EBM Resources in the Palm of your Hand

Amr Jamal, MD, SBFM, ABFM, MRCGP, GCCI, MBI

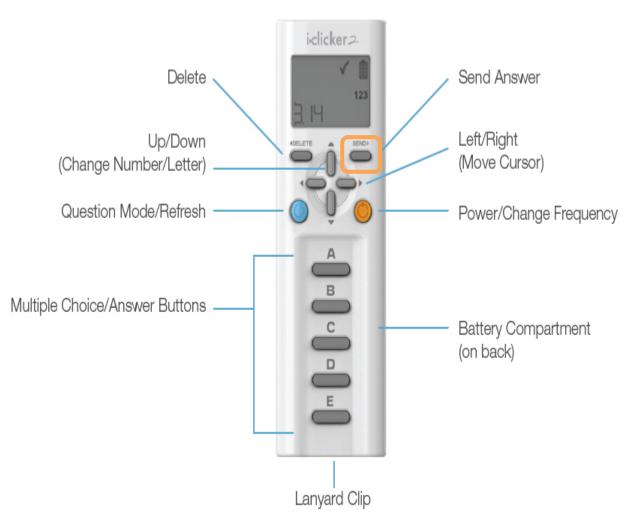
Assistant professor and consultant Family physician and clinical informatician

King Saud university, School of medicine





Enter your university ID





Use this channel for Questions & Feedback

* http://todaysmeet.com/EBM

TodaysMeet

Listen.

Talk.

Message:

How to practice EBM using my iPad?

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Say.

today.io/b12h

transcript | projector



What is mobile platform?

- * Platform = a standard for the hardware of a computer system, which determines what kinds of software it can run (Oxford)
 - * such as: such as Mac OS, Linux or Windows that controls a desktop computer or laptop
- * Mobile platforms:



What is the platform of your phone device?

- Apple iOS (iPhone)
- Google Android
- 3. Microsoft Windows Mobile
- 4. RIM BlackBerry OS
- Feature phone
- 6. Other
- 7. None











What is the platform of your tablet device?

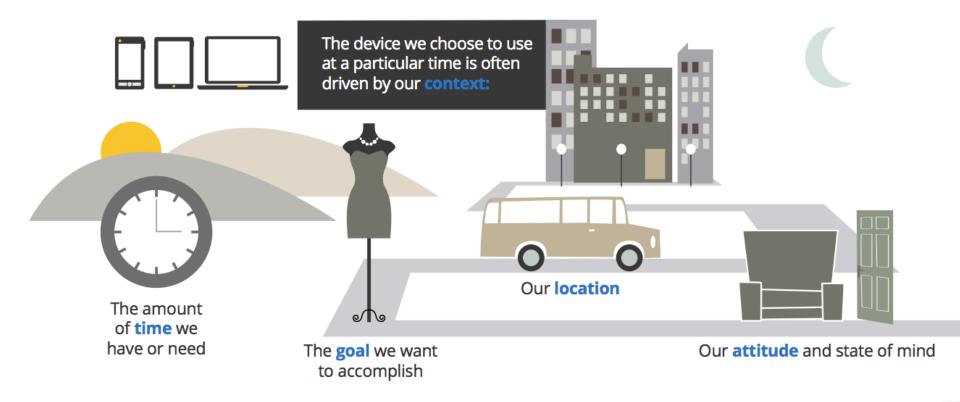
- Apple iOS (iPad)
- Google Android
- 3. Microsoft Windows
- 4. RIM's BlackBerry OS
- 5. Other
- 6. None





Context drives device choice

Today consumers own multiple devices and move seamlessly between them throughout the day

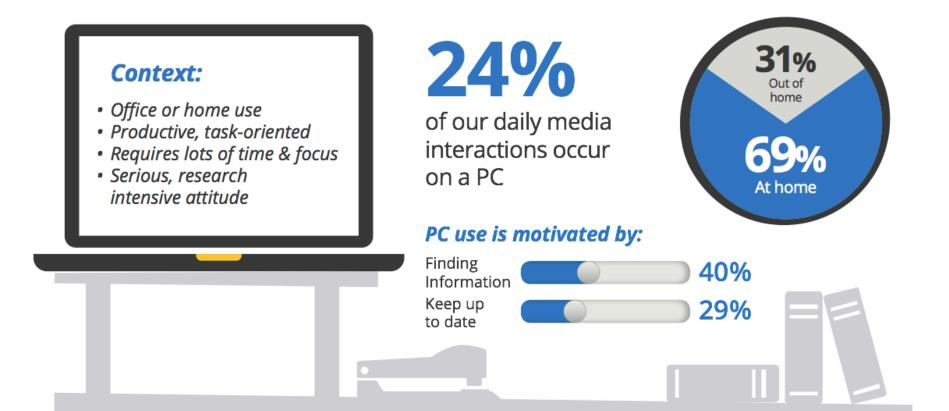




Smartphones are the backbone of our daily media interactions. They have the highest number of user interactions per day and serve as the most common starting point for activities across multiple screens

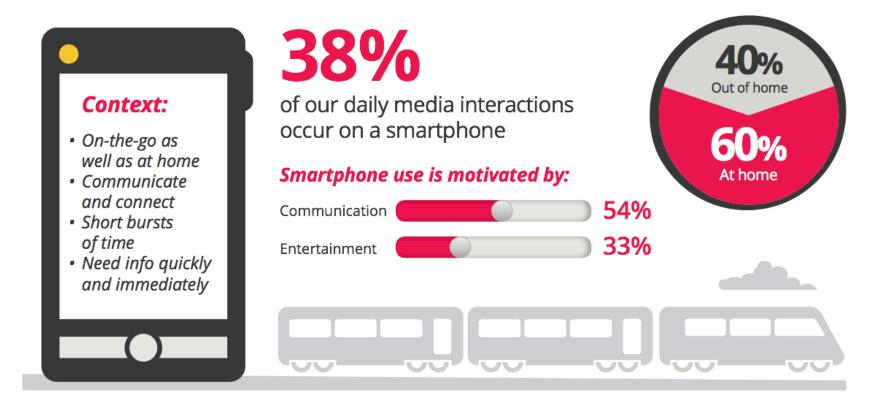


Computers keep us productive and informed



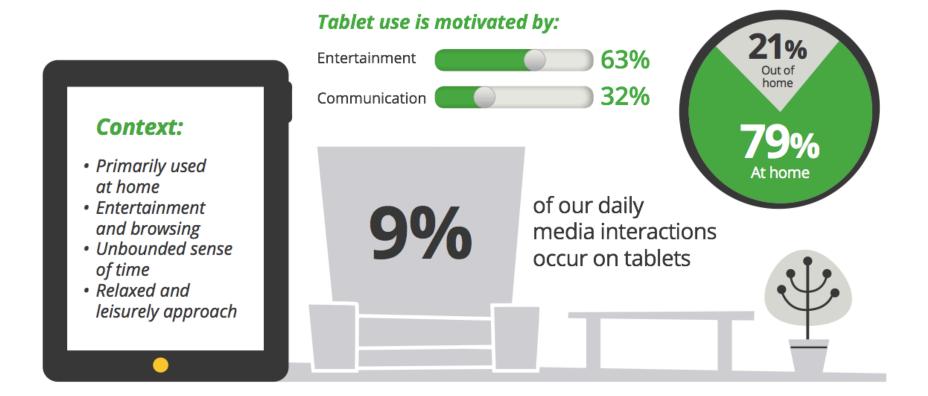


Smartphones keep us connected



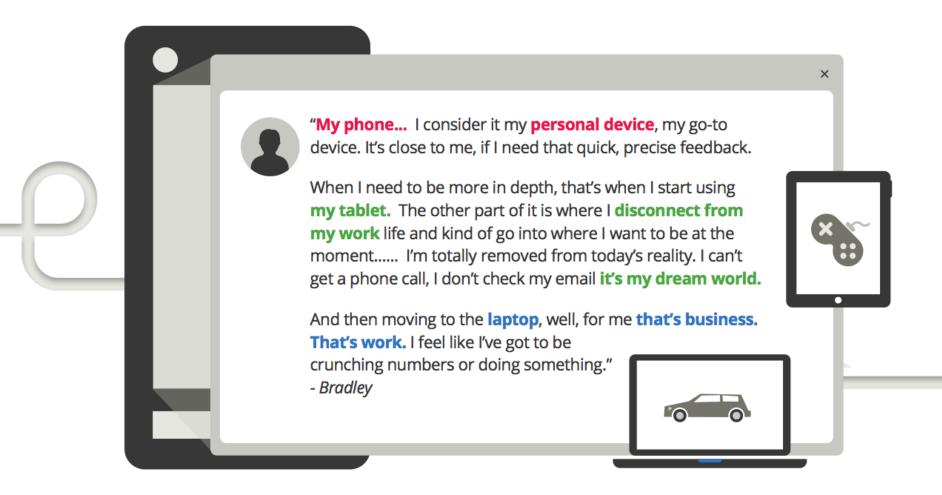


Tablets keep us entertained





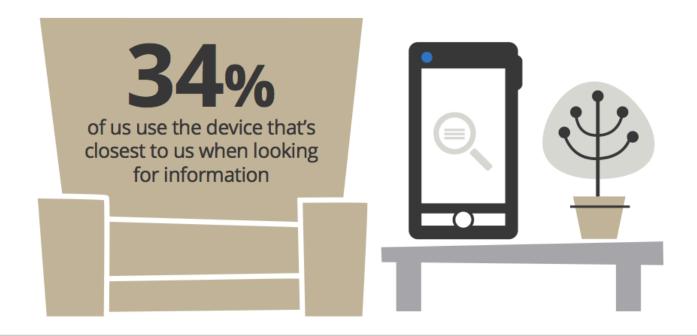
Consumer viewpoints on device differences





Many times we turn to the screen that's closest

While we all have screen preferences for certain activities, we are also creatures of convenience

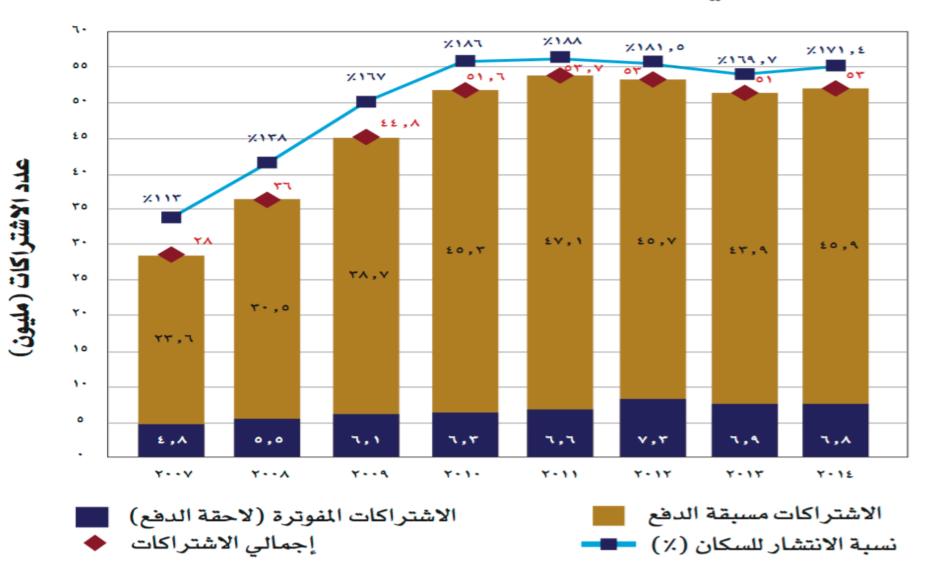




"If I'm watching TV I won't go upstairs to grab my laptop to follow up on a product I see, I'd just pull out my phone." - Sophie



إجمالي الاشتراكات في خدمات الاتصالات المتنقلة

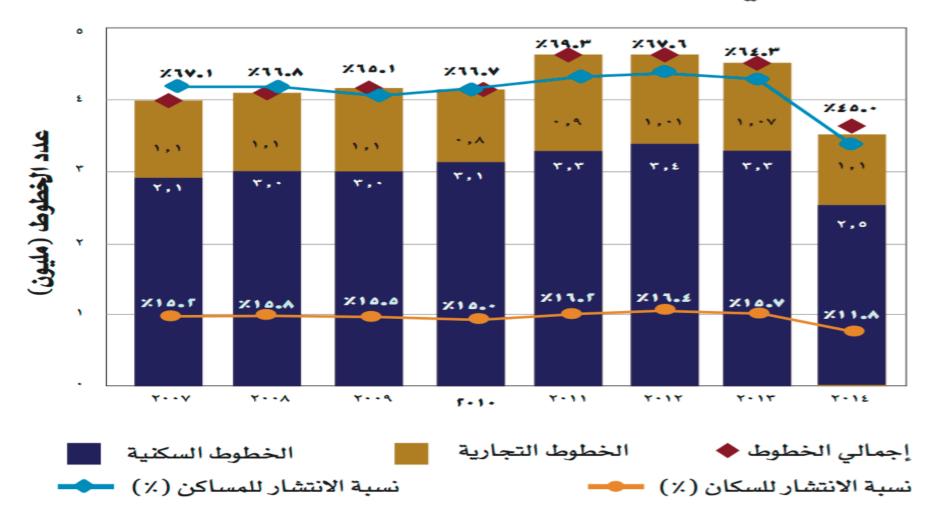


http://www.citc.gov.sa/arabic/MediaCenter/Annualreport/Documents/PR_REP_010A.pdf

الشكل رقم (٦): نمو الاتصالات المتنقلة

المصدر: هيئة الاتصالات وتقنية المعلومات

إجمالي الاشتراكات في خدمات الاتصالات الثابتة

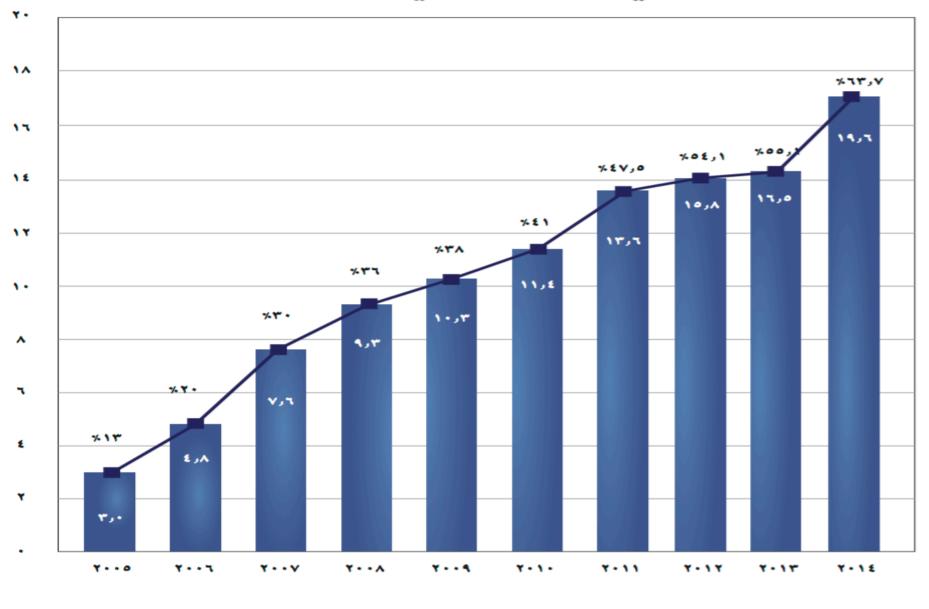


الشكل رقم (٧): نمو الاتصالات الثابتة

المصدر: هيئة الاتصالات وتقنية المعلومات

ملحوظة: تقاس نسبة الانتشار للسكان بقسمة إجمالي خطوط الهاتف الثابت العاملة على عدد السكان، أما نسبة الانتشار للمساكن؛ فيتم حسابها بقسمة عدد العاملة على عدد المساكن.

