Quality of Systematic Reviews of Observational Nontherapeutic Studies

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Abstract

Introduction

High-quality epidemiologic research is essential in reducing chronic diseases. We analyzed the quality of systematic reviews of observational nontherapeutic studies.

Methods

We searched several databases for systematic reviews of observational nontherapeutic studies that examined the prevalence of or risk factors for chronic diseases and were published in core clinical journals from 1966 through June 2008. We analyzed the quality of such reviews by using prespecified criteria and internal quality evaluation of the included studies.

Results

Of the 145 systematic reviews we found, fewer than half met each quality criterion; 49% reported study flow, 27% assessed gray literature, 2% abstracted sponsorship of individual studies, and none abstracted the disclosure of conflict of interest by the authors of individual studies. Planned, formal internal quality evaluation of included studies was reported in 37% of systematic reviews. The journal of publication, topic of review, sponsorship, and conflict of interest were not associated with better quality. Odds of formal internal quality evaluation (odds ratio [OR], 1.10 per year; 95% confidence interval [CI], 1.02-1.19) and either planned, formal internal quality evaluation or abstraction of quality criteria of included studies (OR, 1.17 per year; 95% CI, 1.08-1.26) increased over time, without positive trends in other quality criteria from 1990 through June 2008. Systematic reviews with internal quality evaluation did not meet other quality criteria more often than those that ignored the quality of included studies.

Conclusion

Collaborative efforts from investigators and journal editors are needed to improve the quality of systematic reviews.

Introduction

Valid epidemiologic research is essential in preventing chronic diseases (1-3). Assessing the quality of observational studies is an important part of evidence synthesis (4). Systematic reviews have become key tools in evidence synthesis from a growing number of epidemiologic studies (5). Producing high-quality systematic reviews is essential to developing generalizable and actionable conclusions (6,7). Quality criteria for systematic reviews have been proposed by working groups that developed the Meta-analysis of Observational Studies in Epidemiology (MOOSE), Strengthening the Reporting of Observational Studies in Epidemiology (STROBE), and a measurement tool for assessment of multiple systematic reviews (AMSTAR) (8-12). The working groups and the Cochrane handbook (13) addressed those criteria for systematic reviews that more likely result in biased results, including bias in selection of the studies or the information within studies by the reviewers (14-18) or bias in the publication of positive significant results (6,15,19,20).

Previous research and guidelines (13,21-23) focus on systematic reviews of interventional therapeutic studies.
Validity of observational nontherapeutic studies of prevalence of chronic diseases or risk factors for diseases is essential for effective preventive public health actions (24,25). Our aim was to evaluate the quality of systematic reviews of observational nontherapeutic studies that examined the incidence and prevalence of chronic conditions and risk factors for diseases. The criteria we used to determine the reporting and methodologic quality in systematic reviews were from published standards (8-12). We hypothesized that the quality of systematic reviews differs by the time when the study was published, the country in which the study was conducted, the journal of publication, the sponsorship of the study, and whether a conflict of interest was disclosed. We hypothesized also that systematic reviews with internal quality evaluation of the included studies would have better quality, demonstrating commitment to quality of evidence.

Methods

Data sources

We searched MEDLINE via PubMed and via Ovid MEDLINE, the Cochrane Library (26) and working groups, WorldCat (27), and Scirus (28) to find systematic reviews of observational nontherapeutic studies published in English from 1966 through June 2008 in core clinical journals (exact search string is listed in Appendix Table 1). We used the definitions of core clinical journals from the Abridged Index Medicus (119 indexed titles). We defined observational nontherapeutic studies as observations of patient outcomes that did not examine procedures concerned with the remedial treatment or prevention of diseases (29).

Study selection

Three investigators independently decided on the eligibility of the studies according to recommendations from the Cochrane Handbook for Systematic Reviews of Interventions (13). We reviewed abstracts to exclude comments, expert opinions, letters, case reports, systematic reviews of interventional studies, and systematic reviews of studies of diagnostic accuracy of tests.

Data extraction

Evaluations of the studies and data extraction were performed independently by 2 researchers. Predefined categorical responses to the checklist items were abstracted into our spreadsheet. Errors in data extraction were assessed by a comparison of the data charts with the original articles (13,30). Any discrepancies were discussed and resolved. The quality criteria that we abstracted were based on guidelines for determining the reporting and methodologic quality of systematic reviews (8-12).

To evaluate selection bias, we abstracted whether the authors of systematic reviews described the search strategy (yes, no, or partially); yes indicated that the authors reported time periods of searches, searched databases, and exact search string. We abstracted whether the authors of systematic reviews described study flow (yes, no, or partially); yes indicated that the authors reported the list of retrieved citations, the list of excluded studies, and justification for exclusion.

We abstracted as dichotomous variables whether the authors of systematic reviews did any of the following:

• Stated the aim of the review and the primary and secondary hypotheses of the review.
• Included or justified exclusion of articles published in languages other than English.
• Searched for gray literature, including abstracts and unpublished studies, to evaluate publication bias (21).
• Described any contact with authors of the included studies.
• Analyzed sponsorship of and conflict of interest in the included studies.

We abstracted how the authors of systematic reviews described obtained statistical methods with justification and models for pooling with fixed or random effects models in sufficient detail to be replicated (no pooling, random, or fixed). We abstracted whether the authors of pooling analyses reported statistical tests for heterogeneity and whether heterogeneity was statistically significant (not reported, not significant, or significant).

We used 3 categories to classify whether the authors of systematic reviews had evaluated the quality of included studies by using developed or previously published checklists or scales (31): 1) the authors stated planned, formal internal quality evaluations; 2) the authors abstracted selected criteria of external or internal validity without using a planned, formal, and comprehensive internal quality evaluation; and 3) the authors did not conduct
internal quality evaluations. We further categorized the studies that evaluated quality criteria to compare studies with no mention of internal quality evaluation of the included studies. We also compared studies with and without planned formal internal quality evaluation. We abstracted with dichotomous responses blinding and reliability testing (reported or not reported) of internal quality evaluations.

We abstracted several explanatory variables that could be related to the quality of systematic reviews:

- The year of publication, defined as a continuous variable. We created categories of 4- or 5-year periods: 1990 to 1994, 1995 to 1999, 2000 to 2004, and 2005 through June 2008.
- The journals of publication.
- The country where the systematic reviews were performed.
- The sponsorship of the reviews. Those that had either governmental or foundational support or were fellowships were defined as having nonprofit support.
- The disclosure of conflict of interest by authors of reviews (either not disclosed, disclosed as no conflict of interest, or disclosed conflict of interest).
- The number of disclosed relationships with industry, defined as a continuous variable.
- The sponsor’s participation in data collection, analysis, and interpretation of the results of the review.
- The review outcomes as risk factors for prevalence or incidence of chronic conditions or diseases.

Data synthesis

We summarized the results in evidence tables. We used prespecified categories of dependent and independent variables and did not force the data into binary categories for definitive tests of significance. We used univariate logistic regression to examine the association between internal quality evaluation and the year of the publication by using the Wald test. Odds ratios (ORs) were calculated with binary logit models and Fisher’s scoring method technique. We computed the fractions of systematic reviews meeting various quality criteria in each of the 4 time periods considered. The proportions of systematic reviews that met different levels of each quality criterion were evaluated by using $\chi^2$ tests and Fisher’s exact tests in cases of small numbers. All calculations were performed at 95% confidence intervals (CIs) by using 2-sided $P$ values with SAS version 9.1.3 (SAS Institute, Inc, Cary, North Carolina).

Results

We found 145 eligible systematic reviews of observational nontherapeutic studies (study flow in the Appendix Figure) (32-176). The number of published systematic reviews increased from 17 during 1990-1994 to 56 during 2005-2008. Most of the studies were conducted in the United States (55 publications) or in the United Kingdom (28 publications) (Appendix Table 2). Half of the systematic reviews (73 publications) were funded by nonprofit organizations; 56 (39%) reviews did not publish their funding sources, 4 reviews received industry support, and 10 were sponsored jointly by industry and nonprofit organizations. Almost three-fourths (106) of the authors of systematic reviews did not disclose conflict of interest; 35 publications stated that the authors do not have any conflict of interest; and 4 studies were conducted by authors who reported conflict of interest. The studies were published in 49 journals. Most systematic reviews (122 studies) assessed risk factors for chronic diseases, 19 summarized estimates of prevalence or incidence, 2 studies reported prevalence and associations with risk factors, and 2 studies examined levels of risk factors. Most studies reported incidence and risk factors for cardiovascular diseases (46 studies) or cancer (26 studies).

Quality of systematic reviews

Less than half of the studies reported study flow (49%), assessed gray literature (27%), or addressed language bias (29%) (Table 1). Only 2% of reviews abstracted sponsorship of individual studies and none abstracted the disclosure of conflict of interest by the authors of individual studies that were eligible for the reviews. Pooling was performed in 137 studies; of these, 62% used a random effects model; 57% reported detecting significant heterogeneity across the studies; and 19% did not provide any information about statistical heterogeneity in pooled estimates. The proportion of systematic reviews that met quality criteria including study flow, assessment of gray literature, or the abstraction of funding sources of included studies did not show significant trends from 1990 through 2008. The proportion of systematic reviews that assessed language bias increased from 8% during 1995-1999 to 41% during 2005-2008. In later years, more studies reported using random effects models (79% during 2005-2008 vs 39% during...
1995-1999) and tests for statistical heterogeneity (89% during 2005-2008 vs 65% during 1995-1999).

Internal quality evaluation

Planned and detailed quality assessment of included studies was reported in 37% of systematic reviews, and 18% abstracted more than 1 criterion of external or internal quality; significant positive trends were reported during the evaluated time (Table 1). Quality assessment was masked in 3 studies. Development of the appraisals, including references to previously published tools, was reported in 32 studies, but only 6 tested interobserver agreement for quality assessment.

Quality of systematic review by explanatory factors

The quality of systematic reviews did not differ much by study location or by the journal of publication. Systematic reviews of prevalence or incidence or risk factors of the diseases did not differ in their quality measures. Sponsorship was not associated with quality of the reviews. The role of conflict of interest was impossible to establish because the authors of 56 reviews did not disclose funding and authors of 106 reviews did not disclose conflict of interest.

Explanatory factors of internal quality evaluation of included studies

The journal of publication, topic of the review, and continent where the review was conducted were not associated with the likelihood of internal quality evaluation. Systematic reviews of risk factors tended to conduct internal quality evaluation of the included studies more often than reviews of incidence or prevalence or of levels of risk factors. Systematic reviews sponsored by nonprofit organizations conducted internal quality evaluations of individual studies more often than reviews that received corporate funding. Systematic reviews that disclosed conflict of interest conducted internal quality evaluation of individual studies less frequently (10 of 39 studies; 26%) than reviews with no disclosure (44 of 106 studies; 42%). Odds of formal internal quality evaluation (OR, 1.10 per year; 95% CI, 1.02-1.19) and either planned, formal internal quality evaluation or abstraction of quality criteria (OR, 1.17 per year; 95% CI, 1.08-1.26) increased over time. Disclosure of conflict of interest by the authors of systematic reviews was not associated with greater odds of internal quality evaluation.

Quality of systematic reviews by internal quality evaluation

Complete documentation of the literature search including time period, databases searched, and exact literature search strings was less common among reviews with planned, formal internal quality evaluation (48 studies, 35%) than among reviews without it (90 studies, 65%) (Table 2). However, reviews that either abstracted selected quality criteria or planned, formal internal quality evaluation reported partial (6 studies) or complete (74 studies) information about the literature search more often than studies that did not evaluate quality of included studies (64 studies). Reviews that did not justify exclusion of non-English studies ignored quality of individual studies more often (72 studies) than reviews with planned, formal internal quality evaluation (31 studies). The same pattern was present for publication bias: the reviews that did not mention gray literature also ignored the quality of individual studies. The reviews reporting attempts to contact the authors of included studies either performed planned, formal internal quality evaluation or abstracted selected quality criteria more often than reviews without such attempts (OR, 2.3; 95% CI, 1.1-4.7). Reviews with complete reporting of study flow performed planned, formal internal quality evaluation or abstracted quality criteria more often (51 studies) than reviews without study flows (20 studies). More than half of systematic reviews without planned, formal internal quality evaluation (44 studies) also did not report study flow.

The association between quality of systematic reviews and sponsor participation in the data collection, analyses, and interpretation was difficult to analyze because this information was either omitted or reported in various ways. Less than 10% of systematic reviews contained a clear statement that the sponsors did not play any role in gathering the studies or analyzing or interpreting the results and did not influence the content of the manuscript. Other reviews omitted mention of the role of the sponsor in approval of the manuscript or provided a general statement that sponsors did not influence the conclusions or the content of the paper. Two reviews included statements of unconditional or unrestricted sponsorship of the meta-analyses.

