

Sun Protection: Are We Killing People?

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Director, Ohio Contact Dermatitis Center
Member, North American Contact Dermatitis Group

Ultraviolet Radiation is a Carcinogen

- About 15,000 people a year die from skin cancer
- The vast majority of those deaths are related to UV exposure
- The more sun you get, the more likely you are to die from skin cancer

But the More You Avoid Sun, the More Likely You Are to Die

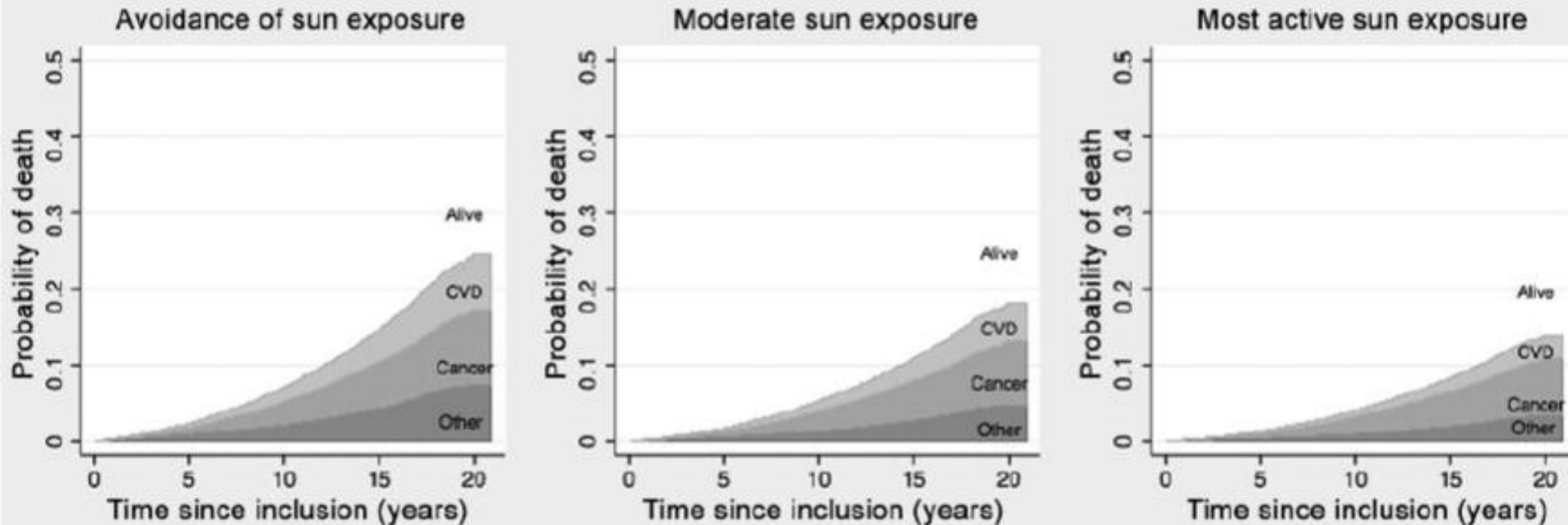
Original Article

Journal of INTERNAL MEDICINE

doi: 10.1111/joim.12496

Avoidance of sun exposure as a risk factor for major causes of death: a competing risk analysis of the Melanoma in Southern Sweden cohort

P. G. Lindqvist¹, E. Epstein², K. Nielsen³, M. Landin-Olsson⁴, C. Ingvar⁵ & H. Olsson⁶

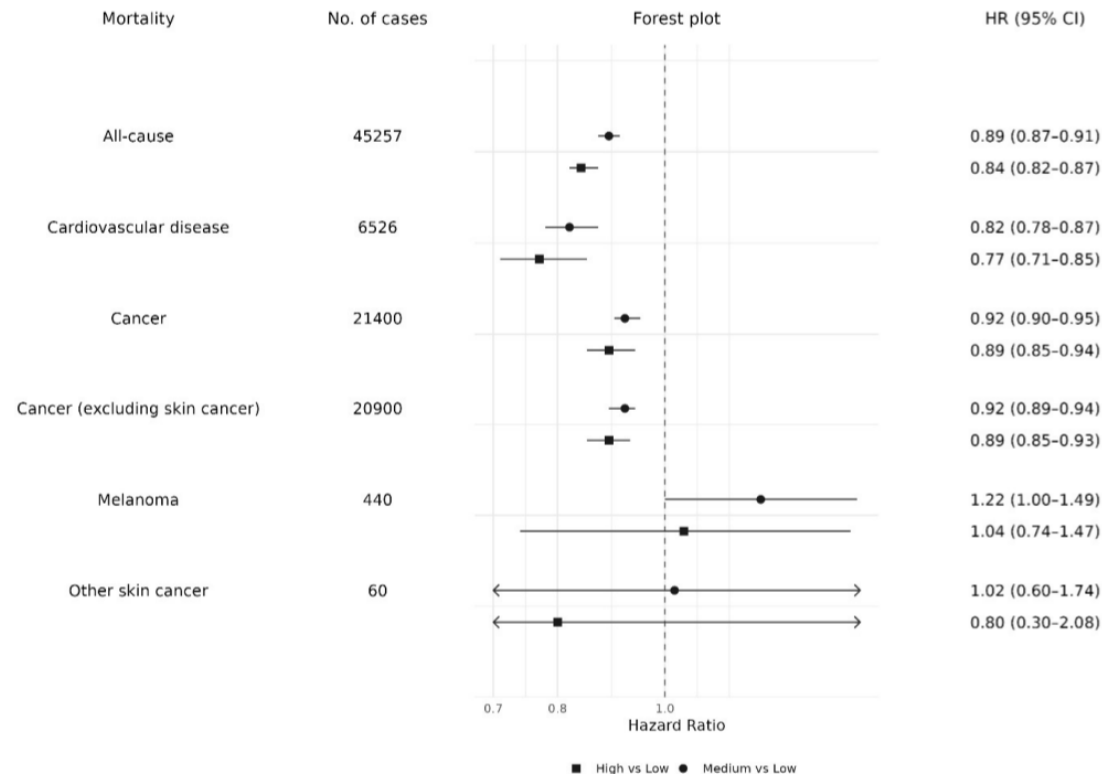


But the More You Avoid Sun, the More Likely You Are to Die

Risk–benefit balance of habitual ultraviolet exposure for cardiovascular, cancer, and skin cancer mortality: UK Biobank cohort study.

