

### **The Contribution of the Cochrane Collaboration and The Canadian Cochrane Network and Centre**

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#### **Introduction**

Chiropractors are busy health professionals. Like all other health practitioners today, you do not have the time to read all the literature you ought to review to keep current with new research and the reports of best practices in your profession. Fortunately, there are reliable sources of up-to-date summarized literature available to help you.

*The Cochrane Library* of systematic reviews of health care interventions is one of those sources. The Journal of the Canadian Chiropractic Association has arranged for a series of articles on the Cochrane Collaboration, The Canadian Cochrane Network and Centre, The Cochrane Library and systematic reviews. This is the introductory article in the series.

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### Evidence-based Practice

In their introduction to the book *Users' Guides to the Medical Literature – The Essentials of Evidence-Based Clinical Practice*, Gord Guyatt et al. document the evolution of the concepts of critical appraisal into evidence-based medicine and currently evidence-based practice.<sup>1</sup> Evidence-based medicine (or evidence-base practice) is about solving clinical problems.<sup>1</sup> It is about identifying and applying evidence from research to answer clinical questions and it challenges tradition, intuition, and conventional authority.

Guyatt et al. state that evidenced-based practice involves two principles: 1) evidence alone is not sufficient to make clinical decisions; and, 2) there is a hierarchy of evidence to guide clinical decision-making.<sup>1</sup> According to the first principle, if clinical decision-making is to be patient or client centered it must consider individual values, preferences and circumstances along with information derived from research. The second principle speaks to the different levels of clinical evidence and the strengths and limitations of each (Table 1). Perhaps the most frequently quoted definition of evidence-based practice alludes to this hierarchy of evidence: “the conscientious, explicit, and judicious use of the current best evidence in making decisions about the care of individual patients”.<sup>2</sup>

**Table 1**  
**A Hierarchy of Strength of Evidence for Treatment Decisions<sup>1</sup>**

- |   |
|---|
| <ul style="list-style-type: none"> <li>• N of 1 randomized controlled trial</li> <li>• Systematic reviews of randomized trials</li> <li>• Single randomized trial</li> <li>• Systematic review of observational studies addressing patient-important outcomes</li> <li>• Single observational study addressing patient-important outcomes</li> <li>• Physiologic studies (studies of blood pressure, cardiac output, exercise capacity, bone density, and so forth)</li> <li>• Unsystematic clinical observation</li> </ul> |
|---|

Source: *Users' Guides to the Medical Literature*, American Medical Association, copyright 2002.

### Sources of Evidence

Evidence can include unsystematic clinical observations of individual practitioners. However, this information may have inherent limitations and lead to inappropriate clinical decisions. Table 1 presents the hierarchy of study designs for treatment issues. Generally speaking, RCTs are better than observational studies and a systematic review of RCTs is better than a single study.<sup>1</sup>

The Glossary in *The Cochrane Library* defines a systematic review as a review that begins with “a clearly formulated question and then uses systematic and explicit methods to identify, select and critically appraise relevant research and to collect and analyze data from the studies included in the review”.<sup>3</sup> A review may (or may not) include a quantitative meta-analysis to evaluate and summarize the results of the studies included in the review.

The next article in this series will describe in detail what a systematic review is, how it is prepared and updated, and how it can be used by practicing chiropractors.

