

CBM 92-13

# Meta-Analysis

January 1980 through December 1992

337 Citations

Prepared by Catherine Roos Selden, M.L.S.

**U.S. DEPARTMENT OF HEALTH  
AND HUMAN SERVICES**  
Public Health Service  
National Institutes of Health

National Library of Medicine  
Reference Section  
8600 Rockville Pike  
Bethesda, Maryland 20894

1992

## SERIES NOTE

*Current Bibliographies in Medicine* (CBM) is a continuation in part of the National Library of Medicine's Literature Search Series, which ceased in 1987 with No. 87-15. In 1989 it also subsumed the *Specialized Bibliography Series*. Each bibliography in the new series covers a distinct subject area of biomedicine and is intended to fulfill a current awareness function. Citations are usually derived from searching a variety of online databases. NLM databases utilized include MEDLINE®, AVLINE®, BIOETHICSLINE®, CANCERLIT®, CATLINE®, HEALTH, POPLINE™ and TOXLINE®. The only criterion for the inclusion of a particular published work is its relevance to the topic being presented; the format, ownership, or location of the material is not considered.

Comments and suggestions on this series may be addressed to:

Karen Patrias, Editor  
Current Bibliographies in Medicine  
Reference Section  
National Library of Medicine  
Bethesda, MD 20894  
Phone: 301-496-6097  
Fax: 301-402-1384  
Internet: patrias@nlm.nih.gov

### Ordering Information:

*Current Bibliographies in Medicine* is sold by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. To order the entire CBM series for the calendar year 1992 (approx. 14 bibliographies), send \$41.00 (\$51.25 foreign) to the Superintendent of Documents citing GPO List ID: CBM92. For your convenience an order blank is given inside the back cover. Orders for individual bibliographies in the series (\$3.25, \$4.06 foreign) should be sent to the Superintendent of Documents citing the title, CBM number, and the GPO List ID given above.

*Use of funds for printing this periodical has been approved by the Director of the Office of Management and Budget through September 30, 1993.*

## META-ANALYSIS

The 1989 amendments to the Public Health Service Act called for the National Library of Medicine (NLM) and the Agency for Health Care Policy and Research (AHCPR) to work together to develop and enhance information services in health services research. In response to this mandate, NLM established its Health Services Research Information Program. NLM's highest priorities for this program are to 1) enhance NLM's basic collection development, organization, and dissemination services to provide better coverage of the results of health services research, and 2) promote the use of these services by the health services research community. One area specifically targeted in this program is the development and dissemination of information on techniques and methodologies useful for health services research, such as meta-analysis.

The National Library of Medicine defines meta-analysis as "a quantitative method of combining the results of independent studies (usually drawn from the published literature) and synthesizing summaries and conclusions which may be used to evaluate therapeutic effectiveness, plan new studies, etc. It is often an overview of clinical trials." Interest in medical applications of meta-analysis has increased significantly in recent years, although meta-analytic procedures have been widely employed in the social sciences since the early 1970s. Meta-analysis is being used to draw conclusions from results collected from literature or narrative reviews and data pooled from independent studies, often clinical trials. It is a systematic method that uses statistical analysis for extracting, comparing, and combining results from independent studies to get quantifiable outcomes. Meta-analysis also can help to identify gaps in knowledge found in the published literature and thus can help provide guidance for future research.

This bibliography includes selected references from many disciplines. References are to works describing the methodology of meta-analysis including coding studies, data analytic methods, differences between results of competing models for meta-analysis, searching the literature, and publication bias. The selected references generally reflect the literature published since 1980 in journals, reports, books, book chapters, academic theses and dissertations, proceedings of meetings, guides, bibliographies and conference papers. A few selected references published before 1980 have been included because of their significance in the evolution of meta-analysis. Meta-analyses which are substantive and do not provide information about the methodology are excluded. Foreign-language works are included although most publications are in English. The bibliography is arranged in eight sections. The first section includes books and reports while the second has general references on meta-analysis and related methodologies. The remaining sections are arranged in specific subject categories; references appear in only one section.

We would like to thank Dr. Lawrence Hedges, University of Chicago, for his critical review and editorial suggestions; Dr. David Schriger of the UCLA Medical Center and Ione Auston and Kristine Scannell of the National Library of Medicine for their efforts in conceptualizing the project; and Marlyn Schepartz of the National Library of Medicine for editorial and project assistance.

## SEARCH STRATEGY

A variety of online databases are usually searched in preparing bibliographies in the CBM series. To assist you in updating or otherwise manipulating the material in this search, the strategy used for the NLM's MEDLINE database is given below. Please note that the search strategies presented here differ from individual demand searches in that they are generally broadly formulated and irrelevant citations edited out prior to printing.

SS 1 = META-ANALYSIS (MH) OR META-ANALYSIS (PT)

SS 2 = ALL METAANALY:

SS 3 = (TW) ALL META# AND ALL ANALY:

SS 4 = TS :META#ANALY: (TI) OR :META#ANALY: (AB)

SS 5 = ODDS RATIO OR SELECTION BIAS

SS 6 = (TW) ALL PUBLICATION# AND BIAS

SS 7 = 1 OR 2 OR 4 OR 5 OR 6

## GRATEFUL MED<sup>®</sup>

To make online searching easier and more efficient, the Library offers GRATEFUL MED, microcomputer-based software that provides a user-friendly interface to most NLM databases. This software was specifically developed for health professionals and features multiple choice menus and "fill in the blank" screens for easy search preparation. GRATEFUL MED runs on an IBM PC (or IBM-compatible) with DOS 2.0 or a Macintosh, and requires a Hayes (or Hayes-compatible) modem. It may be purchased from the National Technical Information Service in Springfield, Virginia, for \$29.95 (plus \$3.00 per order for shipping). For your convenience, an order blank has been enclosed at the back of this bibliography.

## SAMPLE CITATIONS

Citations in this bibliographic series are formatted according to the rules established for *Index Medicus*<sup>®\*</sup>. Sample journal and monograph citations appear below. For journal articles written in a foreign language, the English translation of the title is placed in brackets; for monographs, the title is given in the original language. In both cases the language of publication is shown by a three letter abbreviation appearing at the end of the citation. Note also that a colon (:) may appear within an author's name or article title. The NLM computer system automatically inserts this symbol in the place of a diacritical mark.

### Journal Article:

*Authors* *Article Title*

Gerbarg ZB, Horwitz RI. Resolving conflicting clinical trials: guidelines for meta-analysis.  
J Clin Epidemiol 1988;41(5):503-9.

*Abbreviated Journal Title* *Date* *Volume* *Issue* *Pages*

### Monograph:

*Authors/Editors* *Title*

Hedges LV, Olkin I. Statistical methods for meta-analysis.  
New York: Academic Press; 1985. 360p.

*Place of Publication* *Publisher* *Date* *Total No. of Pages*

---

\*For details of the formats used for references, see the following publication:

Patrias, Karen. *National Library of Medicine recommended formats for bibliographic citation*.  
Bethesda (MD): The Library; 1991 Apr. Available from: NTIS, Springfield, VA; PB91-182030.

