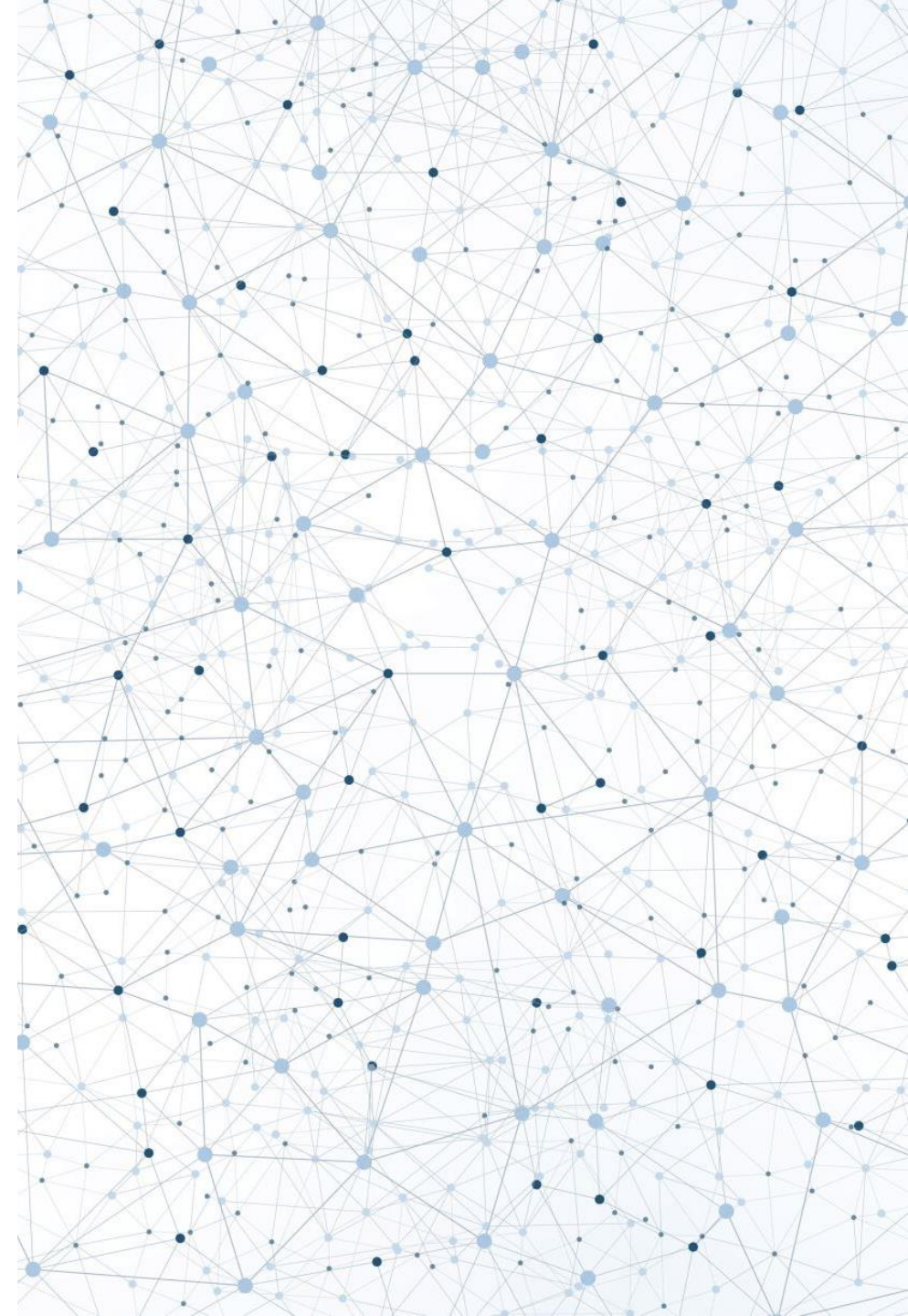


# LEVERAGING TECHNOLOGY TO ADVANCE MEDICAL EDUCATION IN ALLERGY

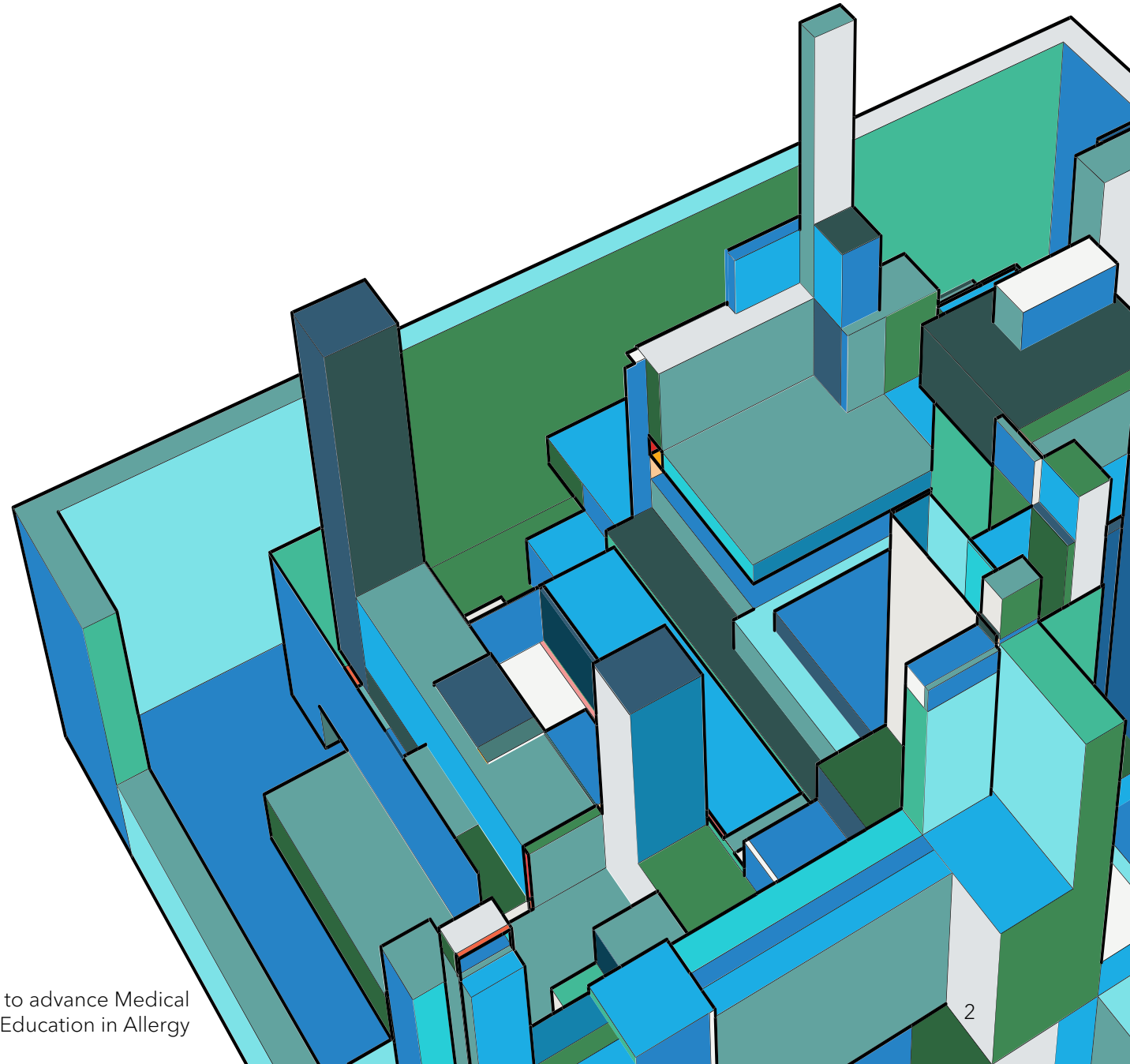
Zachary Rubin, MD  
Pediatric Allergist/Immunologist



# CONFLICT OF INTEREST

Consulting for Amgen/AstraZeneca regarding social media and produced content for asthma education.

All my views are my own and do not reflect those views of my employer.





# LEARNING OBJECTIVES

- Discuss how social media is used by patients and physicians.
- Identify misinformation and how it impacts healthcare.
- Outline strategies to grow your social media following and leveraging it to grow your practice.

# HOW IT STARTED (AUGUST 2020)

# HOW IT'S GOING (MAY 2022)



Joined Aug 2020  
Verified user  
>8,000 followers



Joined April 2021  
>140,000 followers  
Raised >\$30K for  
charities



Joined June 2021  
>2,000 followers

# HOW IT'S GOING (MAY 2023)



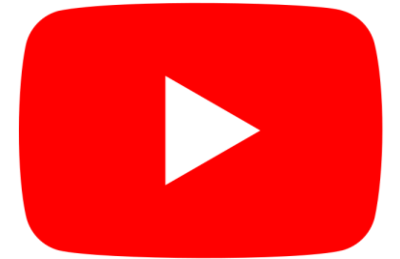
Joined Aug 2020  
>17,000 followers  
Verified user?



Joined April 2021  
>570,000 followers  
Raised >\$30K for  
charities  
Verified User



Joined June 2021  
>87,000 followers



Joined March 2023  
>1,400 subscribers

# HOW IT'S GOING (DECEMBER 2023)



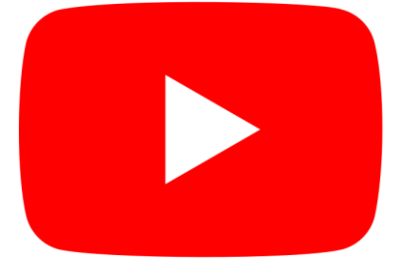
Joined Aug 2020  
>16,000 followers  
Inactive, but  
switched to Threads  
>22,000 followers



Joined April 2021  
>1 million followers  
Raised >\$30K for  
charities  
Verified User



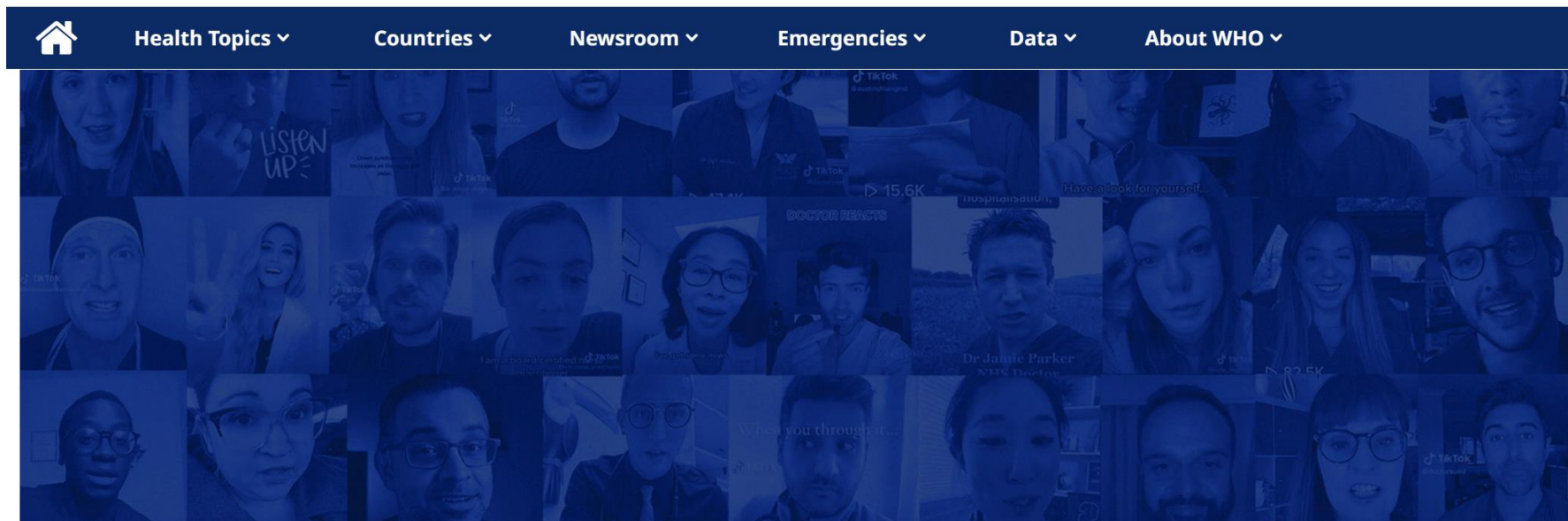
Joined June 2021  
>213,000 followers  
Verified User



Joined March 2023  
>3,300 subscribers



# FIDES (WORLD HEALTH ORGANIZATION)



The name Fides stems from the goddess of trust in Roman mythology, *Fides*. The name is also associated with reliability, loyalty, and good faith (*bona fides*).



# ILLINOIS MEDICAL PROFESSIONALS ACTION COLLABORATION TEAM



## Our Mission

We are a coalition of physicians and health professionals working to identify and meet the needs of Illinois' healthcare workers and communities.

We **engage** grass-root networks, **advocate** for evidence-based solutions, **advise** influential stakeholders, and **amplify** solutions that protect the individuals and communities across the state and country.



## Zachary Rubin, MD

Pediatric Clinical Immunology Advisor

Dr. Zachary Rubin is a pediatric allergist and clinical immunologist at Oak Brook Allergists. Some of his clinical interests include food allergy and adverse reactions to vaccines. He is an active member of #TeamHalo, a verified initiative sponsored by the United Nations to help fight misinformation and address COVID-19 vaccine concerns. Dr. Rubin creates social media content on Twitter and TikTok. He has been a regular contributor to ABC7 news.

# MEDIA APPEARANCES



## FDA rejects first needle-free alternative to EpiPens, calling for more research

The move came as a surprise: In May, an FDA advisory committee voted to recommend approval of the drug for children and adults.

HEALTH

## Why you're losing the spring allergy battle — and ten ways to win

By Alyson Krueger  
Published April 25, 2023, 4:37 p.m. ET

SCIENCE

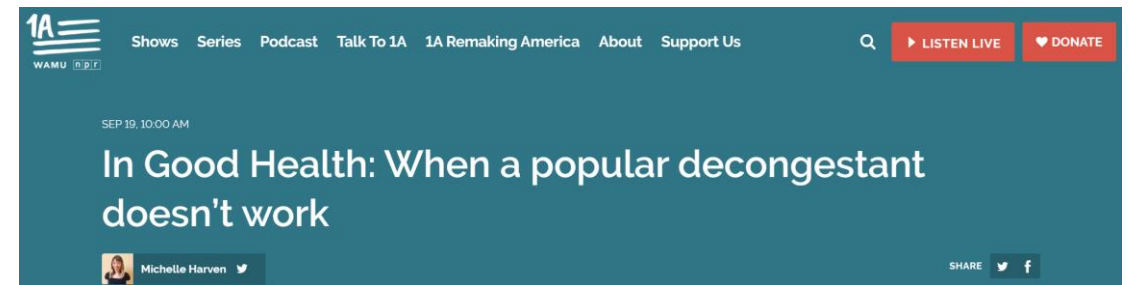
## I Was Allergic to Cats. Until Suddenly, I Wasn't.

No one quite knows why some allergies disappear and others don't.

By Katherine J. Wu



Dr. Zachary Rubin, an allergist immunologist in his mid-30s practicing in suburban Chicago, has become something of a social media sensation thanks to his informational videos on Tik Tok.

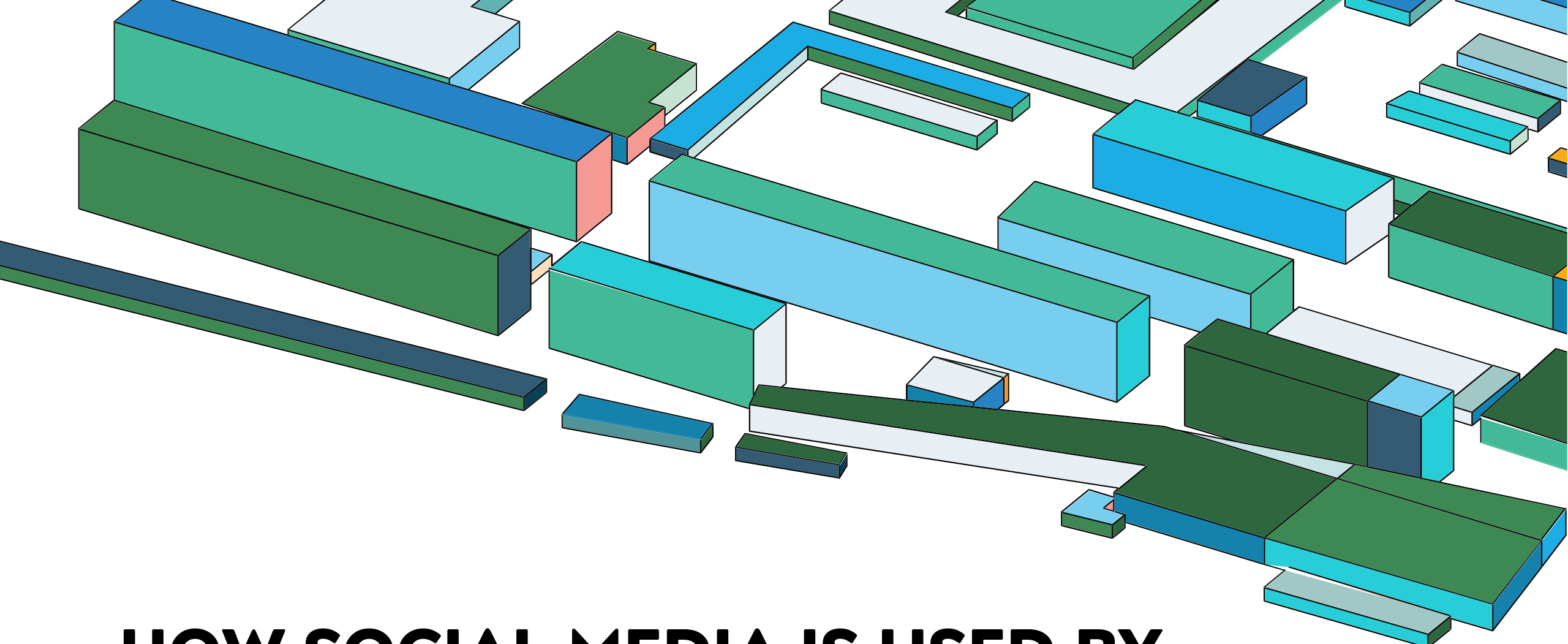


## 'Christmas tree syndrome' is real. Here's how to avoid it this holiday season.



Katie Camero  
USA TODAY

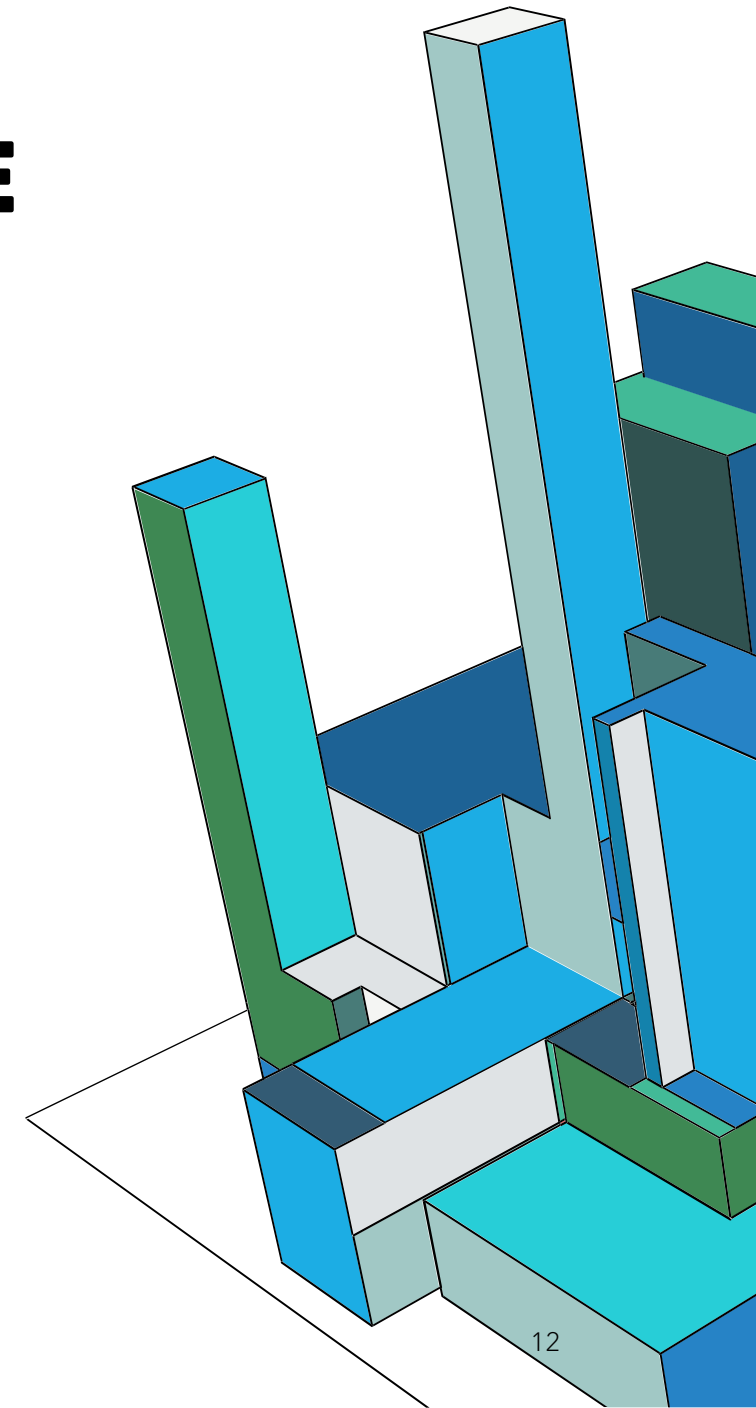
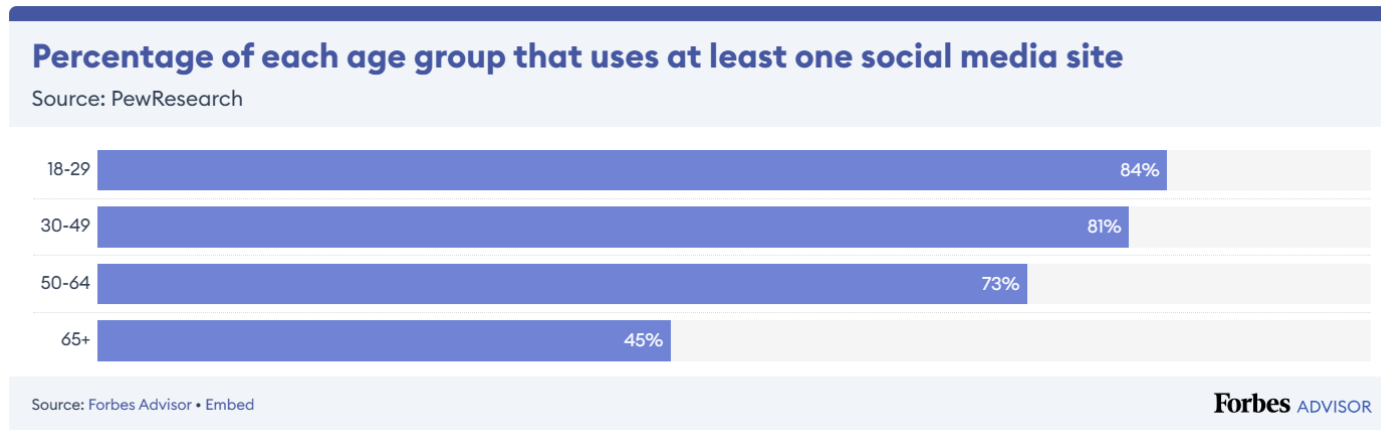
Published 12:00 p.m. ET Dec. 1, 2023 | Updated 7:59 p.m. ET Dec. 1, 2023