إجمالي عدد مستخدمي الإنترنت

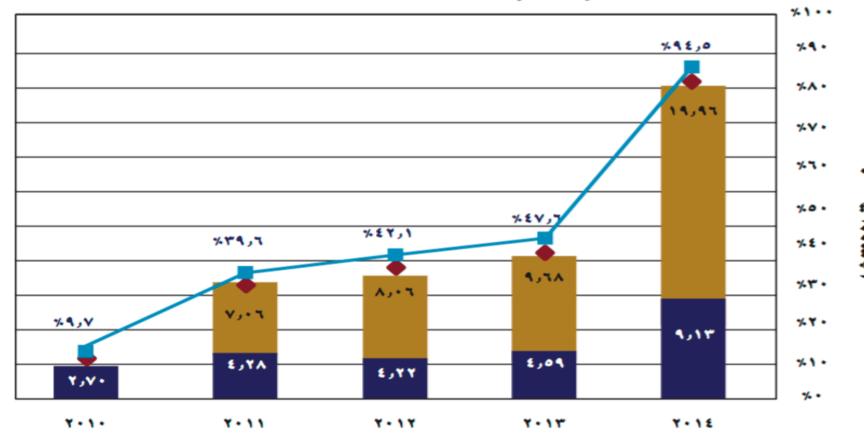


عدد المستخدمين

نسبة الانتشار

الشكل رقم (١٠): نمو خدمات الإنترنت

إجمالي الاشتراكات في خدمات النطاق العريض عبر شبكات الاتصالات المتنقلة

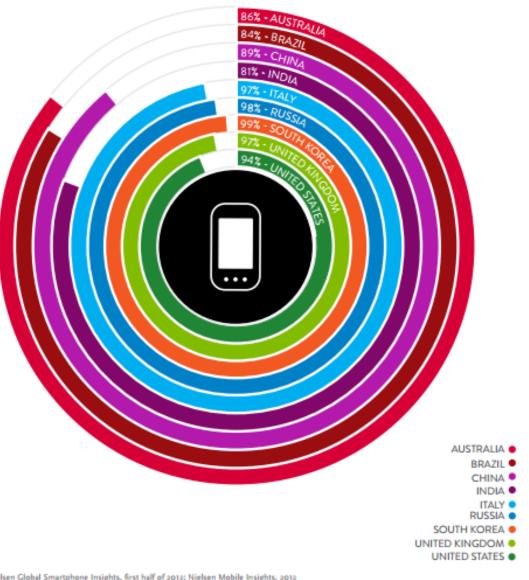


- إجمالي الاشتراكات الخاصة بباقات الاتصالات الصوتية والمعطيات إجمالي الاشتراكات الخاصة بخدمات المعطيات
- إجمالي اشتراكات النطاق العريض عبر شبكات الاتصالات المتنقلة
- نسبة الانتشار للسكان (٪)

الشكل رقم (٩): نمو خدمات النطاق العريض

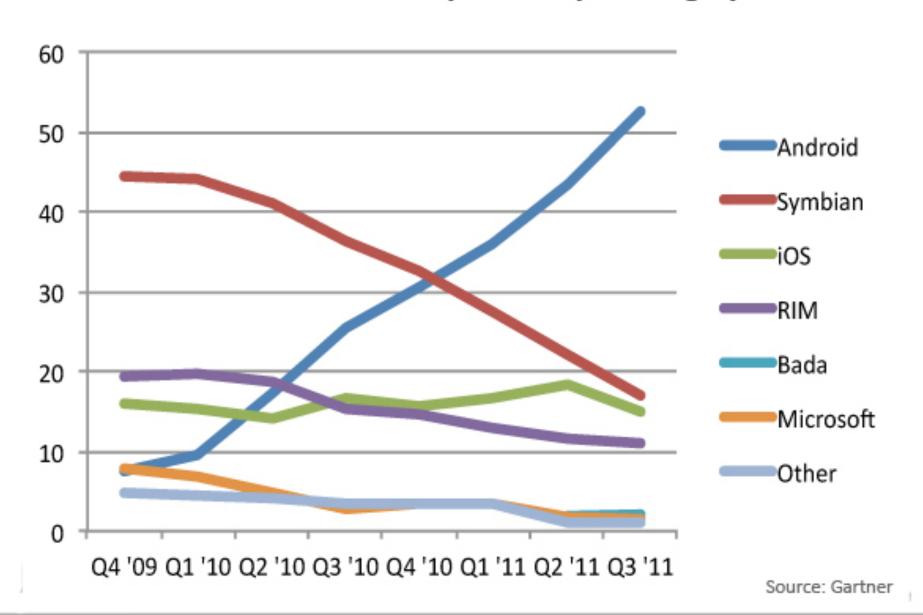
HOW MANY OF US USE A MOBILE PHONE?

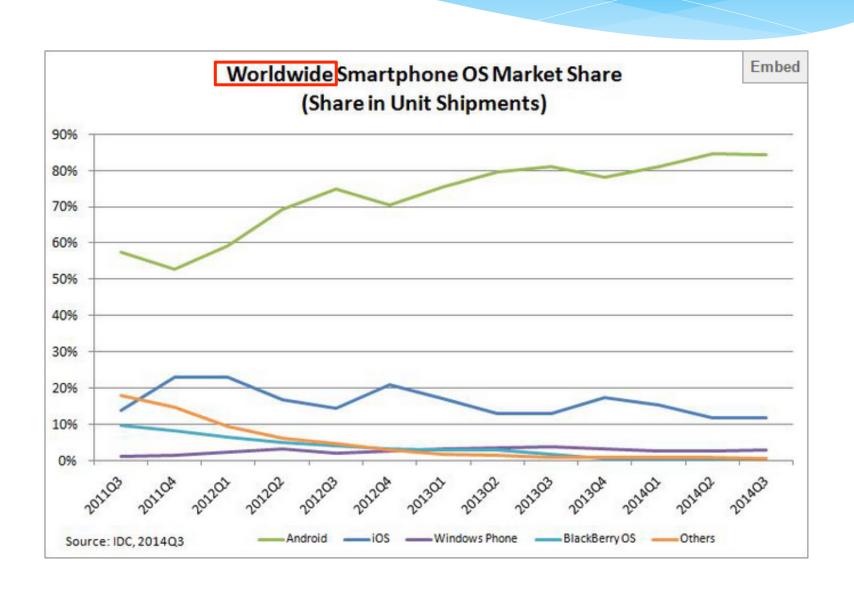
AMONG CONSUMERS AGES 16+





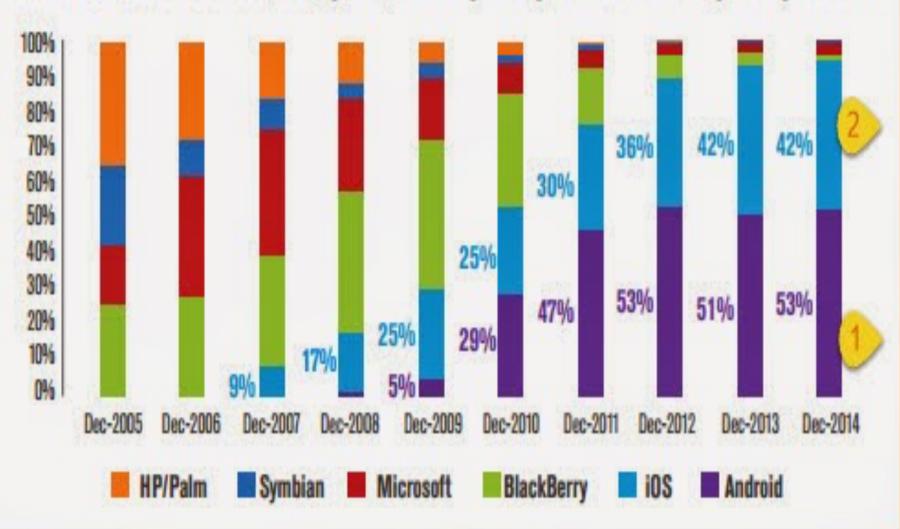
Market Share For Smartphone Operating Systems

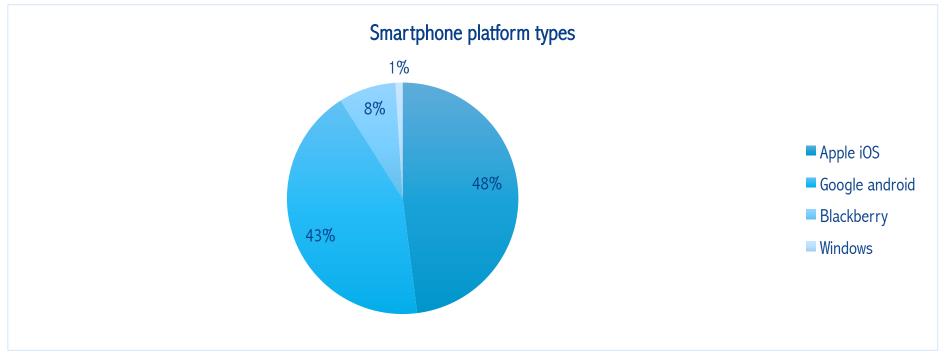


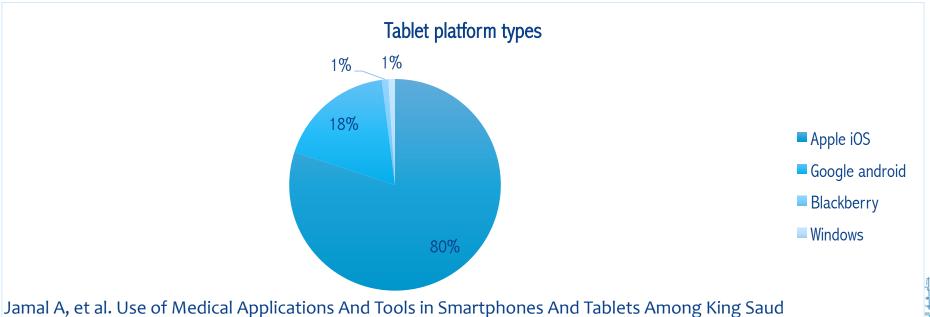


Smartphone Platform Market Share

Source: comScore MobiLens, U.S., Age 13+, 3 Mo. Avg. Ending Dec 2005 - 3 Mo. Avg. Ending Dec 2014







University Medical Students: A Cross Sectional Study. JMIR Mhealth Uhealth. 2013.

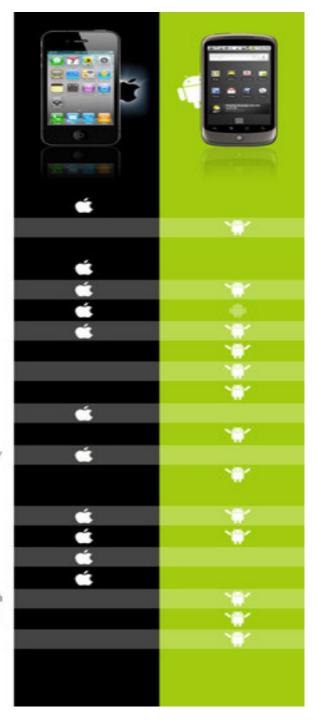


Ease of Use Openness

Battery Life
Multitasking
Software Keyboard
System-Wide Search
Notification System
Voice-to-Text
Syncing
Non-Google Syncing
Tethering
Release/Update Consistency
Customizable

Apps
Web Browsing
Gaming
Music Player
Free Turn-by-Turn Navigation
Google Apps Integration
Google Voice

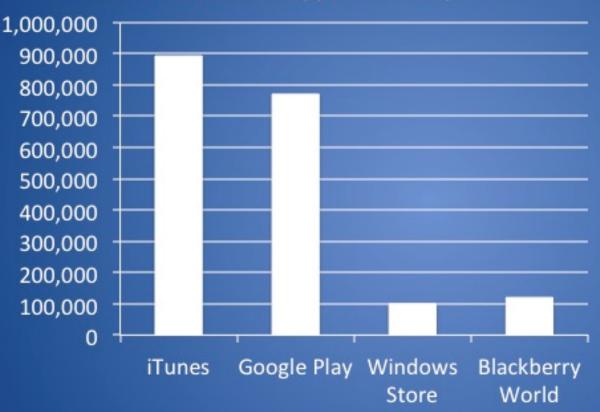
lifehacker

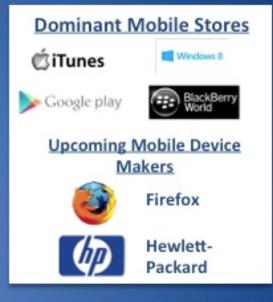




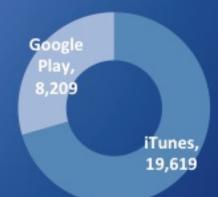
The Current State of Mobile Medical Applications







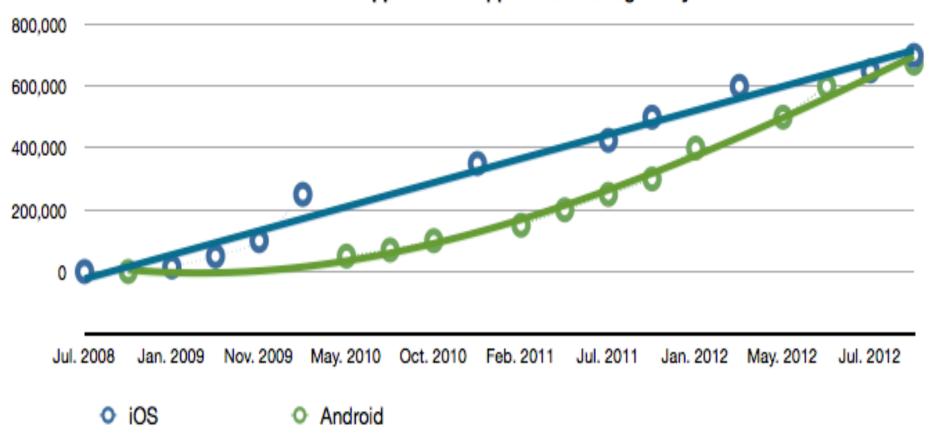
Number of Medical Applications by Store





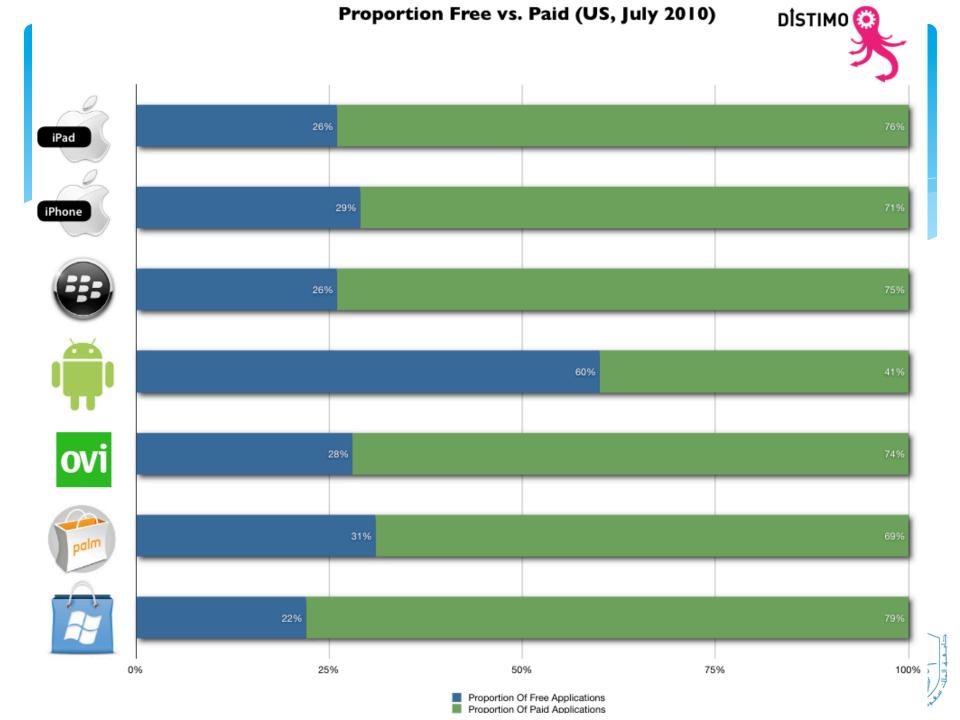
References: Apple Stats – 148app.biz Android Stats – Appbrain.com

No. of apps: iTunes App Store vs Google Play

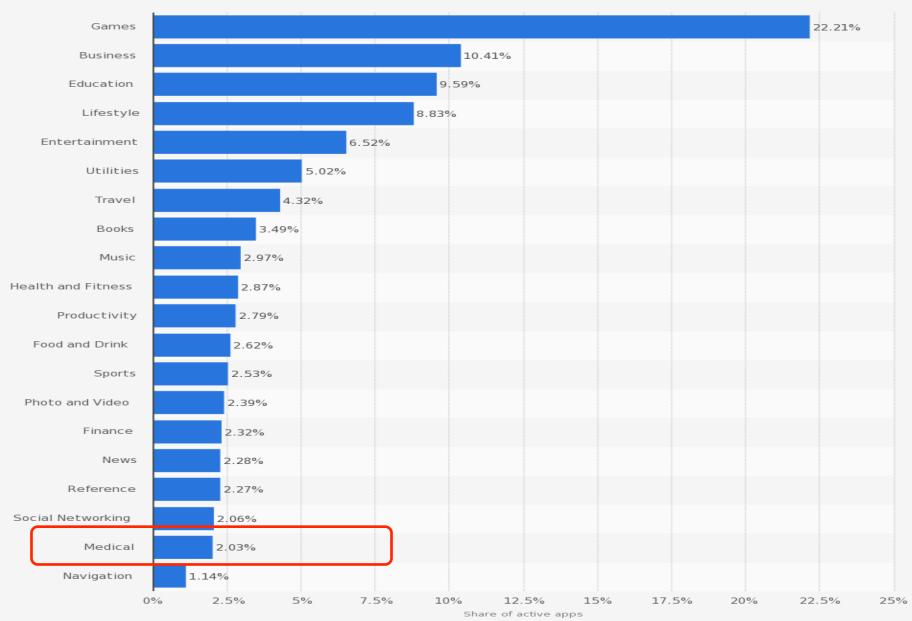


http://www.insidemobileapps.com/2012/09/26/tracking-growth-the-itunes-app-store-vs-google-play/





Most popular Apple App Store categories in September 2015, by share of available apps



Source: PocketGamer.biz © Statista 2015 Additional Information:
Worldwide: PocketGamer.biz; September 2015; Current active applications



Category statistics table

The following table shows the following data for all Android app categories:

- The total number of apps in this category
- The average star rating
- The number and percentage of apps in the category that have more than 50,000 downloads
- The number and percentage of paid apps in this category
- The average price for paid apps in this category
- The number and percentage of low quality apps in this category

3.9

4.0

3.9

4.0

4.2

3.9

4.3

4.0

4.0

3.9

4.0

4.1

4.0

3.9

3.9

4.1

4.0

This table was last updated on October 25, 2013.