Jiayue. Gu¹ *, Andrew C. Stevenson², Annie R. Brady¹, Graeme J.M. Cowan³, Chris Dibben², Richard B. Weller¹

(A) All cause and cause specific mortality



Take Vita

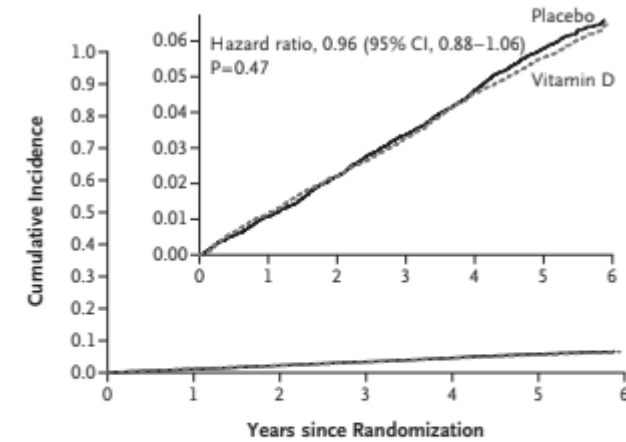
The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Vitamin D Supplements and Prevention of Cancer and Cardiovascular Disease

JoAnn E. Manson, M.D., Dr.P.H., Nancy R. Cook, Sc.D., I-Min Lee, M.B., B.S., Sc.D., William Christen, Sc.D., Shari S. Bassuk, Sc.D., Samia Mora, M.D., M.H.S., Heike Gibson, Ph.D., David Gordon, M.A.T., Trisha Copeland, M.S., R.D., Denise D'Agostino, B.S., Georgina Friedenberg, M.P.H., Claire Ridge, M.P.H., Vadim Bubes, Ph.D., Edward L. Giovannucci, M.D., Sc.D., Walter C. Willett, M.D., Dr.P.H., and Julie E. Buring, Sc.D., for the VITAL Research Group*

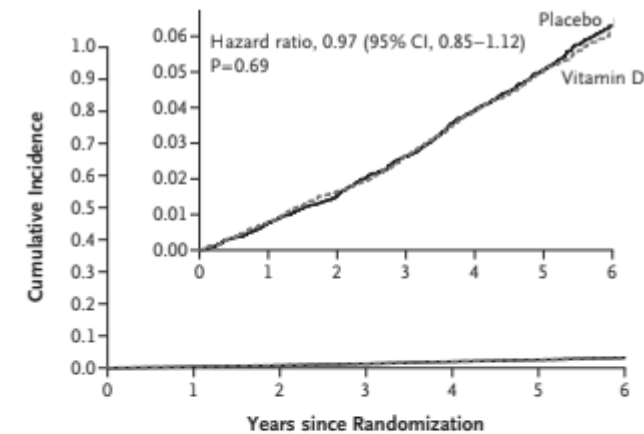
A Invasive Cancer of Any Type



No. at Risk

Placebo	12,944	12,765	12,567	12,345	11,985	9543	746
Vitamin D	12,927	12,738	12,543	12,341	11,992	9557	744

B Major Cardiovascular Events



No. at Risk

Placebo	12,944	12,862	12,747	12,593	12,289	9841	766
Vitamin D	12,927	12,842	12,723	12,593	12,314	9862	774

Figure 2. Cumulative Incidence Rates of Invasive Cancer of Any Type and Major Cardiovascular Events, According to Year of Follow-up, in the Vitamin D Group and Placebo Group.

Analyses were from Cox regression models that were controlled for age, sex, and randomization group in the n-3 fatty acid portion of the trial (intention-to-treat analyses). The insets show the same data on an enlarged y axis.

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All events
Male
Female
40-59 yrs
≥60 yrs
Total

No phototherapy
88.4 (76.1-102.2)
100.1 (89.5-111.6)
61.1 (53.6-69.2)
199.1 (175.8-224.6)
95.6 (87.4-104.2)

Phototherapy (≥100)
65.4 (48.7-86)
56.6 (44.2-71.4)
43.9 (34.3-55.5)
118.2 (88.3-155)
60.0 (49.8-71.7)



Hazard ratio (95% CI)
0.748 (0.548-1.021)
0.574 (0.444-0.743)
0.730 (0.560-0.953)
0.599 (0.445-0.807)
0.637 (0.523-0.776)

Cardiovascular events
Male
Female
40-59 yrs
≥60 yrs
Total

No phototherapy
39.3 (31.3-48.7)
30.3 (24.7-36.8)
26.0 (21.3-31.5)
56.0 (44.4-69.8)
33.8 (29.1-39)

Phototherapy (≥100)
30.2 (19.4-45)
18.0 (11.4-27)
17.4 (11.5-25.1)
41.6 (25-64.9)
22.7 (16.7-30.2)



Hazard ratio (95% CI)
0.780 (0.495-1.228)
0.603 (0.384-0.949)
0.675 (0.445-1.024)
0.758 (0.459-1.251)
0.682 (0.495-0.940)

Cerebrovascular events
Male
Female
40-59 yrs
≥60 yrs
Total

No phototherapy
51.9 (42.6-62.6)
72.1 (63.2-81.9)
36.6 (30.9-43)
146.2 (126.6-168.1)
64.2 (57.6-71.3)

Phototherapy (≥100)
35.4 (23.6-51.2)
39.6 (29.4-52.2)
27.4 (19.9-36.8)
76.0 (52.6-106.2)
38.0 (30-47.4)



Hazard ratio (95% CI)
0.691 (0.456-1.047)
0.560 (0.412-0.759)
0.764 (0.545-1.070)
0.523 (0.363-0.753)
0.601 (0.470-0.769)

