 (92.7–98.3)
50-59 yaş	96.9 (90.6–99.4)
60-69 yaş	94.1 (85.6–98.1)
≥ 50 yaş	98.3 (89.9–100.0)

Yan etkiler;

- İnjektasyon yerinde ağrı, kızarıklık, şişlik
- Miyalji
- Baş ağrısı, yorgunluk
- Titreme, ateş



Short communication

Complications of herpes zoster in immunocompetent older adults:
Incidence in vaccineesMartina Kovac^a, Himmilata
Laura Campora^g, Antonio

HZ/su efficacy against HZ-related complications

Participants	HZ/su	Number of participants	Number of participants with HZ-related complications	(year) ^a	person-years	related complications	(year) ^a	person-years	CI	p-value
By age group										
50–59 years	3491	0	13,789.7	0.0	3523	1	13,941.4	0.1	100.0	–3890.4; 100.0 1.0000
60–69 years	2140	0	8621.4	0.0	2166	3	8671.8	0.3	100.0	–142.8; 100.0 0.2513
70–79 years	6468	1	24,437.4	0.0	6554	8	24,691.4	0.3	87.4	5.9; 99.8 0.0403
≥80 years	1782	0	6324.4	0.0	1792	4	6277.5	0.6	100.0	–51.1; 100.0 0.1245
Total population										
≥70 years	8250	1	30,761.7	0.0						
Overall (≥50 years)	13,881	1	53,172.9	0.0						

Sonuç:

50 yaş üstü erişkinlerde 2 doz (0-2. ay)

HZ/subunit aşı HZ ilişkili komplikasyonları
azaltmada oldukça etkili.

Shingrix is a trademark of the GSK group of companies

Evaluation of the effect of the herpes zoster vaccination programme 3 years after its introduction in England: a population-based study



Lancet Public Health 2018; 3: e82–90

Gayatri Amirthalingam, Nick Andrews, Philip Keel, David Mullett, Ana Correa, Simon de Lusignan, Mary Ramsay



İngiltere, 2013 HZ aşısı >70 yaş öneri
60–89 yaş arası kişiler aşılanmış (yakalama aşıları)
3 yıllık sonuçlar; HZ konsültasyonu/ PHN tanı kodu irdelenmiş

	Age on Sept 1, 2013, (age when first eligible for vaccination)	Average cumulative uptake*	Expected events†	Observed events	Incidence rate ratio (95% CI)‡	Expected incidence per 1000 person-years	Incidence reduction per 1000 person-years (95% CI)	Vaccine effectiveness (95% CI)§
Routine cohorts								
First year after vaccine eligibility	68–70 years (70–71 years)	46%	354	255	0.72 (0.64–0.82)	8.7	2.4 (1.6–5.6)	62% (39–78)
Second year after vaccine eligibility	69–70 years (70–71 years)	65%	241	143	0.59 (0.50–0.70)	8.9	3.6 (2.7–4.5)	62% (54–77)
Third year after vaccine eligibility	70 years (70–71 years)	70%	117	65	0.56 (0.44–0.71)	9.2	4.1 (2.7–5.2)	64% (41–80)
All years of the programme	68–70 years (70–71 years)	56%	712	463	0.65 (0.60–0.72)	8.8	3.1 (2.5–3.5)	62% (50–71)
Catch-up cohorts								
First year after vaccine eligibility	76–79 years (78–80 years)	46%	348	243	0.70 (0.62–0.79)	10.0	3.0 (2.1–3.8)	65% (46–83)
Second year after vaccine eligibility	77–79 years (78–80 years)	62%	251	151	0.60 (0.51–0.71)	10.2	4.0 (3.0–5.0)	64% (47–79)
Third year after vaccine eligibility	79 years (79–80 years)	60%	78	59	0.76 (0.59–0.98)	10.3	2.5 (0.2–4.2)	40% (3–68)
All years of the programme	76–79 years (78–80 years)	54%	677	453	0.67 (0.61–0.74)	10.1	3.1 (2.6–3.9)	62% (48–72)

Impact is shown by the incidence rate ratio (observed/expected events) and incidence reduction. GP=general practitioner. * Calculated by taking the mean of the cumulative uptake values in each month from October to September of the relevant years and cohorts. † Expected if the vaccine had not been introduced; based on model results for unvaccinated cohorts. ‡ Estimated from the Poisson regression model with a log-linear time trend, quadratic age effect, and the factor for vaccine eligibility. § Effectiveness required to generate the observed reductions in the first 3 years after vaccination.