22637

59937

18433

39327

24870

84761

10587

21939

13023

17994

23448

56509

40504

9743

3549

3542

9619

Android applications

Health & Fitness

Media & Video

Music & Audio

Personalization

Photography

Productivity

Transportation

Travel & Local

Libraries & Demo

Shopping

Social

Sports

Weather

Tools

News & Magazines

Lifestyle

Medical

Category name	All appsAverage rating \(^{\mathbb{I}}\)		3 WILLI > JOK	Paid appsAv	erage price LOW qu	LOW quality	
category name	Att appsAvera	gerating	downloads	r ala appsav	erage price	apps	
Books & Reference	63010	4.2	2599 (4 %)1	.9884 (32 %)	\$ 4.3525628 (4	1 %)	
Business	35939	4.0	597 (2 %)	1805 (5 %)	\$ 6.3012730 (3	5 %)	
Comics	6404	4.1	561 (9 %)	1819 (28 %)	\$ 3.13 2004 (3	1 %)	
Communication	17870	4.0	1973 (11 %)	2486 (14 %)	\$ 2.66 2157 (1	2 %)	
Education	55490	4.2	2696 (5 %)1	.3804 (25 %)	\$ 4.6314026 (2	5 %)	
Entertainment	92098	4.0	7454 (8 %)1	3143 (14 %)	\$ 1.9720412 (2	2 %)	
Finance	17842	4.0	1144 (6 %)	1589 (9 %)	\$ 4.52 1952 (1	1 %)	

1321 (6 %) 4324 (19 %)

3664 (6 %) 9111 (15 %)

363 (4 %) 2675 (28 %)

1009 (4 %)

537 (4 %)

1330 (7 %)

499 (14 %)

260 (7 %)

2490 (6 %) 3944 (10 %)

5808 (7 %) 29858 (35 %)

1608 (15 %) 1640 (15 %)

1793 (8 %) 4625 (21 %)

1040 (4 %) 3771 (16 %)

814 (8 %) 1217 (12 %)

1419 (4 %)10398 (26 %)

5621 (10 %) 9913 (18 %)

1398 (6 %)

836 (6 %)

1492 (8 %)

517 (15 %)

231 (7 %)

1936 (11 %) 2031 (11 %)

Anne with >50K

Low quality

\$ 3.24 6717 (30 %)

\$ 3.3816941 (28 %)

\$ 4.16 3656 (20 %)

\$ 10.94 2712 (28 %)

\$ 2.42 6779 (17 %)

\$ 2.17 5208 (21 %)

\$ 1.4421899 (26 %) \$ 2.87 1873 (18 %)

\$ 3.24 2161 (10 %)

\$ 2.50 2999 (23 %)

\$ 2.62 2405 (13 %)

\$ 2.98 5239 (22 %)

\$ 5.12 1170 (12 %)

\$ 3.5914909 (37 %)

5130 (9 %)

251 (7 %)

559 (16 %)

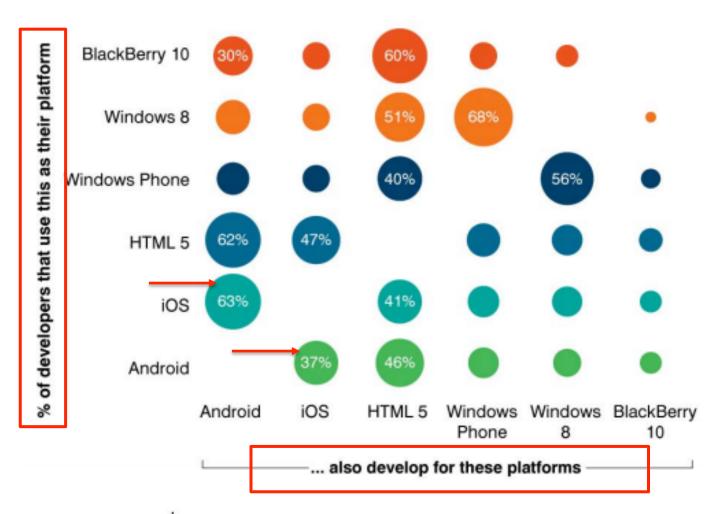
\$ 2.51

\$ 2.07

\$ 3.14

MULTI PLATFORM DEVELOPERS: HOW THEY MIX AND MATCH PLATFORMS

% of respondents using each platform, by primary platform (n=6,311)







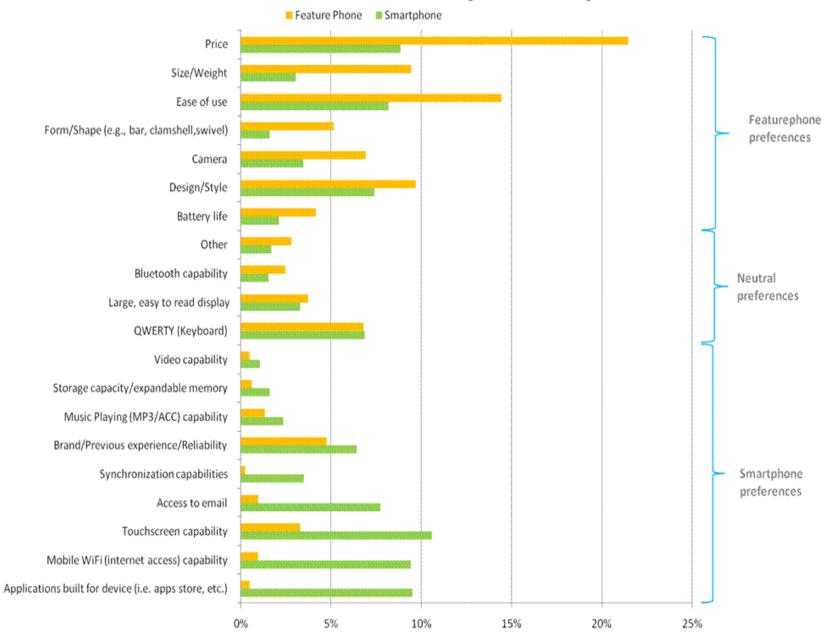
What is the top reason for selecting your current phone?

- 1. Applications built for device
- 2. Internet/email access
- 3. Touchscreen
- 4. Synchronization
- 5. Brand / Reliability
- 6. multimedia capability
- 7. Keyboard
- 8. Large screen, easy to read
- Battery life
- 10. Small size/weight
- 11. Price



Top Reasons for Choosing Device - Smartphone vs Feature Phone

Selected as first, second or third reason for choosing, Nielsen Mobile Insights



Medical professionals values of using smartphone

* The <u>fastest</u> approach to the right <u>updated</u> information at the <u>right time</u> in the <u>point-of-care</u> based on <u>the best available evidence</u> to support the best decision for care



Which Device is better?

- * Determine which applications you will need first
- * Use different devices if possible before purchasing
- * Prominence of a particular device in your environment
- * Memory
- * Wireless / 3G access availability
- * Your keyboard style
- * Size & weight



What do you use your smartphone for in your medical practice?

- 1. Clinical drug references
- 2. Medical dictionaries
- 3. Electronic prescription tools
- 4. Clinical textbooks
- Patient tracking
- 6. Medical Calculators
- 7. Evidence based references
- 8. Search for literature

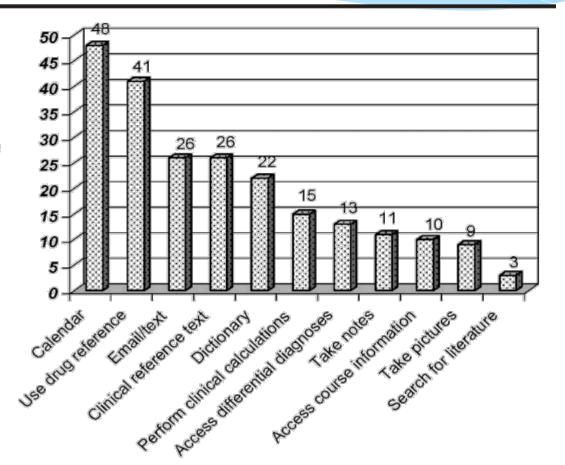


What do use your smartphone for?

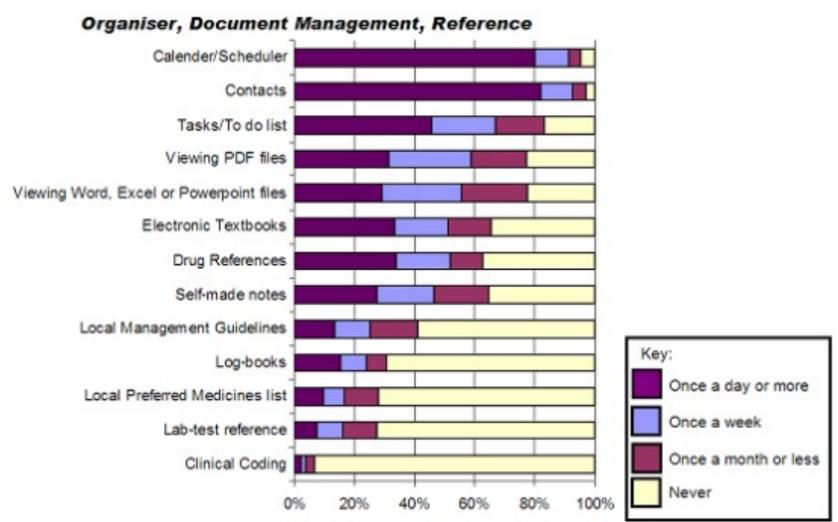
Figure 1
Common uses of personal digital assistants (PDAs) among medical students (n=53)

Number of students

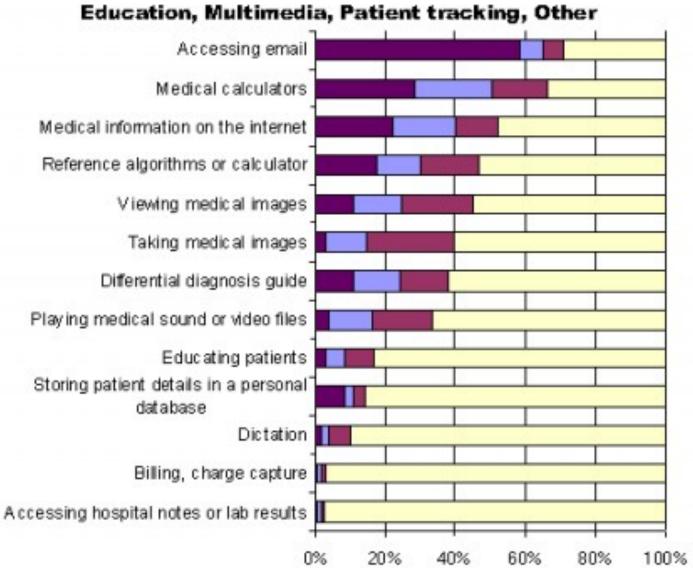
Chatterley T, Chojecki D. Personal digital assistant usage among undergraduate medical students: exploring trends, barriers, and the advent of smartphones. Journal of the Medical Library Association: JMLA. 2010;98(2):157













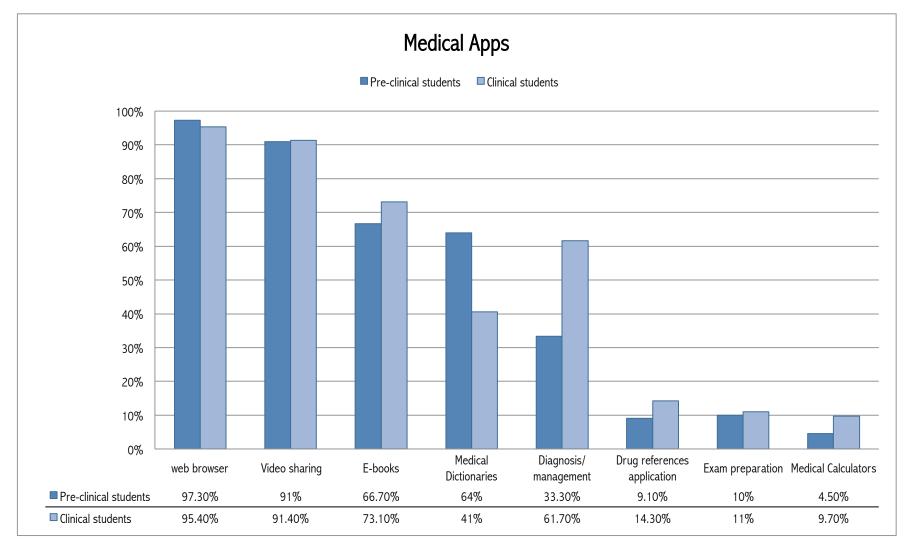


Figure 2: medical-practice-related non-communication apps/tools

Jamal A, et al. Use of Medical Applications And Tools in Smartphones And Tablets Among King Saud University Medical Students: A Cross Sectional Study
. JMIR Mhealth Uhealth. 2013.



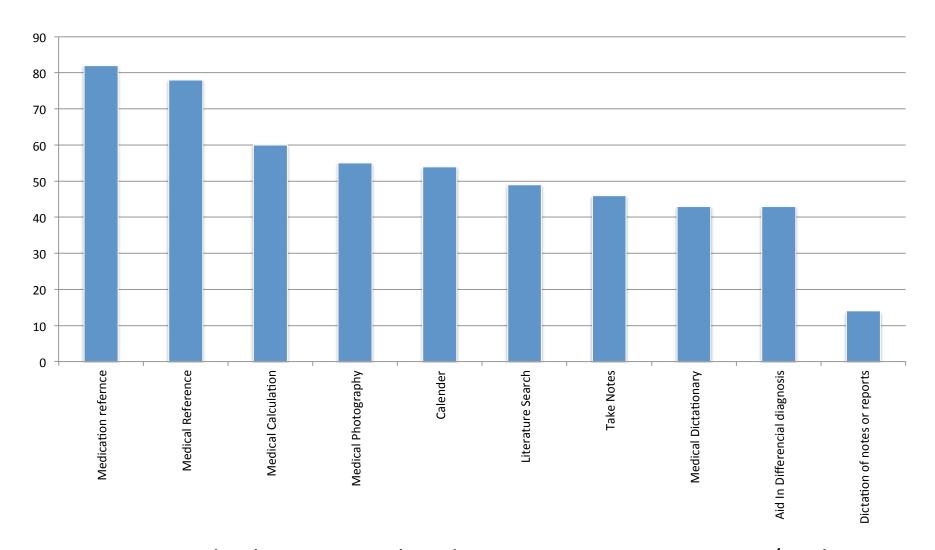


Figure 2: medical-practice-related non-communication apps/tools

Jamal A, Temsah M-H, Khan SA, Al-Eyadhy A, Koppel C, Chiang M. Smartphone use among medical residents: a cross sectional multicenter survey in Saudi Arabia. JMIR Mhealth Uhealth. 2015.



