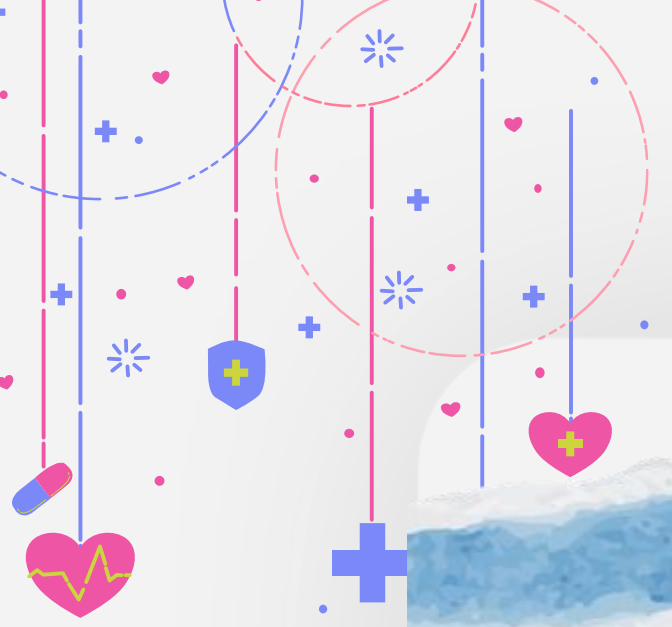


# Görünmeyen Risk Faktörleri: İmmünosüpresif Dışı Farmakoterapi, Bitkisel Uygulamalar ve İnfeksiyon Duyarlılığı

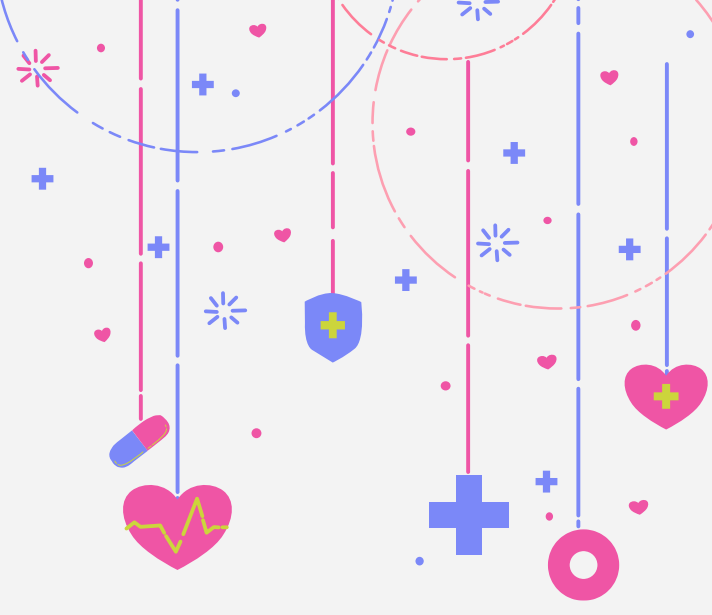
Taliha Karakök  
Halk Sağlığı Genel Müdürlüğü  
KLİMİK 2026

1





# Uyku



# Sleep Deprivation After Septic Insult Increases Mortality Independent of Age

Friese, Randall S. MD; Bruns, Brandon MD; Sinton, Christopher M. PhD

- Fareler 6nce sepsise sokulmuř, sonra bir grubun uyumasına izin verilmemiř
- Uykusuz kalan grupta mortalite yařtan baęımız olarak y6ksek bulunmuř