## TABLE OF CONTENTS

	<i>page</i>
<b>Books and Other Monographs</b>	1
<b>General</b>	2
<b>Coding</b>	7
<b>Searching the Literature</b>	8
<b>Publication Bias</b>	8
<b>Statistics</b>	
General	9
Combining Studies with Discrete Endpoints	11
Combining Studies with Continuous Endpoints	12

## BOOKS AND OTHER MONOGRAPHS

- Berry DA. A Bayesian approach to multicenter trials and meta-analysis. Washington: National Science Foundation; 1989. 12 p.
- Cook TD. Meta-analysis for explanation - a casebook. New York: Russell Sage Foundation; 1992. 378 p.
- Cooper HM. Integrating research: a guide for literature reviews. 2nd ed. Newbury Park (CA): Sage Publications; 1989. 157 p.
- Cooper HM, Hedges LV. The handbook of research synthesis. New York: Russell Sage Foundation. Forthcoming. To be published in Fall 1993
- Eddy DM. A manual for assessing health practices and designing practice policies: the explicit approach. Philadelphia (PA): American College of Physicians; 1992. 126 p.
- Eddy DM, Hasselblad V, Shachter RD. Meta-analysis by the confidence profile method: the statistical synthesis of evidence. Boston: Academic Press; 1991. 428 p.
- Eddy DM. Statistical issues in combining environmental studies. 2nd ASA/EPA Conferences on Interpretation of Environmental Data; 1986 Oct 1-2. Washington: Environmental Protection Agency, Office of Policy, Planning and Evaluation; [1986]. 102 p.
- Food and Drug Administration (US). Center for Drug Evaluation and Research. Guideline for the format and content of the clinical and statistical sections of new drug applications. Rockville (MD): The Administration; 1988 Jul. 125 p.
- Gelijns AC, editor. Modern methods of clinical investigation. Washington: National Academy Press; 1990. 222 p. (Medical innovation at the crossroads; vol. 1).
- General Accounting Office (US). Cross design synthesis: a new strategy for medical effectiveness research. Washington: The Office; 1992 Mar. Report No.: GAO/PEMD-92-18. 121 p.
- Glass GV, et al. Integration of research studies: meta-analysis of research. Methods of integrative analysis; Final report. Boulder: University of Colorado; 1980 Aug 15: 340 p.
- Glass GV, McGaw B, Smith ML. Meta-analysis in social research. Beverly Hills (CA): Sage Publications; 1981. 279 p.
- Hedges LV, et al. A practical guide to modern methods of meta-analysis. Washington: National Science Teachers Association; 1989. 80 p.
- Hedges LV, Olkin I. Statistical methods for meta-analysis. New York: Academic Press; 1985. 360 p.
- Hunter JE, Schmidt FL. Methods of meta-analysis correcting error and bias in research findings. Newbury Park (CA): Sage Publications; 1990. 592 p.
- Hunter JE, Schmidt FL, Jackson GB. Meta-analysis cumulating research findings across studies. Beverly Hills (CA): Sage Publications; 1982. 176 p.
- Jackson GB. Methods for reviewing and integrating research in the social sciences. Final report. Washington: George Washington University, Social Research Group; 1978 May. 136 p.
- Light RJ, Pillemer D. Summing up. Cambridge (MA): Harvard Univ. Press; 1984. 191 p.
- Mullen B. Advanced BASIC meta-analysis. Hillsdale (NJ): L. Erlbaum Associates; 1990. 169 p.
- Mullen B, Rosenthal R. BASIC meta-analysis: procedures and programs. Hillsdale (NJ): L. Earlbaum Associates; 1985. 144 p.
- Preiss RW. Meta-analysis: A bibliography of conceptual issues and statistical methods. In: ERIC [database online]. Washington: U.S. Dept. of Education, Educational Resource Information Center; 1966-1992. Accession No.: ED300411; [2 screens]. 28 page bibliography, 1988.
- Rosenthal R. Judgment studies design, analysis, and meta-analysis. New York: Cambridge University Press; 1987. 255 p.
- Rosenthal R. Meta-analytic procedures for social research. Rev. ed. Newbury Park (CA): Sage Publications; 1991. 155 p.
- Wachter KW, Straf ML, editors. The future of meta-analysis. New York: Russell Sage Foundation; 1990. 210 p.
- Wolf FM. Meta-analysis quantitative methods for research synthesis. Beverly Hills: Sage Publications; 1986. 65 p.
- Wortman PM, Yeaton WH (Institute for Social Research, University of Michigan, Ann Arbor). Role of research synthesis in medical technology assessment. Executive summary report for 1 May 81-30 Apr 84. Rockville (MD): National Center for Health Services Research and Health Care Technology Assessment; 1984 Jul. Report No.: NCHSR-88-10. Contract No.: PHS-HS-04849. 6 p.

**GENERAL**

- Abramson JH. Meta-analysis: a review of pros and cons. *Public Health Rev* 1990-91;18(1):1-47.
- Adami HO. What can epidemiological methods mean to surgical research? *Ups J Med Sci* 1988;93(2):155-60.
- Altman DG, Dor: e CJ. Randomisation and baseline comparisons in clinical trials. *Lancet* 1990 Jan 20; 335(8682):149-53.
- Altman DG, Elbourne D. Combining results from several clinical trials. *Br J Obstet Gynaecol* 1988 Jan;95(1):1-2.
- Andersen JW, Harrington D. Meta-analyses need new publication standards [editorial]. *J Clin Oncol* 1992 Jun;10(6):878-80.
- Anderson C. Congress looks for methods to assess clinical research [news]. *Nature* 1992 May 7; 357(6373):5.
- Angell M. Negative studies [editorial]. *N Engl J Med* 1989 Aug 17;321(7):464-6.
- Antczak-Bouckoms A, Tulloch JF. Update on technology assessment in dentistry. *Curr Opin Dent* 1992 Jun;2:10-4.
- Antman EM, Lau J, Kupelnick B, Mosteller F, Chalmers TC. A comparison of results of meta-analyses of randomized control trials and recommendations of clinical experts. Treatments for myocardial infarction. *JAMA* 1992 Jul 8;268(2): 240-8.
- Bangert-Drowns RL. Review of developments in meta-analytic method. *Psychol Bull* 1986;99(3): 388-99.
- Beadsley RS, Larson DB, Lyons JS, Gottlieb GL, Rabins P, Rovner B. Health services research in nursing homes: a systematic review of three clinical geriatric journals. *J Gerontol* 1989 Jan;44(1): M30-5.
- Berlin J, Chalmers TC. Commentary on meta-analysis in clinical trials. *Hepatology* 1988 May-Jun;8(3): 690-1.
- Boden WE. Meta-analysis in clinical trials reporting: has a tool become a weapon? [editorial]. *Am J Cardiol* 1992 Mar 1;69(6):681-6.
- Boissel JP, Blanchard J, Panak E, Peyrieux JC, Sacks H. Considerations for the meta-analysis of randomized clinical trials. Summary of a panel discussion. *Control Clin Trials* 1989 Sep;10(3): 254-81.
- Boissel JP, Sacks HS, Leizorovicz A, Blanchard J, Panak E, Peyrieux JC. Meta-analysis of clinical trials: summary of an international conference. *Eur J Clin Pharmacol* 1988;34(6):535-8.
- Brook RH. Health services research: is it good for you and me? *Acad Med* 1989 Mar;64(3):124-30.
- Brown SA. Effects of educational interventions in diabetes care: a meta-analysis of findings. *Nurs Res* 1988 Jul-Aug;37(4):223-30.
- Bulpitt CJ. Meta-analysis. *Lancet* 1988 Jul 9;2(8602): 93-4.
- Burnand B, Gutzwiller F, Paccaud F. [Clinical epidemiology: definitions, uses and reasons for development in Switzerland]. *Schweiz Med Wochenschr* 1988 Jun 4;118(22):849-55. (Fre).
- Chalmers TC. Meta-analysis [letter]. *Lancet* 1987 Jun 27;1(8548):1492.
- Chalmers TC. Meta-analysis in clinical medicine. *Trans Am Clin Climatol Assoc* 1987;99:144-50.
- Chalmers TC. Problems induced by meta-analyses. *Stat Med* 1991 Jun;10(6):971-9; discussion 979-80.
- Chalmers TC, Berrier J, Sacks HS, Levin H, Reitman D, Nagalingam R. Meta-analysis of clinical trials as a scientific discipline. II: replicate variability and comparison of studies that agree and disagree. *Stat Med* 1987 Oct-Nov;6(7):733-44.
- Chalmers TC, Levin H, Sacks HS, Reitman D, Berrier J, Nagalingam R. Meta-analysis of clinical trials as a scientific discipline. I: control of bias and comparison with large co-operative trials. *Stat Med* 1987 Apr-May;6(3):315-28.
- Chang LB, Becker BJ. A comparison of three integrative review methods: different methods, different findings? Paper presented at: Annual Meeting of the American Educational Research Association; 1987 Apr 20-24; Washington, DC. [24p.].
- Chlebowski RT, Blackburn GL, Nixon DW, Jochimsen P, Scanlon EF, Insull W Jr, Buzzard IM, Wynder EL, Elashoff R. Unpublished data summaries and the design and conduct of clinical trials. The nutrition adjuvant study experience and commentary. *Control Clin Trials* 1989 Dec;10(4): 368-77.
- Cook TD, Leviton LC. Reviewing the literature: a comparison of traditional methods with meta-analysis. *J Pers* 1980 Dec;48(4):449-72.
- Cooper HM. Scientific guidelines for conducting integrative research reviews. *Rev Educ Res* 1982 Summer;52(2):291-302.
- Cordray DS, Sonnefeld LJ. Quantitative Synthesis: an actuarial base for planning impact evaluations. *New Dir Test Meas* 1985 Sep;27:29-48.



