“Smart Searching for Clinicians”
Human Language to Complex Searching

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MSIT, MS.IS(Informatics Science)
Pediatrics, Ped Cardiology, Emergency Medicine, Family Medicine
Chairs of Corporate Communication & Committee

Medical Association of Thailand &
Ramathibodi Hospital, Mahidol University
Quick Introduce Myself
Dr. Sakda A Vallibhakara, MD., PhD

• My background is Pediatricians and Pediatric Cardiology and Emergency physicians and Family Physicians.

• A/Professor of Clinical Epidemiology of MAHIDOL University

• One of Editorial Board and Reviewers of J Med Assoc Thai & Chair of Corporate Communication & Executive Board of Medical Association of Thailand (MAT).

• General Secretary of THAMJE
Old Traditional Searching

- Which Sources?
- Which Place of ..?
- Strategic of Searching ??
- How can I begin with...?
- No electronic information
- Who can teach us about searching Knowledge?
Old Traditional Searching
Desperate junkies search for an alleged "needle in the haystack."
Current Searching

- PubMed
- Google
- EMBASE
- SCOPUS

*Found It!!!*

*Congratulations, it only took you 65.298 seconds*

About 91,300 results (0.46 seconds)

APAME - WPRO | WHO Western Pacific Region - World Health...

APAME is a nongovernmental, nonpartisan and nonprofit organization that intends to support promote medical journalism in the Asia Pacific Region by...

About APAME - WHO Western Pacific Region

APAME is a nongovernmental, nonpartisan and nonprofit organization that intends to support promote medical journalism in the Asia Pacific Region by...
Up-to-Date: Smart Searching
Smart Searching Tips

• Find the **trusted sources:**
  – A Lot & Plenty: Sufficiently
  – Coverage all of Domains

• Accessible vs. Availability (Full text)

• Clever to use Searching techniques
  – Sufficient of Searching Knowledge
  – PICO searching & Other techniques
  – Management the Outputs & links to References management
  – More practices

• Integrated results with our working /objectives
1. Trusted Sources

- A lot & Plenty of Resources
- Coverage all Domains & Overlapped among DBs !!!
Database

Journal Articles Databases

- MEDLINE
- EMBASE
- SCOPUS
- OVID
- Cochrane DB
- DARE (Database of Abstracts of Reviews of Effects)
- Web of Science
- CINAHL
- PsycINFO
- Etc.

Grey Literature

- Organization reports
- Governmental reports
- Conference Proceedings*
- Dissertation & Theses
- Web
- White papers (original & recent report)

Others Search Engines

- Google/Google Scholar

http://www.greylit.org/about
Information types/Databases

Systems
Regularly Updated Evidence & Some CPG -Guideline

Synopses
Pre-appraised journals databases

Summaries
Well conducted Systematic Review & Meta-analysis

Studies
Original primary studies
System

• “Regularly updated evidence”
• Sometimes with guidance/recommendations or CPG
  – ACP online: http://smartmedicine.acponline.org
  – UpToDate: http://www.uptodate.com/
Synopses

• Pre-appraised journals databases
  — **ACP Journal Club**: https://acpjc.acponline.org
  — **Essential Evidence Plus**:
    http://www.essentialevidenceplus.com/
  — **EBM Journal (by BMJ)**: http://ebm.bmj.com/
Summaries

• Systematic reviews that are well conducted

—The Cochrane Library: http://www.cochrane.org/
Studies

• Original primary studies
  – Randomized/Nonrandomized Controlled Trials
  – Cohort studies
  – Case-control studies
  – Cross sectional studies
  – Case reports
## Search Engine(s) and Database(s)

<table>
<thead>
<tr>
<th>Search Engine</th>
<th>Database(s)</th>
</tr>
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<tbody>
<tr>
<td>PubMed</td>
<td>MEDLINE</td>
</tr>
<tr>
<td>Ovid</td>
<td>MEDLINE, EMBASE, ...</td>
</tr>
<tr>
<td>Scopus</td>
<td>SCOPUS (Many DBs inside)</td>
</tr>
</tbody>
</table>

**Document search**

- **Searching in Meta-analysis**
- **Article Title, Abstract, Keywords**

**Limit to:**
- **Date Range (inclusive):**
  - Published: **All years** to **Present**
  - Added to Scopus in the last: **7** days

**Document Type:**
- **ALL**

**Subject Areas:**
- **Life Sciences** (> 4,300 titles)
- **Health Sciences** (> 6,800 titles, 100% Medline coverage)
- **Physical Sciences** (> 7,200 titles)
- **Social Sciences & Humanities** (> 5,300 titles)
Overlapped among DBs

- MEDLINE
- CINAHL
- EMBASE
- Others
- SCOPUS
2. Accessible vs. Availability


**Effects of education and income on cardiovascular outcomes: A systematic review and meta-analysis.**

Khaing W1,2, Vallibhakara SA1, Attia J3, McEvoy M3, Thakkinstian A1.

