Communicating Nutrition Research

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โควิด-19: เราควรกินวิตามินดีเพื่อสู้กับไวรัสโคโรนาสายพันธุ์ใหม่หรือไม่

มิเชลล์ โรเบิร์ตส์
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9 กันยายน 2020
ปรับปรุงแล้ว 9 กันยายน 2020

เจ้าหน้าที่สาธารณสุขแนะนำให้รับวิตามินดีเสริมในช่วงของการล็อกดาวน์

มีคำถามเกิดขึ้นมากมายว่า วิตามินดีช่วยต่อสู้กับไวรัสโคโรนาได้หรือไม่

ข่าวเด่น

ทำไมโควิดสายพันธุ์เดลตาจึงระบาดอย่างรวดเร็วในอังกฤษ
เมื่อ 2 ชั่วโมงที่แล้ว

วัคซีนซิโนฟาร์มล็อตแรกถึงไทย
20 มิถุนายน 2021

นักวิทยาศาสตร์ฟันธง มนุษย์ไม่อาจหยุดยั้งความชราได้
เมื่อ 3 ชั่วโมงที่แล้ว

เรื่องน่าสนใจ

เทียบประสิทธิภาพ ซิโนแวค-ซิโนฟาร์ม วัคซีนจากจีนที่ไทยวางใจ
19 มิถุนายน 2021

For any nutrition information to be trusted, there must be **credibility** in the conduct and **quality** of the underlying nutrition research, and in the **accuracy** of the dietitian's **interpretation** and translation of research. Therefore, dietitians must be able to accurately **evaluate and translate** studies when nutrition is trending.

Multiple Sectors Contribute to Nutrition Research

- Government
- Non-profit Organizations
- Individual Academic Institutions
- Food and Beverage Industry Groups

Check for updates

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ANALYTIC REVIEW

Neal D. Barnard, MD, M. Blaire Long, MD, Jennifer M. Ferguson, DO, Rosendo Flores, MA, and Hana Kahleova, MD

Industry Funding and Cholesterol Research: A Systematic Review

Abstract: *The effect of diet on blood cholesterol concentrations has become controversial. We assessed whether industry-funded studies were more likely than non–industry-funded studies to report conclusions that were not supported by their objective findings. PubMed and Cochrane Central Register of Controlled Trials searches through March 8, 2019, yielded 211 relevant articles. The percentage of industry-funded studies increased from 0% in the 1950s to 60% for 2010 tp 2019 (P < .001). Of 94 non–industry-funded intervention studies for which the effect of egg ingestion on cholesterol concentrations could be determined, net cholesterol increases were reported in 88 (93%) studies (51% statistically significant, 21% not significant, 21% significance not reported). Among 59 industry-funded intervention studies, net cholesterol increases were reported in 51 (86%) studies (34% statistically significant, 39% not significant, and 14% significance not reported). No studies reported significant cholesterol decreases. Nonsignificant net cholesterol decreases were reported by 6 (6%) non–industry-funded and 8 (14%) industry-funded studies. However, 49% of industry-funded intervention studies reported conclusions that were discordant with study results (ie, net cholesterol increases were described as favorable in the articles' stated conclusions), compared with 13% of non–industry-funded studies. Readers, editors, and the public should remain alert to funding sources in interpreting study findings and conclusions.*

Keywords: cholesterol; egg; lipids; cardiovascular disease; diet

> . . . among published studies reporting relationships between egg consumption and blood cholesterol concentrations, the number and proportion of industry-funded studies has increased over time.

