In 1989, after reviewing that report, Koop concluded the available research was inadequate for drawing definitive conclusions. That his nonconclusion continues to be distorted by ideologues into evidence that abortion has no psychological risks is a sign of desperation.[3]

We welcome critical analyses. The claim that abortion is beneficial to women should be reviewed similarly. Even-handed critics will quickly discover that the assumed benefits of abortion rest solely on anecdotal evidence. There are no studies documenting significant, statistically measurable benefits. Even smoking was once thought to have health benefits.[7]

Major and Gail Erlick Robinson explain our results with the hypothesis that mentally disturbed women are more likely to choose abortion. If true, this argument merely strengthens our conclusion that a history of abortion is a marker for mental illness.

Major's own research team has concluded that abortion can be the direct cause of post-traumatic stress disorder.[8] Three of my coauthors (Vincent Rue, Martha Shuping and Philip Ney) regularly treat women suffering from abortion-related psychiatric illnesses.

More research is clearly needed. Publication should not hinge on political litmus tests.

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[The author of the commentary responds:]

As Stephen Genuis observes, "it is sometimes difficult to objectively determine what is factual and credible scientific information and what represents sexual and philosophical ideology." Researcher bias clearly can affect the research process. Nowhere is this more obvious than in research on abortion. David Reardon has quite explicitly stated his intentions to use data such as those he reported in *CMAJ*[1] to affect abortion-related legislation, bring litigation against physicians who perform abortions and reduce women's access to abortion.[2]

It is an error, however, to assume that because researcher neutrality is difficult to achieve, what passes for "evidence" on both sides of politically charged issues is likely to be equally valid and deserving of equal airing. Not all research is biased. It is possible to distinguish good science from bad. Good science is based on established scientific methods, eliminates confounders and uses appropriate control or comparison groups. The study by Reardon and his associates[1] is not good science.[3] It inappropriately used women who carried a (likely wanted, planned) pregnancy to term as a comparison group for women who aborted a (likely unwanted, unplanned) pregnancy. More appropriate comparison groups include women who carried a pregnancy to term and gave the child up for adoption, and women who wanted an abortion but who were denied one or did not obtain one because of external pressures or guilt, as Aaron Keshen points out in his letter.

Reardon and associates also failed to control adequately for demographic, social and psychological differences that likely existed at the time of the pregnancy between women who subsequently aborted versus those who carried their pregnancies to term. The inference that the abortion procedure itself caused postpregnancy differences observed between these 2 groups is faulty scientific reasoning and misleading. The studies referred to by Annie Banno, all of which were conducted by Reardon, are plagued by similar methodological problems.

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[The editors respond:]

The editors of *CMAJ* respond in this issue's editorial (page 93).

Adverse events with Zyban (buproprion)

Barbara Mintzes and associates[1] expressed concern last year over differences between countries in physicians' reporting of adverse reactions to prescription drugs. To illustrate, they cited significant differences in the reported rates of adverse reactions and deaths attributed to Zyban (buproprion) in Canada and the United Kingdom. We have data suggesting that the actual rates of adverse reactions related to the use of Zyban for smoking cessation in community clinical practice may exceed rates reported elsewhere.

Zyban has been commercially available for smoking cessation since 1998. Most of the evidence pertaining to efficacy and rates of adverse reactions stems from 2 large trials,[2,3] both funded by GlaxoSmithKline, the maker of Zyban. These studies showed a relatively low rate of adverse reactions and claimed that only 6% to 8%[2] and 11.9%[3] of patients discontinued the drug because of

the adverse reactions. However, about 35% of patients overall did not complete the trials.

To determine if rates of adverse reactions were higher in clinical practice than in the literature, we undertook an independent study to examine adverse events associated with Zyban for smoking cessation in rural family practice. The study was carried out in Peace River, Alta. (population 6500) during the period April 2001 to February 2002. Patients 18 years of age or older who received a first-time prescription of Zyban for smoking cessation were enrolled and followed prospectively for 2 months. Previous Zyban users, those who were using Wellbutrin (another brand of bupropion) and those with an underlying seizure disorder were excluded from the study.

We enrolled a total of 39 patients, of whom 15 (38%) discontinued Zyban because of adverse reactions. The most common reasons for discontinuation were neuropsychiatric symptoms (tremors, agitation or confusion), insomnia and rash. An additional 7 patients (18%) decreased the dosage from twice daily to once daily because of adverse reactions. In total, 32 (82%) of the patients reported at least one adverse reaction (including neuropsychiatric symptoms reported by 16, insomnia by 12, dry mouth by 9 and rash by 7). Nine patients (23%) required additional medical care (a total of 10 visits), and one patient (3%) was admitted to hospital. Eleven (28%) of the patients quit smoking, and we are currently determining if those who quit continue to be nonsmokers.

Because of the small sample size, the generalizability of our findings is unknown. However, they indicate that rates of discontinuation because of adverse effects may exceed those previously reported.[2,3] Therefore, larger, independent, community-based studies are needed. It has been postulated that less than 10% of all adverse events are reported.[1] To improve this rate, physicians need to be more diligent in reporting adverse reactions to the Canadian Adverse Drug Reaction Monitoring Programme. Only then can we obtain a true estimate of adverse reaction rates for medications commonly prescribed in Canada.

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Competing interests: None declared.

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Graves' disease in children

Jody Ginsberg's clinical review[1] is appropriate for physicians treating adults with Graves' disease, but children with this condition may not present in the same way as adults, and the diagnosis and management of the disorder differ in several respects between adults and children.

The clinical findings in children can be similar to those in adults, often involving multiple systems in a subtle manner. Most affected children do have diffuse goitre and ocular signs, but neither is a common, isolated presenting complaint.[2] Rather, children often present with behavioural disturbances such as decreased attention span, difficulty concentrating (which leads to poorer academic performance), hyperactivity, difficulty sleeping, tachycardia, tremor and weight loss despite increased appetite.[3]

As in adults, hyperthyroidism in youth can be confirmed by measurements of serum thyroid-stimulating hormone, free thyroxine and triiodothyronine. However, a 24-hour radioiodine uptake scan is not needed to elucidate the cause of hyperthyroidism in young patients because, although other diagnostic possibilities exist, hyperthyroidism in this age group is almost always (more than 95% of cases) related to Graves' disease.[4]

The recommendation to consult a specialist to assist in managing Graves' disease is mandatory for both adults and children. However, although the treatment modalities are similar, there are variations in choice of first-line therapy. Most pediatric endocrinologists currently recommend thionamide as a first-line treatment.[5] Radioactive iodine has traditionally been used if major side effects are experienced or if the hyperthyroidism does not remit after several years of drug treatment. However, reliable clinical predictors of future relapse after medical therapy are not well established, and radioactive iodine is being increasingly used in some Canadian centres as first-line therapy for adolescents and for patients who have trouble adhering to the medication schedule.[6] Although near-total thyroidectomy is an effective treatment for Graves' disease, it is not recommended for children. However, lifelong monitoring of thyroid function is indicated for children with this disease because of the risks of relapse or hypothyroidism.[7] Young women must be educated about the potential for neonatal Graves' disease in their own children, even if they have been definitively treated with radioactive iodine.

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