Table 3: Impact of routine and catch-up herpes zoster vaccination on GP-diagnosed herpes zoster by time since cohorts were first eligible for vaccination

Evaluation of the effect of the herpes zoster vaccination programme 3 years after its introduction in England: a population-based study



Lancet Public Health 2018; 3: e82–90

Gayatri Amirthalingam, Nick Andrews, Philip Keel, David Mullett, Ana Correa, Simon de Lusignan, Mary Ramsay



***Herpes zoster aşı programı ilk 3 yılda: ~17 000 HZ atağını
** ~3300 PHN atağını engelledi**

	Age on Sept 1, 2013, (age when first eligible for vaccination)	Average cumulative uptake*	Expected events†	Observed events	Incidence rate ratio (95% CI)‡	Expected events	Incidence reduction per 1000 person-years (95% CI)	Vaccine effectiveness (95% CI)§
Routine cohorts								
First year after vaccine eligibility	68–70 years	54%	15.0	31	0.66 (0.46–0.94)	1.91	0.83 (0.31–1.02)	100% (54–100)
Second year after vaccine eligibility	71–72 years	54%	15.0	31	0.66 (0.46–0.94)	1.91	0.64 (0.11–1.03)	59% (8–92)
Third year after vaccine eligibility	73–74 years	54%	15.0	9	0.60 (0.31–1.16)	1.99	0.80 (–0.32–1.37)	100% (43–100)
All years of the programme	68–74 years	54%	125.1	78	0.62 (0.50–0.79)	1.88	0.68 (0.39–0.94)	88% (59–100)
Catch-up cohorts								
First year after vaccine eligibility	68–70 years	54%	15.0	31	0.66 (0.46–0.94)	1.91	0.83 (0.31–1.02)	86% (37–100)
Second year after vaccine eligibility	71–72 years	54%	15.0	31	0.66 (0.46–0.94)	1.91	0.64 (0.11–1.03)	55% (10–87)
Third year after vaccine eligibility	73–74 years	54%	15.0	9	0.60 (0.31–1.16)	1.99	0.80 (–0.32–1.37)	66% (27–100)
All years of the programme	68–74 years	54%	125.1	78	0.62 (0.50–0.79)	1.88	0.68 (0.39–0.94)	70% (39–93)

Impact is shown by the incidence rate ratio (observed/expected events) and incidence reduction. GP=general practitioner. *Calculated by taking the mean of the cumulative uptake values in each month from October to September of the relevant years and cohorts. †Expected if the vaccine had not been introduced; based on model results for unvaccinated cohorts. ‡Estimated from the Poisson regression model with a log-linear time trend, quadratic age effect, and the factor for vaccine eligibility. §Effectiveness required to generate the observed reductions in the first 3 years after vaccination.