Ischemic heart disease
Male
Female
40-59 yrs
≥60 yrs
Total

No phototherapy
33.6 (26.2-42.3)
26.6 (21.4-32.8)
22.8 (18.3-27.9)
48.1 (37.3-60.9)
29.3 (25-34.2)

Phototherapy (≥100)
26.4 (16.3-40.4)
16.4 (10.2-25.1)
14.9 (9.5-22.1)
39.3 (23.3-62.2)
20.3 (14.6-27.4)

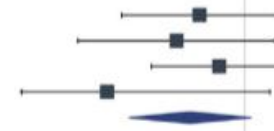


Hazard ratio (95% CI)
0.799 (0.491-1.300)
0.624 (0.387-1.004)
0.659 (0.420-1.033)
0.831 (0.494-1.398)
0.700 (0.498-0.984)

Myocardial infarction
Male
Female
40-59 yrs
≥60 yrs
Total

No phototherapy
11.2 (7.2-16.7)
5.6 (3.4-8.8)
6.1 (4-9.1)
12.6 (7.4-19.8)
7.8 (5.7-10.5)

Phototherapy (≥100)
6.2 (2-14.6)
2.3 (0.5-6.8)
4.3 (1.7-8.9)
2.2 (0.1-12)
3.8 (1.7-7.6)



Hazard ratio (95% CI)
0.571 (0.218-1.498)
0.430 (0.127-1.454)
0.728 (0.315-1.684)
0.182 (0.024-1.363)
0.508 (0.239-1.081)

Cerebrovascular infarction
Male
Female
40-59 yrs
≥60 yrs
Total

No phototherapy
47.0 (38.2-57.2)
66.1 (57.6-75.5)
32.5 (27.2-38.6)
136.0 (117.1-157.1)
58.7 (52.4-65.5)

Phototherapy (≥100)
29.0 (18.4-43.6)
36.4 (26.6-48.5)
23.0 (16.2-31.7)
71.4 (48.8-100.8)
33.6 (26.1-42.5)

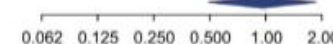


Hazard ratio (95% CI)
0.624 (0.396-0.983)
0.560 (0.407-0.770)
0.720 (0.499-1.037)
0.529 (0.364-0.771)
0.581 (0.448-0.754)

Cerebrovascular hemorrhage
Male
Female
40-59 yrs
≥60 yrs
Total

No phototherapy
5.6 (2.9-9.8)
6.2 (3.9-9.5)
4.7 (2.8-7.3)
9.8 (5.3-16.4)
6.0 (4.1-8.4)

Phototherapy (≥100)
8.7 (3.5-18)
3.9 (1.3-9.1)
4.9 (2.1-9.7)
8.6 (2.4-22.1)
5.8 (3-10)



Hazard ratio (95% CI)
1.563 (0.615-3.973)
0.617 (0.232-1.641)
1.040 (0.453-2.385)
0.879 (0.289-2.677)
0.955 (0.493-1.853)

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Not Randomized, Don't Buy It

- It is literally impossible to do a randomized trial on more sun vs less sun that you would buy
 - Incidentally, we don't have any randomized interventional trials that show that avoiding sun reduces risk of dying from skin cancer
- But we do have the Bradford-Hill Criteria
 - These nine considerations are the classic framework for judging whether an association is causal when you can't run the trial.

Bradford-Hill

- strength of the association Lowest sun exposure vs highest had a mortality difference equivalent to non-smokers vs smokers
- consistency across studies Many studies with different designs, in different places all show the same thing
- specificity Benefits a number of things, but they all have an MOA
- temporality Prospective cohorts, effect gets bigger with time
- dose-response Clear gradient
- biological plausibility Mechanisms well known
- coherence with what's already known Winter excess mortality not explained by temperature, all have latitude gradients, associated with vitamin D deficiency
- experimental evidence Iffy. The Korean NBUVB is the closest as we have
- analogy Exercise: moderate helps, excess harms.

Mechanisms

- There are several vitamin D independent mechanisms by which UV has health benefits:
 - Release of nitric oxide stores from skin leading to endothelial repair, relaxation of the vasculature and a decrease in blood pressure
 - Release of neuroendocrine factors leads to improved mood, less stress, and improved immune function and thus less risk of cancer and autoimmune disease
 - Immunoregulation in skin, reducing the risk of atopic dermatitis and a number of autoimmune diseases

Math

- Skin cancer kills about 15,000 people a year.
- We could plausibly reduce that by 10,000 deaths if everybody did ideal, complete sun protection
- Cardiovascular disease kills about 915,000 people a year
- If maximizing UV exposure reduces it by 1% that's about 10,000 lives we'd save
- Conservative estimate of benefit if everyone maximized?
- 10-20% - that's 100k to 200k lives a year we could save

Potential Benefits: Preventing Rheumatoid Arthritis

- Large, prospective studies: Nurses Health Study 1 and 2
 - Controlled for factors such as physical activity
- In study 1, individuals were enrolled in 1976.
 - There was a 20% reduction in incidence of RA in those with higher UVB exposure
- In study 2, individuals were enrolled in 1989
 - There was no correlation with UVB exposure
 - Increased sun protective behavior appears to be the cause of the loss of benefit

Potential Benefits: Preventing Multiple Sclerosis

- Nurses Health Study
 - Results not broken out by NHS 1 or 2
 - Controlled for confounding variables
- Those in the lowest third of UV exposure had an 80% increase in risk of developing MS

Potential Benefits: Preventing Type 1 Diabetes

- Australian study with 4773 children with T1D
- Increased UV exposure was associated with a 15% reduction in risk of developing T1D

Potential Benefits: Preventing Atopic Dermatitis

- Randomized, double blind, placebo controlled trial of vitamin D supplementation in infants at high risk
- UV dosimeters worn so elevations in vitamin D due to UV could be controlled for
- Vitamin D doesn't prevent AD
- However, kids who got AD got 1/2 the UV of the kids who didn't

Potential Benefits: Dementia

- Having severe vitamin D deficiency more than doubled the risk of Alzheimer's
 - Vit D supplementation doesn't prevent Alzheimer's
- Being vitamin D deficient increases risk of Parkinson's by more than 2.5x
 - No evidence vitamin prevents or slows progression
 - Getting more than 15 minutes of sun *per week* reduces risk of Parkinson's by 98% and is statistically significant
 - Three case control studies, but size of effect seems implausible

Potential Benefits: Mental Health

- Multiple interventional trials have shown benefit of UV on:
 - Depression Scores
 - Mood and Affect
 - Wellbeing

So, How Much Do I Need to Get?