# **HOW SOCIAL MEDIA IS USED BY PATIENTS – AND ITS POTENTIAL HARMS**

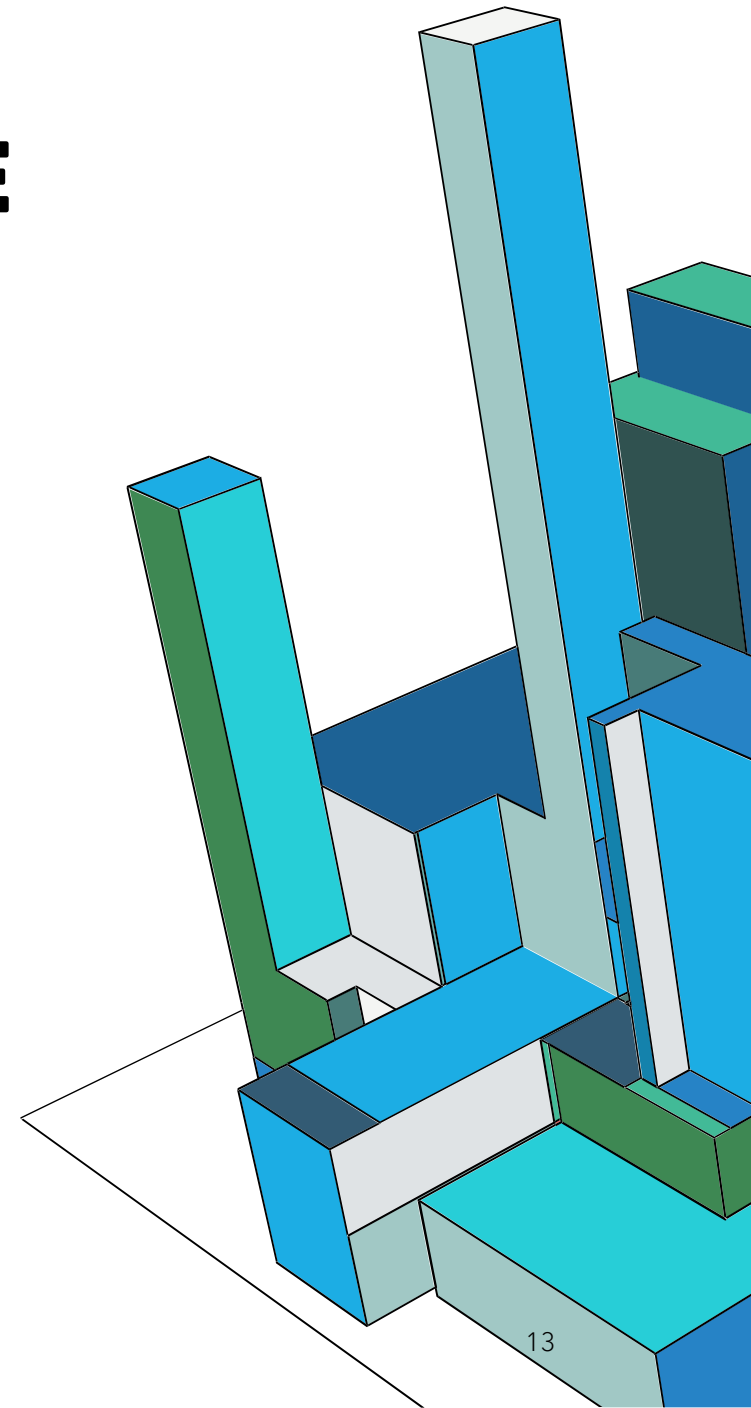
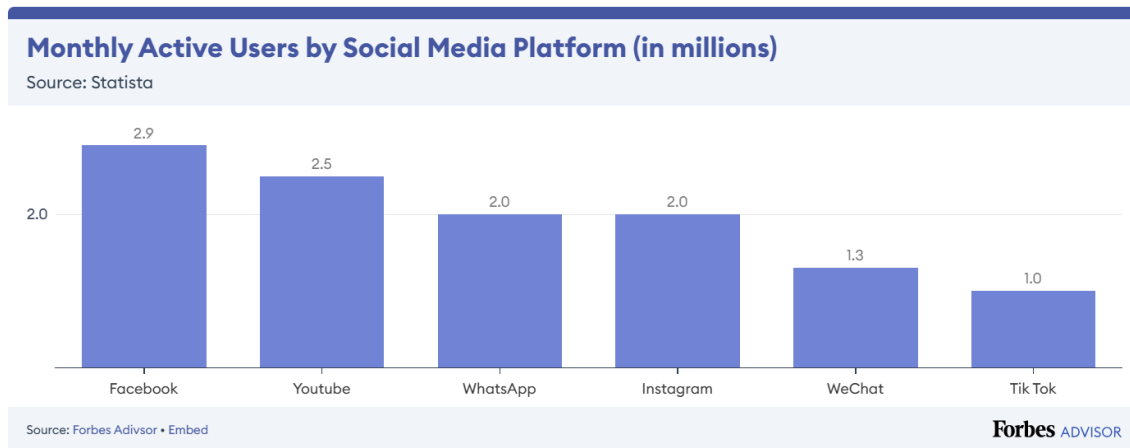
# SOCIAL MEDIA GENERAL USAGE

- 79% of internet users spend most of their time on the internet on a social media platform (2019 Health Information National Trends Survey (HINTS))
- 78% of American adults used the internet to search health-related information in 2013 (PEW Research Center).



# SOCIAL MEDIA GENERAL USAGE

- People have an average of 7 social media accounts
- The average person spends about 145 minutes on social media daily in the USA (~global average)



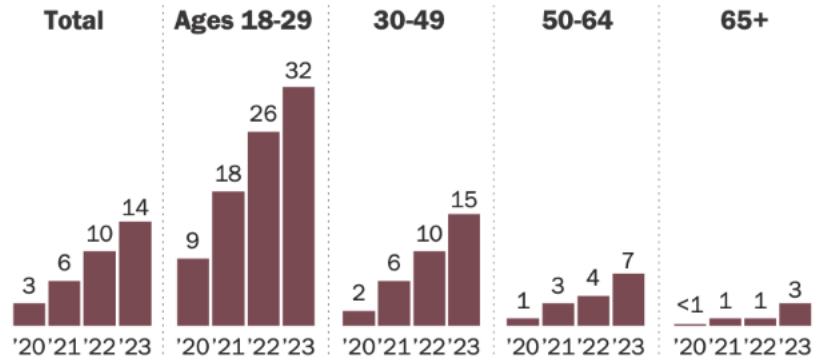
# SOCIAL MEDIA GENERAL USAGE

- Social media is becoming a regular source of news consumption



## About a third of U.S. adults under 30 now regularly get news on TikTok

% of U.S. adults who **regularly** get news from TikTok, by age group

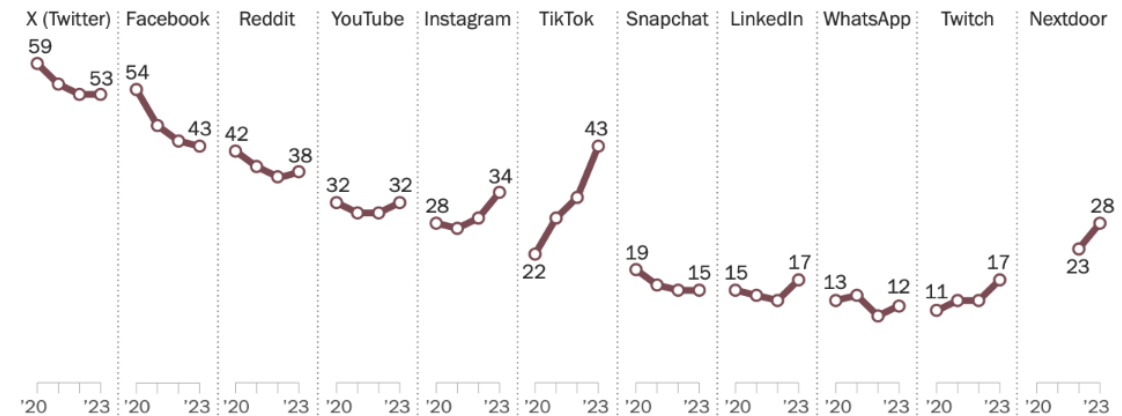


Source: Survey of U.S. adults conducted Sept. 25–Oct. 1, 2023.

PEW RESEARCH CENTER

## Share of TikTok users who regularly get news there has nearly doubled since 2020

% of each social media site's users who **regularly** get news there



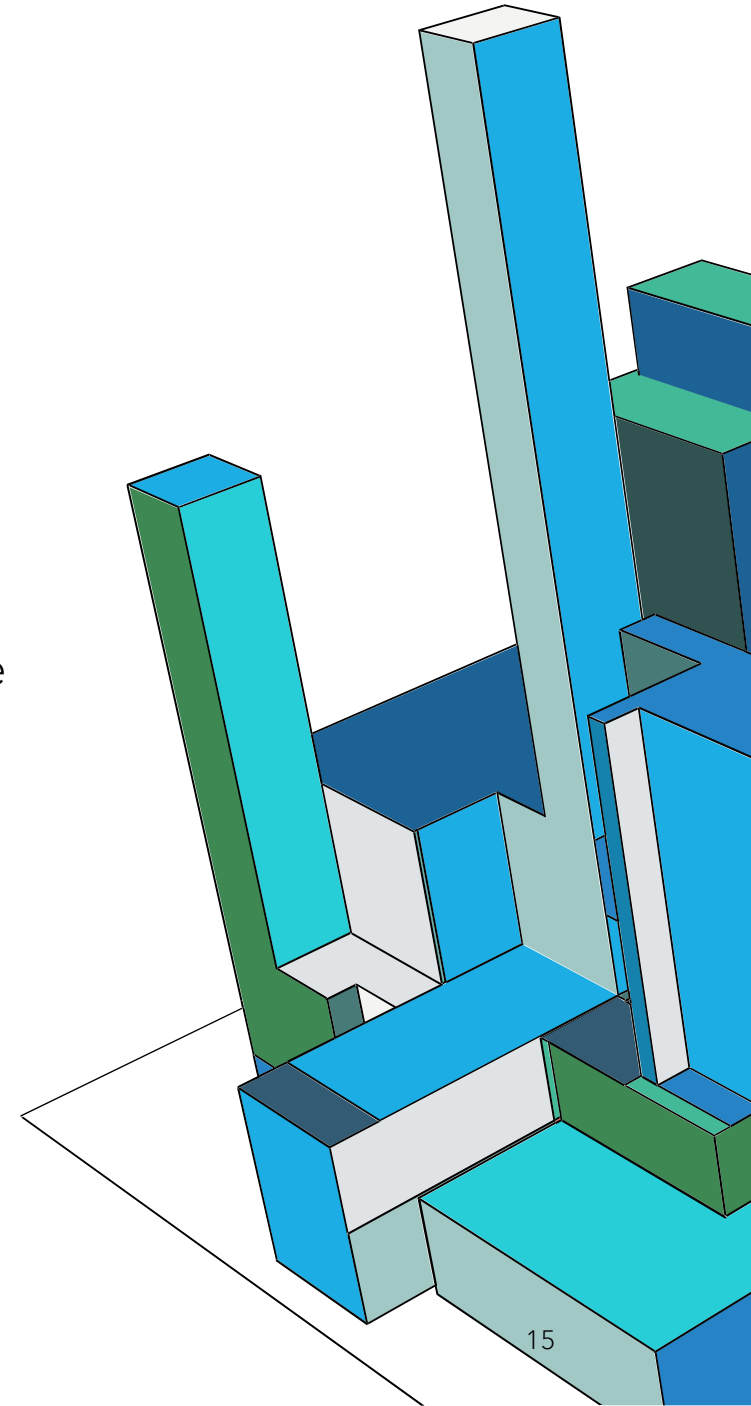
Source: Survey of U.S. adults conducted Sept. 25–Oct. 1, 2023.

PEW RESEARCH CENTER

# SOCIAL MEDIA ALGORITHMS

- Online habits are constantly tracked
- Tailored content and advertisements
- Information that appears at top of search engines are often not vetted
- Social media is designed to keep the user engaged as much as possible

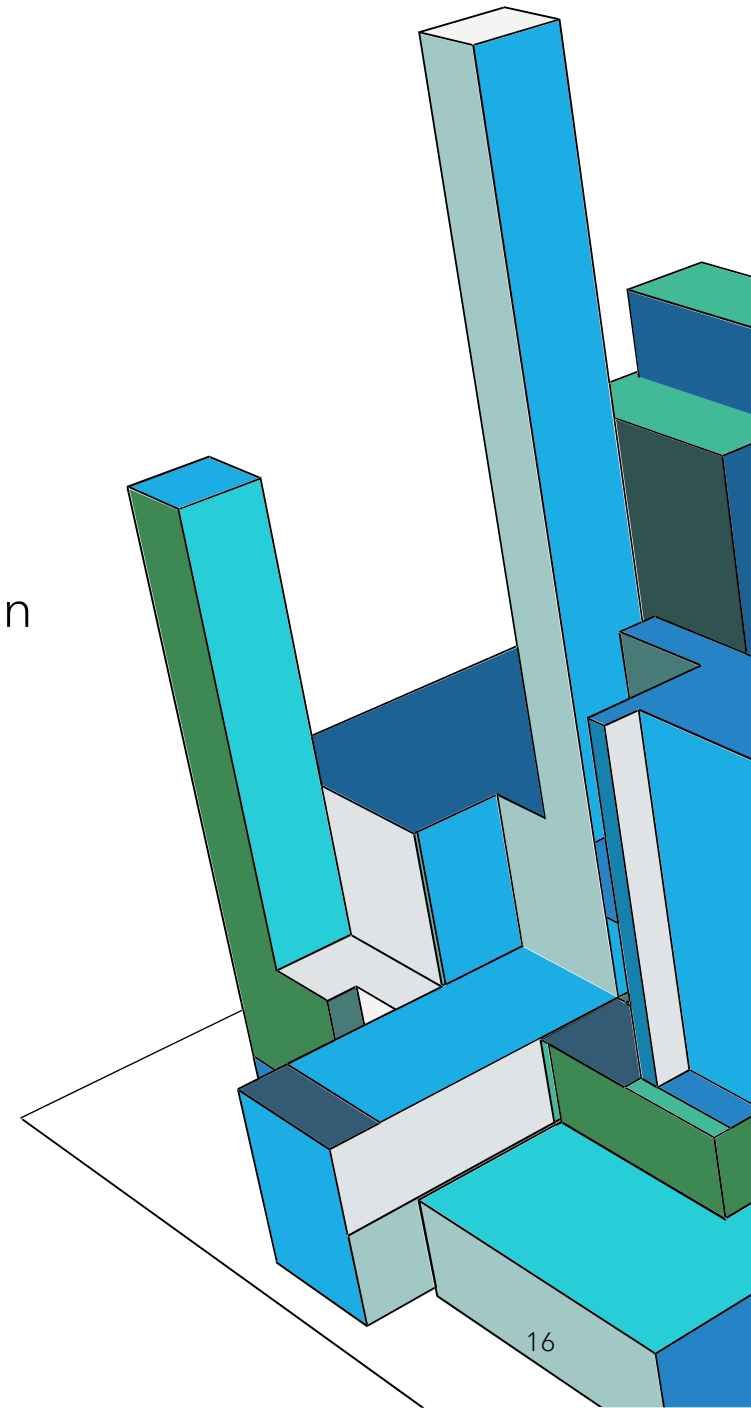
Likes  
Comments  
Shares



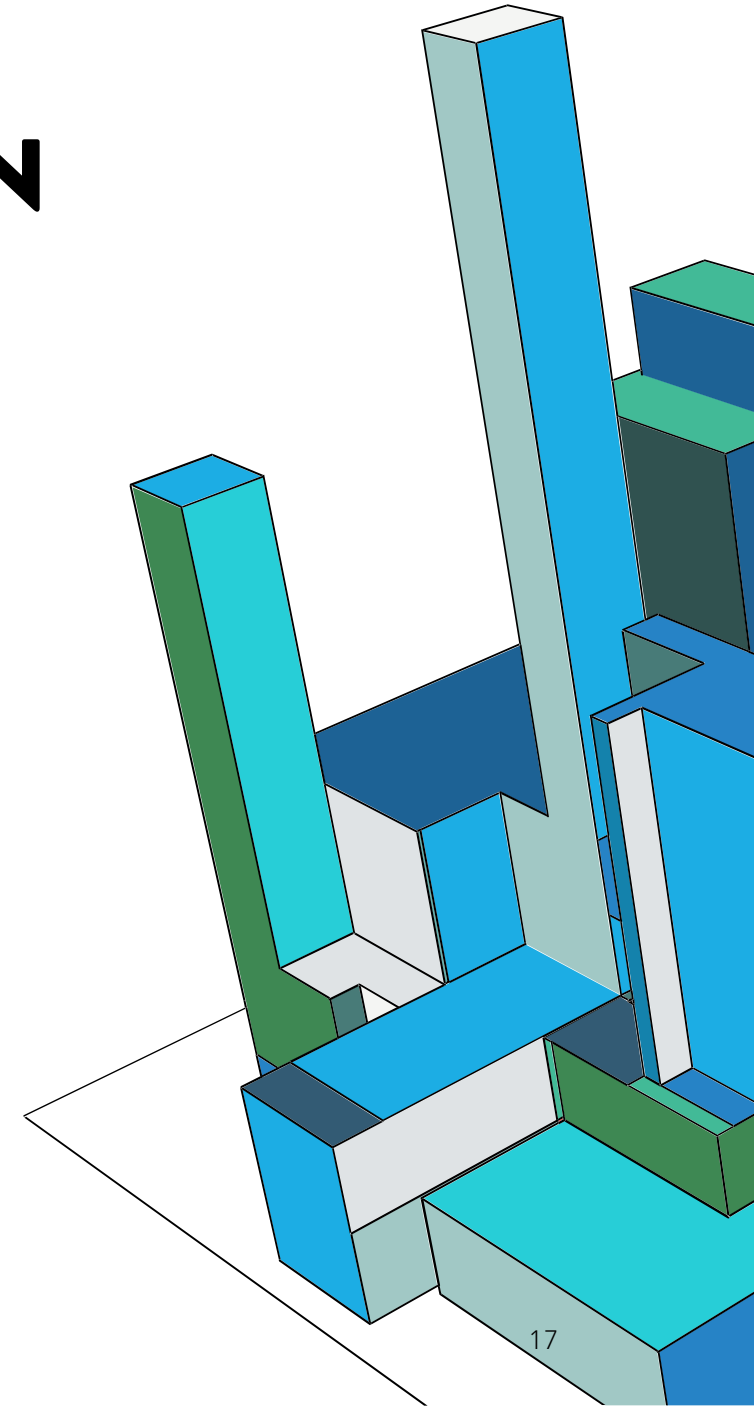


# ONLINE MISINFORMATION

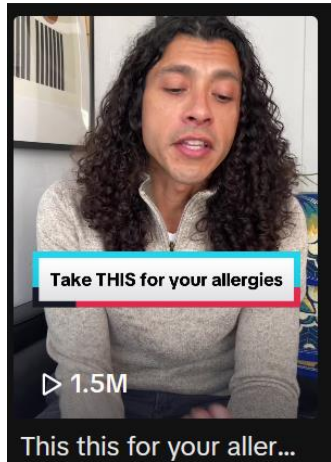
- Health misinformation is false, inaccurate or misleading information compared to the best available evidence
- Impacts medical decision-making by diluting accurate information and confusing people
- When spread intentionally, misinformation is referred to as “disinformation”



# EXAMPLES OF MISINFORMATION



# EXAMPLES OF DISINFORMATION



**NURSE DOZA**

A holistic care clinic that provides tools and resources to help you achieve optimal health.