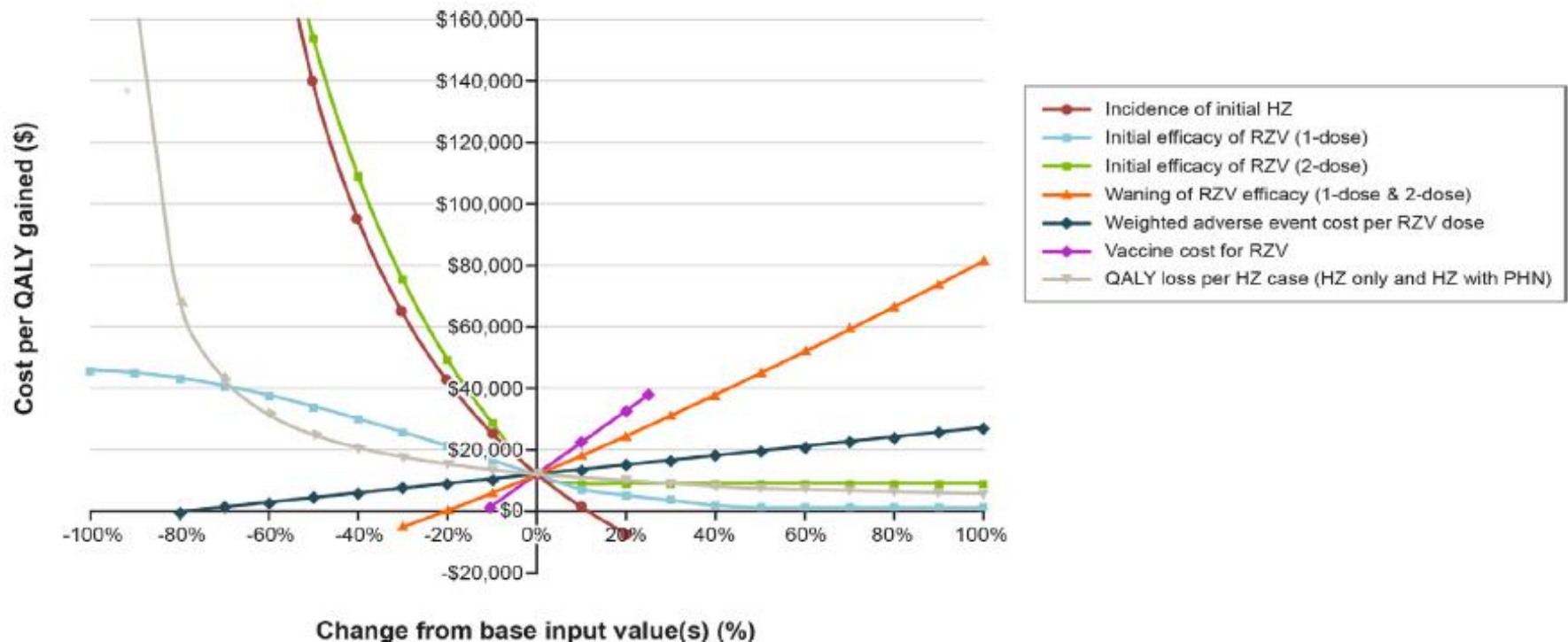
Table 4: Impact of routine and catch-up herpes zoster vaccination on GP-diagnosed postherpetic neuralgia by time since cohorts were first eligible for vaccination



Cost-effectiveness of an Adjuvanted Recombinant Zoster Vaccine in older adults in the United States



D. Curran^{a,*}, B. Patterson^b, L. Varghese^c, D. Van Oorschot^a, P. Buck^b, J. Carrico^d, K. Hicks^d, B. Lee^e, B. Yawn^f



<i>Vaccine</i>	<i>Pros</i>	<i>Cons</i>
Live, attenuated		
Varivax, Varilrix, Zostavax, ProQuad ^a and Priorix-Tetra	Stimulate both cellular and humoral immune response	Not recommended for subjects who are immunosuppressed due to chemotherapy, radiotherapy, steroids, neoplastic diseases, etc.
	Long-lasting immune protection	Not recommended for subjects who are immunosuppressed genetically or due to acquired diseases (HIV, tuberculosis)
	Immune response stimulated by spontaneous reactivation of vaccine strain	Risk of shedding and transmitting vaccine strain to immunodepressed subjects
		Cold chain integrity needs to be preserved in order to maintain infectivity
		Not recommended for pregnant women. Pregnancy should be avoided in the 3 months following vaccination.
		Immunity and effectiveness tend to wane over time after vaccination.
Heat-inactivated		
V212	Safe in immunodepressed subjects	Stimulates lower and less efficient immune response compared to live attenuated vaccines
	Does not require maintenance of cold chain integrity	Requires 4 doses for protective immunity, complicating compliance
Subunit		
Shingrix	Contains only one viral protein	High incidence of adverse events
	Safe in immunodepressed subjects	