- Cornwell JM. Content analysis of meta-analytic studies from I/O psychology. Paper presented at: 96th Annual Meeting of the American Psychological Association; 1988 Aug 12-16; Atlanta, GA. [15p.].
- Cross design synthesis: a new strategy for studying medical outcomes? [editorial]. *Lancet* 1992 Oct 17; 340(8825):944-6.
- Cunningham AS. Meta-analysis and methodology review: what's in a name? [editorial]. *J Pediatr* 1988 Aug;113(2):328-9.
- Curlette WL, Cannella KS. Going beyond the narrative summarization of research findings: the meta-analysis approach. *Res Nurs Health* 1985 Sep;8(3):293-301.
- Davila-Velazquez J, Martinez-Cairo S, Martinez-Garcia MC, Garduno-Espinosa J. [Meta-analysis: an alternative method in clinical research]. *Bol Med Hosp Infant Mex* 1991 Aug; 48(8):576-82. (Spa).
- Delgado Rodriguez M, Sillero Arenas M, Galvez Vargas R. [Meta-analysis in epidemiology (1): the general characteristics]. *Gac Sanit* 1991 Nov-Dec; 5(27):265-72. (Spa).
- Demets DL. Methods for combining randomized clinical trials: strengths and limitations. *Stat Med* 1987 Apr-May;6(3):341-50.
- DerSimonian R. Combining evidence from clinical trials [editorial]. *Anesth Analg* 1990 May;70(5): 475-6.
- Duffy ME. Meta-analysis: a quantitative approach to synthesizing research findings across studies. *Nurs Health Care* 1988 Jun;9(6):287-89.
- Durlak JA, Lipsey MW. A practitioner's guide to meta-analysis. *Am J Community Psychol* 1991 Jun; 19(3):291-332.
- Eddy DM. The challenge. *JAMA* 1990 Jan 12; 263(2):287-90.
- Eddy DM. Clinical decision making: from theory to practice. Designing a practice policy. Standards, guidelines, and options. *JAMA* 1990 Jun 13; 263(22):3077, 3081, 3084.
- Eddy DM. Clinical decision making: from theory to practice. Guidelines for policy statements: the explicit approach. *JAMA* 1990 Apr 25;263(16): 2239-40, 2243.
- Eddy DM. Clinical decision making: from theory to practice. Resolving conflicts in practice policies. *JAMA* 1990 Jul 18;264(3):389-91.
- Eddy DM. Comparing benefits and harms: the balance sheet. *JAMA* 1990 May 9;263(18):2493, 2498, 2501 passim.
- Eddy DM. Practice policies: where do they come from? *JAMA* 1990 Mar 2;263(9):1265, 1269, 1272 passim.
- Eddy DM. Selecting technologies for assessment. *Int J Technol Assess Health Care* 1989;5(4):485-501.
- Eddy DM. Successes and challenges of medical decision making. *Health Aff (Millwood)* 1986 Summer;5(2):108-15.
- Eddy DM, Billings J. The quality of medical evidence: implications for quality of care. *Health Aff (Millwood)* 1988 Spring;7(1):19-32.
- Einarson TR, Leeder JS, Koren G. A method for meta-analysis of epidemiological studies. *Drug Intell Clin Pharm* 1988 Oct;22(10):813-24.
- Elashoff JD. Combining results of clinical trials [editorial]. *Gastroenterology* 1978 Dec;75(6): 1170-2.
- Ellenberg JH. Biostatistical collaboration in medical research. *Biometrics* 1990 Mar;46(1):1-18; discussion 19-32.
- Ellenberg SS. Meta-analysis: the quantitative approach to research review. *Semin Oncol* 1988 Oct;15(5): 472-81.
- Engle VF, Graney MJ. Meta-analysis for the refinement of gerontological nursing research and theory. *J Gerontol Nurs* 1990 Sep;16(9):12-5.
- Farr BR, Shachter RD. Representation of preferences in decision-support systems. *Comput Biomed Res* 1992 Aug;25(4):324-35.
- Feller ER. The language of epidemiology (XII.): Meta-analysis, studying studies. *R I Med* 1992 Jun; 75(6):291-2.
- Fernandez-Ballart JD, Vobecky J, Marti-Henneberg C. [Meta-analysis: the synthesis and integration of the results of independent studies in medicine]. *Med Clin (Barc)* 1991 Mar 16;96(10):382-7. (Spa).
- Fetter MS, Feetham SL, D'Apolito K, Chaze BA, Fink A, Frink BB, Hougart MK, Rushton CH. Randomized clinical trials: issues for researchers. *Nurs Res* 1989 Mar-Apr;38(2):117-20.
- Fiske DW. The meta-analytic revolution in outcome research. *J Consult Clin Psychol* 1983 Feb;51(1): 65-70.

