

Why Gather Scientists Together to Examine Prevailing Research When the Decision on How to Proceed Has Been Previously Decided?

By Susan R. Feldman

This is the prevailing question I came to ask myself and others after attending the World Health Organization/International Life Sciences Institute/National Sanitation Foundation (WHO/ILSI/NSF) Symposium on Calcium and Magnesium in Drinking Water held in Baltimore, Md., April 24-26, 2006. I had great hopes that the symposium organizers would allow a free discussion of the available pros and cons of adding calcium and magnesium as a nutrition source to water, with a resulting conclusion based upon the evidence provided. I was misled.

I attended the symposium to learn with an open mind and left with a sinking feeling in the pit of my stomach that I had been duped. By the end of the week, my worst fears had been confirmed and the outcome was in agreement with previous symposia on the same topic, despite all the dissenting research and discussions.

The eminent attendees and presenters spanned the globe and reported their own work or reviews of the literature to the attendees. The booklet provided to attendees stated that the symposium was to "review possible health significance of magnesium and calcium in drinking water and help to define what questions need to be resolved before a decision can be made on the value of a water contribution of magnesium and calcium to total diet and what studies are necessary." It was then clearly stated that WHO

would convene an expert meeting and that the information presented at the symposium would be forwarded to WHO for their review in preparing their own recommendations.

A list of questions to be answered was also passed out which asked the following:

Health issues

- Could a small increment of daily mineral intake make a difference in population health status?
- Does mechanistic biomedical evidence indicate benefits from incremental increases of daily mineral intake in deficient populations?
- Do controlled dietary and clinical studies support benefits?
- Do epidemiology studies provide support for benefits hypothesis?
- What is the strength of evidence for hard water/cardiovascular disease (CVD) hypothesis?
- Who are the high-risk populations?
- If there are benefits, what are their approximate values?
- Can adverse effects be explained by corrosive water metals?
- Is there scientific support for other health benefits in respect to osteoporosis, hypertension, metabolic syndrome, etc.?
- Are there negative health impacts from increased consumption?
- Are more definitive studies possible?

Daily consumption

- Are the recommended daily allowances (RDA) for calcium and magnesium appropriate?
- What are worldwide dietary contributions of calcium and magnesium and incremental water contributions?
- Uptake efficiency of food versus water sources?
- Optimal intake balance of calcium, magnesium and other ions?
- If there is a desirable water contribution what should it be?
- Would it vary by region or lifestyle?
- How does the mineral composition of cooking water affect the mineral composition of cooked food?

Technological and economic issues

- Is 'soft' water different from 'softened' water?
- What is the technology and cost of mineralizing water?
- If it is desirable to consume 'hard' water, how would this affect municipal corrosion control, central softening or remineralization of desalinated water?
- How would it affect bottled water and beverages?
- How would it affect home water treatment?

For most of these questions there is no research to support an answer. Much of the research has been labeled as flawed due to poor methods of determining lev-

els of magnesium in the body. We now know that there are far better methods to determine magnesium levels than those used.

The symposium was a repeat of earlier (similar) sessions that began debating the issue as early as 50 years ago. Most of the data in favor of adding calcium and magnesium to water is based upon epidemiological studies, which even Dr. Paul Hunter, co-chair of Session VII: *Epidemiological Evidence Linking Drinking Water Components and Health—Cardiovascular and Other Diseases*, admitted is not the best level of scientific research; but, he believes, the best we currently have on this issue. I would go further and say that there is still insufficient evidence to base defining a global definition of what drinking water should contain and how much of these inclusions, in order to be considered of nutritional value or, by inference, to claim that water that does not meet these levels of nutritive constituents is in some manner inferior or unhealthy.

The ground rules for the symposium were pre-arranged so that only previously chosen and sequestered 'experts' would decide the outcome and report it to World Health Organization, keeping their conclusions secret from those who only attended or presented at the symposium. There is no venue for comment from the public, even the selected number who attended the symposium, but were not included as 'experts'. The other researchers who had opposing views or even agreed with the 'unnamed, invited experts' were left out of the decision-making process and also were kept fairly in the dark about the discussions and the outcome. Instead of suggesting we urge the scientific community to fund the appropriate studies to produce a peer-reviewed report based upon good scientific evidence, the sequestered 'experts' decided to reach a conclusion based on opinion, not evidence. The recommendation to WHO will include calcium and magnesium reconstitutions in drinking waters that have been treated to remove calcium and magnesium, so long as it does not interfere with what is necessary for the integrity of the water distribution pipes.

Joe Harrison, Technical Director of the Water Quality Association, gave a clear and impassioned report at the symposium on how most of the research presented was performed on naturally soft or low TDS water; whereas mechanically softened water was high in TDS and no research had ever been performed or published (to our knowledge) on soft-

ened water. He claimed they could not be lumped together as the same or even similar in this respect. With so many unanswered questions, it would seem foolhardy to base a global nutritional campaign upon so little substantiated evidence. It will be interesting to follow the course of this as WHO meets in Geneva this summer. Results of that meeting will eventually become the WHO *Guidelines for Drinking Water*, which is due to be published in 2007.

About the author

◆ Susan R. Feldman is currently Technical Director of the Salt Institute, the world's foremost source of authoritative information about salt and its more than 14,000 uses. The Institute is a nonprofit association of salt producers and manufacturers, founded in 1914. Contact her at Salt Institute, 700 North Fairfax St., Fairfax Plaza, Ste. 600, Alexandria, Va. 22314-2040; office (703) 549-4648; cell phone: (571) 218-8764; fax (703) 548-2194; email: susan@saltinstitute.org or visit www.saltinstitute.org.

Dealer Profiles don't just happen—you've got to speak up!!

Proud of your dealership? Want to see it showcased in an upcoming issue of WC&P? Now's your chance! We know every dealership is special—that's why we write about a different one each and every month—and we'd like to feature yours! Just tell us the particulars and our editorial team will call you for the whole story!

Mail or Email the following info:

Dealership Name:

Main Address:

Telephone:

Your Name and Position:

Email:

WC&P Magazine
2800 E. Fort Lowell Rd.
Tucson, AZ 85716 USA
Attn: Denise Roberts
droberts@wcponline.com