Research on Internet Searching

Research

Links Table		
Search Help	Search Help	Search Tips
Research on Searching	Search Popularity	Cost$ of Not Searching Well
	Why Search Fails?	Improve Your Searches Now!

Search popularity

> **The Internet is now an integral part of the everyday lives of a majority of Americans, whether at home, at work or in both locales. In less than a decade, it has been transformed from a technological curiosity to the place millions of Americans shop every day, to a place they go for news, information and communication and to a place for both entertainment and serious business.**
> - Consumer WebWatch, April 2002 [1]

The Internet — one of the most important information tools available today. An estimated 709 to 945 million people use it worldwide [2]. And for many, it's the information medium of first resort, with the majority of users ranking it ahead of television, radio, newspapers, and magazines.

What's everyone doing online? They're searching. In the United States, about 134 million American adults presently use the Internet [4]; some 64 million employ it daily [6]. And as the table above indicates, searching is one of the most popular online activities [3]; some say *the* most important [5], and the most frequently conducted after e-mail [3], [6]. In fact, obtaining information quickly was the top reason cited for going online in both 2001 and 2002 [7].

Top 5 Online Activities		
Internet Activities	**% of Americans with Internet Access**	**Survey Date**
Send e-mail	91%	February 2004
Use a search engine to find information	88%	June 2003
Search for a map or driving directions	84%	February 2004
Do an Internet search to answer a specific question	80%	Nov-Dec 2003
Research a product or service before buying it	78%	February 2004
Source: Pew Internet & American Life Project, Internet Activities, April 23, 2004 [3]		

On a typical day, over 38 million American Internet users (35%) turn to search engines for their information needs; experienced users, even more (39%) [3], [6] — and they conduct some 319 million searches per day [8] (see table next page).

Implications for you: The Internet has evolved into a mainstream information tool for millions of people around the world. Given its popularity, the importance of improving your online search skills to more effectively use search engines to locate information quickly and accurately cannot be overstated.

Cost$ of not searching well

1. Wasted time and energy - missed opportunities

> **Self-taught users miss out on so many Internet experiences because they do not know the full scope of available choices.**
> - Paul Gil, The Frustrations of Not Understanding the Internet [9]

There are literally billions of pages of documents on the Internet. And, over three hundred freely-available search engines, each with their own methods for collecting, cataloging, and retrieving information.

Yet, most people simply flounder about, using trial and error to locate content. Moreover, because they don't search very well, they can't take full advantage of the Internet, profiting from the amazing quantity and quality of information sources.

Searches per Day - January 2003			
Search Engine	Search Hours per Month (in millions)	Search Minutes per Day (in millions)	Searches per Day (in millions)
Google	18.7	37	112
AOL Search	15.5	31	93
Yahoo	7.1	14	42
MSN Search	5.4	11	32
Ask Jeeves	2.3	5	14
InfoSpace	1.1	2	7
AltaVista	0.8	2	5
Overture	0.8	2	5
Netscape	0.7	1	4
Earthlink	0.4	1	3
Looksmart	0.2	0	1
Lycos	0.2	0	1
TOTALS	53.2	106	319

Source: SearchEngineWatch.com, February 25, 2003 [8]

Implications for you: If you have enough time, energy and persistence, you may eventually find the information you want. Or, you can invest some time *now* to improve your search skills, reaping future payoffs in locating your content quickly and efficiently. Further, you won't miss the tremendous opportunities and discoveries awaiting you on the Internet.

2. Coping with an information explosion!

> **It is clear that we are all drowning in a sea of information. The challenge is to learn to swim in that sea, rather than drown in it.**
> - University of California, Berkeley School of Information Management and Systems, October 2000 [10]

"All of a sudden, almost every aspect of life around the world is being recorded and stored in some information format," says University of California, Berkeley researcher Peter Lyman [11]. In only three years, the amount of new information generated and catalogued globally in 2002 has more than doubled, according to his latest study. With the amount of stored information growing at a rate of about 30 percent a year, if you feel overwhelmed by this now, the bad news is there's no end in sight.

Implications for you: In future, it won't get any easier to locate the information you want.

