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Supporting Literature Searching

Searching the Evidence in PubMed



August 2015

Supporting Literature Searching

Searching the Evidence in PubMed

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To help you use this guide,



indicates a step in the process of searching and retrieving articles.



indicates a tip, or an extra piece of information.

• How to access PubMed – advanced search

Access to PubMed is free – it requires no username or password.

PubMed includes references from Medline, but also has more complete coverage of journals that Medline only indexes selectively.

PubMed is available at

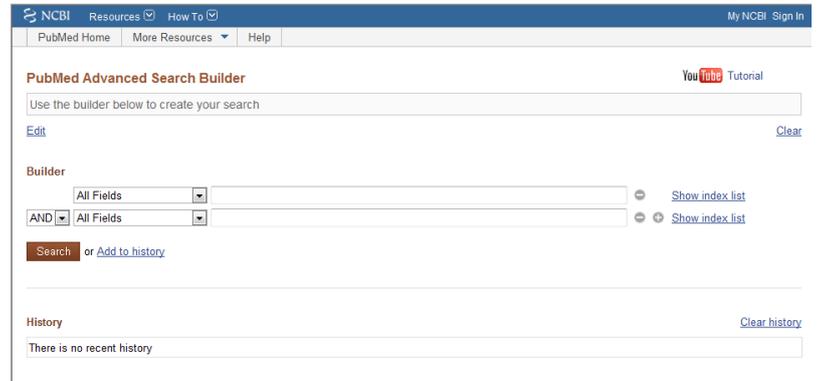
<http://www.ncbi.nlm.nih.gov/pubmed/advanced>

you can use shortcuts:

<http://www.pubmed.gov>

BUT.....

Better to search the version of PubMed at



<http://tinyurl.com/campubmed> because this will give you accurate links through to the ejournals available from University of Cambridge.

• Planning your Search

In this guide we will search for English language randomised controlled trials about the use of oxygen therapy in chronic obstructive pulmonary disease published in the last 6 years.

Before starting your search you should ask questions of yourself such as:

- What are the keywords?
- Are there any other ways to spell the keywords?
- Are there any other words which mean the same thing (synonyms)?
- Are there any related keywords I want to include?
- What limits do I want to apply – date, language, age group, publication type?

In this search there are 2 sets of keywords:

COPD, chronic obstructive pulmonary disease

We combine these in one search line using the Boolean operator OR

oxygen therapy

We will then combine these 2 search sets with the Boolean operator AND.

Boolean Logic



OR will search for articles containing any of the terms we choose. Use OR to combine synonyms, alternative spellings or related items

AND will search for articles which contain all of the terms we have chosen.

- **Searching in PubMed; Search for the first key word**



Using the Builder, type COPD into the first box, chronic obstructive pulmonary disease into the second. Ensure that you link them with OR.



Click “Search”

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PubMed Advanced Search Builder [YouTube Tutorial](#)

copd OR chronic obstructive pulmonary disease

[Edit](#) [Clear](#)

Builder

All Fields	copd	Show index list
OR	chronic obstructive pulmonary disease	Show index list
AND		Show index list

[Search](#) or [Add to history](#)

History [Clear history](#)

There is no recent history



Why can't we enter the whole question at once?

It is tempting to put the whole search into the search box in one go.

Don't!!

- It is better to search in stages, searching only for related terms. Searching in stages, is better because: some databases will treat a string of words as one phrase, so you may find nothing or very little
- searching in stages allows you to build up a much more complex and specific search
- searching in stages makes it easier to correct mistakes.

- **Search for the second keyword**



You'll now see a large number of hits for your first search – don't worry that this number is quite daunting - we've not finished the search yet.

Click "Advanced Search" and, again in the Builder, type the next keyword:



and click "Search"

oxygen therapy

We have now done 2 separate searches – but remember to click on Advanced Search to continue to the next stage.

- **Combining your search results**

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PubMed Home More Resources Help

PubMed Advanced Search Builder [YouTube Tutorial](#)

Use the builder below to create your search

[Edit](#) [Clear](#)

Builder

All Fields [Show index list](#)

AND All Fields [Show index list](#)

[Search](#) or [Add to history](#)

History [Clear history](#)

Search	Add to builder	Query	Items found	Time
#4	Add	Search oxygen therapy	70998	05:33:16
#1	Add	Search (copd) OR chronic obstructive pulmonary disease	35693	05:32:17

We have done 2 separate searches. We need to combine them using Boolean operator AND using the set numbers (prefixed by #). Remember to clear our the search box first, then you have 3 options: (NB: you only need to do one of the following)



Option 1:
Type into the Builder
#1 AND #4
And click "search"

Builder

Recent Query #1 and #4

AND All Fields

[Search](#) or [Add to history](#)

History

Search	Add to builder	Query	Items found	Time
#4	Add	Search oxygen therapy	70998	05:33:16
#1	Add	Search (copd) OR chronic obstructive pulmonary disease	35693	05:32:17



Option 2:
Click on each number (e.g. #1), and click **“AND in builder”** to enter them into the search box automatically. And click “search”

Builder

All Fields

AND All Fields

Search or Add to history

History

Search	Add to builder	
#4	Add	Search oxygen the
#1	Add	Search (copd) OR c

- AND in builder
- OR in builder
- NOT in builder
- Delete from history
- Show search results
- Show search details
- Save in My NCBI

Builder

Recent Query #1

AND All Fields

Search or Add to history

History

Search	Add to builder	
#4	Add	Search oxygen therapy
#1	Add	Search (copd) OR chroni

Add search to the builder above



Option 3:
Click “add” for each number, and then switch the AND between the lines of the Builder.
Click “Search”

Remember, in a more complex search you must take care to use the correct set numbers.

• Limiting your search

“Show additional filters”

You can see there are many different types of limits you can set on your search.