Discussion

Our analyses showed that less than half of the
systematic reviews of nontherapeutic observational studies that were published in core clinical journals met each quality criterion. Quality of systematic reviews did not improve over time. Planned, formal internal quality evaluations of the included studies was reported in less than half of systematic reviews, but the prevalence of internal quality evaluations has increased during the last decade. Our findings are in concordance with previously published methodologic analyses of systematic reviews that also found inconsistent quality and incomplete internal quality evaluation of individual studies (6). Methodologic analyses of systematic reviews that focused on particular diseases or conditions demonstrated that half of the publications had major flaws in design and reporting. For instance, systematic reviews of therapies for renal diseases failed to assess the methodologic quality of included studies (177). Methodologic analyses of systematic reviews of interventions showed that 69% of those randomly selected in MEDLINE meta-analyses did not analyze quality of trials (22). Most (68%) systematic reviews of diagnostic tests for cancer did not provide formal assessments of study quality (178). We also found that the quality of reviews did not differ among types of studies (incidence or risk factors for diseases), types of diseases, or journal of publication.

Journal commitment to high-quality research, however, was associated with improved reporting quality of the publications. For example, adoption by journals of the Consolidated Standards of Reporting Trials (CONSORT) improved the quality of the publications of interventional studies (179,180). An endorsement of the developed standards for observational studies including MOOSE and STROBE checklists may also improve quality of the publications. We did not analyze how many core clinical journals adopted these standards and how quality of the publications changed depending on this adaptation. Peer review of submitted manuscripts should include quality assessment using validated tools (12).

We could not identify the factors that can explain differences in quality of systematic reviews. The role of sponsorship and conflict of interest could not be estimated because of poor reporting of this information. The quality and reliability of quality evaluation of the included studies is unclear because development of the appraisals was described in a small proportion of systematic reviews (32 of 80 studies), and only 6 of 80 studies tested interobserver agreement for quality assessment. We did not evaluate all reviews of observational studies that were published in epidemiologic journals. However, it is unlikely that the quality of reviews published in other journals would be better than those in core clinical journals. Future research should investigate the factors that can explain differences in the quality of systematic reviews.

Peer reviewed publications of high-quality systematic reviews can provide the best available research evidence for evidence-based public health (24). Evidence-based decisions can improve public health practice in preventing incidence and progression of chronic diseases (25). In our analysis, less than half of the systematic reviews of observational nontherapeutic studies met quality criteria established in the MOOSE, STROBE, and AMSTAR statements. Internal quality evaluation of included studies should be an essential part of evidence synthesis, but only half of the reviews reported such evaluation. Collaborative efforts from investigators and journal editors are needed to improve quality of systematic reviews.

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Table 1. Quality Criteria of Systematic Reviews of Observational Nontherapeutic Studies Published in Core Clinical Journals, by Year of Publication, 1990 Through June 2008

| Evaluated Criteria                                                                 | 1990-1994, n (N = 17) | 1995-1999, n (N = 26) | 2000-2004, n (N = 46) | 2005-2008, n (N = 56) | Total, n (N = 145) | P Value<sup>a</sup> |
|------------------------------------------------------------------------------------------------------------------------------------------|------------------------|-----------------------|-----------------------|-----------------------|---------------------|----------------------|
| Literature search                                                                                                                      |                        |                       |                       |                       |                     |                      |
| No information                                                                                                                          | 0                      | 0                     | 1                     | 0                     | 1                   | .7                   |
| Documented partially                                                                                                                   | 1                      | 1                     | 3                     | 1                     | 6                   |                      |
| Complete documenting of databases used, exact search strings used, and time periods of searches                                          | 16                     | 25                    | 42                    | 55                    | 138                 |                      |
| Contact with authors of the included studies                                                                                            |                        |                       |                       |                       |                     |                      |
| No information                                                                                                                          | 13                     | 17                    | 31                    | 31                    | 92                  | .4                   |
| The authors of the review attempted to contact the authors of included studies                                                          | 4                      | 9                     | 15                    | 25                    | 53                  |                      |
| Study flow                                                                                                                               |                        |                       |                       |                       |                     |                      |
| Study flow not reported                                                                                                                 | 10                     | 15                    | 29                    | 18                    | 72                  | .04                  |
| Study flow partially reported                                                                                                            | 0                      | 0                     | 0                     | 2                     | 2                   |                      |
| Study flow reported with the list of retrieved citations, the list of excluded studies, and justification for exclusion for each study | 7                      | 11                    | 17                    | 36                    | 71                  |                      |
| Articles published in languages other than English                                                                                    |                        |                       |                       |                       |                     |                      |
| Language bias was not addressed                                                                                                         | 15                     | 24                    | 31                    | 33                    | 103                 | .01                  |
| Language bias was addressed: the authors included or justified exclusion of the non-English publications                                | 2                      | 2                     | 15                    | 23                    | 42                  |                      |
| Gray literature                                                                                                                         |                        |                       |                       |                       |                     |                      |
| Gray literature was not assessed                                                                                                        | 15                     | 17                    | 36                    | 38                    | 106                 | .25                  |
| Reporting of the method of handling abstracts and unpublished studies                                                                   | 2                      | 9                     | 10                    | 18                    | 39                  |                      |
| Conflict of interest from included studies                                                                                             |                        |                       |                       |                       |                     |                      |
| Conflict of interest in included studies was not abstracted                                                                            | 17                     | 26                    | 46                    | 56                    | 145                 | NA                   |
| Sponsorship of the included studies                                                                                                     |                        |                       |                       |                       |                     |                      |
| Sponsorship of included studies was not analyzed                                                                                         | 16                     | 25                    | 46                    | 55                    | 142                 | .45                  |
| Sponsorship of included studies was analyzed                                                                                             | 1                      | 1                     | 0                     | 1                     | 3                   |                      |

Abbreviation: NA, not applicable.
<sup>a</sup> P values for overall χ² test.

(Continued on next page)
Table 1. (continued) Quality Criteria of Systematic Reviews of Observational Nontherapeutic Studies Published in Core Clinical Journals, by Year of Publication, 1990 Through June 2008

| Evaluated Criteria                                      | 1990-1994, n (N = 17) | 1995-1999, n (N = 26) | 2000-2004, n (N = 46) | 2005-2008, n (N = 56) | Total, n (N = 145) | P Valuea |
|--------------------------------------------------------|------------------------|-----------------------|-----------------------|-----------------------|-------------------|---------|
| Pooled model obtained in the review                    |                        |                       |                       |                       |                   | <.001   |
| Pooling was not obtained                               | 2                      | 0                     | 4                     | 2                     | 8                 |         |
| Fixed effects model was obtained for meta-analyses     | 10                     | 16                    | 11                    | 10                    | 47                |         |
| Random effects model was obtained for meta-analyses    | 5                      | 10                    | 31                    | 44                    | 90                |         |
| Heterogeneity across included studies                  |                        |                       |                       |                       |                   | .04     |
| Heterogeneity across studies was not reported          | 6                      | 9                     | 7                     | 6                     | 28                |         |
| Heterogeneity across studies was not significant       | 5                      | 6                     | 13                    | 11                    | 35                |         |
| Heterogeneity across studies was significant           | 6                      | 11                    | 26                    | 39                    | 82                |         |
| Formal internal quality evaluation of included studies |                        |                       |                       |                       |                   | <.001   |
| Planned, formal internal quality evaluation with       | 3                      | 6                     | 20                    | 25                    | 54                |         |
| developed or previously published checklists or scales |                        |                       |                       |                       |                   |         |
| Some selected criteria of external or internal quality  | 2                      | 3                     | 1                     | 20                    | 26                | <.001   |
| of included studies were abstracted without planned,   |                        |                       |                       |                       |                   |         |
| formal internal quality evaluation                     |                        |                       |                       |                       |                   |         |
| No internal quality evaluation                         | 12                     | 17                    | 25                    | 11                    | 65                |         |
| Reliability of internal quality evaluation reported    | 2                      | 4                     | 8                     | 18                    | 32                | .99     |
| Internal quality evaluation was masked                 | 1                      | 1                     | 0                     | 1                     | 3                 | .11     |

Abbreviation: NA, not applicable.

a P values for overall \( \chi^2 \) test.

Table 2. Quality of Systematic Reviews, by Internal Quality Evaluation of Included Studies, 1990 Through June 2008

| Quality Criterion                                      | Planned, Formal Internal Quality Evaluation or Abstraction of Some Quality Criteria, n | Neither Planned, Formal Internal Quality Evaluation nor Abstraction of Some Quality Criteria, n | Planned, Formal Internal Quality Evaluation, n | No Planned, Formal Internal Quality Evaluation, n |
|--------------------------------------------------------|--------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|-----------------------------------------------|--------------------------------------------------|
| Literature search                                       | P = .04a                                                                             | P = .004b                                                                                        |                                               |                                                  |
| No information                                         | 0                                                                                   | 1                                                                                                | 0                                             | 1                                                |
| Documented partially                                   | 6                                                                                   | 0                                                                                                | 6                                             | 0                                                |

a P value for overall \( \chi^2 \) test between planned, formal internal quality evaluation or abstraction of some quality criteria versus neither planned, formal internal quality evaluation nor abstraction of some quality criteria.

b P value for overall \( \chi^2 \) test between planned, formal internal quality evaluation versus no planned, formal internal quality evaluation.

(Continued on next page)
Table 2. (continued) Quality of Systematic Reviews, by Internal Quality Evaluation of Included Studies, 1990 Through June 2008

| Quality Criterion                                                                 | Planned, Formal Internal Quality Evaluation or Abstraction of Some Quality Criteria, n | Neither Planned, Formal Internal Quality Evaluation nor Abstraction of Some Quality Criteria, n | Planned, Formal Internal Quality Evaluation, n | No Planned, Formal Internal Quality Evaluation, n |
|---------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|------------------------------------------------|--------------------------------------------------|
| Complete documenting of databases used, exact search strings used, and time periods of searches | 74                                                                                         | 64                                                                                             | 48                                                                                           | 90                                                                                           |
| Contact with authors of the included studies                                    | $P = .02^a$                                                                               | $P = .25^b$                                                                                   |                                                |                                                |
| No information                                                                  | 44                                                                                         | 48                                                                                             | 31                                                                                           | 61                                                                                           |
| The authors of the review attempted to contact the authors of included studies   | 36                                                                                         | 17                                                                                             | 23                                                                                           | 30                                                                                           |
| Study flow                                                                      | $P < .001^a$                                                                               | $P = .003^b$                                                                                  |                                                |                                                |
| Study flow not reported                                                         | 28                                                                                         | 44                                                                                             | 17                                                                                           | 55                                                                                           |
| Study flow partially reported                                                    | 1                                                                                          | 1                                                                                              | 1                                                                                             | 1                                                                                             |
| Study flow reported with the list of retrieved citations, the list of excluded studies, and justification for exclusion for each study | 51                                                                                         | 20                                                                                             | 36                                                                                           | 35                                                                                           |
| Articles published in languages other than English                              | $P = .001^a$                                                                               | $P = .01^b$                                                                                   |                                                |                                                |
| No information                                                                  | 48                                                                                         | 55                                                                                             | 31                                                                                           | 72                                                                                           |
| Inclusion of non-English studies or justification for exclusion                  | 32                                                                                         | 10                                                                                             | 23                                                                                           | 19                                                                                           |
| Gray literature                                                                 | $P = .09^a$                                                                               | $P = .04^b$                                                                                  |                                                |                                                |
| No information                                                                  | 54                                                                                         | 52                                                                                             | 34                                                                                           | 72                                                                                           |
| Reporting of the method of handling abstracts and unpublished studies            | 26                                                                                         | 13                                                                                             | 20                                                                                           | 19                                                                                           |
| Conflict of interest from included studies                                      | No information                                                                            | 80                                                                                             | 65                                                                                           | 54                                                                                           | 91                                                                                           |
| Sponsorship of the included studies                                            | $P = .44^a$                                                                               | $P = .18^b$                                                                                  |                                                |                                                |
| No information                                                                  | 79                                                                                         | 63                                                                                             | 54                                                                                           | 88                                                                                           |
| Sponsorship of included studies was abstracted                                   | 1                                                                                          | 2                                                                                              | 0                                                                                             | 3                                                                                             |
| Pooled model obtained in the review                                             | $P < .001^a$                                                                               | $P = .06^b$                                                                                  |                                                |                                                |
| Not applicable (no pooling)                                                     | 6                                                                                          | 2                                                                                              | 5                                                                                             | 3                                                                                             |
| Fixed effects model                                                             | 15                                                                                         | 32                                                                                             | 12                                                                                           | 35                                                                                           |
| Random effects model                                                            | 59                                                                                         | 31                                                                                             | 37                                                                                           | 53                                                                                           |

$^a$ $P$ value for overall $\chi^2$ test between planned, formal internal quality evaluation or abstraction of some quality criteria versus neither planned, formal internal quality evaluation nor abstraction of some quality criteria.

