Can Misinformation Affect Your Medical Decision Making?

Anne K. Ellis MD, MSc, FRCPC
Professor and Chair
Division of Allergy & Immunology
Department of Medicine
Department of Biomedical and Molecular Sciences
Queen's University
ellisa@queensu.ca Twitter: @DrAnneEllis

Disclosures

• Dr. Anne K. Ellis has participated in:
• Advisory boards for ALK Abello, AstraZeneca, Aralez, Bausch Health, Circassia Ltd, GlaxoSmithKline, Johnson & Johnson, Merck, Mylan, Novartis, Pediapharm and Pfizer
• Speaker for ALK, Aralez, AstraZeneca, Boehringer-Ingelheim, CACME, Meda, Mylan, Merck, Novartis, Pediapharm, Pfizer, The ACADEMY, and Takeda.
• Her institution has received research grants from Bayer LLC, Circassia Ltd, Green Cross Pharmaceuticals, GlaxoSmithKline, Sun Pharma, Merck, Novartis, Pfizer, Regeneron and Sanofi.
Allergy warning for Pfizer/BioNTech vaccine after UK health workers with allergy history suffer reaction

By Emma Reynolds, Sharon Dothy and Amy Cavener, CNN

Updated 7:12 PM ET, Fri, December 11, 2020
COVID-19 Vaccine Testing & Administration Guidance for Allergists/Immunologists from the CSACI
Current as of January 5, 2021 and based on available evidence to date

Safe and effective vaccines provide the first hope for mitigating the devastating health and economic impacts resulting from COVID-19 and related public health orders. Both the Pfizer-BioNTech and Moderna products are currently approved in Canada, and further vaccines will likely become available in the coming months. A high rate of vaccine uptake across all sectors of Canadian society is a priority public health goal.

Recent case reports of reactions to COVID-19 vaccines have raised questions about their safety for use in individuals with allergies and those who are immunocompromised. In this document, we aim to address these concerns and provide guidance for CSACI members.
But is it easy?

- Clear from local discussions that colleagues across the country either aren’t reading our evidence based document or are ignoring it
- Hard to keep ‘strong’ when others disagree/practice differently
- Patients have a completely different idea!
So bring it back to non-COVID practice

- Do you routinely:
  - Recommend patients get IgG testing for food “intolerance”?
  - Agree with patients that vaccines (especially MMR) cause autism?
  - Tell your food allergic patients that they ‘could die if you even smelled peanut from across the room’?
  - Tell your dog allergic patients to buy a hypoallergenic breed?

**CSACI Position statement on the testing of food-specific IgG**

In summary
The CSACI does not support the decision of licensed physicians and our pharmacist colleagues to offer such testing, given the overwhelming consensus against the validity of such tests. The CSACI strongly discourages the practice of food-specific IgG testing for the purposes of identifying or predicting adverse reactions to food. We also wish to remind the medical community that blood testing of any kind cannot substitute for consultation with a trained and accredited medical professional such as an Allergist/Immunologist for the diagnosis and management of adverse reactions to food.
Vaccines and Autism

The Wakefield studies

Two studies have been cited by those claiming that the MMR vaccine causes autism. Both studies are critically flawed.

First study

In 1998, Andrew Wakefield and colleagues published a paper in the journal Lancet. Wakefield hypothesized that the measles, mumps and rubella (MMR) vaccine caused a series of events that include intestinal inflammation, entrance into the bloodstream of proteins harmful to the brain, and consequent development of autism. In support of his hypothesis, Dr. Wakefield described 12 children with developmental delay—eight had autism. All of these children had intestinal complaints and developed autism within one month of receiving MMR.

The Wakefield paper published in 1998 was flawed for two reasons:

Mythbuster – Can the smell of food cause an allergic reaction?

March 26, 2020

FACT: The smell of food does not contain protein, which is what causes an allergic reaction. Someone with an allergic reaction to a particular food may feel itchy or uncomfortable if they smell it, but they will not have an allergic reaction.

Myth: The smell of food can cause an allergic reaction. This is not true—people who are allergic to a particular food may react to the smell of that food but will not have an allergic reaction.
But the cycle does persist
So how else do we defend ourselves?

• Seek out the science!
• Locate trustworthy and independent sources
• Seek out expert consensus (as well as the fact that science evolves, when appropriate)
• Highlight gaps in your own knowledge, logic – are you falling for rhetorical tricks?
• Make facts your hook!

Be not afraid

• It’s okay to not know
• It’s not okay to accept everything you hear as the absolute truth
• Don’t be afraid to take the time to get the information before you leap into a practice pattern
• “I don’t honestly know – but you’ve given me some good homework and I will get back to you”
Take Pride!

- Pride yourself on getting the facts
- Be proud that you are practicing best medicine
- Stand tall!