Not all are visible at this stage, but you can “Show additional filters”

Article types

- Clinical Trial
- Review
- Customize ...

Text availability

- Abstract
- Free full text
- Full text

PubMed Commons

- Reader comments

Publication dates

- 5 years
- 10 years
- Custom range...

Species

- Humans
- Other Animals

[Clear all](#)

[Show additional filters](#)

Summary ▾ 20 per page ▾ Sort by Most Recent ▾ Send to: ▾

Results: 1 to 20 of 3747 << First < Prev Page 1 of 188 Next > Last >>

[Utility of Equations to Estimate Peak Oxygen Uptake and Work Rate From a 6-Minute Walk Test in Patients With COPD in a Clinical Setting.](#)

1. [Patients With COPD in a Clinical Setting.](#)
Kirkham AA, Pauhl KE, Elliott RM, Scott JA, Doria SC, Davidson HK, Neil-Sztramko SE, Campbell KL, Camp PG.
J Cardiopulm Rehabil Prev. 2015 Aug 6. [Epub ahead of print]
PMID: 26252340
[Similar articles](#)

[Prevalence, risk factors, and health-related quality of life of osteoporosis in patients with COPD at a community hospital in Taiwan.](#)

2. [Prevalence, risk factors, and health-related quality of life of osteoporosis in patients with COPD at a community hospital in Taiwan.](#)
Lin CW, Chen YY, Chen YJ, Liang CY, Lin MS, Chen W.
Int J Chron Obstruct Pulmon Dis. 2015 Jul 29;10:1493-500. doi: 10.2147/COPD.S85432. eCollection 2015.
PMID: 26251589 Free PMC Article
[Similar articles](#)

[Is asymptomatic peripheral arterial disease associated with walking endurance in patients with COPD?](#)

3. [Is asymptomatic peripheral arterial disease associated with walking endurance in patients with COPD?](#)
Sun KS, Lin MS, Chen YJ, Chen YY, Chen SC, Chen W.
Int J Chron Obstruct Pulmon Dis. 2015 Jul 29;10:1487-92. doi: 10.2147/COPD.S85430. eCollection 2015.
PMID: 26251588 Free PMC Article
[Similar articles](#)

It is likely that the most useful ones will be:

- Publication Date
- Article Type
- Ages
- Languages
- Humans or Animals

Browse the range of options to see the possibilities, (click “more...” to see additional features) but remember, the more limits you apply, the smaller the number of articles you will retrieve.

For this tutorial we are going to limit the search so we only retrieve English language Randomized Controlled Trials published in the last 6 years.

[Choose additional filters](#)

Text availability
Abstract available
Free full text available
Full text available

Publication dates
5 years
10 years
Custom range...

Species
Humans
Other Animals

Article types
Clinical Trial
Meta-Analysis
Practice Guideline
Randomized Controlled Trial
Review
Systematic Reviews
more ...

Languages
English
more ...

[Clear all](#)

[Choose additional filters](#)

Display Settings: Summary, 20

Results: 1 to 20 of 2928

[Compliance with guidelines- signs.](#)
1. Menéndez R, Torres A, Rey Villasclaras JJ, Bello S, Alfar PLoS One. 2012;7(5):e37570. E PMID: 22629420 [PubMed - in pi [Related citations](#)

[The natural history of comm analysis.](#)
2. Müllerova H, Chigbo C, Hag Respir Med. 2012 May 21. [Epu PMID: 22621820 [PubMed - as s [Related citations](#)

[Clinical Audit on Diagnostic.](#)
3. Menzella F, Facciolongo N, I Respir Care. 2012 May 14. [Epu

[Association between diseas](#)

Choose additional filters

- Text availability
- Publication dates
- Species
- Article types
- Languages
- Sex
- Subjects
- Journal categories
- Ages
- Search fields

[Apply](#)



From the results page, look at the “filters” options down the left-hand column.



PUBLICATION DATES: select “custom range” and enter 2009 and 2015 in the year boxes (don’t worry about specifying day and month)



ARTICLE TYPE: Select “Randomized Controlled Trial”



LANGUAGE: Select “English”



Observe how the number of hits has reduced

Article types clear Summary ▾ 20 per page ▾ Sort by Mos
 Clinical Trial
 Randomized Controlled Trial
 Customize ...

Text availability
 Abstract
 Free full text
 Full text

Publication dates clear
 5 years
 10 years
 From 2009/01/01 to 2015/12/31

Species
 Humans
 Other Animals

Languages clear
 English
 Customize ...

[Clear all](#)
[Show additional filters](#)

Results: 1 to 20 of 130
 Filters activated: Randomized Contro
[Clear all](#) to show 3747 items.

[Plasma endothelin-1 and nitric o](#)
 1. [hypertension in patients of chroni](#)
[exacerbation.](#)
 Feng EZ, Yang SY, Huang NX, Yi
 Zhongguo Ying Yong Sheng Li Xue Za
 PMID: 26016363
[Similar articles](#)

[Detailed statistical analysis plan 1](#)
 2. Buggeskov KB, Jakobsen JC, Sec
 Trials. 2014 Dec 23;15:510. doi: 10.118
 PMID: 25539792 **Free PMC Article**
[Similar articles](#)

[Randomized trial of non-invasive](#)
 3. [hypercapnic failure due to chroni](#)
 Márquez-Martín E, Ruiz FO, Ram
 Respir Med. 2014 Dec;108(12):1741-51
 PMID: 25456710
[Similar articles](#)



Limits

Note: The limits you select will apply to any search you do from now on. (Note the tick in the box in the Limits tab).

To remove these limits for future searches, simply uncheck this box.

Or

To apply new/different limits, simply click on the Limits tab, and make your selection.

