Florida State
UNIVERSITY
COLLEGE OF MEDICINE

Using
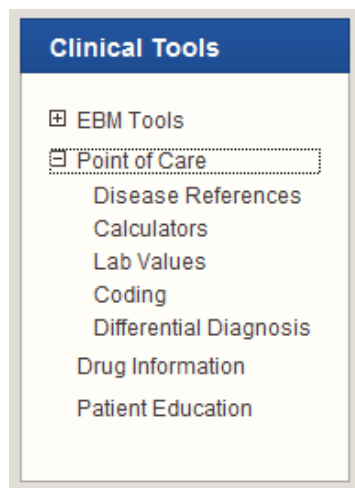# Decision Support
Resources

FSU College of Medicine
2016

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Using Decision Support Resources

Table of Contents

Clinical Tools

⊞ EBM Tools
⊟ Point of Care
   Disease References
   Calculators
   Lab Values
   Coding
   Differential Diagnosis
Drug Information
Patient Education

Access each of the above subscription resources thru the FSU College of Medicine Web site:

www.med.fsu.edu/library

Use EZProxy from off campus.

This handout was designed for FSU College of Medicine faculty and students to assist them in using the extensive resources of the Maguire Medical Library for decision support. Exercises for practice are included.

Point of Care (POC) Decision Support Resources

For years the medical student, resident and practicing physician relied on a white coat stuffed with notes and manuals to use as point of care quick references. By the end of the 20th century, these had been largely replaced by mobile technology: handheld devices loaded with much more information that could ever be stuffed into the pockets of a white coat.
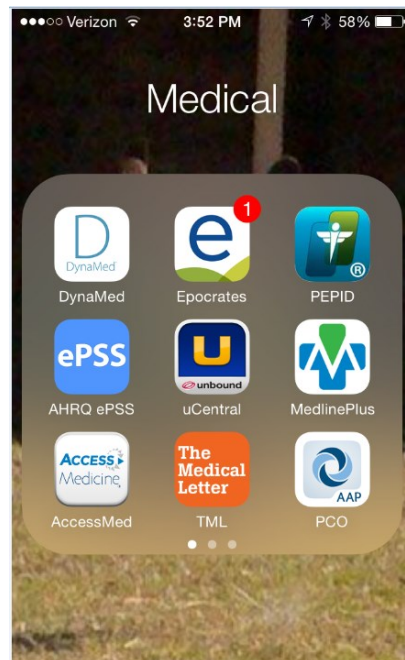
In the last 10 years, these handheld devices have morphed from low memory, hard to load PDAs like the Palm Pilot and PocketPC to multi-function, large capacity smart phones and tablets. Those physicians who have the luxury of an iPad easily at hand while seeing patients have also the resources of the web to call on to answer questions at the point of care.

iPhone loaded with medical software

The library web site has organized their clinical resources to reflect the types used by physicians on a daily basis. We have developed faculty development workshops to address each of there types of resources: Evidence based medicine tools, drug resources, patient education resources, and point of care resources.
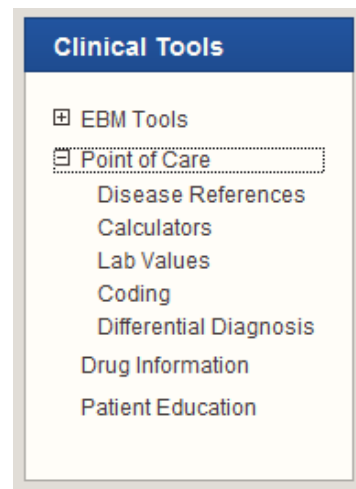
This handout supports the content covered in our Point of Care Decision Support workshop and covers how to use most of the resources listed under Point of Care on the Maguire Medical Library website. These resources can be broken down into the following categories:

Screenshot of Clinical Tools on the Medical Library web page.