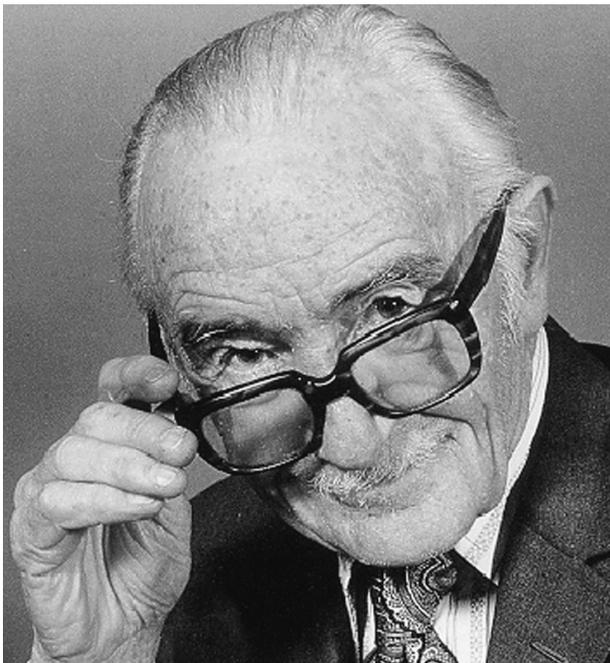
### Cochrane Collaboration

The Cochrane Collaboration is an international, non-profit organisation established in 1993 to fulfill the **mission** of helping people make well-informed decisions about healthcare by preparing, maintaining and promoting the accessibility of systematic reviews of the effects of healthcare interventions. Cochrane reviews are prepared by volunteer reviewers for target audiences of health clinicians, researchers, educators, decision makers, government policy makers and the general public.

The work of the Cochrane Collaboration is guided by **ten key principles**:

- 1 Collaboration – by internally and externally fostering good communications, open decision-making and teamwork.
- 2 Building on the enthusiasm of individuals – by involving and supporting people of different skills and backgrounds.
- 3 Avoiding duplication – by good management and coordination to maximize economy of effort.
- 4 Minimizing bias – through a variety of approaches such as scientific rigour, ensuring broad participation, and avoiding conflicts of interest.
- 5 Keeping up to date – by a commitment to ensure that Cochrane Reviews are maintained through identifica-

- tion and incorporation of new evidence.
- 6 Striving for relevance – by promoting the assessment of healthcare interventions using outcomes that matter to people making choices in healthcare.
  - 7 Promoting access – by wide dissemination of the outputs of the Collaboration, taking advantage of strategic alliances, and by promoting appropriate prices, content and media to meet the needs of users worldwide.
  - 8 Ensuring quality – by being open and responsive to criticism, applying advances in methodology, and developing systems for quality improvement.
  - 9 Continuity – by ensuring that responsibility for reviews, editorial processes and key functions is maintained and renewed.
  - 10 Enabling wide participation – by reducing barriers to contributing and by encouraging diversity.<sup>4</sup>



**Figure 1** Archie Cochrane

The organization is named after **Archie Cochrane**, a Scottish physician and epidemiologist who was born in 1909 and died in 1988 (Figure 1).<sup>5,6</sup> Cochrane challenged the medical community in 1979 with a frequently quoted statement that “it is surely a great criticism of our profession that we have not organized a critical summary, by

specialty or subspecialty, adapted periodically, of all relevant randomized controlled trials”.<sup>7</sup> The Collaboration was formed in response to that challenge and has expanded rapidly and widely over the ensuing nine years.



**Figure 2** The Logo

The **logo** of the Cochrane Collaboration is distinctive and symbolic (Figure 2). In addition to the two “Cs” for the Cochrane Collaboration, it also depicts the results of a particular systematic review. More information about the logo and what it represents can be found on the Cochrane Collaboration Web Site at <http://www.cochrane.org/cochrane/cc-broch.htm#LOGO>.

The Cochrane Collaboration is now a complex organization with over 80 contributing entities. Fifty of these entities are **Collaborative Review Groups** that assist and guide reviewers in the preparation and updating of the reviews as well as ensure the quality and timeliness of the reviews. The Groups cover all the essential areas of healthcare. The ones of particular interest to chiropractors are the Cochrane Back Review Group, the Cochrane Movement Disorders Group, the Cochrane Multiple Sclerosis Review Group, the Cochrane Musculoskeletal Review Group, the Cochrane Musculoskeletal Injuries Review Group, the Cochrane Neuromuscular Disease Group, the Cochrane Pain, Palliative Care and Supportive Care Group, and the Cochrane Stroke Group. Two of these Review Groups are based in Canada. The Back Group is located at the Institute for Work & Health in Toronto with Dr. Claire Bombardier as the Co-ordinating Editor. In Ottawa at the Institute of Population Health, Dr. Peter Tugwell is the Co-ordinating Editor of the Musculoskeletal Review Group.