• Looking at the results of your search

Lets have a closer look at the results:

[Display Settings:](#) Summary, 20 per page, Sorted by Recently Added

[Send to:](#)

Results: 1 to 20 of 125

<< First < Prev Page 1 of 7 Next > Last >>

i Filters activated: Publication date from 2006/01/01 to 2012/12/31, Randomized Controlled Trial, English
[Clear all](#)

- [The effect of sildenafil on respiratory weaning of patients with chronic obstructive pulmonary diseases admitted to intensive care unit.](#)
1. Rafiei MR, Aghadavoudi O, Hojjat M.
Med Arh. 2012;66(2):104-6.
PMID: 22486141 [PubMed - indexed for MEDLINE]
[Related citations](#)
- [AccuO2 oximetry-driven oxygen-conserving device versus fixed-dose oxygen devices in stable COPD patients.](#)
2. Rice KL, Schmidt MF, Buan JS, Lebahn F, Schwarzock TK.
Respir Care. 2011 Dec;56(12):1901-5.
PMID: 22288082 [PubMed - indexed for MEDLINE]
[Related citations](#)
- [Effects of oxygen supplementation on cerebral oxygenation during exercise in chronic obstructive pulmonary disease patients not entitled to long-term oxygen therapy.](#)
3. Oliveira MF, Rodrigues MK, Treptow E, Cunha TM, Ferreira EM, Neder JA.
Clin Physiol Funct Imaging. 2012 Jan;32(1):52-8. doi: 10.1111/j.1475-097X.2011.01054.x. Epub 2011 Oct 3.
PMID: 22152079 [PubMed - indexed for MEDLINE]
[Related citations](#)
- [Strength training increases maximum working capacity in patients with COPD--randomized clinical trial comparing three training modalities.](#)
4. Vonbank K, Strasser B, Mondrzyk J, Marzluf BA, Richter B, Losch S, Nell H, Petkov V, Haber P.
Respir Med. 2012 Apr;106(4):557-63. Epub 2011 Nov 26.
PMID: 22119456 [PubMed - indexed for MEDLINE]
[Related citations](#)
- [Leukocyte filtration ameliorates the inflammatory response in patients with mild to moderate lung dysfunction.](#)
5.

PubMed shows us a Summary record, giving details of Authors, Title and Source (ie Journal title, year, month, volume, part and pages).

You can change the amount of information you see for each record.

Click on the title to view the abstract and related records for the article.

Use the related articles to "snowball" your search.

The screenshot shows the PubMed interface. At the top, there's a search bar with 'PubMed' entered and a search button. Below the search bar, the 'Display Settings' are set to 'Abstract'. The main content area displays a search result for the article 'Oxygen uptake, ventilation, and symptoms during low-frequency versus high-frequency NMES in COPD: a pilot study' by Sillen MJ, Wouters EF, Franssen FM, Meijer K, Stakenborg KH, Spruit MA. The abstract is visible, starting with 'Transcutaneous neuromuscular electrical stimulation (NMES) involves the application of an electrical current through electrodes placed on the skin over the targeted muscles...'. To the right of the main record, there are sections for 'Related citations' and 'All links from this record'. The 'Related citations' section lists several related articles, including 'The metabolic response during resistance training and neuromuscular electrical stimulation in COPD patients' and 'Effects of neuromuscular electrical stimulation of muscles of ambulation in COPD patients'. The 'All links from this record' section includes 'Related Citations', 'Compound (MeSH Keyword)', and 'Substance (MeSH Keyword)'. At the bottom right, there is a 'Recent activity' section with a 'Turn Off' button and a 'Clear' button.

Alternatively, you can change the amount of details using the tabs under the search box which display the current selection.

Change the display option from “summary” to “abstract”, the number of items to 50, and sort the results by publication date.

The screenshot shows the PubMed search results interface. At the top, there are dropdown menus for 'Summary', '20 per page', and 'Sort by Most Recent'. Below these, there are three dropdown menus that have been opened:

- Format:** Options include Summary, Summary (text), Abstract (selected), Abstract (text), MEDLINE, XML, and PMID List.
- Items per page:** Options include 5, 10, 20, 50 (selected), 100, and 200.
- Sort by:** Options include Most Recent, Relevance, Publication Date (selected), First Author, Last Author, Journal, and Title.

The background shows search results for 'Randomized Controlled Trial, F' with 3747 items. A specific result is highlighted: 'Helin-1 and nitric oxide correlation in patients of chronic cor pulmonale and nitric oxide pulmonary artery hypertension in p'.

This screenshot shows the 'Sort by' dropdown menu open over the search results. The menu options are: Most Recent, Relevance, Publication Date (selected), First Author, Last Author, Journal, and Title. The search results show 'Results: 1 to 50' and a filter for 'Zhongguo Ying Yong'. The first result is 'Plasma endothelin-1 and nitric oxide correlation in patients of chronic cor pulmonale and nitric oxide pulmonary artery hypertension in p'.



Access to Full-Text Articles

If you are using the standard version of PubMed, you will notice that some articles provide a link to the full text:

The screenshot shows a PubMed article page for 'The effect of salbutamol on airway response to salbutamol in patients with mild-to-moderate COPD'. A blue button labeled 'View Full-Text Article at SAGE Publications' is visible in the top right corner. Below the article title, there is a 'Related Articles' section with a link to 'Changes in blood ROS, e-NO, and some pro-inflammatory mediators in bronchial secretions following inhaled corticosteroids: a controlled trial'.

In the Abstract view of the article you may see an indication that there is a link to the journal.