- Fleiss JL, Gross AJ. Meta-analysis in epidemiology, with special reference to studies of the association between exposure to environmental tobacco smoke and lung cancer; a critique. *J Clin Epidemiol* 1991; 44(2):127-39.
- Friedman MA. Potential pooling opportunities: cancer. *Stat Med* 1987 Apr-May;6(3):307-14.
- Ganiats TG, Schneiderman LJ. Principles of cost-effectiveness research. *J Fam Pract* 1988 Jul; 27(1):77-84.
- Gelber RD, Goldhirsch A. The concept of an overview of cancer clinical trials with special emphasis on early breast cancer. *J Clin Oncol* 1986 Nov;4(11):1696-703.
- Gelber RD, Goldhirsch A. Meta-analysis in clinical research [letter]. *Ann Intern Med* 1988 Jan;108(1): 158-9.
- Gerbarg ZB, Horwitz RI. Resolving conflicting clinical trials: guidelines for meta-analysis. *J Clin Epidemiol* 1988;41(5):503-9.
- Gilbert JP, McPeck B, Mosteller F. Progress in surgery and anesthesia: benefits and risks of innovative therapy. In: Bunker JP, Barnes BA, Mosteller F, editors. *Costs, risks, and benefits of surgery*. New York: Oxford Univ.; 1977. p. 125-69.
- Glass GV. Meta-analysis: an approach to the synthesis of research results. *J Res Sci Teach* 1982 Feb; 19(2):93-112.
- Glass GV. Primary, secondary, and meta-analysis research. *Educ Res* 1976;5:3-8.
- Goodman SN. Have you ever meta-analysis you didn't like? [editorial]. *Ann Intern Med* 1991 Feb 1; 114(3):244-6.
- Goodman SN. Meta-analysis and evidence [published erratum appears in *Control Clin Trials* 1989 Dec; 10(4):435]. *Control Clin Trials* 1989 Jun;10(2): 188-204.
- Graney MJ, Engle VF. Meta-analysis techniques. *J Gerontol Nurs* 1990 Sep;16(9):16-9.
- Greenland S. Quantitative methods in the review of epidemiologic literature. *Epidemiol Rev* 1987;9: 1-30.
- Hasselblad V, Eddy DM, Kotchmar DJ. Synthesis of environmental evidence: nitrogen dioxide epidemiology studies. *J Air Waste Manage Assoc* 1992 May;42(5):662-71.
- Hennekens CH, Buring JE, Hebert PR. Implications of overviews of randomized trials. *Stat Med* 1987 Apr-May;6(3):397-409.
- Henry DA, Wilson A. Meta-analysis. Part 1: an assessment of its aims, validity and reliability. *Med J Aust* 1992 Jan 6;156(1):31-8.
- Hlatky MA. Combining data from different studies. In: Grady ML, Schwartz HA. *Medical effectiveness research data methods*. Summary report. Rockville (MD): Agency for Health Care Policy and Research; 1992 Jul. p. 33-6. (AHCPR Pub. No. 92-0056).
- Hlatky MA, Califf RM, Harrell FE Jr, Lee KL, Mark DB, Muhlbaier LH, Pryor DB. Clinical judgment and therapeutic decision making. *J Am Coll Cardiol* 1990 Jan;15(1):1-14.
- Hogue CJ. Ethical issues in sharing epidemiologic data. *J Clin Epidemiol* 1991;44 Suppl 1: 103S-107S.
- Hoskins HD Jr. Proof: an elusive ideal [editorial]. *Ophthalmic Surg* 1988 May;19(5):313-4.
- Jackson GB. Methods for integrative reviews. *Rev Educ Res* 1980 Fall;50(3):438-60.
- Jenicek M. Meta-analysis in medicine. Where we are and where we want to go. *J Clin Epidemiol* 1989; 42(1):35-44.
- Jones DR. Meta-analysis of observational epidemiological studies: a review. *J R Soc Med* 1992 Mar;85(3):165-8.
- Kassirer JP. Clinical trials and meta-analysis. What do they do for us? [editorial]. *N Engl J Med* 1992 Jul 23;327(4):273-4.
- Katerndahl D. When plagiarism becomes research. *Fam Pract* 1991 Dec;8(4):382-3.
- Kavale KA, Glass GV. Meta-analysis and the integration of research in special education. *J Learn Disabil* 1981 Nov;14(9):531-38.
- Kulik JA. Uses and misuses of meta-analysis. Paper presented at: Annual Meeting of the American Educational Research Association; 1984 Apr 23-27; New Orleans, LA. [10 p.].
- Kulik JA, Kulik C-LC. Meta-analysis in education. *Int J Educ Res* 1989;13(3):221-340.
- L'Abbe KA, Detsky AS, O'Rourke K. Meta-analysis in clinical research. *Ann Intern Med* 1987 Aug; 107(2):224-33.
- Lau J, Antman EM, Jimenez-Silva J, Kupelnick B, Mosteller F, Chalmers TC. Cumulative meta-analysis of therapeutic trials for myocardial infarction. *N Engl J Med* 1992 Jul 23;327(4): 248-54.
- Lederman RP. Biases in meta-analysis and how to compensate. *MCN Am J Matern Child Nurs* 1992 Jul-Aug;17(4):215.

- Lederman RP. Guidelines for using meta-analysis. *MCN Am J Matern Child Nurs* 1992 Sep-Oct; 17(5):265.
- Lederman RP. Reviews of research literature: meta-analysis for synthesizing. *MCN Am J Matern Child Nurs* 1992 May-Jun;17(3):157.
- Leizorovicz A, Haugh M, Boissel JP. Meta-analysis and multiple publication of clinical trial reports [letter]. *Lancet* 1992 Oct 31;340(8827):1102-3.
- L'Hommedieu R, et al. Putting the "But" back in meta-analysis: issues affecting the validity of quantitative reviews. Paper presented at: Annual Meeting of the American Educational Research Association; 1987 Apr 20-24; Washington, D.C. [12 p.].
- Light RJ. Accumulating evidence from independent studies: what we can win and what we can lose. *Stat Med* 1987 Apr-May;6(3):221-31.
- Light RJ. Accumulating evidence: using meta-analysis to carry out research reviews in pediatrics. *Pediatrics* 1986 Dec;78(6):1145-7.
- Light RJ. Six evaluation issues that synthesis can resolve better than single studies. *New Dir Program Eval* 1984 Dec;24:57-73.
- Light RJ, Pillemer DB. Numbers and narrative: combining their strengths in research reviews. *Harvard Educ Rev* 1982 Feb;52(1):1-26.
- Llaurado JG. Metanalysis: a new scientific endeavor [editorial]. *Int J Biomed Comput* 1988 Mar;22(2): 77-9.
- Louis TA, Fineberg HV, Mosteller F. Findings for public health from meta-analyses. *Annu Rev Public Health* 1985;6:1-20.
- Lycka BA. Meta-analysis for dermatologists. *Int J Dermatol* 1990 Apr;29(3):229-31.
- Lynn MR. Meta-analysis: appropriate tool for the integration of nursing research? *Nurs Res* 1989 Sep-Oct;38(5):302-5.
- Makuch R, Johnson M. Issues in planning and interpreting active control equivalence studies. *J Clin Epidemiol* 1989;42(6):503-11.
- Malone MD, Strube MJ, Scogin FR. Meta-analysis of non-medical treatments for chronic pain [published erratum appears in *Pain* 1989 Apr;37(1):128]. *Pain* 1988 Sep;34(3):231-44.
- Mann C. Meta-analysis in the breech [news]. *Science* 1990 Aug 3;249(4968):476-80.
- Martin PH. Meta-analysis, meta-evaluation and secondary analysis. In: ERIC [database online]. Washington: U.S. Dept. of Education, Educational Resources Information Center; 1966-1992. Accession No.: ED228280; [2 screens]. 37 page unpublished research report, October 1982.
- Massey J, Loomis M. When should nurses use research findings? *Appl Nurs Res* 1988 May; 1(1):32-40.
- McConaghy N. Can reliance be placed on a single meta-analysis? *Aust N Z J Psychiatry* 1990 Sep; 24(3):405-15.
- McCain NL, Lynn MR. Meta-analysis of a narrative review. *Studies evaluating patient teaching. West J Nurs Res* 1990 Jun;12(3):347-58.
- McGeer AJ, Detsky AS, O'Rourke K. Parenteral nutrition in cancer patients undergoing chemotherapy: a meta-analysis. *Nutrition* 1990 May-Jun;6(3):233-40.
- McKinlay SM, Stone EJ, Zucker DM. Research design and analysis issues. *Health Educ Q* 1989 Summer;16(2):307-13.
- Meinert CL. Meta-analysis: science or religion? *Control Clin Trials* 1989 Dec;10(4 Suppl): 257S-263S.
- Michels KB. Quo vadis meta-analysis? A potentially dangerous tool if used without adequate rules. *Important Adv Oncol* 1992:243-8.
- Mintz J. Integrating research evidence: a commentary on meta-analysis. *J Consult Clin Psychol* 1983 Feb;51(1):71-5.
- Moldanado SA. Secondary analysis: expanding survey research by faculty members. *Nurse Educ* 1991 Jul-Aug;16(4):4-5, 15.
- Morley DD. Meta-analytic techniques: when generalizing to message populations is not possible. *Hum Commun Res* 1988 Fall;15(1):112-26.
- Mosteller F, Chalmers T. Some progress and problems in meta-analysis of clinical trials. *Stat Sci* 1992 May;7(2):227-36.
- Mottola CA. Synthesis of research findings through meta-analysis. *Decubitus* 1992 Sep;5(5):48-50.
- Motulsky AG. Sounding board. Biased ascertainment and the natural history of diseases. *N Engl J Med* 1978 May 25;298(21):1196-7.
- Muller C. Objective health care technology evaluation-it isn't easy. *Soc Work Health Care* 1991;16(1):119-32.
- Mulrow CD. The medical review article: state of the science. *Ann Intern Med* 1987 Mar;106(3):485-8.

