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Nursing/ **Nursing Education** CINAHL Plus with Full Text



Clinical Point-of-Care DynaMed, Gideon Infectious Disease



CME **DynaMed**



Hospital Administration Health Business Elite



Marketing/ **Community Outreach** *Health Library*

Evidence-Based Patient Education *Health Library*

Providing benefits of linking/integration and economies of scale in purchasing





Why is *DynaMed* Needed?

- 44-98,000 American deaths per year occur due to preventable medical errors; medical errors are estimated to cost the U.S. \$17 to \$29 billion annually*
- Using the "best available evidence" for clinical decision-making improves health outcomes and reduces health care costs
- Busy clinicians use "fast and easy" resources expected to answer most of their questions instead of resources designed to provide the **best current evidence**
- Clinicians sometimes turn to textbooks and online resources with substantial breadth, but these resources do not use the best available evidence
- Physicians need a resource where they can reliably answer most questions quickly and accurately (i.e., with the best available evidence)



DynaMed

Dv

- EBSCO Publishing acquired *DynaMed* on June 30, 2005
- *DynaMed* is a clinical reference tool designed primarily for use by health care professionals at the point-of-care
- <u>Brian S. Alper M.D., MSPH</u> the founder, medical director and editor-in-chief of *DynaMed* – has joined EBSCO Publishing as Medical Director, Clinical Reference Products





Defining Evidence-Based Evidence-Based = conclusions based on best available evidence

"Evidence-based" requires the following steps:

- 1. Systematically identifying all applicable evidence
- 2. Systematically selecting the best available evidence from that identified
- 3. Systematically evaluating the selected evidence (critical appraisal)
- 4. Accurately summarizing the evidence and its quality
- 5. Making conclusions dependent on the evidence
- 6. Synthesizing multiple bits of evidence for overall conclusion
- 7. Changing the conclusions when new evidence alters the best available evidence

A doctor's recommendation of how they treat their patients is NOT always the best guide if other evidence exists





1. Systematically identifying all applicable evidence

If you don't identify all the evidence, how can you know the evidence you cite is the best available evidence?





- 1. Systematically identifying all applicable evidence
- 2. Systematically selecting the most valid, relevant evidence from that identified

If author selects...what bias is applied?





- 1. Systematically identifying all applicable evidence
- 2. Systematically selecting the most valid, relevant evidence from that identified
- 3. Systematically evaluating the selected evidence (critical appraisal)

Article abstracts are often wrong or misleading.

Most randomized trials have significant methodologic limitations.





- 1. Systematically identifying all applicable evidence
- 2. Systematically selecting the most valid, relevant evidence from that identified
- 3. Systematically evaluating the selected evidence (critical appraisal)
- 4. Accurately summarizing the evidence and its quality

What does it really tell us? Based on what?

Most randomized trials have significant methodologic limitations.





- 1. Systematically identifying all applicable evidence
- 2. Systematically selecting the most valid, relevant evidence from that identified
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- 4. Accurately summarizing the evidence and its quality
- 5. Making conclusions dependent on the evidence

Recommendation/conclusions and evidence summary sections should not be inconsistent.





- 1. Systematically identifying all applicable evidence
- 2. Systematically selecting the most valid, relevant evidence from that identified
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- 5. Making conclusions dependent on the evidence
- 6. Synthesizing multiple bits of evidence for overall conclusion
- 7. Changing the conclusions when new evidence alters the best available evidence

Just citing articles is insufficient to be evidence-based.