If you are
this age,

talk to your health care professional about these vaccines

	Flu Influenza	Tdap or Td Tetanus, diphtheria, pertussis	Shingles Zoster		Pneumococcal		Meningococcal		MMR Measles, mumps, rubella	HPV Human papillomavirus		Chickenpox Varicella	Hepatitis A	Hepatitis B	Hib <i>Haemophilus influenzae</i> type b
			RZV	ZVL	PCV13	PPSV23	MenACWY	MenB		for women	for men				
19 - 21 years	Recommended	Recommended	Recommended	Recommended	Recommended	Recommended	Recommended	Recommended	Recommended	Recommended	Recommended	Recommended	Recommended	Recommended	Recommended
22 - 26 years	Recommended	Recommended	Recommended	Recommended	Recommended	Recommended	Recommended	Recommended	Recommended	Recommended	Recommended	Recommended	Recommended	Recommended	Recommended
27 - 49 years	Recommended	Recommended	Recommended	Recommended	Recommended	Recommended	Recommended	Recommended	Recommended	Recommended	Recommended	Recommended	Recommended	Recommended	Recommended
50 - 64 years	Recommended	Recommended	Recommended	Recommended	Recommended	Recommended	Recommended	Recommended	Recommended	Recommended	Recommended	Recommended	Recommended	Recommended	Recommended
65+ year	Recommended	Recommended	Recommended	Recommended	Recommended	Recommended	Recommended	Recommended	Recommended	Recommended	Recommended	Recommended	Recommended	Recommended	Recommended

**More
Information:**

You should
get flu
vaccine every
year.

You should
get 1 dose of
Tdap if you
did not get
it as a child
or adult.
You should
also get a Td
booster every
10 years.
Women
should get 1
dose of Tdap
during every
pregnancy.

There are 2 types of zoster
vaccine. You should get 2
doses of RZV at age 50 years
or older (preferred) or 1 dose
of ZVL at age 60 years or
older, even if you had shingles
before.

There are 2 types of
pneumococcal vaccine. You
should get 1 dose of PCV13
and at least 1 dose of PPSV23
depending on your age and
health condition.

There are 2 types of
meningococcal vaccine. You
may need one or both types
depending on your health
condition.

You should get this vaccine if you did not get it when you were a child.

You should get HPV vaccine if
you are a woman through age
26 years or a man through
age 21 years and did not
already complete the series.

RZV: Recombinant zoster vaccine
ZVL: Zoster vaccine live

For more information, call 1-800-CDC-INFO
(1-800-232-4636) or visit www.cdc.gov/vaccines

Recommended For You: This vaccine is
recommended for you **unless** your health care
professional tells you that you do not need it or
should not get it.

May Be Recommended For You: This vaccine
is recommended for you if you have certain risk
factors due to your health condition. Talk to your
health care professional to see if you need this
vaccine.

**If you are traveling outside the United States, you
may need additional vaccines.**

Ask your health care professional about which vaccines
you may need at least 6 weeks before you travel.



U.S. Department of
Health and Human Services
Centers for Disease
Control and Prevention

Soru & Yanıt

❖ Zona geçirmiş olan kişiler aşılanabilir mi?

EVET

❖ HZ'nin ortaya çıkışından **ne kadar süre sonra** aşılama yapılabilir?