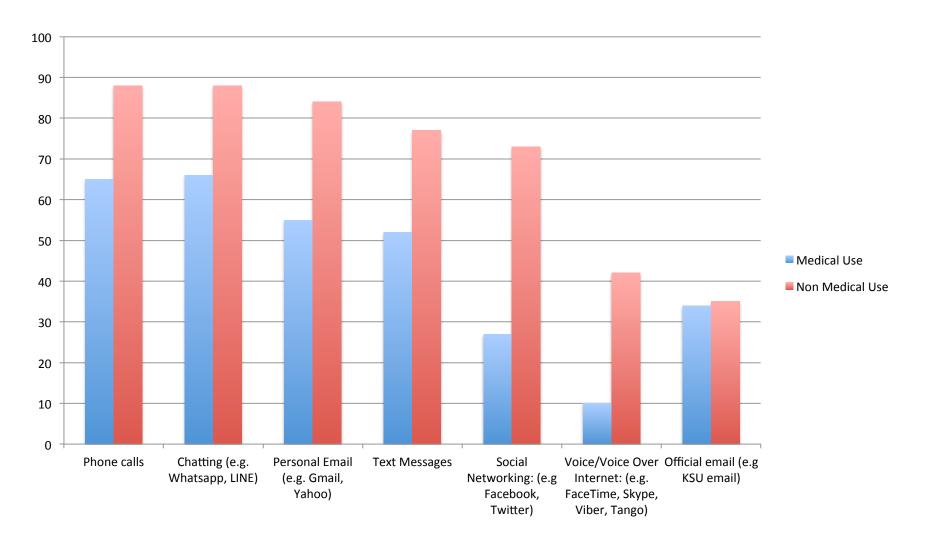


Figure 1: Medical and non-medical related usage of communication tools/apps

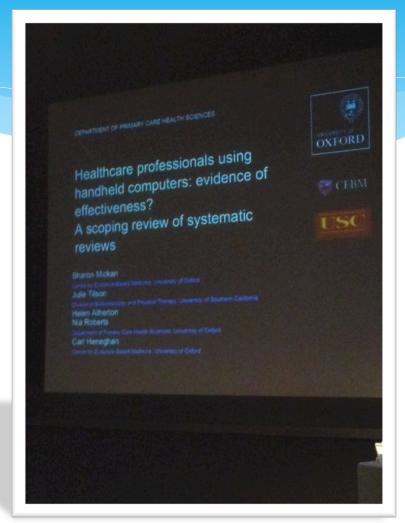
Jamal A, Temsah M-H, Khan SA, Al-Eyadhy A, Koppel C, Chiang M. Smartphone use among medical residents: a cross sectional multicenter survey in Saudi Arabia. JMIR Mhealth Uhealth. 2015.



Is it effective?

(Mickan 2013)

- * improved patient documentation quality
 - * through more complete records with fewer errors and improved ease and efficiency of use.
- improved safe and appropriate decision making
 - * using clinical decision support systems and patient management systems at point of care.
- * supporting healthcare professionals
 - * looking for information about patients, drugs, guidelines and references at point of care.
- * enhance efficiency and improve patterns of work.



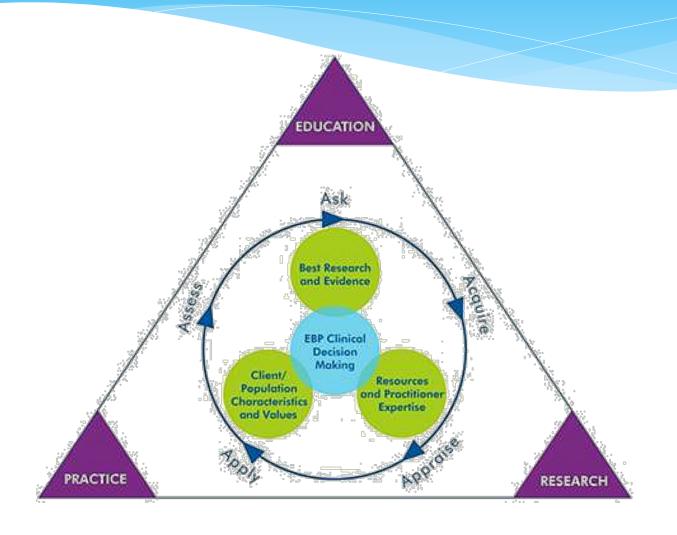


What is the first step in the evidence based practice process?

- A. Applying research to practice
- B. Acquiring available research and evidence
- Assessing the impact of change
- D. Asking a clinical question
- E. Appraising the research quality



5-step EBM process





PICO Maker

- * free Palm OS-based application
- * create and store queries in the PICO format for later reference.
- * http://www.library.ualberta.ca/pdazone/pico/

PICO	PICTWO
Background	Citation
Population	Additional Info
Intervention	SavePICO Previous Screen
Comparison	Delete this PICO Beam PICO
Outcome	GoTo First Record GoTo Last Record
Prev PICO Next PICO More	Exit PICO

Use of task apps to control your EMB questions

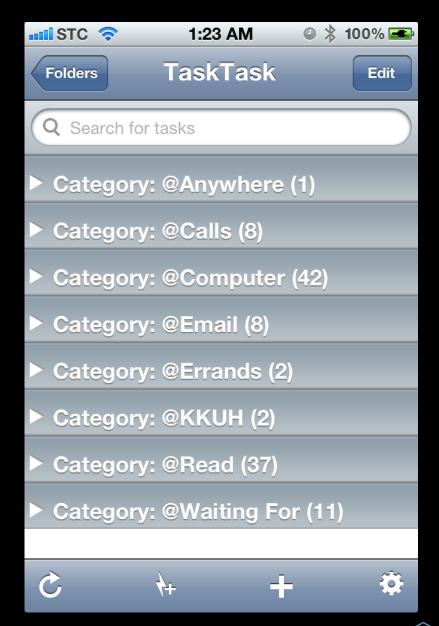
- * Cross platforms Sync
- * Reminders
- * GTD contexts
- * Geotagged reminders
- * Speech recognition









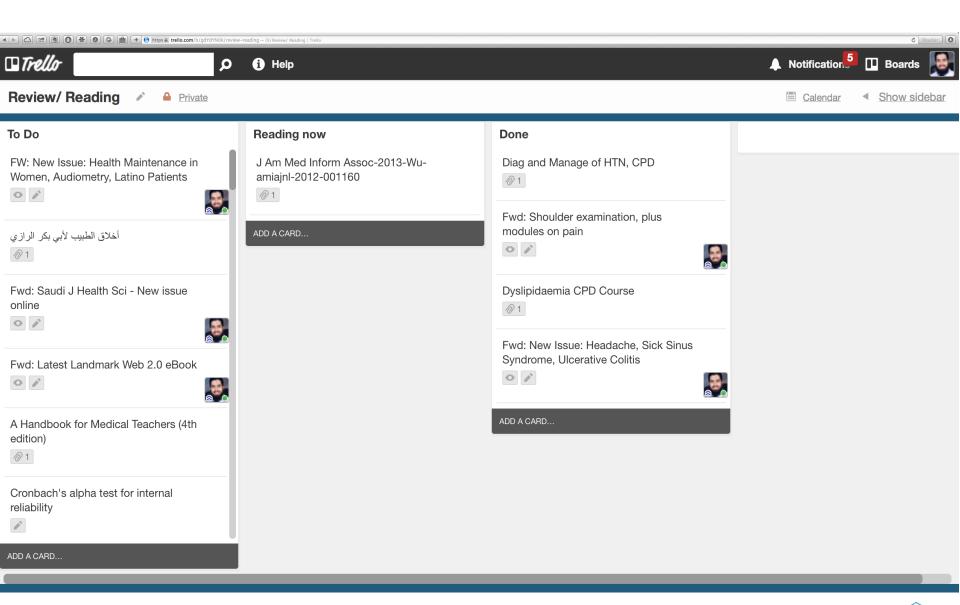




Kanban Board

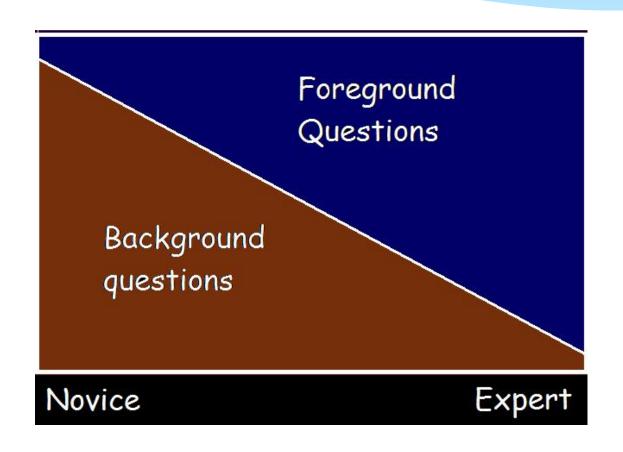






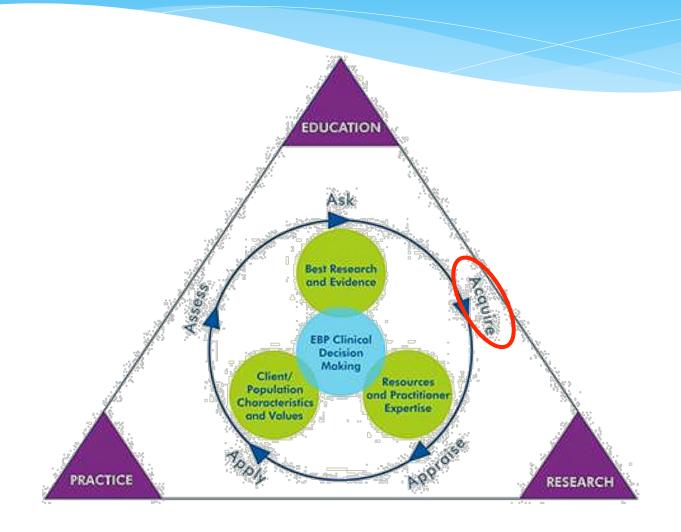


Foreground Vs. Background EBM questions





2nd step: Acquire





Where do you search for evidence using your smartphone/tablet?

- 1. BMJ Best Practice/ Clinical Evidence
- StatRef
- DynaMed
- 4. Essential Evidence Plus
- 5. Medline mobile
- 6. UpToDAte
- MedScape
- 8. Skyskape
- 9. WebMD
- 10. Unbound Medicine

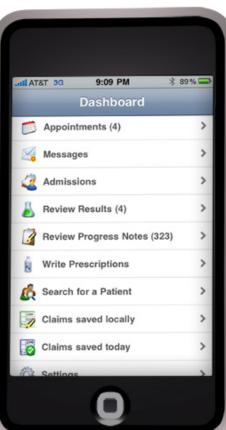


Haynes' 5S pyramid of EBM resources

Clinical decision support systems (0	CDS) Systems	HER built-in CDSs Diagnosis One AHRQ ePSS
Evidence based CPG Evidence based textbooks	Summaries	BMJ BestPractice BMJ ClinicalEvidence UptoDate StatRef
Evidence based journal abstracts	Synopses	DynaMed PIER EE+
Systematic reviews	Syntheses	Cochrane library Trip Database
Original journals	Studies	Medline mobile

CDSS on mobile platforms





Kareo Launches Apple Watch App To Improve Medical Practice Efficiency



Kareo, a cloud-based medical office EHR for independent medical practices is launching an Apple Watch App. The integration of the Apple Watch with Kareo's EHR streamlines care delivery and enhancing the patient experience by improving communications, reducing patient wait times, and increasing practice efficiency. The Apple Watch App was created in response to the growing demands on physicians to increase their focus on all aspects of patient engagement.

AHRQ ePSS

- * Designed by the US Department of Health and Human Services to assist primary care clinicians in identifying what screening, counseling, and preventive services are appropriate for their patients.
- * AHRQ ePSS allows the input of a patient's age and other demographic variables, generating the USPSTF-appropriate screening and counseling guidelines for the patient.

AHRQ ePSS







Where do you search for guidelines?

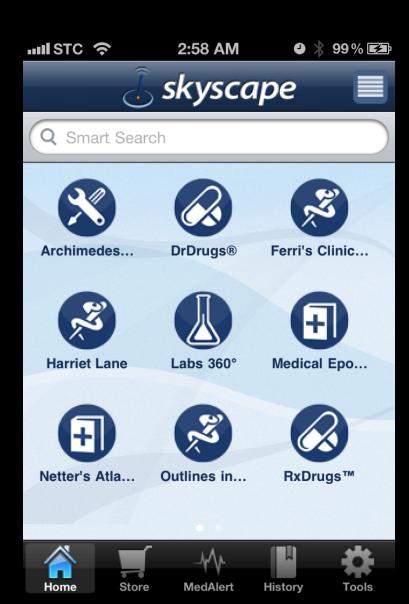
- TRIP database
- DynaMed
- 3. Medline
- 4. EMBASE
- 5. BMJ Best Practice
- 6. National guideline Clearinghouse
- 7. Cochrane
- 8. Essential Evidence Plus
- CMA Infobase



Skyscape

- * Many titles are free through the SDL library
- * Can purchase Harrison's Manual of Medicine, 5-minute Clinical Consult, Merck Manual, Journal Watch and Pocket Medicine
- * Free version includes: Outlines in Clinical Medicine (OCM), RxDrugs, Archimedes.
- * OCM provides disease monographs with ~800 entries
- * Cumbersome user interface, iTunes and Android



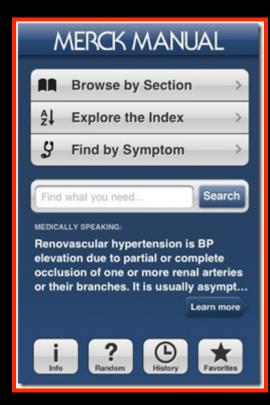


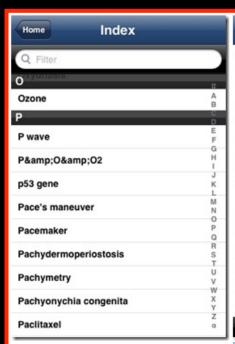


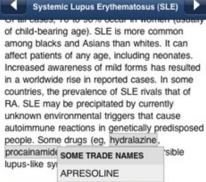
Merck Manual Professional Edition

- * 3,000 page version
- * The Medical Encyclopedia
- * \$34.99, itunes









Symptoms and Signs

Clinical findings vary greatly. SLE may develop abruptly with fever or insidiously over months or years with episodes of arthralgias and malaise. Vascular headaches, epilepsy, or psychoses may be initial findings. Manifestations referable to any organ system may appear. Periodic exacerbations (flares) may occur.



Etiology

Metabolic acidosis is acid accumulation from increased acid production or acid ingestion; decreased acid excretion; or GI or renal HCO₃⁻¹ loss. Acidemia (arterial pH < 7.35) results when acid load overwhelms respiratory compensation. Causes are classified by their effect on the anion gap (see Acid-Base Regulation and Disorders: Causes of Metabolic Acidosis).



High anion gap acidosis

The most common causes of a high anion gap metabolic acidosis are

- Ketoacidosis,
- Lactic acidosis





Bayes' Theorem



When interpreting a test result, the clinician converts a pre-test or prior probability of disease into the appropriate post-test or posterior probability. Clinicians must use their best judgment-from all clinical data available-to assign reasonable estimates of pre-test probabilities. To illustrate this process in a clinical context, consider a 25-yr-old woman who presents with dysuria. Assume that the clinician thought the probability of UTI was moderately low (30%) based on the patient's history and physical examination. Before sending the patient's urine for microscopic examination of the sediment and for culture, the clinician does a dipstick leukocyte esterase test, which has a positive result. To determine the post-test probability of UTI, the clinician must know the sensitivity (71%) and specificity (85%) of the test. Clinical Decision Making: Interpretation of leukocyte esterase test result in a woman with a 30% prior probability of a UTI, simulating a cohort of 100,000 identical women.considers



UpToDate-The Gold Standard?