- Join my School for \$1
- Nurse Doza Newsletter
- Buy Supplements
- Consults w/ Nurse Doza
- School Of Doza Podcast
- Buy Liver Boost

**BRAIN CANDY**  
\$139.00  
★★★★★ 2 reviews

- 1 + ADD TO CART

**VITAMMUNITY**  
\$114.00

- 1 + ADD TO CART

**CHILL**  
\$74.00  
★★★★★ 3 reviews

- 1 + ADD TO CART

**METABOLIC PACK**  
\$109.00

- 1 + ADD TO CART

# ONLINE MISINFORMATION SPREAD

Science

Current Issue

First release papers

Archive

About ▾

Submit manuscript

HOME > SCIENCE > VOL. 359, NO. 6380 > THE SPREAD OF TRUE AND FALSE NEWS ONLINE

REPORT

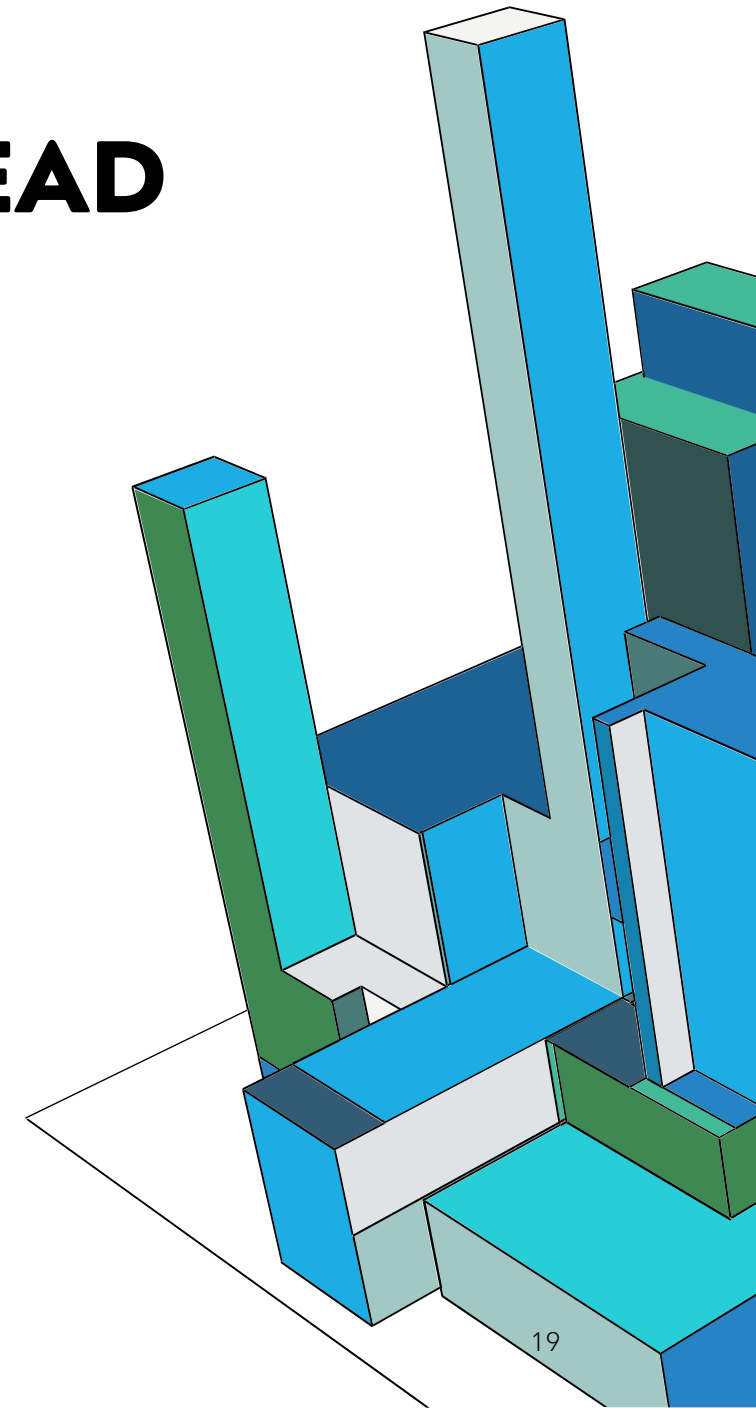


## The spread of true and false news online


SOROUSH VOSOUGHI , DEB ROY, AND, SINAN ARAL  [Authors Info & Affiliations](#)

SCIENCE • 9 Mar 2018 • Vol 359, Issue 6380 • pp. 1146-1151 • DOI: 10.1126/science.aap9559

- Analysis of >126,000 stories posted on Twitter
- False news stories were 70% more likely to be shared on social media compared to accurate ones



# ONLINE MISINFORMATION SPREAD

RESEARCH ARTICLE | SOCIAL SCIENCES | 



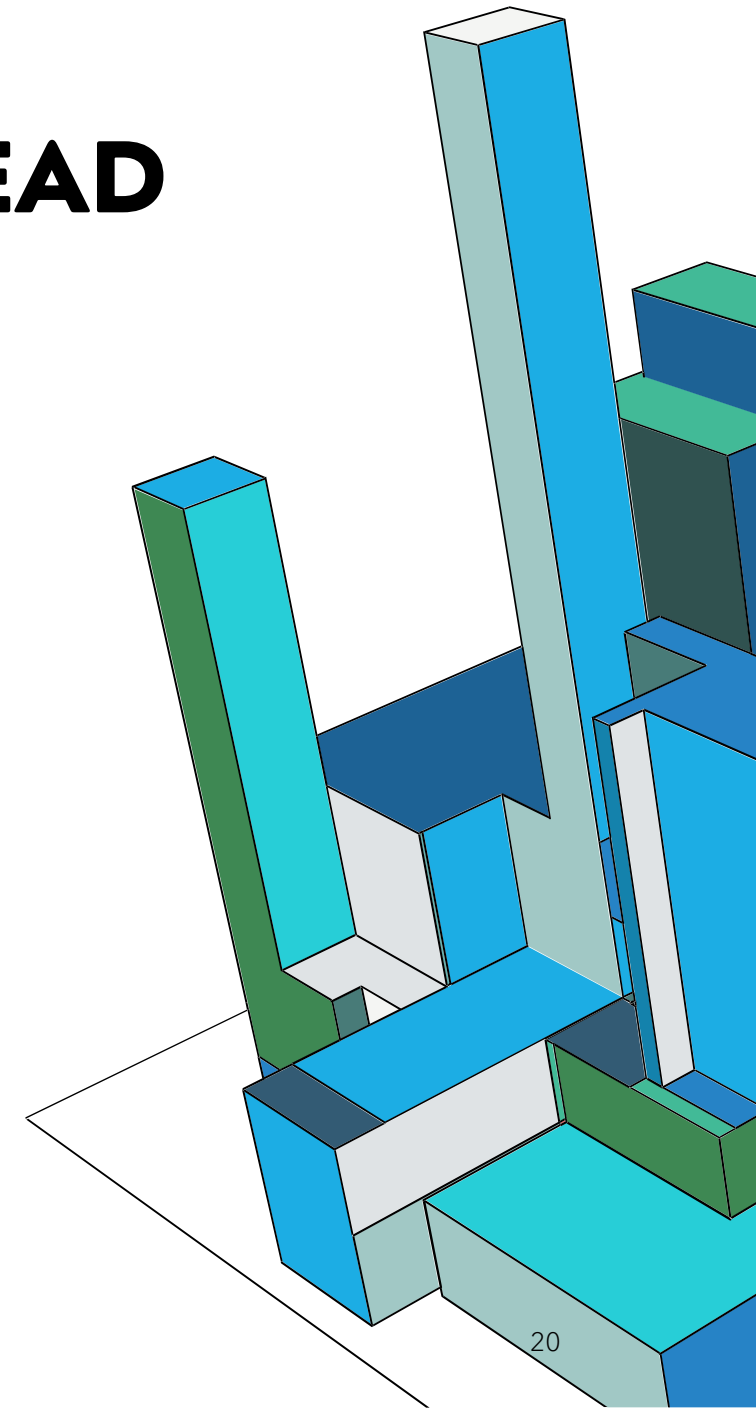
## Sharing of misinformation is habitual, not just lazy or biased

[Gizem Ceylan](#)  , [Ian A. Anderson](#), and [Wendy Wood](#)  [Authors Info & Affiliations](#)

Edited by Susan Fiske, Princeton University, Princeton, NJ; received September 28, 2022; accepted December 3, 2022

January 17, 2023 | 120 (4) e2216614120 | <https://doi.org/10.1073/pnas.2216614120>

- 2,476 active Facebook users ranging in age from 18 to 89 completed a “decision-making” survey approximately seven minutes long.
- Frequent, habitual users forwarded six times more fake news than occasional or new users.



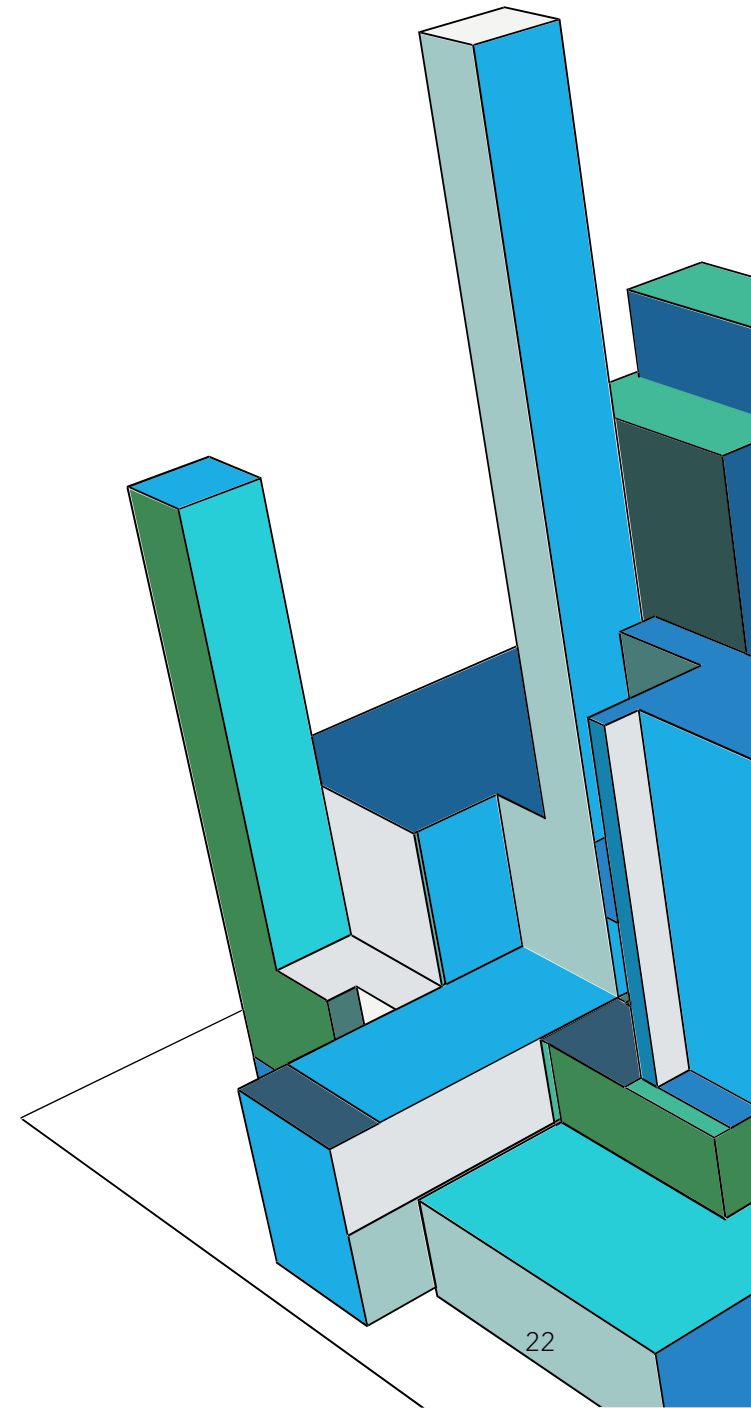
# MISINFORMATION SPREADING TACTICS

1/29/24



# COGNITIVE BIAS

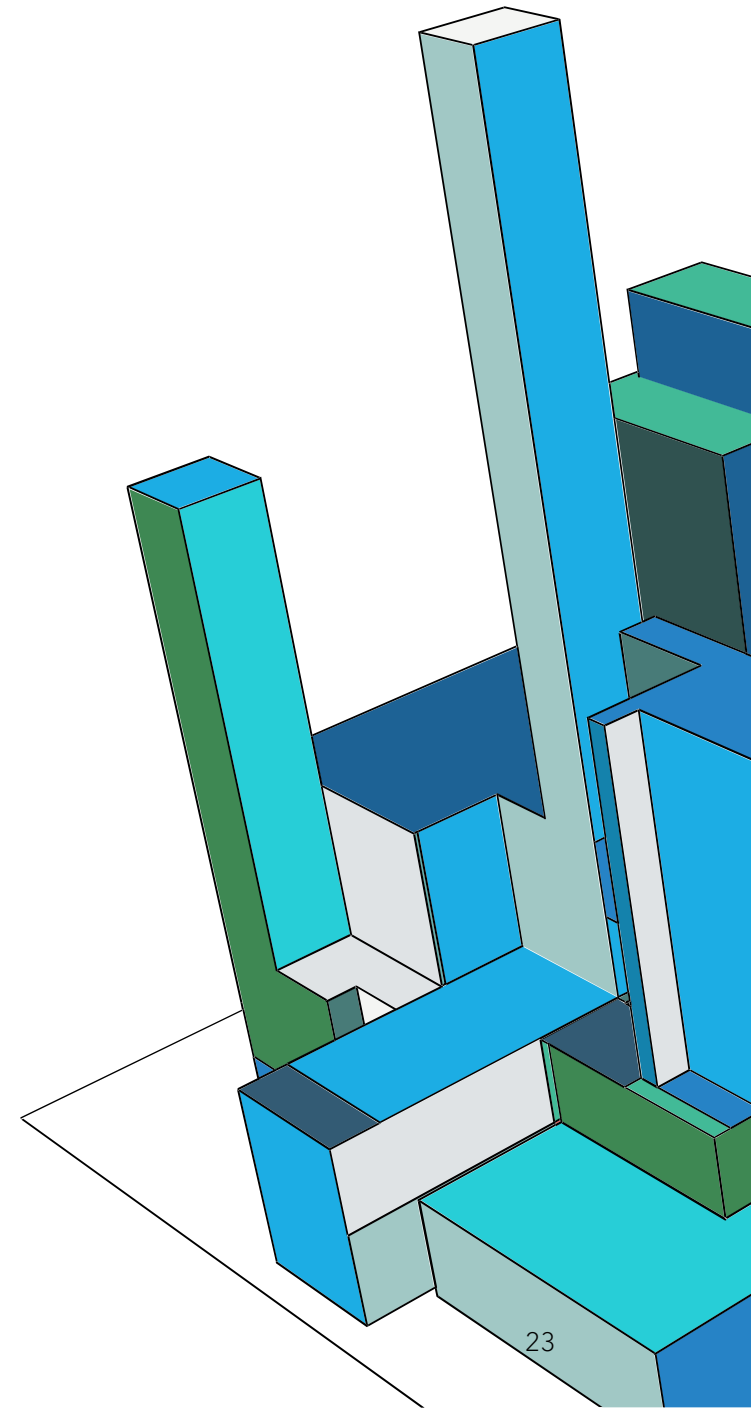
- Confirmation bias
  - Tendency to search for and recall information that is congruent and supports one's beliefs
  - “We did tons of simulations and most of them showed no problems”
- Bandwagon effect
  - Uptake of belief and ideas increases the more that they have already been adopted by others
  - “Everyone has been doing it this way”





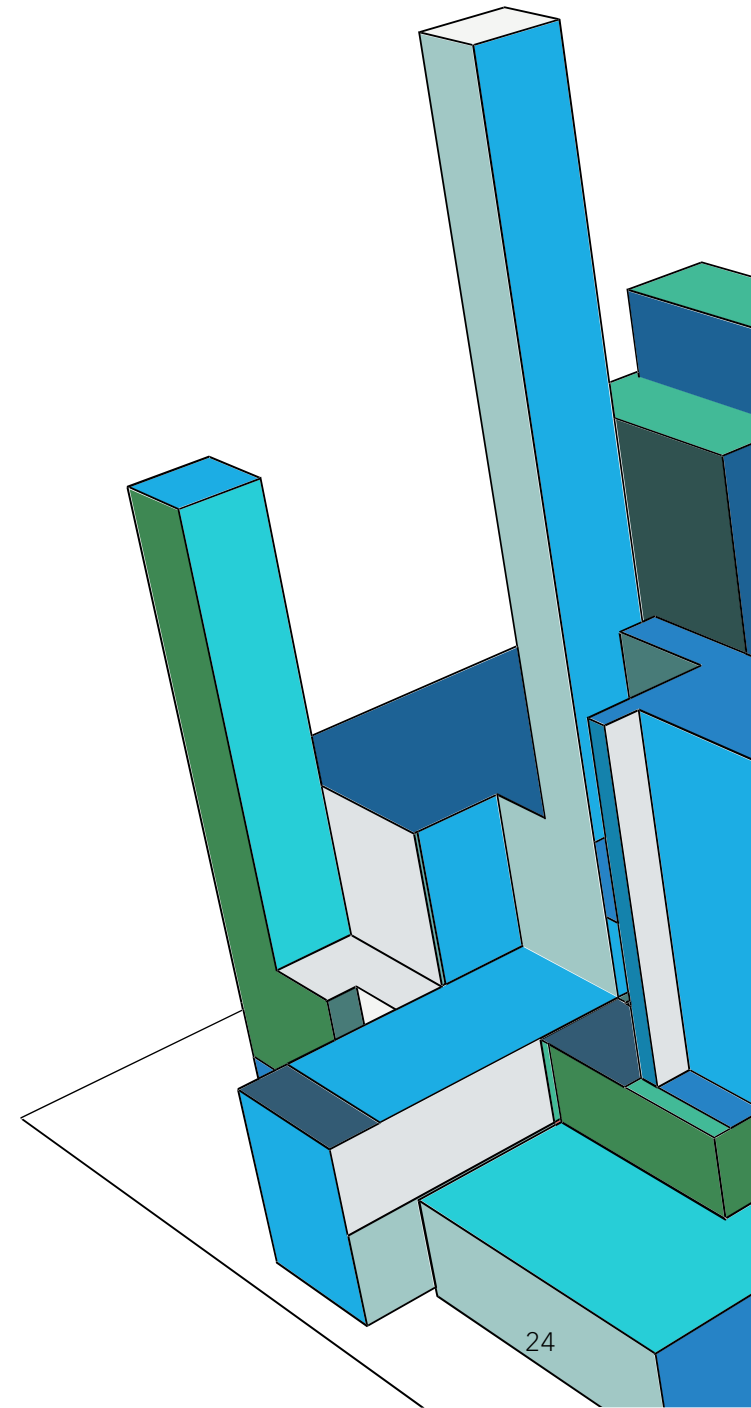
# COGNITIVE BIAS

- Reactive devaluation
  - Devaluating an idea because it originated from an opponent
  - “Political theatre”
- Status quo bias
  - Preferring the state of current affairs over change
  - “If it ain’t broke, don’t fix it!”