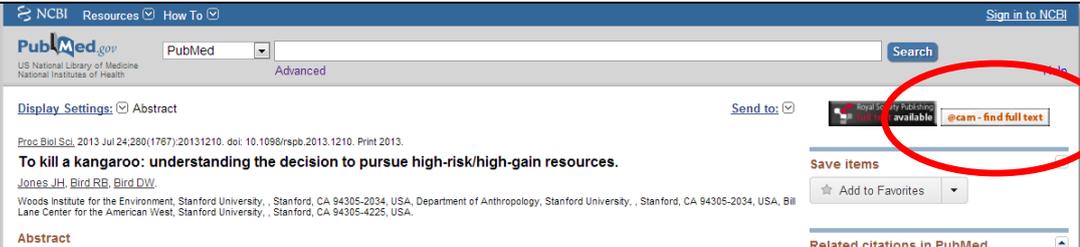
Access to electronic journals will vary depending on the computer you are using (perhaps a computer in the library which is on the University network), and the passwords you have (NHS ATHENS?, University RAVEN?), and it may be that there's only paper access.

****A link in PubMed is no guarantee of access.****

**** No link in PubMed is not proof that you'll never get hold of the article. ****

To be sure that you have access to the article it's necessary to check against the journals which have been paid for by the organisations you have connections with (ie the NHS, and the University of Cambridge and its Medical Library)

- Search PubMed with links to Cambridge full text: using the version of PubMed at <http://tinyurl.com/camPubMed> This will give you an extra button to check "@cam - find full text":



Click on this link to see if there is full text access - NB you may need to use your RAVEN login if you're "off campus"

- the **NHS e-Journals** listing: check via <http://www.evidence.nhs.uk> - click on "Journals and Databases", then "journals" and remember to login with your NHS ATHENS password.
- you can also check **Library Search** to establish whether the Medical Library holds paper or electronic copies of the journal you need: <http://search.lib.cam.ac.uk/>

- **Selecting references to save/print/email**

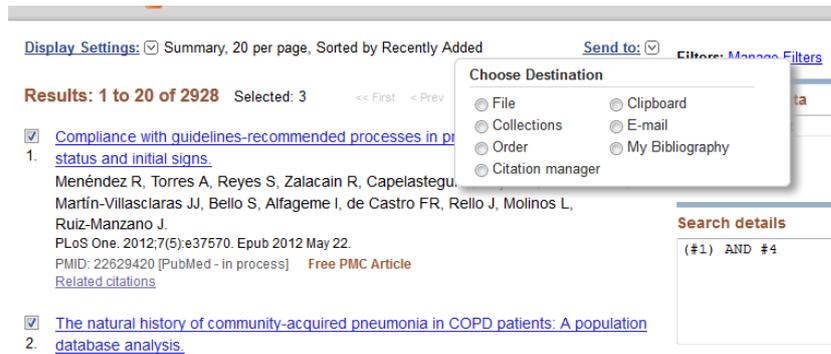
You can select references to print, save or email.



Select (tick in the box next to the reference) the articles you find interesting. NB. You will need to move to the next page of references – at the bottom of the page you'll have the option to click "Next" to move to the next page of references.



Once you have selected all the references, click in the drop down box next to the "send to" option and select "**Clipboard**". Click "**Add to clipboard**".



Display Settings: Summary, 20 per page, Sorted by Recently Added

Results: 1 to 20 of 2928 Selected: 3

1. [Compliance with guidelines-recommended processes in p... status and initial signs.](#)
 Menéndez R, Torres A, Reyes S, Zalacain R, Capelastegu...
 Martín-Villasclaras JJ, Bello S, Alfageme I, de Castro FR, Rello J, Molinos L,
 Ruiz-Manzano J.
 PLoS One. 2012;7(5):e37570. Epub 2012 May 22.
 PMID: 22629420 [PubMed - in process] [Free PMC Article](#)
[Related citations](#)

2. [The natural history of community-acquired pneumonia in COPD patients: A population database analysis.](#)

Choose Destination

- File
- Collections
- Order
- Citation manager
- Clipboard
- E-mail
- My Bibliography

A message will appear under the search box to say that the items were added successfully, the items you've added will be marked as being in the clipboard, and you'll notice the number of items in your clipboard has changed.

NCBI Resources How To My NCBI Sign In

PubMed.gov PubMed (#1) AND #4 Search Help

Choose additional filters Display Settings: Summary, 20 per page, Sorted by Recently Added Send to: Clipboard: 3 items

Text availability: Abstract available, Free full text available, Full text available

Publication dates: 5 years, 10 years, Custom range...

Species: Humans, Other Animals

Article types: Clinical Trial, Meta-Analysis, Practice Guideline, Randomized Controlled Trial, Review

3 items were added to the Clipboard. Clipboard items will be lost after eight hours of inactivity. The maximum number of Clipboard items is 500.

Results: 1 to 20 of 2928 Page 1 of 147

1. [Compliance with guidelines-recommended processes in pneumonia: impact of health status and initial signs.](#)
Menéndez R, Torres A, Reyes S, Zalacain R, Capelastegui A, Rajas O, Borderías L, Martín-Villasclaras JJ, Bello S, Alfageme I, de Castro FR, Rello J, Molinos L, Ruiz-Manzano J.
PLoS One. 2012;7(5):e37570. Epub 2012 May 22.
PMID: 22629420 [PubMed - in process] Free PMC Article
[Related citation](#) [Item in clipboard](#)

2. [The natural history of community-acquired pneumonia in COPD patients: A population database analysis.](#)
Müllerova R, Chigbo C, Hagan GW, Woodhead MA, Miravittles M, Davis KJ, Wedzicha JA.
Respir Med. 2012 May 21. [Epub ahead of print]
PMID: 22621820 [PubMed - as supplied by publisher]
[Related citations](#) [Item in clipboard](#)

Search details: ((#1) AND #4) Search See more...

Recent activity: (((copd) OR chronic obstructive pulmonary disease)) AND (oxyg PubMed) Turn Off Clear



Click on the Clipboard (either via the tab, or the link beside the search box) to see the articles you selected. Remember you can change the format of references by using the drop-down box next to “Display”.



Once you have added articles to the Clipboard, you can continue searching for more articles. Just remember to send your newly selected articles to the clipboard. Gathering the articles you want in this way will reduce duplication - articles that are already on the Clipboard will be identifiable by the green colour of the item number.

