

Literature Search PubMed

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What is PubMed?

- A web-based retrieval system developed by NCBI (a part of Entrez retrieval system)
- Free version of MEDLINE on the web
- PubMed vs Medline

NIH

National Institutes of Health

NLM

National Library of Medicine

NCBI

National Center for
Biotechnology Information



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PubMed Database

- A database of bibliographic information drawn primarily from the life sciences literature
- PubMed contains links to
 - ◆ Full-text articles at participating publishers' Web sites
 - ◆ Other third party sites such as libraries and sequencing centers
- All citations in MEDLINE are assigned MeSH Terms and Publication Types from NLM's controlled vocabulary.



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What Does MEDLINE Cover?

- Not only medicine
 - ◆ medicine
 - ◆ nursing
 - ◆ dentistry
 - ◆ veterinary medicine
 - ◆ health care system
 - ◆ preclinical sciences e.g., molecular biology



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How Big is MEDLINE?

- > 5,400 biomedical journals
- > 22 million citations back to 1865
- Published in the U.S. and 70 other countries.
- Coverage is worldwide, but most records are from English-language sources or have English abstracts
- MEDLINE contains citations, not full-text articles (PubMed provides links to full-text)



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PubMed Basics

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Two Types of Searching

- Keywords search
 - ◆ Results match the exact terms
 - ◆ May miss alternative terms
 - ◆ Often result in more false hits
- Subject search
 - ◆ Results match the concept of that term
 - ◆ MeSH (PubMed), EmTree (Scopus)
 - ◆ Improve precision and save time
 - ◆ Good for well-defined topic



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Cons of Subject Search

- Not work for new or not clearly defined concept
- Newly added articles may not have MeSH
- Errors or wrong judgements of indexers



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7 Steps of Searching

1. Define your topic
2. Break the topic into individual concepts
3. Define words or phrases to describe the concept
4. Search each concept as separate set
5. Combining the search sets with AND, OR, NOT
6. Display and evaluate the results
7. Refine your search: limit or broaden



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PubMed Tools

- My NCBI
 - ◆ Save searches, collections, filters
- Clinical queries
- Advance Search
 - ◆ Limit, Preview, History, Index
- Clipboard
- MeSH database
- Journal database
- Single citation matcher



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Anatomy of a Medline Record

PMID- 15831621
OWN - NLM
STAT- MEDLINE
DA - 20050415
DCOM- 20050517
PUBM- Print
IS - 1468-201X (Electronic)
VI -
IP -
DP - 2005-may
PT - Coronary air embolism treated with aspiration catheter.
PC - E36
AB - Coronary air embolism remains a recognised complication of coronary catheterisation despite a strong emphasis on prevention. Current treatment consists of supportive measures with 100% oxygen and analgesia. Recent case reports describe the use of mechanical treatments aimed at dispersing or removing the air embolus with variable success. A case of coronary air embolism causing an acute coronary syndrome is described that was definitively treated with an aspiration system. The effectiveness of the aspiration system in the distal section of an obtuse marginal artery indicates that such dedicated aspiration systems may prove useful in the standard treatment of air embolism.
AD - Amsterdam Department of Interventional Cardiology, Onze Lieve Vrouwe Gasthuis, Amsterdam, the Netherlands. markspatterson@doctors.net.uk <markspatterson@doctors.net.uk>



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Anatomy of a Medline Record

FAU - Patterson, M S
AU - Patterson MS
FAU - Kiemeneij, F
AU - Kiemeneij F
LA - eng
PT - Case Reports
PT - Journal Article
PL - England
TA - Heart
JT - Heart (British Cardiac Society)
JID - 9602087
SB - AIM
SB - IM
MH - Adult
MH - Coronary Disease/*therapy
MH - Embolism, Air/etiology/*therapy
MH - Heart Catheterization/*adverse effects/methods
MH - Humans
MH - Male
MH - Suction/instrumentation/*methods
EDAT- 2005/04/16 09:00
MHDA- 2005/05/18 09:00
AID - 91/5/e36 [pii]
AID - 10.1136/hrt.2005.060129 [doi]
PST - ppublish
SO - Heart. 2005 May;91(5):e36.



