

FROM TIKTOK TO THE PHARMACY FIGHTING MEDICATION MISINFORMATION

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DISCLAIMER

We have no conflicts of interest, real or apparent, and no financial interests in any company, product, or service mentioned in this program, including grants, employment, gifts, stock holdings and honoraria.

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LEARNING OBJECTIVES

Describe the scope and impact of medication misinformation on social media platforms, particularly short-form video platforms such as TikTok.

Identify common types and sources of medication misinformation encountered by patients, including misleading claims related to prescription drugs, OTC products, supplements, vaccines, and weight-loss therapies.

Recognize the potential clinical and patient-safety consequences of medication misinformation, including nonadherence, inappropriate self-treatment, delayed care, and unsafe medication use.

Discuss effective communication strategies to address misinformation respectfully and build patient trust without dismissing patients' concerns.

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WHAT DO YOU THINK ARE SOME CAUSES FOR MISINFORMATION IN THE HEALTHCARE FIELD?

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[HTTPS://WWW.TIKTOK.COM/@SEANMARTU9/VIDEO/7147387912173210922?UTM_SOURCE=CHATGPT.COM](https://www.tiktok.com/@seanmartu9/video/7147387912173210922?utm_source=chatgpt.com)

Can eating organic apples prevent and naturally dissolve blood clots?

Seamarto - TikTok - https://www.tiktok.com/@seanmartu9/video/7147387912173210922?utm_source=chatgpt.com
<https://www.henrydavis.com/news/2023/05/flower-of-the-world-compound-can-prevent-blood-clots/>

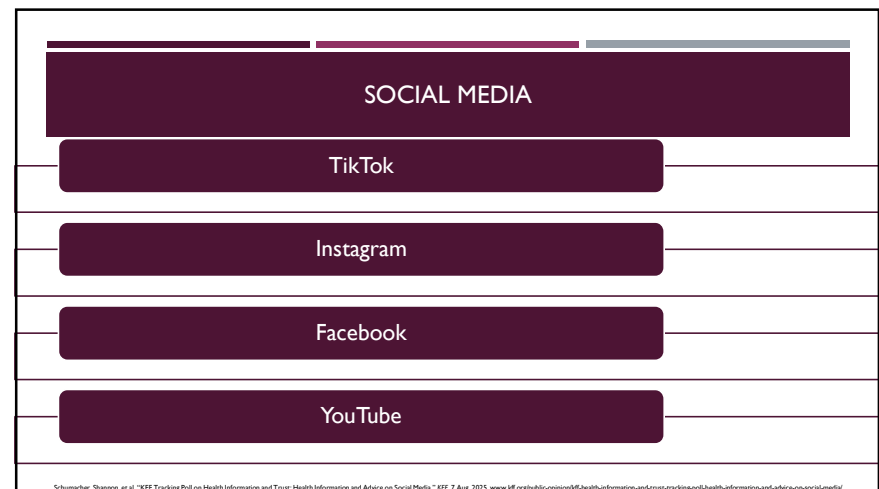
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[HTTPS://WWW.TIKTOK.COM/@DR.JMACK/VIDEO/7094296651946347822?IS_FROM_WEBAPP=1&SENDER_DEVICE=PC](https://www.tiktok.com/@drjmack/video/7094296651946347822?is_from_webapp=1&sender_device=pc)

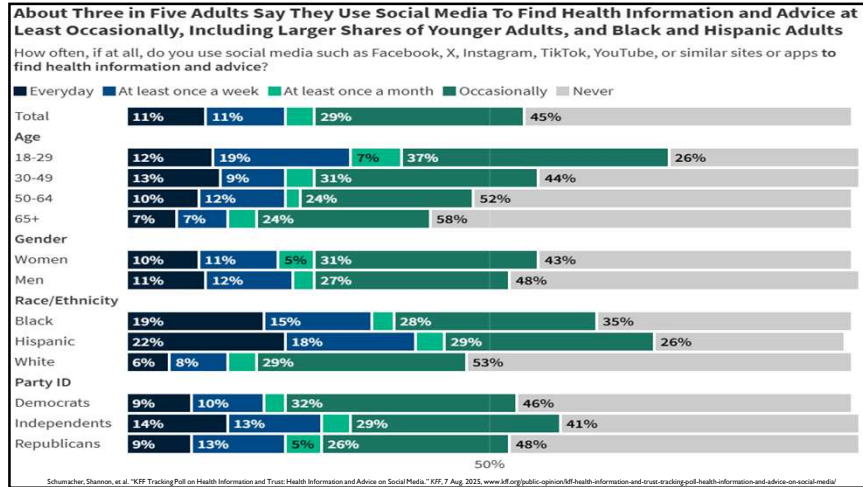
Can cancer be cured with lemon and powdered black seed?