3. Cost of not finding information

> **Handling too much information, as well as not being able to find information when it is needed, constitutes a significant cost to today's enterprises.**
> - Susan Feldman, Vice President for Content Technologies, IDC, April 2003 [12]

Feldman's recent study, "The High Cost of Not Finding Information," explores and quantifies the impact and costs of not finding information. Among its conclusions, an organization with 1000 knowledge workers can annually lose up to:

- $2.5 million in time spent searching;
- $5 million in intellectual rework;
- $15 million in lost opportunity costs [13].

Implications for you: It is very costly to both you and your organization if you can't locate the specific information you require when you need it.

4. Strategic value of information

> **It's not just the quantity of information that is growing. The information is becoming more strategic to a company.**
> - Gil Press, Director of Corporate Information, EMC Corporation [14]

Regardless of your purpose or what you do in life, be it student, professional, business person, knowledge worker, IT specialist, etc., the real challenge is to organize, sort, manage and make sense of all this new data, if you are to maximize its value.

Implications for you: Information provides strategic value to individuals and organizations — but you have to be able to find it first.

Searching well matters

> **Search engines are really the gateway to the Internet; they're the front door.**
> - iProspect CEO Frederick Marckini, April 2004 [15]

Studies have consistently shown that the vast majority of people seek information through search engines. Searching well does matter — and the costs for not doing so are high.

Why search fails?

> **In our recent research, search failed users 66% of the time.**
> - Jared M. Spool, User Interface Engineering, October 2002 [16]

We're convinced searches fail for one major reason — **lack of knowledge and expertise**. Some common errors:

- Lack of search training.
- Poor search skills.
- Not understanding how search engines work.

1. Lack of search training

> **80% of the cyber world uses the Internet without formal training.**
> - Paul Gil, The Frustrations of Not Understanding the Internet, 2004 [9]

It's not very logical! Consider:

- Searching is one of the most important and valued activities on the Internet.
- Billions of documents are available online.

- There's over three hundred search engines to choose from, each with its own unique way of finding information.

Yet people persist in using trial and error to locate content.

Implications for you: Locating content is not always as simple or obvious as it looks. Eventually you *may* find what you want — or not. But why take the chance?

> ⇨ For detailed help, see Improve your searches now! here below.

2. Poor search skills

> **Despite dramatic changes in its size and content, the way people interface with the Web has not significantly changed.**
> - IEEE Computer, July 2001 [17]

Even as the Web becomes increasingly complex, user search behaviors have remained consistently simple in nature. Common search errors:

- Using a single search engine for all searches.
- Not entering enough search terms.
- Abandoning searches without refining queries.
- Not looking beyond the first page of results.
- Avoiding advanced search features.

Implications for you: More than ever before, finding information takes know-how. The trick is to employ the most effective and efficient search techniques given your desired target information. Searching the Internet is a skill — one you *can* learn and improve.

3. Not understanding how search engines work

> **Users are largely unaware that search engines may not be neutral guides to the online world.**
> - Consumer WebWatch, April 2002 [1]

"First equals best" is the prevailing mentality among Internet searchers. Because most naively rely on search engines to list the best, most relevant, accurate, trustworthy and unbiased results first:

- Few users explore beyond the first page of findings [19]. A 2002 iProspect study concluded that half of users make their selection within the first page of results because "they expect that the Web sites with the highest search engine listings are the top in their field" [20].

- Many selected links may actually be paid listings — companies or individuals paying to be placed on the top of results pages (41% of links selected by users were paid listings in one Consumer WebWatch report [19]).
- There's a higher risk of making flawed decisions based on information prominently ranked due to paid placements (e.g., health or financial [19]).

Users are often unaware that many popular search engines accept fees for prominent placement on results lists; one study found 60% didn't know [19]. And once they find out, they have less trust in search engines, and the accuracy or credibility of links on the first page of results.

Users also don't understand that search results are often influenced by:

- How search engines make money — their business models; (some users don't even realize they are money-making businesses).
- How alliances between search companies, and the deals they make, impact search findings.
- How search engines work — how they gather data, then index, rank and prioritize it into catalogs (databases) to answer user queries.

Implications for you: Everyone has the same goal when searching — you want the most relevant and/or authoritative information presented and prioritized in the most appropriate fashion for your needs. Understanding the basic inner workings of search engines — how their ranking and prioritizing technologies work, how they make their money, and how this influences the search results you get, is a key part of optimizing your Internet searches and of being a successful user.

