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Summary Based on the WHO 2005 Report

Executive takeaway: WHO's 2005 review supports a cautious approach to long-term home RO use, because the central issue is not only what RO removes from water, but also what fully demineralized water may remove from everyday nutrition and how much treatment it still needs afterward.

Based on the WHO report, we do not recommend relying on home reverse osmosis as the main long-term household drinking-water source unless the water is properly stabilized and remineralized. WHO notes that RO and other demineralization processes remove most dissolved minerals together with unwanted substances, so the resulting low-mineral water may reduce water's contribution to calcium and magnesium intake, affect water and mineral balance, and become more aggressive to plumbing if it is not stabilized. WHO also describes RO as more than a simple filter: it requires pretreatment to protect the membrane, then post-treatment such as pH adjustment, corrosion control, blending or remineralization, and disinfection; the process also creates a separate concentrate stream rather than turning all incoming water into finished drinking water (WHO, 2005, ch. 1, pp. 10–11; ch. 2, pp. 16–17; ch. 12, pp. 150–157).

WHO further notes that water composition matters in the kitchen and for infants. Cooking with low-mineral water can increase the loss of minerals from food, and the water used to reconstitute powdered infant formula can materially affect the formula's final mineral profile, which is why WHO discusses remineralization of processed waters with infant nutrition in mind (WHO, 2005, ch. 12, p. 154; ch. 13, pp. 164, 169, 175). As brief examples, the report cites volunteer studies in which low-mineral water increased urine output by almost 20% and increased sodium, potassium, calcium, and magnesium losses; cooking in soft or low-mineral water caused losses of up to about 60% of calcium and magnesium from food; and reports from Czech and Slovak households described complaints within weeks to months after home RO systems were introduced (WHO, 2005, ch. 12, pp. 151, 153–154). Where household treatment is needed, a non-demineralizing option, or one with controlled remineralization, is the more cautious long-term choice.

Source and Note

This summary stays within WHO's published recommendations and avoids medical claims beyond them.

For the original source see the WHO document; this summary was written inspired by the WHO document.