



# THERAPEUTICS INITIATIVE

Evidence Based Drug Therapy

## Evaluating the Media as a source of Drug Therapy Information

**C**ase: Mrs. Smith (36 years old) comes in clutching her local newspaper. In bold, the headline states: “Vitamin D reduces the risk of cancer by 60%.” She has a family history of breast and colon cancer and asks: “Should I take daily Vitamin D supplements?”

### What do we know about media reports of drug therapy?

The mass media plays a dominant role in informing the public and health professionals about new research findings and treatments.<sup>1</sup> Health news stories consume a growing share of media space. Many major newspapers and broadcast stations have specialty health columnists or dedicated health programs. **Furthermore medical journals generate media coverage by issuing press releases for each issue.**<sup>2</sup> These mass media messages increasingly influence the use of health care interventions.<sup>3,4,5</sup> However, the quality of the reports has been called into question by researchers who are calling for more direct and complete reporting of research results.<sup>6,7,8,9</sup>

### Media Doctor Canada criteria for assessing a medical news story<sup>10</sup>

- |  |
|--|
| 1. Availability of Treatment               |
| 2. Novelty of Treatment                    |
| 3. Disease Mongering                       |
| 4. Evidence                                |
| 5. Quantification of Benefits of Treatment |
| 6. Quantification of Harms of Treatment    |
| 7. Sources of Information                  |
| 8. Treatment Options                       |
| 9. Costs of Treatment                      |
| 10. Relies on Press Release                |

### How do these criteria relate to the Vitamin D news story?

*The journalist is reporting on a double-blind, randomized study, which followed 1,179 healthy, post-menopausal women from rural eastern Nebraska for four years. Participants were randomized to 1500 mg calcium, 1500 mg calcium plus 1100 IU vitamin D3 (cholecalciferol) or placebo.<sup>11</sup>*

**Availability:** Is the treatment in question available? *Calcium and Vit D3 are readily available in Canada.*



**Novelty:** Is this really “new” knowledge or is it another look at what we already know? Does this story add to our existing knowledge of the role of Vitamin D? *Vitamin D is not new and to learn what it adds we must assess the evidence (see below).*

**Disease Mongering:** Does it seem like they are making a normal characteristic into a “disease” or an accepted disease or condition scarier or more prevalent than it really is? *Nothing obvious here.*

**Evidence:** What is the quality of the evidence underlying the health claim? *The story is based on the highest level of evidence, a randomized controlled trial.*

**Quantification of Benefit:** What are the benefits related to the treatment? If relative numbers are used (i.e. a 60% reduction) does the journalist also report the absolute benefit or how many, out of one hundred patients similarly treated, would benefit (the number needed to treat)? *The headline focuses on the relative benefit, but further on in the story it becomes clear that the relative benefit calculation is based on 50 patients with a new cancer: 4% in the calcium group, 3% in the calcium plus Vitamin D group, and 7% in the placebo group. In fact, Vitamin D plus calcium does not reduce cancers compared to calcium alone RR 0.76 [0.38 - 1.55] (our calculation).*

**Quantification of Harm:** What are the harms related to this treatment and have they been quantified? *There is no mention of harm in the media story. The publication does not report serious adverse events but mentions 5 renal calculi: 3 calcium, 1 calcium plus Vitamin D and 1 placebo.<sup>11</sup>*

**Sources of Information:** Does the journalist tell you if the researcher, or spokesperson quoted in the article has any ties to the company that makes or markets this product? *No.*



**Mailing Address:** Therapeutics Initiative  
The University of British Columbia  
Department of Anesthesiology, Pharmacology & Therapeutics  
2176 Health Sciences Mall  
Vancouver, BC Canada V6T 1Z3

**Tel.:** 604 822-0700  
**Fax:** 604 822-0701  
**E-mail:** info@ti.ubc.ca  
**www.ti.ubc.ca**

**Cost:** What is the cost of the treatment and how do those costs compare to other treatments that might be already available? *Not provided. Costs of daily Vitamin D3 1000 IU is about \$0.07 per tablet.*

**Treatment options:** Are there other equal or more effective treatment options that may cause less harm or are less costly? *Sitting in the sun is a source of Vitamin D and is mentioned?*

**Relies on Press Release:** Did the journalist copy from the press release? *Yes.* Did the journalist get outside opinions? *Yes.*

### What does recent research in Canada say about the quality of our media?

Between May 31, 2005 to November 1st, 2006 the Media Doctor Canada team analyzed 87 unique stories dealing with treatments that appeared in ten major English language daily newspapers, a medical news service directed towards health professionals, and two web-based news services which are linked to two major broadcasters in Canada (CBC and CTV). The reviewers rated each story based on the ten criteria listed above. Nearly all stories were rated satisfactory on two criteria - novelty of treatment (93.8%) and disease mongering (89.7%). Three criteria scored lowest: quantification of harms (8.2%), costs of treatment (20%) and sources of information (25%).

