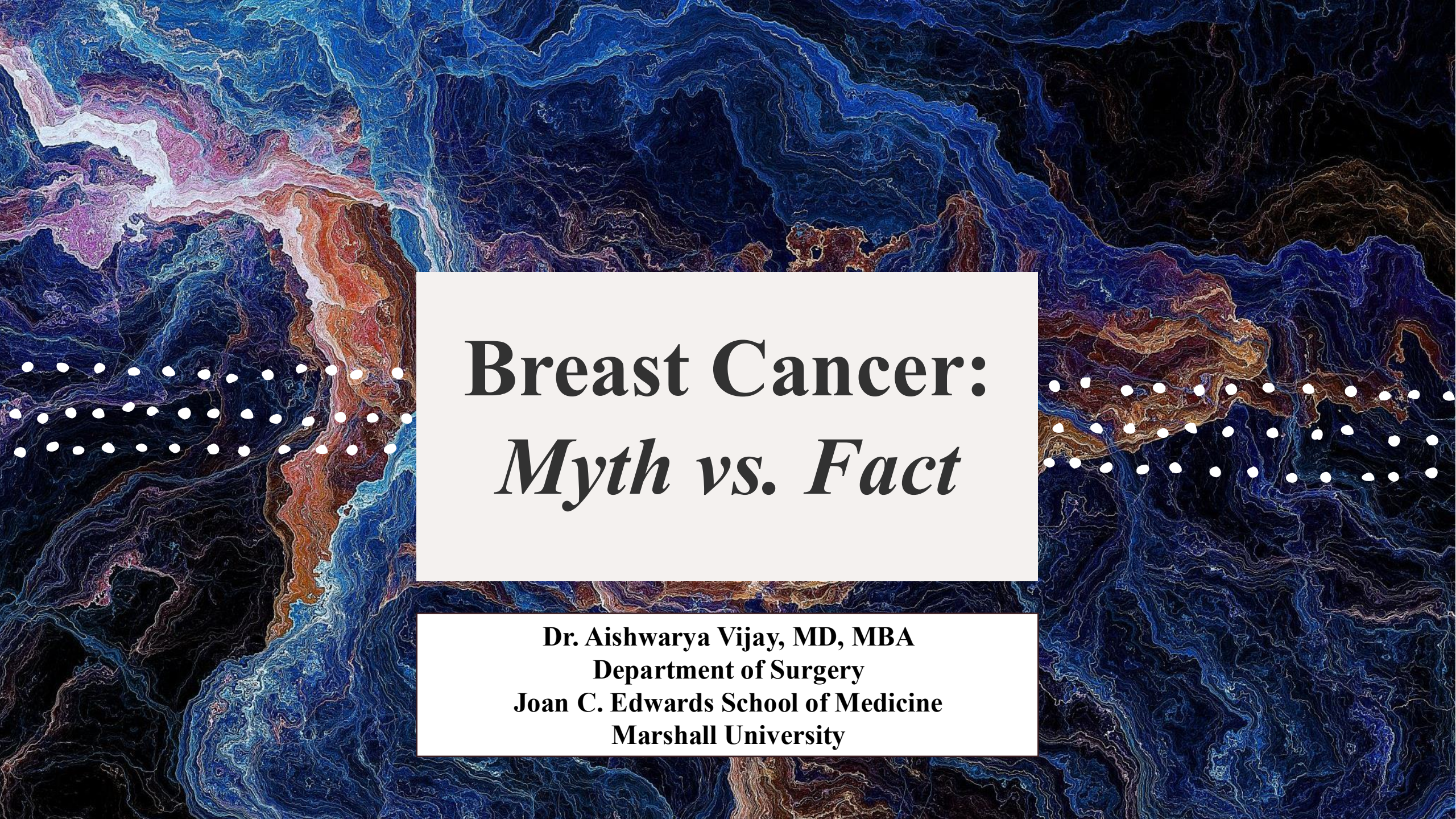




Breast Cancer: *Myth vs. Fact*

Dr. Aishwarya Vijay, MD, MBA
Department of Surgery
Joan C. Edwards School of Medicine
Marshall University

