



NAVIGATING THROUGH THE CURRENT INFODEMIC CoP MEETING – RVH IPAC HUB

Mustansir Diwan, MSc, CIC – November 17, 2022

MISINFORMATION VS DISINFORMATION

- Misinformation is when people spread false information thinking it is true
- False content is shared unknowingly
- Unintentional
- Disinformation is deliberately false content that the writers and sharers know it is not true
- False content is shared knowingly
- Intentional

MISINFORMATION VS DISINFORMATION

Misinformation

→ No intent to deceive

For example:

Click baiting

Sensational headlines

Satire / parody

Exaggerated or humorous representation

Newspaper hoax

Accidental false information

Disinformation

→ Specific intent to deceive

For example:

Manipulated

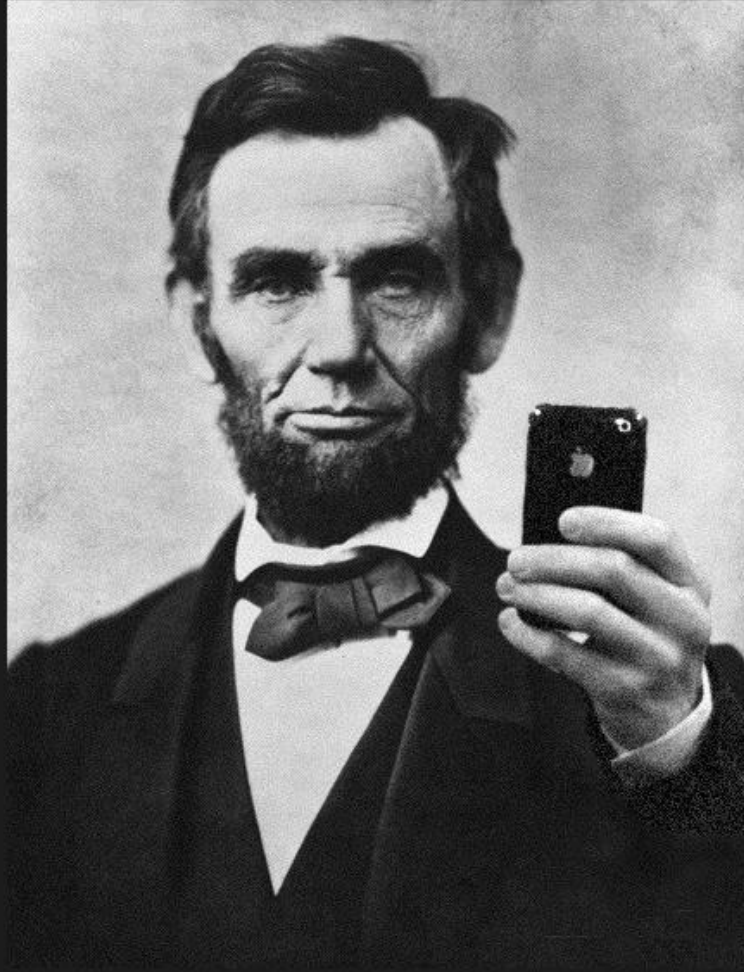
Deep fakes, falsified photos,
counterfeit websites

Taken out of context

Shortened citations, faulty statistics

Purely fictional

Biased claims



*“Do not believe
everything
you read
on the internet.”*

– Abraham Lincoln

POLL

Is red wine good for
your heart?

IS RED WINE GOOD FOR YOUR HEART?

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THE LANCET

VOL 338: AUGUST 24, 1991

Prospective study of alcohol consumption and risk of coronary disease in men

ERIC B. RIMM EDWARD L. GIOVANNUCCI WALTER C. WILLETT
GRAHAM A. COLDITZ ALBERTO ASCHERIO BERNARD ROSNER
MEIR J. STAMPFER

Although an inverse association between alcohol consumption and risk of coronary artery disease has been consistently found in several types of studies, some have argued that the association is due at least partly to the inclusion in the non-drinking reference group of men who abstain because of pre-existing disease. The association between self-reported alcohol intake and coronary disease was studied prospectively among 51 529 male health professionals. In 1986 the participants completed questionnaires about food and alcohol intake and medical history, heart disease risk factors, and dietary changes in the previous 10 years. Follow-up questionnaires in 1988 sought information about

among 51 529 men, aged 40–75 years. The population consists of 29 683 dentists, 10 098 veterinary surgeons, 4185 pharmacists, 3745 optometrists, 2218 osteopathic physicians, and 1600 podiatrists. The study began in 1986 when cohort members completed a detailed food-frequency questionnaire and provided information about medical history, heart disease risk factors, and dietary changes during the previous 10 years. Follow-up questionnaires were sent in 1988 to elicit information on newly diagnosed coronary disease.