At the end of the day

- You are the expert (or you will be!)
- Don’t be bullied by misinformation, take charge and authority
- Accept that sometimes you won’t be the most popular MD in a given patient’s eyes
- To thine own self be true!
• ellisa@queensu.ca
• @DrAnneEllis
Practical Tools to Combat Misinformation in Your Practice

David Stukus, MD, FACAAI
Professor of Clinical Pediatrics
Division of Allergy and Immunology
Nationwide Children’s Hospital
Columbus, Ohio
@AllergyKidsDoc

Initial Thoughts…

• Allergists serve a very special role in the lives of our patients
WE Have an Advantage

- Can ask questions
- Monitor body language
- Dive into nuance surrounding complex topics
- Most importantly...we need to:
  - Listen
  - Give our time
  - Show empathy
  - Be non-judgmental
  - Be available for follow up discussion

We Can’t Reach Everyone

Nurse uses key, hairpin to try to prove she is magnetic from vaccine during Ohio House hearing (video)

https://www.kbtx.com/2021/06/10/nurse-uses-key-hairpin-try-prove-she-is-magnetic-vaccine-during-ohio-house-hearing-video/
Just wanted you to know that your excellent simplified share of info on the delta variant finally convinced my hubby to get his vaccine! I just scheduled jt for today- he’s been SO hesitant...and I haven’t wanted to be the nagging wife 😐 Barbie

The Best Defense…is a Good Offense
What is the ‘CNN Effect’ and how Relevant is it Today?
A Journalism and Politics Essay
“Viriato Villas-Boas”
https://medium.com/@viriatovb

https://medium.com/@viriatovb/what-is-the-cnn-effect-and-how-relevant-is-it-today-a78b15b18f05
"THAT'S ODD: MY FACEBOOK FRIENDS WHO WERE CONSTITUTIONAL SCHOLARS JUST A MONTH AGO ARE NOW INFECTIOUS DISEASE EXPERTS...."

There MUST Be Something Wrong...
The Number 1 Thing YOU Can Do to Help Your Patients...

Learn, Anticipate, Address

- Provide anticipatory guidance at every visit
- Ask permission to discuss
- Make it a normal part of every encounter...especially the hard topics

- If you don’t understand how your patients are being influenced, you won’t be able to help them
If I Lacked a Conscience…

- Medical expertise
- Celebrity testimonial
- Make broad claims about cures
- Sell my “patented” testing & individualized treatment
- Pseudoscientific explanations
- Long list of subjective or chronic symptoms
- Discuss why everyone else is wrong
- Provide long list of “Research”
- Use my expertise to say why I’m the ONLY one who knows how to fix this
- Patient testimonials

Normalize through saturation

Social media

Dr. Oz

Traditional media outlets

Retail pharmacies
What Constitutes Evidence?

Hierarchy of Scientific Evidence

- Meta-analyses & systematic reviews
- Randomized controlled trials
- Cohort studies
- Case control studies
- Cross sectional studies
- Animal trials & in vitro studies
- Case reports, opinion papers, and letters

Not Scientific Evidence

- Youtube videos, personal anecdotes, gut feelings, parental instincts, some guy you know, websites like Natural News, Info Wars, Natural Health Warriors, Collective Evolution, Green Med Info, Mercola.com, Whale.to, etc.

Extraordinary CLAIMS REQUIRE Extraordinary EVIDENCE.

Carl Sagan
Astronomer, Cosmologist, and Astrophysicist
2 at Takeout Restaurant in U.K. Are Convicted of Manslaughter in Nut Allergy Death
By Palko Karasz • Oct. 27, 2018

The Plural of Anecdote…is NOT Data

- Logical fallacy
  - *Post hoc ergo propter hoc* = “after this, therefore because of this”
  - X happened before Y…therefore, X caused Y
- True representation is lacking
  - How many others tried and failed?
- No control → placebo effect
- Small sample size
- Not collected systematically

https://thelogicofscience.com/2016/02/10/5-reasons-why-anecdotes-are-totally-worthless/
Correlation ≠ Causation

Per capita cheese consumption correlates with Number of people who died by becoming tangled in their bedsheets

Data sources: U.S. Department of Agriculture and Centers for Disease Control & Prevention

https://www.tylervigen.com/spurious-correlations

NEWS

Teen dies of allergic reaction after classmate throws cheese at him
By Yaron Steinbuch
May 2, 2019 | 2:26pm | Updated

Alabama Boy's Death Worries Food Allergy Parents
By Jennifer Clopton
The Echo chamber of anti-vaccination conspiracies: mechanisms of radicalisation on Facebook and Reddit*

Nathalie Van Raemdonck

December 22, 2019

Abstract

To understand online radicalisation, it is important to understand the mechanisms of echo chambers on certain social media platforms like Facebook and Reddit. Radicalising communities that have not reached a violent extremism phase can provide a unique insight. This is the case for communities built around conspiracy theories, which thrive in the echo chambers of social media. A case in point is the anti-vaccination conspiracy: most arguments against vaccination are built on conspiracies with little scientific evidence, where the online community predominantly echoes misinformation. This paper explores how Facebook's mechanism for community building has enhanced the spread of vaccination misinformation online, and compares it to Reddit's conspiracy community, applying the RECHRO model of online radicalisation.