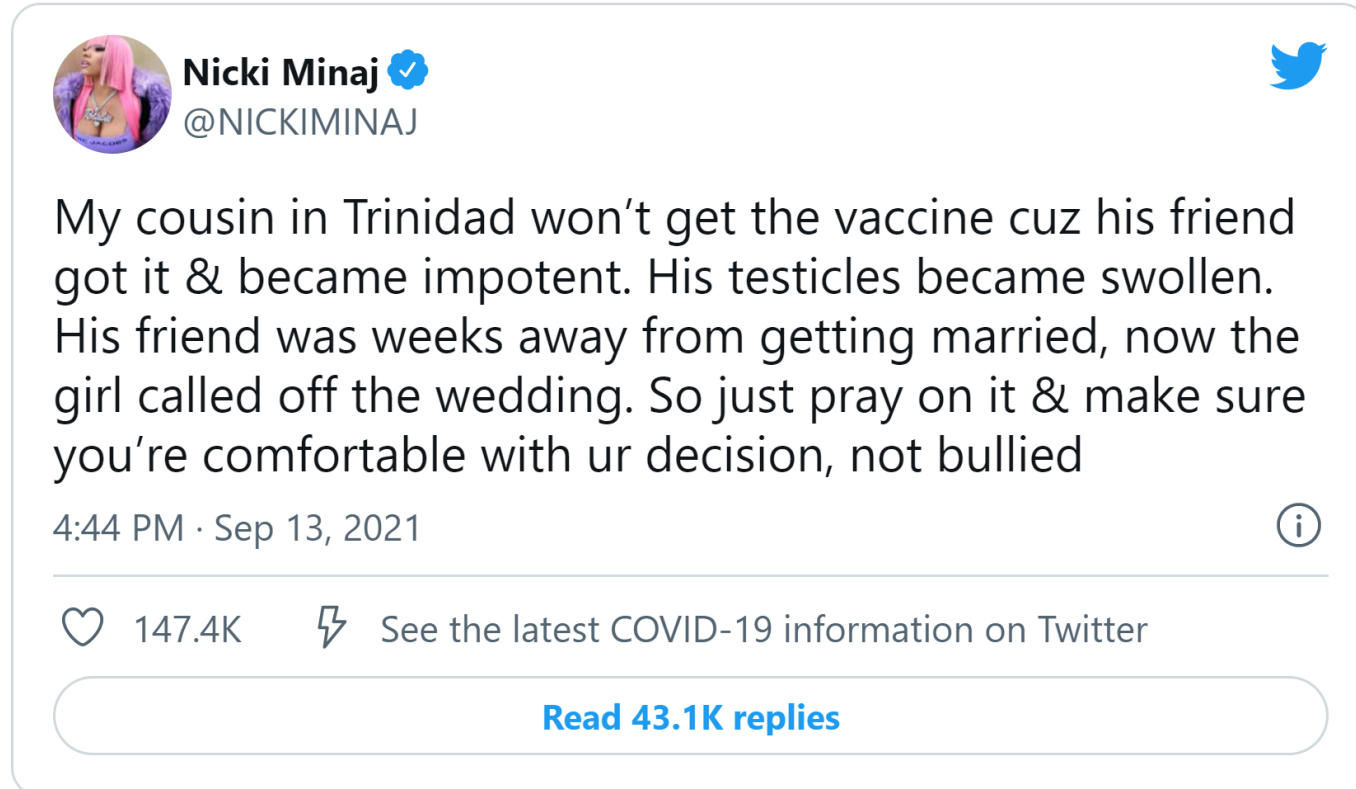


# ANECDOTES




- Personal stories are easily relatable, especially those that cause an emotional response
- Poor understanding of what is evidence and how to evaluate the strength of evidence increases the susceptibility of the **post hoc fallacy**
  - Assuming an event must have been caused by a later event because it happened earlier
  - "Correlation equals causation"




# SOCIAL MEDIA INFLUENCERS AND CELEBRITIES





A screenshot of a tweet from Nicki Minaj (@NICKIMINAJ) on Twitter. The tweet text reads: "My cousin in Trinidad won't get the vaccine cuz his friend got it & became impotent. His testicles became swollen. His friend was weeks away from getting married, now the girl called off the wedding. So just pray on it & make sure you're comfortable with ur decision, not bullied". The tweet is dated 4:44 PM · Sep 13, 2021 and has 147.4K likes. Below the tweet is a button that says "Read 43.1K replies". To the right of the tweet is a small Twitter bird icon. At the bottom right of the tweet is an information icon (i).

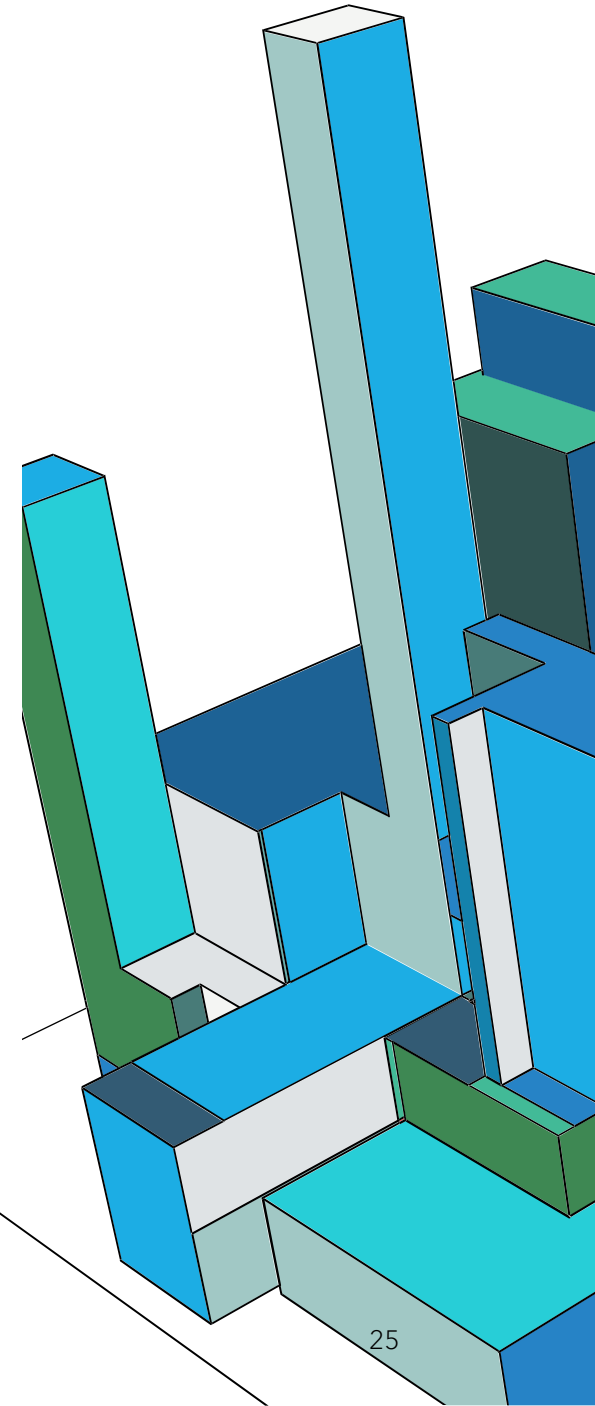
 **Nicki Minaj**   
@NICKIMINAJ 

My cousin in Trinidad won't get the vaccine cuz his friend got it & became impotent. His testicles became swollen. His friend was weeks away from getting married, now the girl called off the wedding. So just pray on it & make sure you're comfortable with ur decision, not bullied

4:44 PM · Sep 13, 2021 

 147.4K  See the latest COVID-19 information on Twitter

[Read 43.1K replies](#)

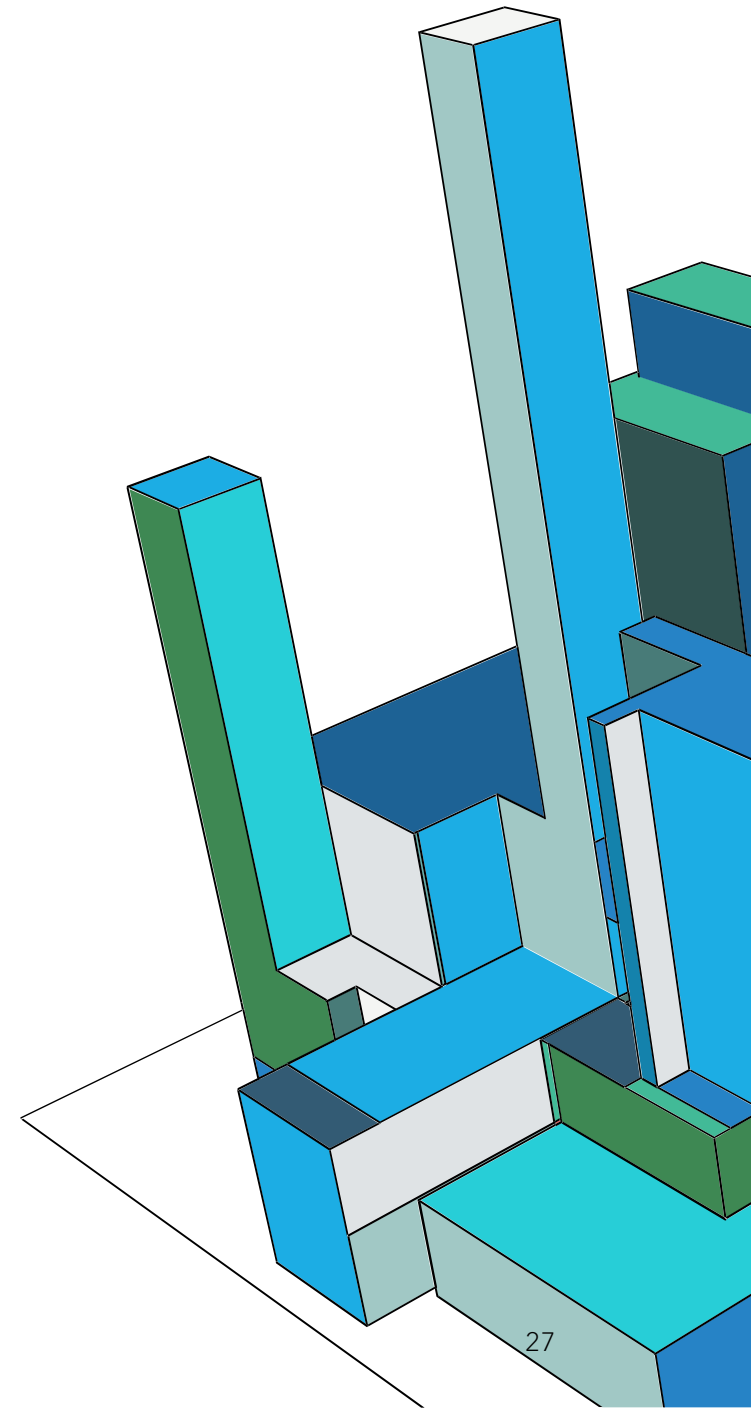




# **SOCIAL MEDIA'S IMPACT ON PATIENT MEDICAL DECISION MAKING**

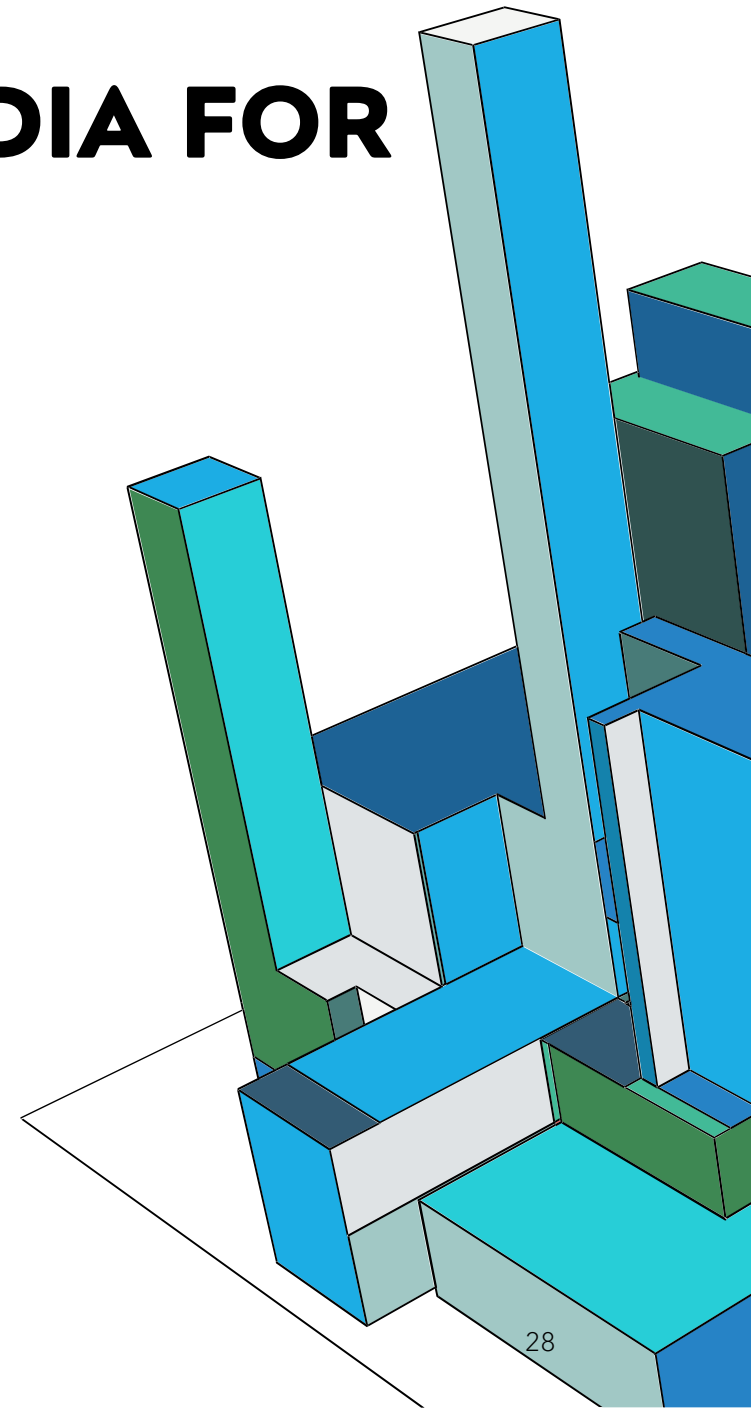
# INFLUENCES ON PATIENTS

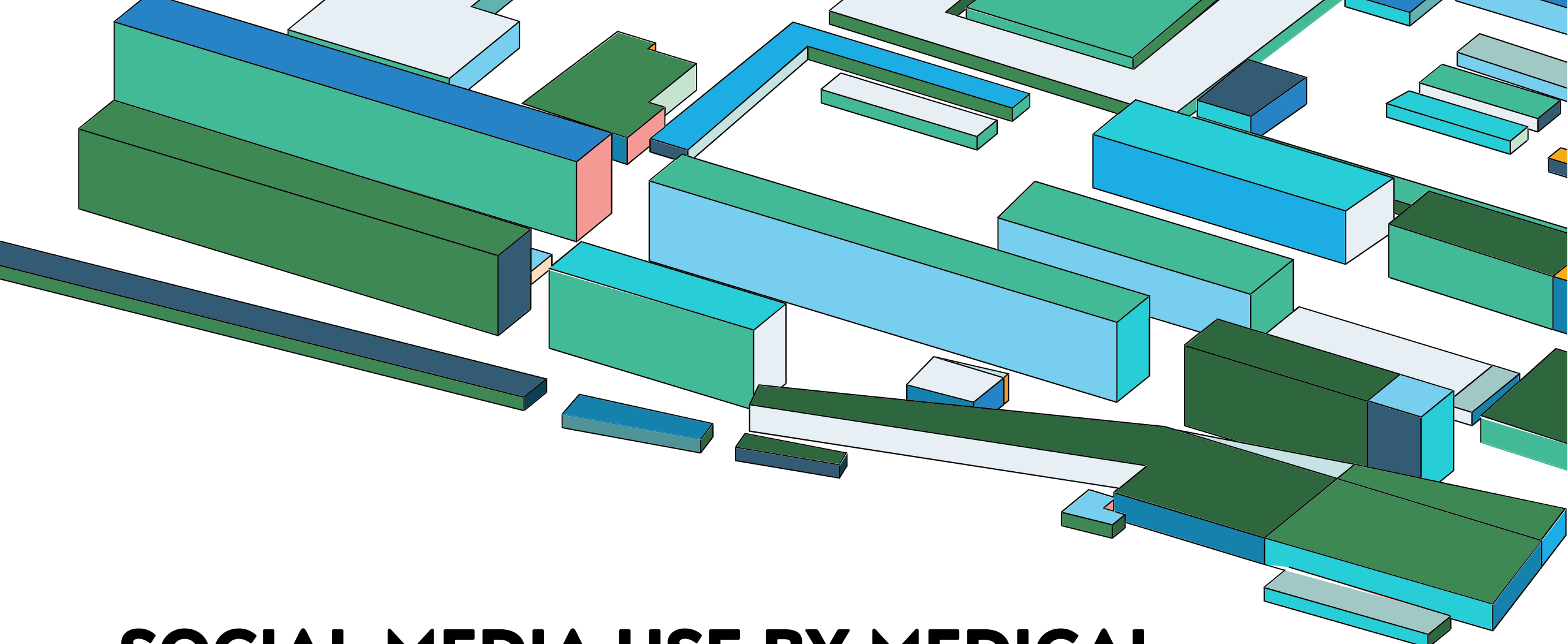
- Family members
- Social circles
- Social media
  - Echo chambers can **suppress outside voices**
  - Echo chambers can **amplify unproven alternative therapies**



# WHY PATIENTS USE SOCIAL MEDIA FOR HEALTH-RELATED SEARCHES

- Information gathering
- Networking
- Patient empowerment for well-being, self-management, and control
- Find empathy from others living with similar conditions
- Venting frustration





# **SOCIAL MEDIA USE BY MEDICAL PROFESSIONALS**



# PAY ATTENTION TO THIS!

- Most academic institutions and private employers have a social media policy



**Stanford** | University Communications

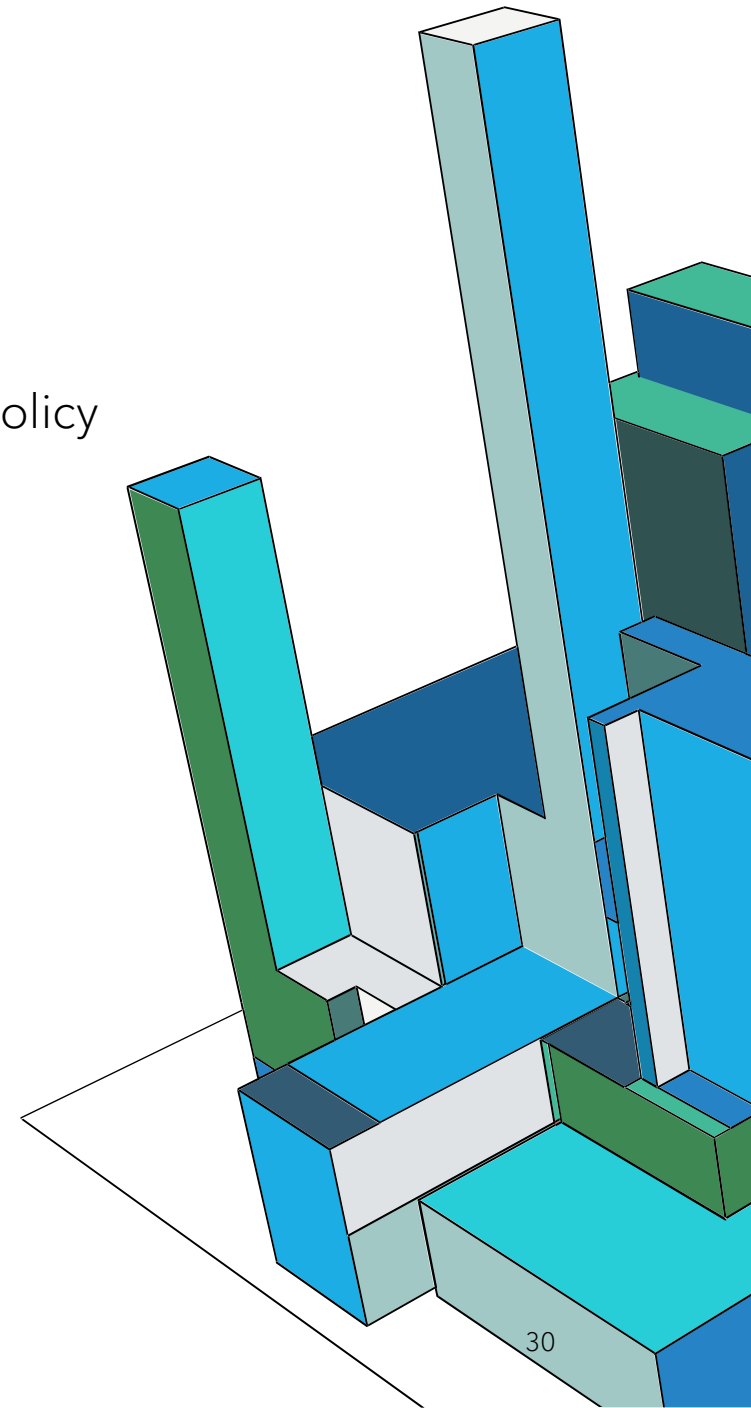
Home News & Publications For Journalists For Faculty & Staff Policies

## Social Media Guidelines

### Introduction

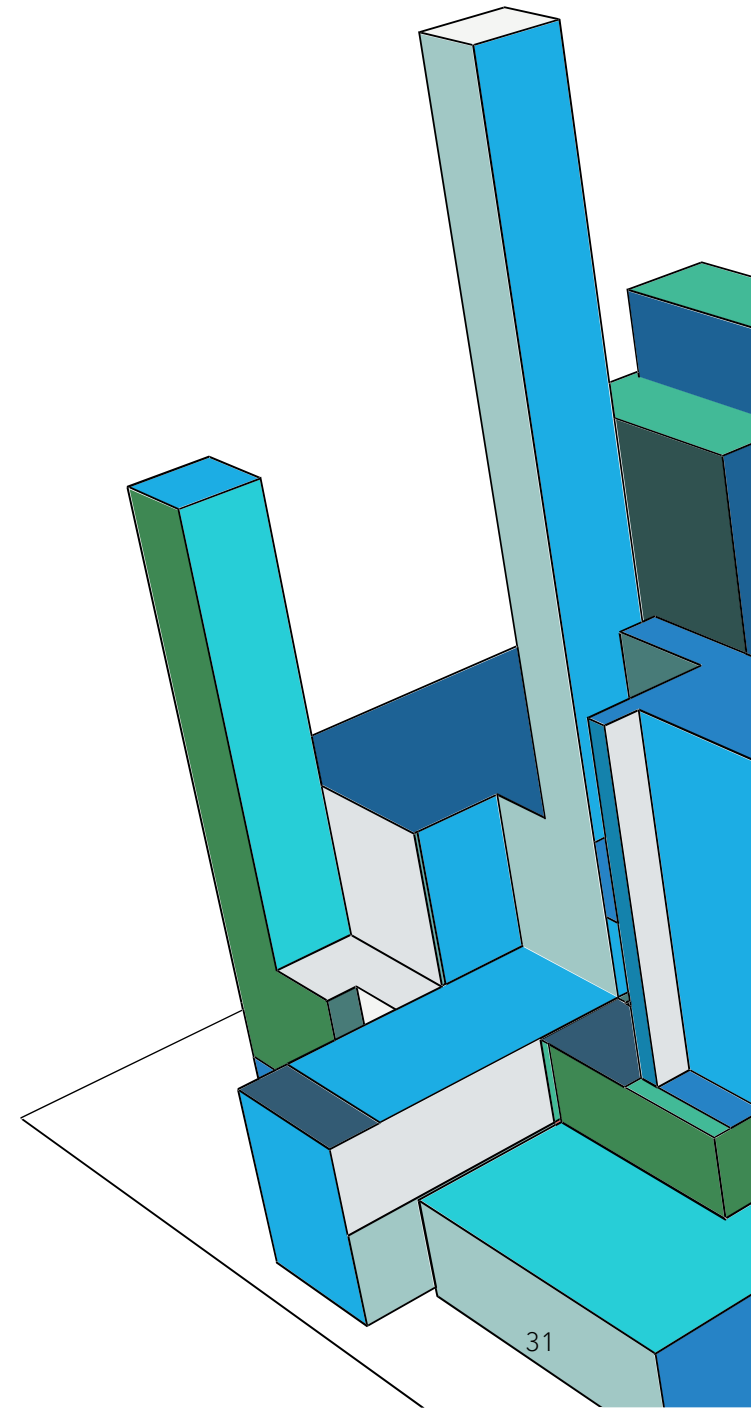
These guidelines are designed to help Stanford employees, volunteers, affiliates, and consultants (e.g., creative agencies) in making appropriate decisions when managing and/or developing social media initiatives on behalf of the university. Additionally, the guidelines are intended to advise Stanford employees who indicate an institutional affiliation on their personal social media profiles on how to balance their affiliation with personal conversation.