There are now 308 **Cochrane reviewers in Canada** associated with the various national and international Review Groups. Currently we don’t know how many of

these are chiropractors. Chiropractors interested in becoming reviewers should contact Kathie Clark, Co-Director, at [kclark@mcmaster.ca](mailto:kclark@mcmaster.ca) or 905-525-9140, ext. 22487.

In addition to the Collaborative Review Groups, there are ten **Fields/Networks** in the Cochrane Collaboration. Fields and Networks are Cochrane entities that focus on dimensions of health care other than specific health problems. They have broader scopes of interest and activities. They do not prepare reviews but support the relevant review groups that do. The Fields and Networks of interest to chiropractors are the Neurological Network and the Rehabilitation and Related Therapies Field as well as the Complementary Medicine Field.

A Network with a unique focus is the **Consumer Network** ([www.consumernetwork.com](http://www.consumernetwork.com)). Based in Australia and coordinated by Hilda Bastain, the Consumer Network promotes and supports the involvement of consumers throughout the Cochrane Collaboration. Also available at this Web site are the short, plain-language consumer synopses of the Cochrane systematic reviews and abstracts.

The Cochrane Collaboration's commitment to its principle of "ensuring quality" is supported by the work of eleven **Methods Groups**. These entities contribute to the ongoing improvement of the validity and precision of Cochrane systematic reviews. The members of Cochrane Statistical Methods Group, for example, develop general policy advice on all statistical issues relevant to systematic reviews for the Collaboration, they co-ordinate practical statistical support for CRGs, conduct workshops, monitor training materials and develop and validate the statistical software used within the Collaboration.

Finally, there are 14 national Centres that promote the awareness of the Cochrane Collaboration and support its mission. The Canadian Cochrane Centre is located at McMaster University in Hamilton, Ontario. Other Centers have been established in Australia, Brazil, China, France (temporarily closed), Germany, Holland, Italy, the Nordic Centre (Denmark, Norway, Russia), South Africa, Spain, the United Kingdom, and the United States (New England and San Francisco).

### **The Canadian Cochrane Network and Centre (CCN/C)**

The Canadian Cochrane Centre was officially registered in August 1993 and it will be celebrating its 10th anniversary next fall with a Symposium on the theme of knowl-

edge translation which includes research syntheses, dissemination and the encouragement of the use of new knowledge. For further information about the Symposium and other educational programs, visit the CCN/C Web site at <http://cochrane.mcmaster.ca>.

Given the geography of Canada and dispersion of the population, in 1994 it was decided that a cross-Canada Network was needed to fulfill the **mission of the CCN/C** in all regions (Table 2). The 16 academic health sciences centers were identified as the most appropriate locations for the Network Sites (Table 3). Site Representatives and interdisciplinary Site Groups engage in a variety of activities to promote regional awareness of the Cochrane Collaboration, access to The Cochrane Library, local recruitment of reviewers, and training workshops. If you are interested in becoming a Cochrane reviewer or getting involved in Cochrane activities locally or internationally, please contact the Network Site Representative nearest you.

**Table 2**  
**CCN/C Mission**

The mission of The Canadian Cochrane Network and Centre is to foster evidence-based health care decision making by identifying and supporting individuals in Canada who wish to become involved with the Cochrane Collaboration, and by promoting the awareness, appreciation, distribution, and use of Cochrane systematic reviews of health care interventions.

In addition to the 16 geographic Network Sites, the Advisory Board of the CCN/C currently includes Representatives of 18 Affiliate Organizations (Table 4). These national health professional and consumer organizations identify the needs and interests of their members for the strategic planning of the CCN/C. The Representatives serve as promoters for the Cochrane Collaboration among their members. The Canadian Chiropractic Association (CCA) joined the Advisory Board of the CCN/C in 2000 and the CCA Affiliate Representative is Dr. Allan Gotlib, CCA Research Programs Coordinator and Editor, JCCA.