We excluded from this analysis 1530 men who did not report an average daily food intake of 3.35–17.6 MJ (800–4200 kcal) and who did not eat more than 70 food items on the dietary questionnaire. We also excluded 5940 men who reported a diagnosis of cancer (except non-melanoma skin cancer), myocardial infarction, angina, stroke, or coronary artery bypass graft (CABG) or percutaneous transluminal coronary angioplasty (PTCA) on the 1986 questionnaire. 44 059 men were followed for disease incidence in the subsequent 2 years.

IS RED WINE GOOD FOR YOUR HEART?

Journal of the American College of Cardiology
© 1999 by the American College of Cardiology
Published by Elsevier Science Inc.

Vol. 35, No. 1, 2000
ISSN 0735-1097/00/\$20.00
PII S0735-1097(99)00531-8

Light-to-Moderate Alcohol Consumption and Mortality in the Physicians' Health Study Enrollment Cohort

J. Michael Gaziano, MD,*†§|| Thomas A. Gaziano, MD,*§ Robert J. Glynn, PhD,*§¶
Howard D. Sesso, MPH,*§# Umed A. Ajani, MBBS,*§ Meir J. Stampfer, MD,†§##
JoAnn E. Manson, MD,*†§# Charles H. Hennekens, MD, Julie E. Buring, ScD*§#††
Boston and Brockton/West Roxbury, Massachusetts

-
- OBJECTIVES** This study examined the relationship between light-to-moderate alcohol consumption and cause-specific mortality.
- BACKGROUND** Previous studies suggest a J-shaped relation between alcohol and total mortality in men. A decrease in cardiovascular disease (CVD) mortality without a significant increase in other causes of mortality may explain the overall risk reduction at light-to-moderate levels.
- METHODS** We conducted a prospective cohort study of 89,299 U.S. men from the Physicians' Health Study enrollment cohort who were 40 to 84 years old in 1982 and free of known myocardial infarction, stroke, cancer or liver disease at baseline. Usual alcohol consumption was estimated by a limited food frequency questionnaire.

IS RED WINE GOOD FOR YOUR HEART?

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SCIENTIFIC LETTER

Beneficial effect of short term intake of red wine polyphenols on coronary microcirculation in patients with coronary artery disease

T Hozumi, K Sugioka, K Shimada, S H Kim, M Y Kuo, Y Miyake, K Fujimoto, R Otsuka, H Watanabe, K Hosoda, J Yoshikawa, S Homma

Heart 2006;92:681–682. doi: 10.1136/hrt.2004.059204

Previous studies have shown the antioxidant effects of polyphenols in red wine.^{1–4} An acute effect of red wine on the coronary microcirculation has been shown in healthy volunteers, although neither white wine nor vodka had an acute effect on coronary microcirculation in that study.⁵ Thus, we hypothesised that the coronary microcirculation can be improved by a daily intake of red wine polyphenols without alcohol. In addition, this effect may be seen not only in the healthy person but also in the patient with coronary artery disease (CAD).

Recent advances in transthoracic Doppler echocardiography (TTDE) have enabled non-invasive assessment of coronary flow velocity reserve (CFVR) in the clinical

participants were provided with red wine polyphenol powder (1.4 g/kg/day) and were instructed to drink it with water (250 ml/day). CFVR was assessed by TTDE before (baseline) and after 15 days of taking red wine polyphenols (follow up).

TTDE was performed to assess CFVR with a Sequoia digital ultrasound system (Siemens, Mountain View, California, USA) as previously described.^{4, 5} We first recorded the spectral Doppler signal in the left anterior descending coronary artery at rest. Adenosine was administered intravenously (0.14 mg/kg/min) for two minutes to record spectral Doppler signals to obtain the peak flow response induced by dilatation of the coronary microvessels. All patients had continuous heart rate and ECG monitoring. Systolic and diastolic blood pressures

Heart: first published as 10.1136/hrt.2004.059204 on 13 April 2006. Downloaded

IS RED WINE GOOD FOR YOUR HEART?