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Components of Searching

- 3 components for searching
 - ♦ Search terms
 - ♦ Search fields
 - ♦ Search syntax
- Example of search
 - ♦ Search for articles about influenza published in the New England Journal of Medicine
 - ♦ influenza [mh] AND n engl j med [ta]



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Search Rules and Syntax

- Boolean operators
 - ♦ AND, OR, NOT (must be in UPPER CASE)
- Enclosing individual concepts in parentheses
 - ♦ common cold AND (vitamin c OR zinc).
- Truncation = *
 - ♦ bacter* = bacteria, bacterium, bacteriophage, etc.
 - ♦ Not map to the MeSH term
- Phrase search: "peptic ulcer"
 - ♦ Not map to the MeSH term
- All fields: [all]

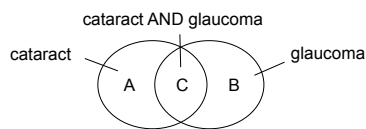


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Boolean operator

- cataract = A + C
- glaucoma = B + C
- cataract AND glaucoma = C
- cataract OR glaucoma = A + B + C
- cataract NOT glaucoma = A
- glaucoma NOT cataract = B



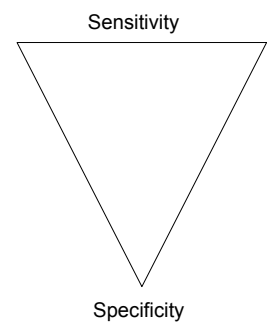
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Search Strategy Design

When starting your search do not limit your options
use MeSH [mh]
& Free Text [tw]

As your search progresses you can be more specific by adding more terms



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PubMed Basic Skills

- Search terms
 - ♦ Medical subject heading (MeSH)
- Search fields
- Search syntax
- PubMed search mechanism
 - ♦ Automatic term mapping



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Automatic Term Mapping

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Automatic Term Mapping

1. MeSH Translation Table
2. Journals Translation Table
3. Full Author Translation Table
4. Author Index
5. Full Investigator (Collaborator) translation table
6. Investigator (Collaborator) index



Automatic Term Mapping

- MeSH Translation Table
 - ◆ MeSH, entry term, MeSH Subheadings
 - ◆ Publication Types
 - ◆ Pharmacologic Action terms
 - ◆ Terms from the Unified Medical Language System
 - ◆ Supplementary Concept (Substance) Names
- Journals Translation Table
 - ◆ Full journal title, title abbreviation, ISSN number
- Full Author Translation Table
 - ◆ Only from 2002 forward



If no match is found?

- PubMed breaks apart the phrase and repeats the above automatic term mapping process until a match is found.
- If there is no match, the individual terms will be combined (ANDed) together and searched in All Fields.



Phrase Searches

- Automatic term mapping applied to phrases that are recognized by the MeSH Translation Table
- To force phrase searches
 - ◆ Entering the phrase in quotes, e.g., "single cell"
 - ◆ Using a search tag, e.g., single cell[tj]



ATM Is Suppressed When

1. Search with truncation
 - ◆ bacteri*
2. Search with quote
 - ◆ "deep vein thrombosis"
3. Search with field tags
 - ◆ venous thrombosis [mh]



MeSH (Medical Subject Headings)

- NLM's controlled vocabulary used for indexing articles in PubMed (26,142 entries in 2011)
- Provide a consistent way to retrieve information that may use different terminology for the same concepts
- Impose uniformity and consistency to the indexing of biomedical literature
- MeSH terms are arranged in a hierarchical categorized manner called MeSH Tree Structures and are updated annually



Example of MeSH

[All MeSH Categories](#)
[Diseases Category](#)
[Respiratory Tract Diseases](#)
[Nose Diseases](#)
[Paranasal Sinus Diseases](#)
Sinusitis
[Ethmoid Sinusitis](#)
[Frontal Sinusitis](#)
[Maxillary Sinusitis](#)
[Sphenoid Sinusitis](#)



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Example of MeSH

[All MeSH Categories](#)
[Diseases Category](#)
[Cardiovascular Diseases](#)
[Vascular Diseases](#)
Hypertension
[Hypertension, Malignant](#)
[Hypertension, Pregnancy-Induced](#)
[Hypertension, Renal](#)
[Hypertension, Renovascular](#)