- ♦ **Differential Diagnosis Generators**
- ♦ **Disease Quick References**
- ♦ **Medical Calculators**
- ♦ **Laboratory resources**

Currently, the subscription resources covered include Epocrates Essentials and Epocrates Online, PEPID, Essential Evidence Plus, Dynamed, Pediatric Care Online, the multiple resources in uCentral and Access Medicine. Both PEPID and Epocrates include all of the tools listed above, plus drug information. There are some nice free resources that need to be mentioned, like Medscape's app.
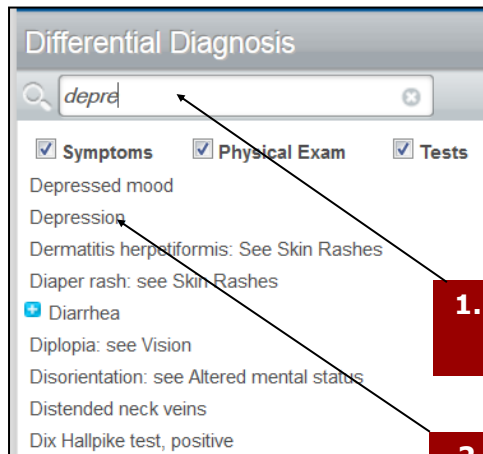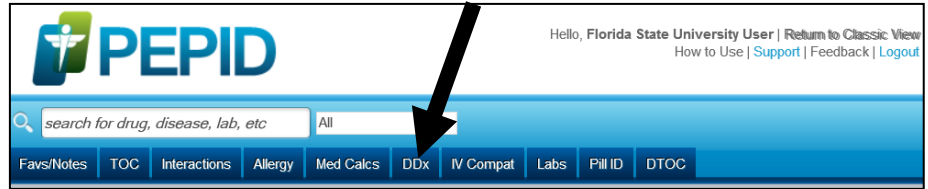
PEPID DDX— Online and Mobile

This feature of PEPID lets you enter symptoms, labs and findings and generates a differential with the possibilities given a score from a high of 5 to a low of 1.
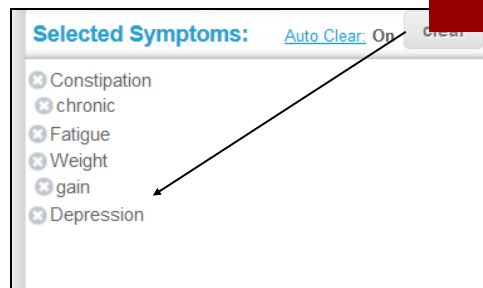
PEPID Online

From the library web site, follow the link to PEPID. Click on the DDX tab on the tool bar.
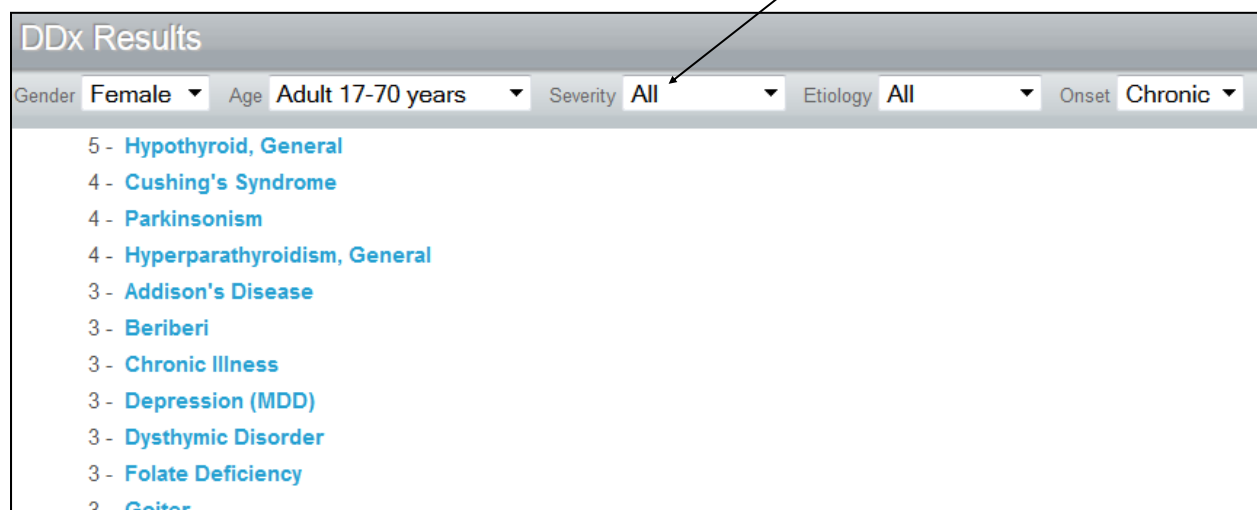
One at a time, enter the first few letters of your symptoms, findings or labs, then click on the appropriate choice adding them to the bottom half of the tool. The diagnoses will pop up as you add terms. These are ranked from most likely (5) to least likely (1).

