

To: Mr Robert Bos
The World Health Organisation
11211 Geneva 27
Switzerland

Dear Mr Bos

Comments on
Background document for development of WHO *Guidelines for Drinking-water Quality*
Documents title: **Hardness in Drinking-water**

We are writing in response to the recent posting of the above Background Document “Hardness in Drinking-water” on the WHO website as we are concerned about the apparent lack of balance in its representation of the various water sources used for drinking purposes, and of the established and significant merits of soft, or softened, water when weighed against the questionable benefit from hardness minerals in the drinking-water supply.

The EWTA is the European trade body representing the industry for treatment of drinking water at point-of-use and point-of-entry to buildings. Its members are national associations, companies and institutions whose activities involve water treatment supplies and services in Europe. Products include softening, filtration, disinfection, chemical and physical treatment and are therefore relevant to treatment in the home.

1. Our primary concern is the exclusive reference to “household treatment methods” requiring that “users should be made aware of changes in mineral composition and possible consequences to nutrient intake and human health”.

Our view is that it is unrealistic to expect suppliers of household water treatment systems to inform consumers of the change in mineral content and possible consequences to their health when:

- the epidemiological evidence for the hypothesised health benefit is highly questionable and complex
- other similar drinking-water sources are not called upon to advertise the same qualification and health information
- from the more robust data, the evidence narrows to a potential benefit from magnesium (which is inconclusive and further studies are necessary) with the suggested lower limit for beneficial magnesium concentrations of 10 mg/l. But it does not address the obvious challenge that such levels represent only 4% of typical RDIs and are thus trivial in terms of dietary contribution. Medical evidence indicates that even doubling the RDI, has a minimal and inconsistent physiological effect.
- if any benefit may be attributable to magnesium, neither the consumer nor the supplier will have ready access to magnesium composition of the water supply.

Since the implementation of the 1998 revision of the EU Drinking-water Directive, water suppliers no longer monitor magnesium levels specifically

- the document does **not** point out that the epidemiological studies almost exclusively relate to hardness levels in “fresh” water supplies and there is no epidemiological evidence of a similar relationship with processed or softened water.

2. There is a range of water supplies that are not addressed by the Background Document including bottled water, rainwater, private water supplies as well as municipally supplied water and it seems inequitable to single out household treatment for specific action. If health advice is required to be provided for one source of drinking-water, then, in the interests of the public as a whole, it should be provided for all potential sources.

If there is any justification in informing the consumer of potential health benefits of natural minerals in drinking water, the maximum effect would be to those supplied with water that is naturally soft. This would constitute 30 to 40% of the population and water suppliers should inform consumers in soft water areas of the potential deficiency in their nutrient intake as a consequence of their soft water supply.

3. Section 5 “Household Treatment Methods” makes reference to “aesthetic” benefits of softening. This significantly understates the value of water softening which extend beyond the reduction of soap/detergent usage and stains on sanitary-ware. Elimination of scale in water heaters and boilers, substantially reduces energy consumption and consequent CO₂ emissions. Pressure at international and national level to improve energy efficiency in homes is resulting in increasing regulatory requirements to fit energy-saving appliances such as softeners – the global environmental benefit, to which this is targeted, can hardly be described as aesthetic.

The document does now make reference to potential benefits to childhood eczema citing the report by McNally et al., 1998 but omits similar studies in Spain (Arnedo-Pena et al., 2007) and Japan (Miyake et al., 2002). Recognising the physical and psychologically debilitating consequences that this disease has on both the children and parents, the effect can hardly be described as aesthetic.

As a final comment, our conviction, having assimilated the various proceedings and documents which have evolved from the recent activities of the WHO on this issue, is that the current evidence for a potential health benefit from water hardness is very weak and confined to magnesium content, for which the contribution to dietary intake would be trivial. The justification for any informative action is, at this stage, highly questionable and, when balanced against the economic and environmental benefits of soft (or softened) water, and against the direct health benefits of optimum hydration, positive statement or action is inappropriate unless and until there are definitive conclusions from recommended research. Nutrient deficiency should be addressed by dietary control and education. In contrast to the above comments on the Background document, there is a summary statement, also posted on the WHO website, which we feel is balanced and to the point.

We appreciate your consideration of the above and, of course, we would welcome the opportunity to discuss the situation in more detail at your convenience.

Yours sincerely,

Mike Pickavance
Chairman