DISCLOSURES

- None



SPECIAL THANKS TO



Dr. Diane M. Krutzler-Berry

Oncology | Assistant Professor



Health Network | PROVIDER SPOTLIGHT

LET'S TALK ABOUT "THE BIG C"



OBJECTIVES

- Recognize common myths about breast cancer.
- Discuss where these ideas originated.
- Explain what the evidence actually shows — and where uncertainty remains.
- Identify red-flag symptoms and understand the role of screening.
- Use a simple “myth → evidence → action” framework in educating during patient conversations.
- Leave with a few facts you can confidently teach tomorrow.



How do myths get started?

- Begin as a historical understanding of how the body works
- Questions about scientific evidence
- Questions about established beliefs
- Health influencers

MYTH VS. FACT



MYTH

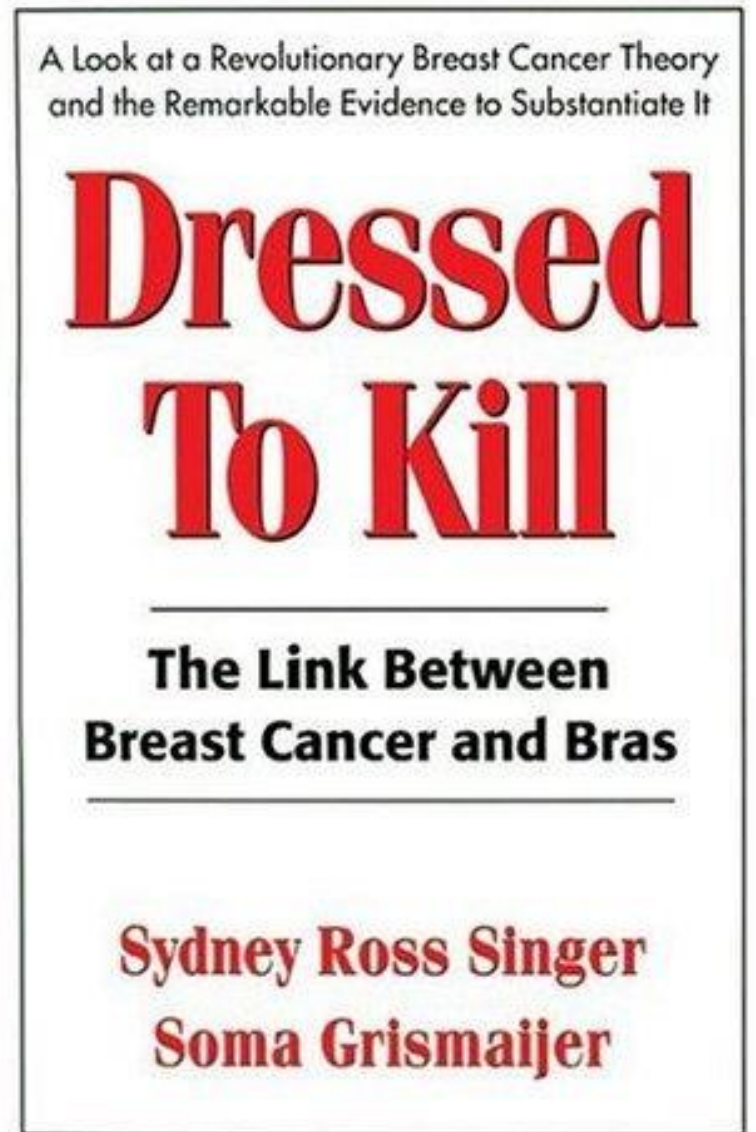
Wearing a bra causes breast cancer.

FACT

There is no established evidence that bra use causes breast cancer.

Comfortable clothing is not a cancer-prevention strategy.