- In the big studies the people with the most exposure had the lowest risk of death – not clear there's a plateau
- I tell my patients, even those with a personal history of melanoma:
 - Avoid sunburns at all cost
 - Use sunscreen on your face and neck all the time
 - Other than that, get as much unprotected sun as possible
 - Get a skin check every year and check yourself once a month

Thank You.



Welcome!



Debating Isotretinoin Considerations

John Barbieri, MD, MBA; Dawn Eichenfield, MD, PhD; Lawrence Eichenfield, MD; Jonette Keri, MD, PhD;

Linda Stein Gold, MD; Elizabeth (Lisa) Swanson, MD

What labs should be followed and when?

JB: I would argue no labs are needed, but baseline and peak-dose lipids and ALT are sufficient.

Is routine laboratory testing in healthy young patients taking isotretinoin necessary: a critically appraised topic

Andrew Affleck,¹ David Jackson ,² Hywel C. Williams ,³ Patricia Chavez⁴ and Joerg Albrecht ^{5,6}

- LFTs?
 - “In the UK no death due to hepatobiliary disorders has ever been reported secondary to isotretinoin”
 - “Data...do not suggest that baseline monitoring is helpful”
- Lipids?
 - “Triglyceride-induced pancreatitis for younger patients is virtually non-existent”
 - Pancreatitis from elevated triglycerides is thought not to occur with triglyceride levels <2000 mg/dL
- “Our review could not identify a single blood test that seems reasonable to perform routinely”

Isotretinoin-Associated Acute Pancreatitis: An Updated Systematic Review

Abdul Aziz Abdul Ghafoor, BKin ¹, Hedyeh Vaseli, MEng ¹, Mahan Maazi, MEng¹,
Arveen Shokravi, MD², Chaocheng Liu, MD ³, and Laurie M. Parsons, MD, FRCPC^{2,4}

- 30 patient with pancreatitis after being prescribed isotretinoin
- 19 patients with documented peak triglycerides
 - 13 of 19 had normal TG levels

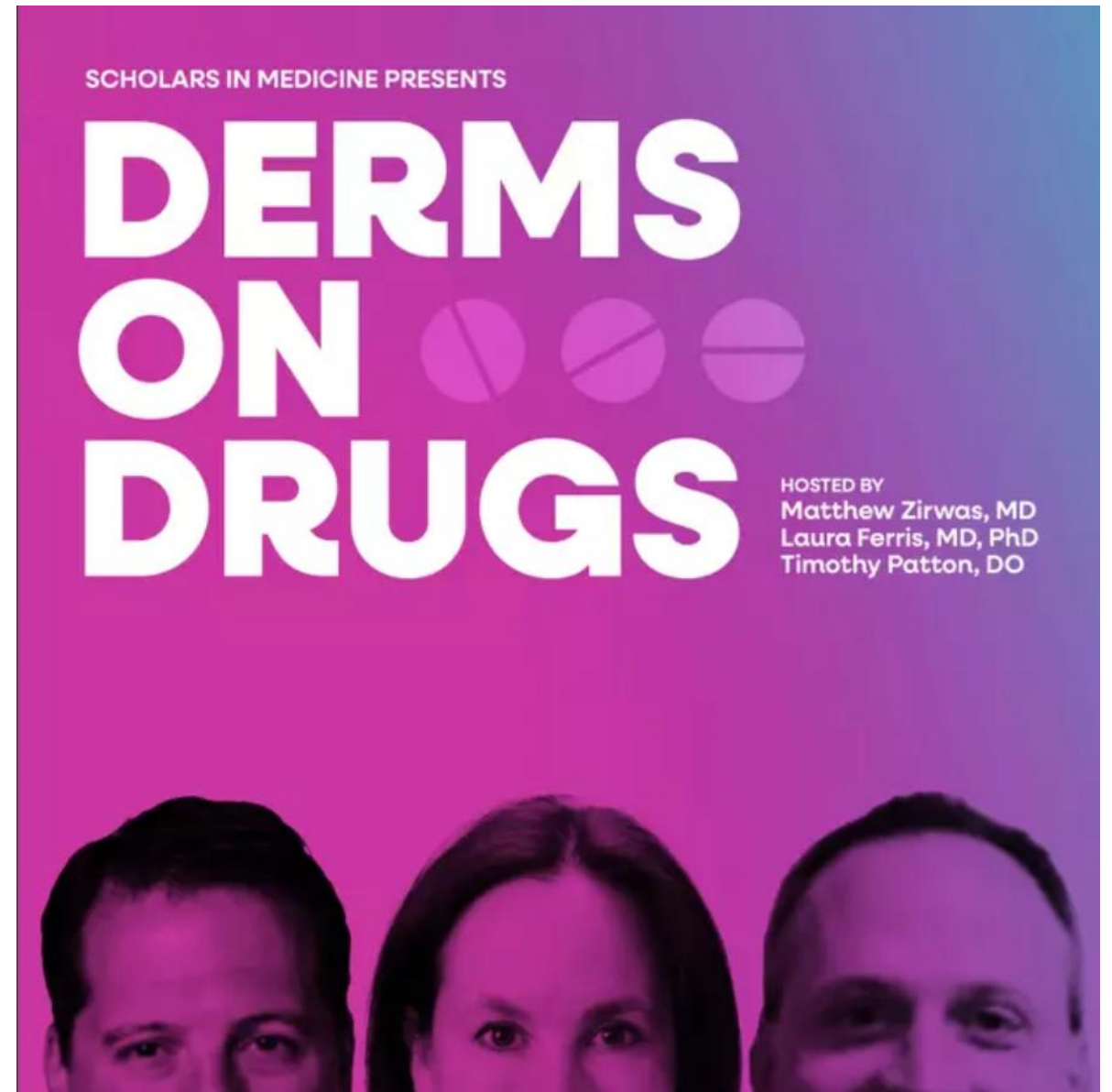


Welcome!