1. Type in first few letters of symptom, finding or lab

2. Click appropriate term to add to bottom

Results can be filtered by Gender, age group, severity, etiology and onset

DDx Results

Gender **Female** ▾ Age **Adult 17-70 years** ▾ Severity **All** ▾ Etiology **All** ▾ Onset **Chronic** ▾

5 - **Hypothyroid, General**
4 - **Cushing's Syndrome**
4 - **Parkinsonism**
4 - **Hyperparathyroidism, General**
3 - **Addison's Disease**
3 - **Beriberi**
3 - **Chronic Illness**
3 - **Depression (MDD)**
3 - **Dysthymic Disorder**
3 - **Folate Deficiency**
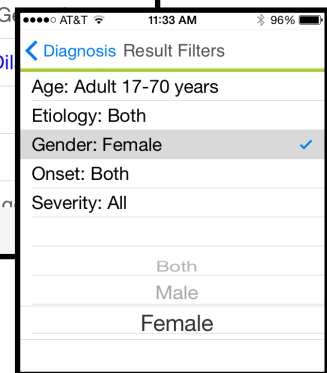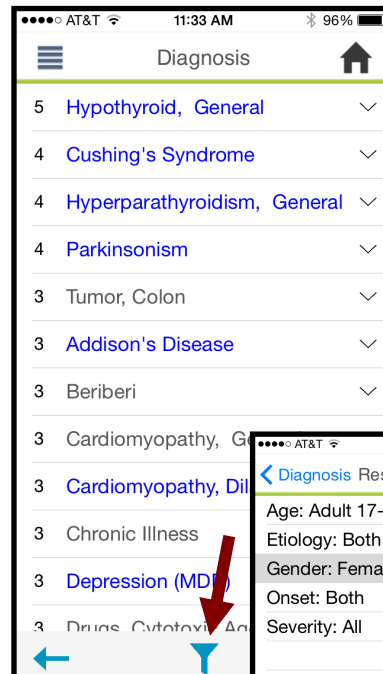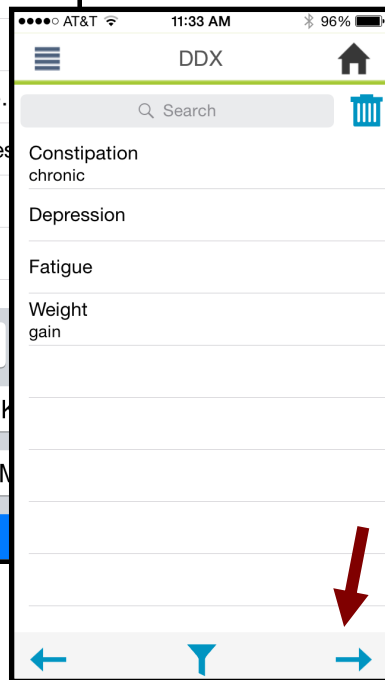3 - **Goiter**

PEPID DDX— Online and on the iPhone

PEPID Online continued

Click on a diagnosis in the list to bring up the disease monograph.