Dr JMack - TikTok - <https://www.tiktok.com/@drjmack/video/7094296651946347822>
 Clarke, Kayleigh. "Fact Check: No Evidence That Black Seed Powder, Organic Honey and Lemon Cures Cancer." Lead Stories, Lead Stories LLC, 7 Mar. 2023, leadstories.com/news-alert/2023/03/fact-check-no-evidence-that-black-seed-powder-organic-honey-lemon-cures-any-cancer-leadstories/

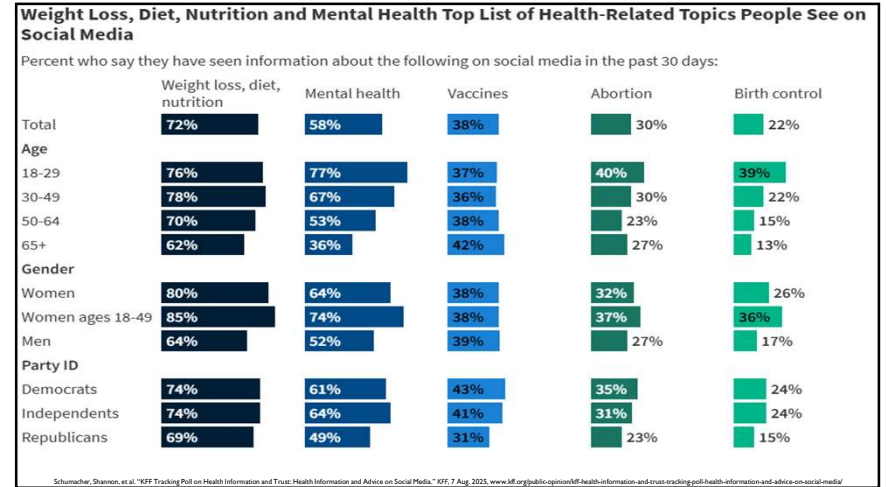
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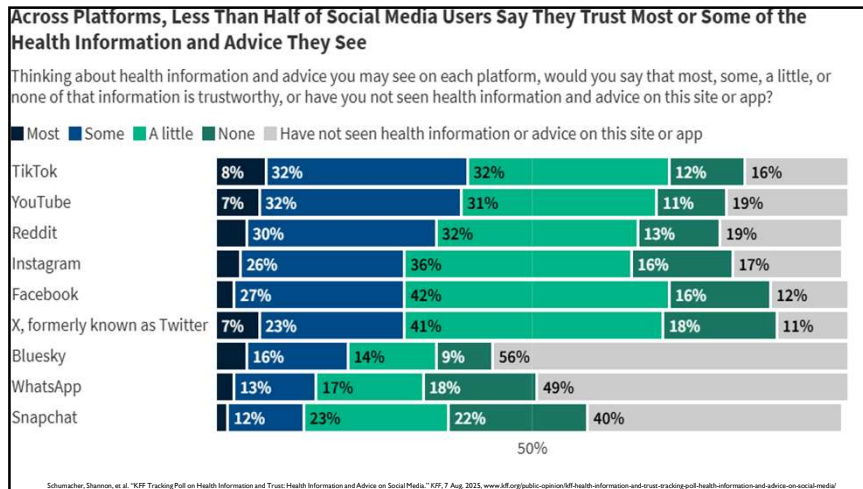
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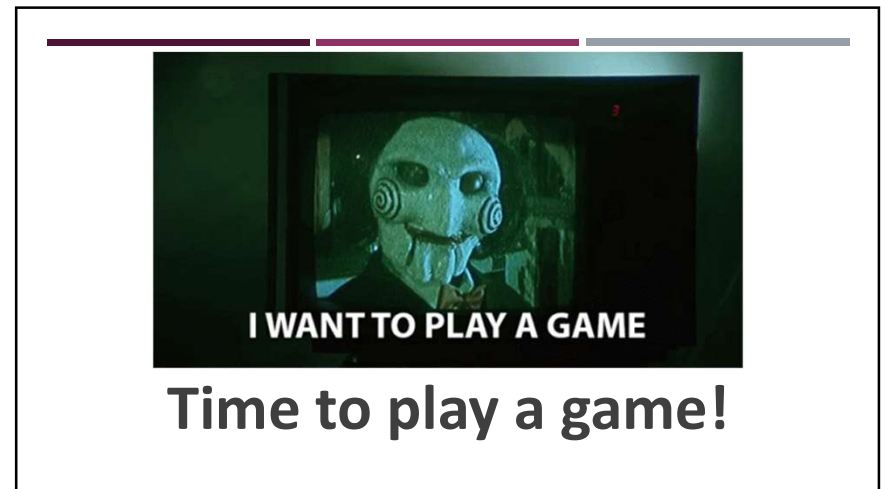
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WHAT PERCENT OF INDIVIDUALS STATE THAT THEY HAVE ENCOUNTERED AT LEAST SOME MISLEADING HEALTH INFORMATION VIA SOCIAL MEDIA?