- ✓ Optimal zaman aralığını gösteren hiçbir veri yok
- ✓ Kanada (NACI) ve Avustralya (ATAGI) aşılamasının son episoddan en **az 1 yıl sonra** yapılabileceği belirtilmekte





Shingles (Herpes Zoster)

Shingles Home

About Shingles +

Vaccination

For Health Care Professionals +

Laboratory Testing +

Surveillance

Resources & References

Multimedia

[CDC > Shingles Home](#)

New Shingles Vaccine Fact Sheet for Adults



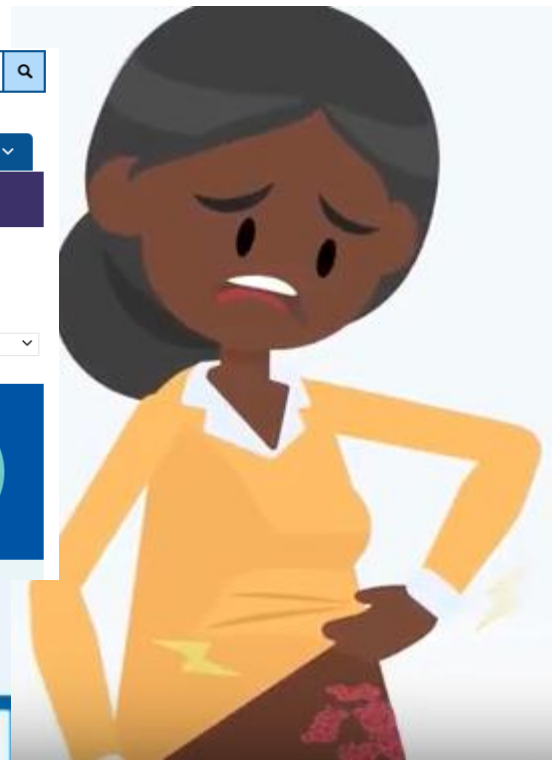
Format:

Language:

Get the new shingles vaccine if you are
50 or older



VACCINATION IS
RECOMMENDED
FOR EVERYONE
AGE 50 OR OLDER.





Shingles (Herpes Zoster)

Shingles Home

About Shingles



Vaccination

If you're 50 or older, get

- Shingrix provides strong protection against shingles and pain.
- Get Shingrix even if you already had shingles more than once.
- Your risk of shingles and complications increases as you get older.
- You need 2 doses of Shingrix. You need to get the second dose 2 to 6 months after you get the first dose.

If you got a shingles vaccine, get Shingrix

- You may have already got a dose of Shingrix, but if you did, you still need 2 doses of Shingrix.

Make a plan to get 2 doses of Shingrix

- You can get Shingrix at your doctor or pharmacist about getting the vaccine.
- Call your health insurance provider to see if you have coverage for the vaccine.
- Plan to get your second dose of Shingrix 2 to 6 months after your first dose.

Know your risk of getting shingles and complications



About 1 out of every 3 people in the United States will develop shingles during their lifetime.



If you've had chickenpox, you are at risk for shingles. More than 99% of Americans born before 1980 have had chickenpox, even if they don't remember it.



Your risk of getting shingles and having serious complications increases as you get older.



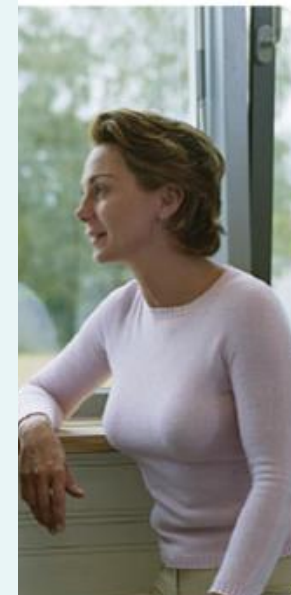
About 1 in 10 people who get shingles develop nerve pain that lasts for months or years after the rash goes away. This is called postherpetic neuralgia and is the most common complication of shingles.



Shingles may lead to other serious complications involving the eye, including blindness. Very rarely, it can also lead to pneumonia, hearing problems, brain inflammation (encephalitis) or death.

CDC A-Z INDEX

Language: English (US)



Getting Shingrix.



Aşı "aşığı" Dr. Fikret KURT'un izniyle...



Aşı "aşığı" Dr. Fikret KURT'un izniyle....