PEPID MOBILE iOS or Android

On the mobile device, run PEPID, choose the **Clinical Rotation Companion** from the first page, then click the **DDX** icon. A very similar interface to the web comes up. Type the first few letters of your symptoms, click the appropriate term to add it to the list. Once all the symptoms, findings and labs are added, click **Right Arrow** to get the list. Items in the differential are assigned a numerical score from 5, the most likely, to 1, the least likely. You tap the disease to see the disease monograph. To Filter by Age, gender, etc. click the Filter (funnel) symbol at the center bottom.
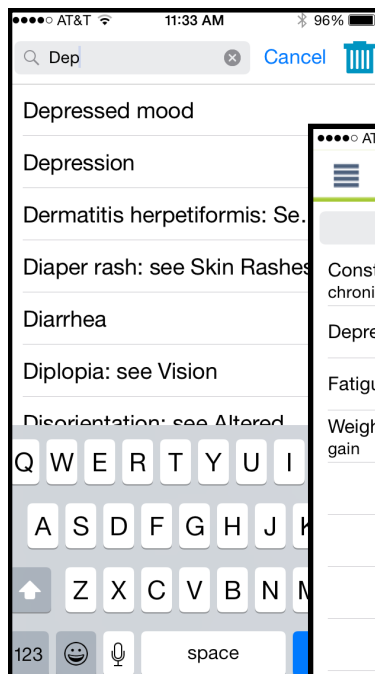
Diagnosaurus — Online and on the iPhone

Diagnosaurus is a very simple quick reference that provides 1000 differential diagnoses by symptom, disease or system. It is available online in **Access Medicine** and in the **Access Medicine app**. **Access Medicine** can be reached in the **Quick Links** dropdown on the Medical Library web page.

Links are provided in the lists of possible diagnosis, which search the content of the resources in Access Medicine, which includes most of the McGraw-Hill textbooks, a Quick Dx reference, as well as patient ed materials.

ACCESS Medicine
Trusted Content. Instant Answers.

| Home | Readings | Quick Reference ▾ | Drugs | Multimedia ▾ | Cases ▾ | Self-Assessme |

Search AccessMedicine

Diagnosaurus®

- All Differential Diagnoses
- By Symptom
- By Disease
- By Organ System
- Instructions
- About
- How to Cite this Resource
- Diagnosaurus for mobile

All Differential Diagnose

A B C D E F G H I J

Abdominal aortic aneurysm
Abdominal pain
Abdominal pain, generalized
Abdominal pain, left lower quadrant
Abdominal pain, left upper quadrant
Abdominal pain, right lower quadrant
Abdominal pain, right upper quadrant

Blindness, acute

DDx

Inflamed eye (red)
- Acute glaucoma
- Uveitis
- Keratitis (corneal ulcer or inflammation), e.g., herpes
- Conjunctivitis (blurry)

Uninflamed eye
- Retinal detachment
- Central retinal vein occlusion
- Central retinal artery occlusion
- Vitreous hemorrhage
- Macular degeneration (exudative)
- Anterior ischemic optic neuropathy, e.g., temporal (gi
- Optic neuritis, e.g., multiple sclerosis
- Papilledema
- Hyperglycemia (blurry; subacute)
- Polycythemia vera (blurry; subacute)
- Trauma
- Conversion disorder
- Episodic: amaurosis fugax (TIA), ophthalmic migraine
- Diplopia

macular degeneration

Search only displays content that you own, as long as you are signed in.

- Readings (220)
  - Textbooks (207)
  - Diagnosaurus (9)
  - Harrison's Manual (2)
  - Quick Dx and Rx (2)
- Images (29)
- Cases (2)
- Patient Education (6)