- Mulrow CD, Thacker SB, Pugh JA. A proposal for more informative abstracts of review articles. *Ann Intern Med* 1988 Apr;108(4):613-5.
- Murray GD. Meta-analysis. *Br J Surg* 1990 Mar; 77(3):243-4.
- Naylor CD. Meta-analysis of controlled clinical trials. *J Rheumatol* 1989 Apr;16(4):424-6.
- Naylor CD. Two cheers for meta-analysis: problems and opportunities in aggregating results of clinical trials. *Can Med Assoc J* 1988 May 15;138(10): 891-5.
- Neugebauer E, Rothmund M, Lorenz W. [The concept, structure and practice of prospective clinical studies]. *Chirurg* 1989 Apr;60(4):203-13. (Ger).
- Norton BJ, Strube MJ. Making decisions based on group designs and meta-analysis. *Phys Ther* 1989 Jul;69(7):594-600.
- Olson RK, Heater BS, Becker AM. Meta-analysis of data from experimental research. *Kans Nurse* 1990 Nov-Dec;65(10):1.
- O'Rourke K, Detsky AS. Meta-analysis in medical research: strong encouragement for higher quality in individual research efforts. *J Clin Epidemiol* 1989;42(10):1021-4.
- Ottensbacher KJ, Petersen P. Quantitative reviewing of medical literature. An approach to synthesizing research results in clinical pediatrics. *Clin Pediatr (Phil)* 1984 Aug;23(8):423-7.
- Oxman A. Science of reading. *Pediatrics* 1989 Apr; 83(4):617-9.
- Oxman AD, Guyatt GH. A consumer's guide to subgroup analyses. *Ann Intern Med* 1992 Jan 1; 116(1):78-84.
- Peto R. Why do we need systematic overviews of randomized trials? *Stat Med* 1987 Apr-May;6(3): 233-44.
- Pignon JP. [Meta-analysis in clinical research]. *Presse Med* 1988 Dec 10;17(44):2328-30. (Fre).
- Pillemer DB, Light RJ. Synthesizing outcomes: how to use research evidence from many studies. *Harv Educ Rev* 1980 May;50(2):176-95.
- Putzrath RM, Ginevan ME. Meta-analysis: methods for combining data to improve quantitative risk assessment. *Regul Toxicol Pharmacol* 1991 Oct; 14(2):178-88.
- Ratain JS, Hochberg MC. Clinical trials. A guide to understanding methodology and interpreting results. *Arthritis Rheum* 1990 Jan;33(1):131-9.
- Sacks HS, Berrier J, Reitman D, Ancona-Berk VA, Chalmers TC. Meta-analyses of randomized controlled trials. *N Engl J Med* 1987 Feb 19; 316(8):450-5.
- Sacks HS, Berrier J, Reitman D, Pagans D, Chalmers TC. Meta-analysis of randomized control trials: an update of the quality and methodology. In: Bailar JC, Mosteller F, editors. *Medical uses of statistics*. 2nd ed. Boston: NEJM; 1992. p. 427-42.
- Schell CL, Rathe RJ. Meta-analysis: a tool for medical and scientific discoveries. *Bull Med Libr Assoc* 1992 Jul;80(3):219-22.
- Shapiro DA, Shapiro D. Comparative therapy outcome research: methodological implications of meta-analysis. *J Consult Clin Psychol* 1983 Feb; 51(1):42-53.
- Simes J. Meta-analysis: its importance in cost-effectiveness studies. *Med J Aust* 1990 Aug 6; 153 Suppl:S13-6.
- Simon R. Overviews of randomized clinical trials. *Cancer Treat Rep* 1987 Jan;71(1):3-5.
- Sindelar PT, Wilson RJ. The potential effects of meta-analysis on special education practice. *J Spec Educ* 1984 Spring;18(1):81-92.
- Slavin RE. Best-evidence synthesis: an alternative to meta-analysis and traditional reviews. *Educ Res* 1986 Nov;15:5-11.
- Smith MC. Meta-analysis. *NLN Publ* 1988 Dec; (15-2233):77-91.
- Smith MC, Naftel DC. Meta-analysis: a perspective for research synthesis. *Image J Nurs Sch* 1984 Winter;16(1):9-13.
- Smith MC, Stullenbarger E. Meta-analysis: an overview. *Nurs Sci Q* 1989 Fall;2(3):114-5.
- Smith MC, Stullenbarger E. A prototype for integrative review and meta-analysis of nursing research. *J Adv Nurs* 1991 Nov;16(11):1272-83.
- Sobal J, Deforge BR. Fraudulent studies and meta-analysis [letter]. *JAMA* 1988 Aug 12;260(6): 791-2.
- Sorensen TI. [Meta-analysis--a pseudoscience or a useful tool?] *Ugeskr Laeger* 1991 Jul 1;153(27): 1913-4. (Dan).
- Spector TD, Thompson SG. The potential and limitations of meta-analysis. *J Epidemiol Community Health* 1991 Jun;45(2):89-92.
- Spitzer WO. Meta-meta-analysis: unanswered questions about aggregating data [editorial]. *J Clin Epidemiol* 1991;44(2):103-7.

Streiner DL. Using meta-analysis in psychiatric research. *Can J Psychiatry* 1991 Jun;36(5):357-62.

Strube MJ, Hartmann DP. A critical appraisal of meta-analysis. *Br J Clin Psychol* 1982 Jun;21(Pt 2):129-39.

Teagarden JR. Meta-analysis: whither narrative review? *Pharmacotherapy* 1989;9(5):274-81; discussion 281-4.

Thacker SB. Meta-analysis. A quantitative approach to research integration. *JAMA* 1988 Mar 18;259(11):1685-9.

Thompson SG, Pocock SJ. Can meta-analyses be trusted? *Lancet* 1991 Nov 2;338(8775):1127-30.

Uberla KK. Boundaries of perception and knowledge for risk assessment in epidemiology. *Int J Epidemiol* 1990;19 Suppl 1:S81-3.

Udvarhelyi IS, Colditz GA, Rai A, Epstein AM. Cost-effectiveness and cost-benefit analyses in the medical literature. Are the methods being used correctly? *Ann Intern Med* 1992 Feb 1;116(3):238-44.

Wachter KW. Disturbed by meta-analysis? *Science* 1988 Sep 16;241(4872):1407-08.

Wittes RE. Problems in the medical interpretation of overviews. *Stat Med* 1987 Apr-May;6(3):269-80.

Wolf FM. Meta-analytic applications in program evaluation. Paper presented at: 90th Annual Convention of the American Psychological Association; 1982 Aug 23-27; Washington, DC. [27 p.].

Yach D. Meta-analysis in epidemiology. *S Afr Med J* 1990 Jul 21;78(2):94-7.

Yeaton WH, Wortman PM. Evaluation issues in medical research synthesis. *New Dir Program Eval* 1984 Dec;24:43-56.

Yusuf S. Obtaining medically meaningful answers from an overview of randomized clinical trials. *Stat Med* 1987 Apr-May;6(3):281-94.

## CODING

Brown SA. Measurement of quality of primary studies for meta-analysis. *Nurs Res* 1991 Nov-Dec;40(6):352-5.

Detsky AS, Naylor CD, O'Rourke K, McGeer AJ, L'Abbe KA. Incorporating variations in the quality of individual randomized trials into meta-analysis. *J Clin Epidemiol* 1992 Mar;45(3):255-65.

Emerson JD, Burdick E, Hoaglin DC, Mosteller F, Chalmers TC. An empirical study of the possible relation of treatment differences to quality scores in controlled randomized clinical trials. *Control Clin Trials* 1990 Oct;11(5):339-52.

Felson DT. Bias in meta-analytic research. *J Clin Epidemiol* 1992 Aug;45(8):885-92.