Article

Consumption of Wine with Meals and Subjective Well-being: A Finnish Population-Based Study

Atte Oksanen^{1,*} and Hanna Kokkonen²

¹School of Social Sciences and Humanities, University of Tampere, Tampere, Finland, and ²Home Economics, Department of Teacher Education, University of Helsinki, Helsinki, Finland

*Corresponding author: School of Social Sciences and Humanities, University of Tampere, 33014 Tampere, Finland. Tel.: +358-50-318-7279; E-mail: atte.oksanen@uta.fi

Received 30 September 2015; Revised 26 January 2016; Accepted 5 March 2016

Abstract

Aims: To examine in the general population the association of regular consumption of wine with meals, subjective well-being and risky drinking.

Methods: A random sample of Finnish people aged 18–69 ('Finnish Drinking Habits Survey 2008', $n = 2591$, response rate 74%) were interviewed regarding psychological distress, self-efficacy, self-perceived health, uncontrolled drinking, negative events during drinking, hazardous drinking and consumption of alcohol. The analysis focused on comparison of those who drank wine at least once a week versus more seldom. Regression models adjusted for social determinants, smoking and chronic illness.

Results: Twelve percent of Finnish adults drank wine with meals at least once a week. Drinking wine with meals was an urban phenomenon and associated with higher socioeconomic status. Regular wine with meal drinkers reported better health, higher self-efficacy and less psychological distress

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CLICKBAIT “NEWS” HEADLINES

LIFESTYLE, HEALTH AND WELLBEING

Dine with wine for good health: study

ANI | DECCAN CHRONICLE

Published May 2, 2016, 12:45 pm IST

Updated May 2, 2016, 7:36 pm IST



CLICKBAIT “NEWS” HEADLINES

Here's why a daily dose of wine at dinner is great for your health

Health

Updated on May 02, 2016 01:13 PM IST

A new study done by researchers in Helsinki and Tampere in Finland has shown that sipping a glass of wine at dinner every day is actually good for you.



HT Hindustan Times

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Why a glass of wine with dinner **IS** healthy: Moderate drinkers are less likely to get ill and enjoy life more

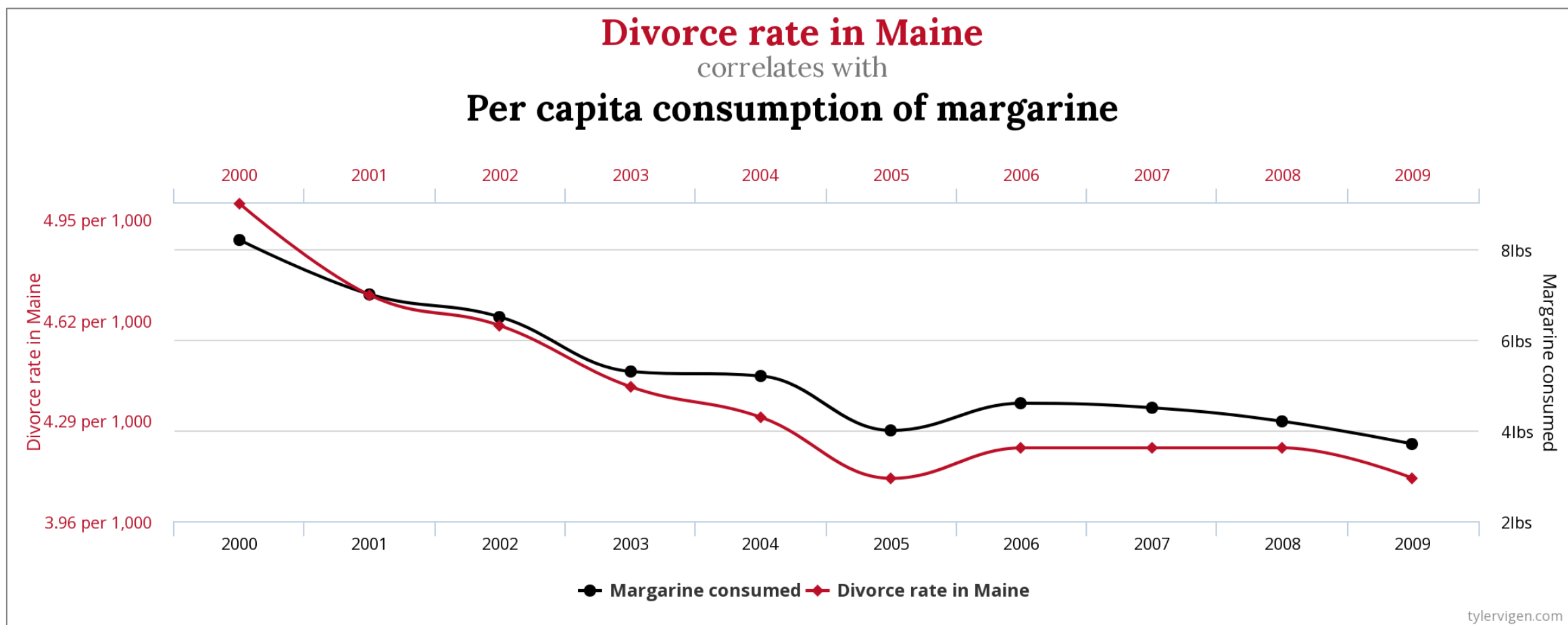
- Enjoying glass of wine with your meal could be key to a happy, healthy life
- Study finds those who have a third of a bottle a day suffer fewer illnesses
- They have a more positive outlook on life and are less likely to binge drink
- Finnish researchers studied alcohol consumption habits of 2,600 people