**FREE**
3. Clever searching techniques

- Gain and Sustain of Searching Knowledge
  - MeSH, Wildcard and Boolean (Search Operators)
- PICO searching & Other techniques
- Result management and links to References management
- More practices
3. Clever searching techniques

Human Language Searching
( Text Searching)

Text Search

Wildcard

MeSH Searching

Good!

Narrow

Missing
3. Clever searching techniques

Advanced Searching
(cmd line Searching)

Advanced Searching + PICO

Quick!

Easy life

Tailor made

Bedside

Miss

Conver

Meta-
MeSH

- Medical Subject Heading
- “Tag” of subject in database
Search Operators

• **Truncated search term (wildcards)**
  - `flavor*` = flavoring + flavored + flavors
  - `synerchi*` = synerchia + synerchia

• **Combining search terms**
  - AND
  - OR
  - NOT
  - `( )` : e.g. (Au)
3. Clever searching techniques

- Searching Knowledge
- PICO searching & Other techniques

Patient/Subjects
Intervention or Exposure
Comparators
Outcomes
Bell Palsy

Antiviral

Steroid

Recovery Rate

AND

AND

AND

P

I

C

O

2017

Search & Access for Reading, Citing & Writing

August 17-19, 2017. Vientiane, Laos
Bell Palsy
Idiopathic Facial Palsy
Antiviral
Acyclovir
Valacyclovir
Steroid
Prednisolone
Methylprednisolone
Recovery Rate
House-Brackmann Scale
Sunnybrook Scale
Real life
Group Your Question into Terms

- **Terms #1**
  - Subject Headings
  - Text words
  - Bell Palsy
    - “Bell Palsy” [MeSH]
    - “Bell Palsy”, “Idiopathic facial paralysis”, ...

- **Terms #2**
  - Subject Headings
  - Text words
  - Antiviral
    - “Antiviral agents” [MeSH]
    - “Antivirus”, “Antiviral drug”, ...

- **Terms #3**
  - Subject Headings
  - Text words
  - Steroid
    - “Steroids” [MeSH]
    - “Steroid”, “Prednisolone”, ...

1. Prognostic factors of peripheral facial palsy: multivariate analysis followed by receiver operating characteristic and Kaplan-Meier analyses.
   Takemoto N, Horii A, Sakata Y, Inohara H.
   PMID: 21725266
   Similar articles

2. [Ramsay Hunt syndrome in children: four cases and review].
   PMID: 19194612
   Free Article
   Similar articles

3. Acyclovir improves recovery rate of facial nerve palsy in Ramsay Hunt syndrome.
   Kinishi M, Amatsu M, Mohri M, Saito M, Hasegawa T, Hasegawa S.
   PMID: 11489365
   Similar articles

   Uri N, Greenberg E, Meyer W, Kitzes-Cohen R.
   PMID: 1739262
Search Strategy from cmd line

Example:

- (((((Herpes Zoster Oticus [MeSH Terms]) OR Ramsay Hunt Syndrome [MeSH Terms])) AND acyclovir [MeSH Terms]) AND Recovery rate

- Reproducible

- Alert to update !!
3. Clever searching techniques

- Searching Knowledge
- PICO searching & Other techniques
- Result management and links to References management
- More practices
3. Clever searching techniques

- Searching Knowledge
- PICO searching & techniques (wide-narrow)
- Result management and links to References management

- More Practices and Practices!!
4. Integrated results to you working/objectives

- Match with our **Design** or **Objectives** of Study
- Conduct **Meta-Analysis**?
Few of Practices
HRTs in Postmenopausal Woman with Insomnia/Sleep Problem

Research questions
Does hormone replacement therapy improve sleep quality measured by questionnaire, Polysomnography or Actigraph for postmenopausal women who have insomnia problem?

P – Postmenopausal woman with insomnia or sleep problem
I – HRT (Estrogen, Progesterone or Both)
C – Placebo/ non-medicaton.
O – Sleep quality by Polysomnography /Actigraph
Sleep quality measured by questionnaire
<table>
<thead>
<tr>
<th>Menopause</th>
<th><em>menopaus</em></th>
<th>OR</th>
</tr>
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<tbody>
<tr>
<td>Climacteric</td>
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</tr>
<tr>
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<td>&quot;sleep deprivation&quot;</td>
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<tr>
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<td>&quot;sleep duration&quot;</td>
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<tr>
<th>Outcome</th>
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<td>&quot;Basic Nordic Sleep Questionnaire&quot;</td>
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<td>&quot;Sleep quality&quot;</td>
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<td>30105</td>
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</table>

**PubMed** combined patient and intervention

**Scopus** combined patient, intervention and outcome. Select only health science, Social sciences and Humanities, limit to clinical trial and randomized controlled trial