- **Saving, printing and emailing references**

To do any of these things you must first put the references in Clipboard, and click on the “Clipboard” tab.

Change the display format as required.

NB. If you have the summary view on the screen, you will save/email/print the summary details. If you want the abstract you **must** change the display.



To Email: Click on the drop down box next to the “send to” button and select “email”.

Fill in the form (check that you’re taking more than just the “summary” of each article, and at least choosing to take the “abstract”, and click “Mail”.

You should get a message, below the search box, indicating that the email has been sent successfully

To Print or Save

PubMed will turn your references into a text file (.txt) which you can print or save.



Click “send to” and chose “file”. Ensure you select the format “Abstract (text)”. While this may not be a very attractive format, it is minimal and ideal for printing.

Open the file and print as normal, or save it.



POP-Ups

If you have pop-up blocker software installed on your machine, you may have difficulties in displaying the “save” option.

To overcome this, hold down the *Ctrl / Control* key, THEN click on the “file” option in the *Send To* list of options.

- **Exporting to reference management software**

If you are using reference management software such as Endnote, it's easy to export your references.



Click “send to” and choose “citation manager”. Save the file to your PC.

Open your reference management tool and import.

- **Saving your search strategy or the articles in your clipboard for later – MyNCBI; and/or RSS**

It's useful to be able to save search strategies to re-run at a later date, or to pick up where you left off with a search. It's also helpful sometimes to be able to save the articles you've saved to clipboard.

MyNCBI lets you do these things.

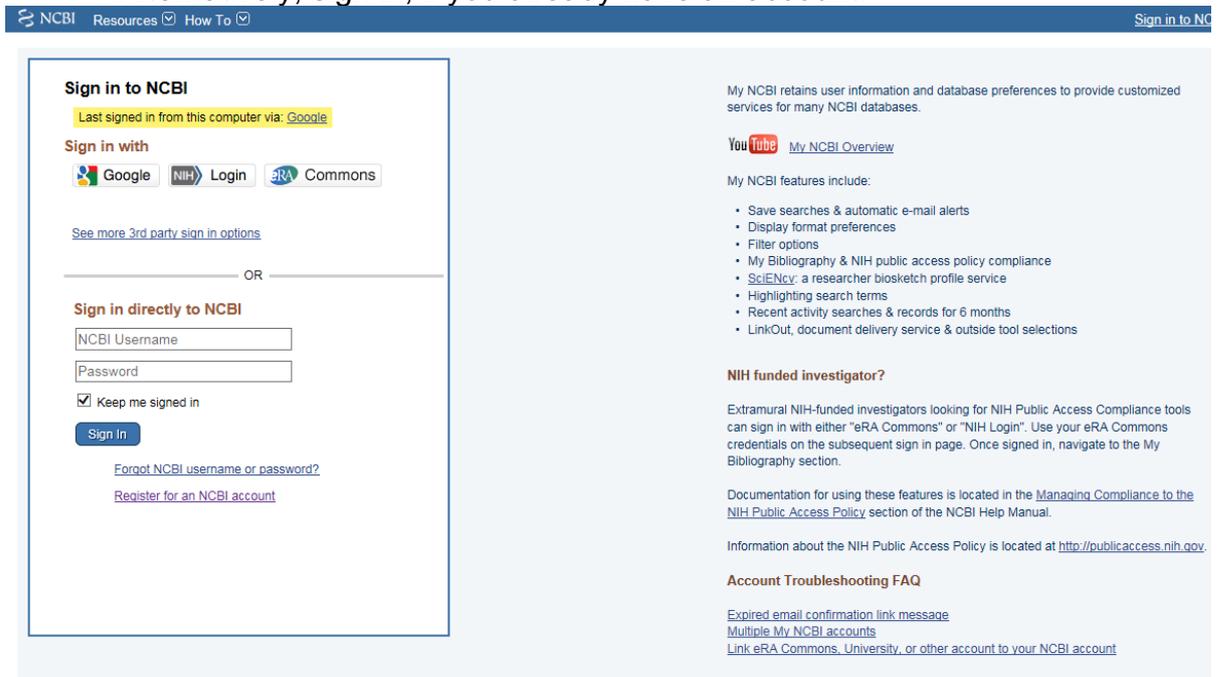


Find the Sign in to NCBI link in the top right-hand corner of the page.



Complete the registration process, or use an existing Google account to sign in.

Alternatively, sign in, if you already have an account.





Once back in PubMed, return to the “Advanced Search” option. Select the line of your search strategy you wish to save, and click on the number of the search



You have the option to “Save in My NCBI” – click that option.

History [Clear history](#)

Search	Add to builder	Query	Items found	Time
#4	Add	Search #2 AND #1 Limits: Randomized Controlled Trial, English, published in the last 5 years	102	10:15:58
#3	AND in builder	#1	2871	10:08:53
#2	OR in builder	therapy	69537	09:35:23
#1	NOT in builder	OR chronic obstructive pulmonary disease	34450	09:31:03
#0	Delete from history	ard	4	10:15:58

#4 Add

#3 AND in builder

#2 OR in builder

#1 NOT in builder

#0 Delete from history

Show search results

Show search details

[Save in My NCBI](#)



If you’re happy with the search, click “save”



You will be given a host of options, including to name the search, to set up an alert which will be emailed to you. Make your choices and “SAVE”

[My NCBI](#) » Saved Searches

Your PubMed search

Name of saved search:

Search terms:

[Test search terms](#)

Filters: Randomized Controlled Trial, From 2009/01/01 to 2015/12/31, English

Would you like e-mail updates of new search results?

- No, thanks.
 Yes, please.

E-mail: ejb87@medschl.cam.ac.uk ([change](#))

Schedule:

Frequency:

Which day?