- Published in 1995 by husband-and-wife team Sidney Ross Singer and Soma Grismejer
- Conducted a "study" of ~5000 women
- Stated women who wore bras 24/7 had a 75% increased risk of breast cancer
- Theorized that this was caused from compression of the lymphatic tissue in breast causing increased toxin buildup



Sidney Ross Singer

- Developed his own Institute for the Study of Culturogenic Disease
- Anthropologist
- Continues to promote false data on Facebook
- Study did not account for confounding factors such as age, weight, and family history
- Claims made in this book have been disproven through multiple other research papers



Bra wearing not associated with breast cancer risk: a population based case-control study

[Lu Chen](#)¹, [Kathleen E Malone](#)¹, [Christopher I Li](#)¹

► [Author information](#) ► [Article notes](#) ► [Copyright and License information](#)

PMCID: PMC4184992 NIHMSID: NIHMS616048 PMID: [25192706](#)

- Case-controlled study
- Women diagnosed between 2000-2004 in Seattle-Puget Sound area
- Between ages 55 to 74
- Information on bra wearing habits and other breast cancer risk factors
- There was no correlation that bra wearing habits, cup size, or number of hours of wearing a bra were associated with development of IDC or ILC

A close-up photograph of a woman's face and shoulder, showing her lips and skin. The image is used as a background for the text boxes.

MYTH

**Deodorant or antiperspirant
causes breast cancer.**

FACT

NCI reports no scientific
evidence linking underarm
deodorants or antiperspirants
with breast cancer.

HOW IT STARTED



- Late 1990s - an email went viral claiming aluminum-based antiperspirants cause breast cancer
- Claimed that the aluminum stopped the body from "sweating out toxins" causing toxins to build up in the breast causing cancer
- This caused interest in research into the relationship between breast cancer and antiperspirants

A popular claim is not the same thing as a demonstrated risk.



Antiperspirant Use and the Risk of Breast Cancer

Get access >

Dana K. Mirick , Scott Davis, David B. Thomas

JNCI: Journal of the National Cancer Institute, Volume 94, Issue 20, 16 October 2002, Pages 1578–1580, <https://doi.org/10.1093/jnci/94.20.1578>

Published: 16 October 2002 **Article history** ▼



- From 2002
- Population case-controlled study
- Women 20-74 years old diagnosed with breast cancer between November 1992 and March 1995
- Interviewed patients regarding product use
- Did not show an increase in breast cancer from use of antiperspirants, deodorants or application after shaving

Aluminium, antiperspirants and breast cancer

P.D. Darbre  

Show more 

- Study did not show definitive proof of the connection
- Journalists misquoted the article
- This was an in-vitro study looking at breast cancer cell lines
NOT in animal or human studies
- Did show that aluminum had an estrogenic effect

to other signalling pathways in breast cells. Given the wide exposure of the human population to antiperspirants, it will be important to establish dermal absorption in the local area of the breast and whether long term low level absorption could play a role in the increasing incidence of breast cancer.

Systematic review of potential health risks posed by pharmaceutical, occupational and consumer exposures to metallic and nanoscale aluminum, aluminum oxides, aluminum hydroxide and its soluble salts

[Calvin C Willhite](#)^{1,2}, [Nataliya A Karyakina](#)¹, [Robert A Yokel](#)³, [Nagarajkumar Yenugadhati](#)², [Thomas M Wisniewski](#)⁴, [Ian M F Arnold](#)⁵, [Franco Momoli](#)^{6,7,8}, [Daniel Krewski](#)^{1,2,7}

► [Author information](#) ► [Copyright and License information](#)

PMCID: PMC4997813 NIHMSID: NIHMS809489 PMID: [25233067](#)

- 2014 toxicity report regarding aluminum exposure
- Several studies done - none demonstrated link to breast cancer
- Even studies the risk associated with environmental exposure from smelting