Quick Dx and Rx

▼ Narrow By Textbook   ▼ Narrow By Topic

2 results in Quick Dx and Rx

QMDT Quick Medical Dx & Rx **LANGE**
Macular Degeneration, Age-Related
Quick Medical Diagnosis & Treatment 2015
... Age-related macular degeneration is the leading cause of permanent...
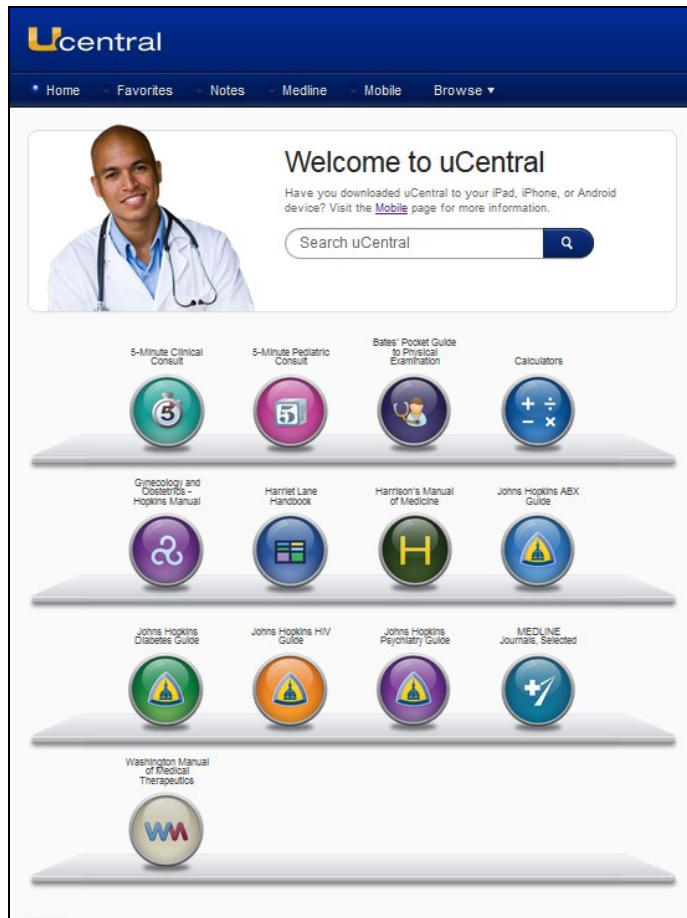
QMDT Quick Medical Dx & Rx **LANGE**
Vitreous Hemorrhage
Quick Medical Diagnosis & Treatment 2015
... – Neovascular age-related macular degeneration – Blood dyscrasias – Trauma – Subarachnoid hemorrhage...
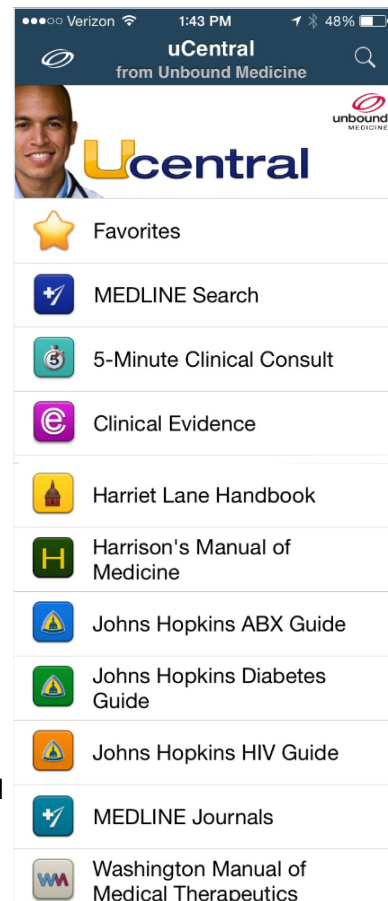
uCentral — Online and App

uCentral is the online and mobile interface created by Unbound Medicine, Inc. The CoM Medical Library subscribes to many excellent resources with this company because of the multiplatform options and excellent interfaces. We will be adding more as time goes on.

Currently (Summer 2016) we subscribe to the resources pictured at left and below in **uCentral.**

5-Minute Clinical Consult (5MCC) helps diagnose, treat, and follow up on over 600 medical conditions seen in everyday practice. 5MCC 2014 is organized in a proven, rapid-access format with concise, action-oriented entries, so you can answer questions fast and provide premium care to your patients. 5MCC also includes 200 pediatric topics from the latest edition of 5-Minute Pediatric Consult.

Harrison's Manual of Medicine. Derived from the best-selling internal medicine reference in the world, Harrison's Principles of Internal Medicine, this popular reference delivers fast, to-the-point guidance on the clinical problems seen in everyday practice. It focuses on diagnosis and therapy with an emphasis on patient care. It offers high-yield coverage of etiology, signs and symptoms, physical examination, laboratory findings, and practice guidelines.

The **Washington Manual of Medical Therapeutics** provides residents and senior medical students on inpatient medicine rotations practical clinical recommendations in an easy to digest format. This application streamlines access to clear information outlining general principles, diagnosis, and extensive treatment options for hundreds of common medical conditions. Tables and charts have been optimized for easy viewing on any of your mobile devices.