DynaMed: Evidence-Based Reference

- Systematic method to base conclusions on the best available evidence
- *DynaMed* uses *Cochrane Database of Systematic Reviews* and many other evidence sources
- *DynaMed* is the only evidence-based reference shown to answer most clinical questions in primary care
- *DynaMed* is the only evidence-based product to be updated daily



DynaMed Content

- *DynaMed* offers clinically organized summaries for nearly **2,000 topics**
- Topic summaries are based on:
 - Common and uncommon diseases and conditions
 - Symptoms (e.g., chest pain)
 - Other clinically important topics
 (e.g., breastfeeding, cardiac stress testing)
 - Specific popular interest
 (e.g., West Nile virus, anthrax, SARS, avian influenza)
 - New scope of information based on developing research (e.g., include metabolic syndrome and D-dimer testing)
 - Suggestions by *DynaMed* users





DynaMed Content Organization

- Data is organized to be easy to find in a clinically practical format:
 - Description (including ICD-9 codes)
 - Causes & Risk Factors
 - Complications & Associated Conditions
 - History
 - Physical
 - Diagnosis
 - Prognosis
 - Treatment
 - Prevention & Screening
 - References (including reviews & guidelines)
 - Patient Information





DynaMed – Systematic Literature Surveillance

- Surveillance of more than 500 journals directly and indirectly through many journal review services
- Each article is assessed for clinical relevance and each relevant article is further assessed for validity relative to existing *DynaMed* content
- The most valid articles are summarized, the summaries are integrated with *DynaMed* content, and overview statements and outline structure are changed based on the overall evidence synthesis
- Systematic Literature Surveillance occurs daily





Does *DynaMed* Help Physicians Answer More Questions?

- <u>Research</u>: supported by the National Science Foundation^{*}
- <u>Objective</u>: determine if access to *DynaMed* helps clinicians answer more clinical questions than without access to *DynaMed*
- <u>Method</u>: Randomized Controlled Trial of 52 primary care clinicians; 698 clinical questions
- <u>Results</u>:
 - With access to *DynaMed*, primary care clinicians answered more clinical questions than without access to *DynaMed*
 - With *DynaMed*, primary care clinicians found more answers that changed clinical decisions
 - Answers were found in *DynaMed* for approximately 70% of clinical questions (far exceeds any other point-of-care resource; UpToDate answers 34% of clinical questions^{**})

* This study is published in *Annals of Family Medicine* 2005 Nov/Dec; 3: 507 ** Data taken from <u>www.uptodate.com</u> on May 30, 2006





Does *DynaMed* Answer Physicians' Questions With Better Evidence Than the Competition?

- <u>Research</u>: supported by the National Science Foundation*
- <u>Objective</u>: determine if the level of evidence of answers found in *DynaMed* meets or exceeds the level found in a combination of the most commonly used point-of-care references
- <u>Method</u>: Randomized Controlled Trial of 52 primary care clinicians; 698 clinical questions
- <u>Results</u>:
 - Level of Evidence for answers in *DynaMed* met or exceeded what could be found in a combination of commonly used point-of-care references 87% of the time
- <u>Conclusion</u>: *DynaMed* provides the best available evidence among the most commonly used rapid references

* This study is published in Annals of Family Medicine 2005 Nov/Dec; 3: 507





Accessing DynaMed

How many doctors visit their patients in the library?

- Access to *DynaMed* on the Web is unlimited
 - Local
 - Remote
- Access to DynaMed is available via PDA





Who Uses DynaMed?

DynaMed is used by:

- Medical Schools
- Hospitals
- Residency Programs
- Individual/Other









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THE UNIVERSITY of TEXAS Health Science Center





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About DynaMed	AAT deficiency
How to Use DynaMed	Abdominal aortic aneurysm (AAA)
Recently Updated	Abdominal discomfort
DynaMed Archives	Abdominal pain
General Comments	Abnormal uterine bleeding
Editorial Processes	Abortion
Systematic Literature	Abruptio placentae (placental abruption)
Surveillance	Absence epilepsy
DynaMed Content Sources	Absorptive hypercalciuria
Editorial Policies for Authors & Reviewers	Acanthosis nigricans
Becoming an Author or	Accurate measurement of carotid stenosis
Reviewer	ACE inhibitors
Editorial Team	ACE inhibitors for congestive heart failure
List of Reviewers & Authors	ACE inhibitors for coronary artery disease
	Acetaminophen
	Acetaminophen poisoning
	Achalasia
	Achilles tendinopathy
	Achilles tendon rupture
	Achondroplasia
	ACL tear