$^b$ $P$ value for overall $\chi^2$ test between planned, formal internal quality evaluation versus no planned, formal internal quality evaluation.
Quality Criterion

Definition of Formal Internal Quality Evaluation

| Planned, Formal Internal Quality Evaluation or Abstraction of Some Quality Criteria, n | Neither Planned, Formal Internal Quality Evaluation nor Abstraction of Some Quality Criteria, n | Planned, Formal Internal Quality Evaluation, n | No Planned, Formal Internal Quality Evaluation, n |
|---|---|---|---|
| Heterogeneity across included studies | $P = .27^a$ | $P = .67^b$ |
| Not reported | 13 | 15 | 9 | 19 |
| Heterogeneity was not significant | 17 | 18 | 15 | 20 |
| Heterogeneity was significant at least for one association | 50 | 32 | 30 | 52 |

$^a$ P value for overall $\chi^2$ test between planned, formal internal quality evaluation or abstraction of some quality criteria versus neither planned, formal internal quality evaluation nor abstraction of some quality criteria.

$^b$ P value for overall $\chi^2$ test between planned, formal internal quality evaluation versus no planned, formal internal quality evaluation.

Appendix

Table 1. Search Strategy and Exact Search Strings Used to Identify Systematic Reviews of Observational Studies, Scales and Checklists for Internal Quality Evaluation, and Studies About Bias in Observational Research, 1966 Through June 2008

| Search Method | No. of Articles Identified |
|---|---|
| Search strategy for Ovid MEDLINE | |
| 1. exp Research Design/st [Standards] | 4,303 |
| 2. exp Chronic Disease/ep [Epidemiology] | 1,619 |
| 3. exp Urinary Incontinence/ep [Epidemiology] | 1,155 |
| 4. exp Fecal Incontinence/ep [Epidemiology] | 328 |
| 5. exp "Sleep Initiation and Maintenance Disorders"/ep [Epidemiology] | 565 |
| 6. exp Depression/ep [Epidemiology] | 4,700 |
| 7. exp Depressive Disorder/ep [Epidemiology] | 6,816 |
| 8. exp Myocardial Infarction/ | 43,531 |
| 9. 6 or 7 | 11,214 |
| 10. 8 and 9 | 105 |
| 11. 2 or 3 or 4 or 5 or 10 | 3,636 |
| 12. 1 and 11 | 9 |
| 13. exp Data Collection/mt, st [Methods, Standards] | 36,173 |
| 14. exp "Bias (Epidemiology)"/ | 25,369 |

Abbreviations: MeSH, Medical Subject Heading term; sb, subset; CN, corporate author.

(Continued on next page)
Appendix Table 1. (continued) Search Strategy and Exact Search Strings Used to Identify Systematic Reviews of Observational Studies, Scales and Checklists for Internal Quality Evaluation, and Studies About Bias in Observational Research, 1966 Through June 2008

| Search Method | No. of Articles Identified |
|---------------|---------------------------|
| 15. exp Questionnaires/st [Standards] | 3,879 |
| 16. exp Evidence-Based Medicine/ | 27,487 |
| 17. 13 or 14 or 15 or 16 | 86,857 |
| 18. 11 and 17 | 127 |
| 19. 12 or 18 | 133 |
| 20. limit 19 to english language | 124 |
| 21. exp “Predictive Value of Tests”/ | 62,290 |
| 22. exp “Reproducibility of Results”/ | 126,475 |
| 23. 21 or 22 | 182,941 |
| 24. 11 and 23 | 126 |
| 25. limit 24 to english language | 121 |
| 26. 20 or 25 | 224 |
| 27. exp randomized controlled trial/ | 151,027 |
| 28. 11 and 27 | 74 |
| 29. exp research design/ | 134,468 |
| 30. 28 and 29 | 15 |
| 31. 1 and 16 | 547 |
| 32. ep.fs. | 434,923 |
| 33. exp epidemiology/ | 6,500 |
| 34. 32 or 33 | 437,784 |
| 35. 31 and 34 | 29 |
| 36. exp incidence/ | 81,260 |
| 37. exp prevalence/ | 83,713 |
| 38. 36 or 37 | 157,239 |
| 39. 31 and 38 | 14 |
| 40. 26 or 30 or 35 or 39 | 268 |
| 41. limit 40 to english language | 267 |
| 42. limit 41 to journal article | 251 |
| 43. from 42 keep 1:251 | 251 |

Abbreviations: MeSH, Medical Subject Heading term; sb, subset; CN, corporate author.

(Continued on next page)
Appendix Table 1. (continued) Search Strategy and Exact Search Strings Used to Identify Systematic Reviews of Observational Studies, Scales and Checklists for Internal Quality Evaluation, and Studies About Bias in Observational Research, 1966 Through June 2008

| Search Method | No. of Articles Identified |
|---------------|---------------------------|
| MEDLINE search via PubMed | |
| (“Biomedical Research/methods”[MeSH] OR “Biomedical Research/organization and administration”[MeSH] OR “Biomedical Research/standards”[MeSH] OR “Biomedical Research/statistics and numerical data”[MeSH] OR “Biomedical Research/trends”[MeSH]) Limits: Humans, Journal Article, English | 3,703 |
| “Epidemiologic Studies”[MeSH] AND “Research Design/standards”[MeSH] AND (“Evaluation Studies as Topic/classification”[MeSH] OR “Evaluation Studies as Topic/methods”[MeSH] OR “Evaluation Studies as Topic/standards”[MeSH]) Limits: Humans, Journal Article, English | 59 |
| “Publishing/standards”[MeSH] AND “Epidemiologic Methods”[MeSH] AND “Research Design/standards”[MeSH] Limits: Humans, Journal Article, English | 65 |
| “STROBE Initiative”[Corporate Author] | 10 |
| “Bias (Epidemiology)”[MeSH] AND “Epidemiologic Studies”[MeSH] AND “Epidemiologic Methods”[MeSH] AND “Research Design/standards”[MeSH] Limits: Humans, Journal Article, English | 97 |
| “Evidence-Based Medicine”[MeSH] AND “Epidemiologic Studies”[MeSH] AND “Epidemiologic Methods”[MeSH] AND “Research Design/standards”[MeSH] Limits: Humans, Journal Article, English | 25 |
| “Research Design/standards”[MeSH] AND “Epidemiologic Studies”[MeSH] AND “Epidemiologic Measurements”[MeSH] AND “Bias (Epidemiology)”[MeSH] Limits: Humans, Journal Article, English AND “Incidence”[MeSH] Limits: Humans, Journal Article, English | 8 |
| “Research Design/standards”[MeSH] AND “Epidemiologic Studies”[MeSH] AND “Epidemiologic Measurements”[MeSH] AND “Bias (Epidemiology)”[MeSH] Limits: Humans, Journal Article, English AND “Prevalence”[MeSH] Limits: Humans, Journal Article, English | 7 |
| (“Prevalence”[MeSH]) AND systematic[sb] “Working group” Limits: English | 15 |
| [CN] Limits: Humans, Meta-Analysis, English, Core clinical journals | 2 |
| (“Prevalence”[MeSH]) AND systematic[sb] Limits: Humans, Meta-Analysis, English, Core clinical journals | 83 |
| Moher D[author] | 198 |
| “Epidemiologic Studies”[MeSH] Limits: Humans, Meta-Analysis, English AND “Incidence”[MeSH] Limits: Humans, Meta-Analysis, English Limits: Humans, Meta-Analysis, English, Core clinical journals | 57 |
| “Epidemiologic Studies”[MeSH] AND “Incidence”[MeSH] Limits: Humans, Meta-Analysis, English | 236 |
| “Epidemiologic Studies”[MeSH] AND “Incidence”[MeSH] AND Evidence Limits: Humans, Meta-Analysis, English | 52 |
| “Incidence”[MeSH] Limits: Humans, Meta-Analysis, English | 635 |
| “Risk”[MeSH] AND “Epidemiologic Studies”[MeSH] Limits: Humans, Meta-Analysis, English, Core clinical journals | 273 |
| “Prevalence”[MeSH] Limits: Humans, Meta-Analysis, English, Core clinical journals | 84 |
| Altman DG[author] | 7 |
| Higgins J[author] | 3 |

Abbreviations: MeSH, Medical Subject Heading term; sb, subset; CN, corporate author.

(Continued on next page)
| Search Method                                                                 | No. of Articles Identified |
|------------------------------------------------------------------------------|---------------------------|
| MEDLINE search via PubMed (continued)                                        |                           |
| "Review Literature as Topic"[MeSH] AND "Research Design/standards"[MeSH] AND "Epidemiologic Studies"[MeSH] Limits: Humans, English, Core clinical journals | 0                         |
| "Review Literature as Topic"[MeSH] AND "Epidemiologic Studies"[MeSH] AND "Quality control"[MeSH] | 1                         |
| "Incidence"[MeSH] AND "Chronic Disease/epidemiology"[MeSH] AND "Peer Review, Research"[MeSH] AND "Research Design/standards"[MeSH] | 0                         |
| "Incidence"[MeSH] AND "Chronic Disease/epidemiology"[MeSH] AND "Peer Review, Research"[MeSH] AND "Quality control"[MeSH] | 0                         |
| "Incidence"[MeSH] AND "Chronic Disease/epidemiology"[MeSH] AND "Research Design/standards"[MeSH] | 0                         |
| "Incidence"[MeSH] AND "Chronic Disease/epidemiology"[MeSH] AND "Quality control"[MeSH] | 0                         |
| "Incidence"[MeSH] AND "Chronic Disease/epidemiology"[MeSH] AND "Research Design/standards"[MeSH] OR "Data Collection/standards"[MeSH] | 5                         |
| "Incidence"[MeSH] AND "Chronic Disease/epidemiology"[MeSH] AND "Bias (Epidemiology)"[MeSH] | 1                         |
| "Incidence"[MeSH] AND "Chronic Disease/epidemiology"[MeSH] AND "Questionnaires/methods"[MeSH] OR "Questionnaires/standards"[MeSH] | 0                         |
| "Incidence"[MeSH] AND "Chronic Disease/epidemiology"[MeSH] AND "Evidence-Based Medicine"[MeSH] | 2                         |
| "Incidence"[MeSH] AND "Chronic Disease/epidemiology"[MeSH] AND "Reproducibility of Results"[MeSH] | 3                         |
| "Prevalence"[MeSH] AND "Chronic Disease/epidemiology"[MeSH] AND "Peer Review, Research"[MeSH] AND "Research Design/standards"[MeSH] | 0                         |
| "Prevalence"[MeSH] AND "Chronic Disease/epidemiology"[MeSH] AND "Peer Review, Research"[MeSH] AND "Quality control"[MeSH] | 0                         |
| "Prevalence"[MeSH] AND "Chronic Disease/epidemiology"[MeSH] AND "Research Design/standards"[MeSH] | 0                         |
| "Prevalence"[MeSH] AND "Chronic Disease/epidemiology"[MeSH] AND "Quality control"[MeSH] | 0                         |
| "Prevalence"[MeSH] AND "Chronic Disease/epidemiology"[MeSH] AND "Research Design/standards"[MeSH] OR "Data Collection/standards"[MeSH] | 16                        |
| "Prevalence"[MeSH] AND "Chronic Disease/epidemiology"[MeSH] AND "Bias (Epidemiology)"[MeSH] | 6                         |
| "Prevalence"[MeSH] AND "Chronic Disease/epidemiology"[MeSH] AND "Questionnaires/methods"[MeSH] OR "Questionnaires/standards"[MeSH] | 1                         |
| "Prevalence"[MeSH] AND "Chronic Disease/epidemiology"[MeSH] AND "Evidence-Based Medicine"[MeSH] | 0                         |
| "Prevalence"[MeSH] AND "Chronic Disease/epidemiology"[MeSH] AND "Reproducibility of Results"[MeSH] | 12                        |
| "Risk Factors"[MeSH] AND "Chronic Disease/epidemiology"[MeSH] AND "Peer Review, Research"[MeSH] AND "Research Design/standards"[MeSH] | 0                         |
| "Risk Factors"[MeSH] AND "Chronic Disease/epidemiology"[MeSH] AND "Peer Review, Research"[MeSH] AND "Quality control"[MeSH] | 0                         |
| "Risk Factors"[MeSH] AND "Chronic Disease/epidemiology"[MeSH] AND "Research Design/standards"[MeSH] | 1                         |
| "Risk Factors"[MeSH] AND "Chronic Disease/epidemiology"[MeSH] AND "Data Collection/methods"[MeSH] OR "Data Collection/standards"[MeSH] | 18                        |

Abbreviations: MeSH, Medical Subject Heading term; sb, subset; CN, corporate author.