5 Minute Clinical Consult (5MCC) — Online and on the iPhone

We will focus on this resource because of the utility of the resource in the uCentral interface. The navigation is simple yet effective.
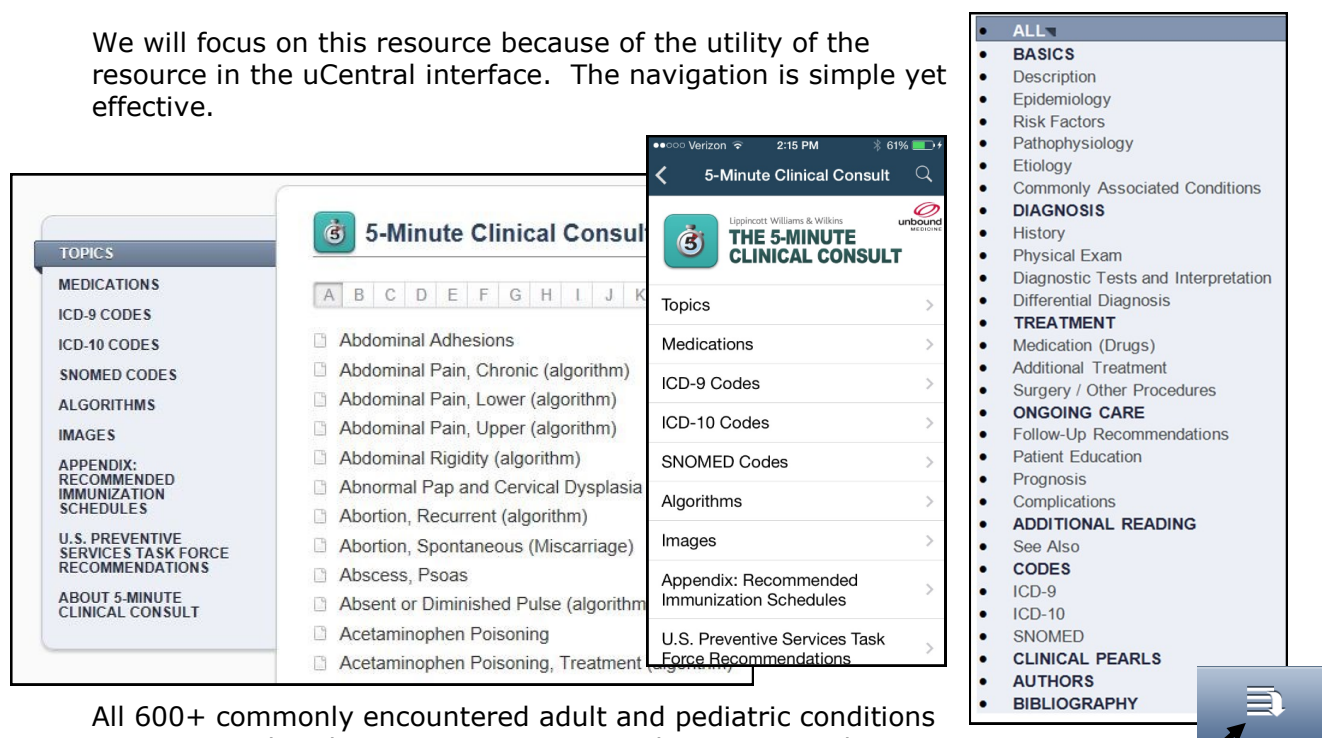
All 600+ commonly encountered adult and pediatric conditions are organized in the same manner using the structure above right which makes it easy to navigate to the needed information in a well built clinical question. Topics are cross-linked with similar or related topics in other uCentral Resources, as shown in the Asthma monograph below. There are also algorithms, images, and sufficient coding information to classify this as a coding tool.