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WHAT PERCENT OF INDIVIDUALS STATE THAT THEY HAVE ENCOUNTERED AT LEAST SOME MISLEADING HEALTH INFORMATION VIA SOCIAL MEDIA?

35.6% of U.S. adults reported seeing **a lot** of misleading health information on social media; another **45.8%** reported seeing **some**.

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WHAT PERCENT OF INDIVIDUALS REPORTED THAT THEY HAVE DIFFICULTY DETERMINING WHETHER HEALTH INFORMATION ON SOCIAL MEDIA WAS TRUTHFUL?



15

WHAT PERCENT OF INDIVIDUALS REPORTED THAT THEY HAVE DIFFICULTY DETERMINING WHETHER HEALTH INFORMATION ON SOCIAL MEDIA WAS TRUTHFUL?

66.6% reported difficulty determining whether health information on social media was truthful.

39% of U.S. adults say they are not too or not at all confident in their ability to tell whether health information from social media is true or false.

44% aren't too or not at all confident they can distinguish true from false health information from AI chatbots.

80% are confident they can determine whether health information from a doctor/healthcare provider is true or false.

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WHAT PERCENT OF INDIVIDUALS REPORTED TRYING A NEW HEALTH TACTIC OR TREATMENT REGIMEN BASED ON SOCIAL MEDIA?



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WHAT PERCENT OF INDIVIDUALS REPORTED TRYING A NEW HEALTH TACTIC OR TREATMENT REGIMEN BASED ON SOCIAL MEDIA?

A 2024 Healthline/YouGov survey of **4,012 U.S. adults** found that **more than half** reported trying a new health “tactic” they had seen on social media during the previous year.

Ashtari SH, Rodrigues Recchia D. Media health literacy predicts preventive health behaviors: findings from a nationally matched survey. Front Digit Health. 2025 Sep 30;7:1659988. doi: 10.3389/fgh.2025.1659988. PMID: 41098648. PMCID: PMC12518239.

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VACCINES



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REALITY:
Vaccination is a goal, not a chemical structure.

Vaccination is our purpose

- Synonymous with immunity from preventable illness
- Synonymous with healthy practice
- Not a single mechanism
- Cannot put all vaccines into one bucket



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MYTH:
“If vaccines work, why do we still get the disease?”



- “Prevention” is assumed to mean “elimination”
- Breakthrough cases are held up as proof of failure

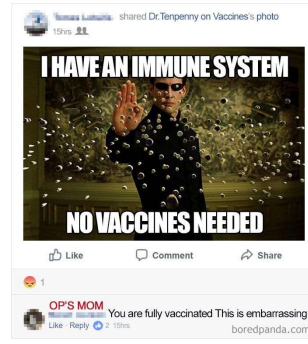
The REALITY:

- Efficacy is stated as risk reduction, not zero risk
- Antigenic drift

Centers for Disease Control and Prevention. “Explaining How Vaccines Work.” Vaccines & Immunizations. 10 Aug. 2024. www.cdc.gov/vaccines/basics/explaining-how-vaccines-work.html

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MYTH:
“I have a strong immune system; I don’t need vaccines.”



- Immune health vs. pathogen-specific immune memory
- If I don’t personally benefit, I don’t need it

The REALITY:

- A ‘strong’ immune system with no prior exposure has nothing to recognize on first contact
- Herd immunity

Centers for Disease Control and Prevention. “Explaining How Vaccines Work.” Vaccines & Immunizations. 10 Aug. 2024. www.cdc.gov/vaccines/basics/explaining-how-vaccines-work.html

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MYTH:
“Natural immunity always beats vaccine immunity.”

Natural immunity is *science*.
Just not the revenue generating kind.