(Continued on next page)
Appendix Table 1. (continued) Search Strategy and Exact Search Strings Used to Identify Systematic Reviews of Observational Studies, Scales and Checklists for Internal Quality Evaluation, and Studies About Bias in Observational Research, 1966 Through June 2008

| Search Method                                                                 | No. of Articles Identified |
|------------------------------------------------------------------------------|----------------------------|
| MEDLINE search via PubMed (continued)                                        |                            |
| “Risk Factors”[MeSH] AND “Chronic Disease/epidemiology”[MeSH] AND “Bias (Epidemiology)”[MeSH] | 7                          |
| “Risk Factors”[MeSH] AND “Chronic Disease/epidemiology”[MeSH] AND (“Questionnaires/methods”[MeSH] OR “Questionnaires/standards”[MeSH]) | 1                          |
| “Risk Factors”[MeSH] AND “Chronic Disease/epidemiology”[MeSH] AND “Evidence-Based Medicine”[MeSH] | 4                          |
| “Risk Factors”[MeSH] AND “Chronic Disease/epidemiology”[MeSH] AND “Reproducibility of Results”[MeSH] | 10                         |
| “Health Care Quality, Access, and Evaluation”[MeSH] AND “Chronic Disease/epidemiology”[MeSH] AND “Peer Review, Research”[MeSH] AND “Research Design/standards”[MeSH] | 0                          |
| “Health Care Quality, Access, and Evaluation”[MeSH] AND “Chronic Disease/epidemiology”[MeSH] AND “Peer Review, Research”[MeSH] | 0                          |
| “Health Care Quality, Access, and Evaluation”[MeSH] AND “Chronic Disease/epidemiology”[MeSH] AND “Research Design/standards”[MeSH] | 4                          |
| “Health Care Quality, Access, and Evaluation”[MeSH] AND “Chronic Disease/epidemiology”[MeSH] AND “Evidence-Based Medicine”[MeSH] | 8                          |
| “Health Care Quality, Access, and Evaluation”[MeSH] AND “Chronic Disease/epidemiology”[MeSH] AND “Bias (Epidemiology)”[MeSH] | 33                         |
| “Models, Statistical”[MeSH] AND “Risk Factors”[MeSH] AND “Chronic Disease/epidemiology”[MeSH] AND “Research Design/standards”[MeSH] | 0                          |
| “Models, Statistical”[MeSH] AND “Incidence”[MeSH] AND “Chronic Disease/epidemiology”[MeSH] AND “Research Design/standards”[MeSH] | 0                          |
| “Models, Statistical”[MeSH] AND “Prevalence”[MeSH] AND “Chronic Disease/epidemiology”[MeSH] AND “Research Design/standards”[MeSH] | 0                          |
| “Epidemiologic Studies”[MeSH] AND “Models, Statistical”[MeSH] AND “Research Design/standards”[MeSH] | 47                         |
| “Prevalence”[MeSH] AND “Epidemiologic Studies”[MeSH] AND “Models, Statistical”[MeSH] AND “Bias (Epidemiology)”[MeSH] | 61                         |
| “Incidence”[MeSH] AND “Epidemiologic Studies”[MeSH] AND “Models, Statistical”[MeSH] AND “Bias (Epidemiology)”[MeSH] | 66                         |
| “Research Design/standards”[MeSH] AND (“Biomedical Research/methods”[MeSH] OR “Biomedical Research/organization and administration”[MeSH] OR “Biomedical Research/standards”[MeSH] OR “Biomedical Research/statistics and numerical data”[MeSH] OR “Biomedical Research/trends”[MeSH]) Limits: Humans, Journal Article, English | 62                         |

Abbreviations: MeSH, Medical Subject Heading term; sb, subset; CN, corporate author.
Table 2. Quality of Systematic Review and Meta-Analyses of Nontherapeutic Observational Studies Published in Core Clinical Journals, 1990 Through June 2008

| Publication Characteristics | Outcome | Estimate | Assessment of Quality of Included Studies |
|-----------------------------|---------|----------|----------------------------------------|
| Bracken, 1990 (32)          | Congenital malformations in offspring | Risk | No |
| Country: United States      |         |          |                                        |
| Journal: Obstet Gynecol     |         |          |                                        |
| Sponsorship: Not reported   |         |          |                                        |
| Conflict of Interest (COI): Not reported | | | |
| Sponsor participation in data analyses: Not reported | | | |
| Romieu et al, 1990 (33)     | Breast cancer | Risk | Quality criteria abstracted |
| Country: United States      |         |          |                                        |
| Journal: Cancer             |         |          |                                        |
| Sponsorship: Government     |         |          |                                        |
| COI: Not reported           |         |          |                                        |
| Sponsor participation in data analyses: Not reported | | | |
| Haughey et al, 1992 (34)    | Second malignant tumors in head and neck cancer | Risk | No |
| Country: United States      |         |          |                                        |
| Journal: Ann Otol Rhinol Laryngol | | | |
| Sponsorship: Not reported   |         |          |                                        |
| COI: Not reported           |         |          |                                        |
| Sponsor participation in data analyses: Not reported | | | |

(Continued on next page)
Appendix Table 2. (continued) Quality of Systematic Review and Meta-Analyses of Nontherapeutic Observational Studies Published in Core Clinical Journals, 1990 Through June 2008

| Publication Characteristics | Outcome                                | Estimate     | Assessment of Quality of Included Studies |
|-----------------------------|----------------------------------------|--------------|------------------------------------------|
| Lemon et al, 1992 (35)      | Nonfamilial breast cancer              | Continuous variable | No                                       |
| Country: United States      |                                        |              |                                          |
| Journal: Cancer             |                                        |              |                                          |
| Sponsorship: Government     |                                        |              |                                          |
| COI: Not reported           |                                        |              |                                          |
| Sponsor participation in data analyses: Not reported |               |              |                                          |
| McKenna, 1992 (36)          | Differences in vitamin D status        | Prevalence   | Quality criteria abstracted              |
| Country: United Kingdom     |                                        |              |                                          |
| Journal: Am J Med           |                                        |              |                                          |
| Sponsorship: Nonprofit organization, nursing home |       |              |                                          |
| COI: Not reported           |                                        |              |                                          |
| Sponsor participation in data analyses: Not reported |               |              |                                          |
| Morris et al, 1992 (37)     | Cancer                                 | Risk         | Yes                                      |
| Country: United States      |                                        |              |                                          |
| Journal: Am J Public Health |                                        |              |                                          |
| Sponsorship: Not reported   |                                        |              |                                          |
| COI: Not reported           |                                        |              |                                          |
| Sponsor participation in data analyses: Not reported |               |              |                                          |
| Myers and Basinski, 1992 (38)| Coronary heart disease                 | Risk         | No                                       |
| Country: Canada             |                                        |              |                                          |
| Journal: Arch Intern Med    |                                        |              |                                          |
| Sponsorship: Nonprofit organization, award |         |              |                                          |
| COI: Not reported           |                                        |              |                                          |
| Sponsor participation in data analyses: Not reported |               |              |                                          |
| Becker et al, 1993 (39)     | Survival of cardiac arrest             | Risk         | No                                       |
| Country: United States      |                                        |              |                                          |
| Journal: Ann Emerg Med      |                                        |              |                                          |
| Sponsorship: Not reported   |                                        |              |                                          |
| COI: Not reported           |                                        |              |                                          |
| Sponsor participation in data analyses: Not reported |               |              |                                          |
| Brownson et al, 1993 (40)   | Adult leukemia                         | Risk         | Yes                                      |
| Country: United States      |                                        |              |                                          |
| Journal: Arch Intern Med    |                                        |              |                                          |
| Sponsorship: Not reported   |                                        |              |                                          |
| COI: Not reported           |                                        |              |                                          |
| Sponsor participation in data analyses: Not reported |               |              |                                          |
| Ernst and Resch, 1993 (41)  | Cardiovascular risk factor             | Risk         | No                                       |
| Country: Austria            |                                        |              |                                          |
| Journal: Ann Intern Med     |                                        |              |                                          |
| Sponsorship: Not reported   |                                        |              |                                          |
| COI: Not reported           |                                        |              |                                          |
| Sponsor participation in data analyses: Not reported |               |              |                                          |
Appendix Table 2. (continued) Quality of Systematic Review and Meta-Analyses of Nontherapeutic Observational Studies Published in Core Clinical Journals, 1990 Through June 2008

| Publication Characteristics | Outcome | Estimate | Assessment of Quality of Included Studies |
|-----------------------------|---------|----------|------------------------------------------|
| Katerndahl, 1993 (42)       | Panic disorder and mitral valve prolapse | Risk | Yes |
| Country: United States      |         |          |                                           |
| Journal: J Nerv Ment Dis    |         |          |                                           |
| Sponsorship: Not reported   |         |          |                                           |
| COI: Not reported           |         |          |                                           |
| Sponsor participation in data analyses: Not reported | | | |
| Harris and Barraclough, 1994 (43) | Suicide | Risk | No |
| Country: United Kingdom     |         |          |                                           |
| Journal: Medicine           |         |          |                                           |
| Sponsorship: Industry       |         |          |                                           |
| COI: Not reported           |         |          |                                           |
| Sponsor participation in data analyses: Not reported | | | |
| Kawachi et al, 1994 (44)    | Coronary heart disease | Risk | No |
| Country: United States      |         |          |                                           |
| Journal: Br Heart J         |         |          |                                           |
| Sponsorship: Industry, scholarship | | | |
| COI: Not reported           |         |          |                                           |
| Sponsor participation in data analyses: Not reported | | | |
| Law et al, 1994 (45)        | Hazards of reducing serum cholesterol | Risk | No |
| Country: United Kingdom     |         |          |                                           |
| Journal: BMJ                |         |          |                                           |
| Sponsorship: Not reported   |         |          |                                           |
| COI: Not reported           |         |          |                                           |
| Sponsor participation in data analyses: Not reported | | | |
| Law et al, 1994 (46)        | Ischemic heart disease | Risk | No |
| Country: United Kingdom     |         |          |                                           |
| Journal: BMJ                |         |          |                                           |
| Sponsorship: Not reported   |         |          |                                           |
| COI: Not reported           |         |          |                                           |
| Sponsor participation in data analyses: Not reported | | | |
| Steffen et al, 1994 (47)    | Hepatitis A | Risk | No |
| Country: Switzerland        |         |          |                                           |
| Journal: JAMA               |         |          |                                           |
| Sponsorship: Not reported   |         |          |                                           |
| COI: Not reported           |         |          |                                           |
| Sponsor participation in data analyses: Not reported | | | |
| Zhang and Begg, 1994 (48)   | Cervical neoplasia | Risk | No |
| Country: United States      |         |          |                                           |
| Journal: Int J Epidemiol    |         |          |                                           |
| Sponsorship: Government     |         |          |                                           |
| COI: Not reported           |         |          |                                           |
| Sponsor participation in data analyses: Not reported | | | |

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### Appendix Table 2. (continued) Quality of Systematic Review and Meta-Analyses of Nontherapeutic Observational Studies Published in Core Clinical Journals, 1990 Through June 2008

| Publication Characteristics                                      | Outcome                      | Estimate | Assessment of Quality of Included Studies |
|------------------------------------------------------------------|------------------------------|----------|-----------------------------------------|
| **Everhart and Wright, 1995 (49)**                              | Pancreatic cancer            | Risk     | No                                      |
| Country: United States                                          |                              |          |                                         |
| Journal: JAMA                                                  |                              |          |                                         |
| Sponsorship: Not reported                                       |                              |          |                                         |
| COI: Not reported                                               |                              |          |                                         |
| Sponsor participation in data analyses: Not reported             |                              |          |                                         |
| **Feinberg et al, 1995 (50)**                                  | Atrial fibrillation          | Prevalence| No                                      |
| Country: United States                                          |                              |          |                                         |
| Journal: Arch Intern Med                                        |                              |          |                                         |
| Sponsorship: Not reported                                       |                              |          |                                         |
| COI: Not reported                                               |                              |          |                                         |
| Sponsor participation in data analyses: Not reported             |                              |          |                                         |
| **Ritchie and Kildea, 1995 (51)**                              | Senile dementia              | Prevalence| No                                      |
| Country: France                                                |                              |          |                                         |
| Journal: Lancet                                                |                              |          |                                         |
| Sponsorship: Not reported                                       |                              |          |                                         |
| COI: Not reported                                               |                              |          |                                         |
| Sponsor participation in data analyses: Not reported             |                              |          |                                         |
| **Raman-Wilms et al, 1995 (52)**                               | Fetal genital effects        | Risk     | No                                      |
| Country: Canada                                                |                              |          |                                         |
| Journal: Obstet Gynecol                                         |                              |          |                                         |
| Sponsorship: Not reported                                       |                              |          |                                         |
| COI: Not reported                                               |                              |          |                                         |
| Sponsor participation in data analyses: Not reported             |                              |          |                                         |
| **Hatsukami and Fischman, 1996 (53)**                          | Use of crack cocaine and cocaine hydrochloride | Prevalence | No                                      |
| Country: United States                                          |                              |          |                                         |
| Journal: JAMA                                                  |                              |          |                                         |
| Sponsorship: Not reported                                       |                              |          |                                         |
| COI: Not reported                                               |                              |          |                                         |
| Sponsor participation in data analyses: Not reported             |                              |          |                                         |
| **Hill and Schoener, 1996 (54)**                               | Attention deficit hyperactivity disorder | Prevalence | No                                      |
| Country: United States                                          |                              |          |                                         |
| Journal: Am J Psychiatry                                        |                              |          |                                         |
| Sponsorship: Not reported                                       |                              |          |                                         |
| COI: Not reported                                               |                              |          |                                         |
| Sponsor participation in data analyses: Not reported             |                              |          |                                         |
| **Hackshaw et al, 1997 (55)**                                  | Lung cancer                  | Risk     | No                                      |
| Country: United Kingdom                                         |                              |          |                                         |
| Journal: BMJ                                                   |                              |          |                                         |
| Sponsorship: Government                                        |                              |          |                                         |
| COI: Reported as not a conflict of interest                     |                              |          |                                         |
| Sponsor participation in data analyses: "The views expressed are those of the authors and not necessarily those of the Department of Health." |                              |          |                                         |