<table>
<thead>
<tr>
<th>Total PubMed and Scopus</th>
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<tr>
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<td>#1 Search Menopause[MeSH Terms]</td>
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<td>#3 Search <em>menopaus</em></td>
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<td>#4 Search Climacteric*</td>
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<tr>
<td>#5 Search &quot;the Stages of Reproductive Aging Workshop&quot;</td>
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<td></td>
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| #6 Search (((((Menopause[MeSH Terms]) OR "Menopause") OR *menopaus*) OR Climacteric*) OR "the Stages of Reproductive Aging Workshop"
| #7 Search Dyssomnias[MeSH Terms]                                            | 53779       |
| #8 Search Insomnia                                                           | 18934       |
| #9 Search sleep difficulty                                                   | 2376        |
| #10 Search Sleep disorder                                                    | 79138       |
| #11 Search sleep initiation                                                  | 11381       |
| #12 Search initiate sleep                                                    | 329         |
| #13 Search sleep deprivation                                                 | 10675       |
| #14 Search sleepless*                                                        | 722         |
| #15 Search ((((((Menopause[MeSH Terms]) OR "Menopause") OR *menopaus*) OR Climacteric*) OR "the Stages of Reproductive Aging Workshop") AND (((((Dyssomnias[MeSH Terms]) OR Insomnia) OR sleep difficulty) OR Sleep disorder) OR sleep initiation) OR initiate sleep) OR sleep deprivation) OR sleepless*
| #16 Search Estrogens[MeSH Terms]                                            | 58155       |
| #17 Search "Estrogen"                                                        | 129460      |
| #18 Search polysomnography[MeSH Terms]                                       | 16353       |
| #19 Search progest*                                                          | 115761      |
| #20 Search "Hormone Replacement Therapy"                                     | 17741       |
| #21 Search replacement therapy                                               | 240761      |
#27 Search polysomnography[MeSH Terms] 16353
#28 Search polysomnogra* 21864
#29 Search actiwatch 181
#30 Search actigra* 5015
#31 Search "quality of life" 236636
#32 Search "Insomnia Severity Index" 438
#33 Search "Epworth Sleepiness Scale" 2710
#34 Search sleep diar* 1008
#35 Search "visual analogue scale" 16826
#36 Search "Basic Nordic Sleep Questionnaire" 29
#37 Search "Pittsburgh Sleep Quality Index" 2384
#38 Search "Jenkins Sleep Scale" 11
#39 Search "sleep duration" 4297
#41 Search Sleep quality

Search ((((((((((polysomnography[MeSH Terms]) OR polysomnogra*) OR actiwatch) OR actigra*) OR "quality of life") OR "Insomnia Severity Index") OR sleep diar*) OR "visual analogue scale") OR "Basic Nordic Sleep Questionnaire") OR "Pittsburgh Sleep Quality Index") OR "Jenkins Sleep Scale") OR "sleep duration") OR Sleep quality 286515

Search ((((((((((Menopause[MeSH Terms]) OR "Menopause") OR *menopaus*) OR Climacteric*) OR "the Stages of Reproductive Aging Workshop") OR (((((Dyssomnias[MeSH Terms]) OR Insomnia) OR sleep difficulty) OR Sleep disorder) OR sleep initiation) OR initiate sleep) OR sleep deprivation) OR sleepless*)))) AND (((Estrogens[MeSH Terms]) OR "Estrogen") OR progest*) OR "Hormone Replacement Therapy")}) AND ((((((((((polysomnography[MeSH Terms]) OR polysomnogra*) OR actiwatch) OR actigra*) OR "quality of life") OR "Insomnia Severity Index") OR sleep diar*) OR "visual analogue scale") OR "Basic Nordic Sleep Questionnaire") OR "Pittsburgh Sleep Quality Index") OR "Jenkins Sleep Scale") OR "sleep duration") OR Sleep quality) 127
Search Terms and Strategies

((((((((((Menopause[MeSH Terms]) OR "Menopause") OR *menopaus*)
OR Climacteric*) OR "the Stages of Reproductive Aging Workshop")
AND (((((((((Dyssomnias[MeSH Terms]) OR Insomnia) OR sleep difficulty)
OR Sleep disorder) OR sleep initiation) OR initiate sleep) OR sleep
deprivation) OR sleepless*))) AND (((((Estrogens[MeSH Terms]) OR
"Estrogen") OR progest*) OR "Hormone Replacement Therapy")
AND (((((polysomnography[MeSH Terms]) OR polysomnogra*) OR
actiwatch) OR actigra*) OR "quality of life") OR "Insomnia Severity
Index") OR sleep diar*) OR "visual analogue scale") OR "Basic Nordic
Sleep Questionnaire") OR "Pittsburgh Sleep Quality Index") OR "Jenkins
Sleep Scale") OR "sleep duration") OR Sleep quality)
Thanks!
Now you know concepts of Smart Searching