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Example of MeSH

[All MeSH Categories](#)
[Diseases Category](#)
[Nutritional and Metabolic Diseases](#)
[Metabolic Diseases](#)
[Glucose Metabolism Disorders](#)
Diabetes Mellitus
[Diabetes, Gestational](#)
[Diabetes Mellitus, Experimental](#)
[Diabetes Mellitus, Type 1](#)
[Wolfram Syndrome](#)
[Diabetes Mellitus, Type 2](#)
[Diabetes Mellitus, Lipoatrophic](#)
[Diabetic Ketoacidosis](#)
[Prediabetic State](#)



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[All MeSH Categories](#)
[Diseases Category](#)
[Endocrine System Diseases](#)
Diabetes Mellitus
[Diabetes Complications](#)
[Diabetic Angiopathies](#)
+
[Diabetic Coma](#)
+
[Diabetic Ketoacidosis](#)
[Diabetic Nephropathies](#)
[Diabetic Neuropathies](#)
+
[Fetal Macrosomia](#)
[Diabetes, Gestational](#)
[Diabetes Mellitus, Experimental](#)
[Diabetes Mellitus, Type 1](#)
[Wolfram Syndrome](#)
[Diabetes Mellitus, Type 2](#)
[Diabetes Mellitus, Lipoatrophic](#)
[Prediabetic State](#)



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Turn Off Automatic Inclusion

- To turn off the automatic inclusion of the more specific terms, use the syntax [field:noexp]
 - ♦ hypertension [mh:noexp]
 - ♦ hypertension [majr:noexp]
 - ♦ hypertension/therapy [mh:noexp].
 - The latter example turns off the more specific terms in both parts, searching for only the one Subheading therapy attached directly to only the one MeSH term hypertension.



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Search Field Tags : 50

As of Jun 1, 2012

Affiliation [AD]	Investigator [IR]	Pharmacological Action [PA]
Article Identifier [AID]	ISBN [ISBN]	Place of Publication [PL]
All Fields [ALL]	Issue [IP]	PMID [PMID]
Author [AU]	Journal [TA]	Publisher [PUBN]
Book [book]	Language [LA]	Publication Date [DP]
Comment Corrections	Last Author [LASTAU]	Publication Type [PT]
Corporate Author [CN]	Location ID [LID]	Secondary Source ID [SI]
Create Date [CRDT]	MeSH Date [MHDA]	Subset [SB]
Completion Date [DCOM]	MeSH Major Topic [MAJR]	Supplementary Concept[NM]
EC/RN Number [RN]	MeSH Subheadings [SH]	Text Words [TW]
Editor [ED]	MeSH Terms [MH]	Title [TI]
Entrez Date [EDAT]	Modification Date [LR]	Title/Abstract [TIAB]
Filter [FILTER]	NLM Unique ID [JID]	Transliterated Title [TT]
First Author Name [1AU]	Other Term [OT]	UID [PMID]
Full Author Name [FAU]	Owner	Version
Full Investigator Name [FIR]	Pagination [PG]	Volume [V]
Grant Number [GR]	Personal Name as Subject [PS]	

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Alternative Field Tags Name

- [au] = [author]
- [ta] = [journal]
- [vi] = [volume]
- [ip] = [issue]
- [pg] = [page]
- [mh] = [MeSH]
- [pt] = [ptyp]



Field: Comment/Correction Type

- Comment in: hascommentin
- Comment on: hascommenton
- Erratum in: haserratumin
- Erratum for: haserratumfor
- Republished in: hasrepublishedin
- Retraction in: hasretractionin
- Retraction of: hasretractionof



Field: Publication Date [DP]

- Format
 - ◆ yyyy/mm/dd [dp]
 - ◆ yyyy/mm/dd : yyyy/mm/dd [dp]
 - ◆ "last X days"[dp]
 - ◆ "last X months"[dp]
 - ◆ "last X year"[dp]



Searching for date range

- Example
 - 1993:1995 [dp]
 - 1997/01:1997/06 [epdat]
 - 2002:2009[ppdat]
- Comprehensive searches for a full year should be entered as 2000:2000[dp] rather than 2000[dp] to retrieve citations with a different print and electronic year of publication
 - ◆ The electronic date will not be searchable if it is later than the print date, except when range searching.