**MYTH:
CARRYING A
CELL PHONE
CAN CAUSE
BREAST
CANCER**





- The thought is the radiofrequency radiation emitted from cell phones can cause cancer
- Started in 2013 when a study was presented on The Dr. Oz Show



Multifocal Breast Cancer in Young Women with Prolonged Contact between Their Breasts and Their Cellular Phones

John G. West, Nimmi S. Kapoor✉, Shu-Yuan Liao, June W. Chen, Lisa Bailey, Robert A. Nagourney

First published: 18 September 2013 | <https://doi.org/10.1155/2013/354682> | Citations: 25

Academic Editor: Hans-Joachim Mentzel

- 
- Combination of case reports reporting breast cancer in premenopausal women
 - All women had excessive cellphone contact with their breast by placing it in their bra
 - Conclusions did not establish causality and did not discuss any other known causes of breast cancer

NCI FACT SHEET ON CELL PHONES AND CANCER

- Four large epidemiologic studies have examined the possible association between cell phone use and cancer: Interphone, a case–control study, and three cohort studies: the Danish Study, the Million Women Study, and the Cohort Study on Mobile Phones and Health (COSMOS). The findings of these studies are mixed, but overall, they do not show an association between cell phone use and cancer.
- Overall, no link to cancer and cell phone use has been established.





**MYTH:
TOO MUCH
SUGAR CAN
CAUSE OR
ACCELERATE
CANCER**

ORIGINAL STUDY

- Otto Warburg – 1920
- "The Warburg Effect"
- Where cancer cells were seen to produce energy from glucose more rapidly
- Thought that this metabolic change was the cause of cancer
- This was then translated into cancer cells "eat sugar" to fuel growth and avoiding sugar would starve the cells



CAUSE AND EFFECT

- Sugar DOES NOT cause cancer directly
- Many studies have shown the link between obesity and cancer including breast cancer

Obesity and Adverse Breast Cancer Risk and Outcome: Mechanistic Insights and Strategies for Intervention

Manuel Picon-Ruiz, PhD¹; Cynthia Morata-Tarifa, PhD²; Janeiro J. Valle-Goffin, MD³;
Eitan R. Friedman, MD⁴; Joyce M. Slingerland, MD, PhD ^{5,6,7}

MYTH VS. FACT

MYTH

**If there's no family history,
I'm not at risk.**

FACT

Family history matters, but many people who develop breast cancer do not have a known family history. Age and other lifetime factors also matter.

Family history changes risk; absence of family history does not make risk zero.

MYTH VS. FACT

MYTH

Breast cancer only happens to older women.

FACT

Risk rises with age, but breast cancer can occur in younger adults. Some young diagnoses can also signal hereditary risk.

Age changes probability — it does not define who can get breast cancer.

MYTH VS. FACT

MYTH

A BRCA mutation means you will definitely get breast cancer.

FACT

Pathogenic BRCA1/2 variants can substantially increase risk, but they do not make cancer inevitable.

High risk is not certainty.

MYTH VS. FACT

MYTH

Breast cancer is one disease.

FACT

Breast cancer contains biologically distinct subtypes, including hormone receptor-positive, HER2-positive, and triple-negative disease.

Diagnosis is the beginning of classification, not the end.

**HEALTH CARE
PROFESSIONALS
ARE HIDING
ALTERNATIVE
CANCER
TREATMENTS**



ALTERNATIVE CANCER CENTERS AND PRACTITIONERS

- Utilization of non-traditional methods for cancer treatment
- Ultrasound, laser, and photodynamic therapy
- Immunomodulation therapy
- Herbals: Turmeric, Lion's Mane, etc.
- Antiparasitic: Ivermectin, Mebendazole/Albendazole

INFLUENCERS

- Dr. Max Gerson
- Joe Tippens
- Dr. William Makis
- Dr. Linus Pauling
- Social Media “Health Gurus” or “Influencers”



WHAT SHOULD MAKE YOU PAUSE?