### What happens to a media outlet when its coverage is inadequate?

Journalists receive very little feedback on the quality of their stories except from their editors, publishers, and sometimes, through letters to the editor from their readers. **They seldom use professional feedback or self audit, both of which are considered essential to improve professional practice.** Four English language services currently exist to provide feedback to journalists, assessing the quality of medical journalism and acting as a guide to consumers:

- Australia: Media Doctor Australia ([www.mediadoctor.org](http://www.mediadoctor.org))
- Canada: Media Doctor Canada ([www.mediadoctor.ca](http://www.mediadoctor.ca))
- United States: Health News Reviews ([www.healthnewsreview.org](http://www.healthnewsreview.org))
- UK: Hitting the Headlines ([www.library.nhs.uk](http://www.library.nhs.uk))

### References

1. Phillips DP, Kanter EJ, Bednarczyk B, Tastad PL. *Importance of the lay press in the transmission of medical knowledge to the scientific community.* New England Journal of Medicine 1991;325:1180-3.
2. Woloshin S, Schwartz LM. *Press releases: translating research into news.* JAMA 2002;287:2856-8.
3. Grilli R, Ramsay C, Minozzi S. *Mass media interventions: effects on health services utilisation.* Cochrane Database of Systematic Reviews 2002 (Issue 1).
4. Ries A, Ries L. *The fall of advertising and the rise of PR.* New York: HarperBusiness, 2002.
5. Basky G. *Medical coverage of health stories often inaccurate, MDs report.* CMAJ 1999;161:361.
6. Entwistle V. *Reporting research in medical journals and newspapers.* BMJ 1995;310:920-3.

### What can a clinician do when confronted with a news story?

The accuracy and completeness of news coverage can either provide a valuable and vital public service, setting appropriate expectations among consumers, or conversely, driving inappropriate demand for therapies which have yet to be supported by solid research evidence.<sup>4</sup> Health professionals must be able to properly critique and verify media information for their patients and put it into a proper context.

• **How did the Vitamin D news story score on the 10-point checklist?** It scored 5/10. It was satisfactory in these criteria: availability, disease mongering, novelty, quantification of benefit, and treatment options. The rest of the criteria were unsatisfactory: the evidence (the interpretation is inappropriate), mention of harms, costs, and potential conflicts of interest.

• **Should this media story and published trial change your practice?** When you realize the small numbers of cancers in this trial and the fact that the main benefit seems to be coming from the calcium, you should look for results from larger trials.

• **Is there other better evidence to inform you and the patient?** The Women's Health Initiative (WHI) study is the largest RCT relevant to this question.<sup>12</sup> It compared 1g calcium and 400 IU Vitamin D with placebo in over 36,000 women followed for 7 years. **The WHI demonstrated no reduction in new cancers associated with Vitamin D and calcium, RR 0.98 [0.91 - 1.05].** The media report didn't mention the WHI trial and the publication dismissed the WHI trial, stating that the dose of Vitamin D was inadequate.<sup>11</sup>

### Conclusion

- **The media are important for disseminating new therapeutic information and hence quality and completeness of reporting is vital.**
- **Frequently therapeutic effects are neither as spectacular nor as disastrous as media headlines suggest.**
- **Health care professionals must know how to critique and verify information coming from news stories.**

The draft of this Therapeutics Letter was submitted for review to 40 experts and primary care physicians in order to correct any inaccuracies and to ensure that the information is concise and relevant to clinicians.

7. Schwartz LM, Woloshin S. *The media matter: a call for straightforward medical reporting.* Annals of Internal Medicine 2004;140:226-8.
8. Smith DE, Wilson AJ, Henry DA. *Monitoring the quality of medical news reporting: early experience with media doctor.* MJA 2005;183:190-3.
9. Cassels A, Hughes MA, Cole C, et al. *Drugs in the news: an analysis of Canadian newspaper coverage of new prescription drugs.* CMAJ 2003;168:1133-7.
10. Media Doctor Canada ([www.mediadoctor.ca](http://www.mediadoctor.ca)). see: rating information
11. Lappe JM, Travers-Gustafson D, Davies KM et al. *Vitamin D and calcium supplementation reduces cancer risk: Results of a randomised trial.* Am J Clin Nutr 2007;85:1586-1591.
12. Wactawski-Wende J, Kotchen JM, Anderson GL et al. *Calcium plus Vitamin D supplementation and the risk of colorectal cancer.* N Engl J Med. 2006;354:684-696.