These guidelines are intended to complement existing university policy. If there is a conflict between guidance in this document and a policy in the Administrative Guide, then the Administrative Guide controls. Further, these guidelines do not supersede or otherwise modify the social media communications policy adopted by SLAC National Accelerator Laboratory.



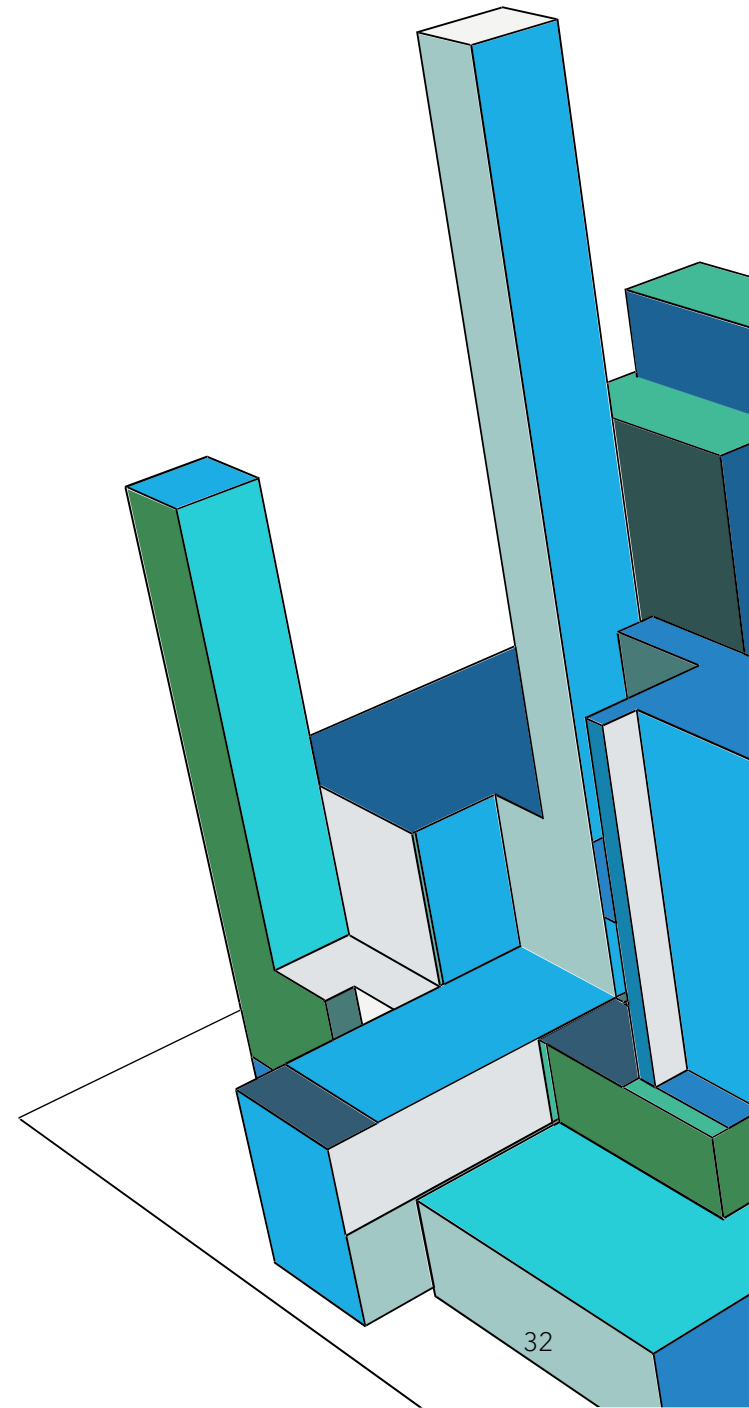
# CAREER ADVANCEMENT

- Social media can provide networking opportunities
  - Colleagues
  - Media
- Most professional organizations and journals have accounts
- Patients want to see their physicians on social media!
  - 2018 Harris Poll reported that 54% of millennials and 42% of adults would like to follow their health care providers on social media
- Growing your practice!



# DEBUNKING MISINFORMATION

- Growing distrust of the healthcare system
- Misinformation spreads more since there is a lack of credible expertise to fill the void
- Clearing up myths and misconceptions can help patients who are seeking medical information
- Health care professionals can offer their expertise and evidence to explain complicated medical concepts in simpler terms



# ADVOCACY

In 2022, generous contributors raised...

# \$810,830

## Top 5 Teams

Rank	Team Name	Total
1st	#Kidvengers	\$210,942
2nd	#DiagnosticNation	\$175,630
3rd	#BladesForcepsNBougies	\$123,447
4th	#HemOnculus	\$117,837
5th	#TheWholeEnchilada	\$75,011

[Click here for the full leaderboard](#)

rubin\_allergy  
56.3K likes

\$2.5K · 47 Weekly ranking

Tips for going LIVE

CORE  
CORE  
Donate

Grateful for?

- jeffreybodean89  
Omg so easy lol
- lisalove1223  
You make it look so easy. lol
- shannoka  
Awesome tie and explanation!
- sheilakearney7 sent you likes

Co-host Multi-gu... Interact 10 Enhance LIVE Ce...

# WHAT IF YOU DON'T WANT TO USE SOCIAL MEDIA?

- Patients may have preconceived notions regarding the cause of their symptoms and treatment options based on what they learn through social media
- You still need to be aware of the trends!



## FDA warns about serious problems with high doses of the allergy medicine diphenhydramine (Benadryl)

Teen misuse sparked by dangerous "Benadryl Challenge" promoted on social media

[Subscribe to Email Updates](#) [Share](#) [Post](#) [LinkedIn](#) [Email](#) [Print](#)

[en Español](#)

[Drug Safety Communication \(PDF - 59KB\)](#)

09-24-2020 FDA Drug Safety Communication



**National Suicide Prevention Lifeline**

1-800-273-8255

24/7

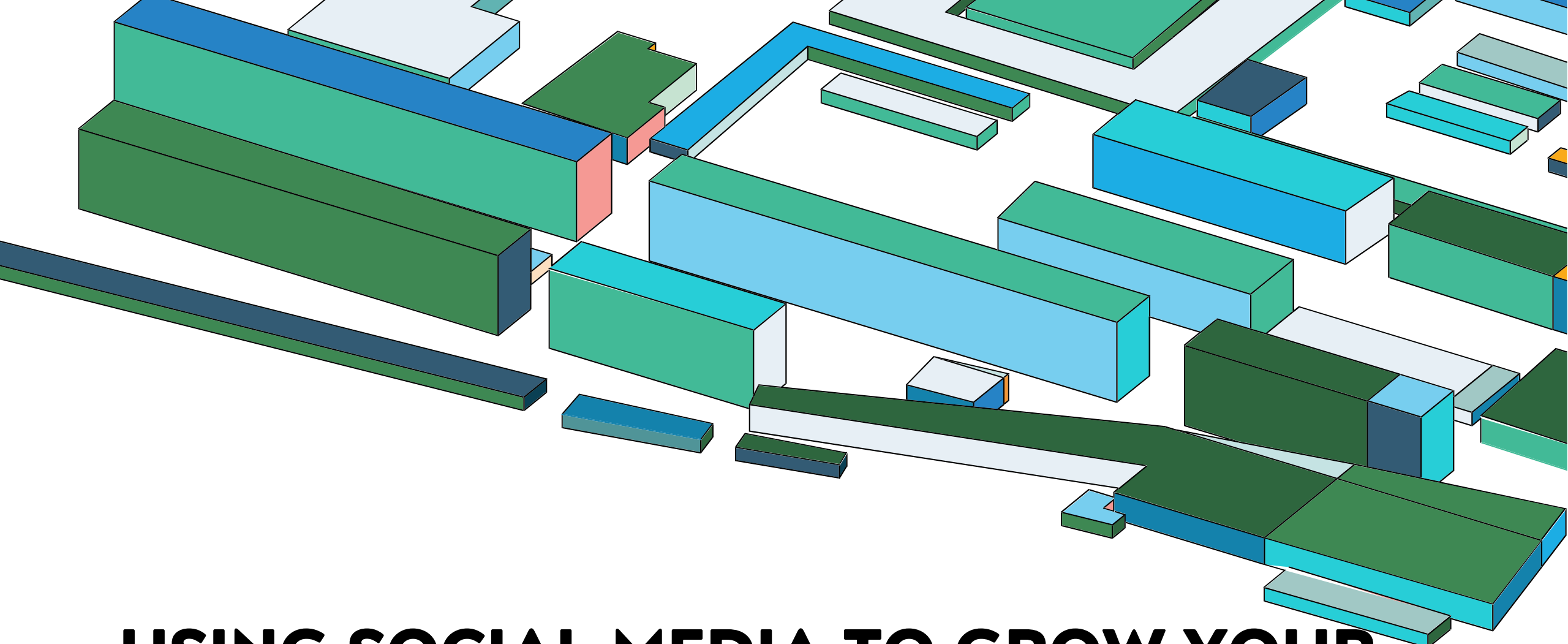


**Crisis Text Line**

Text "TikTok" to 741-741

24/7

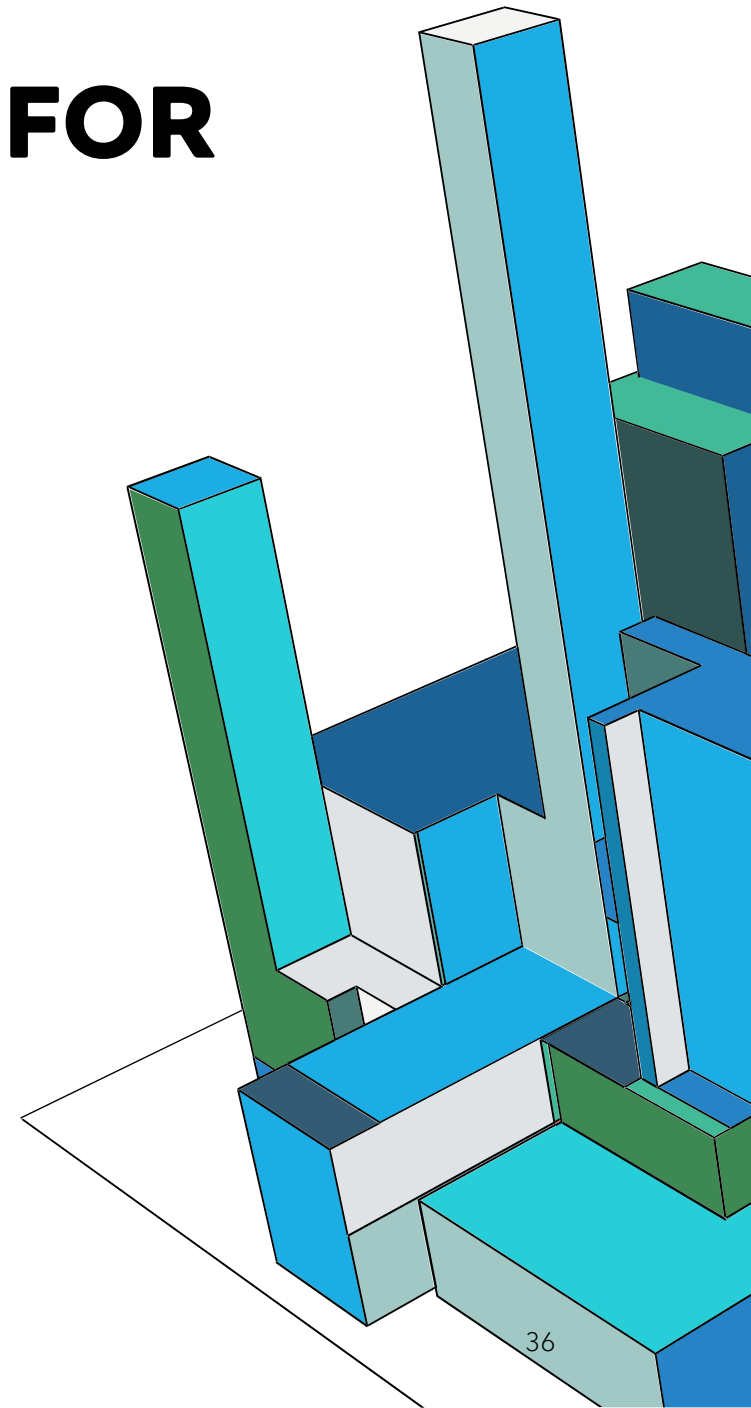




# **USING SOCIAL MEDIA TO GROW YOUR PRACTICE**

# TIPS FOR USING SOCIAL MEDIA FOR GROWING A PRACTICE

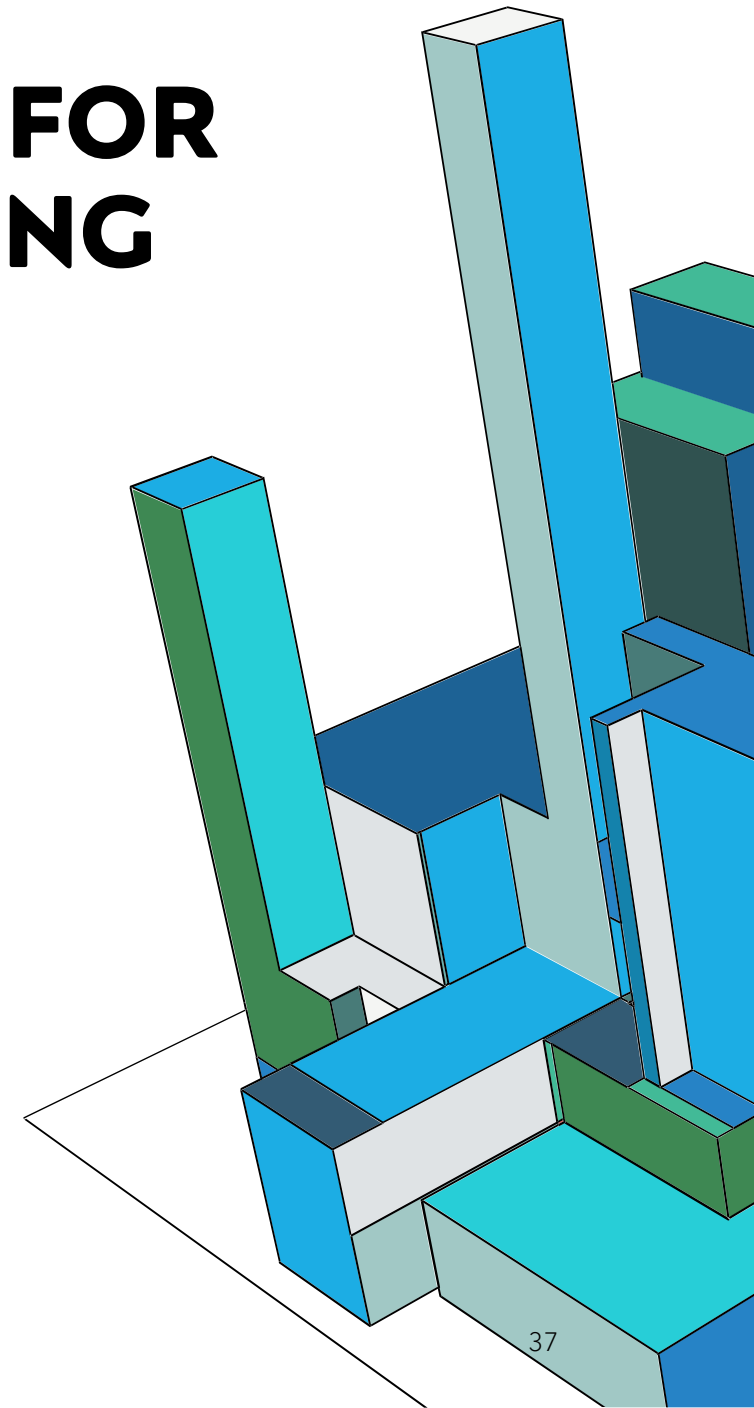
- It's not about followers - it's about engagement
- Education builds trust
- Video > photo posts
- Create content about conditions that patients are actively searching
- Focus on one platform
- Paid ads?