Formats:

Report format:

Number of items:

Send at most: Send even when there aren't any new results

Any text you want to be added at the top of your e-mail (optional):

[Skip saving a](#)



To save a collection of articles saved to Clipboard, when you “send to”, there’s an option to send to “Collections” This is held in My NCBI for you.

- **RSS**

Setting up an RSS feed can be a useful way of keeping track of new material in your field, and will not require you to set up a MyNCBI account.



When you have completed a search strategy which pulls together all the keywords of the question you are trying to answer, run the search.



To set up an RSS feed, click the RSS option.



A box appears, and you can change the name of your RSS feed if you wish, and change the maximum number of articles which can display in the feed. Make your selection, and click “create RSS”



Click the XML button, and a page will appear which you can subscribe to, if you use a browser-based RSS reader. Alternatively, you can copy the URL of the page, and add this to your web-based RSS reader.

pubmed: (#2) and #1, with li...

You are viewing a feed that contains frequently updated content. When you subscribe to a feed, it is added to the Common Feed List. Updated information from the feed is automatically downloaded to your computer and can be viewed in Internet Explorer and other programs. [Learn more about feeds.](#)

[Subscribe to this feed](#)

Bronchodilators accelerate the dynamics of muscle O2 delivery and utilisation during exercise in COPD.

Berton DC, Barbosa PB, Takara LS, Chiappa GR, Siqueira AC, Bravo DM, Ferreira LF, Neder JA. [Related Articles](#)

Bronchodilators accelerate the dynamics of muscle O2 delivery and utilisation during exercise in COPD.

Thorax. 2010 Jul;65(7):588-93

Authors: Berton DC, Barbosa PB, Takara LS, Chiappa GR, Siqueira AC, Bravo DM, Ferreira LF, Neder JA

BACKGROUND: Expiratory flow limitation and lung hyperinflation promote cardiocirculatory perturbations that might impair O₂ delivery to locomotor muscles in patients with chronic obstructive pulmonary disease (COPD). The hypothesis that decreases in lung hyperinflation after the inhalation of bronchodilators would improve skeletal muscle oxygenation during exercise was tested. **METHODS:** Twelve non- or mildly hypoxaemic males (forced expiratory volume in 1 s (FEV₁)=38.5±12.9% predicted; Pao₂>60 mm Hg) underwent constant work rate cycle ergometer exercise tests (70-80% peak) to the limit of tolerance (Tlim) after inhaled bronchodilators (salbutamol plus ipratropium) or placebo.

Displaying 15 / 15

Sort by:

- All 15
- Date
- Title
- Author

Filter by category:

- Am J Respir Crit ... 1
- Chest 2
- Crit Care Med 1
- Int J Chron Obstru... 1
- Int J Sports Med 1
- J Physiother 1
- Monaldi Arch Che... 1
- Pak J Biol Sci 1
- Pulm Pharmacol ... 1
- Respir Care 2
- Respirology 1
- Scand J Med Sci ... 1
- Thorax 1

- **Searching using MeSH (Medical Subject Headings)
– a brief introduction**

MeSH is the acronym for "**Medical Subject Headings**." MeSH is the authority list of the vocabulary terms used for subject analysis of biomedical literature at NLM. MeSH vocabulary is used for indexing journal articles for **MEDLINE** and is also used for cataloguing books and audiovisuals.

 The MeSH controlled vocabulary is a distinctive feature of MEDLINE. It **imposes 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.

Searching using MeSH allows you to overcome problems of spelling and terminology - especially when *you* might not be aware of different spellings or terminology!

We will search again for English language randomised controlled trials about the use of oxygen therapy in chronic obstructive pulmonary disease published in the last 5 years – this time we will use MeSH.



You reach the MeSH Browser from
a) the homepage of PubMed, or by using the drop down set of options, or in the Advanced Search screen, by scrolling to the **bottom of the page**, and selecting **MeSH** from the list available in **Queries**

The screenshot shows the PubMed homepage. At the top, there is a navigation bar with 'NCBI Resources' and 'How To' menus. Below this is the 'PubMed.gov' logo and a search bar. A dropdown menu is open, listing various resources like 'PubMed Protein', 'Nucleotide', 'EST', 'Structure', 'Genome', 'BioProject', 'BioSample', 'BioSystems', 'Books', 'CancerChromosomes', 'Conserved Domains', 'Clone', 'dbGaP', 'dbVar', 'Epigenomics', 'Gene', 'GENSAT', 'GEO DataSets', 'GEO Profiles', 'HomoloGene', 'MeSH', 'NCBI Web Site', 'NLM Catalog', 'OMIA', 'OMIM', 'PMC', 'PopSet', and 'Probe'. The 'MeSH' option is highlighted with a red box. In the main content area, there are sections for 'PubMed Tools' and 'More Resources'. The 'MeSH Database' link under 'More Resources' is also highlighted with a red box.



MeSH

MeSH (Medical Subject Headings) is the NLM controlled vocabulary thesaurus used for indexing articles for PubMed.

Using MeSH

- [Help](#)
- [Tutorials](#)

More Resources

- [E-Utilities](#)
- [NLM MeSH Homepage](#)

Make sure the search box is clear, then type in:



COPD

Click "Go". PubMed will map your term to a MeSH heading.