Field: Publication Date [DP]

- Print Date vs Electronic Print Date
 - ◆ Search for electronic dates only use [epdat]
 - ◆ Search for print dates only use [ppdat]
 - The electronic date will not be searchable if it is later than the print date, except when range searching.
 - 2007 [dp] vs 2007:2007 [dp]
 - ◆ Comprehensive searches for a full year
 - Use 2000:2000[dp] rather than 2000[dp] to retrieve citations with a different print and electronic date



Searching for date range

- Example
 - 1993:1995 [dp]
 - 1997/01:1997/06 [epdat]
 - 2002:2009[ppdat]
- Comprehensive searches for a full year should be entered as 2000:2000[dp] rather than 2000[dp] to retrieve citations with a different print and electronic year of publication
 - ◆ The electronic date will not be searchable if it is later than the print date, except when range searching.



Field: Journal Name

British Medical Journal

1: [British medical journal](#).
pISSN: 0007-1447
MEDLINE Abbr: Br Med J
NLM ID: [0372673](#)

The New England
Journal of Medicine

1: [The New England journal of medicine](#).
pISSN: 0028-4793
eISSN: 1533-4406
MEDLINE Abbr: N Engl J Med
ISO Abbr: N. Engl. J. Med.
NLM ID: [0255562](#)

จ.พ.ศ.พ.

1: [Journal of the Medical Association of Thailand = Chotmailhet thangphaet](#).
pISSN: 0125-2208
MEDLINE Abbr: J Med Assoc Thai
NLM ID: [7507216](#)



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Field: Journal Name

The Cochrane Library

1: Cochrane database of systematic reviews (Online : Update Software)
eISSN: 1469-493X
MEDLINE Abbr: Cochrane Database Syst Rev
Publisher: Update Software,
Language: eng
Country: England
NLM ID: [100909747](#)

Clinical Evidence

1: [Clinical evidence](#).
pISSN: 1462-3846
MEDLINE Abbr: Clin Evid
NLM ID: [100883600](#)

ACP Journal Club

1: [ACP journal club](#).
pISSN: 1056-8751
MEDLINE Abbr: ACP J Club
ISO Abbr: ACP J. Club
NLM ID: [9104824](#)



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Field: Publication Types [pt]

- clinical trial, phase I
- randomized controlled trial
- editorial
- journal article
- lecture
- meta-analysis
- multicenter study
- practice guideline
- review literature
- retracted publication (article later retracted by author)
- retraction of publication (author's statement of retraction)



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Field: Subsets [SB]

- 4 types of subsets in PubMed
 - ◆ Subject
 - ◆ Citation status
 - ◆ Journal/Citation
 - ◆ PubMed Central
- 2 ways to access subsets
 - ◆ PubMed's "Limits" screen pull-down menu
 - ◆ Use the [SB] search tag



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Subject Subsets

- Citations to articles on specialized topics
 - ◆ Systematic Reviews : *systematic [sb]*
 - ◆ Veterinary science : *Veterinary [sb]*
 - ◆ AIDS : *aids [sb]*
 - ◆ Bioethics : *bioethics [sb]*
 - ◆ Complementary Medicine : *cam [sb]*
 - ◆ History of Medicine : *history [sb]*
 - ◆ Space Life Sciences : *science [sb]*
 - ◆ Toxicology : *tox [sb]*
- Example of search syntax
 - ◆ asthma AND systematic [sb]



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Searching Systematic Review

- Use the "Clinical Queries" screen
- Use the search field tags
 - ◆ epilepsy AND (systematic [sb] OR meta-analysis [pt])
- Search from "Limit" screen pull-down menu
 - ◆ If search for both systematic reviews and meta-analysis, it will search for:
systematic [sb] AND meta-analysis [pt]



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Systematic Review in Pubmed

- Cover a broad set of articles that build consensus on biomedical topics
 - ◆ systematic reviews, meta-analyses
 - ◆ reviews of clinical trials
 - ◆ evidence-based medicine
 - ◆ consensus development conferences, guidelines, and citations to articles from journals specializing in review studies of value to clinicians



