

HALTING THE INERTIA OF INDIFFERENCE: FLUORIDE AND FERTILITY REVISITED

SUMMARY: Two new studies have demonstrated that fluoride can impair male fertility. The first, in mice, found fluoride decreases sperm hyperactivation and *Catsper1* gene expression. The second, in rats, reports that fluoride decreases sperm motility, enhances oxidative stress in testis, and increases testis apoptosis. These findings are consistent with many earlier reports of adverse fluoride effects, including some of reduced fertility in animals drinking water containing 1 ppm of fluoride. The current recommendation by some authorities for adding fluoride to community water supplies is likely to impair male fertility.

Keywords: Fertility; Fluoridation; Indifference to fluoride effects on fertility; Infertility; Mice; Rats; Spermatozoal hypermotility; Spermatozoal motility; Testis apoptosis; Testis oxidative stress.

Two further articles on the adverse effects of fluoride on male reproductive function are included in the present issue. Wang et al. found that fluoride in mice decreases sperm hyperactivation and *Catsper1* gene expression.¹ Zhang et al. report that fluoride in rats decreases sperm motility, enhances oxidative stress in testis, and increases testis apoptosis.² These studies follow many previous reports published in *Fluoride* and other peer-reviewed publications of the detrimental effects of fluoride on male reproductive function.^{3–34}

The need for additional studies of a possible association between fluoride and reproductive parameters was noted in a chapter on “Reproductive and developmental effects of fluoride” in the 2006 National Research Council publication *Fluoride in drinking water: a scientific review of EPA’s standards* notes.³⁵ The two new studies now reported provide examples of such information as suggested. These findings are consistent with many earlier reports of fluoride adverse effects, including some of reduced fertility in animals drinking water containing 1 ppm of fluoride.^{36–40}

Currently the authorities who recommend adding fluoride at 0.7–1.2 ppm to community water supplies give little attention to the effect of fluoride on male fertility. For example, the 2007 Australian Government publication *A systematic review of the efficacy and safety of fluoridation* found that the existing body of evidence strongly suggested that water fluoridation is beneficial at reducing dental caries but did not discuss the concerns about the effects of fluoride on fertility.⁴¹

Adding fluoride to community water supplies is likely to impair male fertility. The two studies reported in this issue provide further friction to help halt this inertia of indifference to the adverse effects of fluoride on male reproductive function.

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