Controversial
take:
Dermatologists
should prescribe
GLP-1 Receptor
agonists

Laura K Ferris MD PhD
Co-host “Dermis on Drugs”



Disclosures

Investigator

Takeda, Regeneron, Oruka, J&J, Dermasensor

Consultant

Boehringer-Ingelheim, AbbVie, Bristol-Myers Squibb, Pfizer, Regeneron, Amgen, J&J, Almirall, Sun Pharma, Takeda, Castle Biosciences, Novartis

Speaker

Boehringer-Ingelheim

Risk of Myocardial Infarction in Patients With Psoriasis

Joel M. Gelfand, MD, MSCE

Andrea L. Neimann, MD

Daniel B. Shin, BA

Xingmei Wang, MS

David J. Margolis, MD, PhD

Andrea B. Troxel, ScD

Psoriasis Comorbidities and Their Treatment Impact

Mark Taliercio, MD^{a,*}, Mark Lebwohl, MD^b

Choosing the right biologic treatment for moderate-to-severe plaque psoriasis: the impact of comorbidities

Laura Mateu-Arrom  & Lluís Puig  

Joint AAD-NPF guidelines of care for the management and treatment of psoriasis with awareness and attention to comorbidities

J Am Acad Dermatol 2019;80:1073-113.

American Journal of Clinical Dermatology (2024) 25:527–540
<https://doi.org/10.1007/s40257-024-00857-0>

REVIEW ARTICLE

Managing the Patient with Psoriasis and Metabolic Comorbidities

Francesco Bellinato¹  · Martina Maurelli¹  · Davide Geat² · Giampiero Girolomoni¹  · Paolo Gisondi¹ 

Dermatol Ther (Heidelb) (2024) 14:841–852
<https://doi.org/10.1007/s13555-024-01152-w>

REVIEW

Psoriasis and Molecular Target Therapies: Evidence of Efficacy in Preventing Cardiovascular Comorbidities

Luca Potestio  · Nello Tommasino · Giuseppe Lauletta ·
Fabrizio Martora · Matteo Megna

GLP1-R/GIP antagonists are now FDA approved to treat:

Obesity

Type 2 diabetes

Reduction of cardiovascular death

Chronic Kidney Disease

Moderate-severe obstructive sleep apnea

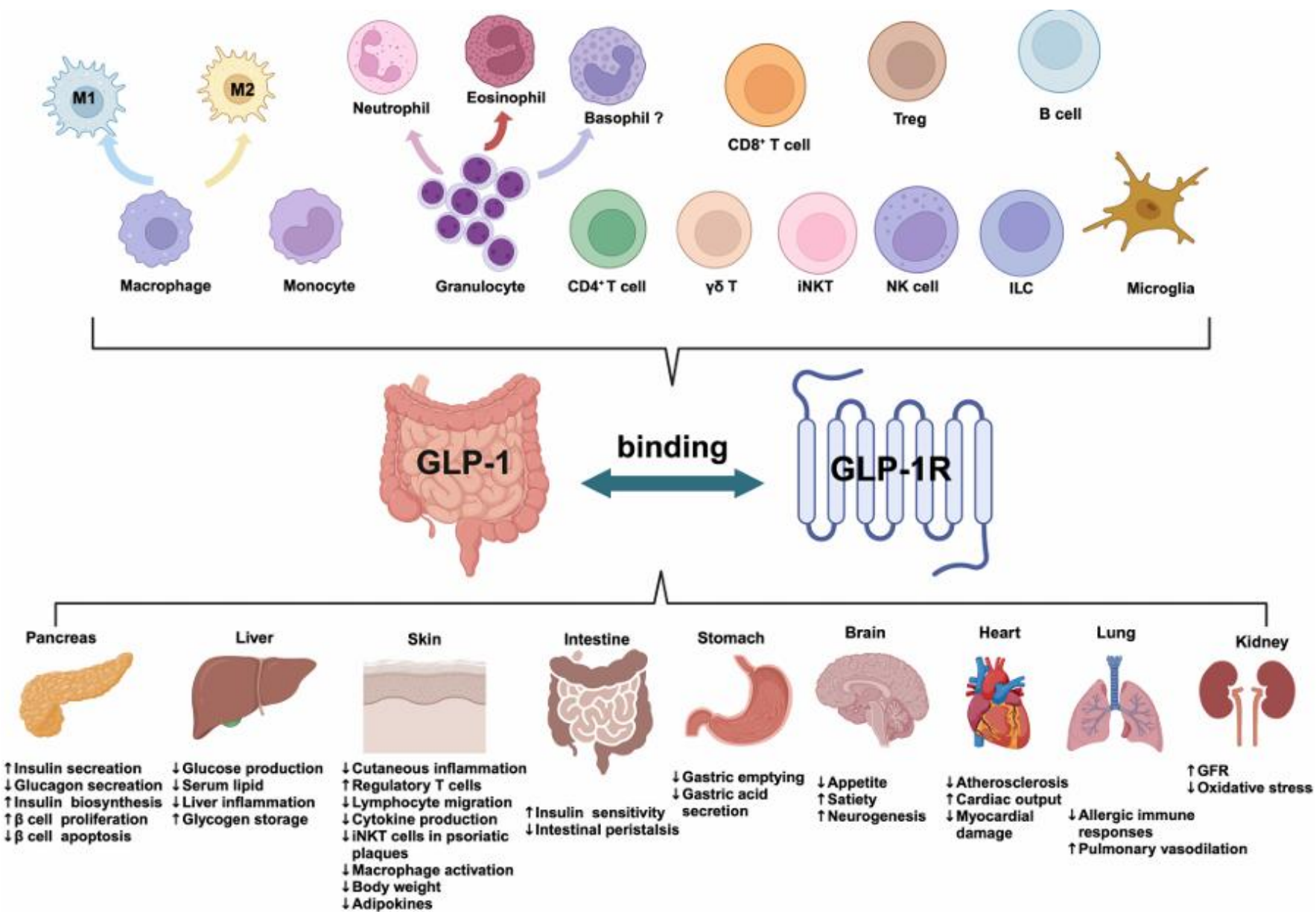
Steatohepatitis/MASH

Joint AAD-NPF guidelines of care for the management and treatment of psoriasis with awareness and attention to comorbidities