(Continued on next page)
Appendix Table 2. (continued) Quality of Systematic Review and Meta-Analyses of Nontherapeutic Observational Studies Published in Core Clinical Journals, 1990 Through June 2008

| Publication Characteristics | Outcome | Estimate | Assessment of Quality of Included Studies |
|-----------------------------|---------|----------|------------------------------------------|
| Kluijtmans et al, 1997 (56)  | Coronary artery disease | Risk | No |
| Country: Netherlands        |         |          |                                          |
| Journal: Circulation       |         |          |                                          |
| Sponsorship: Nonprofit organization, industry |         |          |                                          |
| COI: Not reported          |         |          |                                          |
| Sponsor participation in data analyses: Not reported |         |          |                                          |
| Law and Hackshaw, 1997 (57) | Hip fracture | Risk | No |
| Country: United Kingdom    |         |          |                                          |
| Journal: BMJ               |         |          |                                          |
| Sponsorship: None          |         |          |                                          |
| COI: Reported as not a conflict of interest |         |          |                                          |
| Sponsor participation in data analyses: None |         |          |                                          |
| Law et al, 1997 (58)       | Ischemic heart disease | Risk | No |
| Country: United Kingdom    |         |          |                                          |
| Journal: BMJ               |         |          |                                          |
| Sponsorship: Government    |         |          |                                          |
| COI: Reported as not a conflict of interest |         |          |                                          |
| Sponsor participation in data analyses: “The Department of Health (England) supported this work, although the views are our own.” |         |          |                                          |
| Danesh et al, 1998 (59)    | Coronary heart disease | Risk | Yes |
| Country: United Kingdom    |         |          |                                          |
| Journal: JAMA              |         |          |                                          |
| Sponsorship: Scholarship, nonprofit organization |         |          |                                          |
| COI: Not reported          |         |          |                                          |
| Sponsor participation in data analyses: Not reported |         |          |                                          |
| French and Brocklehurst, 1998 (60) | Survival in women infected with human immunodeficiency virus | Risk | Yes |
| Country: United Kingdom    |         |          |                                          |
| Journal: Br J Obstet Gynaecol |         |          |                                          |
| Sponsorship: Not reported |         |          |                                          |
| COI: Not reported          |         |          |                                          |
| Sponsor participation in data analyses: Not reported |         |          |                                          |
| Forgie et al, 1998 (61)    | Allogeneic blood transfusion | Risk | No |
| Country: Canada            |         |          |                                          |
| Journal: Arch Intern Med   |         |          |                                          |
| Sponsorship: Industry, government, fellowships, nonprofit organization |         |          |                                          |
| COI: Not reported          |         |          |                                          |
| Sponsor participation in data analyses: Not reported |         |          |                                          |

(Continued on next page)
Appendix Table 2. (continued) Quality of Systematic Review and Meta-Analyses of Nontherapeutic Observational Studies Published in Core Clinical Journals, 1990 Through June 2008

| Publication Characteristics | Outcome                                      | Estimate | Assessment of Quality of Included Studies |
|-----------------------------|----------------------------------------------|----------|------------------------------------------|
| **Huang et al, 1998 (62)**  | Gastric cancer                               | Risk     | Yes                                      |
| **Country**: Canada         |                                              |          |                                          |
| **Journal**: Gastroenterology|                                              |          |                                          |
| **Sponsorship**: Not reported|                                              |          |                                          |
| **COI**: Not reported       |                                              |          |                                          |
| **Sponsor participation in data analyses**: Not reported | | | |
| **Johnston et al, 1998 (63)** | Subarachnoid hemorrhage                       | Risk     | No                                       |
| **Country**: United States  |                                              |          |                                          |
| **Journal**: Neurology      |                                              |          |                                          |
| **Sponsorship**: Not reported|                                              |          |                                          |
| **COI**: Not reported       |                                              |          |                                          |
| **Sponsor participation in data analyses**: Not reported | | | |
| **Lazarou et al, 1998 (64)** | Adverse drug reactions in hospitalized patients | Prevalence | Quality criteria abstracted |
| **Country**: Canada         |                                              |          |                                          |
| **Journal**: JAMA           |                                              |          |                                          |
| **Sponsorship**: Scholarship, nonprofit organization | | | |
| **COI**: Not reported       |                                              |          |                                          |
| **Sponsor participation in data analyses**: Not reported | | | |
| **Ray, 1998 (65)**          | Venous thromboembolic disease                | Risk     | Quality criteria abstracted              |
| **Country**: Canada         |                                              |          |                                          |
| **Journal**: Arch Intern Med|                                              |          |                                          |
| **Sponsorship**: Not reported|                                              |          |                                          |
| **COI**: Not reported       |                                              |          |                                          |
| **Sponsor participation in data analyses**: Not reported | | | |
| **Spencer-Green, 1998 (66)** | Secondary diseases from primary Reynaud phenomenon | Risk     | Yes                                      |
| **Country**: United States  |                                              |          |                                          |
| **Journal**: Arch Intern Med|                                              |          |                                          |
| **Sponsorship**: Not reported|                                              |          |                                          |
| **COI**: Not reported       |                                              |          |                                          |
| **Sponsor participation in data analyses**: Not reported | | | |
| **Stratton et al, 1998 (67)** | Ovarian cancer                              | Risk     | No                                       |
| **Country**: United Kingdom |                                              |          |                                          |
| **Journal**: Br J Obstet Gynaecol |                             |          |                                          |
| **Sponsorship**: Research fellowship, nonprofit organization | | | |
| **COI**: Not reported       |                                              |          |                                          |
| **Sponsor participation in data analyses**: Not reported | | | |
| **Zock and Katan, 1998 (68)** | Breast, colorectal, and prostate cancer      | Risk     | Quality criteria abstracted              |
| **Country**: Netherlands    |                                              |          |                                          |
| **Journal**: Am J Clin Nutr |                                              |          |                                          |
| **Sponsorship**: Nonprofit organization | | | |
| **COI**: Not reported       |                                              |          |                                          |
| **Sponsor participation in data analyses**: Not reported | | | |

(Continued on next page)
Appendix Table 2. (continued) Quality of Systematic Review and Meta-Analyses of Nontherapeutic Observational Studies Published in Core Clinical Journals, 1990 Through June 2008

| Publication Characteristics | Outcome | Estimate | Assessment of Quality of Included Studies |
|-----------------------------|---------|----------|------------------------------------------|
| Zondervan et al, 1998 (69)  | Chronic pelvic pain in women | Prevalence | No |
| Country: United Kingdom     |         |          |                                          |
| Journal: Br J Obstet Gynaecol |       |          |                                          |
| Sponsorship: Nonprofit organization |     |          |                                          |
| COI: Not reported |            |          |                                          |
| Sponsor participation in data analyses: Not reported | | | |
| Angellillo and Villari, 1999 (70) | Childhood leukemia | Risk | Yes |
| Country: Italy             |         |          |                                          |
| Journal: Bull World Health Organ |      |          |                                          |
| Sponsorship: Not reported  |         |          |                                          |
| COI: Not reported |            |          |                                          |
| Sponsor participation in data analyses: Not reported | | | |
| He et al, 1999 (71)        | Coronary heart disease | Risk | No |
| Country: United States     |         |          |                                          |
| Journal: N Engl J Med      |         |          |                                          |
| Sponsorship: Nonprofit organization |     |          |                                          |
| COI: Not reported |            |          |                                          |
| Sponsor participation in data analyses: Not reported | | | |
| Shaffer et al, 1999 (72)   | Disordered gambling behavior | Prevalence | No |
| Country: United States     |         |          |                                          |
| Journal: Am J Public Health |       |          |                                          |
| Sponsorship: Nonprofit organization |     |          |                                          |
| COI: Not reported |            |          |                                          |
| Sponsor participation in data analyses: Not reported | | | |
| Wittrup et al, 1999 (73)   | Ischemic heart disease | Risk | Yes |
| Country: Denmark           |         |          |                                          |
| Journal: Circulation       |         |          |                                          |
| Sponsorship: Government    |         |          |                                          |
| COI: Not reported |            |          |                                          |
| Sponsor participation in data analyses: Not reported | | | |
| Yoder et al, 1999 (74)     | Fetus with isolated choroid plexus cysts | Risk | No |
| Country: United States     |         |          |                                          |
| Journal: Obstet Gynecol    |         |          |                                          |
| Sponsorship: Not reported  |         |          |                                          |
| COI: Not reported |            |          |                                          |
| Sponsor participation in data analyses: Not reported | | | |
| Christen et al, 2000 (75)  | Cardiovascular disease | Risk | Yes |
| Country: United States     |         |          |                                          |
| Journal: Arch Intern Med   |         |          |                                          |
| Sponsorship: Not reported  |         |          |                                          |
| COI: Not reported |            |          |                                          |
| Sponsor participation in data analyses: Not reported | | | |

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Appendix Table 2. (continued) Quality of Systematic Review and Meta-Analyses of Nontherapeutic Observational Studies Published in Core Clinical Journals, 1990 Through June 2008

| Publication Characteristics | Outcome | Estimate | Assessment of Quality of Included Studies |
|-----------------------------|---------|----------|------------------------------------------|
| Cleophas et al, 2000 (76)   | Coronary artery disease | Risk     | Yes                                      |
| Country: Netherlands        |         |          |                                          |
| Journal: Am J Cardiol       |         |          |                                          |
| Sponsorship: Not reported   |         |          |                                          |
| COI: Not reported           |         |          |                                          |
| Sponsor participation in data analyses: Not reported | | | |
| DiMatteo et al, 2000 (77)  | Noncompliance with medical treatment | Risk | Quality criteria abstracted |
| Country: United States      |         |          |                                          |
| Journal: Arch Intern Med   |         |          |                                          |
| Sponsorship: Industry, scholarship | | | |
| COI: Not reported           |         |          |                                          |
| Sponsor participation in data analyses: Not reported | | | |
| WHO Collaborative Study Team on the Role of Breastfeeding on the Prevention of Infant Mortality, 2000 (78) | Infant and child mortality | Risk | No |
| Country: Brazil             |         |          |                                          |
| Journal: Lancet            |         |          |                                          |
| Sponsorship: Nonprofit organization | | | |
| COI: Not reported           |         |          |                                          |
| Sponsor participation in data analyses: Not reported | | | |
| Wilson et al, 2000 (79)    | Mortality after myocardial infarction | Risk | Yes |
| Country: Canada             |         |          |                                          |
| Journal: Arch Intern Med   |         |          |                                          |
| Sponsorship: Not reported   |         |          |                                          |
| COI: Not reported           |         |          |                                          |
| Sponsor participation in data analyses: Not reported | | | |
| Zeegers et al, 2000 (80)   | Urinary tract cancer | Risk | Yes |
| Country: Netherlands        |         |          |                                          |
| Journal: Cancer             |         |          |                                          |
| Sponsorship: Not reported   |         |          |                                          |
| COI: Not reported           |         |          |                                          |
| Sponsor participation in data analyses: Not reported | | | |
| Danesh et al, 2001 (81)    | Coronary heart disease | Risk | No |
| Country: United Kingdom     |         |          |                                          |
| Journal: Circulation        |         |          |                                          |
| Sponsorship: Government, scholarship | | | |
| COI: Not reported           |         |          |                                          |
| Sponsor participation in data analyses: Not reported | | | |
| Eaden et al, 2001 (82)     | Colorectal cancer | Risk | Yes |
| Country: United Kingdom     |         |          |                                          |
| Journal: Gut                |         |          |                                          |
| Sponsorship: Nonprofit organization | | | |
| COI: Not reported           |         |          |                                          |
| Sponsor participation in data analyses: Not reported | | | |