When searches don't succeed

The more users searched, the less likely they were to find what they wanted.
- Jared M. Spool, User Interface Engineering, November 2001 [21]

Although this sounds counterintuitive, experience does not necessarily guarantee improved search skills. Usability expert Jared Spool says, "Theoretically, as people use the search engine, they should get better at making it perform. After all, each successive interaction is a learning moment — something that is teaching them the idiosyncrasies of the tool. But that's not what we've seen. Either users succeed up front, or things go downhill rapidly" [21].

Another usability expert, Jakob Nielsen, agrees. "If users don't find the result with their first query, they are progressively less and

less likely to succeed with additional searches. Many users don't even bother. In our study, almost half the users whose first search failed gave up immediately" [22].

Implications for you: If you don't find the information you want on the first try, it's less and less likely you will ever find it. Users want results fast — and with little effort. And, if they don't find what they want right away, they will most likely quit. So locating your target content quickly and accurately on the first try is key — made a lot simpler if you develop better search skills.

Improve your searches now!

> **Search engines are becoming the card catalog to the Web.**
> - CyberAtlas, March 2003 [24]

Online searching is one of the most important and valued activities on the Internet — and search engines are the gateways to access its information. So improving your ability to improve your online search skills — to effectively use search engines — is more important than ever before. Here are some improvements you can immediately put into practice:

- Use more than 1 search engine.
- Enter at least 3 search terms.
- Refine your queries.
- Try out advanced search features.
- Look beyond the first page of search results.
- Find out how search engines work.
- Improve your overall search skills.

🔍 A 2004 Enquiro report [25] describes search engine results pages as a "navigation menu" — "a navigation aid in negotiating the online research interaction, as people continually refer back to it and launch another online exploration from this starting point."

1. Use more than 1 search engine

> **Today's search engines may be capturing as little as 1 percent of the Web, largely because of how they find and index online resources.**
> - Associated Press, March 2004 [18]

Whether search engines capture one percent — or ten percent of Web content, as some research claims — it's self-evident you need to use more than one search engine.

Regardless, most people employ the same tried and true search engines time and again. Two recent iProspect surveys illustrate this point.

Search Engine Loyalty		
User Behavior	**2002**	**2004**
Always use the same search engine	52	57
Alternate among several favorites	35	30
Deliberately use different search engines for various types of searches	13	13
Source: iProspect 2002 Search Engine Branding Survey [20] and iProspect 2004 Search Engine User Attitudes [26]		

But it's a mistake to rely on a single search engine for all your online searching. Because if there's one big lesson for you in our book, it's that no one search engine can do it all for you — whether you are a rank amateur beginner, an experienced user with sophisticated needs, or you're somewhere in between.

Why? One major reason is that search results vary greatly depending on the search engine used. A case in point: Expert Greg Notess has long studied search engine database overlap, and has consistently found little overlap in the search results they produce — even among their top ten results and for the most popular search terms used. Witness the chart below.

In 2002, for instance, four small searches were run on ten different search engines — AlltheWeb, AltaVista, Direct Hit, Google, HotBot, iWon, MSN, NLResearch, Teoma and Wisenut. Of the 141 unique webpages found:

- 50% were only discovered by one search engine, and not always the same one.
- 72% were found by only two search engines.
- 79% were located by only three.

		Search Engine Overlap		
Year	Number of Search Engines Studied	% Webpages found by 1 Search Engine	% Webpages found by 2 Search Engines	% Webpages found by 3 Search Engines
2002	10	50	72	79
2000	14	37	63	77
1999	13	46	68	83
1998	5	71	87	96
1997	4	48	74	95

Source: Greg R. Notess, Database Overlap, Search Engine Showdown, 1997-2002 [27]

In other words, there was very little overlap in search results produced by the various search engines studied, and this has been consistently so throughout the years.

Suggested strategy: Subject directories, meta search engines, specialized and deep web search engines can all deliver the results you want. They all have the potential to deliver superior search results under certain conditions, as well as complement each other in the search process. The trick is to experiment with a number of search engines:

- Try some out.
- Learn how to maximize their abilities by reading search engine Help.
- Experiment to determine how to use them most appropriately to meet your search needs.

