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CORRIGENDUM

Corrigendum for: Effects of exposure measurement error in the analysis of health effects from traffic-related air pollution

LISA K. BAXTER, ROSALIND J. WRIGHT, CHRISTOPHER J. PACIOREK, FRANCINE LADEN, HELEN H. SUH AND JONATHAN I. LEVY

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Correction to: *Journal of Exposure Science and Environmental Epidemiology* (2010) **20,** 101–111; doi:10.1038/jes.2009.5

In the above manuscript, a correction needs to be made to Eq. (7):

Instead of:

Using a two-sided test, the power to detect a significant positive association based on a surrogate model given the power of the true exposure model is

$$\text{Power}_w \approx 2\Phi(\sqrt{R^2}(\Phi^{-1}(\text{Power}_x) + 1.96) - 1.96$$

… and the value 1.96 is the critical value under the normal distribution function for a two-sided test.

It should read:

Using a one-sided test, the power to detect significant positive associations based on a surrogate model given the power of the true exposure model is:

$$\text{Power}_w \approx \Phi(\sqrt{R^2}(\Phi^{-1}(\text{Power}_x) + 1.96) - 1.96$$

… and the value 1.96 is the critical value under the normal distribution function for a one-sided test with significance level of 2.5%.

Appendix A Corrigendum

In the fifth paragraph instead of:

… the power to detect a significant positive association using a two-sided test based on the true exposure is

$$\text{Power}_X \approx 2\Pr\left(\hat{\beta}_X > 1.96\sqrt{\text{Var}(\hat{\beta}_X)}\right)$$
$$\approx 2\Phi\left(-1.96 - \beta/\sqrt{\text{Var}(\hat{\beta}_X)}\right)$$

… and the value 1.96 is the critical value under a normal distribution.

… $\sqrt{\text{Var}(\hat{\beta}_W)} \approx \beta\left(\sqrt{R^2}(-1.96 - \Phi^{-1}(\text{Power}_X/2))\right)^{-1}$. Plugging this expression into the expression for the power to detect a significant positive association using a two-sided test based on the surrogate, we get

$$\text{Power}_W \approx 2\Phi(-1.96 - \beta/\sqrt{\text{Var}(\hat{\beta}_W)})$$
$$\approx 2\Phi(\sqrt{R^2}(\Phi^{-1}(\text{Power}_X/2) + 1.96) - 1.96)$$

it should read:

… the power to detect a significant positive association using a one-sided test based on the true exposure is

$$\text{Power}_X \approx \Pr(\hat{\beta}_X > 1.96\sqrt{\text{Var}(\hat{\beta}_X)})$$
$$\approx \Phi(-1.96 + \beta/\sqrt{\text{Var}(\hat{\beta}_X)})$$

… and the value 1.96 is the critical value under a normal distribution with a significance value of 2.5%.

… $\sqrt{\text{Var}(\hat{\beta}_W)} \approx \beta(\sqrt{R^2}(1.96 + \Phi^{-1}(\text{Power}_X)))^{-1}$. Plugging this expression into the expression for the power to detect a significant positive association using a one-sided test based on the surrogate, we get

$$\text{Power}_W \approx \Phi(-1.96 + \beta/\sqrt{\text{Var}(\hat{\beta}_W)})$$
$$\approx \Phi(-1.96 + \sqrt{R^2}(1.96 + \Phi^{-1}(\text{Power}_X)))$$