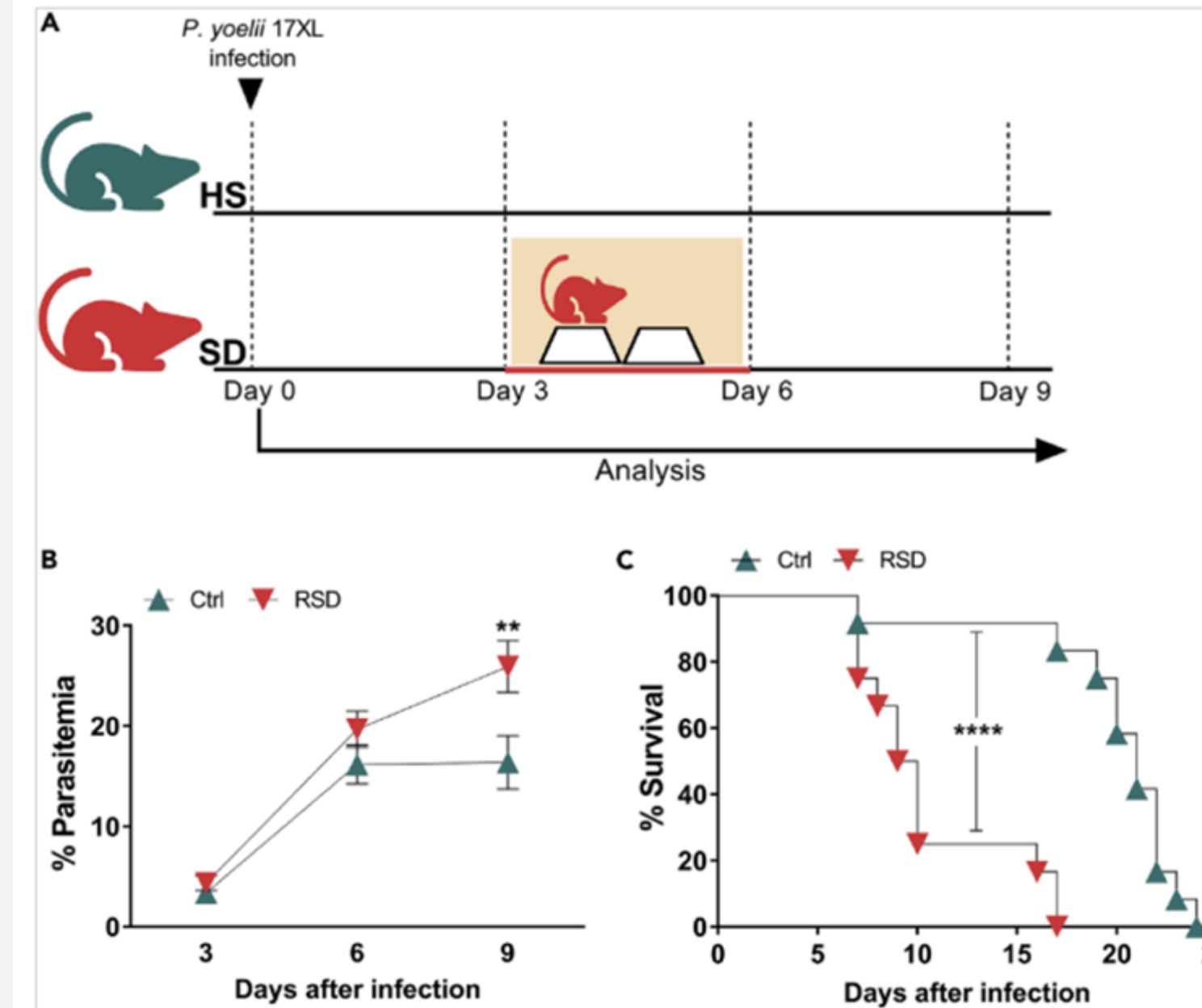
# Sleep Disturbance during Infection Compromises Tfh Differentiation and Impacts Host Immunity

[Edgar Ruz Fernandes](#)<sup>1</sup> · [Marcela Luize Barbosa](#)<sup>1</sup> · [Marcelo Pires Amaral](#)<sup>1</sup> · ...

[Silvia Beatriz Boscardin](#)<sup>2,4</sup> · [Alexandre Castro Keller](#)<sup>1</sup> ✉ · [Daniela Santoro Rosa](#)<sup>1,4,5</sup> ✉ ...

[Show more](#)

- Farelerin REM uykusu bozulmuş
- Farelere Plasmodium verilmiş
- T foliküler yardımcı (Tfh) hücrelerinin farklılaşmasını engellenmiş ve farklılaşma için gereken genler inaktive olmuş
- Hipotalamus-hipofiz-adrenal eksenini aşırı aktive olmuş



## BEHAVIORALLY ASSESSED SLEEP AND SUSCEPTIBILITY TO THE COMMON COLD

# Behaviorally Assessed Sleep and Susceptibility to the Common Cold

Aric A. Prather, PhD<sup>1</sup>; Denise Janicki-Deverts, PhD<sup>2</sup>; Martica H. Hall, PhD<sup>3</sup>; Sheldon Cohen, PhD<sup>2</sup>

<sup>1</sup>Department of Psychiatry, University of California, San Francisco, CA; <sup>2</sup>Department of Psychology, Carnegie Mellon University, Pittsburgh, PA;

<sup>3</sup>Department of Psychiatry, University of Pittsburgh Medical Center, Pittsburgh, PA

