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## APPENDIX 1

### The potential for bias in estimation of ORs: a worked example

Consider the example of diabetes and the effect of unemployment status, with the following input assumptions….

- The true OR we seek to estimate (odds of occupational injury in those with diabetes versus those without)=2.0
- The RR of diabetes in employed versus unemployed men=3.0
- The estimate of prevalence of diabetes in our controls (y)=1.59%[9]
- We planned to study 1700 cases and 8500 controls….

| RR | Prevalence (%) among controls in our sample (y) | Prevalence (%) in workers (solve for 'p') | Expected OR (vs 2.0) |
|---|---|---|---|
| Diabetes | | | |
| 3.00 | 1.59=(0.921×p)+(0.079×3p) | 1.373% | 1.72 |

The extract from table 1 (above) shows that the estimated prevalence of diabetes in working controls (p) is 1.373%, and that the OR of 2.0 can be expected to be biased downwards to 1.72. This last figure is derived as follows:

If all the controls were workers, 1.373% of 8500 that is 116.705 (without rounding) would be diabetics and the remainder (8383.295) would not.

In fact, as our controls include some unemployed men, and as a whole have a prevalence of 1.59%, we estimate in error that 135.15 controls would have diabetes and 8364.85 would not.

Imagine first the 'true' 2×2 table, confined to workers, among whom the true OR for injury is 2.

| Worker controls | | | |
|---|---|---|---|
| | Diabetes? | | |
| Injury? | Yes | No | All |
| Yes | A | (1700−A) | 1700 |
| No | 116.705 | 8383.295 | 8500 |

This table has one unknown, but OR=2. Thus, (8383.295×A)/(116.705×(1700−A))=2.

Solving for 'A' gives a value of 46.05:

| Worker controls | | | |
|---|---|---|---|
| | Diabetes? | | |
| Injury? | Yes | No | All |
| Yes | 46.05 | 1653.95 | 1700 |
| No | 116.705 | 8383.295 | 8500 |

Using 'all' controls rather than 'worker' controls will alter the bottom row of this table as follows:

| All controls | | | |
|---|---|---|---|
| | Diabetes? | | |
| Injury? | Yes | No | All |
| Yes | 46.05 | 1653.95 | 1700 |
| No | 135.15 | 8364.85 | 8500 |

Thus, instead of an OR of 2, the estimated OR would become: (46.05×8364.85)/(135.15×1653.95)=1.723.

# Corrections

NO2 and children' s respiratory symptoms in the PATY study. **Pattenden S,** Hoek G, Braun-Fahrlander C *et al Occup Environ Med* 2006;**63**:828–835. This article was published with an incorrect doi of 10.1136/oem.2006.025213. The correct doi is 10.1136/oem.2005.025213.

*Occup Environ Med* 2010:**67**:877. doi:10.1136/oem.2005.025213

**Valentini E,** Ferrara M, Prasaghi F *et al*. Systematic review and meta-analysis of psychomotor effects of mobile phone electromagnetic fields. *Occup Environ Med* 2010;**67**:708–716. The citation in this review contains an error. The fourth author is De Gennaro L, not Gennaro LD.

*Occup Environ Med* 2010:**67**:877. doi:10.1136/oem.2009.047027corr1