DynaMed	<u>Start About Us Terms of Use Help</u>
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General Comments	Cat-scratch fever
	Cataract
Editorial Processes	Catheter-associated urinary tract infection
Systematic Literature	Cauda equina syndrome
Surveillance	Causalgia
DynaMed Content Sources	Caustic esophageal stricture
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Becoming an Author or	Celiac disease
Reviewer	Celiac sprue
Editorial Team	Cellulitis
List of Reviewers & Authors	Celosomia
	Central diabetes insipidus (DI)
	Central pontine myelinolysis
	Central sleep apnea
	Cerebellar cystic astrocytoma
	Cerebral gigantism
	Cerebral infarct
	Cerebral palsy (CP) in general





General Information (including ICD-9 Codes) Causes and Risk Factors Complications and Associated Conditions His Ph Level of Evi Dia	 lidocaine patch 5% might reduce pain in mild-to-moderate carpal tunnel syndrome (level 2 [mid-level] evidence) based on 1 smaller domized trial without placebo control 40 patients with an d-to-moderate carpal tunnel syndrome randomized to open-label bacaine patch 5% vs. single injection with 0.5 cc lidocaine 1% ednisolone acetate (Depo-Medrol) 40 mg based baseline 						
Prognosis Treatment Prevention and Screening References including Reviews	 or a significant of ences between groups or 5 entients in lidocaine (1996) group (25%) did not complete trial, including 3 due to adverse events or Reference - <u>J Fam Pract 2006 Mar.s. 19779</u> neither NSALC nor diuretics appear to be considered (level 2 [mid-level]) 						
and Guidelines Patient Information Acknowledgements Topic Comment View Expand All Collapse All	 evidence) based on 1 mall randomized placebo-controlled trial NSAIDs not shown to be effective compared to placebo, but randomized trial data comparing ISAIDs to placebo limited to 34 patients (Clinical Evidence) diuretics not shown to be effective compared to placebo, but randomized trial data comparing discritics to placebo limited to 32 patients (Clinical Evidence) Iocal insulin injection weekly for 7 weeks may improve symptoms in patients with diabetes (level 2 [mid-level] evidence) based on 1 randomized trial without intent-to-treat analysis 50 women with type 2 diabetes, glycohemoglobin < 8% and mild-to-mediated price of the standard price of the standa						
<u>Top of Page</u>	moderate CTS (72 hands) were treated with methylprednisolone 20 mg injected into carpal tunnel o 1 week later patients were randomized to NPH insulin 12 U (0.3 mL) vs. 0.9% calino placebo (0.3 mL) injected into carpal tuppel weekly for 7 weeks	T					
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- Level of Evidence systems are designed to rate evidence for rapid recognition of the quality of evidence
- LOE is important because not all evidence is created equal
- LOE systems can be useful if they help the clinician rapidly determine the quality of supporting evidence – this is faster than reading the underlying methods and trying to figure out the quality of those methods
- LOE systems can be harmful if they are confusing, take time to interpret or are misleading
- There are more than 100 LOE systems, designed for various purposes





Level of Evidence (LOE)

- *DynaMed* provides easy-to-interpret Level of Evidence labels so users can quickly find the best available evidence and determine the quality of the best available evidence
- Not all Evidence-Based References provide quality, easy-to-use LOE; some do not provide LOE at all
- *DynaMed* uses three Levels of Evidence:
 - Level 1 likely reliable
 - Level 2 mid-level
 - Level 3 lacking direct

🚰 Level of Evidence Labeling in DynaMed - EBSCO Help - Microsoft Internet Explorer

Welcome

- Welcome to DynaMed
- Level of Evidence Labeling in DynaMed

Searching

- Finding a Topic
- Full-Text Search

Browsing

 Using the Browse Feature

Viewing Results

- Viewing Information in a Selected Topic
- Collapsible Sections
- Backtracking
- Comments

Citation Styles

 How to Cite Information in DynaMed

Reaching Technical Support

Technical Support

Level of Evidence Labeling in DynaMed

DynaMed introduced level of evidence/strength of recommendation labeling as of March 2004.