Tap to pull up sections on mobile version
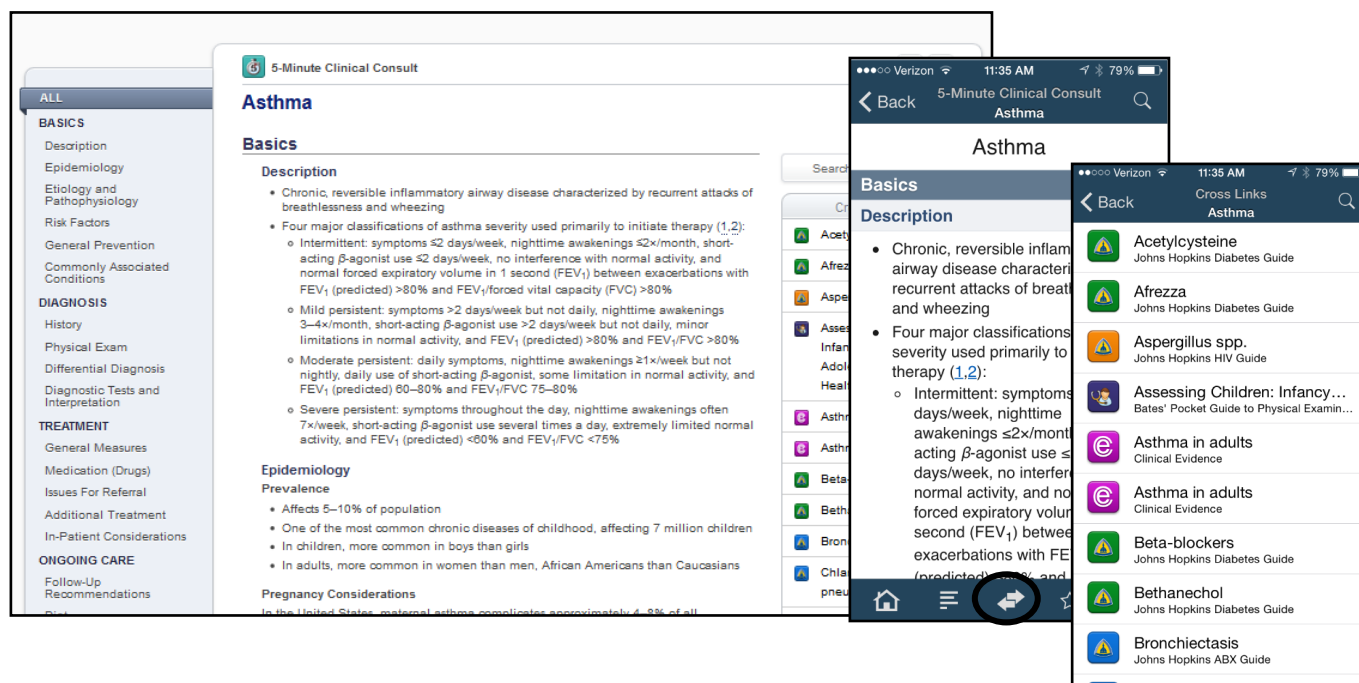
Epocrates Diseases Mobile

Epocrates Essentials includes a disease quick reference which contains the content from BMJ that has evidence-based recommendations and nice images. The Epocrates developers have made it highly convenient in that it links drugs to the Rx section so that a series of questions on one topic can be answered in a minimum number of taps. The main index will feel very familiar. The iPhone version has a lot of moving forward and going back. The pictures are not actually stored on the iPhone. They are pulled from the web, so you need an internet connection, either 3G or wifi to see the pictures.
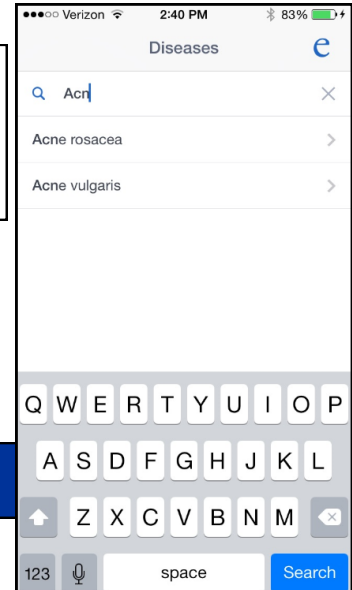
Pick Disease