NCBI Resources How To ilk21 My NCBI Sign Out

MeSH NLM Controlled Vocabulary
 Search: MeSH Save search Limits Advanced search Help
 copd Search Clear

Display Settings: Full Send to:

Pulmonary Disease, Chronic Obstructive

A disease of chronic diffuse irreversible airflow obstruction. Subcategories of COPD include CHRONIC BRONCHITIS and PULMONARY EMPHYSEMA.
 Year introduced: 2002
 PubMed search builder options
[Subheadings:](#)

<input type="checkbox"/> blood	<input type="checkbox"/> ethnology	<input type="checkbox"/> psychology
<input type="checkbox"/> chemically induced	<input type="checkbox"/> etiology	<input type="checkbox"/> radiography
<input type="checkbox"/> classification	<input type="checkbox"/> genetics	<input type="checkbox"/> radionuclide imaging
<input type="checkbox"/> complications	<input type="checkbox"/> history	<input type="checkbox"/> radiotherapy
<input type="checkbox"/> congenital	<input type="checkbox"/> immunology	<input type="checkbox"/> rehabilitation
<input type="checkbox"/> diagnosis	<input type="checkbox"/> metabolism	<input type="checkbox"/> surgery
<input type="checkbox"/> diet therapy	<input type="checkbox"/> microbiology	<input type="checkbox"/> therapy
<input type="checkbox"/> drug therapy	<input type="checkbox"/> mortality	<input type="checkbox"/> ultrasonography
<input type="checkbox"/> economics	<input type="checkbox"/> nursing	<input type="checkbox"/> urine
<input type="checkbox"/> embryology	<input type="checkbox"/> pathology	<input type="checkbox"/> veterinary
<input type="checkbox"/> enzymology	<input type="checkbox"/> physiopathology	<input type="checkbox"/> virology
<input type="checkbox"/> epidemiology	<input type="checkbox"/> prevention and control	

Restrict to MeSH Major Topic.
 Do not include MeSH terms found below this term in the MeSH hierarchy.

Entry Terms:

- COPD
- Chronic Obstructive Pulmonary Disease
- COAD
- Chronic Obstructive Airway Disease
- Chronic Obstructive Lung Disease
- Airflow Obstruction, Chronic
- Airflow Obstructions, Chronic
- Chronic Airflow Obstructions
- Chronic Airflow Obstruction

Previous Indexing:

- [Lung Diseases, Obstructive \(1971-2001\)](#)
- [Pulmonary Emphysema \(1965-1971\)](#)

[All MeSH Categories](#)
[Diseases Category](#)
[Respiratory Tract Diseases](#)
[Lung Diseases](#)
[Lung Diseases, Obstructive](#)
Pulmonary Disease, Chronic Obstructive
[Bronchitis, Chronic](#)

PubMed search builder
 Add to search builder AND Search PubMed

All links from this record
 PubMed
 PubMed - Major Topic
 Clinical Queries
 NLM MeSH Browser

Search details
 "pulmonary disease, chronic obstructive"[MeSH Terms] OR copd[Text Word]
 Search See more...

Recent activity
 Turn Off Clear
 copd (1)
 MeSH
 Oxygen uptake, ventilation, and symptoms during low-frequency versus high-freq... PubMed
 A randomised crossover trial comparing volume assured and pressure preset n... PubMed
 ((COPD OR chronic obstructive pulmonary disease) AND (oxygen the... (148) PubMed
 ((COPD OR chronic obstructive pulmonary disease) AND (oxygen the... (2600) PubMed
 See more...



Scope Notes

The definition of each MeSH is provided - this is called the scope note. Be aware that definitions and interpretations may vary between Britain and the United States of America.

Make sure you and PubMed are talking the same language!



Subheadings

These are qualifying terms which allow you to search on a particular aspect of the Subject Heading you've found. The list of subheadings varies with every Subject Heading, since not all are applicable to all subject headings.



Entry Terms

There are also a selection of synonyms which are used for this subject. The benefit of using MeSH is that you don't have to think of all these synonyms yourself!



Mark the term (ie tick the box), and click "add to search builder". The default setting for this is to combine using "AND", but you may want to change this to "OR" if you are searching for more than one synonymous subject heading.



Click "Search PubMed" to view the results of your search.

The screenshot shows the MeSH browser interface. At the top, there is a search bar with 'MeSH' selected and 'copd' entered. Below the search bar, there are options for 'Save search', 'Limits', 'Advanced search', and 'Help'. The main content area displays the MeSH term 'Pulmonary Disease, Chronic Obstructive' with its definition and subcategories. A 'PubMed search builder' window is open, showing the selected MeSH term and options to 'Add to search builder' and 'Search PubMed'. The 'Add to search builder' button is highlighted with a red box, and the 'AND' operator is selected in the dropdown menu.



Next, return to the MeSH browser, and search for "Oxygen Therapy" in the same way. You may find it useful to search for Oxygen as a separate MeSH Heading:

Again, make sure you send each term you select to the “Search Box with OR”.

MeSH
NLM Controlled Vocabulary

Search: MeSH
oxygen therapy

Save search Limits Advanced search Help

Search Clear

Display Settings: Summary Send to:

Results: 2 Selected: 1

Oxygen Inhalation Therapy

- Inhalation of oxygen aimed at restoring toward normal any pathophysiologic alterations of gas exchange in the cardiopulmonary system, as by the use of a respirator, nasal catheter, tent, chamber, or mask. (From Dorland, 27th ed & Stedman, 25th ed)

Hyperbaric Oxygenation

- The therapeutic intermittent administration of oxygen in a chamber at greater than sea-level atmospheric pressures (three atmospheres). It is considered effective treatment for air and gas embolisms, smoke inhalation, acute carbon monoxide poisoning, caisson disease, clostridial gangrene, etc. (From Segen, Dictionary of Modern Medicine, 1992). The list of treatment modalities includes stroke.
Year introduced: 1965(1964)

PubMed search builder

"Oxygen Inhalation Therapy"
[Mesh]

Add to search builder AND Search PubMed

Find related data

Database: Select Find items



When you have selected all relevant terms, click on “Search PubMed”.



Click the “Advanced Search” tab to combine your searches, using the set numbers, prefixed with # and the Boolean operator AND.

Compare your results. The “free text” search result with limits applied is line #5 in this example (114 results) and the “MeSH” search result with the same limits is in line #10.

Have you found more, or less? What is missing? What new references have we found? Are the results more focused?