J Am Acad Dermatol 2019;80:1073-113

ALL are listed as comorbidities of psoriasis

Also have been shown to reduce alcohol consumption in psoriasis patients



Skin

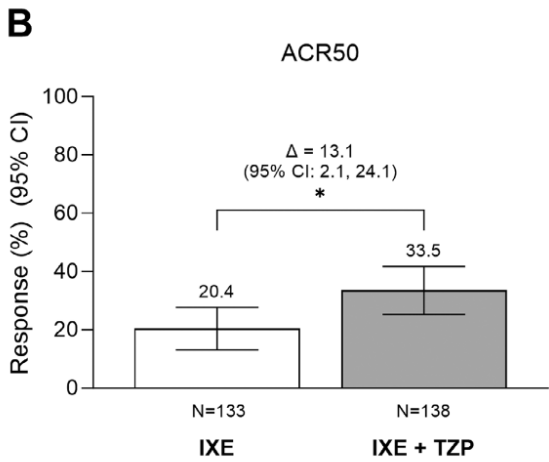
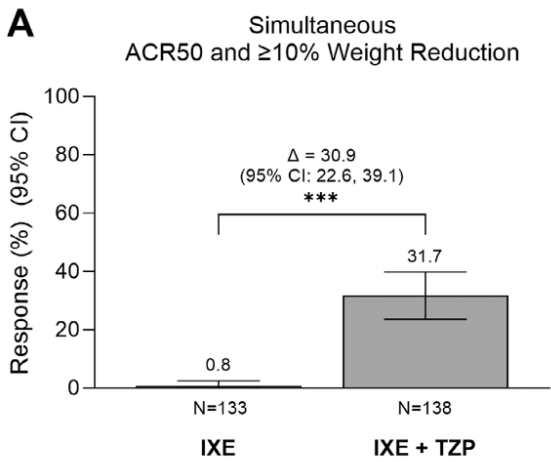
- ↓ Cutaneous inflammation
- ↑ Regulatory T cells
- ↓ Lymphocyte migration
- ↓ Cytokine production
- ↓ iNKT cells in psoriatic plaques
- ↓ Macrophage activation
- ↓ Body weight
- ↓ Adipokines

Roles of glucagon-like peptide 1 receptor agonists in immune cell biology and autoimmune/autoinflammatory diseases. *Cell Biosci* 15, 137 (2025).

Ixekizumab With Tirzepatide Achieved Greater Disease Control Than Ixekizumab Alone in Adults With Psoriatic Arthritis and Overweight or Obesity: Results From a Randomized Clinical Trial

Joseph F. Merola, MD, MMSc, FAAD, FACP,¹ Philip Mease, MD,²  Alan Kivitz, MD, MACR,³ Naveed Sattar, FMedSci,⁴ Laura C. Coates, MBChB, PhD,⁵  Daniel Aletaha, MD, MS, MBA,⁶ Cynthia E. Kartman, RN,⁷ Peter Fischer, MD,⁷ Luna Sun, PhD,⁷ Píndaro Martínez-Osuna, MD,⁷ Andris Kronbergs, PhD,⁷ Purvi Prajapati, PhD,⁷ Anabela Cardoso, MD,⁷ Mark C. Genovese, MD,⁷ and Alexis Ogdie, MD, MSCE⁸

Arthritis Rheumatol. 2026 Mar 28. Epub ahead of print.



JAMA Dermatology | **Original Investigation**

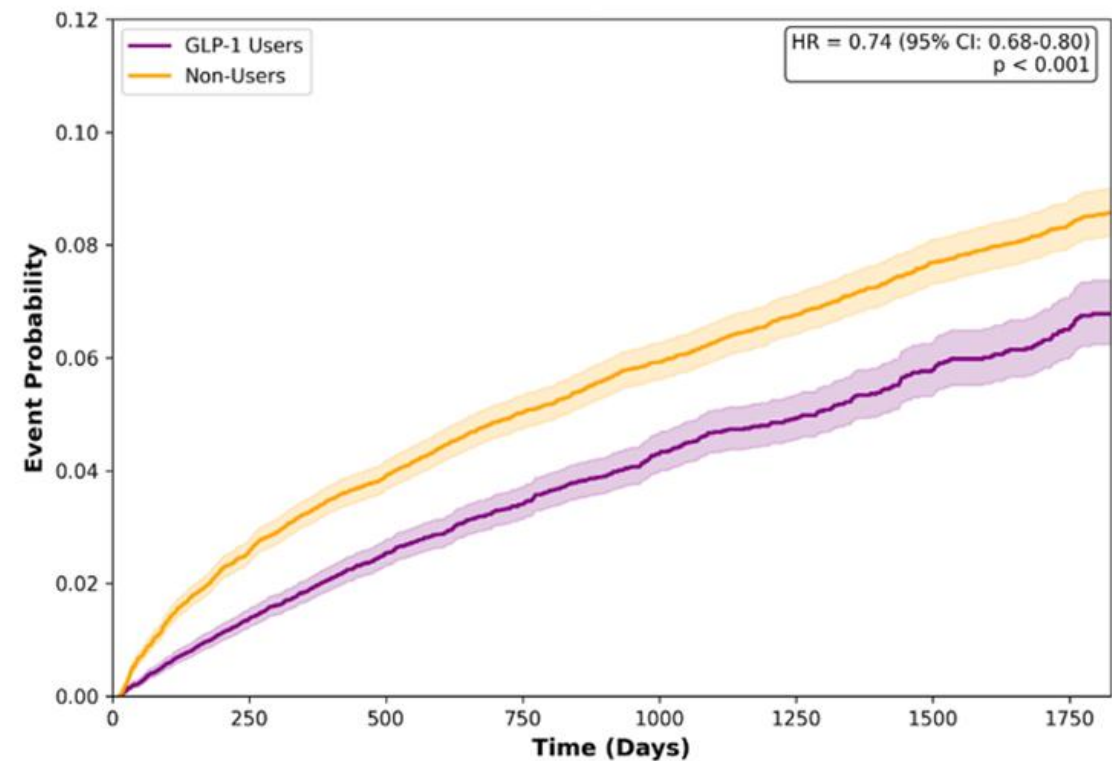
Ixekizumab With or Without Tirzepatide in Adults With Psoriasis and Overweight or Obesity A Phase 3b Randomized Clinical Trial