Individual evidence reports will be labeled as one of the following:

level 1 (likely reliable) evidence -- representing the most valid reports addressing patientoriented outcomes. Examples include randomized trials with at least 80% follow-up, inception cohort studies for prognostic information, and systematic reviews of level 1 evidence reports. These examples are only presented as brief examples. Achieving a level 1 evidence label means that specific quality criteria were met based on the study type.

level 2 (mid-level) evidence -- representing reports addressing patient-oriented outcomes, and using some method of scientific investigation, yet not meeting the quality criteria to achieve level 1 evidence labeling. Examples include randomized trials with less than 80% follow-up, non-randomized comparison studies, and diagnostic studies without adequate reference standards. Level 2 evidence does not imply reliable evidence. For example, hormone replacement therapy was associated with reduced cardiovascular events in large cohort studies (level 2 evidence), but then shown not to be preventive (and possibly increase the cardiovascular risk) in randomized trials (level 1 evidence).

level 3 (lacking direct) evidence -- representing reports that are not based on scientific analysis of patient-oriented outcomes. Examples include case series, case reports, expert opinion, and conclusions extrapolated indirectly from scientific studies.

Recommendations will be labeled as one of the following*:

- grade A recommendation (consistent high-quality evidence)
- grade B recommendation (inconsistent or limited evidence)
- grade C recommendation (lacking direct evidence)

This labeling scheme is formally named the Strength Of Recommendation Taxonomy (SORT) and is described in detail, along with the algorithms used for its application, in <u>Am Fam</u> Physician 2004 Feb 1;69(3):548-56.

General Information (including ICD-9 Codes) Causes and Risk Factors Complications and Associated Conditions History Physical Diagnosis Prognosis Treatment Prevention and Screening References including Reviews and Guidelines Patient Information Acknowledgements Topic Comment View Expand All Collapse All	 lidocaine patch 5% might reduce pain in mild-to-moderate carpal tunnel syndrome (level 2 [mid-level] evidence) based on 1 small randomized trial without placebo control 40 patients with mild-to-moderate carpal tunnel syndrome randomized to open-label lidocaine patch 5% vs. single injection with 0.5 cc lidocaine 1% plus methylprednisolone acetate (Depo-Medrol) 40 mg both groups reported significant reductions in worst pain and average pain at 4 week compared to baseline no significant differences between groups 5 patients in lidocaine patch group (25%) did not complete trial, including 3 due to adverse events Reference - J Fam Pract 2006 Mar;55(3):209 neither NSAIDs nor div s appear to be effective (level 2 [mid-level] evidence) based on 1 or all randomized placebo-controlled trial NSAIDs nor div s appear to be appeared to placebo, but randomized trial data (maring NSAIDs to placebo limited to 34 patients (Clinical Evidence) w for 7 weeks may improve symptoms in patients with diabetes (level 2 [mid-level] evidence) based on 1 randomized trial without intent-to-treat analysis 50 women with type 2 diabetes, glycohemoglobin < 8% and mild-to-moderate CTS (72 hands) were treated with methylprednisolone 20 mg injected into carpal tunnel 1 week later natients were randomized to NPH insulin 12 U (0.3 ml.) vs 	
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□ 1: J Fam Pract. 2006 Mar;55(3):209-14.

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Related Articles, Links

Lidocaine patch 5 for carpal tunnel syndrome: how it compares with injections: a pilot study.

Nalamachu S, Crockett RS, Mathur D.