- Appeal to nature → bias
- Earning immunity through survival feels more legitimate
- “Big Pharma” just wants to profit



Centers for Disease Control and Prevention. “Explaining How Vaccines Work.” Vaccines & Immunizations. 10 Aug. 2024. www.cdc.gov/vaccines/basics/explaining-how-vaccines-work.html

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REALITY:
Measles infection erases immunity you already had

- Vaccine-induced immunity is natural immunity
- Naturally-acquired immunity can be unpredictable
- Measles has been shown to wipe out 11-73% of a child’s existing antibodies to unrelated pathogens

But one of the least commonly known risks of measles isn’t from the measles disease itself.

IT’S HOW IT IMPACTS YOUR IMMUNITY TO OTHER DISEASES.

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Measles virus infection diminishes preexisting antibodies that offer protection from other pathogens

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Mina^{1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51,52,53,54,55,56,57,58,59,60,61,62,63,64,65,66,67,68,69,70,71,72,73,74,75,76,77,78,79,80,81,82,83,84,85,86,87,88,89,90,91,92,93,94,95,96,97,98,99,100,101,102,103,104,105,106,107,108,109,110,111,112,113,114,115,116,117,118,119,120,121,122,123,124,125,126,127,128,129,130,131,132,133,134,135,136,137,138,139,140,141,142,143,144,145,146,147,148,149,150,151,152,153,154,155,156,157,158,159,160,161,162,163,164,165,166,167,168,169,170,171,172,173,174,175,176,177,178,179,180,181,182,183,184,185,186,187,188,189,190,191,192,193,194,195,196,197,198,199,200,201,202,203,204,205,206,207,208,209,210,211,212,213,214,215,216,217,218,219,220,221,222,223,224,225,226,227,228,229,230,231,232,233,234,235,236,237,238,239,240,241,242,243,244,245,246,247,248,249,250,251,252,253,254,255,256,257,258,259,260,261,262,263,264,265,266,267,268,269,270,271,272,273,274,275,276,277,278,279,280,281,282,283,284,285,286,287,288,289,290,291,292,293,294,295,296,297,298,299,300,301,302,303,304,305,306,307,308,309,310,311,312,313,314,315,316,317,318,319,320,321,322,323,324,325,326,327,328,329,330,331,332,333,334,335,336,337,338,339,340,341,342,343,344,345,346,347,348,349,350,351,352,353,354,355,356,357,358,359,360,361,362,363,364,365,366,367,368,369,370,371,372,373,374,375,376,377,378,379,380,381,382,383,384,385,386,387,388,389,390,391,392,393,394,395,396,397,398,399,400,401,402,403,404,405,406,407,408,409,410,411,412,413,414,415,416,417,418,419,420,421,422,423,424,425,426,427,428,429,430,431,432,433,434,435,436,437,438,439,440,441,442,443,444,445,446,447,448,449,450,451,452,453,454,455,456,457,458,459,460,461,462,463,464,465,466,467,468,469,470,471,472,473,474,475,476,477,478,479,480,481,482,483,484,485,486,487,488,489,490,491,492,493,494,495,496,497,498,499,500,501,502,503,504,505,506,507,508,509,510,511,512,513,514,515,516,517,518,519,520,521,522,523,524,525,526,527,528,529,530,531,532,533,534,535,536,537,538,539,540,541,542,543,544,545,546,547,548,549,550,551,552,553,554,555,556,557,558,559,560,561,562,563,564,565,566,567,568,569,570,571,572,573,574,575,576,577,578,579,580,581,582,583,584,585,586,587,588,589,590,591,592,593,594,595,596,597,598,599,600,601,602,603,604,605,606,607,608,609,610,611,612,613,614,615,616,617,618,619,620,621,622,623,624,625,626,627,628,629,630,631,632,633,634,635,636,637,638,639,640,641,642,643,644,645,646,647,648,649,650,651,652,653,654,655,656,657,658,659,660,661,662,663,664,665,666,667,668,669,670,671,672,673,674,675,676,677,678,679,680,681,682,683,684,685,686,687,688,689,690,691,692,693,694,695,696,697,698,699,700,701,702,703,704,705,706,707,708,709,710,711,712,713,714,715,716,717,718,719,720,721,722,723,724,725,726,727,728,729,730,731,732,733,734,735,736,737,738,739,740,741,742,743,744,745,746,747,748,749,750,751,752,753,754,755,756,757,758,759,760,