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Appendix Table 2. (continued) Quality of Systematic Review and Meta-Analyses of Nontherapeutic Observational Studies Published in Core Clinical Journals, 1990 Through June 2008

| Publication Characteristics | Outcome                 | Estimate | Assessment of Quality of Included Studies |
|-----------------------------|-------------------------|----------|------------------------------------------|
| Faraone et al, 2001 (83)    | Attention deficit hyperactivity disorder | Risk     | Yes                                      |
| Country: United States      |                         |          |                                          |
| Journal: Am J Psychiatry    |                         |          |                                          |
| Sponsorship: Government     |                         |          |                                          |
| COI: Not reported           |                         |          |                                          |
| Sponsor participation in data analyses: Not reported | |     |                                          |
| Horta et al, 2001 (84)      | Early weaning           | Risk     | Yes                                      |
| Country: Brazil             |                         |          |                                          |
| Journal: Am J Public Health |                         |          |                                          |
| Sponsorship: Government     |                         |          |                                          |
| COI: Not reported           |                         |          |                                          |
| Sponsor participation in data analyses: Not reported | |     |                                          |
| Rebora, 2001 (85)           | Coronary artery disease | Risk     | Yes                                      |
| Country: Italy              |                         |          |                                          |
| Journal: Arch Dermatol      |                         |          |                                          |
| Sponsorship: Not reported   |                         |          |                                          |
| COI: Not reported           |                         |          |                                          |
| Sponsor participation in data analyses: Not reported | |     |                                          |
| Cannon et al, 2002 (86)     | Schizophrenia           | Risk     | No                                       |
| Country: United Kingdom     |                         |          |                                          |
| Journal: Am J Psychiatry    |                         |          |                                          |
| Sponsorship: Research fellowship, nonprofit organization | |     |                                          |
| COI: Not reported           |                         |          |                                          |
| Sponsor participation in data analyses: Not reported | |     |                                          |
| Hellermann et al, 2002 (87) | Heart failure           | Risk     | No                                       |
| Country: United States      |                         |          |                                          |
| Journal: Am J Med           |                         |          |                                          |
| Sponsorship: Government, nonprofit organization, fellowship | |     |                                          |
| COI: Not reported           |                         |          |                                          |
| Sponsor participation in data analyses: Not reported | |     |                                          |
| Huang et al, 2002 (88)      | Peptic-ulcer disease    | Risk     | Yes                                      |
| Country: Canada             |                         |          |                                          |
| Journal: Lancet             |                         |          |                                          |
| Sponsorship: Not reported   |                         |          |                                          |
| COI: Reported as not a conflict of interest | |     |                                          |
| Sponsor participation in data analyses: Not reported | |     |                                          |
| Huncharek et al, 2002 (89) | Malignant melanoma      | Risk     | Yes                                      |
| Country: United States      |                         |          |                                          |
| Journal: Am J Public Health |                         |          |                                          |
| Sponsorship: Nonprofit organization, industry | |     |                                          |
| COI: Not reported           |                         |          |                                          |
| Sponsor participation in data analyses: Not reported | |     |                                          |

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Appendix Table 2. (continued) Quality of Systematic Review and Meta-Analyses of Nontherapeutic Observational Studies Published in Core Clinical Journals, 1990 Through June 2008

| Publication Characteristics | Outcome | Estimate | Assessment of Quality of Included Studies |
|-----------------------------|---------|----------|------------------------------------------|
| Juul et al, 2002 (90)       | Factor V Leiden | Risk     | Yes                                      |
| Country: Denmark            |         |          |                                          |
| Journal: Blood              |         |          |                                          |
| Sponsorship: Government, nonprofit organization | | | |
| COI: Not reported           |         |          |                                          |
| Sponsor participation in data analyses: “They had no role in gathering, analyzing, or interpreting the data and had no right to approve or disapprove the submitted paper.” | | | |
| Kelly et al, 2002 (91)      | Risk of ischemic stroke | Risk     | No                                       |
| Country: United States      |         |          |                                          |
| Journal: Neurology          |         |          |                                          |
| Sponsorship: Nonprofit organization, industry, fellowship | | | |
| COI: Not reported           |         |          |                                          |
| Sponsor participation in data analyses: Not reported | | | |
| Klerk et al, 2002 (92)      | Coronary heart disease | Risk     | Yes                                      |
| Country: Netherlands        |         |          |                                          |
| Journal: JAMA               |         |          |                                          |
| Sponsorship: Government, “public/private partnership” | | | |
| COI: Not reported           |         |          |                                          |
| Sponsor participation in data analyses: Not reported | | | |
| Kozer et al, 2002 (93)      | Congenital anomalies | Risk     | No                                       |
| Country: Canada             |         |          |                                          |
| Journal: Am J Obstet Gynecol|         |          |                                          |
| Sponsorship: Industry       |         |          |                                          |
| COI: Not reported           |         |          |                                          |
| Sponsor participation in data analyses: Not reported | | | |
| Law et al, 2002 (94)        | Death after myocardial infarction | Risk     | No                                       |
| Country: United Kingdom     |         |          |                                          |
| Journal: Arch Intern Med    |         |          |                                          |
| Sponsorship: Not reported   |         |          |                                          |
| COI: Not reported           |         |          |                                          |
| Sponsor participation in data analyses: Not reported | | | |
| Wald et al, 2002 (95)       | Cardiovascular disease | Risk     | No                                       |
| Country: United Kingdom     |         |          |                                          |
| Journal: BMJ                |         |          |                                          |
| Sponsorship: None           |         |          |                                          |
| COI: Reported as not a conflict of interest | | | |
| Sponsor participation in data analyses: None | | | |
| Wald and Link, 2002 (96)    | Human immunodeficiency virus infection | Risk     | No                                       |
| Country: United States      |         |          |                                          |
| Journal: J Infect Dis       |         |          |                                          |
| Sponsorship: Government     |         |          |                                          |
| COI: Not reported           |         |          |                                          |
| Sponsor participation in data analyses: Not reported | | | |

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Appendix Table 2. (continued) Quality of Systematic Review and Meta-Analyses of Nontherapeutic Observational Studies Published in Core Clinical Journals, 1990 Through June 2008

| Publication Characteristics | Outcome | Estimate | Assessment of Quality of Included Studies |
|-----------------------------|---------|---------|------------------------------------------|
| Benjamin et al, 2003 (97)   | End-organ damage | Prevalence | No |
| Country: United States      |         |         |                                           |
| Journal: Pediatrics         |         |         |                                           |
| Sponsorship: Government     |         |         |                                           |
| COI: Not reported           |         |         |                                           |
| Sponsor participation in data analyses: Not reported | | | |
| Clarfield, 2003 (98)        | Reversible dementias | Prevalence | No |
| Country: Israel             |         |         |                                           |
| Journal: Arch Intern Med    |         |         |                                           |
| Sponsorship: Not reported   |         |         |                                           |
| COI: Report as not a conflict of interest | | | |
| Sponsor participation in data analyses: Not reported | | | |
| Cole and Dendukuri, 2003 (99) | Depression among elderly community subjects | Risk | Yes |
| Country: Canada             |         |         |                                           |
| Journal: Am J Psychiatry    |         |         |                                           |
| Sponsorship: Not reported   |         |         |                                           |
| COI: Not reported           |         |         |                                           |
| Sponsor participation in data analyses: Not reported | | | |
| Gisbert et al, 2003 (100)  | Hepatitis C virus infection | Risk | Yes |
| Country: Spain              |         |         |                                           |
| Journal: Gastroenterology   |         |         |                                           |
| Sponsorship: Nonprofit organization | | | |
| COI: Not reported           |         |         |                                           |
| Sponsor participation in data analyses: Not reported | | | |
| Glatt et al, 2003 (101)    | Schizophrenia | Risk | No |
| Country: United States      |         |         |                                           |
| Journal: Am J Psychiatry    |         |         |                                           |
| Sponsorship: Government     |         |         |                                           |
| COI: Not reported           |         |         |                                           |
| Sponsor participation in data analyses: Not reported | | | |
| Halbert et al, 2003 (102)  | Prevalence estimates for chronic obstructive pulmonary disease | Prevalence | No |
| Country: United States      |         |         |                                           |
| Journal: Chest              |         |         |                                           |
| Sponsorship: Industry       |         |         |                                           |
| COI: Not reported           |         |         |                                           |
| Sponsor participation in data analyses: Not reported | | | |
| Huang et al, 2003 (103)    | Gastric cancer | Risk | Yes |
| Country: Canada             |         |         |                                           |
| Journal: Gastroenterology   |         |         |                                           |
| Sponsorship: Not reported   |         |         |                                           |
| COI: Not reported           |         |         |                                           |
| Sponsor participation in data analyses: Not reported | | | |

(Continued on next page)
| Publication Characteristics | Outcome                  | Estimate   | Assessment of Quality of Included Studies |
|-----------------------------|--------------------------|------------|------------------------------------------|
| Rey et al, 2003 (104)       | Fetal loss               | Risk       | Yes                                      |
| Country: Canada             |                          |            |                                          |
| Journal: Lancet             |                          |            |                                          |
| Sponsorship: Government     |                          |            |                                          |
| COI: Reported as not a conflict of interest |        |            |                                          |
| Sponsor participation in data analyses: Not reported |    |            |                                          |
| Riboli and Norat, 2003 (105)| Cancer risk             | Risk       | No                                       |
| Country: France             |                          |            |                                          |
| Journal: Am J Clin Nut      |                          |            |                                          |
| Sponsorship: Government     |                          |            |                                          |
| COI: Reported as not a conflict of interest |        |            |                                          |
| Sponsor participation in data analyses: Not reported |    |            |                                          |
| Scholten-Peeters et al, 2003 (106)| Whiplash-associated disorders | Risk       | Yes                                      |
| Country: Netherlands        |                          |            |                                          |
| Journal: Pain               |                          |            |                                          |
| Sponsorship: Not reported   |                          |            |                                          |
| COI: Not reported           |                          |            |                                          |
| Sponsor participation in data analyses: Not reported |    |            |                                          |
| Thurnham et al, 2003 (107)  | Vitamin A deficiency     | Continuous variable | No                                      |
| Country: United Kingdom     |                          |            |                                          |
| Journal: Lancet             |                          |            |                                          |
| Sponsorship: Government, fellowship |       |            |                                          |
| COI: Reported as not a conflict of interest |        |            |                                          |
| Sponsor participation in data analyses: “The funding source had no role in study design, data collection, data analysis, data interpretation, or in the writing of this report.” |    |            |                                          |
| Zeegers et al, 2003 (108)   | Prostate carcinoma       | Risk       | No                                       |
| Country: Netherlands        |                          |            |                                          |
| Journal: Cancer             |                          |            |                                          |
| Sponsorship: Government     |                          |            |                                          |
| COI: Not reported           |                          |            |                                          |
| Sponsor participation in data analyses: Not reported |    |            |                                          |
| Burzotta et al, 2004 (109)  | Coronary ischemic syndromes | Risk       | No                                       |
| Country: Italy              |                          |            |                                          |
| Journal: Heart              |                          |            |                                          |
| Sponsorship: Fellowship     |                          |            |                                          |
| COI: Not reported           |                          |            |                                          |
| Sponsor participation in data analyses: Not reported |    |            |                                          |

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### Appendix Table 2. (continued) Quality of Systematic Review and Meta-Analyses of Nontherapeutic Observational Studies Published in Core Clinical Journals, 1990 Through June 2008

| Publication Characteristics | Outcome                  | Estimate | Assessment of Quality of Included Studies |
|-----------------------------|---------------------------|----------|------------------------------------------|
| Casas et al, 2004 (110)     | Ischemic heart disease    | Risk     | No                                       |
| Country: United Kingdom     |                           |          |                                          |
| Journal: Circulation        |                           |          |                                          |
| Sponsorship: Government, 1 author holds a chair of nonprofit organization | | | |
| COI: Not reported           |                           |          |                                          |
| Sponsor participation in data analyses: Not reported | | | |
| Casas et al, 2004 (111)     | Ischemic stroke           | Risk     | No                                       |
| Country: United Kingdom     |                           |          |                                          |
| Journal: Arch Neurol        |                           |          |                                          |
| Sponsorship: Fellowship     |                           |          |                                          |
| COI: Not reported           |                           |          |                                          |
| Sponsor participation in data analyses: Not reported | | | |
| He et al, 2004 (112)        | Coronary heart disease mortality | Risk | No |
| Country: United States      |                           |          |                                          |
| Journal: Circulation        |                           |          |                                          |
| Sponsorship: Not reported   |                           |          |                                          |
| COI: Not reported           |                           |          |                                          |
| Sponsor participation in data analyses: Not reported | | | |
| Huang et al, 2004 (113)     | Sporadic Parkinson disease | Risk | No |
| Country: United States      |                           |          |                                          |
| Journal: Neurology          |                           |          |                                          |
| Sponsorship: Government     |                           |          |                                          |
| COI: Not reported           |                           |          |                                          |
| Sponsor participation in data analyses: Not reported | | | |
| Klement et al, 2004 (114)   | Inflammatory bowel disease | Risk | Yes |
| Country: Israel             |                           |          |                                          |
| Journal: Am J Clin Nutr     |                           |          |                                          |
| Sponsorship: Medical center |                           |          |                                          |
| COI: Reported as not a conflict of interest | | | |
| Sponsor participation in data analyses: Not reported | | | |
| Kovalevsky et al, 2004 (115) | Recurrent pregnancy loss | Risk | No |
| Country: United States      |                           |          |                                          |
| Journal: Arch Intern Med    |                           |          |                                          |
| Sponsorship: Not reported   |                           |          |                                          |
| COI: Reported as not a conflict of interest | | | |
| Sponsor participation in data analyses: Not reported | | | |
| Levitan et al, 2004 (116)   | Cardiovascular disease    | Risk     | No                                       |
| Country: United States      |                           |          |                                          |
| Journal: Arch Intern Med    |                           |          |                                          |
| Sponsorship: Not reported   |                           |          |                                          |
| COI: Reported as not a conflict of interest | | | |
| Sponsor participation in data analyses: Not reported | | | |