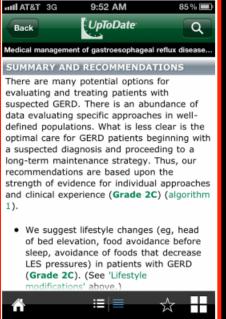
- * Pricing \$195/year (.53 cents per day) for trainee and \$495/year (\$1.36 per day)
- * Free throw SDL
- * Peer-reviewed, comprehensive, #1 most used resource
- * 8,500 medical topics, 385,000 total references
- * Good search function
- * Slow to load topics



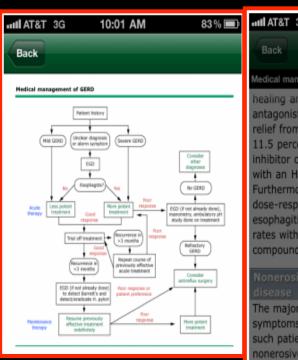


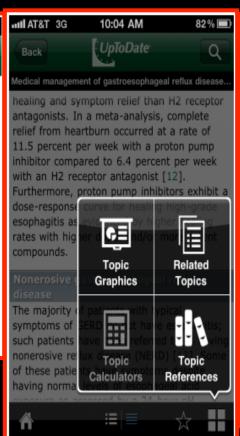


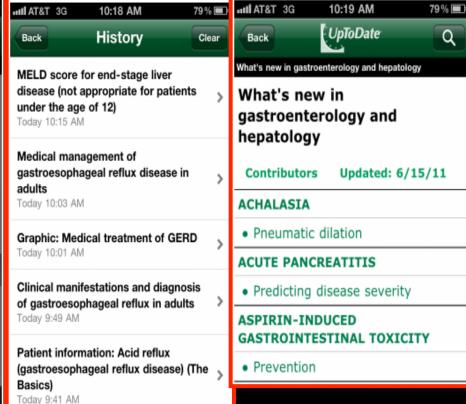














www.unboundmedicine.com



Evidence Central

Integrated, Evidence-Based Solution

E vidence Central supports effective evidence-based medical practice by integrating analysis with the latest research. Access Evidence-Based Medicine Guidelines, Cochrane Abstracts, EE+ POEMs (Patient-Oriented Evidence that Matters from Essential Evidence Plus), and MEDLINE Journals anytime, anywhere on the web or your mobile device. Connect to related entries with Cross Links.

\$79.95

Details



Clinical Evidence For PDA

With Auto-Updates

The best available evidence for the treatment of common clinical conditions, Clinical Evidence for PDA covers more than 200 medical conditions and over 2,000 treatments. Includes the entire Clinical Evidence database from the BMJ with references to the underlying medical literature. Updated monthly!

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Details



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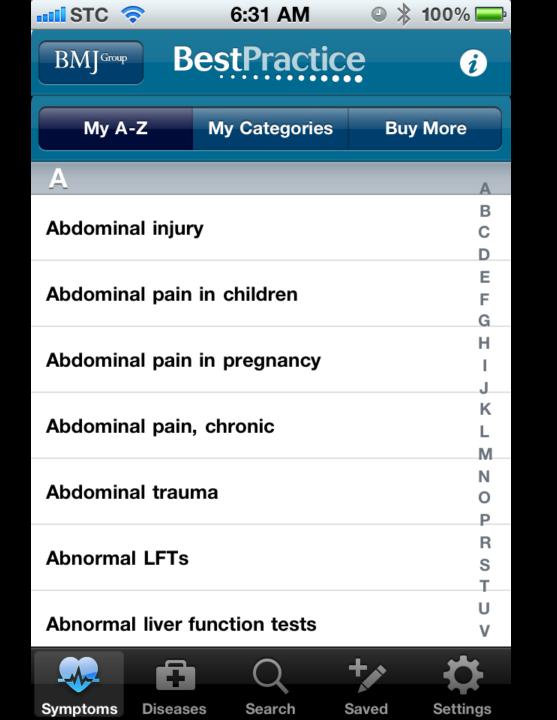
Access more than 18 million articles from MEDLINE and PubMed from your PC, laptop, or on-device web browser!



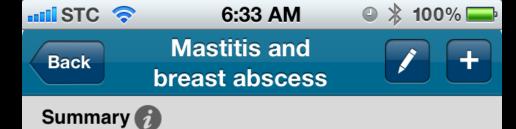


Haynes' 5S pyramid of EBM resources

HER built-in CDSs Systems Clinical decision support systems (CDS) Diagnosis One AHRQ ePSS **BMJ Best Practice** Evidence based CPG Summaries StatRef Evidence based textbooks DynaMed Evidence based journal Synopses **PIER** abstracts EE+ Cochrane library **Syntheses** Systematic reviews Trip Database **Studies** Medline mobile Original journals



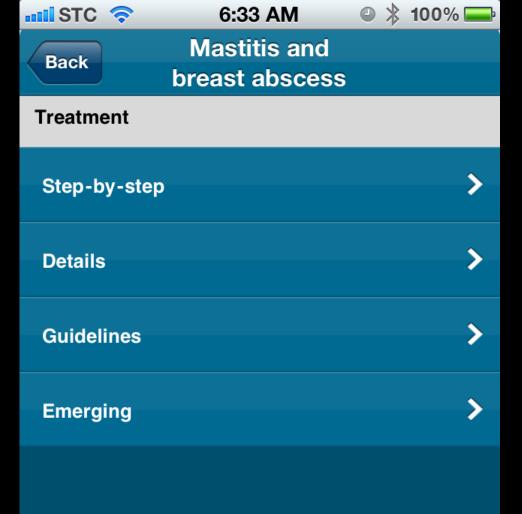




Breast infection (including infectious mastitis and breast abscess) typically affects women 15 to 45 years of age, especially those who are lactating. Neonates and adolescent girls may also be affected.

Staphylococcus aureus is the most frequent pathogen isolated.







ClinicalEvidence

Full review list



Search this site



Conditions

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Clinical Evidence is one of the world's most authoritative medical resources for informing treatment decisions and improving patient care.

Latest updated reviews

- Skin cancer (updated)
- Colorectal cancer treatment (updated)
- Chlamydia (uncomplicated, genital) (updated)
- Stroke management (updated)
- # Dementia (updated)

- # Impacted wisdom teeth (updated)
- # Acute anterior uveitis (updated)
- Constipation in children (updated)
- Basal cell carcinoma (updated)
- Summary of all updates

May 7, 2010

News Feeds & Email Alerts





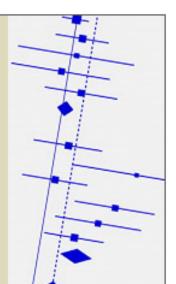
Clinical Evidence Userguide



The Clinical Evidence
Userguide, available in
over a dozen languages
(now including Finnish),
features illustrations and
examples of how to get
the most out of our site.

Guest editorial

At Clinical Evidence, we present an overview of the best available evidence, with a view to answering clinical questions of interest. Frequently, the evidence we identify includes systematic reviews that have meta-analysed data from RCTs. Synthesising data from multiple small RCTs can improve confidence in the effects, or confirm the believed lack of effect, of a particular intervention, thereby accelerating acceptance or rejection of that treatment. However, as Carl Heneghan and Rafael Perera outline in their Editorial, producing a reliable meta-analysis may not always be as simple as combining all the RCTs for the treatment



Swine flu patient leaflet now free online

🔁 Swine flu patient leaflet

Articles and Research section

Access the latest independent research on Clinical

Clinical Evidence on your PDA



PRICE

£37/€50/\$72 (standard individual)

£19/€26/\$37 (student/nurse)

Institutional prices on request

Prices exclude VAT

This new enhanced version of *Clinical Evidence* for PDA, makes the **full content** of the *Clinical Evidence* database easy to access using a personal digital assistant (PDA) at the point of care. Via a handheld, on-the-go professionals can quickly access evidence-based answers to clinical questions.

powered by



Clinical Evidence Handbook

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Clinical Evidence Handbook and Online

Clinical Evidence PDA

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Essential Evidence Plus, formerly InfoPOEMs/InfoRetriever, is a powerful electronic resource packed with all of the medical evidence you need to make critical patient care decisions.



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TOUR

News

- Wiley-Blackwell to Relaunch InfoPOEMs with InfoRetriever as Essential Evidence Plus Read the Press Release
- The Society of Hospital Medicine and Wiley to Launch InfoPOEMs for Hospitalists Read the Press Release
- Wiley Expands Partnership with Skyscape Read the Press Release
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Essential Evidence Plus

Essential Evidence Plus features must-have content, tools, calculators, and daily email alerts for clinicians who deliver first-contact care.

Learn More

Events

Come see us at:

STFM Annual Conference April 30-May 4, 2008 Baltimore, MD

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Product Support

- Getting Started
- Downloads/Updates
- FAQs
- View All

POEM of the Week Podcast



Listen to the latest weekly podcast from Drs. Ebell and Wilkes

MORE INFO>

NEW RESOURCE: EBMG



Introducina a new resource for EE+! Download for Palm OS and Pocket PC today!

EE+

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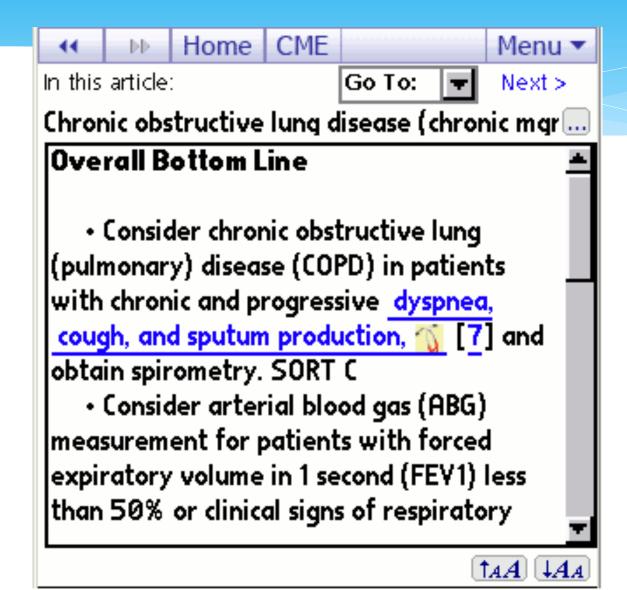


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Search Results New Search								
Your t	Your topic selection produced 174 results							
re	refine by type of result							
re	refine by type of resource							
Chronic obstructive lung disease (acute exacerbation)								*
	Chronic obstructive lung disease (chronic mgmt)							
Action plans for chronic obstructive pulmonary disease (LOE = 1a or 2a)								
ES Action plans for chronic obstructive pulmonary disease (LOE = N/A)								
Ambulatory oxygen for COPD (LOE = 1a								•
Page: << 1 2 3 4 5 6 7 8 >>								



EE+











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Superior

evidence-based results

DynaMed is a medical information database with nearly 3,000 clinical topic summaries.

Designed for use at the point-of-care, providing best available evidence and updated daily.

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The American Academy of Family Physicians (AAFP) has determined that DynaMed may be of assistance to family physicians in answering clinical questions with high-quality evidence.

Hospitals

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American College of Physicians

- Health Information
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 - Electronic Health Records
 - e-Prescribing
 - Informatics
 - PDA & Mobile
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 - Bioterrorism
 - Clinical References
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 <u>Requirements for MS</u>
 - Teaching in Your Office
 - E thics Manual
 - Audio
 - PIER PDA

- Calorie Savings Food List
- Normal Lab Values from MKSAP 15
- * Vaccine Specific Information
- * USPSTF Preventive Services Guidelines
- * NCEP ATP III Guidelines
- * ADA Guidelines
- * Drugs Used in the Treatment of HIV Infection
- * Table of Normal Physiological Changes During Pregnancy
- * Pharmacotherapies for Acute Major Depression
- * Differential Diagnosis Between Allergic and Nonallergic Rhinitis





American College of Physicians

Physicians' Information and Education Resource

Welcome

PIER: The Physicians' Information and Education Resource. Find authoritative, evidence-based guidance to improve clinical care. Register for access (ACP members only)

Browse a Topic Type:



<u>Diseases</u>



Screening and Prevention



<u>Complementary/Alternative</u> Medicine



Ethical and Legal Issues



Procedures



Quality Measures



Drug Resource

The information included herein should never be used as a substitute for dinical judgment and does

Enter a Keyword to Search:

What's New

Find:	within	_
Entire site	- 30	
For more options	s try <u>Structured Sear</u>	ch.

QUALITY MEASURES: The PIER Quality Measures page has been updated to include the 179 2010 Physician Quality Reporting Initiative (PQRI) measures. The PQRI
administrative criteria for each measure is
given, and, where applicable, links are
provided to PIER modules to help physicians
fulfill the PORI.

UPDATED MODULES: The following modules were updated the week ending April 30:
<u>Cirrhosis</u>
<u>Gonorrhea</u>

Group A Strepto occal Pharyngitis Hip Fracture HIV in Pregnancy

National Guideline Clearinghouse

- * http://www.guideline.gov/
- * directly access the entire site using PDA browser
- * download all NGC guideline summaries as PDF or MS Word documents

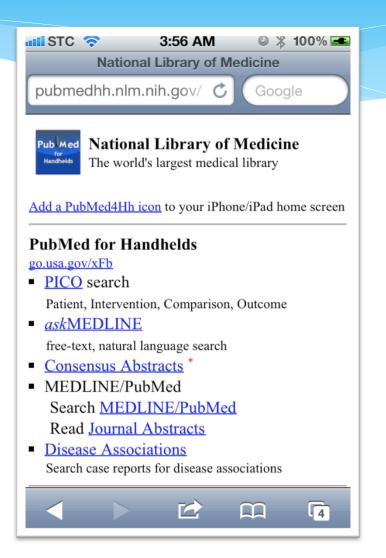


Haynes' 5S pyramid of EBM resources

HER built-in CDSs Systems Clinical decision support systems (CDS) Diagnosis One AHRQ ePSS **BMJ Best Practice** Evidence based CPG Summaries StatRef Evidence based textbooks DynaMed Evidence based journal Synopses **PIER** abstracts FF+ Cochrane library **Syntheses** Systematic reviews Trip Database **Studies** Original journals Medline mobile

Primary Evidence Resources mobile websites

- * CINAHL
- * PubMed
- * MedlinePlus





PubMed searching apps

PubMed Clip ✓
PubMed on Tap ✓
PubGet
PubMed Mobile

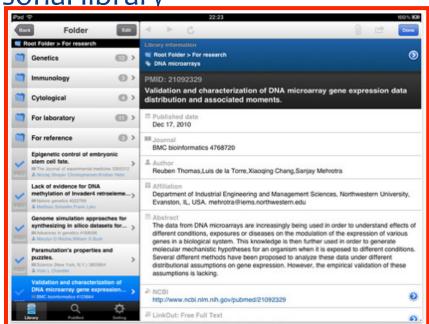


PubMed Clip

- * \$2.99, good UI, itunes only
- * Facebook, Twitter, Evernote integration
- * Proxy link for full-text

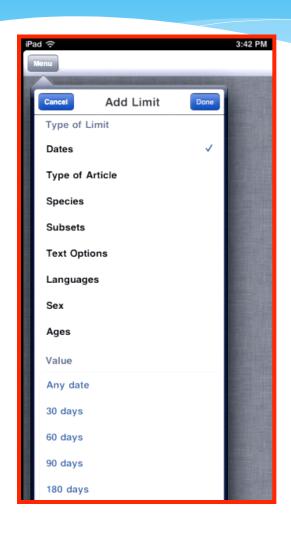
* Tag articles and create personal library