By [DAILY MAIL REPORTER](#)
PUBLISHED: 21:01 EDT, 29 April 2016 | **UPDATED:** 22:28 EDT, 29 April 2016

THE DEVIL IS IN THE DETAILS – 2016 FINNISH STUDY

- Finnish paper states a caveat: “consumption of wine with meals was associated with **high socioeconomic status** & high subjective well-being.”
- Hints that wine drinkers tend to belong to well-off demographics
- May explain their good health and subjective well-being
- Linking good health to wine consumption may be simplistic
- Correlation is **not** causation

CORRELATION IS NOT CAUSATION








Data sources: National Vital Statistics Reports and U.S. Department of Agriculture

Source: www.tylervigen.com

GRAPE EXPECTATIONS – CLASSIC TALE OF MISINFORMATION

- Overall evidence of a beneficial effect is weak.
- All of the research done in humans is observational. Such studies can only prove associations, **not** cause and effect.
- Some studies *suggest* a beneficial effect and other studies do not.
- Healthy habits of wine drinkers may explain the positive results.
- Many studies have “misclassification” bias in their control groups
- Alcohol consumption increases risk of other diseases including cancer

POLL: WHICH STATEMENT IS TRUE?

- Using warm water to wash your hands kills more germs 
- Wearing a mask continuously could weaken your immune system 
- Disinfectants and antiseptics cannot get contaminated with bacteria 
- mRNA vaccine technology used for COVID-19 vaccines is brand new 
- It is safer to frequently clean your hands and not wear gloves 

ABSURDITY IN DISINFORMATION

Go Corona Go!



Source: www.youtube.com

ABSURDITY IN DISINFORMATION



WHEN DISINFORMATION GOES VIRAL

DANGER OF FACEMASK

Mask is supposed to be used for limited time, if you wear it for a long time :

1. Oxygen in the blood reduces.
2. Oxygen to the brain reduces.
3. You start feeling weak.
4. May lead to death.



• NO EVIDENCE

... in their car
with AC on still wearing face Mask. Ignorance or illiteracy?

B. Do not use it at home.

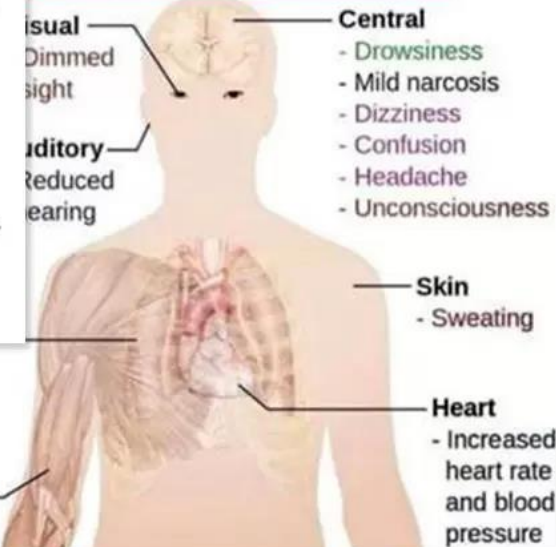
C. Only use in crowded place and when in close contact
with one or more persons.