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### Appendix Table 2. (continued) Quality of Systematic Review and Meta-Analyses of Nontherapeutic Observational Studies Published in Core Clinical Journals, 1990 Through June 2008

| Publication Characteristics | Outcome Description | Estimate | Assessment of Quality of Included Studies |
|-----------------------------|---------------------|----------|------------------------------------------|
| Lovett et al, 2004 (117)    | Subtype of ischemic stroke | Risk     | Yes                                      |
| Country: United Kingdom     |                     |          |                                          |
| Journal: Neurology          |                     |          |                                          |
| Sponsorship: Not reported   |                     |          |                                          |
| COI: Not reported           |                     |          |                                          |
| Sponsor participation in data analyses: Not reported | | | |
| Mitsikostas et al, 2004 (118) | Headache | Risk | No                                      |
| Country: Greece             |                     |          |                                          |
| Journal: Brain              |                     |          |                                          |
| Sponsorship: Not reported   |                     |          |                                          |
| COI: Not reported           |                     |          |                                          |
| Sponsor participation in data analyses: Not reported | | | |
| Montanez et al, 2004 (119)  | Total and cardiovascular mortality and sudden death | Risk | No                                      |
| Country: United States      |                     |          |                                          |
| Journal: Arch Intern Med    |                     |          |                                          |
| Sponsorship: Not reported   |                     |          |                                          |
| COI: Reported as not a conflict of interest | | | |
| Sponsor participation in data analyses: Not reported | | | |
| Woodbury and Houghton, 2004 (120) | Pressure ulcers | Prevalence | Yes                                      |
| Country: Canada             |                     |          |                                          |
| Journal: Ostomy Wound Manage|                     |          |                                          |
| Sponsorship: Not reported   |                     |          |                                          |
| COI: Not reported           |                     |          |                                          |
| Sponsor participation in data analyses: Not reported | | | |
| Bolland et al, 2005 (121)   | Increased body weight | Risk | Quality criteria abstracted |
| Country: New Zealand        |                     |          |                                          |
| Journal: J Clin Endocrinol Metab | | | |
| Sponsorship: Scholarship    |                     |          |                                          |
| COI: Not reported           |                     |          |                                          |
| Sponsor participation in data analyses: Not reported | | | |
| Contopoulos-loannidis et al, 2005 (122) | Asthma phenotypes | Risk | Quality criteria abstracted |
| Country: Greece             |                     |          |                                          |
| Journal: J Allergy Clin Immunol | | | |
| Sponsorship: Not reported   |                     |          |                                          |
| COI: Not reported           |                     |          |                                          |
| Sponsor participation in data analyses: Not reported | | | |
| Dauchet et al, 2005 (123)   | Stroke              | Risk     | No                                       |
| Country: France             |                     |          |                                          |
| Journal: Neurology          |                     |          |                                          |
| Sponsorship: Nonprofit organization, educational institute | | | |
| COI: Reported as not a conflict of interest | | | |
| Sponsor participation in data analyses: Not reported | | | |

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Appendix Table 2. (continued) Quality of Systematic Review and Meta-Analyses of Nontherapeutic Observational Studies Published in Core Clinical Journals, 1990 Through June 2008

| Publication Characteristics | Outcome                  | Estimate | Assessment of Quality of Included Studies |
|----------------------------|--------------------------|----------|------------------------------------------|
| **Etminan et al, 2005 (124)** | Ischemic stroke         | Risk     | Yes                                      |
| Country: Canada            |                          |          |                                          |
| Journal: BMJ               |                          |          |                                          |
| Sponsorship: Government, fellowship | |          |                                          |
| COI: Reported as not a conflict of interest | |          |                                          |
| Sponsor participation in data analyses: Not reported | |          |                                          |
| **Fazel et al, 2005 (125)** | Serious mental disorder | Prevalence | Quality criteria abstracted |
| Country: United Kingdom    |                          |          |                                          |
| Journal: Lancet           |                          |          |                                          |
| Sponsorship: Nonprofit organization | |          |                                          |
| COI: Reported as not a conflict of interest | |          |                                          |
| Sponsor participation in data analyses: “The sponsors of the study had no role in study design, data collection, data analysis, data interpretation, or writing of the report. The corresponding author had full access to all the data in the study and had final responsibility for the decision to submit for publication.” | |          |                                          |
| **García-Closas et al, 2005 (126)** | Bladder cancer         | Risk     | No                                       |
| Country: United States     |                          |          |                                          |
| Journal: Lancet           |                          |          |                                          |
| Sponsorship: Nonprofit organization | |          |                                          |
| COI: Reported as not a conflict of interest | |          |                                          |
| Sponsor participation in data analyses: “The study sponsors had no role in the design of the study; in the collection, analysis, or interpretation of the data; or in the writing of the report. The corresponding author had full access to all the data in the study and had final responsibility for the decision to submit the paper for publication.” | |          |                                          |
| **Lee et al, 2005 (127)** | Systemic lupus erythematosus | Risk     | No                                       |
| Country: United States     |                          |          |                                          |
| Journal: Arthritis Rheum   |                          |          |                                          |
| Sponsorship: Government, industry | |          |                                          |
| COI: Not reported          |                          |          |                                          |
| Sponsor participation in data analyses: Unrestricted | |          |                                          |
| **Lin and August, 2005 (128)** | Preeclampsia            | Risk     | No                                       |
| Country: United States     |                          |          |                                          |
| Journal: Obstet Gynecol    |                          |          |                                          |
| Sponsorship: Not reported  |                          |          |                                          |
| COI: Not reported          |                          |          |                                          |
| Sponsor participation in data analyses: Not reported | |          |                                          |
| **McDonald et al, 2005 (129)** | Perinatal outcomes     | Risk     | Yes                                      |
| Country: Canada            |                          |          |                                          |
| Journal: Am J Obstet Gynecol |                        |          |                                          |
| Sponsorship: Not reported  |                          |          |                                          |
| COI: Not reported          |                          |          |                                          |
| Sponsor participation in data analyses: Not reported | |          |                                          |

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Appendix Table 2. (continued) Quality of Systematic Review and Meta-Analyses of Nontherapeutic Observational Studies Published in Core Clinical Journals, 1990 Through June 2008

| Publication Characteristics | Outcome | Estimate | Assessment of Quality of Included Studies |
|-----------------------------|---------|----------|------------------------------------------|
| Palmer, 2005 (130)          |         |          |                                          |
| Country: United States      | Lifetime risk of suicide in schizophrenia | Prevalence | Quality criteria abstracted |
| Journal: Arch Gen Psychiatry|         |          |                                          |
| Sponsorship: Nonprofit organization |          |          |                                          |
| COI: Not reported            |          |          |                                          |
| Sponsor participation in data analyses: Not reported |          |          |                                          |
| Sin et al, 2005 (131)       |         |          |                                          |
| Country: Canada             | Cardiovascular mortality | Risk | Yes |
| Journal: Chest              |         |          |                                          |
| Sponsorship: Nonprofit organization, educational institute |          |          |                                          |
| COI: Not reported            |          |          |                                          |
| Sponsor participation in data analyses: Not reported |          |          |                                          |
| Boudville et al, 2006 (132) |         |          |                                          |
| Country: Canada             | Hypertension | Risk | No |
| Journal: Ann Intern Med     |         |          |                                          |
| Sponsorship: Government, fellowship |          |          |                                          |
| COI: Reported as not a conflict of interest |          |          |                                          |
| Sponsor participation in data analyses: “The study sponsors had no role in the study design; in the collection, analysis, and interpretation of data; in the writing of the report; or in the decision to submit the paper for publication.” |          |          |                                          |
| Clark et al, 2006 (133)     |         |          |                                          |
| Country: United Kingdom     | Fractures | Risk | Yes |
| Journal: Pediatrics         |         |          |                                          |
| Sponsorship: Fellowship     |         |          |                                          |
| COI: Not reported            |          |          |                                          |
| Sponsor participation in data analyses: Not reported |          |          |                                          |
| de Boer et al, 2006 (134)   |         |          |                                          |
| Country: Netherlands        | Unemployment | Risk | Yes |
| Journal: Cancer             |         |          |                                          |
| Sponsorship: Not reported   |         |          |                                          |
| COI: Not reported            |          |          |                                          |
| Sponsor participation in data analyses: Not reported |          |          |                                          |
| Di Castelnuovo et al, 2006 (135) |         |          |                                          |
| Country: Italy              | Total mortality in men and women | Risk | Yes |
| Journal: Arch Intern Med    |         |          |                                          |
| Sponsorship: Government     |         |          |                                          |
| COI: Not reported            |          |          |                                          |
| Sponsor participation in data analyses: “The sponsor of the study had no involvement in study design; data collection, analysis, or interpretation; writing of the report; or in the decision to submit the paper for publication.” |          |          |                                          |

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Appendix Table 2. (continued) Quality of Systematic Review and Meta-Analyses of Nontherapeutic Observational Studies Published in Core Clinical Journals, 1990 Through June 2008

| Publication Characteristics | Outcome                  | Estimate | Assessment of Quality of Included Studies |
|-----------------------------|--------------------------|----------|------------------------------------------|
| **Flores-Mateo et al, 2006 (136)** | Coronary heart disease | Risk     | Yes                                      |
| Country: United States      |                          |          |                                          |
| Journal: Am J Clin Nutr     |                          |          |                                          |
| Sponsorship: Nonprofit organization |                      |          |                                          |
| COI: Reported as not a conflict of interest |          |          |                                          |
| Sponsor participation in data analyses: Not reported |          |          |                                          |
| **Galassi et al, 2006 (137)** | Cardiovascular disease  | Risk     | Quality criteria abstracted              |
| Country: United States      |                          |          |                                          |
| Journal: Am J Med           |                          |          |                                          |
| Sponsorship: Government     |                          |          |                                          |
| COI: Not reported           |                          |          |                                          |
| Sponsor participation in data analyses: Not reported |          |          |                                          |
| **Huxley et al, 2006 (138)** | Fatal coronary heart disease | Risk     | Quality criteria abstracted              |
| Country: Australia          |                          |          |                                          |
| Journal: BMJ                |                          |          |                                          |
| Sponsorship: Government, fellowship, industry |          |          |                                          |
| COI: Reported as not a conflict of interest |          |          |                                          |
| Sponsor participation in data analyses: Unconditional |          |          |                                          |
| **Kahlenborn et al, 2006 (139)** | Premenopausal breast cancer | Risk     | Quality criteria abstracted              |
| Country: United States      |                          |          |                                          |
| Journal: Mayo Clin Proc     |                          |          |                                          |
| Sponsorship: Government     |                          |          |                                          |
| COI: Not reported           |                          |          |                                          |
| Sponsor participation in data analyses: Not reported |          |          |                                          |
| **Larsson et al, 2006 (140)** | Esophageal, gastric, and pancreatic cancer | Risk     | Quality criteria abstracted              |
| Country: Sweden             |                          |          |                                          |
| Journal: Gastroenterology   |                          |          |                                          |
| Sponsorship: Not reported   |                          |          |                                          |
| COI: Not reported           |                          |          |                                          |
| Sponsor participation in data analyses: Not reported |          |          |                                          |
| **Mahid et al, 2006 (141)** | Inflammatory bowel disease | Risk     | Yes                                      |
| Country: United States      |                          |          |                                          |
| Journal: Mayo Clin Proc     |                          |          |                                          |
| Sponsorship: Nonprofit organization |                      |          |                                          |
| COI: Not reported           |                          |          |                                          |
| Sponsor participation in data analyses: Not reported |          |          |                                          |
| **Owen et al, 2006 (142)**  | Type 2 diabetes          | Risk     | Quality criteria abstracted              |
| Country: United Kingdom     |                          |          |                                          |
| Journal: Am J Clin Nutr     |                          |          |                                          |
| Sponsorship: Nonprofit organization |                      |          |                                          |
| COI: Reported as not a conflict of interest |          |          |                                          |
| Sponsor participation in data analyses: Not reported |          |          |                                          |