### **The Cochrane Library**

The primary products of the Cochrane Collaboration are the systematic reviews of healthcare interventions. These

**Table 3**  
**CCN/C Network Sites and Representatives**

Site	Representative	Phone Number
University of British Columbia	Ms. Arminée Kazanjian, BA, MA, PhD	604-822-4618
University of Calgary	Dr. Roger Thomas, MD, PhD, CCFP, MRCP	403-210-9200
University of Alberta	Dr. Joanne Homik, MD	780-407-8070
University of Saskatchewan	Ms. Angela Busch, PT, BPT, MSc	306-966-6585
	Ms. Dorothy Forbes, RN, PhD	306-966-8239
University of Manitoba	Dr. Michael Moffatt, MD, FRCPC	204-787-2441
University of Western Ontario	Dr. George Rice, BSc, MD	519-663-3712
McMaster University	TBA	TBA
University of Toronto	Dr. Rebecca Wong, MB ChB, MSc, FRCPC	416-946-2919
Queen's University	Dr. Tanveer Towheed, MD, MSc, FRCPC, FACR, DABIM	613-533-6896
	Mr. Phil Hahn, MSc	613-533-6523
University of Ottawa	Dr. Peter Tugwell, MD, MSc, FRCPC	613-562-5800
	Mr. George Wells, MSc, PhD	613-562-5800
McGill University	Dr. Roland Grad, MD, CM, MSc	514-340-8234
Université de Montréal	Dr. Jacques Lacroix, MD	514-345-4708
Université Laval	Dr. France Légaré, MD, MSc, CCMF, FCMF	418-525-4351
Université de Sherbrooke	Dr. Jean Pierre Tétrault, BA, MD, MSc, FRCPC	819-346-1110
Dalhousie University	Ms. Grace Paterson, MA, MSc, BSc	902-494-1764
	Dr. Alexandra Howlett, MD, FRCP(C)	902-428-2961
Memorial University	Ms. Sandra LeFort, RN, MN, PhD	709-777-6679
	Ms. Donna Moralejo, RN, PhD	709-777-6527

**Table 4**  
**CCN/C Affiliate Organizations and Representatives**

Organization	Representative
Arthritis Society	Ms. Linda Greason, BA, BEd
Canadian Association of Occupational Therapists	Ms. Laurie Snider, PhD, OT(C)
Canadian Association of Speech-Language Pathologists & Audiologists	Mr. J. B. Orange, PhD
Canadian Chiropractic Association	Dr. Allan Gotlib, DC
Canadian Coordinating Office for Health Technology Assessment	Ms. Jill Sanders, PhD
Canadian Dental Association	Dr. Euan Swan, BSc, DDS, DDPH
Canadian Health Libraries Association	Ms. Ellen Crumley, BA, MLIS
Canadian Institute for Health Information	Mr. Serge Taillon, BSc, MHA
Canadian Medical Association	Dr. Todd Watkins, BSc, MD, CCFP
Canadian Nurses Association	Ms. Carol Repchinsky, BSP
Canadian Physiotherapy Association	Ms. Dorianne Sauvé, BSc, PT
Canadian Task Force on Preventive Health Care	Dr. John Feightner, MD, FRCPC
College of Family Physicians of Canada	Dr. Walter Rosser, MD, CCFP, FCFP, MRCPG
Consumers' Association of Canada	Ms. Jean Jones, CM, LL.D, MSW
Dietitians of Canada	Ms. Jayne Thirsk, PhD, RD
Physical Medicine Research Foundation	Mr. Marc White, BA
The Royal College of Physicians and Surgeons of Canada	TBA