Liberati A, Himel HN, Chalmers TC. A quality assessment of randomized control trials of primary treatment of breast cancer. *J Clin Oncol* 1986 Jun;4(6):942-51.

Matt GE. Decision rules for selecting effect sizes in meta-analysis: a review and reanalysis of psychotherapy outcome studies. *Psychol Bull* 1989 Jan;105(1):106-15.

Orwin RG, Cordray DS. Effects of deficient reporting on meta-analysis: a conceptual framework and reanalysis. *Psychol Bull* 1985 Jan;97(1):134-47.

Oxman AD, Guyatt GH. Guidelines for reading literature reviews. *Can Med Assoc J* 1988 Apr 15;138(8):697-703.

Oxman AD, Guyatt GH. Validation of an index of the quality of review articles. *J Clin Epidemiol* 1991;44(11):1271-8.

Oxman AD, Guyatt GH, Singer J, Goldsmith CH, Hutchison BG, Milner RA, Streiner DL. Agreement among reviewers of review articles. *J Clin Epidemiol* 1991;44(1):91-8.

Stock WA, Okun M, Haring M, Miller W, Kenney C, Ceurvorst R. Rigor in data synthesis: case study of reliability in meta-analysis. *Educ Res* 1982 Jun-Jul;11(6):10-4.

Wilson A, Henry DA. Meta-analysis. Part 2: Assessing the quality of published meta-analyses. *Med J Aust* 1992 Feb 3;156(3):173-4, 177-80, 184-7.

## SEARCHING THE LITERATURE

- Chalmers I, Hetherington J, Newdick M, Mutch L, Grant A, Enkin M, Enkin E, Dickersin K. The Oxford database of perinatal trials: developing a register of published reports of controlled trials. *Control Clin Trials* 1986 Dec;7(4):306-24.
- Chalmers TC, Hewett P, Reitman D, Sacks HS. Selection and evaluation of empirical research in technology assessment. *Int J Technol Assess Health Care* 1989;5(4):521-36.
- Cooper H, Ribble R. Influences on the outcome of literature searches for integrative research reviews. In: ERIC [database online]. Washington: U.S. Dept. of Education, Educational Resources Information Center; 1966-1992. Accession No.: ED266802; [2 screens]. 36 page unpublished research report, 1985.
- Dickersin K, Hewett P, Mutch L, Chalmers I, Chalmers TC. Perusing the literature: comparison of Medline searching with a perinatal trials database. *Control Clin Trials* 1985 Dec;6(4):306-17.
- Dickersin K, Higgins K, Meinert CL. Identification of meta-analyses. The need for standard terminology. *Control Clin Trials* 1990 Feb;11(1):52-66.
- Hawkins BS. Perusing the literature. *Control Clin Trials* 1988 Jun;9(2):152-62.
- Hawkins BS, Singer SW. Perusing the literature. *Control Clin Trials* 1989 Jun;10(2):211.
- Kirpalani H, Schmidt B, McKibbin KA, Haynes RB, Sinclair JC. Searching Medline for randomized clinical trials involving care of the newborn. *Pediatrics* 1989 Apr;83(4):543-46.
- Poynard T, Conn HO. The retrieval of randomized clinical trials in liver disease from the medical literature, a comparison of Medlars and manual methods. *Control Clin Trials* 1985 Dec;6(4):271-79.
- Schoones JW. Searching publication data bases [letter]. *Lancet* 1990 Feb 24;335(8687):481.
- Swanson DR. Medical literature as a potential source of new knowledge. *Bull Med Libr Assoc* 1990 Jan;78(1):29-37.

## PUBLICATION BIAS

- Begg CB, Berlin JA. Publication bias: problem in interpreting medical data. *J R Stat Soc Ser A* 1988;151(3):419-45.
- Begg CB, Berlin JA. Publication bias and dissemination of clinical research. *J Natl Cancer Inst* 1989 Jan 18;81(2):107-15.
- Berlin JA, Begg CB, Louis TA. An assessment of publication bias using a sample of published clinical trials. *J Am Stat Assoc* 1989 Jun;84(406):381-92.
- Carson KP, et al. The usefulness of the "fail-safe" statistic in meta-analysis. *Educ Psychol Meas* 1990 Summer;50(2):233-43.
- Chalmers TC, Frank CS, Reitman D. Minimizing the three stages of publication bias. *JAMA* 1990 Mar 9;263(10):1392-5.
- Dear KBG, Begg CB. An approach for assessing publication bias prior to performing a meta-analysis. *Stat Sci* 1992 May;7(2):237-45.
- Dickersin K. Report from the panel on the case for registers of clinical trials at the Eighth Annual Meeting of the Society for Clinical Trials. *Control Clin Trials* 1988 Mar;9(1):76-81.
- Dickersin K, Chan S, Chalmers TC, Sacks HS, Smith H Jr. Publication bias and clinical trials. *Control Clin Trials* 1987 Dec;8(4):343-53.
- Dickersin K, Min Yi, Meinert Cl. Factors influencing publication of research results. Follow-up of applications submitted to two institutional review boards. *JAMA* 1992 Jan 15;267(3):374-8.
- Dickersin K, Min YI, Meinert CL. The fate of clinical trials funded by the NIH in 1979. *Control Clin Trials* 1991 Oct;12(5):634.
- Easterbrook PJ. Reducing publication bias. *Br Med J* 1987 Nov 21;295(6609):1347.
- Easterbrook PJ, Berlin JA, Gopalan R, Matthews DR. Publication bias in clinical research. *Lancet* 1991 Apr 13;337(8746):867-72.
- Hedges LV. Estimation of effect size under nonrandom sampling: the effects of censoring studies yielding statistically insignificant mean differences. *J Educ Stat* 1984 Spring;9(1):61-85.
- Hedges LV. Modeling publication selection effects in meta-analysis. *Stat Sci* 1992 May;7(2):246-55.
- Hedges LV. The meta-analysis of test validity studies: some new approaches. In: Braun HI, Wainer H, editors. *Test validity*. Hillsdale (NJ): Erlbaum Associates; 1988. p. 191-212.

Hetherington J, Dickersin K, Chalmers I, Meinert CL. Retrospective and prospective identification of unpublished controlled trials: lessons from a survey of obstetricians and pediatricians. *Pediatrics* 1989 Aug;84(2):374-80.

Iyengar S, Greenhouse JB. Selection models and the file drawer problem. *Stat Sci* 1988 Feb;3(1):109-35.

Kleijnen J, Knipschild P. Review articles and publication bias. *Arzneimittelforschung* 1992 May; 42(5):587-91.

Lane DM, Dunlap WP. Estimating effect size: bias decisions. *Br J Math Stat Psychol* 1978 Nov; 31(2):107-12.

Rosenthal R. The "file drawer problem" and tolerance for null results. *Psychol Bull* 1979;86(3):638-41.

Simes RJ. Confronting publication bias: a cohort design for meta-analysis. *Stat Med* 1987 Jan-Feb; 6(1):11-29.

## STATISTICS

### - General

Abraham IL, Schultz S 2d. Univariate statistical models for meta-analysis. *Nurs Res* 1983 Sep-Oct; 32(5):312-5.

Becker BJ. Applying tests of combined significance in meta-analysis. *Psychol Bull* 1987 Jul;102(1): 164-71.

Becker BJ. Power differences among tests of combined significance. Paper presented at: 68th Annual Meeting of the American Educational Research Association; 1984 Apr 23-27; New Orleans, LA. [21p].

Becker BJ. Small sample accuracy of approximate distributions of functions of observed probabilities from t-tests. *J Educ Stat* 1991 Winter;16(4): 345-69.

Becker BJ, Hedges LV. Meta-analysis of cognitive gender differences: comment on an analysis by Rosenthal and Rubin. *J Educ Psychol* 1984 Aug; 76(4):583-87.

Begg CB, Pilote L. A model for incorporating historical controls into a meta-analysis. *Biometrics* 1991 Sep;47(3):899-906.

