

How to read a scientific paper

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How to read a scientific paper

In everyday practice

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Scientific papers

- PubMed search – no. of publications
 - Palliative 2018 7574
 - Pain 2018 61535
 - Morphine 2018 1946
 - Euthanasia 2018 700
 - It is impossible to read all papers

Strategies to limit the number of papers Papers on “palliative care and 2018”

- Total number 6179
- Include only English literature 5965
- Include one category of papers
 - Clinical trials 230
 - Reviews 732
 - Metaanalyses 63
 - Randomized clinical trials 171
- Read only high quality journals
 - JAMA (including JAMA spin off journals) 4 RCT (53 total)
 - NEJM 1 RCT (3total)

Strategies to limit the number of papers Papers on palliative care in 2018

- Read only journals devoted to palliative medicine
 - J Pain Symptom Manage 25 clinical trials
- Read only papers by well known researchers
 - Kaasa 26
- Read only guidelines 23

What is the purpose of reading?

- To do research
Search by PubMed, find important papers summarizing the topic, browse the references in those papers, repeat browsing in these papers, use ISI or similar to find papers that have cited the important papers. Do this procedure repeatedly until you are not able to find new information. Some days work
- To get insight into a topic you are interested and know well
Use PubMed or other databases in order to find new papers. Use automatic search strategies
- To learn something new
Browse a journal within your or a general field. And perhaps for this purpose to look in the actual paper version is the best one (personal opinion)

What is the purpose of reading?

- To get insight into a general topic

Use of opioid analgesics in the treatment of cancer pain: evidence-based recommendations from the EAPC

Augustine Casson¹, Geoffrey Haskell², David Keenan³, Michael Bennett, Owen Brindle, Nathan Cherry, Gill Dale, James De Groot, Maria Faller, Heidi Hansen, George Hwang-Hogan, Gillian Hill, Samuel King, Pål Klipstad, Greville A. Langford, Maria Lindvall, Sebastian Møller, Maria Nohr, Alessandro Pigo, Lukas Radbruch, Catherine Reid, De Sijpe, Patrick C. Stone, David Tait, Susan, Giamberini, De Zeeuw, for the European Palliative Care Research Collaborators (EPCRC), on behalf of the European Association for Palliative Care (EAPC)

The immunopathogenesis of sepsis

Jonathan Cohen

Journal of Internal Medicine 2002; 252: 5-16

Sepsis is a condition that results from a harmful or damaging host response to infection. Many of the components of the innate immune response that are normally concerned with host defence against infection can, under some circumstances, cause cell and tissue damage and hence multiple organ failure, the clinical hallmark of sepsis. Because of the high mortality of sepsis in the face of standard treatment, many efforts have been made to improve understanding of the dysregulation of the host response to sepsis. As a result, much has been learnt of the basic principles governing host/antibiotic interactions, and new opportunities for therapeutic intervention have been revealed.

Lancet Oncol

Nature 2002

A review or a guideline are the most effective reading in order to be introduced to an unfamiliar topic

What is the purpose of reading?

- To get insight into a specific new developments in a topic of which you are familiar

Immediate- or sustained-release morphine for dose finding during start of morphine to cancer patients: a randomized, double-blind trial

P. Klepstad^{1,2}, Stein Kaasa³, Åse Jystad⁴, Bjørn Hval⁵, Petter C. Borchgrevink⁶

Pain 2003

Prolongation of the QT Interval in Palliative Care Patients

Georgina Walker, MRCP, Andrew Wilcock, DM, FRCP, Ann Marie Carey, MRCP, Cathann Manderson, RN, Rebecca Wedler, RN, and Vincent Crosby, MRCPG
Haywards House Moxmiller Specialist Palliative Care Unit, Nottingham City Hospital NHS Trust, Nottingham, United Kingdom

JPSM 2003

Read original scientific papers

How to save time when reading a original paper

- Read the title and the abstract first
 - Is the topic of interest?
 - Is the finding going to change or add to your current knowledge of this topic
- If no to one of these questions stop reading

Sequence variations in the UDP-glucuronosyltransferase 2B7 (*UGT2B7*) gene: identification of 10 novel single nucleotide polymorphisms (SNPs) and analysis of their relevance to morphine glucuronidation in cancer patients

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ABSTRACT
We have screened a cohort of 239 Norwegian cancer patients for sequence variation in the coding and regulatory regions of the UDP-glucuronosyltransferase 2B7 gene (*UGT2B7*), and analyzed the impact of gene variants on morphine glucuronidation in vivo. In all, 12 single nucleotide polymorphisms (SNPs) were identified, 10 of which have not been previously described. Only one SNP causes a change in amino acid sequence (R268F). Seven *UGT2B7* genotypes were observed and three main haplotypes predicted. There was no correlation between *UGT2B7* genotype or haplotype and morphine glucuronide to morphine serum ratios among 175 patients who received chronic oral morphine therapy, and who had normal renal and hepatic function. The apparent lack of functional polymorphisms fits well with the near unimodal, but broad, distributions of the ratios (morphine 3-glucuronide/morphine, 6.4–209.2; morphine 6-glucuronide/morphine, 0.5–72.8). Our results suggest that factors other than *UGT2B7* polymorphism may be more decisive for the variability in morphine glucuronide to morphine serum ratios.
The Pharmacogenomics Journal (2003) 3, 17–26. doi:10.1038/tpj.6500139

How to save time when reading a original paper

Are you an expert in the topic?

Yes

No

Don't spend time reading the introduction or the discussion - You already know what initiated the study and you can for yourself interpret the findings

Read the introduction and the discussion - You must learn why the study was needed and you will need to see the interpretation of the findings

Do you need to read the paper? Is it new?

- New original question?
- Larger population than previous studies?
- Improved methods?
- Other populations than previous studies?

Is the paper relevant for your practice? Who is the study about?

- How were the participants recruited?
 - Consecutively
 - One or more centers
 - Be aware of selection bias
- Does the paper describe the patients in enough detail
- Who was included in the study
 - Does the study population reflects your patients?
- Were the subjects studied in real life circumstances?

Can you trust the results?
Design good enough?

- Was the design of the study sensible?
 - What intervention was studied and what was it compared with?
 - What outcome was measured and how?
 - Was systematic bias avoided?
 - Recall bias
 - Observer bias
 - Patient related bias
 - Was the outcome predefined?

Can you trust the paper?
Results valid?

- How are the results presented?
 - Did the results reflect the aim of the study?
 - Was the study groups comparable?
 - Was the results also presented as absolute numbers?
 - Is drop-outs and patients not included accounted for?
 - Is the results of clinical significance?

And finally

After reading

- Do you know why they did the study?
- Is the patients similar to your patients?
- Have they assessed what matters?
- Do you trust the findings?