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Citation Status Subsets

- Citations in a particular stage of processing
- Citation Status tags displays next to the PMID
 - ◆ PubMed - as supplied by publisher : *publisher [sb]*
 - ◆ PubMed - in process : *in process [sb]*
 - ◆ PubMed - indexed for MEDLINE : *medline [sb]*
 - ◆ PubMed - *pubmednotmedline [sb]*
 - ◆ PubMed - OLDMEDLINE for Pre1966 : *oldmedline [sb]*
 - ◆ All – total number of PubMed citations : *all [sb]*
- Example of search syntax
 - ◆ *n engl j med AND in process [sb]*



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Journal/Citation Subsets (1)

- Citations to articles from specialized journals or to articles on specialized topics in other journals (11)
 - ◆ AIM - Abridged Index Medicus
 - a list created 20 years ago of 120 core clinical English language journals
 - ◆ D - dentistry journals
 - ◆ E - citations from bioethics journals or selected bioethics citations from other journals
 - ◆ H - health administration journals, non-Index Medicus
 - ◆ IM - Index Medicus journals



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Journal/Citation Subsets (2)

- ◆ K - consumer health journals, non-Index Medicus
- ◆ N - nursing journals
- ◆ Q - history of medicine journals and selected citations from other
- ◆ S - citations from space life sciences journals
- ◆ T - health technology assessment journals, non-Index Medicus
- ◆ X - AIDS/HIV journals (selected citations from other journals 1980 - 2000)
- Search syntax : use *"jsubset?"*
 - ◆ *diarrhea AND jsubsetx*



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PubMed Central Subset

- Citations with links to full-text in PubMed Central (PMC)
- 2 ways to search
 - ◆ PubMed's "Subset" menus in "Limits" screen
 - ◆ Use the *pubmed pmc [sb]* search tag
 - *protein p53 AND pubmed pmc [sb]*
 - *protein p53 AND pubmed pmc local [sb]*



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Citations with Abstracts

- Search only for citations that have abstracts
- 2 ways to search
 - ◆ Use the "Limit" screen
 - ◆ Use the value *"hasabstract"*
 - *sars AND hasabstract*



No Abstract



Abstract



Full-text article available free in [PubMed Central](#).



Free full-text article available




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Citations with Full-Text

- Search only for citations that have full-text
 - ◆ *free full text [sb]* - Citations that include a link to a free full-text article
 - ◆ *full text [sb]* - Citations that include a link to a full-text article



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- Search only for citations that have full-text
 - ◆ *free full text [sb]* - Citations that include a link to a free full-text article
 - ◆ *full text [sb]* - Citations that include a link to a full-text article

Ahead of Print Citations

- Articles that appear on the web in advance of the journal issue's release
- These citations display the tag *[epub ahead of print]* immediately following the date of publication
- Search syntax : use *"pubstatusaheadofprint"*
 - ◆ gene AND pubstatusaheadofprint



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- Articles that appear on the web in advance of the journal issue's release
- These citations display the tag *[epub ahead of print]* immediately following the date of publication
- Search syntax : use *"pubstatusaheadofprint"*
 - ◆ gene AND pubstatusaheadofprint

Article Identifier [AID]

- Article identifiers submitted by journal publishers
 - doi (digital object identifier)
 - CONSORT 2010 statement: updated guidelines for reporting parallel group randomised trials.
 - Schulz KF, Altman DG, Moher D; CONSORT group. *PLoS Med*. 2010 Mar 24;7(3):e1000251. No abstract available. PMID: 20352064 [PubMed - indexed for MEDLINE] [Free PMC Article](#)
 - [Free full text](#) [Related citations](#)

MHDA-- 2010/05/27 06:00
 CRDT-- 2010/03/31 06:00
 PHST-- 2010/03/24 [epublish]
 AID - 10.1371/journal.pmed.1000251 [doi]
 PST - ePublish
 SO - PLoS Med. 2010 Mar 24;7(3):e1000251.

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 national health and medical research council

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- Article identifiers submitted by journal publishers
 - ◆ doi (digital object identifier)

PMID: 20352064 [PubMed - indexed for MEDLINE] [Free PMC Article](#)
[Free full text](#) [Related citations](#)

MHDA- 2010/05/27 06:00
CRDT- 2010/03/31 06:00
PHST- 2010/03/24 [epublish]
AID - 10.1371/journal.pmed.1000251 [doi]
PST - epublish
SO - PLoS Med. 2010 Mar 24;7(3):e1000251.