Blashfield RK, Aldenderfer MS. The literature on cluster analysis. *Multivar Behav Res* 1978 Jul; 13(3):271-95.

Blimling GS. Meta-analysis: A statistical method for integrating the results of empirical studies. *J Coll Student Dev* 1988 Nov;29(6):543-49.

Center BA, et al. A methodology for the quantitative synthesis of Intra-Subject Design Research. *J Spec Educ* 1986 Winter;19(4):387-400.

Chalmers TC, Buyse ME. Meta-analysis. In: Chalmers TC, editor. *Data analysis for clinical medicine: the quantitative approach to patient care in gastroenterology*. Rome: International University Press; 1988. p. 75-84.

Cooper HM, Rosenthal R. Statistical versus traditional procedures for summarizing research findings. *Psychol Bull* 1980 May;87(3):442-9.

Delgado Rodriguez M, Sillero Arenas M, Gálvez Vargas R. [Meta-analysis in epidemiology (2): quantitative methods]. *Gac Sanit* 1992 Jan-Feb; 6(28):30-9. (Spa).

DerSimonian R, Laird N. Meta-analysis in clinical trials. *Control Clin Trials* 1986 Sep;7(3):177-88.

- DuMouchel WH. Bayesian meta-analysis. In: Berry DA, editor. *Statistical methodology in the pharmaceutical science*. New York: Dekker; 1990. p. 509-29.
- Eddy DM. CAN\*TROL: a computer model for designing national cancer control strategies. *Bull Cancer (Paris)* 1987;74(3):323-32.
- Eddy DM, Hasselblad V, Shachter R. A Bayesian method for synthesizing evidence. The confidence profile method. *Int J Technol Assess Health Care* 1990;6(1):31-55.
- Eddy DM, Hasselblad V, Shachter R. An introduction to a Bayesian method for meta-analysis: the confidence profile method. *Med Decis Making* 1990 Jan-Mar;10(1):15-23.
- Follmann D, Elliott P, Suh I, Cutler J. Variance imputation for overviews of clinical trials with continuous response. *J Clin Epidemiol* 1992 Jul; 45(7):769-73.
- Gelber RD, Goldhirsch A. Interpretation of results from subset analyses within overviews of randomized clinical trials. *Stat Med* 1987 Apr-May;6(3):371-88.
- Gingerich WJ. Meta-analysis of applied time-series data. *J Appl Behav Sci* 1984 Feb;20(1):71-9.
- Haladyna T. A common metric for integrating research findings. In: ERIC [database online]. Washington: U.S. Dept. of Education, Educational Resources Information Center; 1966-1992. Accession No.: ED202873; [2 screens]. 21 page unpublished report, 1981.
- Halvorsen KT, Burdick E, Colditz GA, Frazier HS, Mosteller F. Combining results from independent investigations: meta-analysis in clinical research. In: Bailar JC 3d, Mosteller F, editors. *Medical uses of statistics*. 2nd ed. Boston: NEJM Books; 1992. p. 413-26.
- Hedges LV. Combining independent estimators in research synthesis. *Br J Math Stat Psychol* 1983 May;36(1):123-31.
- Hedges LV, Bushman BJ, Cooper H. Testing the null hypothesis in meta-analysis: a comparison of combined probability and confidence interval procedures. *Psychol Bull* 1992;111(1):188-94.
- Hedges LV, Olkin I. Clustering estimators of effect magnitude from independent studies. *Psychol Bull* 1983 May;93(3):563-73.
- Hedges LV, Olkin I. Nonparametric estimators of effect size in meta-analysis. *Psychol Bull* 1984 Nov;96(3):573-80.
- Hedges LV, Olkin I. Regression models in research synthesis. *Am Stat* 1983 May;37(2):137-40.
- Hedges LV, Olkin I. Vote-counting methods in research synthesis. *Psychol Bull* 1980 Sep;88(2): 359-69.
- Hemenway D. The second best in statistics. *J Clin Epidemiol* 1991;44(9):957-9.
- Kraemer HC. Theory of estimation and testing of effect sizes: use in meta-analysis. *J Educ Stat* 1983 Summer;8(2):93-101.
- Laird NM, Mosteller F. Some statistical methods for combining experimental results. *Int J Technol Assess Health Care* 1990;6(1):5-30.
- Ludlow LH. Diagnostic techniques in research synthesis. Paper presented at: 68th Annual Meeting of the American Educational Research Association; 1984 Apr 23-27; New Orleans, LA. [23 p.].
- Meier P. Variance of a weighted mean. *Biometrics* 1953 Mar;9(1):59-73.
- Muller KE, Benignus VA. Increasing scientific power with statistical power. *Neurotoxicol Teratol* 1992 May-Jun;14(3):211-9.
- Murray LW, Dosser DA Jr. How significant is a significant difference? Problems with the measurement of magnitude of effect. *J Couns Psychol* 1987 Jan;34(1):68-72.
- Pocock SJ, Hughes MD. Estimation issues in clinical trials and overviews. *Stat Med* 1990 Jun;9(6): 657-71.
- Rosenthal R. Combining results of independent studies. *Psychol Bull* 1978 Jan;85(1):185-93.
- Rosenthal R, Rubin DB. Ensemble-adjusted p values. *Psychol Bull* 1983 Nov;94(3):540-41.
- Rosenthal R, Rubin DB. A simple, general purpose display of magnitude of experimental effect. *Educ Psychol* 1982 Apr;74(2):166-9.
- Rubin DB. Estimation in parallel randomized experiments. *J Educ Stat* 1981 Winter;6(4):337-99.
- Rubin DB. Using empirical Bayes techniques in the law school validity studies. *J Am Stat Assoc* 1980 Dec;75(372):801-16.
- Salzberg CL, et al. Meta-analysis for single-subject research: When does it clarify? When does it obscure? *Remedial Spec Educ* 1987 Mar-Apr;8(2): 43-8.
- Sasieni P. A note on the presentation of matched case-control data. *Stat Med* 1992 Mar;11(5): 617-20.