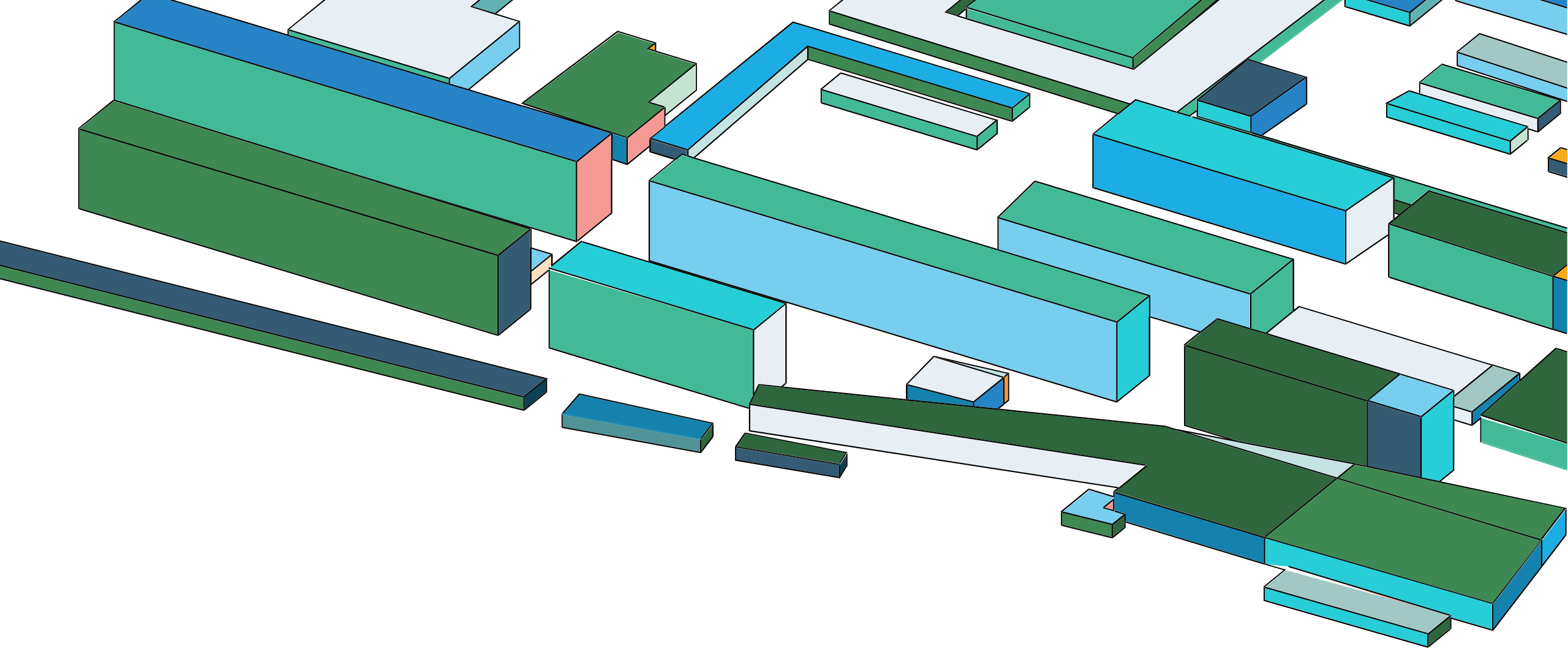




# TIPS FOR USING SOCIAL MEDIA FOR GROWING A PRACTICE - WARNING

- Do not give direct medical advice over social media
- Be careful of DM requests
- Be careful about personal information shared online
- Do not “friend” or “follow” people you cannot verify
- Do not post anything online that you don’t want your family to see
- Be careful about negative comments online





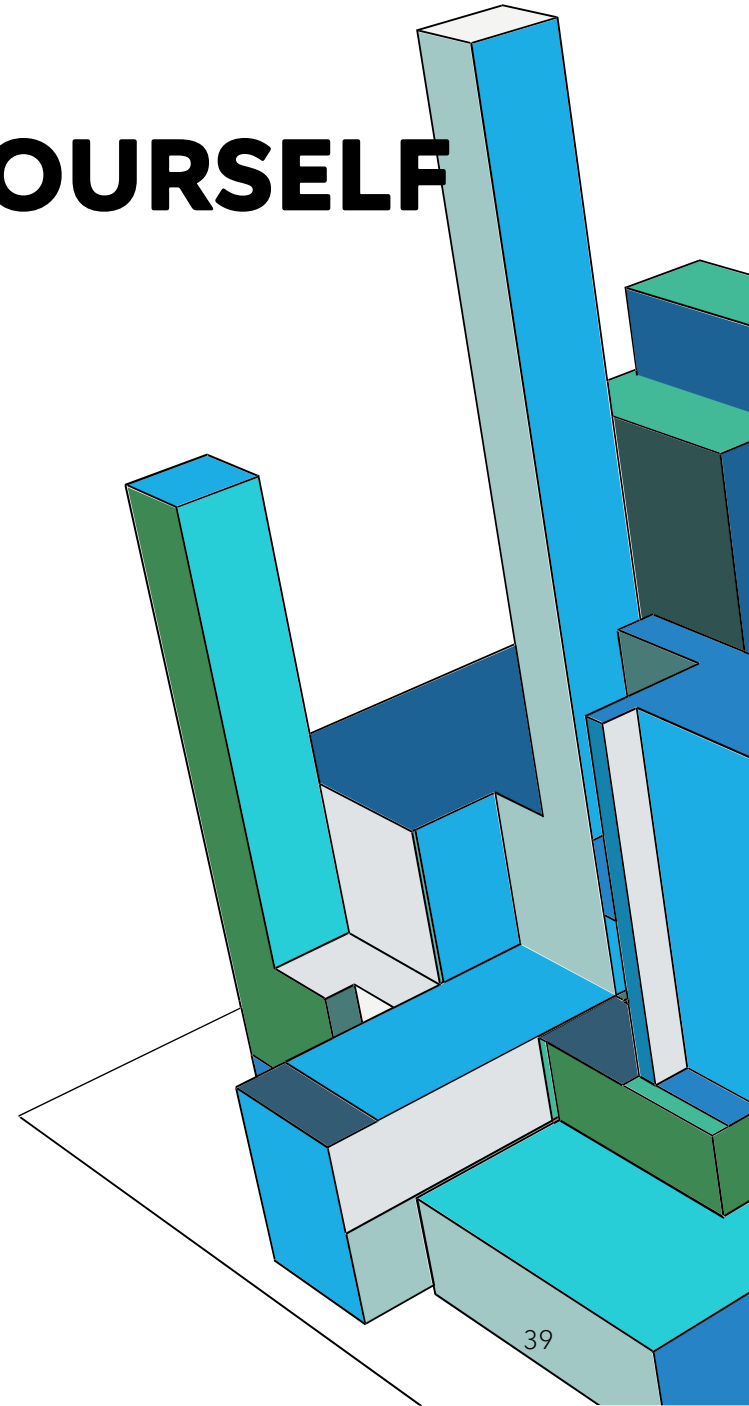
# HOW TO GROW YOUR FOLLOWING

# 3 QUESTIONS YOU MUST ASK YOURSELF

Why?

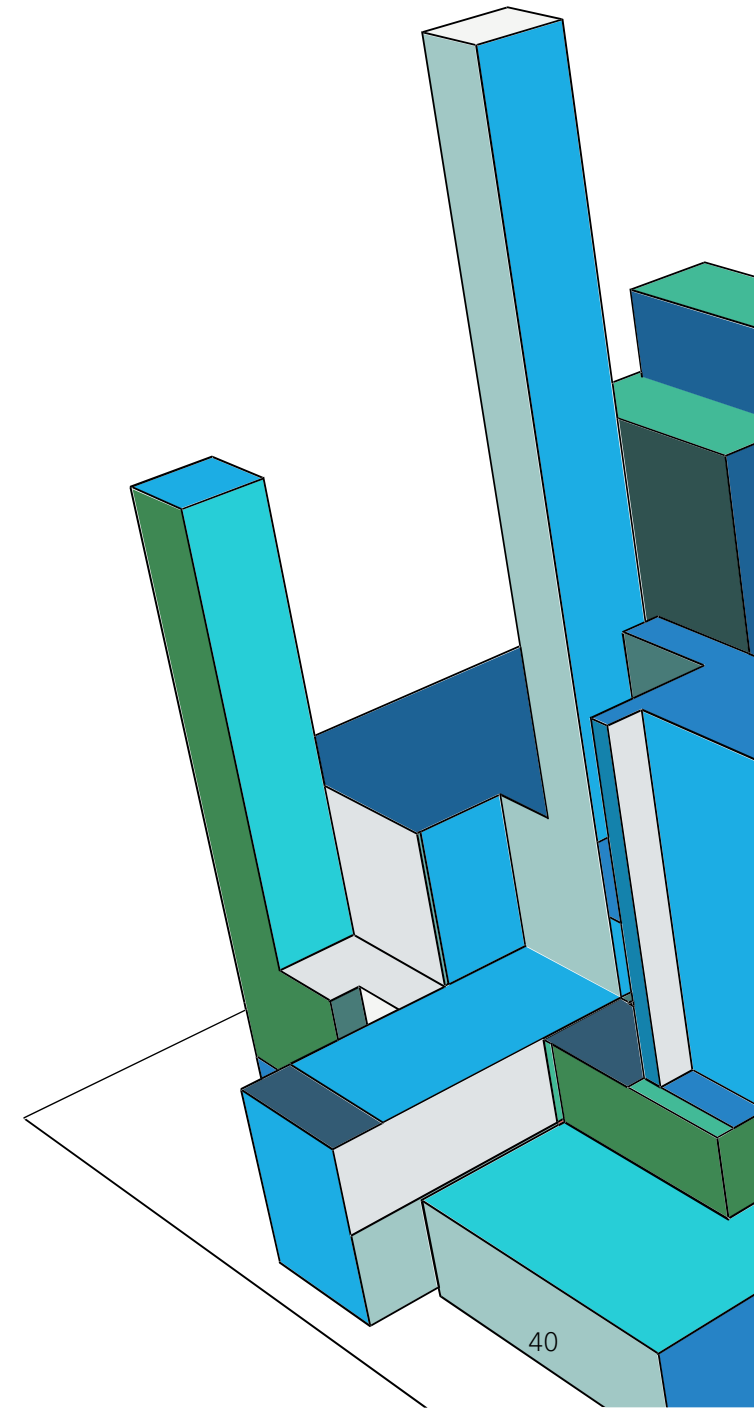
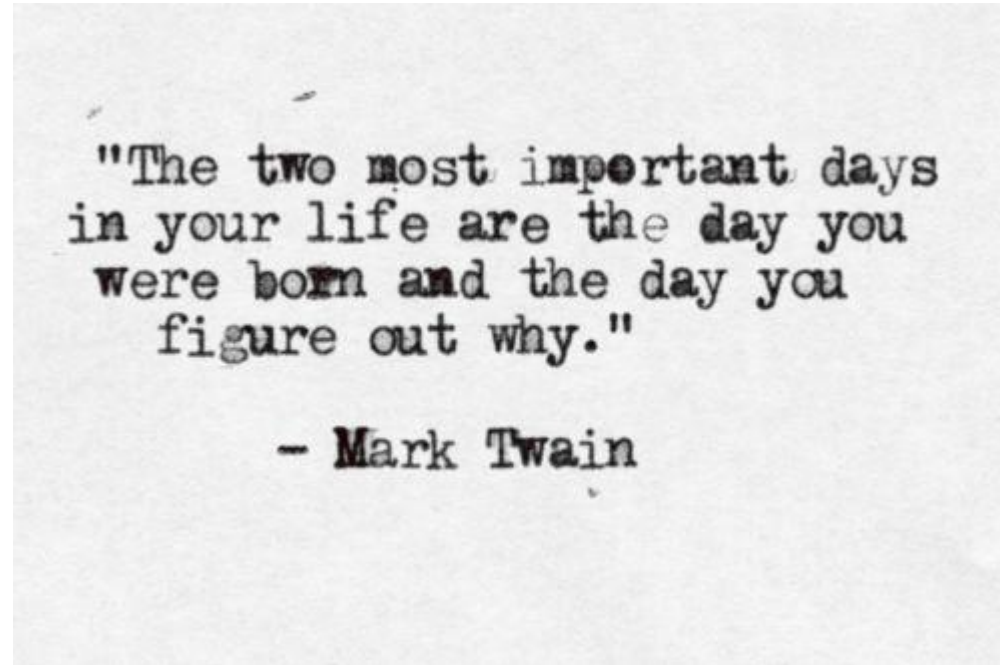
What?

How?



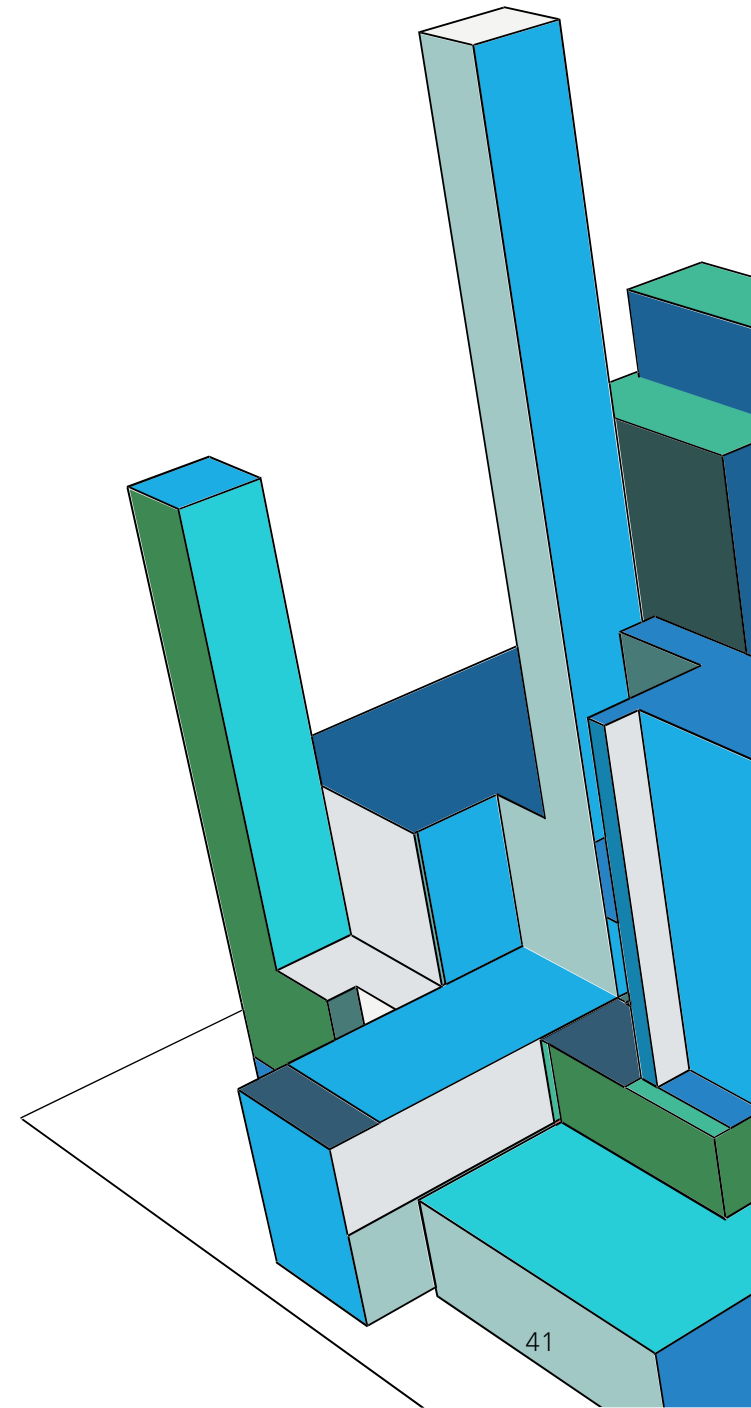
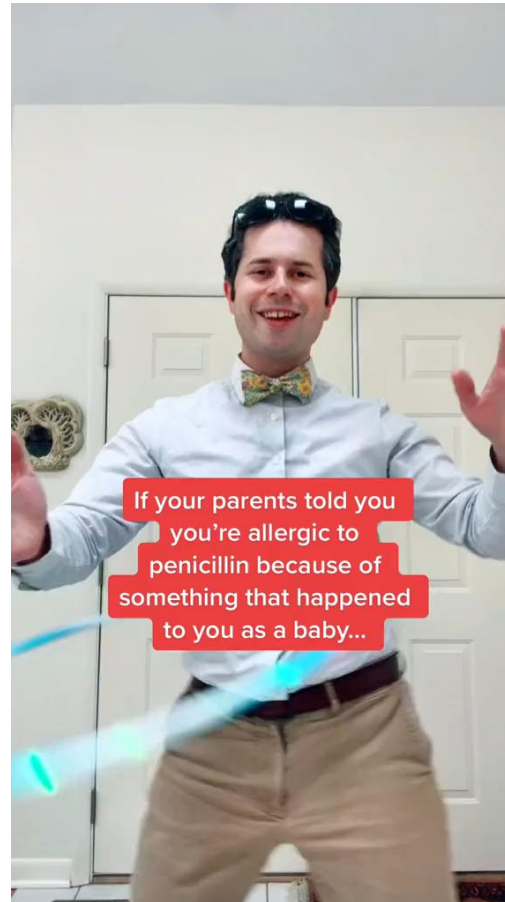
# WHY?

- This is most important!



# WHAT?

- What is your “it” factor that sets yourself apart from others?



# HOW?

- Be SMART
  - Simple
  - Make valuable content
  - Authenticity
  - Reliable
  - Timely (Consistency)



# HOW?

- Do not get discouraged!
- It is not all about the number of followers, but the engagement

## Followers

View more >

Last 7 days

Last 28 days

Last 60 days

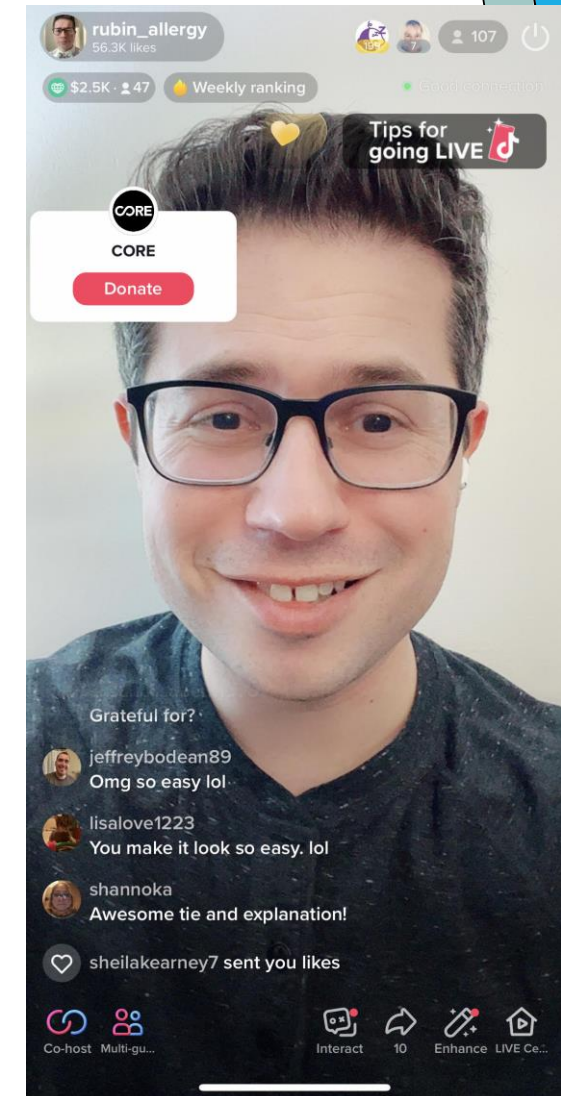
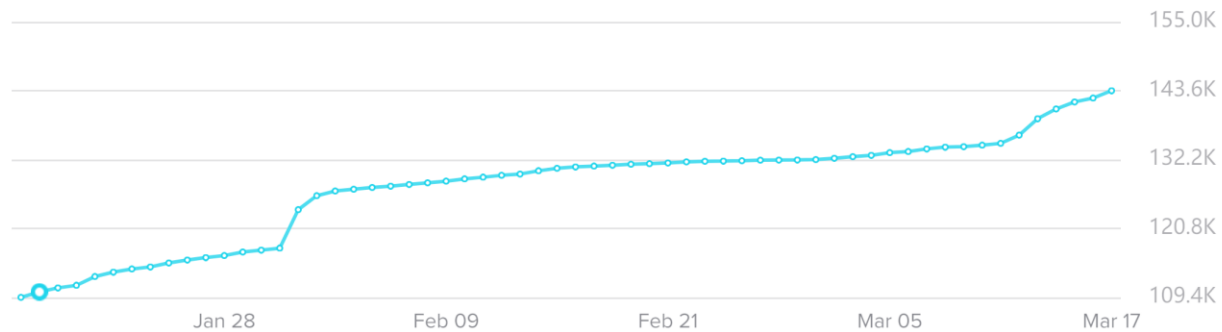
Custom ▾

**143,949** in total ⓘ

Net +35,292 (Jan 17 - Mar 17)