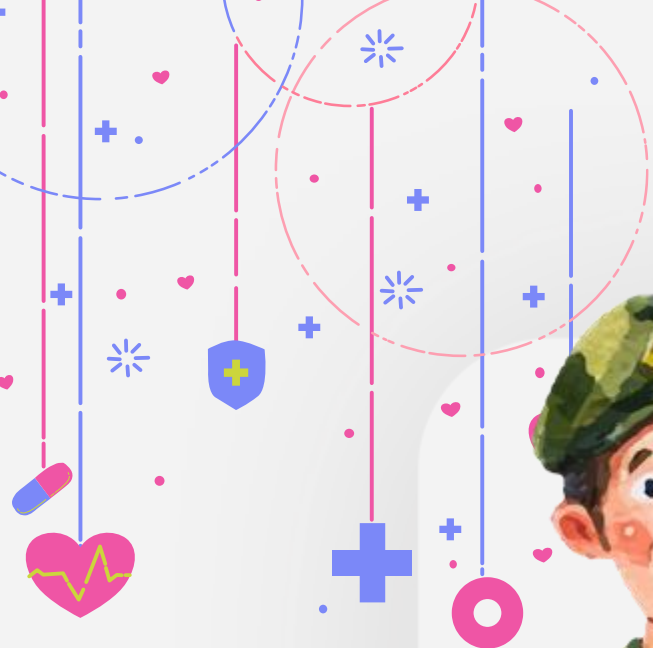
- Bileğe takılan bir sensörle kişilerin 7 gün boyunca uyku saatleri takip edilmiş
- 7 günlük ölçümün ardından denekler bir otele yerleştirilmiş ve karantinaya alınmış. Burada hepsine burun damlası yoluyla **Rhinovirus** verilmiş
- Sonraki 5 gün semptom takibi, muayene ve mukus örnekleri alınmış

**Sonuç?**

- 5 saatten az uyuyanlar [OR] = **4,50**, %95 güven aralığı[CI], 1,08–18,69)
- 5 ila 6 saat uyuyanlar (OR = **4,24**, %95 CI, 1,08–16,71)

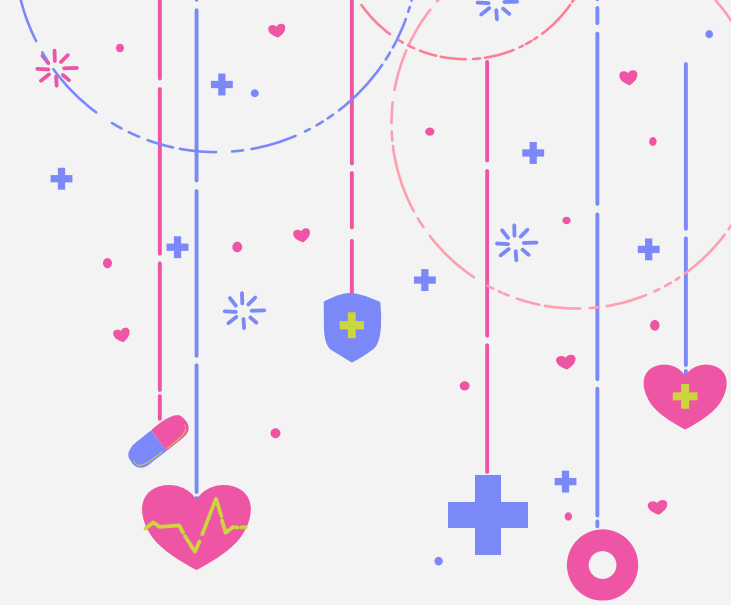
Gecede 7 saatten fazla uyuyanlara kıyasla **soğuk algınlığı gelişme riski daha yüksek**

6,01 ila 7 saat uyuyanlar ise daha fazla risk altında değil (OR = 1,66; %95 CI 0,40–6,95)



6

# Askerlik



# Changes in Immune Function during Initial Military Training

ADRIENNE HATCH-MCCHESNEY<sup>1</sup>, PATRICK N. RADCLIFFE<sup>1,2</sup>, KENNETH P. PITTS<sup>3</sup>, ANTHONY J. KARIS<sup>1</sup>, RORY P. O'BRIEN<sup>4</sup>, STEPHANIE KRIEGER<sup>5</sup>, MAYRA NELMAN-GONZALEZ<sup>5</sup>, DOUGLASS M. DIAK<sup>6</sup>, SATISH K. MEHTA<sup>7</sup>, BRIAN CRUCIAN<sup>8</sup>, JAMES P. MCCLUNG<sup>1</sup>, TRACEY J. SMITH<sup>1</sup>, LEE M. MARGOLIS<sup>1</sup>, and J. PHILIP KARL<sup>1</sup>

<sup>1</sup>U.S. Army Research Institute of Environmental Medicine, Natick, MA; <sup>2</sup>Oak Ridge Institute of Science and Education, Oak Ridge, TN; <sup>3</sup>Army Research Institute, Ft. Benning, GA; <sup>4</sup>U.S. Army Maneuver Center of Excellence, Fort Benning, GA; <sup>5</sup>KBR, Houston, TX; <sup>6</sup>Aegis Aerospace, Houston, TX; <sup>7</sup>JES Tech, Houston, TX; and <sup>8</sup>NASA Johnson Space Center, Houston, TX

- ✓ •Kalabalık ortam
- ✓ •Uyku değişiklikleri
- ✓ •Fiziksel ve psikolojik stres
- ✓ •Diyet değişiklikleri