D. Reduce the use of it while isolating yourself most of the times.

STAY SAFE

ercapnia. It can be caused by
your own exhaled CO2 by wearing
continually.

Main symptoms of Carbon dioxide toxicity



RETRACTION IN ACADEMIC PUBLISHING

EDITORIAL

Notice of Retraction. Walach H, et al. Experimental Assessment of Carbon Dioxide Content in Inhaled Air With or Without Face Masks in Healthy Children: A Randomized Clinical Trial. *JAMA Pediatr.* Published online June 30, 2021.

Dimitri Christakis, MD, MPH; Phil B. Fontanarosa, MD, MBA

The Research Letter, “Experimental Assessment of Carbon Dioxide Content in Inhaled Air With or Without Face Masks in Healthy Children: A Randomized Clinical Trial,” by Harald Walach, PhD, and colleagues published online in *JAMA Pediatrics* on June 30, 2021,¹ is hereby retracted. Following publication, numerous scientific issues were raised regarding the study methodology, including concerns about the applicability of the device used for assessment of carbon dioxide levels in this study



[Related article](#)

setting, and whether the measurements obtained accurately represented carbon dioxide content in inhaled air, as well as issues related to the validity of the study conclusions. In their invited responses to these and other concerns, the authors did not provide sufficiently convincing evidence to resolve these issues, as determined by editorial evaluation and additional scientific review. Given fundamental concerns about the study methodology, uncertainty regarding the validity of the findings and conclusions, and the potential public health implications, the editors have retracted this Research Letter.

ARTICLE INFORMATION

Author Affiliations: Editor, *JAMA Pediatrics* (Christakis); Interim Editor in Chief, *JAMA* and JAMA Network (Fontanarosa).

Corresponding Author: Phil B. Fontanarosa, MD, MBA, JAMA and JAMA Network, 330 N Wabash Ave, Chicago, IL 60611 (phil.fontanarosa@jamanetwork.org).

Published Online: July 16, 2021.
doi:[10.1001/jamapediatrics.2021.3252](https://doi.org/10.1001/jamapediatrics.2021.3252)