(Continued on next page)
| Publication Characteristics                          | Outcome                | Estimate | Assessment of Quality of Included Studies |
|-----------------------------------------------------|------------------------|----------|------------------------------------------|
| Ownby et al, 2006 (143)                             | Alzheimer disease      | Risk     | Yes                                      |
| Country: United States                              |                        |          |                                          |
| Journal: Arch Gen Psychiatry                        |                        |          |                                          |
| Sponsorship: Government                            |                        |          |                                          |
| COI: Not reported                                   |                        |          |                                          |
| Sponsor participation in data analyses: Not reported |                        |          |                                          |
| Pavia et al, 2006 (144)                             | Oral cancer            | Risk     | Yes                                      |
| Country: Italy                                      |                        |          |                                          |
| Journal: Am J Clin Nutr                            |                        |          |                                          |
| Sponsorship: Not reported                           |                        |          |                                          |
| COI: Reported as not a conflict of interest         |                        |          |                                          |
| Sponsor participation in data analyses: Not reported |                        |          |                                          |
| Riddle et al, 2006 (145)                            | Diarrhea               | Prevalence| Yes                                      |
| Country: United States                              |                        |          |                                          |
| Journal: Am J Trop Med Hyg                         |                        |          |                                          |
| Sponsorship: Not reported                           |                        |          |                                          |
| COI: Not reported                                   |                        |          |                                          |
| Sponsor participation in data analyses: Not reported |                        |          |                                          |
| Rutledge et al, 2006 (146)                          | Depression             | Prevalence/risk | Quality criteria abstracted |
| Country: United States                              |                        |          |                                          |
| Journal: J Am Coll Cardiol                          |                        |          |                                          |
| Sponsorship: Not reported                           |                        |          |                                          |
| COI: Not reported                                   |                        |          |                                          |
| Sponsor participation in data analyses: Not reported |                        |          |                                          |
| Smith et al, 2006 (147)                             | Renal impairment       | Risk     | Yes                                      |
| Country: United States                              |                        |          |                                          |
| Journal: J Am Coll Cardiol                          |                        |          |                                          |
| Sponsorship: Government                            |                        |          |                                          |
| COI: Not reported                                   |                        |          |                                          |
| Sponsor participation in data analyses: Not reported |                        |          |                                          |
| Weis et al, 2006 (148)                              | Uveal melanoma         | Risk     | Quality criteria abstracted              |
| Country: United States                              |                        |          |                                          |
| Journal: Arch Ophthalmol                           |                        |          |                                          |
| Sponsorship: Government                            |                        |          |                                          |
| COI: Reported as not a conflict of interest         |                        |          |                                          |
| Sponsor participation in data analyses: Not reported |                        |          |                                          |
| Williams et al, 2006 (149)                          | Autism spectrum disorders | Prevalence/risk | Quality criteria abstracted |
| Country: United Kingdom                             |                        |          |                                          |
| Journal: Arch Dis Child                             |                        |          |                                          |
| Sponsorship: Nonprofit organization                 |                        |          |                                          |
| COI: Reported as not a conflict of interest         |                        |          |                                          |
| Sponsor participation in data analyses: Not reported |                        |          |                                          |

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## Appendix Table 2. (continued) Quality of Systematic Review and Meta-Analyses of Nontherapeutic Observational Studies Published in Core Clinical Journals, 1990 Through June 2008

| Publication Characteristics | Outcome | Estimate | Assessment of Quality of Included Studies |
|-----------------------------|---------|----------|------------------------------------------|
| **Bahekar et al, 2007 (150)** | Coronary heart disease | Risk | Yes |
| **Country:** United States | | | |
| **Journal:** Am Heart J | | | |
| **Sponsorship:** Not reported | | | |
| **COI:** Not reported | | | |
| **Sponsor participation in data analyses:** Not reported | | | |
| **Baurecht et al, 2007 (151)** | Atopic eczema | Risk | No |
| **Country:** Germany | | | |
| **Journal:** J Allergy Clin Immunol | | | |
| **Sponsorship:** Government, university | | | |
| **COI:** Reported as a conflict of interest | | | |
| **Sponsor participation in data analyses:** Not reported | | | |
| **Bellamy et al, 2007 (152)** | Cardiovascular disease | Risk | Quality criteria abstracted |
| **Country:** United Kingdom | | | |
| **Journal:** BMJ | | | |
| **Sponsorship:** Government, fellowship | | | |
| **COI:** Reported as not a conflict of interest | | | |
| **Sponsor participation in data analyses:** Not reported | | | |
| **Conde-Agudelo et al, 2007 (153)** | Maternal health | Risk | Yes |
| **Country:** Colombia | | | |
| **Journal:** Am J Obstet Gynecol | | | |
| **Sponsorship:** Government | | | |
| **COI:** Not reported | | | |
| **Sponsor participation in data analyses:** “The content of the paper has not been influenced by the sponsor.” | | | |
| **Dehghan et al, 2007 (154)** | Diabetes | Risk | No |
| **Country:** Netherlands | | | |
| **Journal:** Diabetes | | | |
| **Sponsorship:** University, government | | | |
| **COI:** Not reported | | | |
| **Sponsor participation in data analyses:** Not reported | | | |
| **Eichler et al, 2007 (155)** | First coronary events | Risk | Yes |
| **Country:** Switzerland | | | |
| **Journal:** Am Heart J | | | |
| **Sponsorship:** Nonprofit organization | | | |
| **COI:** Not reported | | | |
| **Sponsor participation in data analyses:** “The funding source had no influence on study design; in the collection, analysis, and interpretation of the data; in the writing of the manuscript; and in the decision to submit the manuscript for publication.” | | | |

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| Publication Characteristics | Outcome | Estimate | Assessed Quality of Included Studies |
|-----------------------------|---------|----------|--------------------------------------|
| Gami et al, 2007 (156)      | Cardiovascular events and death | Risk | Yes |
| Country: United States      |         |          |                                      |
| Journal: J Am Coll Cardiol  |         |          |                                      |
| Sponsorship: Not reported   |         |          |                                      |
| COI: Not reported           |         |          |                                      |
| Sponsor participation in data analyses: Not reported | | | |
| Grulich et al, 2007 (157)   | Cancers | Risk | Yes |
| Country: Australia          |         |          |                                      |
| Journal: Lancet             |         |          |                                      |
| Sponsorship: Government, fellowship, scholarship | | | |
| COI: Reported as a conflict of interest | | | |
| Sponsor participation in data analyses: “There was no funding source for this study. All authors had access to all the data. The corresponding author had final responsibility for the decision to submit for publication.” | | | |
| Havemann et al, 2007 (158)  | Asthma | Risk | Quality criteria abstracted |
| Country: United States      |         |          |                                      |
| Journal: Gut                |         |          |                                      |
| Sponsorship: Industry       |         |          |                                      |
| COI: Reported as a conflict of interest | | | |
| Sponsor participation in data analyses: Not reported | | | |
| Hirtz et al, 2007 (159)     | Common neurologic disorders | Prevalence | Yes |
| Country: United States      |         |          |                                      |
| Journal: Neurology          |         |          |                                      |
| Sponsorship: Not reported   |         |          |                                      |
| COI: Reported as not a conflict of interest | | | |
| Sponsor participation in data analyses: Not reported | | | |
| Huxley et al, 2007 (160)    | Ischemic heart disease | Risk | Yes |
| Country: Australia          |         |          |                                      |
| Journal: Am J Clin Nut      |         |          |                                      |
| Sponsorship: Government, nonprofit organization | | | |
| COI: Reported as not a conflict of interest | | | |
| Sponsor participation in data analyses: “None of the funding sources had any role in the study design, data analysis, data interpretation, writing of the paper, or the decision to submit the paper for publication.” | | | |
| Krishna and Kim, 2007 (161) | Risk factors for subarachnoid hemorrhage | Risk | Quality criteria abstracted |
| Country: United States      |         |          |                                      |
| Journal: J Neurosurg        |         |          |                                      |
| Sponsorship: Government     |         |          |                                      |
| COI: Not reported           |         |          |                                      |
| Sponsor participation in data analyses: Not reported | | | |

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### Appendix Table 2. (continued) Quality of Systematic Review and Meta-Analyses of Nontherapeutic Observational Studies Published in Core Clinical Journals, 1990 Through June 2008

| Publication Characteristics | Outcome | Estimate | Assessment of Quality of Included Studies |
|-----------------------------|---------|----------|------------------------------------------|
| Langan et al, 2007 (162) Country: United Kingdom Journal: Arch Dermatol **Sponsorship:** Nonprofit organization **COI:** Reported as not a conflict of interest **Sponsor participation in data analyses:** "The sponsor had no role in the design and conduct of the study; in the collection, analysis, and interpretation of data; or in the preparation, review, or approval of the manuscript." | Eczema | Risk | Quality criteria abstracted |
| Larsson and Wolk, 2007 (163) Country: Sweden Journal: Am J Clin Nutr **Sponsorship:** Nonprofit organization **COI:** Reported as not a conflict of interest **Sponsor participation in data analyses:** Not reported | Colon and rectal cancer risk | Risk | Quality criteria abstracted |
| Larsson and Wolk, 2007 (164) Country: Sweden Journal: Gastroenterology **Sponsorship:** Nonprofit organization **COI:** Reported as not a conflict of interest **Sponsor participation in data analyses:** "The sponsor had no role in the study design or in the collection, analysis, and interpretation of the data.” | Liver cancer | Risk | Quality criteria abstracted |
| Liu et al, 2007 (165) Country: China Journal: J Am Coll Cardiol **Sponsorship:** Not reported **COI:** Not reported **Sponsor participation in data analyses:** Not reported | Recurrence of atrial fibrillation after successful electrical cardioversion | Risk | Yes |
| Loza and Chang, 2007 (166) Country: United States Journal: J Allergy Clin Immunol **Sponsorship:** Government, nonprofit organization **COI:** Reported as not a conflict of interest **Sponsor participation in data analyses:** Not reported | Atopic asthma risk | Risk | Yes |
| Pittas et al, 2007 (167) Country: United States Journal: J Clin Endocrinol Metab **Sponsorship:** Government **COI:** Reported as not a conflict of interest **Sponsor participation in data analyses:** Not reported | Type 2 diabetes | Risk | No |

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Appendix Table 2. (continued) Quality of Systematic Review and Meta-Analyses of Nontherapeutic Observational Studies Published in Core Clinical Journals, 1990 Through June 2008

| Publication Characteristics | Outcome | Estimate | Assessment of Quality of Included Studies |
|----------------------------|---------|----------|------------------------------------------|
| Polanczyk et al, 2007 (168) | Attention deficit hyperactivity disorder | Prevalence | No |
| Country: Brazil | | | |
| Journal: Am J Psychiatry | | | |
| Sponsorship: Industry, foreign grants | | | |
| COI: Not reported | | | |
| Sponsor participation in data analyses: “There was no involvement of any funding source in the study design, data collection, analysis, interpretation of data, and writing of this article or in the decision to submit the article for publication.” | | | |
| Rona et al, 2007 (169) | Food allergy | Prevalence | Quality criteria abstracted |
| Country: United Kingdom | | | |
| Journal: J Allergy Clin Immunol | | | |
| Sponsorship: Government | | | |
| COI: Reported as a conflict of interest | | | |
| Sponsor participation in data analyses: Not reported | | | |
| Sarwar et al, 2007 (170) | Coronary heart disease | Risk | No |
| Country: United Kingdom | | | |
| Journal: Circulation | | | |
| Sponsorship: Government, scholarship, industry | | | |
| COI: Reported as not a conflict of interest | | | |
| Sponsor participation in data analyses: Unrestricted | | | |
| Snoep et al, 2007 (171) | Clopidogrel nonresponsiveness | Prevalence | Yes |
| Country: Netherlands | | | |
| Journal: Am Heart J | | | |
| Sponsorship: Not reported | | | |
| COI: Not reported | | | |
| Sponsor participation in data analyses: Not reported | | | |
| Zintzaras and Kaditis, 2007 (172) | Blood pressure | Risk | Yes |
| Country: Greece | | | |
| Journal: Arch Pediatr Adolesc Med | | | |
| Sponsorship: Not reported | | | |
| COI: Not reported | | | |
| Sponsor participation in data analyses: Not reported | | | |
| Ageno et al, 2008 (173) | Venous thromboembolism | Risk | Yes |
| Country: Italy | | | |
| Journal: Circulation | | | |
| Sponsorship: Not reported | | | |
| COI: Not reported | | | |
| Sponsor participation in data analyses: Not reported | | | |

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Appendix Table 2. (continued) Quality of Systematic Review and Meta-Analyses of Nontherapeutic Observational Studies Published in Core Clinical Journals, 1990 Through June 2008

| Publication Characteristics | Outcome | Estimate | Assessment of Quality of Included Studies |
|-----------------------------|---------|----------|------------------------------------------|
| Barclay et al, 2008 (174)   | Chronic disease risk | Risk | Quality criteria abstracted |
| Country: Australia          |         |          |                                          |
| Journal: Am J Clin Nutr     |         |          |                                          |
| Sponsorship: Government     |         |          |                                          |
| COI: Reported as not a conflict of interest |         |          |                                          |
| Sponsor participation in data analyses: Not reported |         |          |                                          |
| Conde-Agudelo et al, 2008 (175) | Risk of preeclampsia | Risk | Yes |
| Country: United States      |         |          |                                          |
| Journal: Am J Obstet Gynecol|         |          |                                          |
| Sponsorship: Government     |         |          |                                          |
| COI: Not reported           |         |          |                                          |
| Sponsor participation in data analyses: “The views expressed in this document are solely the responsibility of the authors and do not necessarily represent the views of the World Health Organization.”|         |          |                                          |
| Schunkert et al, 2008 (176) | Coronary artery disease | Risk | No |
| Country: Germany            |         |          |                                          |
| Journal: Circulation        |         |          |                                          |
| Sponsorship: Government     |         |          |                                          |
| COI: Reported as not a conflict of interest |         |          |                                          |
| Sponsor participation in data analyses: Not reported |         |          |                                          |