History [Clear history](#)

Search	Add to builder	Query	Items found	Time
#12	Add	Search #10 AND #8 Limits: Randomized Controlled Trial, English, published in the last 5 years	29	10:23:16
#11	Add	Search #10 AND #8	574	10:23:06
#10	Add	Search "Oxygen Inhalation Therapy"[Mesh]	19789	10:22:42
#8	Add	Search "Pulmonary Disease, Chronic Obstructive"[Mesh]	17005	10:22:22
#4	Add	Search #2 AND #1 Limits: Randomized Controlled Trial, English, published in the last 5 years	102	10:15:58
#3	Add	Search #2 AND #1	2871	10:08:53
#2	Add	Search oxygen therapy	69537	09:35:23
#1	Add	Search copd OR chronic obstructive pulmonary disease	34450	09:31:03
#0	Add	pubmed clipboard	4	10:15:58

• PubMed Clinical Queries

The Clinical Study Category is a specialized search method with built-in [search filters](#) that limit retrieval to citations to articles reporting research conducted with specific methodologies, including those that report applied clinical research.

NCBI Resources How To My NCBI Sign In

PubMed Clinical Queries

Results of searches on this page are limited to specific clinical research areas. For comprehensive searches, use [PubMed](#) directly.

Search

Clinical Study Categories

Display citations filtered to a specific clinical study category and scope. These search filters were developed by [Haynes RB et al.](#) See more [filter information](#).

Systematic Reviews

Display citations for systematic reviews, meta-analyses, reviews of clinical trials, evidence-based medicine, consensus development conferences, and guidelines. See [filter information](#) or additional [related sources](#).

Medical Genetics

Display citations pertaining to topics in medical genetics. See more [filter information](#).

To find citations using the Clinical Study Category:



Click the Clinical option from the choices in the Queries box at the bottom of the Advanced Search page

Enter your search term in the search box

Select a Category: therapy, diagnosis, aetiology, or prognosis

Select a Scope: “narrow, specific search or broad, sensitive search

Click Go

NCBI Resources How To My NCBI Sign In

PubMed Clinical Queries

Results of searches on this page are limited to specific clinical research areas. For comprehensive searches, use [PubMed](#) directly.

copd and oxygen therapy Search

Clinical Study Categories

Category:

Scope:

Results: 5 of 1640

Randomised controlled crossover trial of the effect on PICO2 of oxygen-driven versus air-driven nebulisers in severe chronic obstructive pulmonary d [Emerg Med J. 2011]

Managing passengers with stable respiratory disease planning air travel: British Thoracic Society recommendations. [Thorax. 2011]

[Intensive care in patients with asthma and COPD]. [Dtsch Med Wochenschr. 2011]

Joint guideline focuses on COPD care. [JAMA. 2011]

Biomarkers of therapeutic response in patients with chronic obstructive pulmonary disease: a critical review of the literature. [Drugs. 2011]

[See all \(1640\)](#)

Display citations filtered to a specific clinical study category and scope. These search filters were developed by [Haynes RB et al.](#) See more [filter information](#).

Systematic Reviews

Results: 5 of 131

Managing passengers with stable respiratory disease planning air travel: British Thoracic Society recommendations. [Thorax. 2011]

Joint guideline focuses on COPD care. [JAMA. 2011]

Biomarkers of therapeutic response in patients with chronic obstructive pulmonary disease: a critical review of the literature. [Drugs. 2011]

Activity promotion: a paradigm shift for chronic obstructive pulmonary disease therapeutics. [Proc Am Thorac Soc. 2011]

Diagnosis and management of stable chronic obstructive pulmonary disease: a clinical practice guideline update from the American College of Physicians. [Ann Intern Med. 2011]

[See all \(131\)](#)

Display citations for systematic reviews, meta-analyses, reviews of clinical trials, evidence-based medicine, consensus development conferences, and guidelines. See [filter information](#) or additional [related sources](#).

Medical Genetics

Topic:

Results: 5 of 15

Which Pulmonary Function Tests Best Differentiate Between COPD Phenotypes? [Respir Care. 2012]

Respiratory care year in review 2010: part 1. asthma, COPD, pulmonary function testing, ventilator-associated pneumonia. [Respir Care. 2011]

Arylhydrocarbon receptor (AhR) activation in airway epithelial cells induces MUC5AC via reactive oxygen species (ROS) production. [Pulm Pharmacol Ther. 2011]

[Lymphangioliomyomatosis]. [Presse Med. 2010]

A hypothesis for the initiation of COPD. [Eur Respir J. 2009]

[See all \(15\)](#)

Display citations pertaining to topics in medical genetics. See more [filter information](#).



Click the “see all” option to view the retrieved articles in more detail.

The Clinical Study Category search filters are based on the work of [Haynes RB et al.](#) For example, when you perform a “sensitive” search for “diabetes” with a “therapy” filter, the search that PubMed will perform is:

```
Diabetes AND ((clinical[Title/Abstract] AND trial[Title/Abstract]) OR clinical trials[MeSH Terms] OR clinical trial[Publication Type] OR random*[Title/Abstract] OR random allocation[MeSH Terms] OR therapeutic use[MeSH Subheading])
```

- using the Clinical Queries tool simplifies a very complex process, and could save you a great deal of time.

Systematic Reviews uses a customized search strategy which is even more complex: go to <http://bit.ly/bkiSHp> to see it.



Further Refinements:

The results of these searches can be refined using PubMed’s Limits (e.g., English language).

You may wish to refine the search further by searching for additional terms, and then combining them with the result of your “clinical query”



More Help

For further help or to arrange a training session, please contact:

Isla Kuhn, Veronica Phillips or Eleanor Barker
librarytraining@medschl.cam.ac.uk

Phone: (01223) 336750

Web: <http://library.medschl.cam.ac.uk>