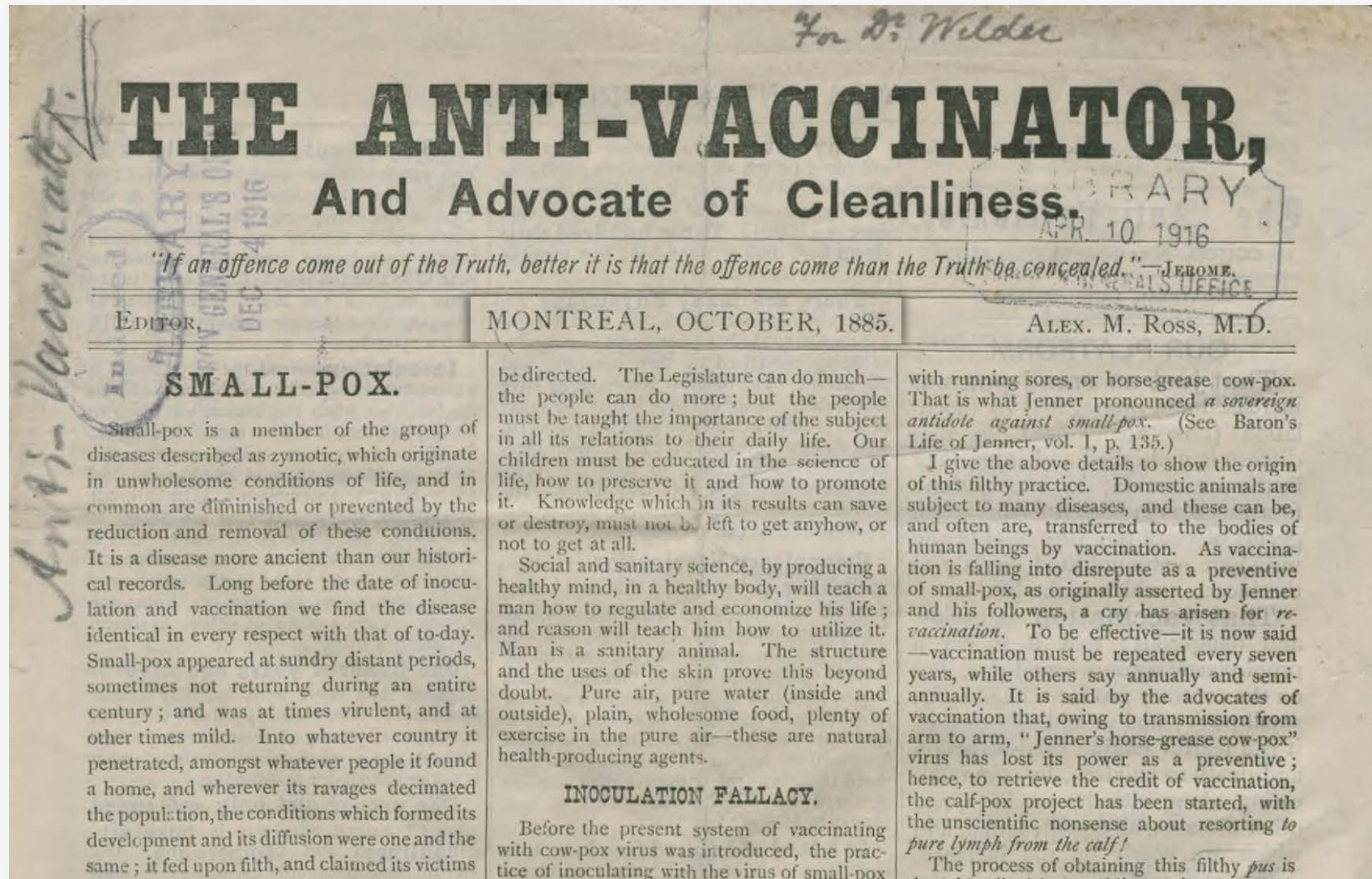
Conflict of Interest Disclosures: None reported.

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with or without face masks in healthy children: a randomized clinical trial. *JAMA Pediatr.* 2021. Published online June 30, 2021. doi:[10.1001/jamapediatrics.2021.2659](https://doi.org/10.1001/jamapediatrics.2021.2659)

DISINFORMATION ABOUT VACCINES IS NOTHING NEW



LONG HISTORY OF ANTIVACCINE MOVEMENTS

- Anti-vaccine movements soon started after the initiation of smallpox vaccine by Edward Jenner in 1796.
- Wild imagery circulated in pamphlets of inoculated woman growing horns and birthing calves, alleging immunity came with “beastly” side effects.
- The Montréal vaccine riot of 1885.
- Now retracted, Andrew Wakefield’s study published in 1998 in *The Lancet* fraudulently connected MMR vaccine with autism.

FEARMONGERING ABOUT SMALLPOX VACCINE



Source: wellcomecollection.org

A CLOSER LOOK – DUBIOUS CASE REPORT ON MMR VACCINE

- Wakefield's 1998 case study in *The Lancet* involved only **12** children.
- Children were pre-selected and recruited through anti-MMR campaigns.
- Data collected came from “reported observations” from the parents.
- Wakefield deliberately hid data that conflicted with his hypothesis.
- Claimed that 9 of the 12 children had autism. In reality, only **one** did.
- Had major financial conflicts of interest.
- The study was funded by law firm trying to sue the MMR vaccine makers...
using the same 12 families recruited.

INFORMATION CHAOS

- One of the major ploys online influencers use to undermine health experts.
- Sow doubt and confusion by spreading multiple false or exaggerated claims.
- Ask their followers to “do their own research” on already well-established scientific facts.
- Highlight incredibly rare events or cherry-pick statistics to push a false narrative.

WHAT SHOULD BE OUR RESPONSE?

- A single study is rarely the final answer.
- **Be curious:** read beyond the headlines. Independently verify the source and the information through trustworthy news sources.
- **Be reflective:** if you have an immediate emotional reaction to a news article or social media post, then pause, reflect, and investigate.
- **Beware of algorithms:** social media algorithms are designed to show posts that reinforces your current views (echo chambers).
- **Look for in-depth coverage:** Look for long-form reporting that better captures the complexity of topics.

Be intellectually humble.

QUESTIONS?



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