2. Enter at least 3 search terms

> **The vast majority of Web searchers use approximately two terms in a query, have two queries per session, do not use complex query syntax, and typically view no more than ten documents from the results list.**
> - Journal of the American Society of Information and Technology, 2000 [28]

Even though the above study was published in 2000, this would still be an accurate description of user search behavior today. Mondosoft's research [23] is more specific, finding:

- 52% of searchers only use a single search term.
- About 30% use two words.
- Only 2% use more than four words.

Suggested strategy: You can increase the chances of quickly locating your target content by adding more keywords to your search. Specifically:

- Zero in on important terms likely used in the title of the document, which are given the highest priority in a search engine's logic.
- Include expected words in a general description of the document, such as its keywords or major subject area.
- Use important words included in the body text.
- Try entering the name of the author(s), or sponsoring organization or company, or the name of the newspaper, journal or publisher.
- Make sure you place the most important words first.
- Avoid small or unimportant words (e.g., "a", "the", "to") whenever possible.

3. Refine your queries

> **The majority of us type in a few top of mind words and hit the search button without giving a lot of thought about how to construct our search query. We tend to take an iterative approach to searching, refining our search based on the results that are returned to us.**
> - Enquiro, April 2004 [29]

The above describes how most people search [29], [30]. 2001-02 research indicated when target content was not located:

- The majority of users abandoned their search altogether after the first or second attempt [21], [22], [23], [31], [32].
- Even if they searched more than once, most did not add or delete many terms to their subsequent queries [31].
- Only 7.5% refined their search with additional keywords when they couldn't obtain satisfactory results [20].

But iProspect's 2004 Survey [26] revealed a significant change in user search behavior:

- When respondents were dissatisfied with the first three pages of results after an initial search, 91% modified their original queries and retried them using the same search engine, before giving up on that engine to return satisfactory results. This was an increase of 20% over 2002 survey results.
- iProspect interpreted this to mean that users had more confidence in their selected search engine to formulate queries than in their own abilities.

Suggested strategy: If you don't get the search results you want:

- Don't give up — don't abandon your search.
- Try refining your query:
  - Add more search terms;
  - Change some of your search words;
  - Use a thesaurus to suggest additional search terms.

4. Try out advanced search features

> **Most search queries are very simple and generic in nature. Few people take advantage of extended Boolean search capabilities or other advanced search features.**
> - Enquiro, April 2004 [29]

Advanced search features typically include the use of Boolean operators, phrased searching, and stemming, for example. They permit the formation of more complex queries, which can lead to improved search results, more quickly.

Research indicates most searchers do not know that search engines offer advanced search features. Thus, not surprisingly, few use them [28], [29], [30], [31]. For instance, a recent Enquiro study [29] indicated about three-quarters of respondents rarely or never used them, 5% not even knowing what they were. Only 25% reported often or almost always using them.

Suggested strategy: As you acquire more knowledge about using search engines and develop more confidence in your search abilities:

- Start experimenting with advanced search features.
- For explanations on available features and how to use them:
    - Consult the Help section of your selected search engines;
    - Use the links found on their general search interfaces;
    - Read our book which deals with advanced search features in great depth.

Advanced Search Feature Use	
User Responses	**%age**
Don't know what advanced search is	5%
Never use it	21%
Rarely use it	48%
Often use it	21%
Almost always-always use it	4%
Source: Enquiro, April 2004 [29]	

5. Look beyond the first page of search results

> **If none of the first ten are any good, what are the chances that the next ten will be any better?**
> - Mondosoft, July 2002 [23]

Finding the content you want is only half the battle. Getting 20 pages of search results is not helpful either — because the average user won't look at most of it.

Research tells us the majority of web users do not browse beyond the first or second page of results, a common trait shared in both Europe and North America [6], [19], [20], [23], [26], [29], [30], [31].

> 🔨 **The average search engine user scrolled through 1.8 result pages during a typical search.**
> - PEW, August 2004 [6]

For example, in 2003, Consumer WebWatch reported that 88% of result links selected by participants were located on the first page [19]. And when searching for health information, it's even higher. A 2002 British Medical Journal study found that 97% of the time consumers chose a search result ranked among the top 10; in 71% of cases, they selected a link from the top five results [33].

To summarize iProspect's 2004 Survey [26] results below:

- 23% of search engine users will only look at the first few search results before trying another search.
- 41% expect to find the answer to their query on the first page of search matches.
- 67% won't look past the first 2 pages of results.
- 82% will not read beyond the third page of search results.