761,762,763,764,765,766,767,768,769,770,771,772,773,774,775,776,777,778,779,780,781,782,783,784,785,786,787,788,789,790,791,792,793,794,795,796,797,798,799,800,801,802,803,804,805,806,807,808,809,810,811,812,813,814,815,816,817,818,819,820,821,822,823,824,825,826,827,828,829,830,831,832,833,834,835,836,837,838,839,840,841,842,843,844,845,846,847,848,849,850,851,852,853,854,855,856,857,858,859,860,861,862,863,864,865,866,867,868,869,870,871,872,873,874,875,876,877,878,879,880,881,882,883,884,885,886,887,888,889,890,891,892,893,894,895,896,897,898,899,900,901,902,903,904,905,906,907,908,909,910,911,912,913,914,915,916,917,918,919,920,921,922,923,924,925,926,927,928,929,930,931,932,933,934,935,936,937,938,939,940,941,942,943,944,945,946,947,948,949,950,951,952,953,954,955,956,957,958,959,960,961,962,963,964,965,966,967,968,969,970,971,972,973,974,975,976,977,978,979,980,981,982,983,984,985,986,987,988,989,990,991,992,993,994,995,996,997,998,999,1000,1001,1002,1003,1004,1005,1006,1007,1008,1009,1010,1011,1012,1013,1014,1015,1016,1017,1018,1019,1020,1021,1022,1023,1024,1025,1026,1027,1028,1029,1030,1031,1032,1033,1034,1035,1036,1037,1038,1039,1040,1041,1042,1043,1044,1045,1046,1047,1048,1049,1050,1051,1052,1053,1054,1055,1056,1057,1058,1059,1060,1061,1062,1063,1064,1065,1066,1067,1068,1069,1070,1071,1072,1073,1074,1075,1076,1077,1078,1079,1080,1081,1082,1083,1084,1085,1086,1087,1088,1089,1090,1091,1092,1093,1094,1095,1096,1097,1098,1099,1100,1101,1102,1103,1104,1105,1106,1107,1108,1109,1110,1111,1112,1113,1114,1115,1116,1117,1118,1119,1120,1121,1122,1123,1124,1125,1126,1127,1128,1129,1130,1131,1132,1133,1134,1135,1136,1137,1138,1139,1140,1141,1142,1143,1144,1145,1146,1147,1148,1149,1150,1151,1152,1153,1154,1155,1156,1157,1158,1159,1160,1161,1162,1163,1164,1165,1166,1167,1168,1169,1170,1171,1172,1173,1174,1175,1176,1177,1178,1179,1180,1181,1182,1183,1184,1185,1186,1187,1188,1189,1190,1191,1192,1193,1194,1195,1196,1197,1198,1199,1200,1201,1202,1203,1204,1205,1206,1207,1208,1209,1210,1211,1212,1213,1214,1215,1216,1217,1218,1219,1220,1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221,2222,2223,2224,2225,2226,2227,2228,2229,2230,2231,2232,2233,2234,2235,2236,2237,2238,2239,2240,2241,2242,2243,2244,2245,2246,2247,2248,2249,2250,2251,2252,2253,2254,2255,2256,2257,2258,2259,2260,2261,2262,2263,2264,2265,2266,2267,2268,2269,2270,2271,2272,2273,2274,2275,2276,2277,2278,2279,2280,2281,2282,2283,2284,2285,2286,2287,2288,2289,2290,2291,2292,2293,2294,2295,2296,2297,2298,2299,2300,2301,2302,2303,2304,2305,2306,2307,2308,2309,2310,2311,2312,2313,2314,2315,2316,2317,2318,2319,2320,2321,2322,2323,2324,2325,2326,2327,2328,2329,2330,2331,2332,2333,2334,2335,2336,2337,2338,2339,2340,2341,2342,2343,2344,2345,2346,2347,2348,2349,2350,2351,2352,2353,2354,2355,2356,2357,2358,2359,2360,2361,2362,2363,2364,2365,2366,2367,2368,2369,2370,2371,2372,2373,2374,2375,2376,2377,2378,2379,2380,2381,2382,2383,2384,2385,2386,2387,2388,2389,2390,2391,2392,2393,2394,2395,2396,2397,2398,2399,2400,2401,2402,2403,2404,2405,2406,2407,2408,2409,2410,2411,2412,2413,2414,2415,2416,2417,2418,2419,2420,2421,2422,2423,2424,2425,242}

MYTH:
"I have a strong immune system; I don't need vaccines."

• Catchy metaphor

The REALITY:

- Seedless fruits are selectively bred over generations
- There is no plausible biological pathway for an injection to affect fertility
- mRNA/protein-subunit vaccines do not interact with reproductive cells
- Studies have found no fertility effect
- In one COVID-19 vaccine trial, sperm volume and motility actually increased

Gonzalez DC, Nassau DE, Khodamoradi W, et al. Sperm parameters before and after COVID-19 mRNA vaccination. JAMA. 2021;326(3):273-274. doi:10.1001/jama.2021.9976

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MYTH:
"Vaccines change your DNA."