61 asker, askere kayıt olunan zaman ve yaklaşık 4 ay sonra değerlendirilmiş

|                            | 4 ay sonunda                               |
|----------------------------|--|
| Periferik lökosit dağılımı | Dağılım değişmiş                           |
| Sitokinler                 | IL-5 dışında ölçülen tüm sitokinler artmış |
| Hormonlar                  | Kortizol seviyeleri artmış                 |
| Viral reaktivasyon         | EBV reaktivasyon prevalansı artmış         |

# COMMENTARY

---

MILITARY MEDICINE, 188, 11/12:296, 2023

## **Sleep, Immune Function, and Vaccinations in Military Personnel: Challenges and Future Directions**

*Melissa S. Anderson, PhD<sup>id</sup>\*,†; Evan D. Chinoy, PhD<sup>id</sup>‡,§; Elizabeth M. Harrison, PhD<sup>id</sup>§,||;  
Christopher A. Myers, PhD\*; Rachel R. Markwald, PhD<sup>id</sup>‡*

Askerlik aşıları askerliğin hemen öncesinde değil  
birkaç hafta önce yapılmalı

---

# Egzersiz

[Home](#) > [Sports Medicine](#) > [Article](#)

## Effects of Regular Physical Activity on the Immune System, Vaccination and Risk of Community-Acquired Infectious Disease in the General Population: Systematic Review and Meta-Analysis



Sports Medicine

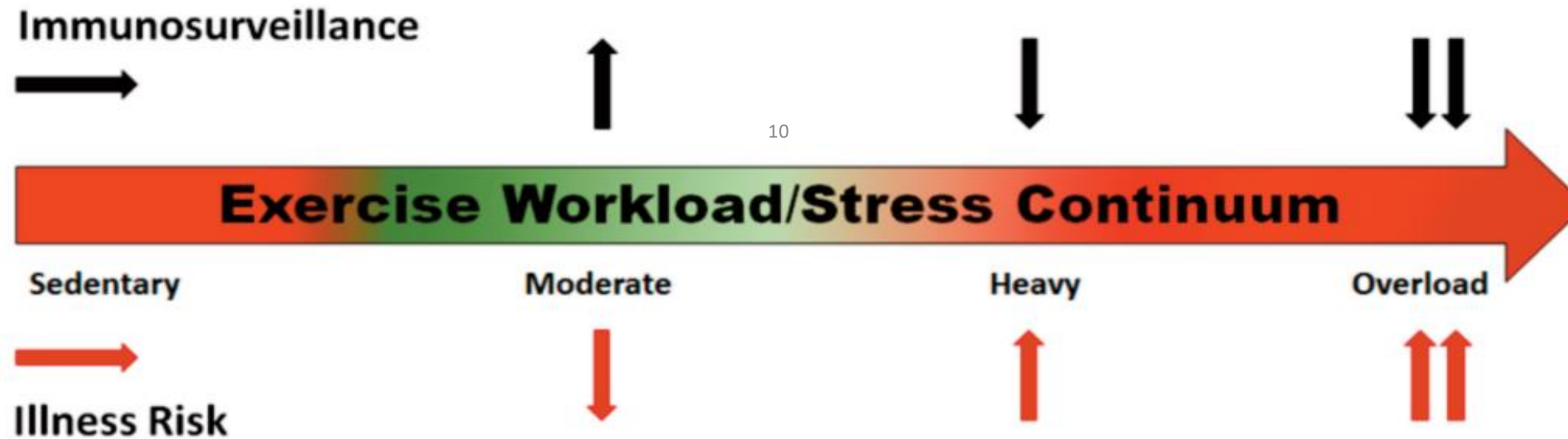
- Habitüel fiziksel aktivite düzeyinin daha yüksek olması, toplum kökenli enfeksiyon hastalıkları riskinde **%31 azalma** (HR **0,69**; %95 GA 0,61–0,78; 6 çalışma, N=557.487 birey)
- Enfeksiyonlara bağlı mortalitede **%37 azalma** (HR **0,64**; %95 GA 0,59–0,70; 4 çalışma, N=422.813 birey) ile ilişkili
- Fiziksel aktivite müdahaleleri, kontrol gruplarına kıyasla **CD4 hücre sayısında artış ve tükürük immünoglobulin A (IgA) düzeyinde artış, nötrofil sayısında ise azalma** göstermiştir

# Increased risk of respiratory viral infections in elite athletes: A controlled study

Maarit Valtonen , Wilma Grönroos, Raakel Luoto, Matti Waris, Matti Uhari, Olli J. Heinonen, Olli Ruuskanen

Published: May 4, 2021 • <https://doi.org/10.1371/journal.pone.0250907>

- Uzun süreli/ağır egzersiz immünsüpresyon yapabilir



**Figure 1:** Schematic model of the exercise workload/stress continuum and the relationship between immunosurveillance measures and risk of illness as the exercise workload is increased to moderate, heavy and overload.