Sonuç

- Herpes zoster yaşlılarda önemli bir morbidite nedeni
- Herpes zoster ve komplikasyonları aşıyla önlenabilir
- ≥ 60 yaş erişkinler ve onların bakımını yapan sağlık çalışanları HZ ve önerilen aşı konusunda eğitilmelidir



KLİMİK TÜRK KLİNİK MİKROBİYOLOJİ VE İNFEKSİYON HASTALIKLARI DERNEĞİ

ZONA AŞILARI



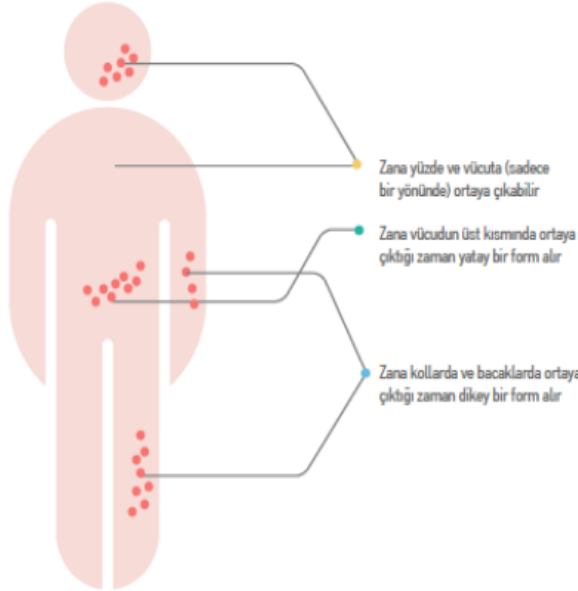
TANIM

Zona (Herpes zoster), bazı kraniyal sinir ganglionları ve arka kök ganglionlarında latent halde bulunan Varicella-zoster virüsü (VZV)'ün reaktivasyonu ile gelişen, genellikle tek dermatom alanında radiküler ağrı ve veziküler döküntü ile seyreden bir hastalıktır. Zona, suçiçeği geçirenlerde ve daha az oranda da suçiçeği aşı olanlarda görülmektedir.



ZONANIN ÖNEMLİ KOMPLİKASYONLARI

- Post herpetik nevralji (PHN)
- Bakteriyel süper enfeksiyonlar
- Ortalimik zoster
- Bell's paralizisi
- Ramsay-Hunt sendromu
- İşitme kaybı
- Motor nöropati
- Transvers miyelit
- Menenjit
- Ensefalit
- VZV vaskülopatisi



Zona yüzde ve vücutta (sadece bir yönünde) ortaya çıkabilir

Zona vücudun üst kısmında ortaya çıktığı zaman yatay bir form alır

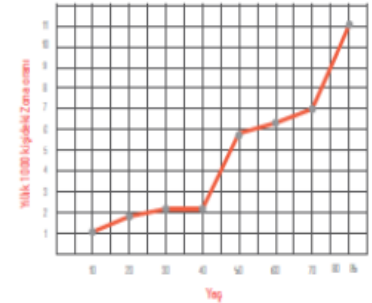
Zona kolları ve bacaklarda ortaya çıktığı zaman dikey bir form alır



1000 KİŞİDE 3-4 VAKA

Zona, suçiçeği geçirenlerde ve daha az oranda da suçiçeği aşı olanlarda görülmektedir. Yıllık zona insidansı 1000 kişide 3-4 vaka olarak bildirilmiştir. Her yaşta görülebilmekle birlikte, 50 yaş üstünde hastalığın insidansı artmaktadır. Bir kişinin zona geçirme riski 60 yaşına kadar %25 iken, 85 yaşına kadar bu risk %50'ye yükselmektedir. Hastalığın komplikasyonları da yaşla birlikte artmaktadır.

Yaşa göre yıllık zona insidansı grafiği



% 53.1 KORUYUCU

Zona aşısı ile zona geçirme riski ve PHN gibi hastalığın önemli komplikasyonlarında azalma görülmektedir. Aşının 60 yaş üstünde zona insidansını %51.3, PHN riskini %66.5 oranında azalttığı gösterilmiştir. Ancak aşının etkinliği yıllar içinde azalmaktadır.



Haydi büyükler aşuya...