• mRNA sounds like genetics, so it must be genome-altering

The REALITY:

- mRNA is read in the cytoplasm and degrades there, never entering the nucleus
- There is no reverse transcriptase to convert the RNA to DNA

Centers for Disease Control and Prevention. "Explaining How Vaccines Work." Vaccines & Immunizations. 10 Jun. 2024. www.cdc.gov/vaccines/basics/explaining-how-vaccines-work.html

26

GLP-1 Medications



27

Myth

GLP-1 Medications are an Easy Shortcut or Miracle Cure. Take a weekly shot, skip the lifestyle work, lose weight effortlessly, then stop.

American Diabetes Association Professional Practice Committee. "9. Older Adults: Standard of Care in Diabetes—2024." Diabetes Care. 2024; 28
Carrillo, A., et al. "Causes and Consequences of Discontinuation of GLP-1RA or Tirzepatide." Nature Reviews Endocrinology. 2024.
Hongsheng, M. C., et al. "Use of GLP-1 Receptor Agonists in Patients With Type 2 Diabetes and Cardiovascular Disease: A Review." JAMA Cardiology. 2020.
Jahra, E. J., et al. "The Science of Safety: Adverse Effects of GLP-1 Receptor Agonists." The Journal of Clinical Investigation. 2024.
Lee, M. M. Y., et al. "Cardiovascular and Kidney Outcomes and Mortality With Long-Acting GLP-1 Receptor Agonists in Type 2 Diabetes." Diabetes Care. 2025.
Nikam, C. E., et al. "2024 ADA Standards of Medical Care for Diabetes Mellitus." 2024.
Rosen, C. J., and J. B. Ingelfinger. "GLP-1 Receptor Agonists." The New England Journal of Medicine. 2024.
U.S. FDA. Orange Book (Prescribing Information, Warnings, Complete Listing, Dosage, and Other Information).

28

Reality

These are chronic-disease medications requiring dose titration, ongoing monitoring, lifestyle change, and management of real adverse effects with benefits that largely reverse if stopped.

American Diabetes Association Professional Practice Committee. "13. Older Adults: Standards of Care in Diabetes—2026." *Diabetes Care*, 2026.
Ceriello, A., et al. "Causes and Consequences of Discontinuation of GLP-1 Receptor Agonists." *Nature Reviews Endocrinology*, 2026.
Horngberg, M. C., et al. "Use of GLP-1 Receptor Agonists in Patients With Type 2 Diabetes and Cardiovascular Disease: A Review." *JAMA Cardiology*, 2026.
Jalili, R. J., et al. "The Science of Safety: Adverse Effects of GLP-1 Receptor Agonists." *The Journal of Clinical Investigation*, 2026.
Lee, M. M. Y., et al. "Cardiovascular and Kidney Outcomes and Mortality With Long-Acting GLP-1 Receptor Agonists in Type 2 Diabetes." *Diabetes Care*, 2026.
Nidumala, S. E., et al. "2026 ADA/ACC/AHA/ASPC/AGS Guideline for CVD Syndrome." 2026.
Reiss, C. J., and J. R. Ingelfinger. "GLP-1 Receptor Agonists." *The New England Journal of Medicine*, 2026.
U.S. FDA. Orange Book / Prescribing Information: Mounjaro, Ozempic, Wegovy, Zepbound, 2019-2026.

29

29

Myth: GLP-1 drugs are a standalone fix



Retrieved from One Medical

30

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**Reality:
The FDA
Label says
"adjunct"**

Every GLP-1/GIP agent is FDA-approved as an adjunct to a reduced-calorie diet and increased physical activity

- Diabetes Management: "adjunct to diet and exercise to improve glycemic control."
- Weight Management: "adjunct to a reduced-calorie diet and increased physical activity."

31

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Myth: "GLP-1 drugs are overhyped weight-loss fads — a cosmetic trend without real, durable health benefits."

32

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Reality: The Benefits Are Real (and Earn Respect, Not Hype)

Long-acting GLP-1 receptor agonists provide robust, evidence-based end-organ protection in type 2 diabetes demonstrated across randomized controlled trials.

- Results:
 - ~14% reduction in MACE
 - ~14% in heart-failure hospitalization
 - ~17% in composite kidney outcomes
 - ~12% in all-cause mortality

33

Lee, M. M. Y., et al. "Cardiovascular and Kidney Outcomes and Mortality With Long-Acting GLP-1 Receptor Agonists in Type 2 Diabetes." Diabetes Care. 2022.