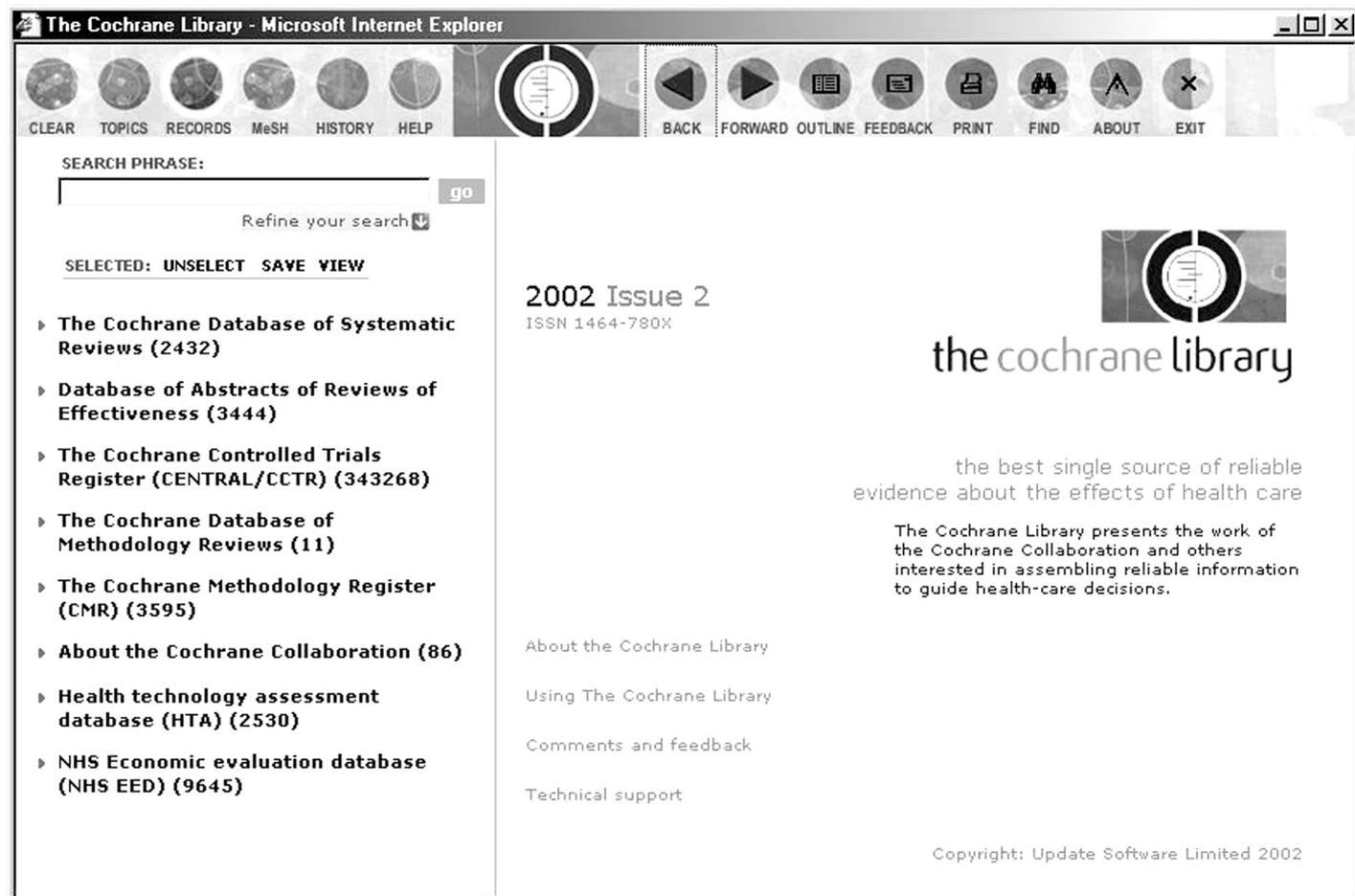


Figure 3 The Cochrane Library internet opening page

reviews are available by subscription electronically on the Internet and CD-ROM in *The Cochrane Library* (Figure 3). Chiropractors who are members of Canadian Memorial Chiropractic College (CMCC) have access to The Cochrane Library through CMCC.