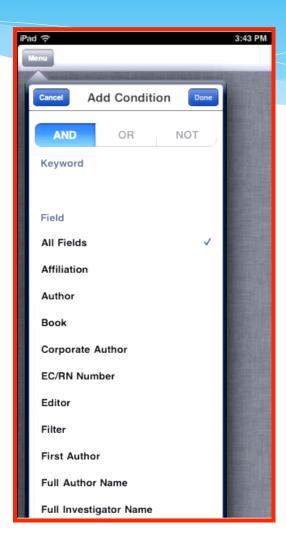
* + Advanced search option





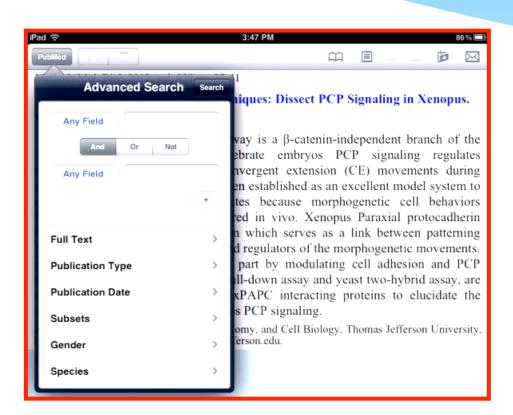
PubMed Clip Advanced search

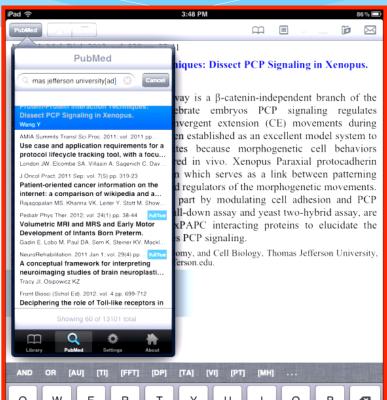






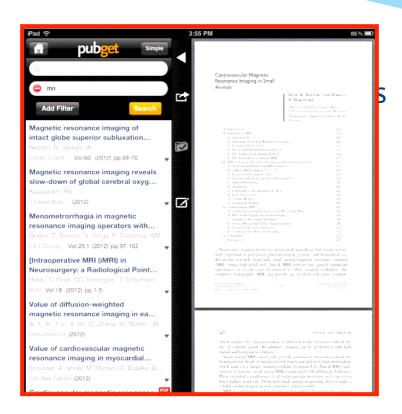
PubMed on Tap

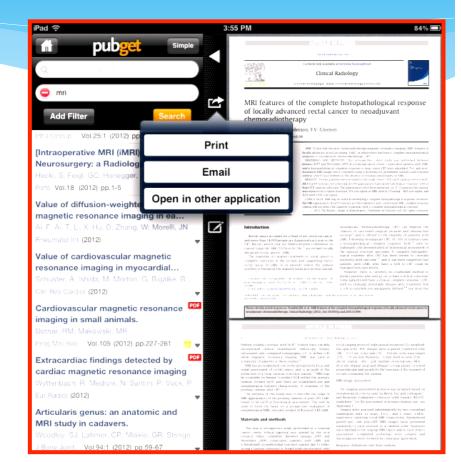






PubGet



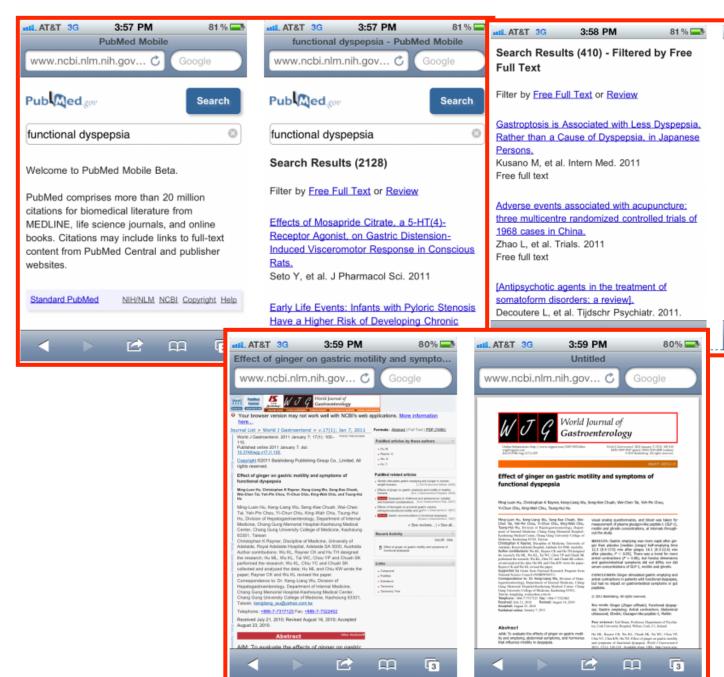




PubMed Mobile

- * Basic searches
- * Limit to free articles
- * Locate primary literature on your handheld
- * Free
- * itunes and Android
- * http://www.ncbi.nlm.nih.gov/m/pubmed/





Effect of ginger on gastric motility and symptoms of functional dyspepsia.

3:59 PM

80% -

Hu ML, et al. Show all

attl. AT&T 3G

Ming-Luen Hu, Keng-Liang Wu, Seng-Kee Chuah, Wei-Chen Tai, Yeh-Pin Chou, Yi-Chun Chiu, King-Wah Chiu, Tsung-Hui Hu, Division of Hepatogastroenterology, Department of Internal Medicine, Chang Gung Memorial Hospital-Kaohsiung Medical Center, Chang Gung University College of Medicine, Kaohsiung 83301, Taiwan.

World J Gastroenterol. 2011 Jan 7;17(1):105-10.

Abstract

AIM: To evaluate the effects of ginger on gastric motility and emptying, abdominal symptoms, and hormones that influence motility in dyspepsia.

METHODS: Eleven patients with functional dyspepsia were studied twice in a randomized double-blind manner. After an 8-b fast, the





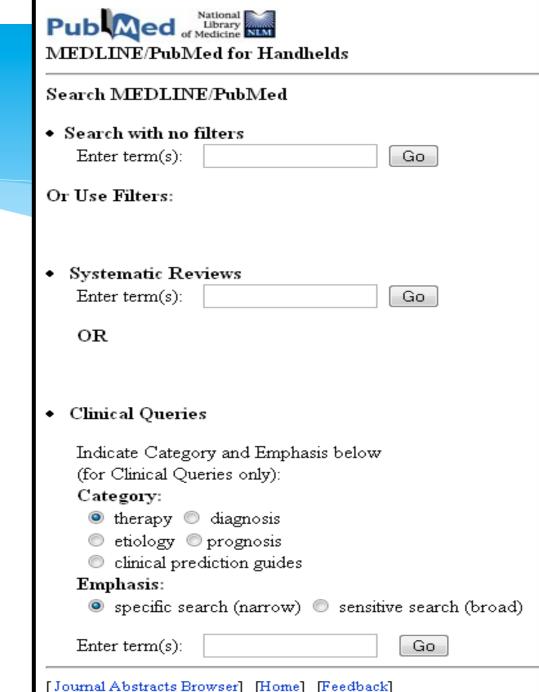


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PubMed® for handhelds Web site

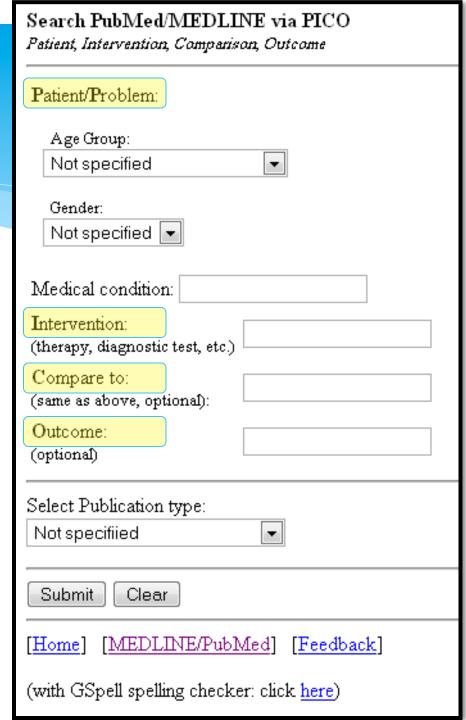
* http://
pubmedhh.nlm.nih.gov/
nlm/pubmed/index.html



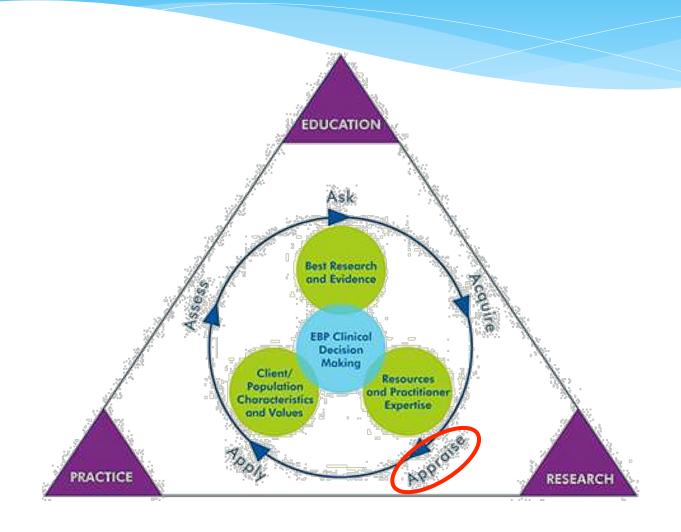
(with GSpell spelling checker: click here)

PICO search

http://
pubmedhh.nlm.nih.gov/
nlm/pico/piconew.html



3rd step: Appraise





The EBM Process	PDA Resources
Ask	PICO-maker from the University of Alberta http://www.library.ualberta.ca/pdazone/pico/
Acquire	Background questions Textbook-type materials (e.g., <u>5-Minute Clinical Consult series</u>) http://skyscape.com , et.al. Drug resources (e.g., <u>Epocrates</u> ; <u>CPOnHand</u>)
	Foreground questions National Guideline Clearinghouse www.ngc.gov Clinical Evidence http://www.clinicalevidence.com/ceweb/products/PDA.jsp NLM Mobile http://www.nlm.nih.gov/mobile/_

from the University of Toronto's Centre for Evidence-Based Medicine

Appraise

EBM Calculator

http://www.cebm.utoronto.ca/palm/eb

What Medical Calculator do you use?

- Skyscape Archimedes/ Archimedes 360
- 2. <u>Doctorcalc</u>
- 3. Thompson Clinical Xpert (formerly MobileMicromedex)
- MedScape Calculator
- 5. <u>AgileMedCalc</u>
- 6. EBM Calculator
- 7. MedCalc
- 8. Other
- 9. None

















Smart Search



Archimedes...



DrDrugs®



Ferri's Clinic...



Harriet Lane



Labs 360°



Medical Epo...



Netter's Atla...



Outlines in...



RxDrugs™



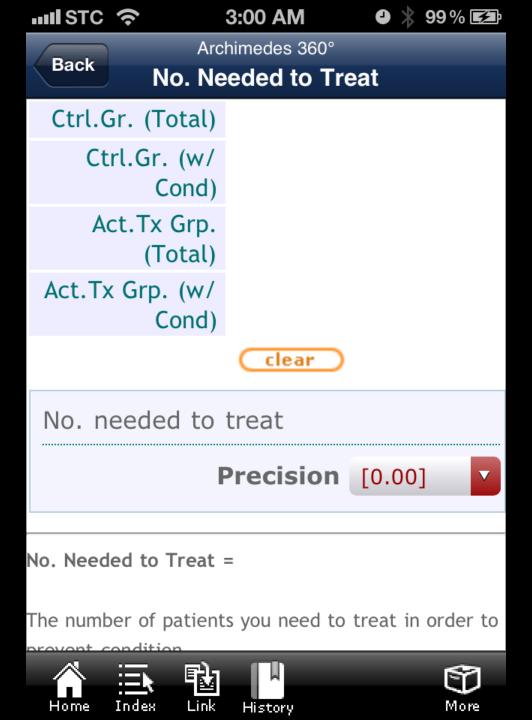




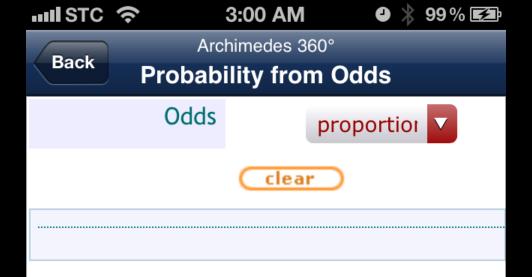












Probability that a particular event will occur is the ratio of the number of ways the event can occur to the total number of possible outcomes.

Odds are the number of ways an event can occur divided by the number of ways an event cannot occur.

An illustrative example is given below:

Q. Find the probability of randomly selecting the letter *p* in the word "Mississippi."



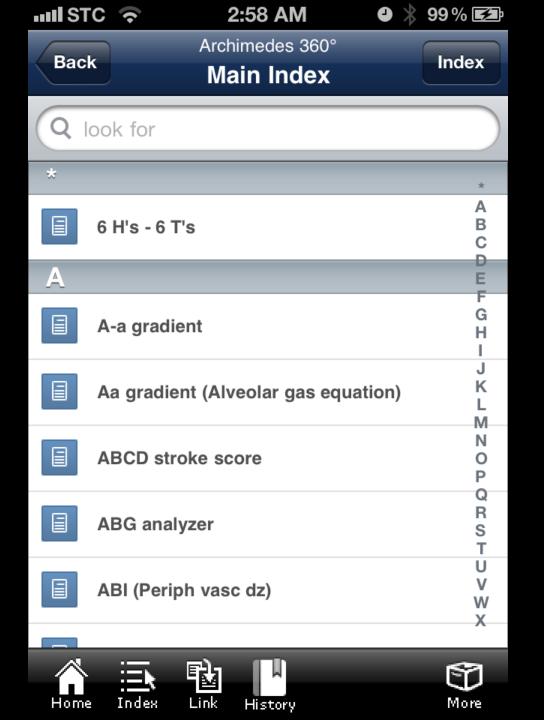




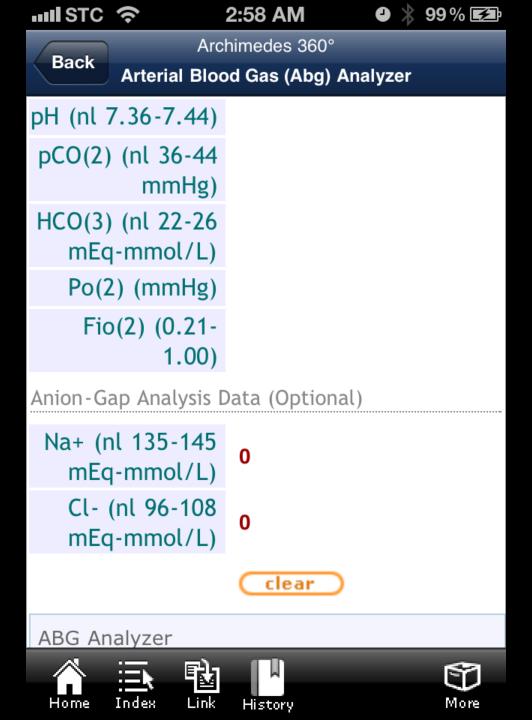












Which mobile drug reference app should I use?



- A. ePocrates
- B. Micromedex
- C. Medscape
- D. Lexi drugs
- E. Skyscape DrDrugs
- F. Skyscape AHFS Drug Information
- G. Medical Letter
- H. Other



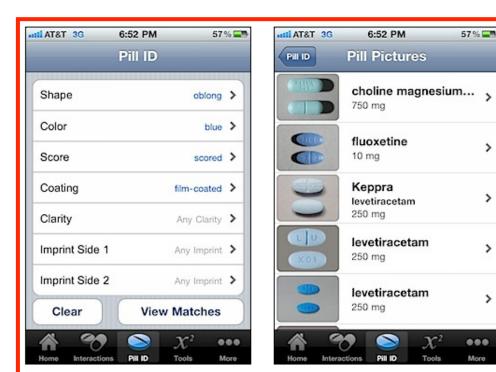
PDA vs Online Drug Information Databases

Medscape® www.medsca	ape.com									
Question Category	CP		EF		EP		LC		MM	
(no. of questions)	PDA	Online	PDA	Online	PDA	Online	PDA	Online	PDA	Online
			No. of Questions Answered Correctly							
Dosage, schedule (17)	15	16	12	12	12	13	13	13	14	15
Drug interactions (17)	14	14	12	12	13	13	13	13	13	15
Methods of administration (13)	12	12	10	10	10	12	12	12	11	13
Adverse drug reactions (13)	10	13	9	9	9	9	12	12	9	13
Over-the-counter products (13)	5	11	4	4	4	4	9	9	0	6
Indications, unlabeled uses (11)	11	11	6	6	6	6	10	10	7	10
Identification, content (10)	5	10	5	5	5	7	6	9	5	8
Pharmacokinetics (10)	2	8	3	3	5	5	7	8	5	9
Compatibility, stability (9)	4	8	1	1	4	4	9	9	4	8
Contraindications (9)	6	9	5	5	6	6	7	7	9	9
Dietary supplements (8)	7	8	0	0	7	7	1	6	7	8
Pharmacology, MOA (8)	4	8	7	7	7	7	8	8	5	7
Pregnancy and lactation (8)	5	7	6	6	6	6	8	8	7	8
Foreign drug identification (7)	0	1	0	0	0	0	0	3	0	3
Cost and economics (5)	0	1	4	4	4	4	4	4	0	0
			Percentage of Total Questions							
Total questions (158)	63.3	86.7	53.2	53.2	62.0	65.2	75.3	82.9	60.8	83.5

CP = Clinical Pharmacology OnHand and online; EF = Epocrates Rx Free and Online Free; EP = Epocrates Rx Pro and Online Premium; LC = Lexi-Drugs and Lexi-Comp Online; MM = mobileMicromedex and Micromedex; PDA = personal digital assistant; MOA = mechanism of action.