33

Myth: "GLP-1 drugs are easy and side-effect-free — a painless, low-hassle shortcut."

34

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Reality: Adverse Effects Make These Anything But "Easy"

Gastrointestinal effects:

Nausea, vomiting, diarrhea, constipation

-dose-related, worst in first ~8 weeks; drive most discontinuations.

Gallbladder/biliary disease:

~1.5× risk, dose and duration-dependent.

Pancreatitis:

Discontinue if suspected; avoid initiation in patients with elevated risk.

Delayed gastric emptying:

Raises concern for aspiration and retained gastric contents in the peri-procedural and perioperative settings

Emerging:

Lean muscle-mass loss (sarcopenia risk in older adults)

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Idumea, C. E., et al. "2025 AHA/ACC/AASNC Guideline for OMS Syndrome." 2025.
Brown, C. J., and J. B. Jorgensen. "GLP-1 Receptor Agonists." The New England Journal of Medicine. 2025.

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Reality: Real Contraindications and Boxed Warning

Black Box Warning:

Thyroid C-cell tumors:

Contraindicated with personal/family history of medullary thyroid carcinoma or MEN2.

Avoid/caution:

Gastroparesis and significant GI motility disorders, history of pancreatitis or gallbladder disease.

Older adults with undernutrition, unexplained weight loss, or frailty

Pregnancy: Discontinue.

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Idumea, C. E., et al. "2025 AHA/ACC/AASNC Guideline for OMS Syndrome." 2025.
Brown, C. J., and J. B. Jorgensen. "GLP-1 Receptor Agonists." The New England Journal of Medicine. 2025.

36

Myth: "GLP-1 drugs a quick fix: start it, get the result, and you're done"

37

37

Reality: Most Patient Don't Stay on Them

Real-world persistence data temper the "quick fix" narrative, with discontinuation rising progressively with age.

After 24 months of follow-up:

- 68.2% of individuals under 65 had discontinued GLP-1 RAs,
- 75.3% for those 65–74
- 82.6% for those ≥75.

Possible drivers: cost, variable efficacy, patient preferences, and/or GI adverse effects.

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Jalili, R. J., et al. "The Science of Safety: Adverse Effects of GLP-1 Receptor Agonists." *The Journal of Clinical Investigation*, 2024.

38

Myth: "Once GLP-1 therapy has worked, you can stop and keep the results"

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Reality: Stopping Reverses the Benefit

These TREAT chronic disease; they DO NOT CURE it.

- Discontinuation is followed by weight regain and loss of associated glycemic and cardiometabolic benefit
- Counseling: Compare to antihypertensives or statins
- Benefit persists only with continued (appropriate) use.

40

Cariello, A., et al. "Causes and Consequences of Discontinuation of GLP-1RA on Tirzepatide." *Nature Reviews Endocrinology*, 2024.

40

Myth: "Just add the GLP-1 on top, the other diabetes meds can stay exactly as they are"

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Reality: Combination Therapy Requires Active Management

GLP-1/GIP agents rarely stand alone.

- When combined with insulin or sulfonylureas, hypoglycemia risk rises and doses must be adjusted

Down-titrate or stop sulfonylurea if at/below target or with any hypoglycemia

- Reduce by ~50% if HbA1c 7.6–8.5%.

Reduce basal insulin ~10–20% when at/near target.

Increase glucose monitoring in the weeks after initiation/up-titration.

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Myth: "Cheaper Online or Compounded is Basically The Same"

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Reality: It isn't

20% of adults on a GLP-1 now obtain it through online sellers

- Telehealth sites, "peptide" sellers, med-spas, and no-prescription online pharmacies

Illicit online pharmacies are widespread

- >40% of 317 sites selling semaglutide were illegal, no-prescription operations
- The top 30 illicit domains logged >4.7 million visits in a single quarter

Test purchases revealed significant risks

- Half were non-delivery scams: delivered vials had semaglutide purity of only 7.7–14.4% (label claimed 99%)
- Active ingredient 28–39% above the label
- Detectable endotoxin in every sample

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Reality: It isn't

Compounded ≠ FDA-approved:

- Not evaluated for safety, quality, or effectiveness

Documented harms:

- More than 600 adverse-event reports had been filed for compounded GLP-1 products
- Dosing errors causing hospitalizations
- Incorrect active ingredients
- Use of unproven salt forms (semaglutide sodium/acetate), and untested added ingredients such as vitamin B12

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Ashraf et al., JAMA Network Open, 2024

Reality: It isn't

Professional guidelines advise against compounded products:

- American Association of Clinical Endocrinology (AACE) recommends **against the use** of non-FDA-approved compounded semaglutide and tirzepatide

Online prescribing frequently lacks adequate clinical evaluation:

- **JAMA findings:** Online, direct-to-consumer healthcare platforms rely on short patient questionnaires and may issue prescriptions with little clinician involvement.
- **AACE position:** Prescribing obesity medications **without proper clinical evaluation or follow-up** is considered **substandard care** and may put patients at risk.