Growth rate -19.68% (vs. Nov 18, 2021 - Jan 16, 2022) ↓

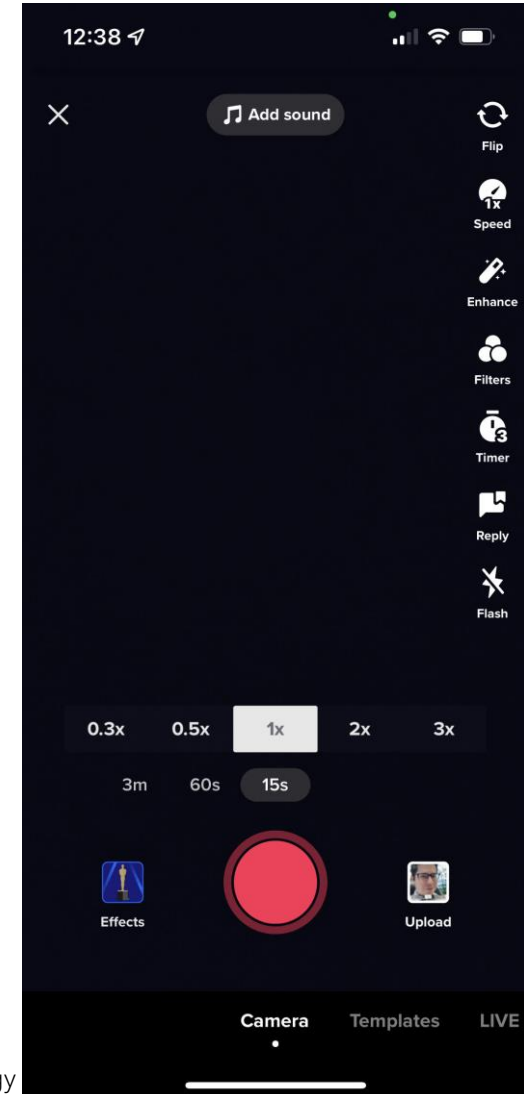
Jan 17 - Mar 17





# HOW TO NAVIGATE A PLATFORM

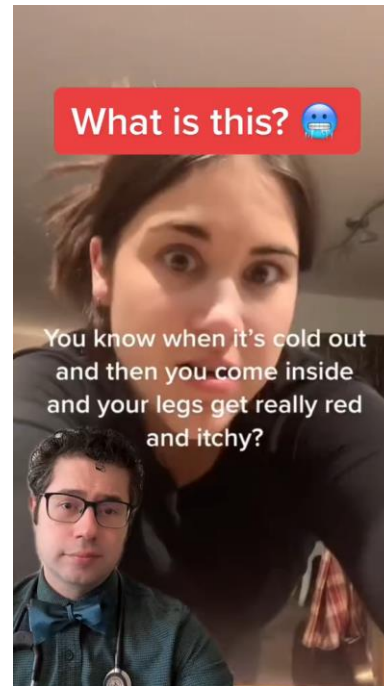
- Video content





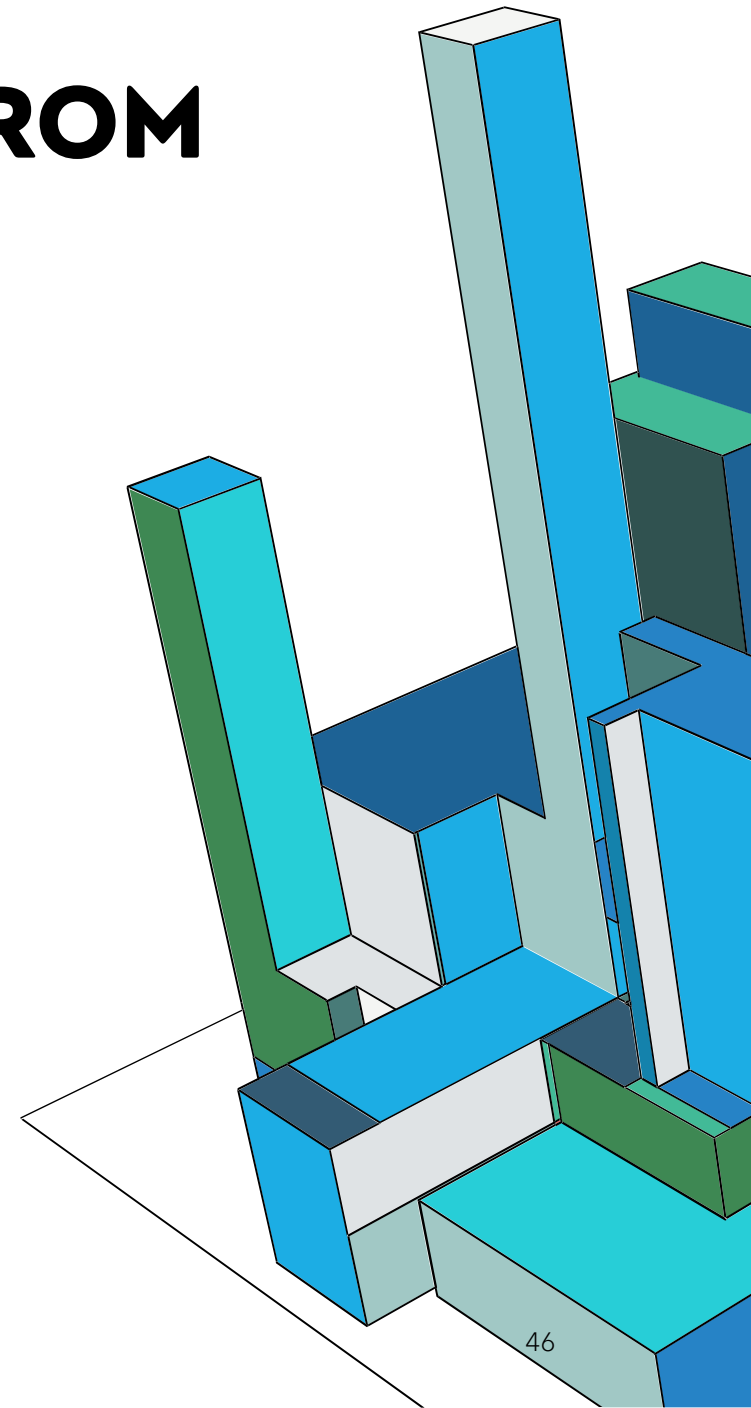
# HOW TO NAVIGATE THE PLATFORM

- Types of videos



# TIPS CURATED FROM ADVICE FROM OTHER LARGE ACCOUNTS

- View time and sharing is key!
- Hashtags?
  - #allergies #doctor #medication #fyp



# TIPS CURATED FROM ADVICE FROM OTHER LARGE ACCOUNTS

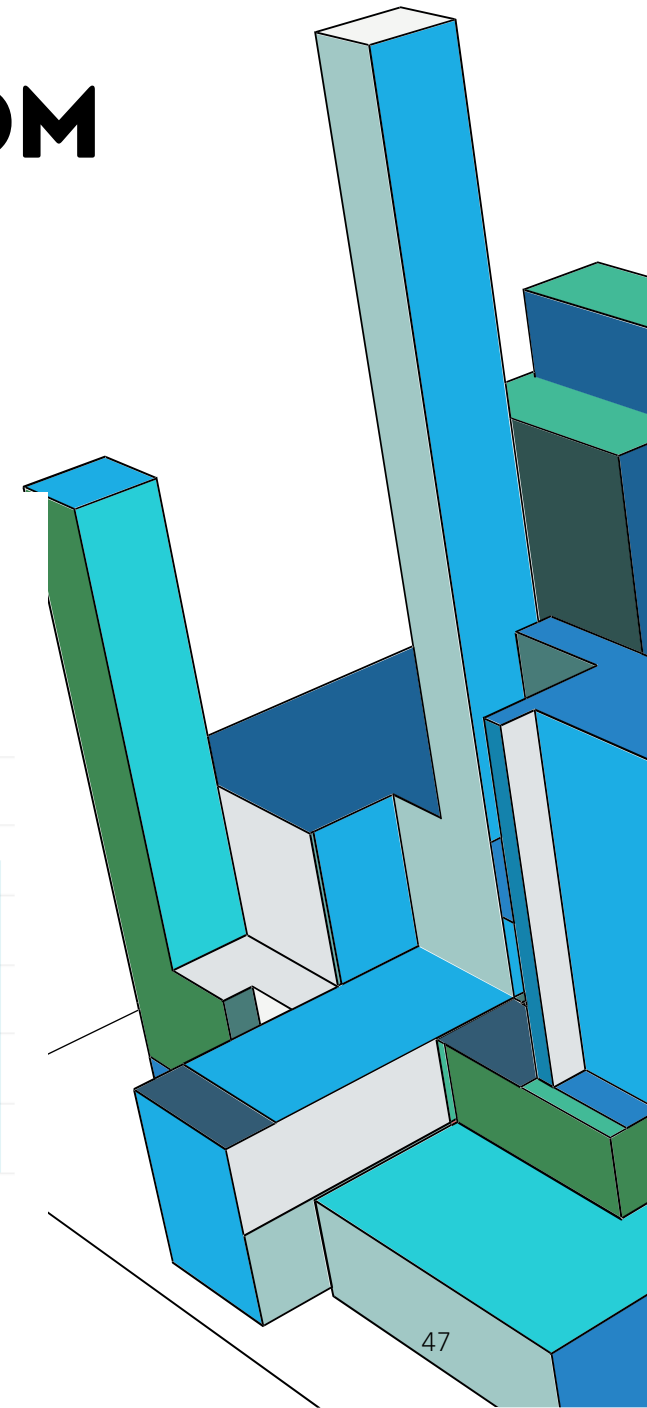
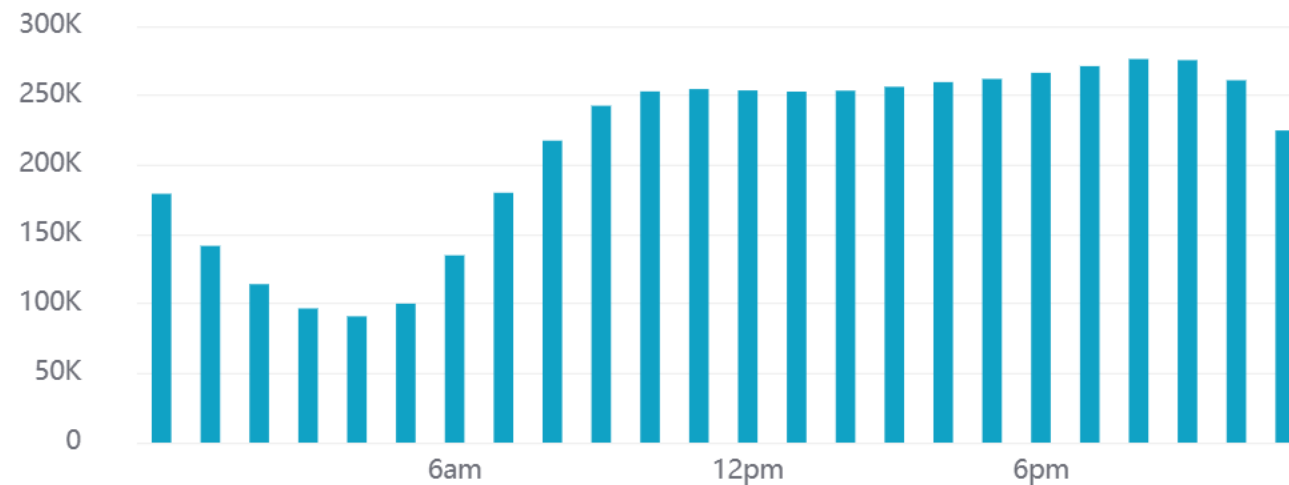
- Posting time?

## Follower activity ⓘ

Hours

Days

Nov 26 ▾



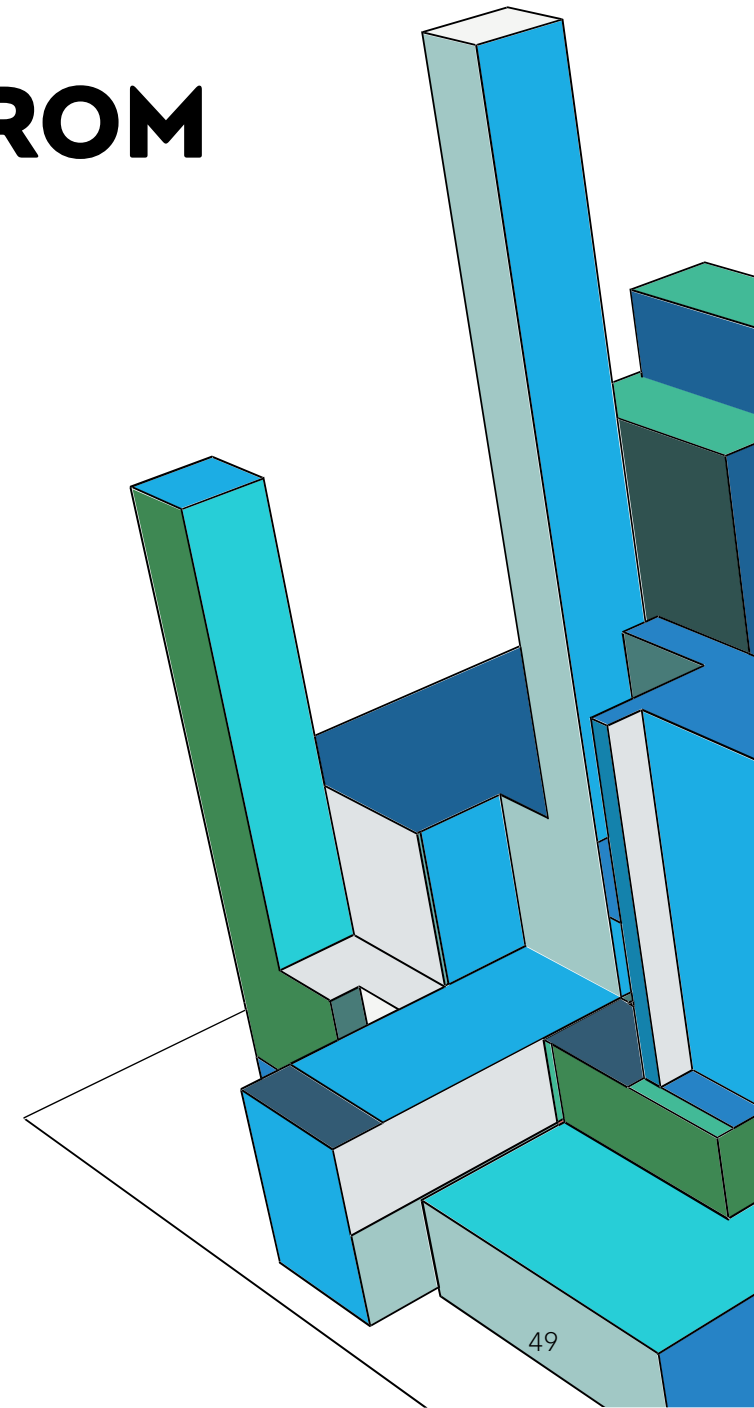
# TIPS CURATED FROM ADVICE FROM OTHER LARGE ACCOUNTS

- Does your post provide value?
- Posts must be timely



# TIPS CURATED FROM ADVICE FROM OTHER LARGE ACCOUNTS

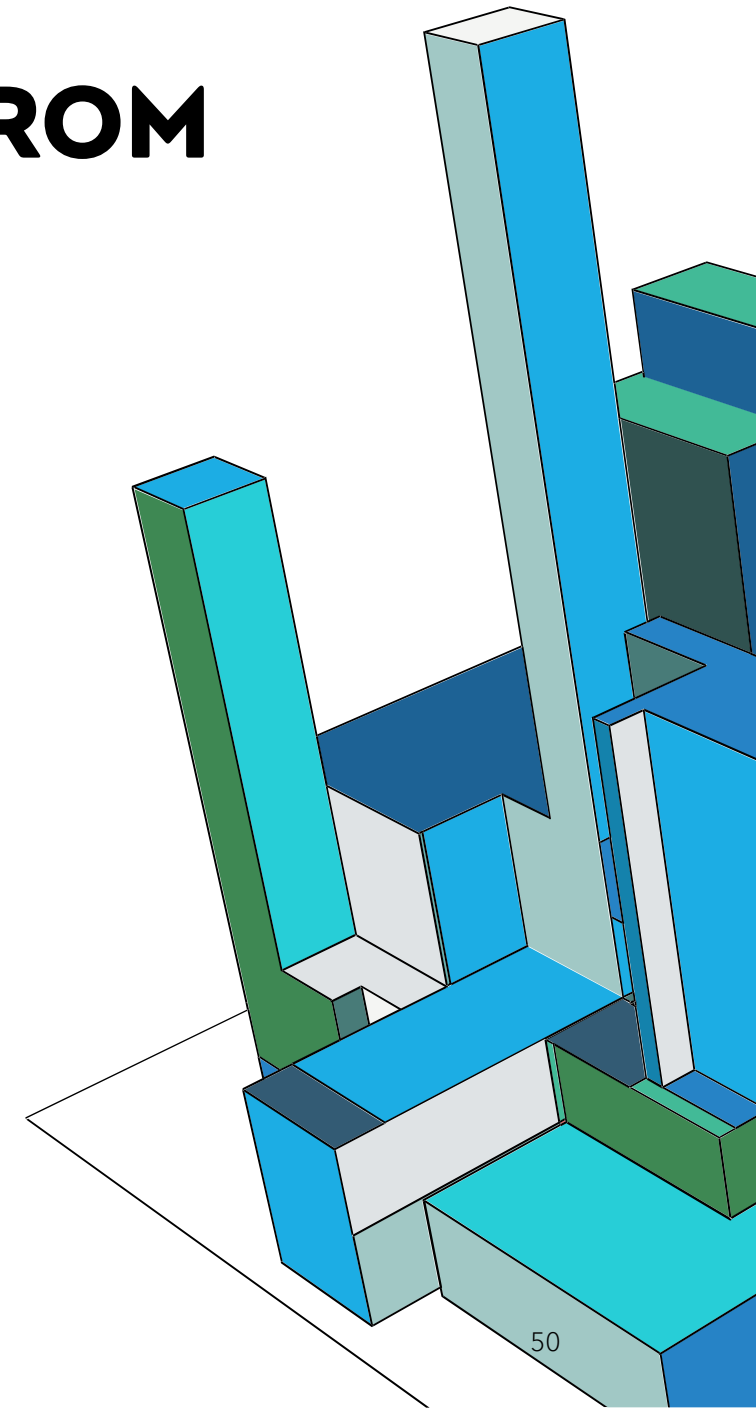
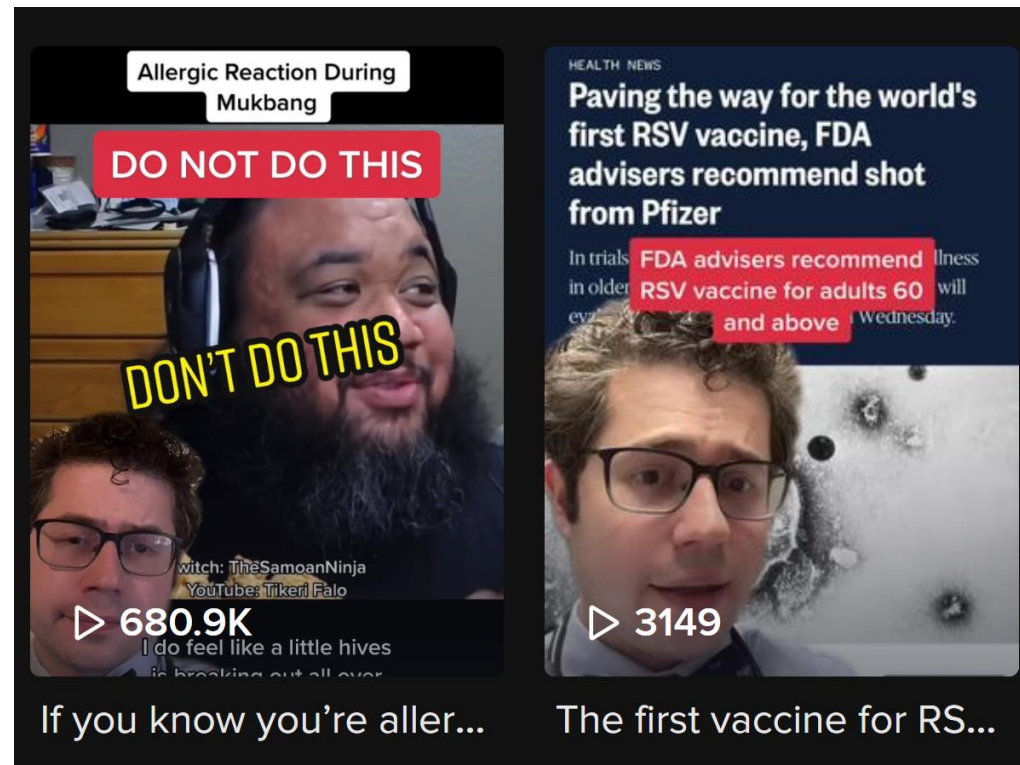
- Follow trends but be relevant





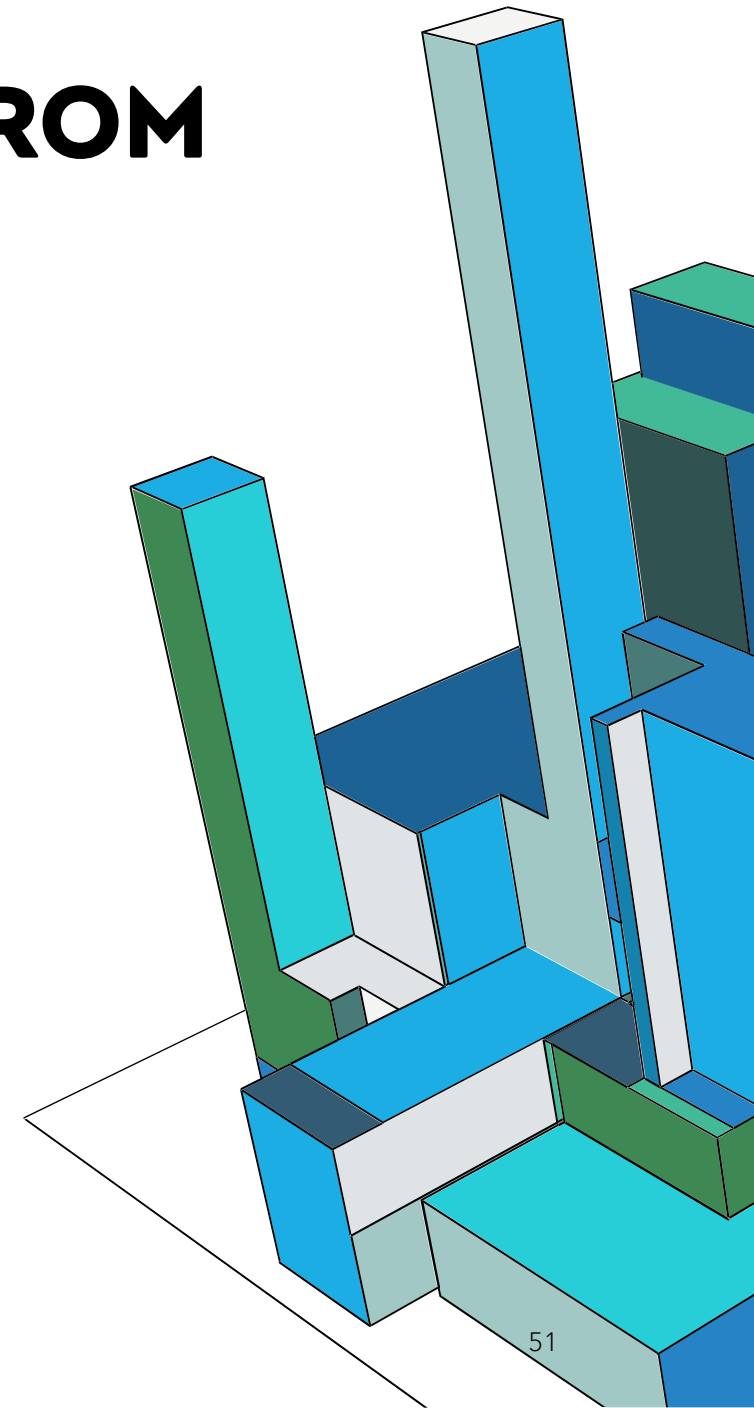
# TIPS CURATED FROM ADVICE FROM OTHER LARGE ACCOUNTS

- If posts do not perform well, do not delete them!



