Despite mixed results with laboratory animals, recent studies indicate that elevated intake of fluoride in drinking water may, depending on circumstances, cause high blood pressure (hypertension) in humans. Although primary or essential hypertension has various causes and is known to be associated with higher levels of vasoconstrictors like endothelin 1 and thromboxane 2, increased oxidative stress, vascular inflammation, aortic stiffness, and magnesium deficiency, new evidence connecting this most common form of hypertension with increased intake of fluoride clearly deserves further investigation.