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Ashraf et al., JAMA Network Open, 2024

Pharmacist's Counseling: Vetting the Source

- **Ask every patient:** "Where are you getting your GLP-1, and what does the packaging/product look like?"
- **Key Pointers for Patients:**
 - No prescription or clinical evaluation required.
 - Sold as a **vial of powder to reconstitute**, "research/peptide" product, or "semaglutide/tirzepatide sodium" salt forms.
 - Prices far below market; payment by wire/crypto; overseas shipping.
 - Packaging/needle-label mismatches (e.g., "NovoFine" vs authentic "NovoFine Plus").

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Ashraf AR, Mackey TK, Vido RG, et al. Multifactor quality and safety analysis of semaglutide products sold by online sellers without a prescription: market surveillance, content analysis, and product purchase evaluation study. J Med Internet Res. 2024.

Ashraf AR, Mackey TK, Schmidt L, et al. Safety and risk assessment of no-prescription online semaglutide purchases. JAMA Netw Open. 2024.

Pharmacist's Counseling: Vetting the Source

- **Pharmacist actions:**
 - Direct patients to **state-licensed pharmacies** and FDA-approved products
 - Verify legitimacy (e.g., state board licensure, NABP-accredited pharmacies).
 - Counsel that "same active ingredient" claims do not guarantee same purity, dose, or sterility.
 - Report suspected falsified/adverse events to FDA MedWatch.

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Ashraf AR, Mackey TK, Vido RG, et al. Multifactor quality and safety analysis of semaglutide products sold by online sellers without a prescription: market surveillance, content analysis, and product purchase evaluation study. J Med Internet Res. 2024.

Ashraf AR, Mackey TK, Schmidt L, et al. Safety and risk assessment of no-prescription online semaglutide purchases. JAMA Netw Open. 2024.

Pharmacist's Role Across GLP-1 Prescribing

Before:

- Verify indication
- Screen contraindications
- Set realistic expectations
- Reinforce lifestyle

During:

- Slow titration to limit GI effects
- Adjust insulin/sulfonylurea
- Monitor glucose and tolerability

Ongoing:

- Support adherence
- Address cost/access
- Reassess deprescribing of hypoglycemia-causing agents

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Achraf AB, Mackey TK, Vida RJ, et al. Multifactor quality and safety analysis of semaglutide products sold by online sellers without a prescription: market surveillance, content analysis, and product purchase evaluation study. *J Med Internet Res*. 2024.

Achraf AB, Mackey TK, Schmidt J, et al. Safety and risk assessment of no-prescription online semaglutide purchases. *JAMA Netw Open*. 2024.

GLP-1 Key Takeaways

GLP-1/GIP agents are powerful adjuncts, not miracle cures, labeled for use *with* diet and exercise.

Real benefits (CV, renal, glycemic, weight) require sustained, monitored use.

Adverse effects, contraindications, high discontinuation, weight regain, drug interactions, and cost all demand active pharmacist involvement.

Unregulated online, counterfeit, and compounded sources are common, often substandard or falsified, and not FDA-reviewed, vetting the patient's source is a high-yield pharmacist safety check.

The pharmacist's role:

- expectation-setting
- safety monitoring
- dose adjustment
- adherence
- deprescribing is exactly what turns a "shortcut" myth into safe, effective chronic-disease care

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American Diabetes Association Professional Practice Committee. "13. Older Adults: Standards of Care in Diabetes—2024." *Diabetes Care*. 2024.

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Lee, M, M, Y, et al. "Cardiovascular and Kidney Outcomes and Mortality With Long-Acting GLP-1 Receptor Agonists in Type 2 Diabetes." *Diabetes Care*. 2023.

National, C, E, et al. "2024 AHA/ACC/AHA/ASNC Guideline for CCM Syndrome." 2024.

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U.S. FDA. Orange Book (Prescribing Information: Mounjaro, Ozempic, Wegovy, Zepbound). 2022-2024.

FROM TIKTOK TO THE PHARMACY FIGHTING MEDICATION MISINFORMATION

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