Circulating cholesterol plays a major role in cardiovascular disease, a leading cause of mortality and morbidity.[1] Although dietary cholesterol is less potent than saturated fat in its effect on blood cholesterol concentrations, its ability to elevate total and low-density lipoprotein (LDL) cholesterol was well established by 2002, when the Institute of Medicine summarized the accumulated evidence in its publication on Dietary Reference Intakes, concluding that "serum cholesterol concentrations increase with increased dietary cholesterol . . . and the relationship of serum cholesterol concentration to CHD risk or mortality increases progressively . . ."[2]

Eggs are highly concentrated in cholesterol, raising concerns about effects on blood cholesterol concentrations. In recent years, the egg industry, working especially through US federally administered programs, has funded studies investigating the effects of eggs on blood cholesterol concentrations. In a 2013 review of prior intervention studies on the effects of dietary cholesterol and plasma lipoprotein profiles, 10 of the 12 included studies were funded by egg industry programs.[3] In 2015, one of the authors of that review served on the Dietary Guidelines Advisory Committee, which reported that "available evidence shows no appreciable relationship between consumption of dietary cholesterol and serum cholesterol . . ."[4] Although that statement was not carried

DOI:10.1177/1559827619892198. From Physicians Committee for Responsible Medicine, Washington, DC (NDB, RF, HK); Adjunct faculty, Department of Medicine, George Washington University School of Medicine, Washington, DC (NDB); Physical Medicine and Rehabilitation, Integrated Rehabilitation Consultants, Centennial, Colorado (MBL); Trident Medical Center, Charleston, South Carolina (JMF). Address correspondence to Neal D. Barnard, MD, Physicians Committee for Responsible Medicine, 5100 Wisconsin Avenue, Suite 400, Washington, DC 20016; e-mail: nbarnard@pcrm.org.

Bias in Nutrition Research

- Bias is **inclination** or **prejudice** in favor of a particular person, thing, or viewpoint; **deviation** of either inferences or results from the truth; or any process leading to that kind of systematic deviation, including tendencies by which data are reviewed, analyzed, interpreted, or published in a way that yields a measurable deviation of research results from the truth.
- A study's **funding source** commonly is discussed as a primary source of bias.
- Bias also can originate from researchers, academic or research institutions, journal publications, mass media, and health professionals themselves. It can't be assumed that all non-industry-funded research is without bias, as **data falsification** and **poor methodology** can occur within any sector.
- Since some degree of bias is nearly **unavoidable**, the important question for dietitians as they evaluate nutrition research is whether bias has led to conclusions that deviate from the truth in a meaningful way.

Potential Sources of Bias

Research Design and Implementation

- Sample selection bias
- Sample size bias
- Data collection and quality bias
- Statistical analysis bias
- Confounding variable bias

Publication and Communication

- Publication bias
- Citation bias
- Confirmation bias

Ranganathan P, et al. Perspect Clin Res. 2016., Lomangino KM, et al. J Acad Nutr Diet. 2016.

Critically Evaluating Nutrition Research

- Source
- Population
- Study Type
- Methods
- Results

Since **no single** study holds the **full answer**, dietitians should consider it in the context of the **totality of evidence** on a topic, looking for contrasting evidence and evaluating its **significance**.

Communicating with Accuracy and Balance

- Specify the information's **source** and legitimacy
- Clarify the **audiences** to whom results apply
- Distinguish between **correlation** and **causation**
- Quantify the **true effect size** of the intervention or exposure of interest
- Identify **strengths** and **limitations**, including potential biases
- Interpret results from a **neutral** point of view
- Put findings in the **context** of the broader literature
- Stay within a comfort level of **expertise**

Examples of Spin in Health Reporting

- Using sensational, **"click-bait"** headlines, hyperbole, and embellished claims;
- Making negative or unremarkable study results sound positive;
- **Extrapolating** animal research to humans or omitting the detail that the study was conducted in animals;
- Failing to qualify the **generalizability** of results from studies with small sample sizes or specific characteristics;
- Exaggerating **effect size**;
- Relying on **anecdotes** that may not represent benefit of a nutrient, food, or dietary pattern at population level;
- Omitting or **downplaying** funder involvement;
- Making cause-and-effect claims based on data that support only **correlation**;
- Using **ambiguous** terms for changes in variables and failing to state any associated health impact;
- Equating **surrogate** endpoints with hard outcomes, such as reduced LDL cholesterol with fewer heart attacks;
- Failing to explain findings in the context of the **broader literature**;

Conclusion

Nutrition information is easy to find, but it's harder to discern what's credible. Dietitians who can **critically evaluate nutrition research** and **accurately translate** it into practical dietary advice can enhance their professional **credibility** as **trusted resources** for sound, evidence-based nutrition information, and help to improve the **public's understanding** of and trust in the scientific process and its outcomes.