- New breast or underarm lump
- New change in breast size or shape
- Skin dimpling, thickening, redness, or a persistent texture change
- Nipple inversion or other new nipple change
- Nipple discharge that is new, especially bloody discharge
- Persistent focal change or symptom that is concerning to the patient or clinician
- Key teaching point: symptoms are not diagnoses — but they are reasons to seek evaluation.

TREATMENT MYTHS

- “Everyone needs a mastectomy.” → Breast-conserving surgery plus radiation is an established option for many patients.
- “Chemotherapy is always necessary.” → Some early-stage tumors can be treated without chemotherapy based on tumor biology and risk assessment.
- “Hormone therapy means your cancer was caused by hormones.” → Endocrine therapy targets hormone-receptor signaling; treatment depends on tumor biology.
- “More treatment is always better.” → Modern oncology balances benefit, toxicity, tumor biology, stage, and patient goals.
- “Reconstruction has to happen immediately.” → Immediate and delayed reconstruction are both used depending on clinical and personal factors.

REFLECTION AS A PROVIDER



Patients are just looking for help



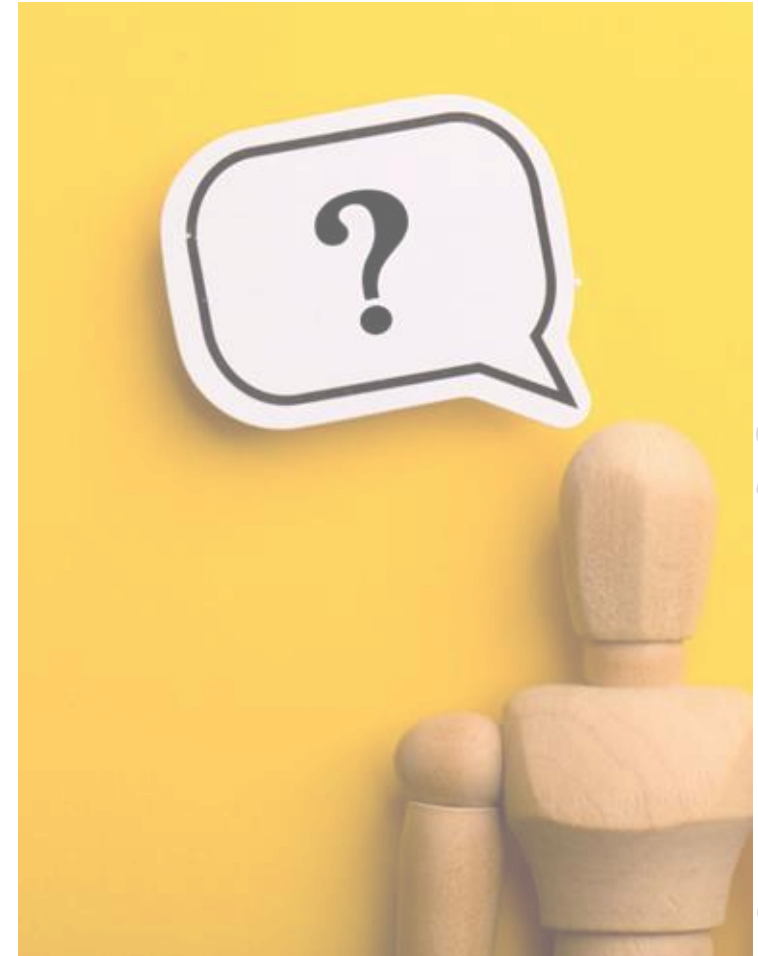
Misinformation is easily spread through social media and manipulation of data even from news sources