PubMed 10.1371/journal.pmed.1000251 [aid] Search

PubMed 10.1371/journal.pmed.1000251 Search

Location Identifier [LID]

- The DOI or publisher ID that serves the role of pagination to locate an online article

CONSORT 2010 explanation and elaboration: updated guidelines for reporting parallel group randomised trials.

Moher D, Hopewell S, Schulz KF, Montori V, Gøtzsche PC, Devereaux PJ, Elbourne D, Egger M, Altman DG.

BMJ. 2010 Mar 23;340:c869. doi: 10.1136/bmj.c869. No abstract available.

PMID: 20332511 [PubMed - indexed for MEDLINE] [Free PMC Article](#)

[Free full text](#) [Related citations](#)

PMID- 20332511
 JN- NLM
 STAT- MEDLINE
 DA- 20100324
 DCOM- 20100401
 LR- 20100910
 IS- 1468-5833
 TS- 0959-535X (Linking)
 VT- 340
 DP- 2010
 TI- CONSORT 2010 explanation and elaboration: updated guidelines for reporting parallel group randomised trials.
 PG- c869
 LID- 10.1136/bmj.c869 [doi]
 LID- bmj.c869 [pid]

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- The DOI or publisher ID that serves the role of pagination to locate an online article

PMID: 20332511 [PubMed - indexed for MEDLINE] [Free PMC Article](#)[Free full text](#) [Related citations](#)

MID- 2033211
 MN- NLM
 SE- SE
 SP- MEDLINE
 DA- 20100324
 DC- 20100401
 LA- 20100930
 IS- 1468-5931
 IS- 0959-535X (Linking)
 VI- 340
 DP- 2010
 TI- CONSORT 2010 explanation and elaboration: updated guidelines for reporting parallel group randomised trials.
 PG- c869
 LID- 10.1136/bmj.c869 [doi]
 LID- bmj.c869 [pii]

Investigator Name [IR], [FR]

- Names of principal investigator(s) or collaborators who contributed to the research
 - ◆ Search names following the Author field format

☐ **CONSORT 2010 statement: updated guidelines for reporting parallel group randomised trials.**

Schulz KF, Altman DG, Moher D. **CONSORT Group.**
PLoS Med 2010 Mar 24;7(3):e1000251. No abstract available.
PMID: 20320264 [PubMed - indexed for MEDLINE] **Free PMC Article**

[Free full text](#) [Related citations](#)

OID : NMR_PMC2844794
FRA : Berlin, Cessa A
IR : Buckton
FRA : Buckton, Isabelle
IR : Devesseaux D
FRA : Desreumaux, P J
IR : Scharifian, Ray
IR : Elkhouri D
FRA : Elmehrik, Nina
IR : Ellensberg S
FRA : Ellensberg, Susan
IR : Gabali V
FRA : Gabali, Val
IR : Goodman S
FRA : Goodman, Steven
IR : Gotschalke PC
FRA : Gotschalke, Peter C
IR : Groves, Trish
FRA : Grumburg S
IR : Grumburg, Steven
IR : Hagyne B
FRA : Hagyne, Brian
IR : Hamer A
FRA : Hamer, Astrid
IR : John F
FRA : Johnson, Phillippe
IR : Kinsler D
FRA : Kinsler, Don
IR : Mohr D
FRA : Mohr, D
IR : Montori VM
FRA : Montori, Victor M
IR : Mulrow
FRA : Mulrow, Cynthia
IR : Penock, Stuart
IR : Rennie P
FRA : Rennie, Drummond
IR : Schriger DE
FRA : Schriger, David L
IR : Schmid RF
FRA : Schmid, R F
IR : Shaw, Lewis
FRA : Shaw, Lewis
IR : Wager E
FRA : Wager, Elizabeth
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- Names of principal investigator(s) or collaborators who contributed to the research
 - ◆ Search names following the Author field format


PMID: 20352064 [PubMed - indexed for MEDLINE] [Free PMC Article](#)

[Free full text](#) [Related citations](#)