Search Engine User Behavior		
Search Results Viewed	**% of Users**	**% Cumulative Total**
First few entries	22.6%	22.6%
1st page of results	18.6%	41.2%
2nd page of results	25.8%	67%
3rd page of results	14.7%	81.7%
More than 3 pages	10.8%	92.5%
Entire list, if not too long	7.4%	99.9%
Source: iProspect 2004 Search Engine User Attitudes Survey [26]		

Suggested strategy: The most relevant search results may not be necessarily listed first. It all depends on how your selected search engine gathers data, then indexes, ranks and prioritizes it. Also be aware of paid listings which may or may not be clearly identified, but are generally placed at the top of your search results pages.

If you don't get the search results you want:

- Start looking past the first page of search results.
- Preferably consult at least the first three pages.
- If you still have no luck:
    - Refine your queries;
    - Add more or use different search terclassms;
    - Try out advanced search features.

6. Find out how search engines work

> **Most participants had little understanding of how search engines retrieve Web pages or how they rank or prioritize links on a results page.**
> - Consumer WebWatch, June 2003 [19]

Every search engine has its own individual method for collecting, cataloging, and retrieving information to answer your queries. Nonetheless, to be a skilful searcher, you must acquire some basic knowledge about how they work. With over three hundred search engines to choose from, this can be a daunting task.

Suggested strategy: Everyone has the same goal when searching — you want the most relevant and authoritative information listed and prioritized to meet your needs. To achieve this, you must have some understanding about the inner workings of search engines. To learn how their ranking and prioritizing technologies work, how they make their money, and how this influences the search results you get:

- Read the Why search fails? here or on our website at: www. SearchHelpCenter.com.
- Read the information provided in search engine Help sections.
- Read our book which explains this in detail.

7. Improve your overall search skills

> **People don't want to be spending time searching and looking for things. They want to be spending the time analyzing the information.**
> - Factiva, 2003 [34]

More than ever before, finding information takes know-how. By increasing your knowledge and improving your online search skills, you can work more successfully with your selected search engine(s) to accurately locate your target content quickly and easily.

Links Table		
Search Help	Search Help	Search Tips
Research on Searching	Search Popularity	Cost$ of Not Searching Well
	Why Search Fails?	Improve Your Searches Now!

Suggested strategy: The search suggestions listed above are practical — and you can start implementing them today.

External References & Links

1. Consumer WebWatch, A Matter of Trust: What Users Want From Web Sites, Princeton Survey Research Associates, April 16, 2002: www.consumerwebwatch.org/news/1_abstract.htm

2. Summary: Internet Usage, About.com, Paul Gil, January 20, 2004: netforbeginners.about.com/cs/technoglossary/f/FAQ3.htm

3. Pew Internet & American Life, Latest Trends, 2004.
   - Daily Internet Activities: www.pewinternet.org/trends/Daily_Activities_4.23.04.htm
   - Internet Activities: www.pewinternet.org/trends/Internet_Activities_4.23.04.htm

4. SearchEngineWatch.com, Nielsen NetRatings Search Engine Ratings, Danny Sullivan, February 25, 2003: www.searchenginewatch.com/reports/article.php/2156451

5. Jupiter Research, 1999, as reported in the Journal of the American Society of Information and Technology, Web User Studies: A Review and Framework for Future Work, B.J. Jansen and U. Pooch, 52(3), p. 235-246, 2000: jimjansen.tripod.com/academic/pubs/wus.html

6. Pew Internet & American Life Project, The popularity and importance of search engines: Pew Internet Project Data Memo, August, 2004: www.pewinternet.org/pdfs/PIP_Data_Memo_Searchengines.pdf

7. UCLA Center for Communication Policy, The UCLA Internet Report: Surveying the Digital Future -Year Three, February 2003: www.ccp.ucla.edu/pages/internet-report.asp

8. SearchEngineWatch.com, Searches per Day, Danny Sullivan, February 25, 2003: www.searchenginewatch.com/reports/article.php/2156461

9. Paul Gil, Internet 101: The Frustrations of Not Understanding the Internet, About.com, 2004: netforbeginners.about.com/cs/internet101/a/internet101.htm

10. University of California, Berkeley School of Information Management and Systems, How Much Information?, Peter Lyman and Hal. R. Varian, October 18, 2000: www.sims.berkeley.edu/research/projects/how-much-info