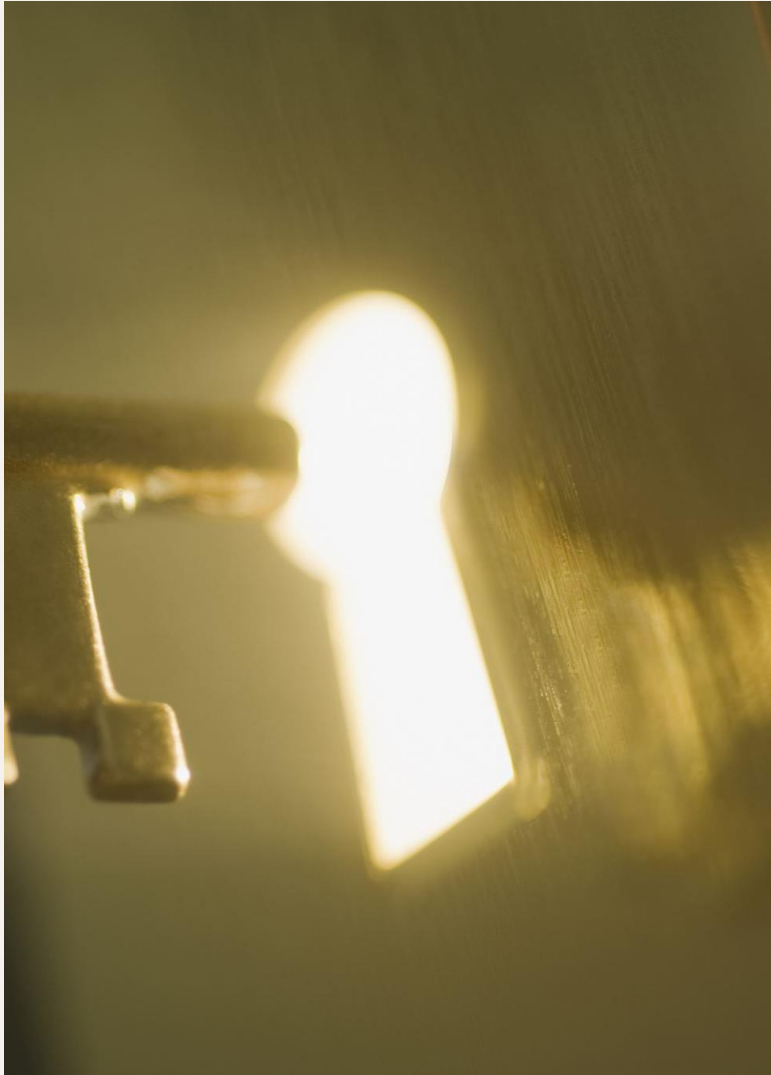


Patients can be desperate for a cure or "Healthier" cure of their disease

HOW TO DEBUNK MYTHS WITHOUT LOSING THE PATIENT

- 1. Ask: “What have you heard?” — find the actual concern.
- 2. Validate the emotion, not the misinformation: “It makes sense to wonder about that. I could see how that may be of concern for you.”
- 3. State the evidence plainly: “The best available evidence shows...”
- 4. Explain uncertainty honestly when it exists.
- 5. Give the actionable next step.
- 6. Ask for teach-back: “What will you take away from this?”
- 7. Give your patient the space to TRUST BUT VERIFY





EDUCATION IS KEY

- Ultimately it is up to the patient to determine what treatments are right for them
- There are strong influences in the media
- Generally, if it is too good to be true, it is

SELECTED REFERENCES AND EVIDENCE BASE

- NCI. Common Cancer Myths and Misconceptions. Updated 2024.
- NCI. Antiperspirants/Deodorants and Breast Cancer.
- NCI. Mammograms; Breast Cancer Prevention (PDQ).
- USPSTF. Breast Cancer: Screening. JAMA / final recommendation, 2024.
- CDC. Breast Cancer Risk Factors. Updated April 2026.
- CDC. Breast Cancer Awareness. 2025.
- For clinical use, verify patient-specific recommendations against current NCCN/ASCO/ACS and local institutional guidance.

THANK YOU!

T R U S T

A close-up photograph of a hand with a red ring on the ring finger, placing a white letter block with the letter 'T' into a row of other letter blocks. The blocks are arranged to spell out 'TRUST'. The background is a soft-focus green and yellow.