Mid-America Physiatrists, PA, Overland Park, KS 66211, USA. nalamachu@sbcglobal.net

OBJECTIVES: A standard treatment option for mild-to-moderate carpal tunnel syndrome (CTS) is a local injection of anesthetic-corticosteroid, but this can be painful and may cause complications. This pilot clinical trial was designed to compare the safety and efficacy of daily applications of the lidocaine patch 5% to that of a single injection of 0.5 cc lidocaine 1% plus methylprednisolone acetate (Depo-Medrol) 40 mg. METHODS: In this randomized, parallel-group, open-label, single-center, active-controlled, prospective pilot study, participants aged 18-75 years with clinical/electrodiagnostic evidence of CTS were randomized to receive the lidocaine patch 5% or 1 injection of 0.5 cc lidocaine 1% plus Depo-Medrol 40 mg. Outcome assessments included the Brief Pain Inventory (measuring pain intensity, relief, and interference with quality of life, Patient and Global Clinical Impression of Improvement, Global Assessment of Treatment Satisfaction, and safety. RESULTS: Baseline characteristics of the 40 patients randomized to treatment with the lidocaine patch 5% (n=20) or injection (n=20) were similar between groups. After 4 weeks of treatment, patients in both groups reported significant changes (P<.05) in worst pain, average pain, and pain "right now." Composite interference scores, which are measures of how much patients' pain interfered with quality of life, also significantly improved in both treatment groups (patch, -13.9; injection, -16.7; P<.001 vs baseline for both groups). . . 4 CONT O 12 1 4 1 1 4 4 1 1 1

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PDA Downloadable Version Browse Table of Contents







Dv

- Daily Systematic Literature Surveillance
- Best Available Evidence determines content
- Quality of evidence explicitly labeled
- Content updated daily
- Evidence summaries focus on patient-oriented outcomes and absolute risks number needed to treat (NNT)
- Easy to use: no training needed
- Synthesized evidence (no need to read multiple hits)

Requirements to be Evidence-Based

	UpToDate	FirstConsult	CR@Ovid	InfoPOEMs	Clinical Evidence	DynaMed
1. Systematically identify the evidence	Unclear, not transparent	Unclear, not transparent	Unclear, not transparent	Partially, only for research articles with abstracts	Yes	YES
2. Systematically select best evidence	No	No	No	Yes	Yes	YES
3. Systematically evaluate evidence (critical appraisal)	No, evidence hierarchy described but not critical appraisal	No, evidence hierarchy described but not critical appraisal	Not described	Yes	Yes	YES
4. Accurately summarize evidence and quality	Author- dependent	Author- dependent	Author- dependent	Yes	Yes	YES
5. Make conclusions of individual articles based on evidence and its quality	Author- dependent	Author- dependent	Author- dependent	Yes	Yes	YES
6. Synthesize multiple bits of evidence for overall conclusions	Recommen- dations not based on evidence cited	Recommen- dations not based on evidence cited	Author- dependent	No	Yes	YES
7. Change conclusions when new evidence alters the best available evidence	Author- dependent	Author- dependent	Author- dependent	No, just add new study summaries	Yes, each chapter is updated every 12 months	YES
EVIDENCE-BASED	No	No	No	Partially	Yes	YES





DynaMed Features Compared

	UpToDate FirstConsult CR@Ovid InfoRetriever				Clinical Evidence	DynaMed
					Evidence	
Evidence-Based (based on systematic evidence analysis)	No	No	No	Partially	Yes	Yes
Systematic Literature Surveillance	No, not evidence- based	No, not evidence- based	No, not evidence- based	Limited to newsletter focus and 100 journals	No	Yes
# Clinical Topics	7,500*	600	900	1,043	221	1,833
Standardized templates	No	Yes	Yes	Yes (search result layout)	Yes	Yes
Citation Links	No	Yes	Yes	Abstract Only	Abstract Only	Yes
Update Frequency	Every 4 months	Weekly	Every 6 months	Weekly	Monthly	Daily
Answers more than 50% of questions	No – 34%	No	Unknown	No	No	Yes – 70%

* Uses multiple topics for a single disease

** Mostly from non-evidence-based source

Thank You