Structured abstracts of all Cochrane reviews are available free on the Internet at <http://www.update-software.com/Cochrane/abstract.htm>. *The Cochrane Library* includes the following databases.

The **Cochrane Database of Systematic Reviews** is updated quarterly and currently contains 1,377 completed Cochrane reviews.<sup>3</sup> It also has 1,055 protocols that are reviews in progress. There are several reviews relevant to the practice of chiropractors. Abstracts of two of these have been included to illustrate the content and structured

format of the summaries prepared for clinicians. Again, these and other abstracts are available free on the Internet.

**DARE (Database of Reviews of Effectiveness)** is a collection of critically appraised non-Cochrane reviews of the effectiveness of health care interventions. It is produced by the Center for Reviews and Dissemination at the University of York in England (<http://agatha.york.ac.uk/welcome.htm>). Currently this database includes 2,644 abstracts of quality assessed systematic reviews as well as 800 other reviews with bibliographic information only.

If you are looking for a source of randomized clinical trials (RCTs) and controlled clinical trials (CCTs), the place to start is **The Cochrane Controlled Trials Register**. Issue 2, 2002 of the Register includes references for

343,270 RCTs and CCTs. If you are interested in the methodology of preparing systematic reviews there is a new database, **The Cochrane Database of Methodology Reviews**, with eleven reviews to date. There is also **The Cochrane Methodology Register** that is a bibliography with abstracts of 3,595 articles and books on methodological issues.

The fifth database in *The Cochrane Library* contains detailed information **About the Cochrane Collaboration**. Finally, there are two other databases of interest to clinicians but also relevant to the information needs of decision makers and policy analysts. The **Health Technology Assessment Database** currently contains 2,530 abstracts of reports prepared by international health technology assessment agencies. This database as well as the **NHS Economic Evaluation Database** (NHS EED) is produced by the Centre for Reviews and Dissemination in York. NHS EED includes abstracts of economic evaluations of healthcare interventions. Currently there are 9,646 abstracts published.

*The Cochrane Library* is a rapidly expanding resource of high quality, up-to-date information needed by chiropractors and other healthcare providers and decision makers.

#### Next Article

The next article in this series will be about systematic reviews. What are they? How are they prepared and updated? How are they used by clinicians?

#### Acknowledgements

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#### References

- 1 Guyatt G, Haynes B, Jaeschke R, Cook D, Greenhalgh T, Meade M, Green L, Naylor D, Wilson M, McAlister F, Richardson, WS. Introduction: The philosophy of evidence-based medicine. In: Guyatt G, Rennie D (eds). *Users' Guides to the Medical Literature* Chicago: AMA Press; 2002:3–12.
- 2 Gatterman MI, Dobson TP, LeFevbre R. Chiropractic quality assurance: standards and guidelines. *J Can Chiropr Assoc* 2001; 45(1):11–17.
- 3 *The Cochrane Library*, Issue 2, 2002. Oxford: Update Software.
- 4 *The Cochrane Collaboration Brochure*. Available at <http://www.cochrane.org/cochrane/cc-broch.htm>.
- 5 Culp K. Evidence innovator. *The Medical Post* 2002; 38(21):20A. Available at <http://www.medicalpost.com/mdlink/english/members/medpost/data/3821/20A.HTM>
- 6 Cochrane AL, Blythe M. *One man's medicine*. An autobiography of Professor Archie Cochrane. London: The British Medical Journal; 1989.
- 7 Chalmers I, Hedges LV, Cooper, H. A brief history of research synthesis. *Evaluation & The Health Professions* 2002; 25(1):12–37.

## Canadian Chiropractic Research Foundation

The vision of the CCRF is to promote research into studies relative to the practice of chiropractic and to assist in the development of chiropractic researchers and the establishment of sustainable quality chiropractic institutional research programs. Integrative health research will be focused on improving both health and quality of life of Canadians that empowers Canadians to be partners in their health.