Epocrates

- * Premium version runs \$99-199 yearly
- * Itunes and Android
- * Free version offer Pill ID feature





>

>

...

Epocrates

* Also offers Medication interactions check, but

MedScape is more inclusive





Downsides to Epocrates Free version

- * Medical Calculator lacks content compared to MedCalc
- * Paid version includes disease monographs with treatment options, infectious diseases and IV compatiblity checker
- * Bottom line: Pill ID function is unique and useful



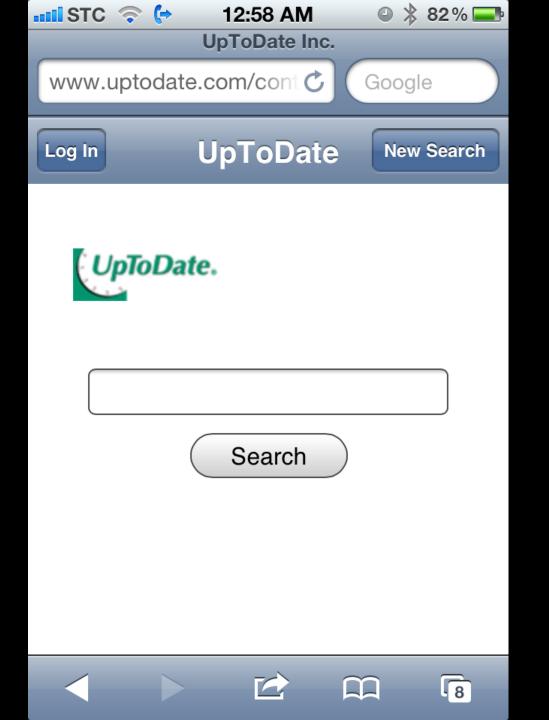
Lexi-Comp

* Library subscribes to web version of Lexi-Comp (no mobile access)



ison's

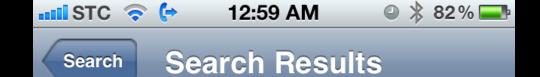












Search Results for "Januvia"

Sitagliptin: Drug information

Sitagliptin: Patient drug information

Glucagon-like peptide-1based therapies for the treatment of type 2 diabetes mellitus

Sitagliptin and metformin: Drug information

<u>Citaalintin and matformine</u>











Sitagliptin: Patient drug information

Brand Names: U.S.

Brand Names: Canada

Mexican Brand Names

Pharmacologic Category

What key warnings do I need to know about before > using this drug?

When is it not safe to use









Adverse Reactions Significant

As reported with monotherapy:

1% to 10%:

Cardiovascular: Peripheral edema (2%)

Endocrine & metabolic: Hypoglycemia (1%)

Gastrointestinal: Diarrhea (4%), constipation (3%), nausea (2%)

Neuromuscular & skeletal: Osteoarthritis (1%)

Respiratory: Nasopharyngitis (5%), pharyngitis (1%), upper respiratory tract infection (viral; 1%)











Pregnancy Risk Factor B (show table)

Pregnancy Implications Adverse events have not been observed in animal reproduction studies; therefore, sitagliptan is classified as pregnancy category B. There are no adequate and well controlled studies in pregnant women. Maternal hyperglycemia can be associated with adverse effects in the fetus, including macrosomia, neonatal hyperglycemia, and hyperbilirubinemia; the risk of congenital malformations is increased when the Hb A_{1c} is above the normal range. Diabetes can also be associated with adverse effects in the mother. Poorly-treated diabetes may cause end-organ damage that may in turn negatively affect obstetric outcomes. Physiologic alucose levels should be









Pricing: U.S. (www.drugstore.com)

Tablets (Januvia)

25 mg (90): \$645.98

50 mg (30): \$220.99

100 mg (30): \$223.99

Monitoring Parameters Hb A_{1c}, serum glucose; renal function prior to initiation and periodically during treatment

Reference Range Recommendations for glycemic control in adults with diabetes:

Hb A_{1c} : <7%

Preprandial capillary plasma glucose: 70-

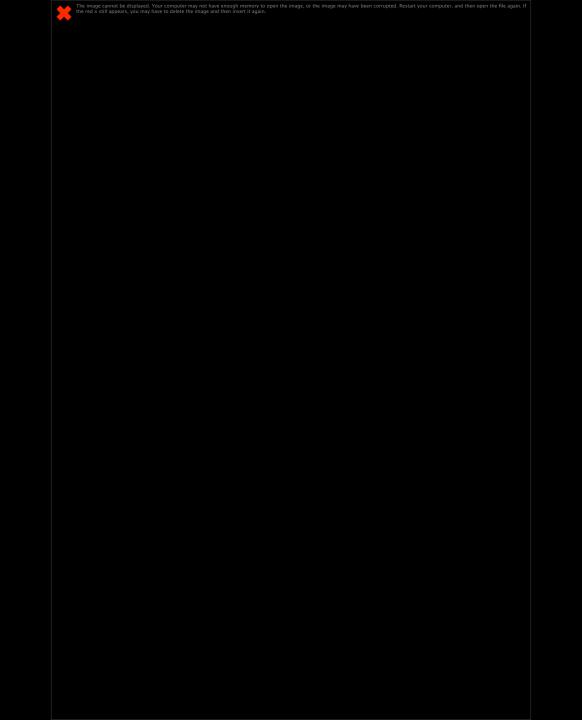




















See Pronunciation

 Adjunct to diet and exercise to improve glycemic control in patients with type 2 diabetes mellitus; may be used as monotherapy or combination therapy with metformin, a thiazolidinedione, a sulfonylurea, or insulin.

Contraind./Precautions



Contraindicated in:

- Type 1 diabetes mellitus.
- · Diabetic ketoacidosis.
- · Hypersensitivity.

Use Cautiously in:

Renal impairment (dose ↓ required for CCr
 <50 mL/min)









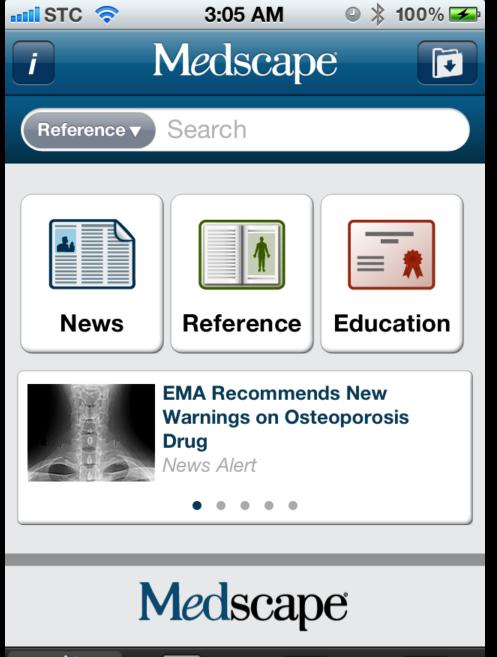




MedScape

- * Highly ranked mobile application
- * Best: medication reference (drug interactions), procedure guide, and clinical reference.
- * Over 7,000 medication and continuously updated
- * As clinical reference does lack detail for specific illnesses
- * A must have application! itunes and Android





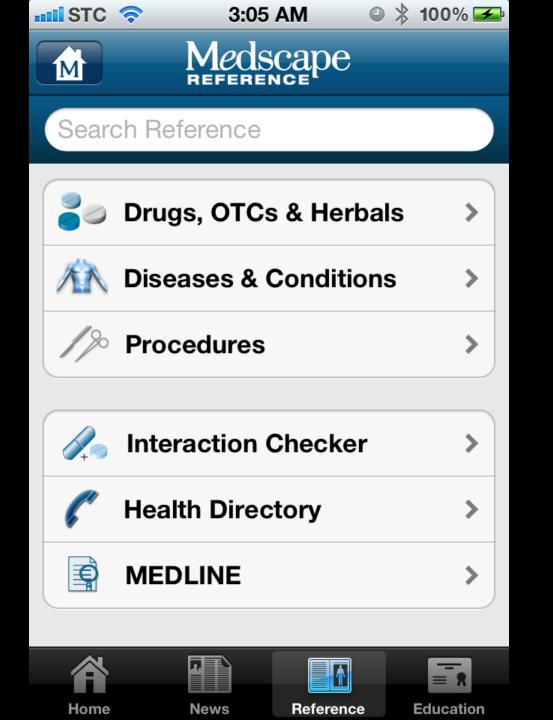




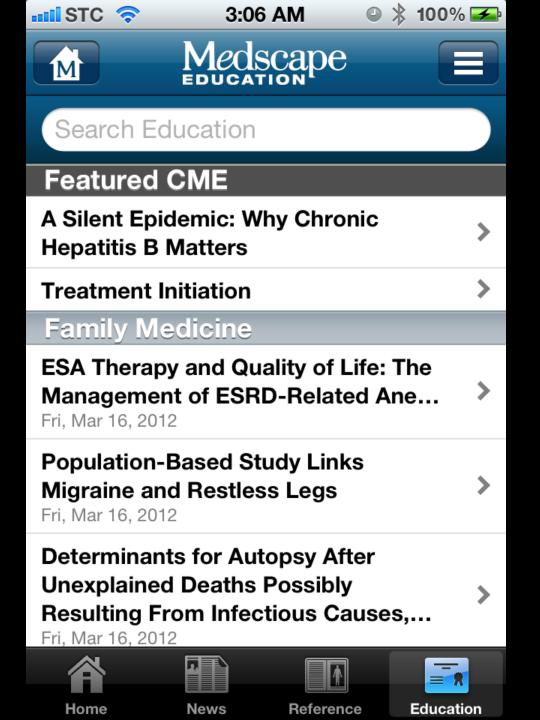
Home

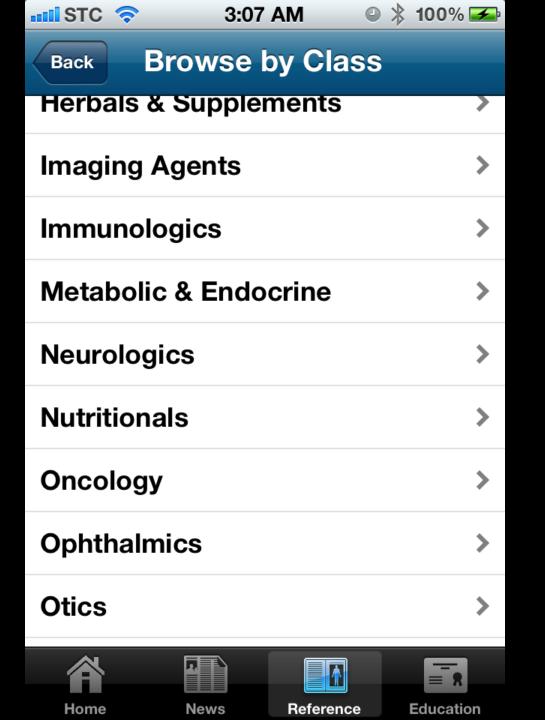


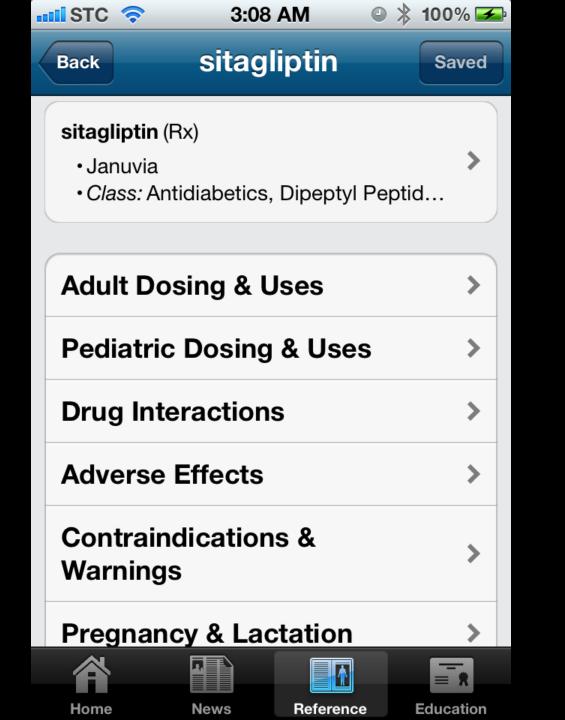




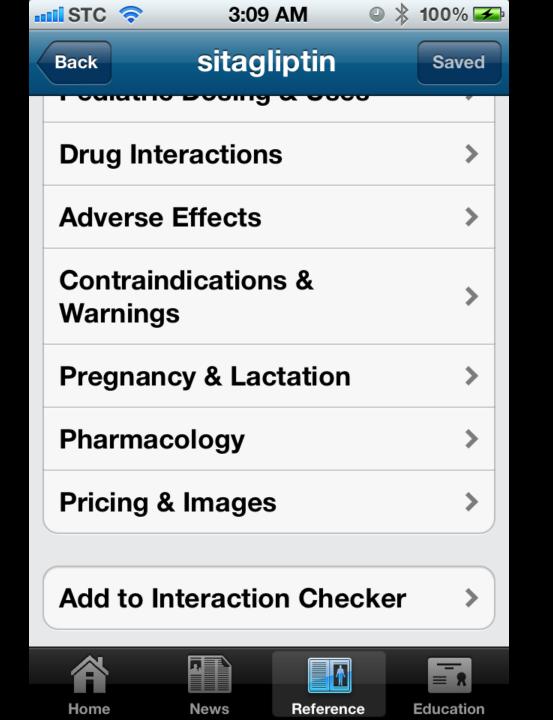




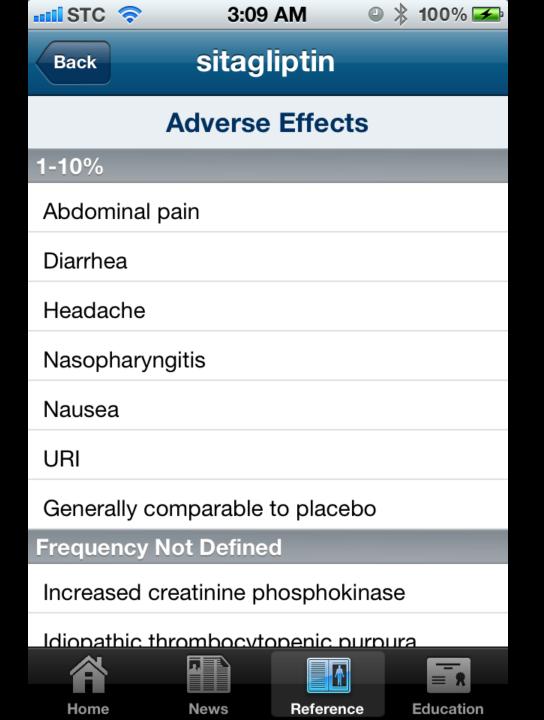




















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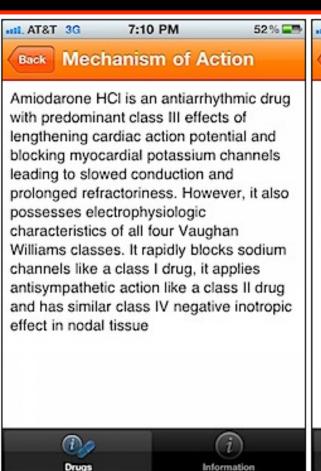
More

Micromedex

- * Straightforward user interface, not include references from desktop version
- * Includes mechanism of action and clinical teaching section
- * Contains the Saudi national formulary
- * Explains how a given medication works, how to take medication, side effects or toxicity alerts
- * Lacks strong drug interaction, itunes and Android, free







Back Clinical Teaching

- Drug causes sun-sensitivity. Advise using sunscreen and avoid tanning beds.
- Advise patient to have regular ophthalmic examinations, as drug may cause corneal deposits and visual disturbances.
- This drug may cause bradyarrhythmia, hypotension, constipation, loss of appetite, nausea, vomiting, abnormal gait, coordination problem, involuntary movement, peripheral neuropathy, fatigue, or malaise.
- Instruct patient to report signs/symptoms of cardiac arrhythmias, pulmonary toxicity, or hepatotoxicity.





51% -

How can I choose the best drug reference app for me?