Mark Lebwohl, MD; Andrew Blauvelt, MD, MBA; Cynthia E. Kartman, RN; Cianna Leatherwood, MD, MPH; Kenneth B. Gordon, MD; Naveed Sattar, MD; Luis Puig, MD, PhD; Joseph F. Merola, MD, MMSc; Kimberly Siu, MD, MPH; Rona Wang, MD, MBA; Luna Sun, PhD; Ann Leung, MS; Najwa Somani, MD; Maria Jose Rueda, MD; Anabela Cardoso, MD; Mark C. Genovese, MD; April W. Armstrong, MD, MPH; Bruce Strober, MD, PhD

JAMA Dermatol. 2026 May 15. Epub ahead of print.

- 40.6% of participants on IXE + TZP vs 29.0% on IXE alone achieved PASI 100 (P = .04)
- Participants on IXE+TZP also had significantly greater decreases in BMI, BP, total cholesterol, TG, HgbA1c

Risk of developing psoriatic arthritis in patients with psoriasis initiating treatment with glucagon-like peptide-1 receptor agonists: A population cohort study from the TriNetX collaborative network



Outcome	GLP-1* Events/Total	Control events/Total	RR (95% CI)	RR P value	HR (95% CI)	HR log-rank P
1-y follow-up						
Psoriatic arthritis	365/22,431	740/23,826	0.52 (0.46, 0.59)†	<.001	0.57 (0.50-0.64)†	<.001
3-y follow-up						
Psoriatic arthritis	667/22,431	1267/23,826	0.56 (0.51, 0.61)†	<.001	0.69 (0.63-0.76)†	<.001
5-y follow-up						
Psoriatic arthritis	758/22,431	1550/23,826	0.52 (0.48, 0.57)†	<.001	0.71 (0.65-0.77)†	<.001
10-y follow-up						
Psoriatic arthritis	832/22,431	1828/23,826	0.48 (0.45, 0.52)†	<.001	0.74 (0.68-0.80)†	<.001

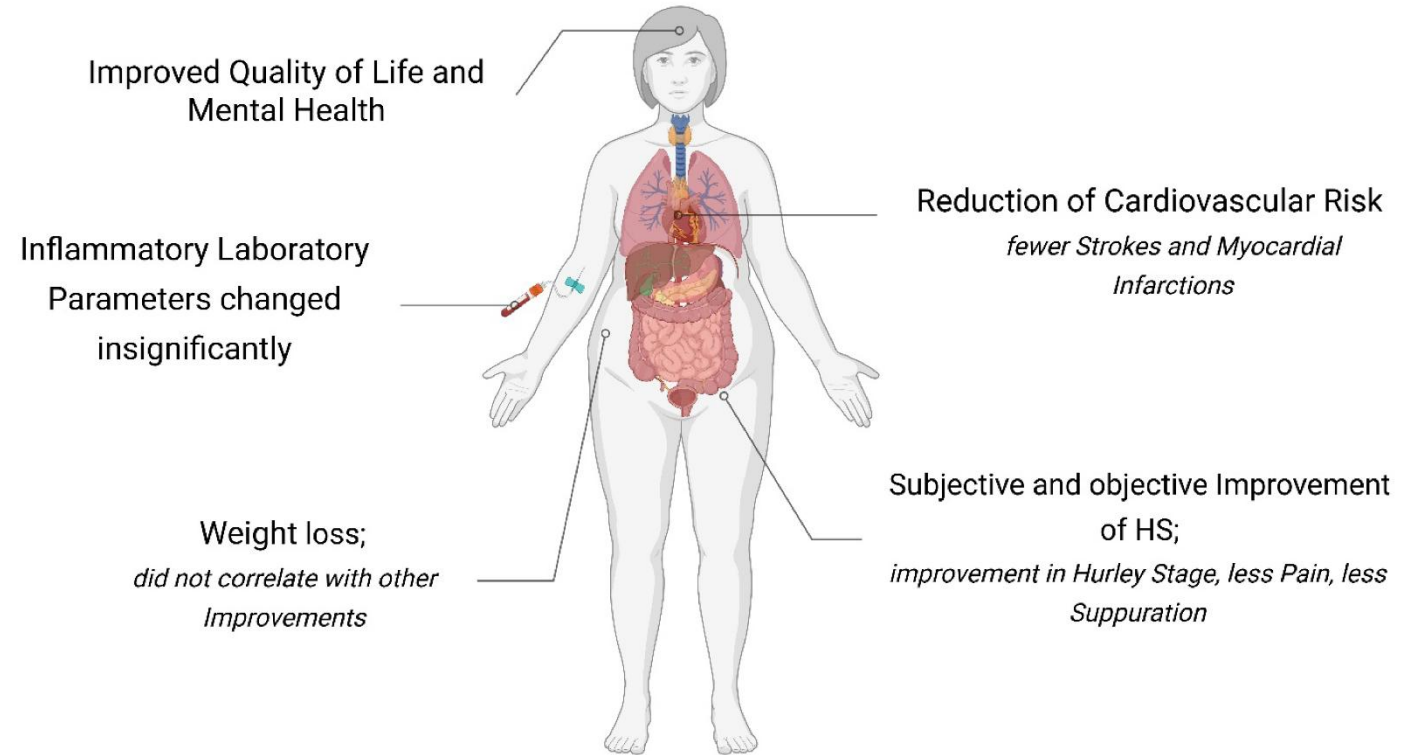
GLP-1 and HS

GLP-1 receptor agonists are associated with reduced nicotine dependence in hidradenitis suppurativa: A TriNetX new-user, active-comparator study