The Vaccine Reaction

An enlightened conversation about vaccination, health and autonomy

Merck's Peanut Oil Adjuvant

By Marie Claire
Published November 21, 2015 / Vaccination History

2.9K SHARES

https://thevaccinereaction.org/2015/11/mercks-peanut-oil-adjuvant/

Hidden Influence
Two People Had an Allergic Reaction to the COVID Vaccine in the UK—Here’s What You Need to Know

We asked doctors what this means for eventual vaccine approval in the US.

By Maggie O’Neill | December 10, 2020


https://www.technologyreview.com/2021/01/16/1016264/covid-vaccine-acceptance-us-county/
Practical Tools to Start Using Today

We Can Do It!

Multipronged Approach

Website

Social Media

Personal encounters
What Health Professionals Can Do

• Proactively engage with patients and the public

• Use technology and media platforms to share evidence based information

• Partner with community groups and local organizations


MEDICAL EDUCATION | COMMUNITY ENGAGEMENT

Fighting fake medical news

Lindsay Kalter, Special to AAMCNews

May 7, 2019

Medical misinformation is responsible for the largest measles outbreak in a quarter century. Here's what academic medicine is doing to help physicians and students develop the skills they need to combat it.

A New Era in Communication

Many of Our Patients Have Low Health Literacy

• “The degree to which individuals have the capacity to obtain, process, and understand basic health information needed to make appropriate health decisions.”

https://www.healthypeople.gov/2020/topics-objectives/topic/social-determinants-health/interventions-resources/health-literacy
Red Flags for Low Literacy

- Frequently missed appointments
- Incomplete registration forms
- Non-compliance with medication
- Unable to name medications, explain purpose or dosing
- Identifies pills by looking at them, not reading label
- Unable to give coherent, sequential history
- Ask fewer questions
- Lack of follow-through on tests or referrals

https://www.ahrq.gov/health-literacy/improve/precautions/1stedition/tool3.html

Disparities Affect Decision Making

Use Evidence to Guide Shared Decision Making

Expertise

Healthcare Provider

- Diagnosis
- Treatment options
- Potential benefits
- Potential harms
- Expectations of treatments

Patient

- Values
- Lifestyle preferences (may depend on current social situation)
- Previous related medical experiences

Shared Decision


Discuss Risk with Patients

- Provide numeric likelihoods of risks and benefits
- Provide absolute risks, not just relative risks
- Keep denominators consistent
- Keep time frames constant
- Use pictograms and other visual aids when possible
- Reduce superfluous information (cognitive overload)
- Provide positive and negative frames
- Keep risk in perspective of everyday hazards

The Simplest Way to Spot Coronavirus Misinformation on Social Media
A digital literacy expert shares his method

He sums it up with the acronym SIFT:

1. Stop.
2. Investigate the source.
3. Find better coverage.
4. Trace claims, quotes, and media to the original context.

https://onezero.medium.com/the-simplest-way-to-spot-coronavirus-misinformation-on-social-media-4b7995448071

How should you talk to friends and relatives who believe conspiracy theories?

By Mariella Tripodi
Specialist disinformation reporter
② 21 December 2020

• Keep calm
• Don’t dismiss
• Encourage critical thinking
• Ask questions
• Don’t expect immediate results
• You can’t reach everyone

Beyond Your Office Doors

Baby Wipes, Antacids and Antibiotics: Do They Cause Food Allergies?

Apr 11, 2018
Recent media headlines have claimed common items can cause infants to develop food allergies. Read what our expert has to say about these claims. Read More →

What Can Peter Rabbit Teach Us About Food Allergies?

Feb 9, 2018
My children and I were excited to see the classic Tale of Peter Rabbit come to life on the movie screen. The Peter Rabbit we grew up with whisked home to his mother with a belly ache after eating too much food from Mr. McGregor’s garden. Read More →

Humidifiers for Respiratory Infections: Are They Helpful or Harmful?

Jan 30, 2018
We’ve all been there. Our child gets an upper respiratory infection, which causes nasal congestion, difficulty breathing through their nose, and cough. This always gets worse at night when they (and we) are trying to sleep. Read More →

https://www.nationwidechildrens.org/family-resources-education/700childrens
What’s in YOUR Portfolio?

Website, Twitter, Facebook, Blog, Podcasts, YouTube, Instagram, Media, Publications
• Provide the science
• Use clear, shareable content
• Reference trustworthy and independent sources
• If possible, reference expert consensus (as well as the fact that science evolves, when appropriate)
• Be nice, authentic, empathetic and humble
• Consider using a narrative
• Highlight gaps in logic and rhetorical tricks
• Make facts the hook, not the misinformation
• **Remember: Your audience is the general public, not the hardcore denier**

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**Tim’s Tips**

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**Steps YOU Can Take Now**

• Try to ‘think like a patient’ to understand how and where they are receiving information
• Proactively ask patients about common areas of misinformation
• Discuss the evidence but don’t dumb down the science
Thank You