- * Try the free version or the free trial
- * Ask your librarian about available paid resources
- * Do a few searches across all the apps
- * Get a feel for their interfaces, quality, organization
- * Keep multiple apps, different databases have different strong points











Labs

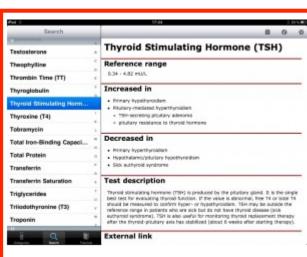
- * Lab 360 from Skyscape (free through SDL)
- * LabDx

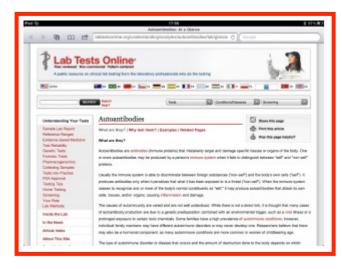


LabDx

- * 27 categories with ~200 laboratory tests
- * Includes links to labtestsonline.org
- * Downside: No pediatric values
- * \$9.99, itunes







What social media do you use in your mobile device?

- 1. SnapChat
- 2. Instagram
- 3. WhatsApp
- 4. Facebook
- 5. Flicker
- 6. Google Plus
- 7. LinkedIn
- 8. Twitter
- 9. Word press
- 10. YouTube
- 11. Other





What social media do you use in your medical practice?

- 1. SnapChat
- 2. Instagram
- 3. WhatsApp
- 4. Facebook
- 5. Flicker
- 6. Google Plus
- 7. LinkedIn
- 8. Twitter
- 9. Word press
- 10. YouTube
- 11. Other





Web 2 Apps

Collaborating Tools:

- Social Networking tools (Facebook, Myspace, Orkut, Linkedin,
- Wiki(Hawaiian langauage) meaning 'Quick'

Contributing to the Web Tools

- Blogging &
 Microbloging
 tools(Blogger,
 Wordpress Twitter)
- Video & Image Sharing tools: Youtube, Flickr

Aggregating and Marking Tools

- Feed Readers: (Google Reader, Bloglines, Netvibes
- Social Bookmarking:

 Delicious. Connotea
 Design for Scientists
 to bookmark, tag and share



Medical RSS feeds

- * American Journal of Hypertension
- * CNN.com Health News
- * <u>eDrugSearch.com's Healthcare 100</u>
- * JAMA
- * Medical News Today
- * Medscape News
- * Nature medicine AOP
- * Nature Webfeeds
- * NewsIsFree: Sources in Category Health
- * NLM RSS Feeds for News, Podcasts, and Webcasts
- * Reuters: Health News
- * ScienceDaily: Health & Medicine News





What is are podcasts?

- * Podcast = iPod + broadcast (audio file)
- * Podcast is a downloadable audio file You can subscribe via RSS or iTunes
- * You can listen when you commute to work or exercise





Medical Podcasts examples

- * Cochrane
- * Essential Evidence Plus, POEM of the Week
- * Centre for Evidence Based Medicine, Oxford University
- * Most of the medical journals
- * freemedicalpodcast.com
- * LearOutLoud.com

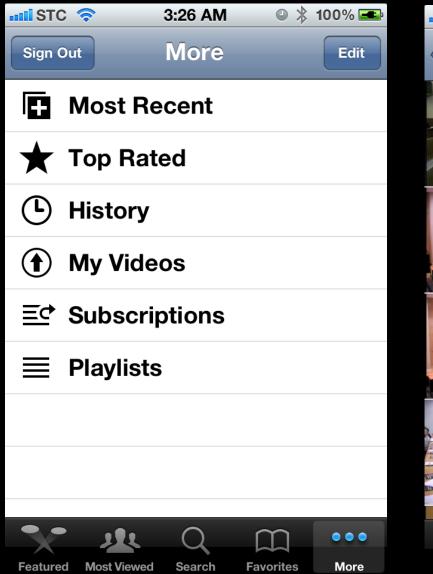


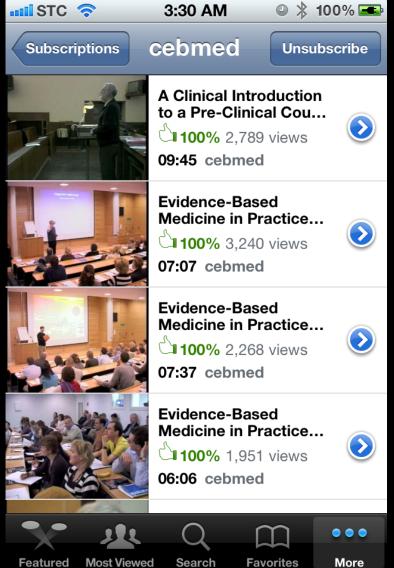
YouTube medical channels



- * CEBM Education Channel
- * KFSHHealthEdu _
- * 30 Youtube.com Medical Video Channels

















heart disease @heartdisease3 Alternative Medicine bit.ly/zIEZbl



MedlinePlus.gov @medlineplus Impatience, irritability & aggression may be linked to high trans fat diets, according to researchers 1.usa.gov/FOb1g0



WebMD @WebMD

Is your #pet as healthy as possible? See our pet health evaluator to help before you make a trip to the #vet. bit.ly/FPCr18



Medscape @Medscape #AAD2012: Vitamin D deficiency "epidemic" not from too little sun exposure; sun protection efforts should continue bit ly/y\/chkt













iTunes U



- * Examples
 - * School of Medicine, Yale University
 - * School of Medicine, Ohio State University



Manage Your References

* RefWorks - RefMobile

RefWorks's mobile site allows you to view references in your account, search within RefWorks and add new references and notes.



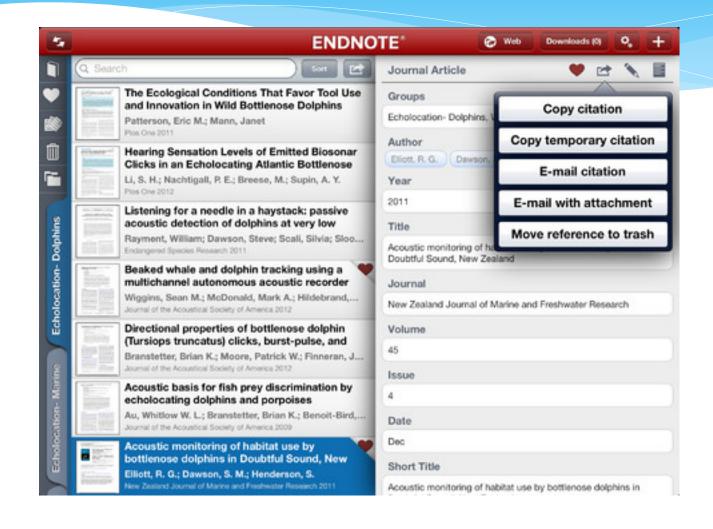








EndNote for iPad





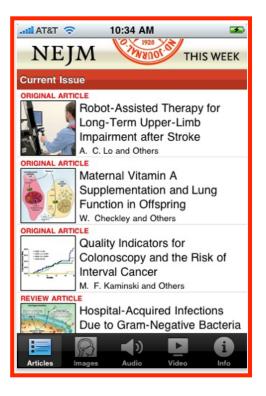
Reference / News applications

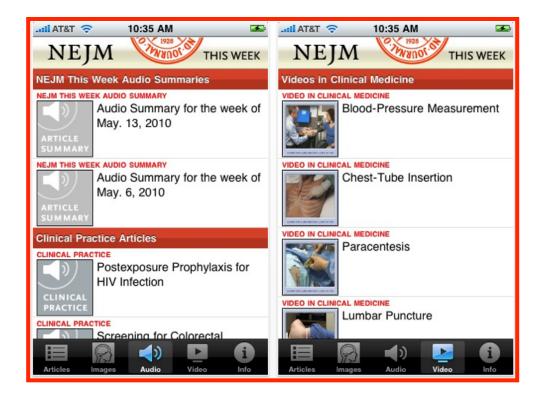
NEJM ✓
Harvard Public Health ✓
MedPage Today ✓
Medscape ✓
Internal Medicine News ✓



NEJM This Week

- * Weekly audio summaries, itunes
- * Videos of common procedures (paracentesis and lumbar puncture)
- * Free





Harvard Public Health

- * Videos
- * Podcasts
- * Breaking News
- * Free
- * itunes and Android

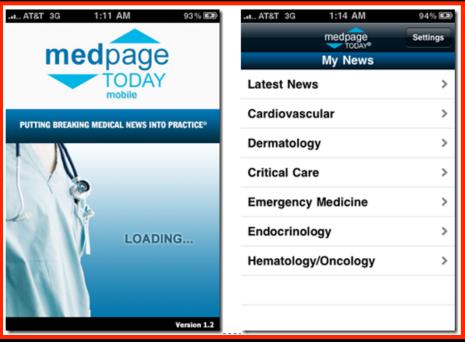




MedPage Today

- * Designed University of Pennsylvania School of Medicine
- * Access to up-to-date news sorted by field
- * Custom select favorite channels
- * Audio and video-education on the go!
- * Free
- * itunes and Android







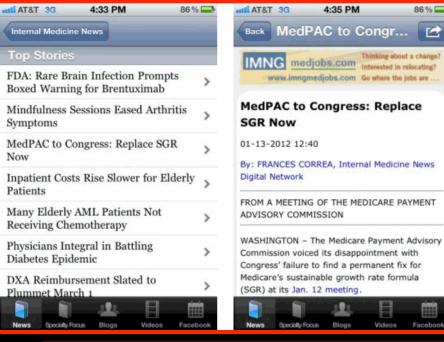


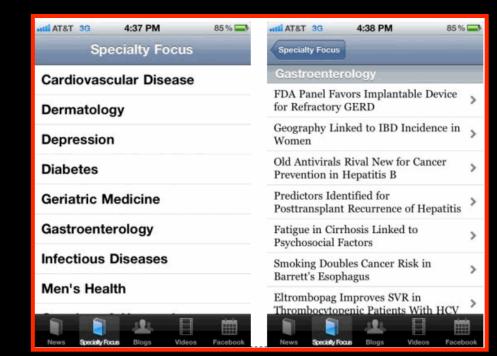


Internal Medicine News

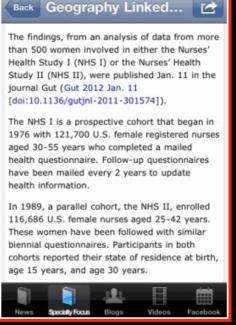
- * Independent bimonthly newspaper founded in 1968
- * Iphone and Itouch, No Android
- * Free
- * Options include: News, specialty focus, blogs, videos, Facebook
- * Include study citations for further reading
- * Stories can take time to load depending on connection
- * No "most popular" listing yet







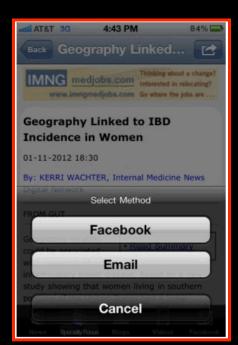




4:41 PM

atti AT&T 3G

84%





OB (Pregnancy) Wheel by Quatertone

- * Track patients pregnancy dating in order
- * Enter first day of last menstrual periodestimated date of conception, weeks gestational age, estimated due date
- * Can track by patient
- * Android marketplace



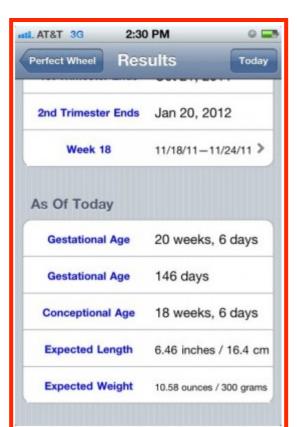


Perfect OB Wheel

- * Inability to search by fetal length
- * perfect replacement for traditional Obstetric dating wheels
- * \$1.99, itunes







Scutsheet-tracking patients

- * \$9.99, itunes
- * Android, beta, free
- * Track multiple patients
- * Add events for each patients
- * Calculate important parameters
- * Does not offer ranges
- * Does not screen for erroneous inputs
- * No print or email feature just yet

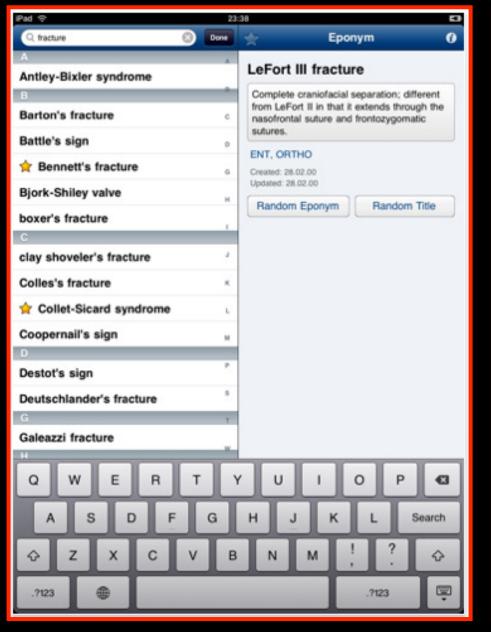


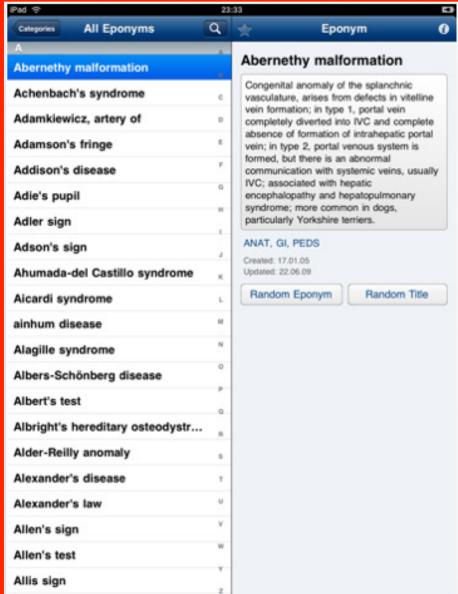


Eponyms

- * \$1.99 in itunes, 1,700, 28 categories, Android, free
- * Fully searchable from Andrew J. Yee (www.eponyms.net)







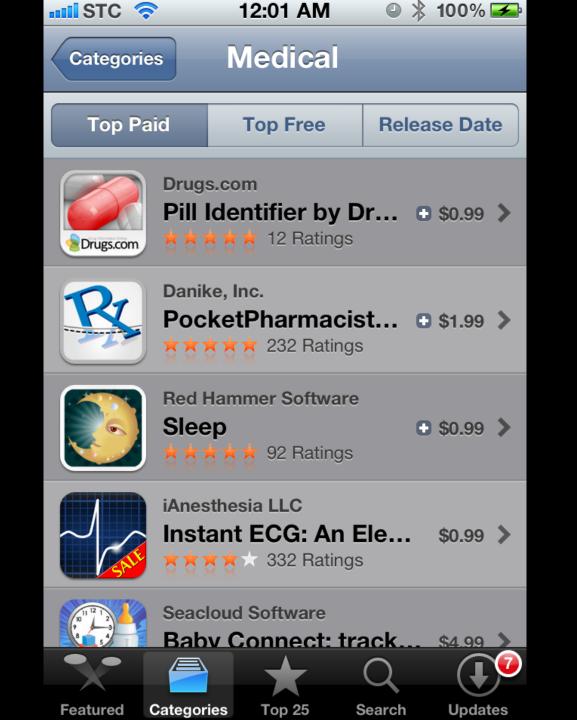


How do you plan to discover new EBM apps?

- 1. Ask your institute librarian
- 2. Search for medical apps websites
- Follow twitter medial apps #hash_tags
- 4. Search app store / android market
- 5. other







Your institute library

- * Examples:
 - * OHSU
 - * Harvard Medical School
 - * Stanford School of Medicine
 - * UNC
 - * BU Medical school



Review Sites

iPhone Medicine Blog

- * Created and maintained by Dr. Salvatore Volpe. Not updated as often as other pages on this list, but Dr. Volpe does have a Twitter feed on related topics. iPhone only, but links to related sites.
- * http://iphonemedicine.blogspot.com/



Review Sites

iMedicalApps

- * The most widely read of all medical app review sites, receiving over 400,000 page views per month. Content is written by a team of doctors and medical students. iPhone, iPad, Android and Blackberry reviews.
- * http://www.imedicalapps.com/



Review Sites

MobiHealthNews

- * A newsletter that chronicles the healthcare sector's adoption of mobile technology
- * http://mobihealthnews.com



In summary,

- * What is the best App to use?
- * It depends on the question you ask and information you need