ORIGINAL ARTICLE | [Open Access](#) | [CC](#) [i](#)

## Changes in immune cell populations during acclimatization to high altitude

[Kathy Pham](#), [Abel Vargas](#), [Shyleen Frost](#), [Saheli Shah](#), [Erica C. Heinrich](#) [✉](#)

## High-altitude exposures and intestinal barrier dysfunction

Authors: [Zachary J. McKenna](#), [Felipe Gorini Pereira](#), [Trevor L. Gillum](#), [Fabiano T. Amorim](#), [Michael R. Deyhle](#), and [Christine M. Mermier](#) | [AUTHORS INFO & AFFILIATIONS](#)

# Yüksek Rakım

Hipobarik hipoksi

inflamasyon

immünitede deęişiklik

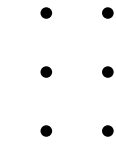
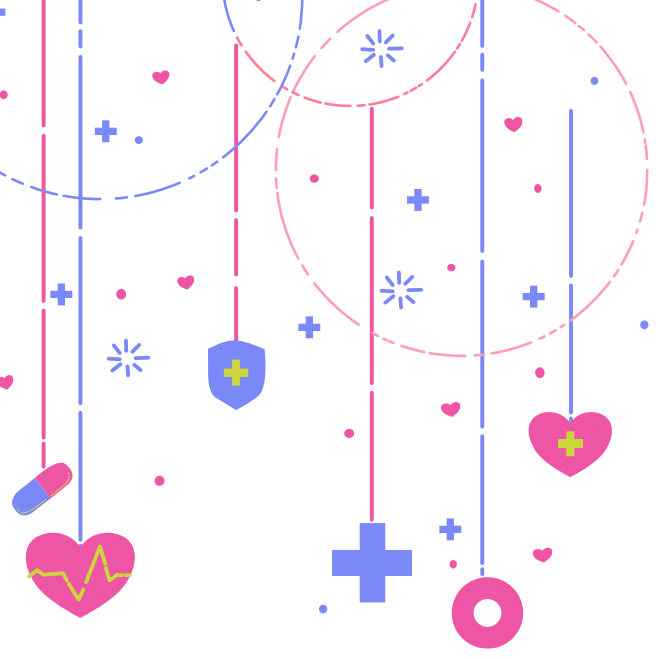
Adaptasyon-Maladaptasyon