OID - MMR: FMC684794
 FIR - Berlin, Jesse A
 FIR - Bismarck, David
 FIR - Boulton, Isabelle
 IR - Dewauxaux PJ
 IR - Dierckx, J
 IR - Dierckx K
 IR - Dierckx, Ray
 IR - Elbourd
 FIR - Elbourne, Diana
 FIR - Elbourne, J
 FIR - Ellensberg, Susan
 IR - Gahani V
 IR - Gahani V
 IR - Goodman S
 IR - Goodman, Steven
 IR - Gotschke PC
 FIR - Gotschke, Peter
 FIR - Gotschke, Trish
 FIR - Gotschke, Trish
 FIR - Gruber, Peter
 FIR - Grunberg, Steven
 IR - Haynes B
 IR - Haynes, Brian
 IR - James A
 IR - James, Astrid
 IR - John P
 FIR - John, Peter
 IR - Kidd, Peter
 FIR - Middleton, Philippa
 IR - Minkler D
 FIR - Minkler, Don
 IR - Mober D
 FIR - Mober, P
 IR - Mostert W
 IR - Mowbray, Victor M
 IR - Mulrow C
 FIR - Mulrow, Cynthia
 FIR - Mulrow, Cynthia
 FIR - Pocock, Stuart
 IR - Pocock, Stuart
 FIR - Rennie, Drummond
 IR - Schriepel ED
 IR - Schriepel, David I
 IR - Schulz KF
 FIR - Schulla, K F
 FIR - Schulla, K F
 FIR - Siewers, Elizabeth
 IR - Siewers, Elizabeth
 FIR - Wapser, Iwona
 FIR - Wapser, Iwona

Secondary Source [SI]

- Identifies secondary source databanks and accession numbers
 - ◆ ClinicalTrials.gov, ISRCTN
 - ◆ GenBank, GEO, PubChem
- Syntax: database name/accession number, can be searched with one or both components
 - ◆ genbank [si], AF001892 [si]
 - ◆ genbank/AF001892 [si]



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- Identifies secondary source databanks and accession numbers
 - ◆ ClinicalTrials.gov, ISRCTN
 - ◆ GenBank, GEO, PubChem
- Syntax: database name/accession number, can be searched with one or both components
 - ◆ genbank [sj], AF001892 [sj]
 - ◆ genbank/AF001892 [sj]

Book [book]

- Search for book citations:
genereviews [book]
- Search for books:
... AND pmcbook
- Search for books:
... AND pmcbooktitle
- Search for books and chapters:
... AND pmcbookchapter



Age Group Limits (1)

- Newborn (0-1 m) -> "infant, newborn" [mh]
- Infant (1-23 m) -> "infant" [mh:noexp]
- All infant (0-23 m) -> "infant" [mh]
- Preschool child (2-5 y) -> "child, preschool" [mh]
- Child (6-12 y) -> "child" [mh:noexp]
- Adolescent (13-18 y) -> "adolescent" [mh]
- All child (0-18 y) -> "infant" [mh] OR
"child" [mh] OR
"adolescent" [mh]



Age Group Limits (2)

- Adult (19-44 y) -> "adult" [mh:noexp]
- Middle aged (45-64 y) -> "middle aged" [mh]
- Aged (65+ y) -> "aged" [mh]
- 80 and over (80+ y) -> "aged, 80 and over" [mh]
- All adult (19+ y) -> "adult" [mh]
- Middle aged + Aged (45+ y) -> "middle aged"[mh]
OR "aged" [mh]



Number of Authors in PubMed

- 1966 - 1984
 - ♦ No limit for number of authors
- 1984 - 1995
 - ♦ Limit authors to 10, with "et al" as the eleventh
- 1996 - 1999
 - ♦ Limit authors to 25
 - ♦ If > 25 authors, the first 24 were listed, the last author was used as the 25th, and the twenty-sixth and beyond became "et al."
- 2000 - Present
 - ♦ No limit for number of authors



Author Search 1

- Author Names
 - ♦ last name plus initials (no punctuation)
 - smith ja [au]
 - ♦ Use double quotes around the author's name
 - "smith j" [au]
- Search for full name (start 2002)
 - ♦ somkiat asawaphureekorn [fau]



Author Search 2

- Search only as first author
 - ♦ smith dj [1au]
- Search only as last author
 - ♦ smith dj [lastau]
- Search for the only author
 - ♦ (smith dj [1au] AND smith dj [lastau])