Thank you :-)

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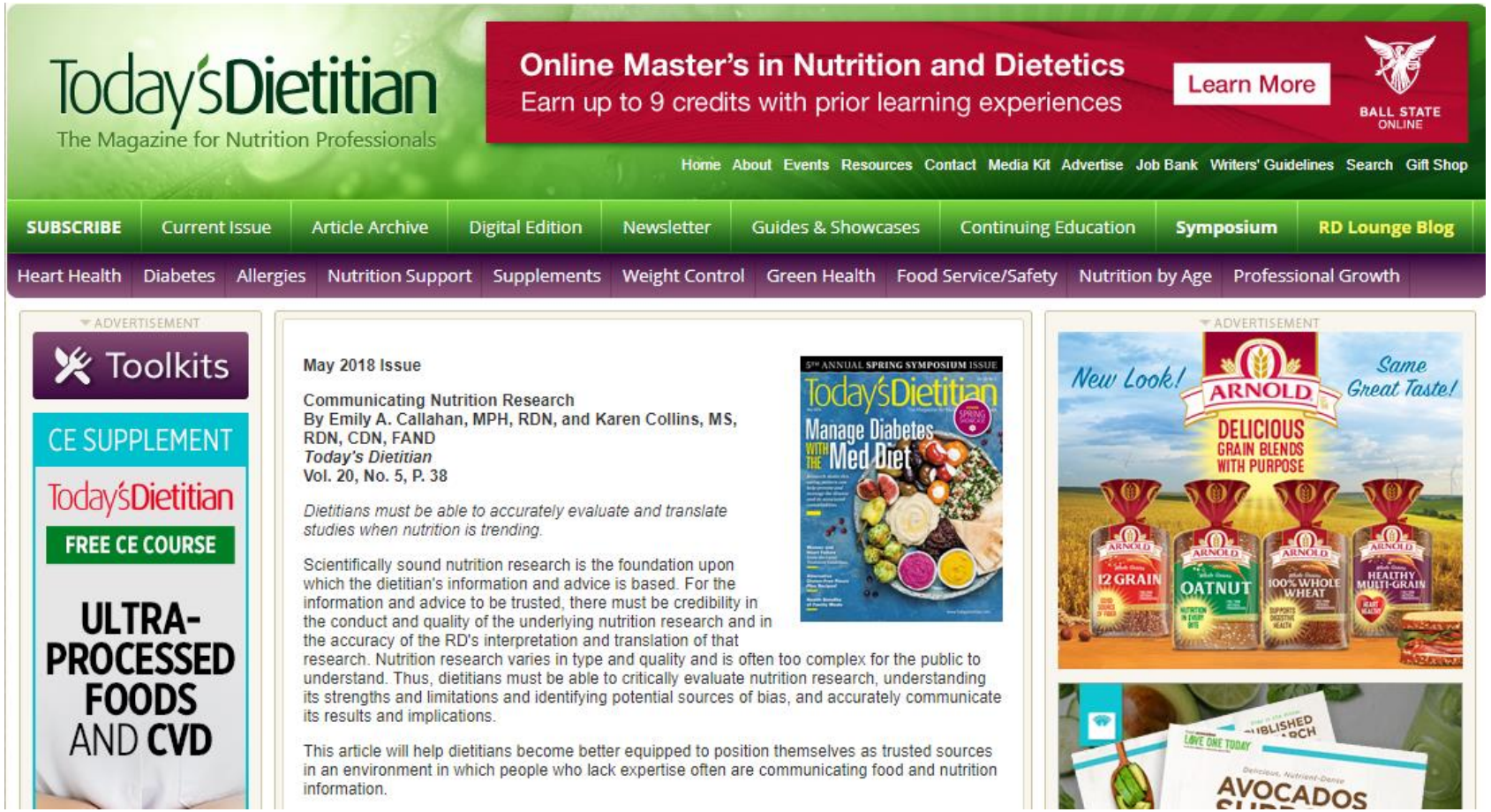

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