Pulmoner HT-Beyin ödemi

intestinal bariyerde deęişiklik

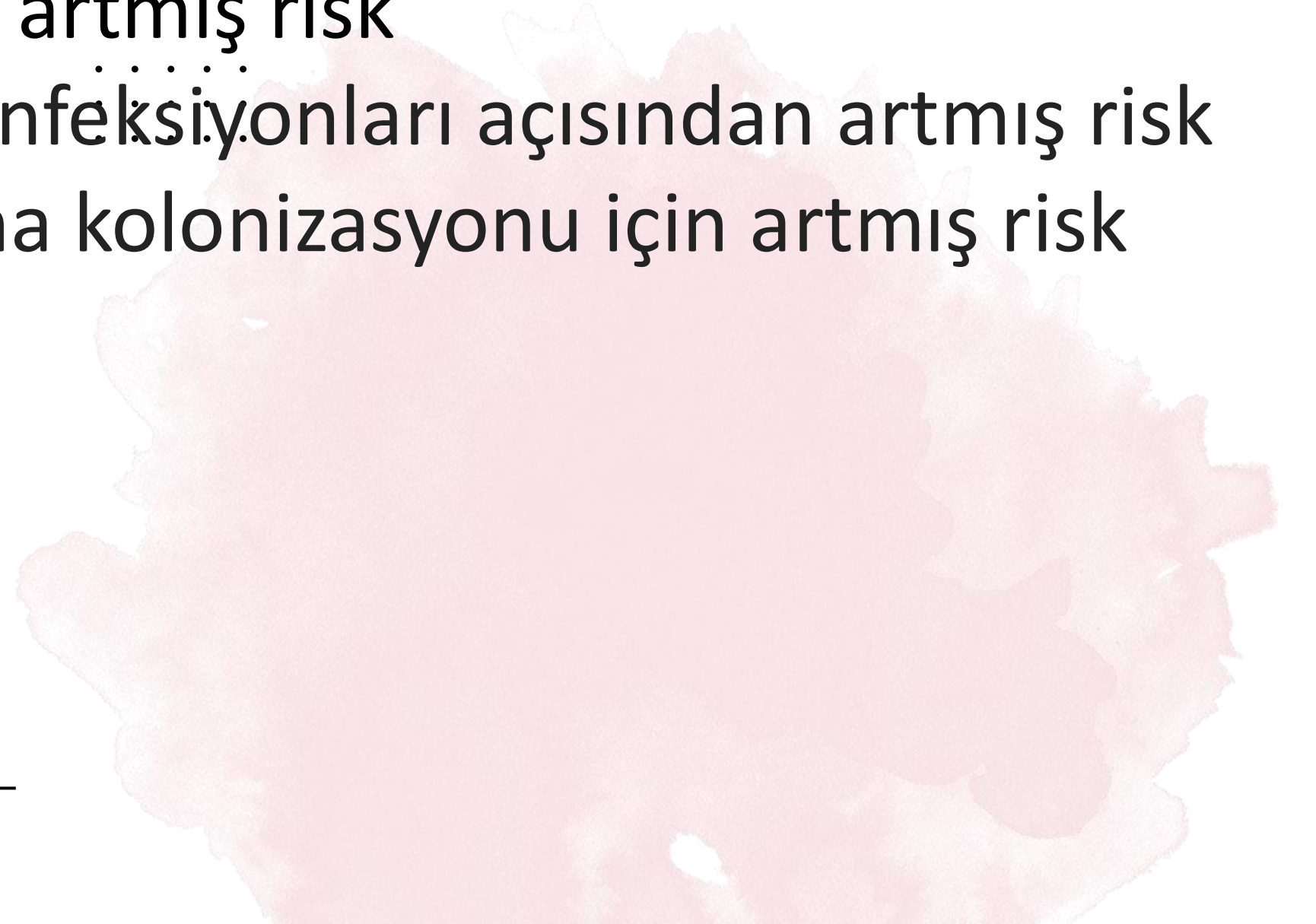
# Proton Pompa İnhibitörleri





## PPI kullanımı

- Clostridium difficile enfeksiyonu artmış risk
- Salmonella ve Campylobacter enfeksiyonları açısından artmış risk
- Çok ilaca dirençli mikroorganizma kolonizasyonu için artmış risk



- Gastrik asit sekresyonu azalır
- Gastrik lümende bakteri kolonizasyonu kolaylaşır
- Mikroaspirasyonla pnömoni gelişir?
- Karıştırıcı faktörler? Protopatik bias?
  - Reflü
  - KOAH

## Proton pump inhibitor use and risk of pneumonia: a self-controlled case series study

Original Article—Alimentary Tract | [Open access](#) | Published: 14 June 2023

Volume 58, pages 734–740, (2023) [Cite this article](#)

### Use of proton pump inhibitors is associated with a higher risk of pneumonia in cirrhotic patients: a systematic review and meta-analysis

[Wasit Wongtrakul](#)<sup>a</sup>, [Nipith Charoenngam](#)<sup>b</sup>, [Patompong Ungprasert](#)<sup>c,✉</sup>

### Community acquired pneumonia incidence before and after proton pump inhibitor prescription: population based study

*BMJ* 2016 ; 355 doi: <https://doi.org/10.1136/bmj.i5813> (Published 15 November 2016)

Cite this as: *BMJ* 2016;355:i5813

### Association between proton pump inhibitor use and risk of pneumonia in children: nationwide self-controlled case series study in Sweden

[Yun-Han Wang](#)<sup>1</sup>, [Henrik Svanström](#)<sup>1, 2</sup>, [Viktor Wintzell](#)<sup>1</sup>, [Jonas F Ludvigsson](#)<sup>3, 4, 5</sup>, [Björn Pasternak](#)<sup>1, 2</sup>

Correspondence to Yun-Han Wang: [yun-han.wang@ki.se](mailto:yun-han.wang@ki.se)

### Association of Proton Pump Inhibitor Use With All-Cause and Cause-Specific Mortality

[Chun-Han Lo](#)<sup>1</sup>, [Peiyun Ni](#)<sup>2</sup>, [Yan Yan](#)<sup>3</sup>, [Wenjie Ma](#)<sup>4</sup>, [Amit D Joshi](#)<sup>4</sup>, [Long H Nguyen](#)<sup>5</sup>, [Raaj S Mehta](#)<sup>5</sup>, [Paul Lochhead](#)<sup>4</sup>, [Mingyang Song](#)<sup>6</sup>, [Gary C Curhan](#)<sup>7</sup>, [Yin Cao](#)<sup>8</sup>, [Andrew T Chan](#)<sup>9</sup>

# SGLT-2 inhibitörleri

**Risk of genitourinary tract infections with SGLT-2 inhibitors in type 2 diabetes mellitus: A meta-analysis of randomised controlled trials and disproportionality analysis using FAERS**

Systematic Review | Published: 24 August 2025

Volume 90, pages 439–452, (2025) [Cite this article](#)

-gliflozin ile biten diyabet ve kalp yetmezliğinde kullanılan ilaçlar

Sodium-glucose cotransporter 2 bloke olur proksimal tübülde glukoz geri emilemez, idrarla glukoz atılır