Glucagon-like peptide-1 receptor agonists may decrease biologic initiation in hidradenitis suppurativa: A TriNetX retrospective analysis

The impact of GLP-1 receptor agonists on clinical outcomes and healthcare utilization in hidradenitis suppurativa patients: A retrospective cohort study using TriNetX

Effects of GLP-1 agonists on patients with Hidradenitis suppurativa



Created in BioRender. Caliezi, A. (2026)

Decreased incidence of hidradenitis suppurativa and psoriasis in diabetic patients treated with GLP-1 receptor agonists: A retrospective cohort study

What about the risks?



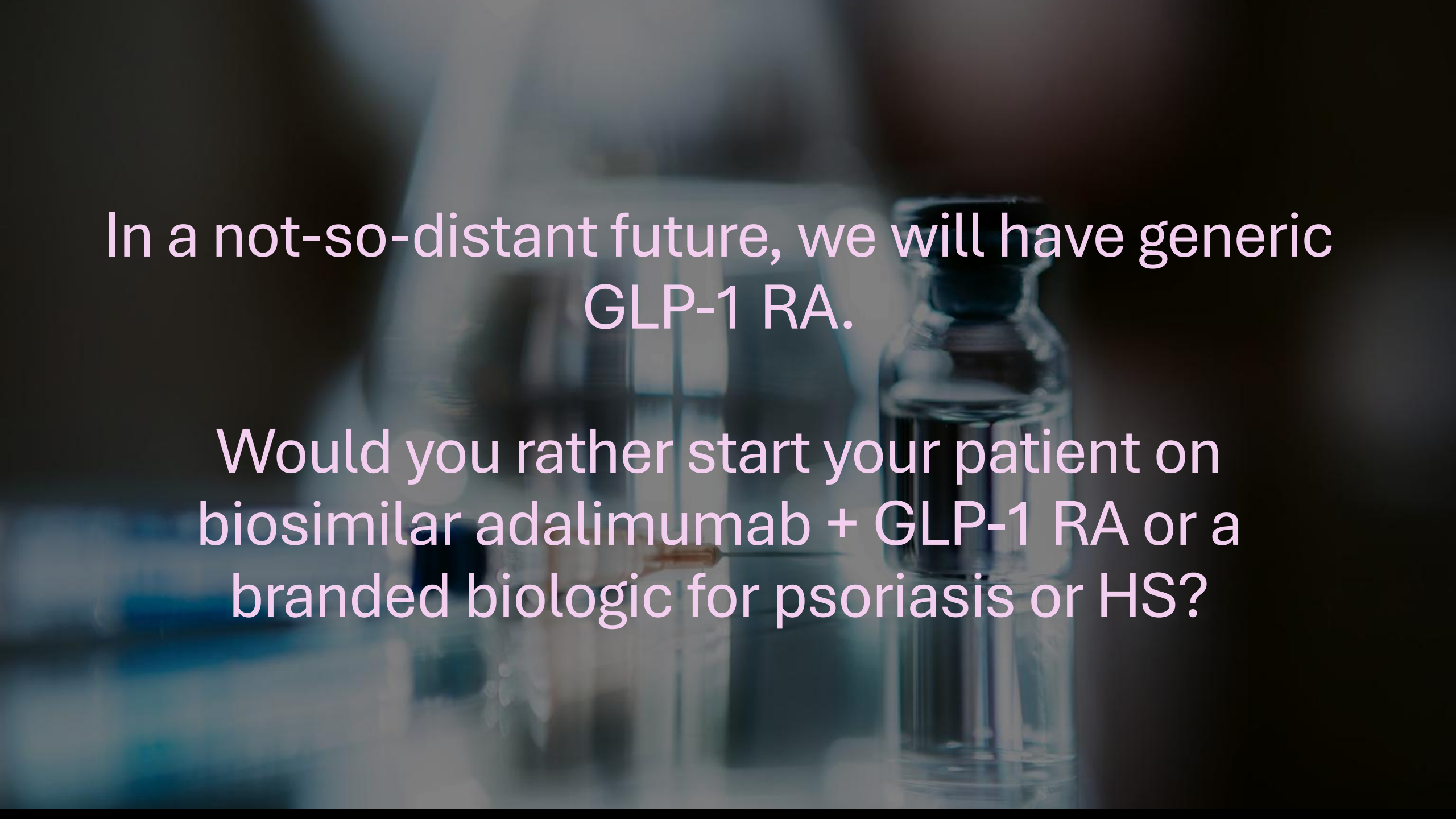
Glucagon-Like Peptide-1 Receptor Agonists and the Risk of Non-Arteritic Anterior Ischemic Optic Neuropathy: A Consensus Statement by the North American Neuro-Ophthalmology Society and the American Academy of Ophthalmology

Sarah W. DeParis, MD,¹ Isdin Oke, MD, MPH,² Eric D. Gaier, MD, PhD,² Heather E. Moss, MD, PhD,³ Peter W. MacIntosh, MD,⁴ Aubrey L. Gilbert, MD, PhD,⁵ Marc J. Dinkin, MD,⁶ John J. Chen, MD, PhD⁷

Non-arteritic anterior ischemic optic neuropathy is a rare condition, with an annual incidence ranging from 2.3 -10.2 per 100 000 individuals

In June 2025, the EMA recommended that product information for semaglutide include NAION as a “very rare” side effect

- NAION Risk with GLP-1 RAs is
- Real (although studies conflict) but modest
 - Seems to be mostly with semaglutide
 - Less than the risk of death due to untreated obesity



In a not-so-distant future, we will have generic
GLP-1 RA.

Would you rather start your patient on
biosimilar adalimumab + GLP-1 RA or a
branded biologic for psoriasis or HS?