- Schmidt FL. From validity generalization to meta-analysis: the development and application of a new research integration procedure. Paper presented at: 69th Annual Meeting of the American Educational Research Association; 1985 Mar 31-Apr 4; Chicago, IL. [16 p.].
- Scruggs TE, et al. The quantitative synthesis of single-subject research: methodology and validation. *Remedial Spec Educ* 1987 Mar-Apr;8(2):24-33.
- Scruggs TE, et al. Reply to Owen White. *Remedial Spec Educ* 1987 Mar-Apr;8(2):40-2.
- Scruggs TE, et al. Response to Salzberg, Strain, and Baer. *Remedial Spec Educ* 1987 Mar-Apr;8(2):49-52.
- Smoot S, et al. Meta-analysis of single subject research in special education: a common metric and a computerized method. In: ERIC [database online]. Washington: U.S. Dept. of Education, Educational Resources Information Center; 1966-1992. Accession No.: ED322151; [2 screens]. 15 page unpublished research report, April 1990.
- Strube MJ. A general model for estimating and correcting the effects of nonindependence in meta-analysis. Paper presented at: 67th Annual Meeting of the American Educational Research Association; 1986 Apr 16-20; San Francisco, CA. [10 p.].
- Strube MJ. Some comments on the use of magnitude-of-effect estimates. *J Couns Psychol* 1988 Jul;35(3):342-45.
- Suen HK. A Bayesian aggregate meta-analytic evaluation approach. *Eval Health Prof* 1984 Dec;7(4):461-70.
- Tracz SM, Elmore PB. The effect of the violation of the assumption of independence when combining correlation coefficients in a meta-analysis. Paper presented at: 69th Annual Meeting of the American Educational Research Association; 1985 Mar 31-Apr 4; Chicago, IL. [22 p.].
- Velanovich V. Meta-analysis for combining Bayesian probabilities. *Med Hypotheses* 1991 Jul;35(3):192-5.
- White OR. Some comments concerning "The quantitative synthesis of single-subject research." *Remedial Spec Educ* 1987 Mar-Apr;8(2):34-9.
- Whitehead A, Whitehead J. A general parametric approach to the meta-analysis of randomized clinical trials. *Stat Med* 1991 Nov;10(11):1665-77.
- Zucker D, Yusuf S. The likelihood ratio versus the p value in meta-analysis: where is the evidence? Comment on the paper by S. N. Goodman. *Control Clin Trials* 1989 Jun;10(2):205-8; discussion 209-10.
- Combining Studies With Discrete Endpoints**
- Bailey KR. Inter-study differences: how should they influence the interpretation and analysis of results? *Stat Med* 1987 Apr-May;6(3):351-60.
- Berlin JA, Laird NM, Sacks HS, Chalmers TC. A comparison of statistical methods for combining event rates from clinical trials. *Stat Med* 1989 Feb;8(2):141-51.
- Breslow N. Odds ratio estimators when the data are sparse. *Biometrika* 1981 Apr;68(1):73-84.
- Breslow NE, Liang KY. The variance of the Mantel-Haenszel estimator. *Biometrics* 1982 Dec;38(4):943-52.
- Carlin JB. Meta-analysis for 2 x 2 tables: a Bayesian approach. *Stat Med* 1992 Jan 30;11(2):141-58.
- Donner A, Hauck WW. The large-sample relative efficiency of the Mantel-Haenszel estimator in the fixed-strata case. *Biometrics* 1986 Sep;42(3):537-45.
- Flanders WD. A new variance estimator for the Mantel-Haenszel odds ratio. *Biometrics* 1985 Sep;41(3):637-42.
- Fleiss JL. *Statistical methods for rates and proportions*. New York: Wiley; 1973. Combining evidence from fourfold tables; p. 109-29.
- Gart JJ. Point and interval estimation of the common odds ratio in the combination of 2 x 2 tables with fixed marginals. *Biometrika* 1970 Dec;57(3):471-75.
- Gart JJ, Zweifel JR. On the bias of various estimators of the logit and its variance with application to quantal bioassay. *Biometrika* 1967 Jun;54(1):181-7.
- Gastwirth JL. The use of maximum efficiency robust tests in combining contingency tables and survival analysis. *J Am Stat Assoc* 1985 Jun;80(390):380-4.
- Greenland S, Salvan A. Bias in the one-step method for pooling study results. *Stat Med* 1990 Mar;9(3):247-52.
- Guilbaud O. On the large-sample distribution of the Mantel-Haenszel odds-ratio estimator. *Biometrics* 1983 Jun;39(2):523-25.
- Hauck WW. A comparative study of conditional maximum likelihood estimation of a common odds ratio. *Biometrics* 1984 Dec;40(4):1117-23.
- Hauck WW. The large sample variance of the Mantel-Haenszel estimator of a common odds ratio. *Biometrics* 1979 Dec;35(4):817-19.

- Hauck WW, Anderson S, Leahy FJ 3d. Finite-sample properties of some old and some new estimators of a common odds ratio from multiple  $2 \times 2$  tables. *J Am Stat Assoc* 1982 Mar;77(377):145-52.
- Hauck WW, Donner A. The asymptotic relative efficiency of the Mantel-Haenszel estimator in the increasing-number-of-strata case. *Biometrics* 1988 Jun;44(2):379-84.
- Liang KY. Odds ratio inference with dependent data. *Biometrika* 1985 Dec;72(3):678-82.
- Mantel N, Brown C, Byar DP. Tests for homogeneity of effect in an epidemiologic investigation. *Am J Epidemiol* 1977 Aug;106(2):125-9.
- Mantel N, Haenszel W. Statistical aspects of the analysis of data from retrospective studies of disease. *J Nat Cancer Inst* 1959 Apr;22(4):719-48.
- McKinlay SM. The effect of nonzero second-order interaction on combined estimators of the odds ratio. *Biometrika* 1978 Apr;65(1):191-202.
- Mehta CR, Patel NR, Gray R. Computing an exact confidence interval for the common odds ratio in several  $2 \times 2$  contingency tables. *J Am Stat Assoc* 1985 Dec;80(392):969-73.
- Phillips A, Holland PW. Estimators of the variance of the Mantel-Haenszel log-odds-ratio estimate. *Biometrics* 1987 Jun;43(2):425-31.
- Raghunathan TE. Pooling controls from different studies. *Stat Med* 1991 Sep;10(9):1417-26.
- Robins J, Breslow N, Greenland S. Estimators of the Mantel-Haenszel variance consistent in both sparse data and large-strata limiting models. *Biometrics* 1986 Jun;42(2):311-23.
- Robins J, Greenland S, Breslow NE. A general estimator for the variance of the Mantel-Haenszel odds ratio. *Am J Epidemiol* 1986 Nov;124(5):719-23.
- Tarone RE, Gart JJ, Hauck WW. On the asymptotic inefficiency of certain noniterative estimators of a common relative risk or odds ratio. *Biometrika* 1983 Aug;70(2):519-22.
- Thomas D. Exact and asymptotic methods for the combination of  $2 \times 2$  tables. *Comput Biomed Res* 1975 Oct;8(5):423-46.
- Ury HK. Hauck's approximate large-sample variance of the Mantel-Haenszel estimator [letter]. *Biometrics* 1982 Dec;38(4):1094-5.
- Combining Studies With Continuous Endpoints**
- Becker BJ. Synthesizing standardized mean-change measures. *Br J Math Stat Psychol* 1988 Nov;41(2):257-78.
- Bruno JE, Ellett FS, Jr. A core-analysis of meta-analysis. *Qual Quant* 1988;22(2):111-26.
- Fowler RL. Estimating the standardized mean difference in intervention studies. *J Educ Stat* 1988 Winter;13(4):337-50.
- Hedges LV. Advances in statistical methods for meta-analysis. *New Dir Program Eval* 1984 Dec;24:25-42.
- Hedges LV. Distribution theory for Glass's estimator of effect size and related estimators. *J Educ Stat* 1981 Summer;6(2):107-28.
- Hedges LV. Estimation of effect size from a series of independent experiments. *Psychol Bull* 1982 Sep;92(2):490-99.
- Hedges LV. Fitting categorical models to effect sizes from a series of experiments. *J Educ Stat* 1982 Summer;7(2):119-37.
- Hedges LV. Fitting continuous models to effect size data. *J Educ Stat* 1982 Winter;7(4):245-70.
- Hedges LV. A random effects model for effect sizes. *Psychol Bull* 1983 Mar;93(2):388-95.
- Holmes CT. Effect size estimation in meta-analysis. *J Exp Educ* 1984 Winter;52(2):106-09.
- Huynh C-L. A unified approach to the estimation of effect size in meta-analysis. Paper presented at: Annual Meeting of the American Educational Research Association; 1989 Mar 27-31; San Francisco, CA. [39p.].
- Kraemer HC, Andrews G. A nonparametric technique for meta-analysis effect size calculation. *Psychol Bull* 1982 Mar;91(2):404-12.
- Raudenbush SW, Becker BJ, Kalaian H. Modeling multivariate effect sizes. *Psychol Bull* 1988 Jan;103(1):111-20.
- Reynolds S, Day J. Monte Carlo studies of effect size estimates and their approximations in meta-analysis. Paper presented at: Annual Meeting of the American Psychological Association; 1984 Aug 24-28; Toronto, ON. [19p.].
- Rosenthal R, Rubin DB. Comparing effect sizes of independent studies. *Psychol Bull* 1982 Sep;92(2):500-4.

Rosenthal R, Rubin DB. Further meta-analytic procedures for assessing cognitive gender differences. *J Educ Psych* 1982 Oct;74(5):708-12.

Tracz SM, et al. Tests of dependence in meta-analysis using multiple linear regression. Paper presented at: 67th Annual Meeting of the American Educational Research Association; 1986 Apr 16-20; San Francisco, CA. [11 p.].