- 98 RCT
- **Genital mikotik enfeksiyon risk artmış (RR: 3.93, 95% CI: 3.28–4.70,  $p < 0.0001$ )**
- İYE riski benzer (RR: 1.05, 95% CI: 0.98–1.13;  $p = 0.1461$ ;  $I^2 = 4\%$ ;  $p = 0.37$ )
- Bazı çalışmalarda İYE riski artmış



# Clinical Recommendations for Managing Genitourinary Adverse Effects in Patients Treated with SGLT-2 Inhibitors: A Multidisciplinary Expert Consensus

Juan J. Gorgojo-Martínez<sup>1\*</sup>, José L. Górriz<sup>2</sup>, Ana Cebrián-Cuenca<sup>3</sup>, Almudena Castro Conde<sup>4</sup> and María Velasco Arribas<sup>5</sup>

- Hali hazırda genitoüriner enfeksiyonu olan hastaya SGLT-2 inhibitörü başlanması ertelenmeli
- SGLT-2 inh. alan hastada genitoüriner enfeksiyon gelişirse rutin kesilmesi önerilmez, hasta bazında değerlendirilir<sup>16</sup>
- Tekrarlayan enfeksiyon, ağır enfeksiyon, tedavisi zor enfeksiyon (fungal piyelonefrit gibi) durumunda kesilmesi önerilir.





# GLP-1 agonistleri

JOURNAL OF  
**INFECTION**

REVIEW · Volume 91, Issue 5, 106645, November 2025 · [Open Access](#)

[Download Full Issue](#)

## Association of glucagon-like peptide-1 receptor agonist use with risk of infections: A systematic review and meta-analysis

[Shumeng Han](#)<sup>a,b,1</sup> · [Yiwen Liu](#)<sup>a,b,1</sup> · [Baodi Xing](#)<sup>a,b,1</sup> · ... · [Yuelun Zhang](#)<sup>e</sup> · [Yuxiu Li](#)<sup>a,b</sup>  · [Huabing Zhang](#)<sup>a,b</sup>  ... [Show more](#)

[Affiliations & Notes](#)  [Article Info](#) 

17

 [Download PDF](#)  [Cite](#)  [Share](#)  [Set Alert](#)  [Get Rights](#)  [Reprints](#)

### >> Highlights

Show Outline

- GLP-1 RAs were associated with reduced infection risk in randomized clinical trials.
- Lower infection risk was observed across multiple organ systems and COVID-19.
- Glycemic control and weight loss were linked to a greater reduction in infection risk.



# Opioid kullanımı

- Direk etki
  - İmmun sistem hücreleri üzerindeki reseptörler üzerinden aktivasyon/inaktivasyon
  - Makrofajlarda bozulmuş fagositoz
  - Nötrofillerin göçü üzerine inhibe edici etki
  - Antijen sunumunu inhibe edici etki
- Dolaylı etki
  - Hipotalamus-adrenal aks üzerine- Kortizol artışı



# Opioid kullanımı



Volume 68, Issue 11

JOURNAL ARTICLE EDITOR'S CHOICE

## Long-acting Opioid Use and the Risk of Serious Infections: A Retrospective Cohort Study <sup>FREE</sup>

Andrew D Wiese <sup>✉</sup>, Marie R Griffin, William Schaffner, C Michael Stein, Robert A Greevy, Edward F Mitchel, Jr, Carlos G Grijalva

- Immünsüpresif opioidler(morfin,fentanil,metadon)
  - 61 240 hasta 1012 enfeksiyon
- Immünsüpresif olmayanlar (oksikodon, oksimorfon, tramadol)
  - 22 811 hasta 205 enfeksiyon aIRR:0.78 [CI: 0.66–0.91])



# Demir Tedavisi

| Analysis                    | Studies and Populations Included   | Comparison   | Results  |
|-----------------------------|--|--|--|
| Shah <sup>78</sup> (2019)   | 6 RCTs conducted in adults admitted to surgical intensive care unit (4 studies) or mixed intensive care units (2 studies); N = 805   | Iron vs no iron (5 trials included an IV iron arm) | No difference in risk for in-hospital infection; risk ratio, 0.95 (95% CI, 0.79-1.19)  |
| Shin <sup>79</sup> (2019)   | 12 clinical studies of patients undergoing orthopedic surgery; 4 RCTs (N = 616); 8 case-controlled studies (N = 1,253)   | Perioperative IV iron vs no IV iron                | IV iron was associated with lower risk for postoperative infection; risk ratio, 0.67 (95% CI, 0.49-0.91)   |
| Shah <sup>80</sup> (2018)   | 2 RCTs conducted in adults undergoing hip fracture surgery; (N = 503)  | IV iron vs control                                 | No difference in risk for infection; risk ratio, 0.99 (95% CI, 0.55-1.80)  |
| Litton <sup>81</sup> (2013) | 72 RCTs conducted in renal (n = 19), obstetric (n = 19), surgical (n = 11), oncology/hematology (n = 11), cardiology (n = 4), gastroenterology (n = 4), and other (n = 7) settings; (total N = 10,605) <sup>20</sup> | IV iron vs oral/no iron                            | In 24 studies with data, IV iron was associated with increased risk for all-cause infection; relative risk, 1.33 (95% CI, 1.10-1.64); no interaction between baseline ferritin, TSAT, iron dose, or ESA use and risk for infection |