# TIPS CURATED FROM ADVICE FROM OTHER LARGE ACCOUNTS

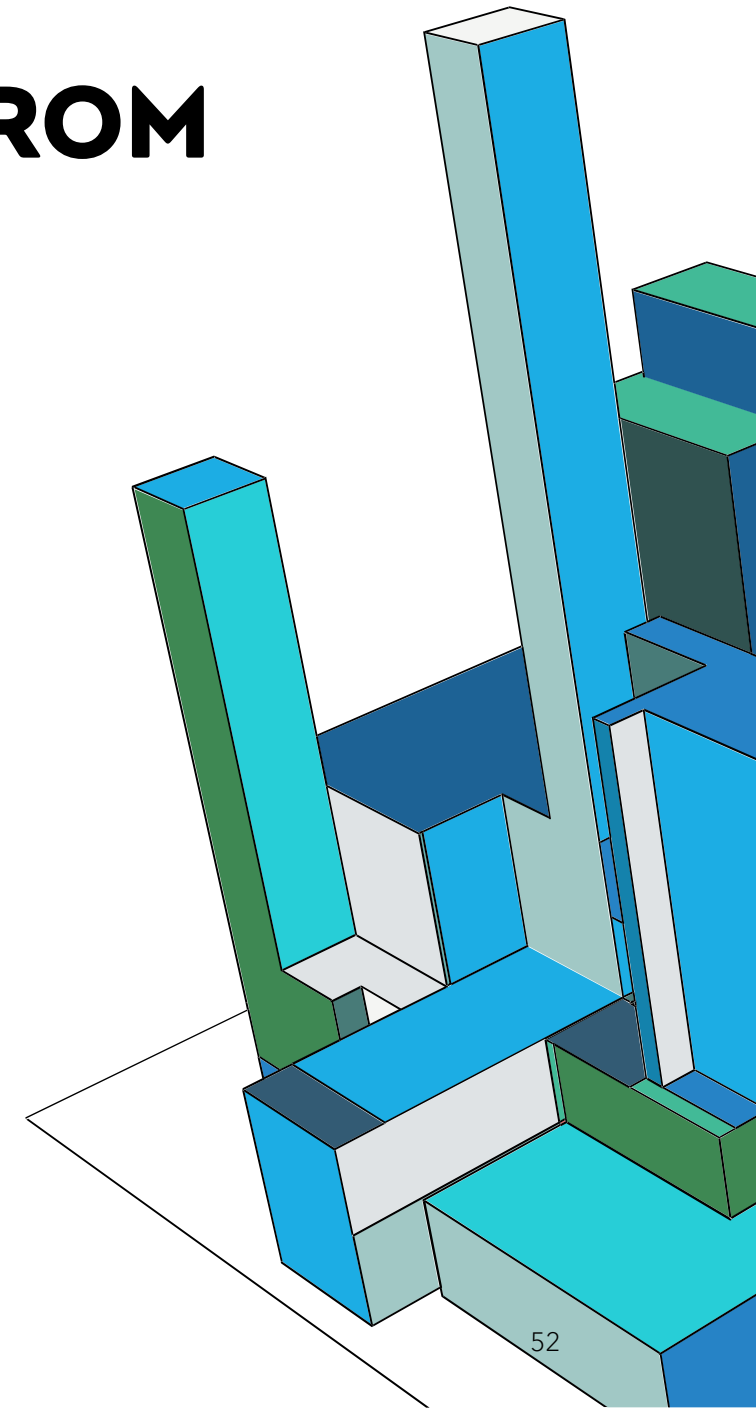
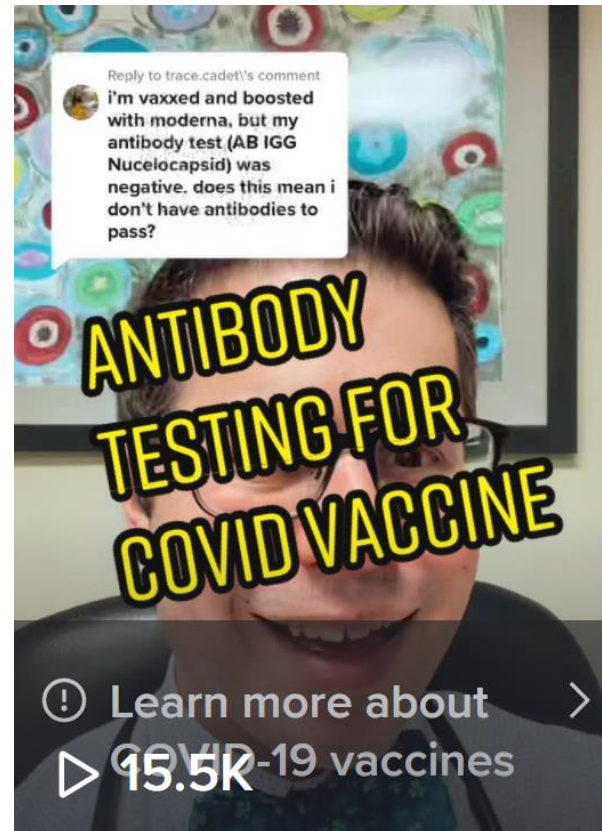
- Engage with comments, but NO negativity!
- Be careful who you engage with





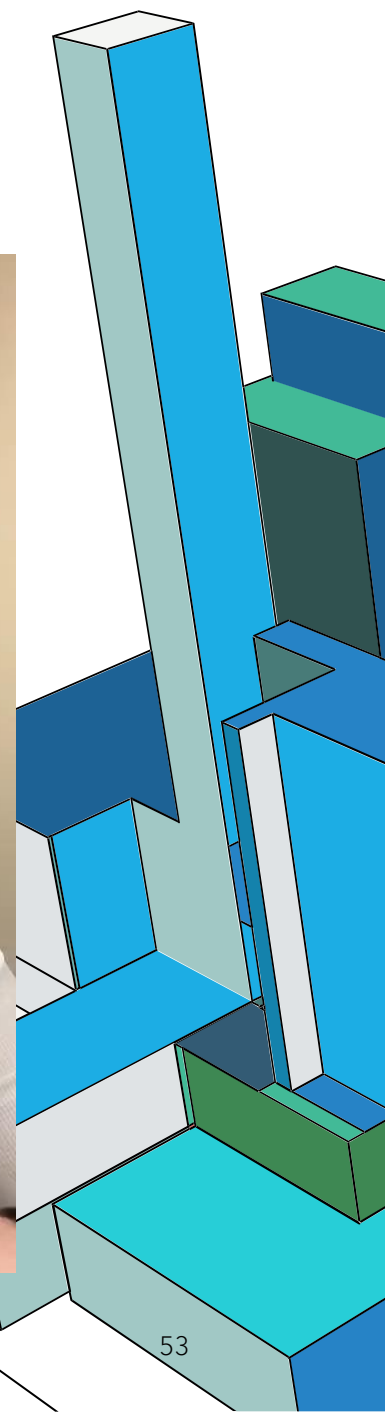
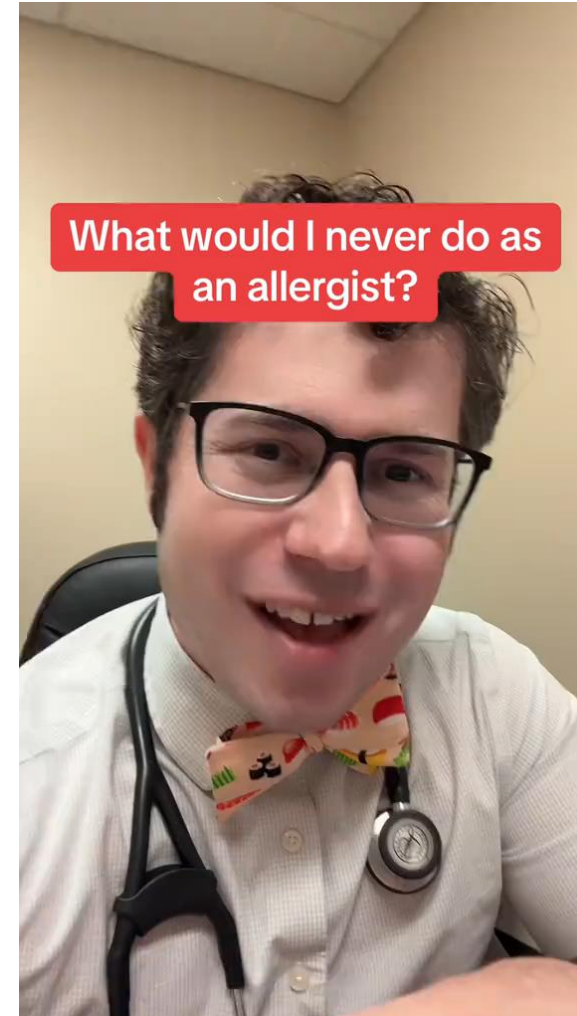
# TIPS CURATED FROM ADVICE FROM OTHER LARGE ACCOUNTS

- Respond to comments by replying with video



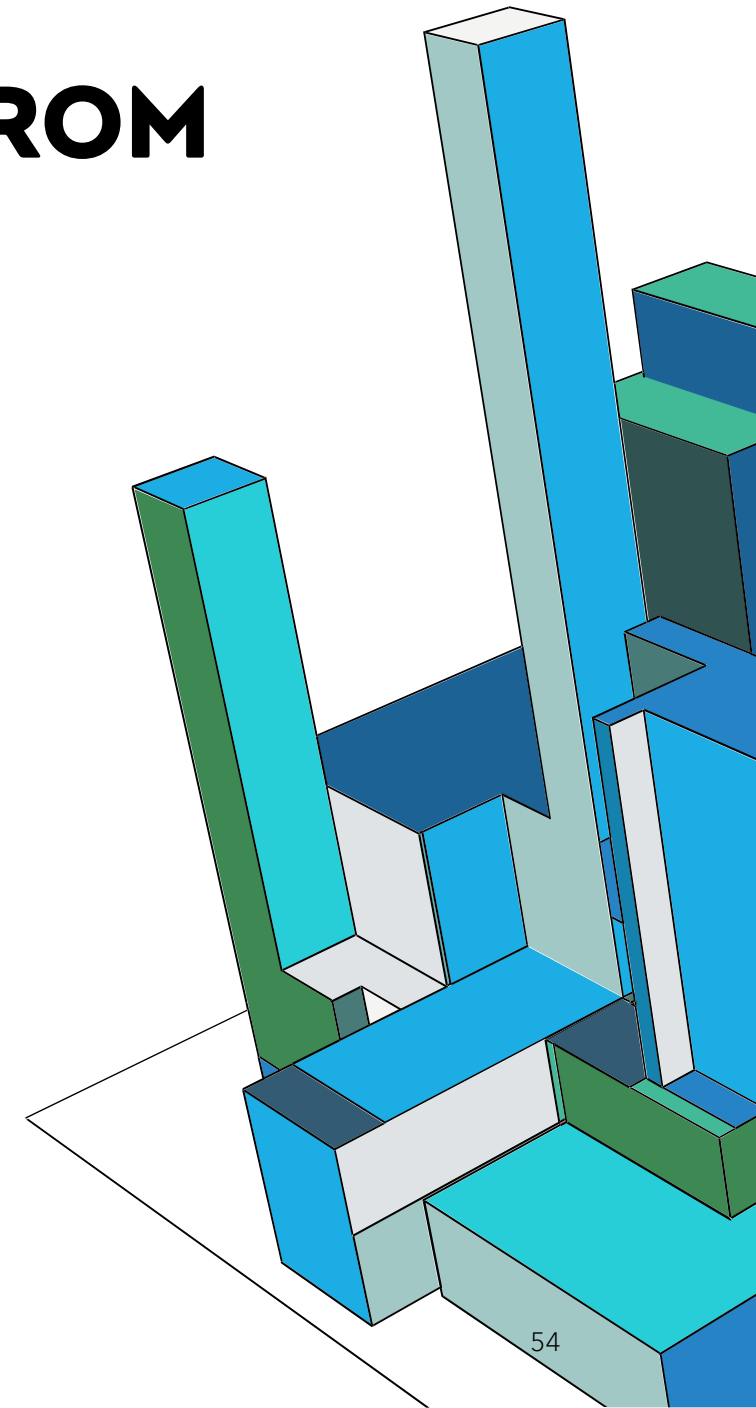
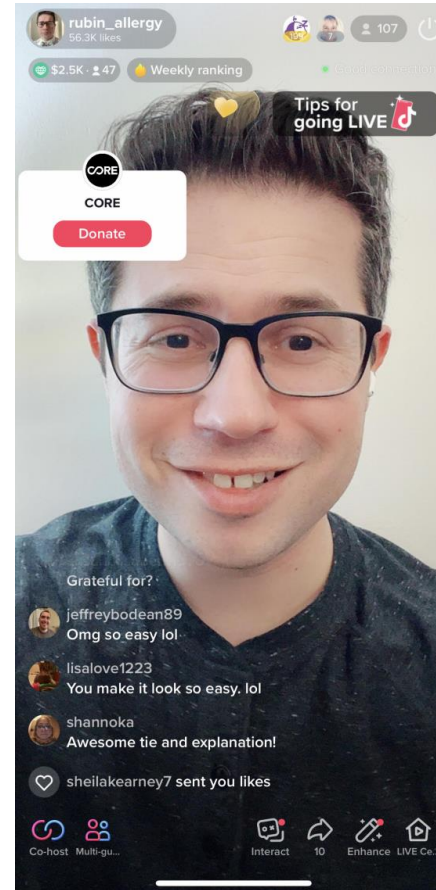
# TIPS CURATED FROM ADVICE FROM OTHER LARGE ACCOUNTS

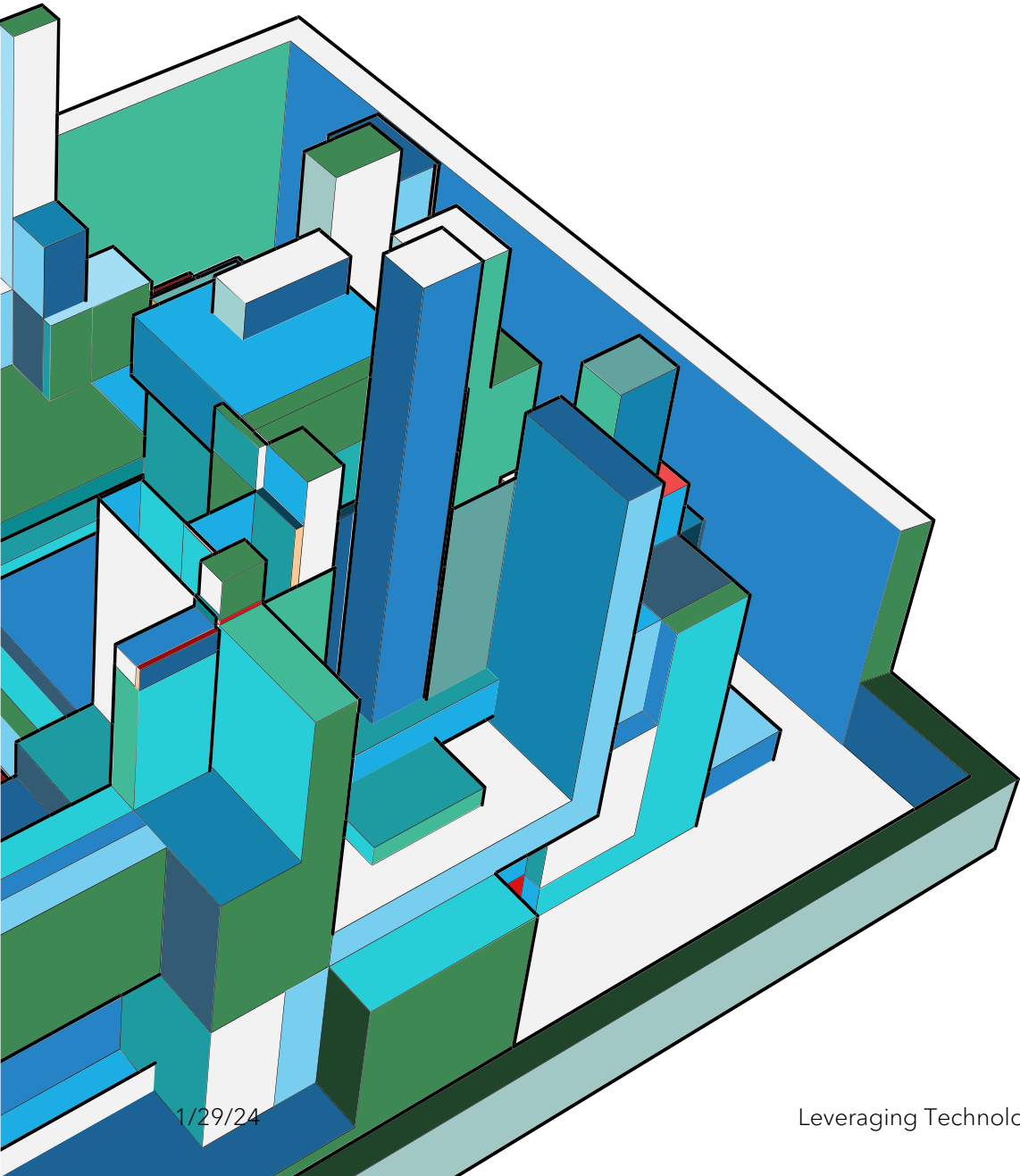
- Collaborate with other content creators



# TIPS CURATED FROM ADVICE FROM OTHER LARGE ACCOUNTS

- Post a video and then go “Live”



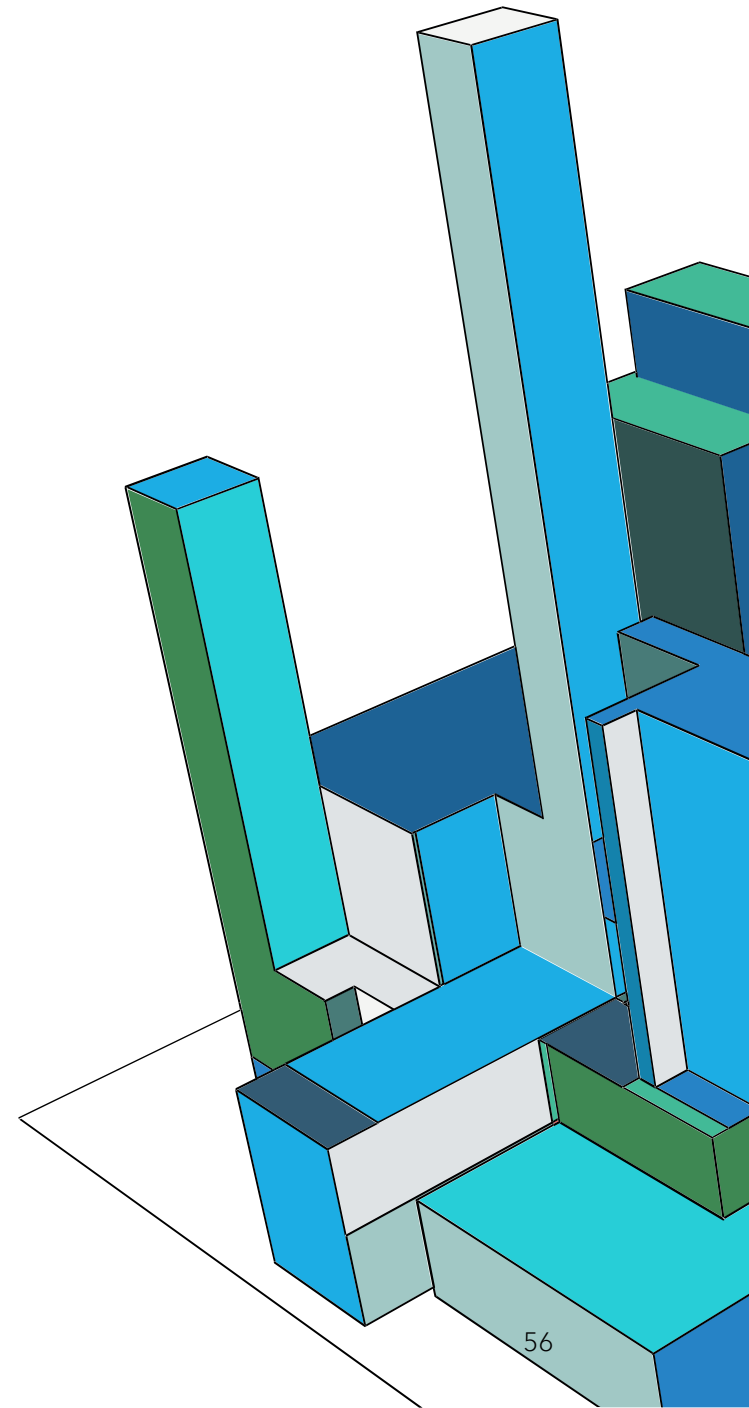


# SUMMARY

- Social media is a part of our everyday lives, whether we like it or not.
- Social media impacts healthcare decision-making
- Show up as your authentic self if you choose to create content
- Social media can be a useful tool to help grow your practice

# REFERENCES

- [https://www.annallergy.org/article/S1081-1206\(21\)01053-X/fulltext](https://www.annallergy.org/article/S1081-1206(21)01053-X/fulltext)
- <https://osteopathic.org/2018/05/14/survey-finds-patients-want-to-be-friends-with-their-physicians-on-social-media/>
- <https://www.hhs.gov/surgeongeneral/reports-and-publications/health-misinformation/index.html>



# THANK YOU

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