11. University of California, Berkeley School of Information Management and Systems, How Much Information? 2003, Peter Lyman and Hal. R. Varian, October 27, 2003: www.sims.berkeley.edu/research/projects/how-much-info-2003

12. IDC, The High Cost of Not Finding Information, Chris Sherman and Susan Feldman, April 2003: www.idc.com/getdoc.jhtml?containerId=29127

13. Qualysys Global, EQMS Cost Benefit, 2003: www.qualsys.co.uk/eqms_cost.htm

14. Byte and Switch, Info Overload! Billions of Bytes Born, Dave Raffo, October 28, 2003: www.byteandswitch.com/document.asp?doc_id=42612

15. MediaPost, MediaDailyNews, Females More Likely to Fly Search Coop, Finds Part Two of iProspect Survey, Kate Kaye, April 20, 2004: www.mediapost.com

16. User Interface Engineering, The Sum of All Findings: Users need Help, Featured Talks, Jared M. Spool, UIE Conference 7, Boston, October 2002.

17. IEEE/CS Computer, Identifying Web Browsing Trends and Patterns, Alan L. Montgomery and Christos Faloutsos, July 2001: pages.cpsc.ucalgary.ca/~saul/personal/other_pubs/r7094.pdf

18. Upstart Competitors Try to Outdo Google, Anick Jesdanun, Associated Press (AP) Internet Writer, March 26, 2004: finance.lycos.com/qc/news/story.aspx?story=200403262031_APO_V6080&symbols=INDUSTRY:32

19. Consumer WebWatch, False Oracles: Consumer Reaction to Learning the Truth About How Search Engines Work, Leslie Marable, New York, June 30, 2003: www.consumerwebwatch.org/news/searchengines/index.html

20. iProspect Search Engine Branding Survey, May 2002: www.iprospect.com/web_site_promotion/press11142002.htm

21. UIETips, Users Don't Learn to Search Better, Jared Spool, November 27, 2001: world.std.com/~uieweb/Articles/not_learn_search.htm

22. Alertbox, Search: Visible and Simple, Jakob Nielsen, May 13, 2001: www.useit.com/alertbox/20010513.html

23. Mondosoft, Web Site Usability Metrics: Search Behavior - Search Trends, July 2002: www.mondosoft.com/SearchBehaviorWP.pdf

24. CyberAtlas, Search Guiding More Web Activity, Brian Morrissey, March 13 2003: www.clickz.com/stats/big_picture/traffic_patterns/article.php/5931_2109221

25. Enquiro, Into the Mind of the Searcher, Gord Hotchkiss, February 2004: www.enquiro.com/research.asp

26. iProspect Search Engine User Attitudes Survey, March 2004: www.iprospect.com/premiumPDFs/iProspectSurveyComplete.pdf

27. Search Engine Showdown, Search Engines Statistics: Database Overlap - Little overlap despite database growth, Greg R. Notess, March 6, 2002: www.searchengineshowdown.com/stats/overlap.shtml

28. Journal of the American Society of Information and Technology, Web User Studies: A Review and Framework for Future Work, B.J. Jansen and U. Pooch, 52(3), p. 235-246, 2000: jimjansen.tripod.com/academic/pubs/wus.html

29. Enquiro, Search Engine Usage in North America, Gord Hotchkiss, Marina Garrison and Steve Jensen, April 2004: www.enquiro.com/research.asp

30. Florida International University, Things you might not know about how real people search, Marc L. Resnick and Rebeca Lergier, Miami, June 28, 2002: www.searchtools.com/analysis/how-people-search.html

31. IEEE/CS Computer, From e-Sex to e-Commerce: Web Search Changes, Amanda Spinks, et al, March 2002: ist.psu.edu/faculty_pages/jjansen/academic/pubs/ieee_computer.pdf

32. UIETips, People Search Once, Maybe Twice, Jared Spool, November 20, 2001: world.std.com/~uieweb/Articles/search_once.htm

33. British Medical Journal (BMJ), How do consumers search for and appraise health information on the world wide web? Qualitative study using focus groups, usability tests, and in-depth interviews, Gunther Eysenbach and Christian Kohler, March 9, 2002, Vol. 324: bmj.bmjjournals.com/cgi/reprint/324/7337/573.pdf

34. Factiva, 2003: www.factiva.com/index.asp