## Risk of Infection Associated With Administration of Intravenous Iron

A Systematic Review and Meta-analysis

[Akshay A Shah](#)<sup>1,2,3,✉</sup>, [Killian Donovan](#)<sup>3</sup>, [Claire Seeley](#)<sup>4</sup>, [Edward A Dickson](#)<sup>5,6</sup>, [Antony J R Palmer](#)<sup>7</sup>, [Carolyn Doree](#)<sup>8</sup>, [Susan Brunskill](#)<sup>8</sup>, [Jack Reid](#)<sup>9</sup>, [Austin G Acheson](#)<sup>5,6</sup>, [Anita Sugavanam](#)<sup>9</sup>, [Edward Litton](#)<sup>10</sup>, [Simon J Stanworth](#)<sup>1,2,8,11</sup>



**Artmış  
risk!**

Epub 2024 Oct 25.

# Effect of correcting iron deficiency on the risk of serious infection in heart failure: Insights from the IRONMAN trial

- HR 0.79, 95% confidence interval [CI] 0.62-1.01,  $p = 0.055$
- **Azalmış risk!**

# Enfeksiyon esnasında demir tedavisi kesilmeli mi?

RESEARCH ARTICLE | JANUARY 27, 2026

## A Retrospective, Real-World Study of IV Iron Use to Treat Iron deficiency Anemia During Acute Infection

Haris Sohail ✉, Jennifer Elizabeth Collins, Kok Hoe Chan, Mohammad Ahsan Alamgir, Amir Shahzad Kamran

- 2026 tarihli retrospektif bir inceleme
- Demir eksikliği anemisi + Bakteriyel enfeksiyon nedeniyle hastaneye yatırılan ve antibiyotik tedavisi gören
- 85.000'den fazla hasta
- Hastanede yatış sırasında intravenöz demir tedavisi alan bireylerin, eşleştirilmiş kontrol gruplarına göre **daha uzun süre hayatta kaldığını** bildirilmiş

# İnhaler tedaviler

- Doz-yanıt ilişkisi analizinde, İKS dozunun pnömoniye bağlı hastaneye yatış riskinde %50'ye varan önemli bir artışla ilişkili olduğu görülmüş
- İKS'ler mümkün olan en düşük dozda ve yalnızca bu ilaca ihtiyacı olduğu belgelenmiş KOAH hastalarına uygulanmalı
- KOAH tanılı hastalarda İKS kullanımı mikobakteriyel enfeksiyon riskini artırabilir



ORIGINAL ARTICLE · Volume 29, Issue 4, P523-529, April 2023 · Open Access

[Download Full Issue](#)

Hospitalization for chronic obstructive pulmonary disease and pneumonia: association with the dose of inhaled corticosteroids. A nation-wide cohort study of 52 100 outpatients

[Christian Rønn](#) <sup>1)</sup> [✉](#) · [Pradeesh Sivapalan](#) <sup>1)</sup> · [Josefin Eklöf](#) <sup>1)</sup> · ... · [Elisabeth Bendstrup](#) <sup>9),10)</sup> · [Charlotte Suppli Ulrik](#) <sup>5),11)</sup> · [Jens-Ulrik Stæhr Jensen](#) <sup>1),5)</sup> ... [Show more](#)

23

META-ANALYSIS | AUGUST 23 2022

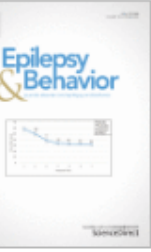
## Inhaled Corticosteroids and Mycobacterial Infection in Patients with Chronic Airway Diseases: A Systematic Review and Meta-Analysis

# Anti-epileptik İlaçlar

- Yeni bir anti-epileptik ilaç (Zonisamid) geliştirilirken yan etki olarak enfeksiyon
- 9186 epilepsi hastası
- Tedavinin ilk 12 ayında İYE tanısı
  - Pregabalin- %16
  - Valproat %11
  - Gabapentin %10
  - İmmunmodulasyon?
  - Anti-inflamatuar etki?



Epilepsy & Behavior  
Volume 135, October 2022, 108910



Association between anti-seizure medication and the risk of lower urinary tract infection in patients with epilepsy

Teşekkürler