Pictures are from an iPhone

Note Add to Favorites

Drug names are linked to the Rx section
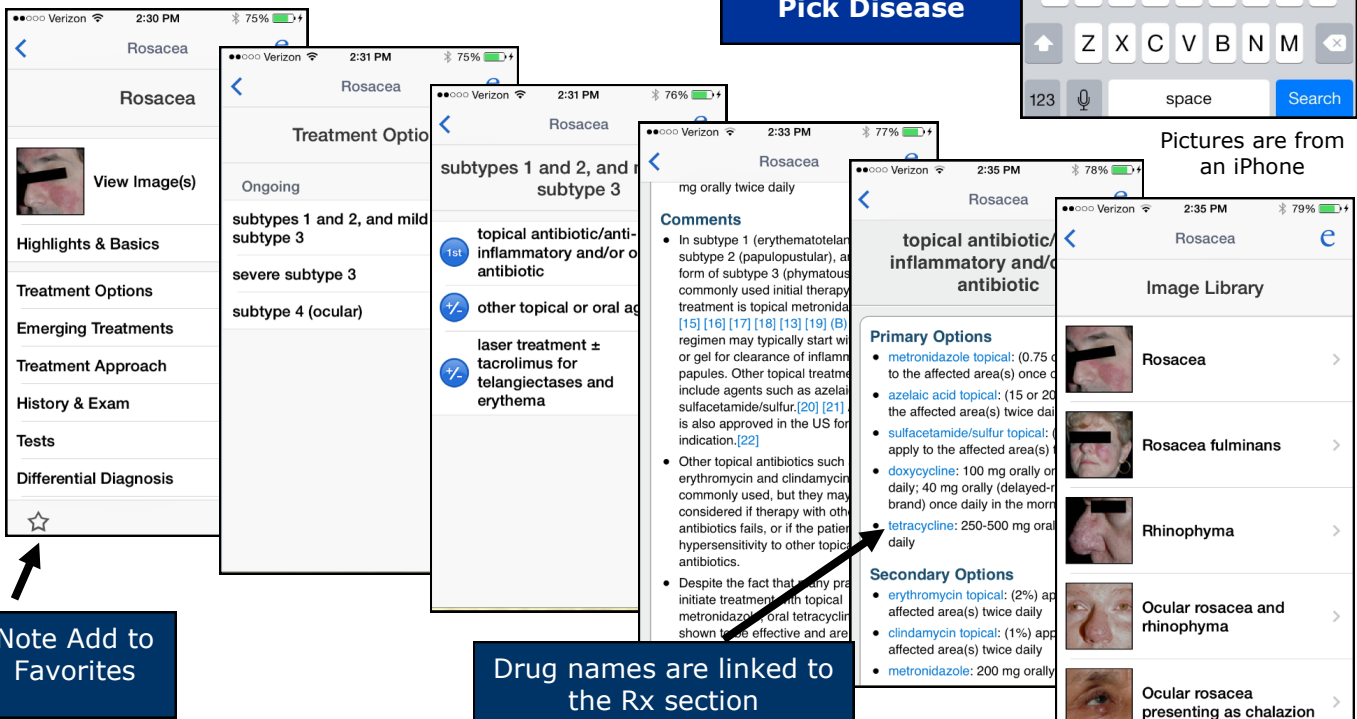
Sections List

- **Highlights & Basics**—description, genetics, incidence and prevalence, predominate age, risk factors, age-related factors, complications, prognosis, associated conditions.
- **Tx Options—**setting general measures, surgical measures, activity/diet, patient education, medications, prevention.
- **Emerging Treatments**
- **Treatment Approach**
- **Hx/Exam**
- **Tests**
- **Differential Diagnosis**
- **Diagnostic Approach**
- **Follow-Up**
- **Citations**
- **Image Library**

Notes — There is a little icon in the bottom right corner that allows you to annotate the monograph

DynaMed Plus – Web Version

DynaMed Plus is an evidence-based reference designed to provide the most useful and current disease information at the point-of-care for health care professionals. Information on diseases, drugs, procedures and clinical presentations are organized into

categories for ease of use and quick answers to clinical questions. In addition, are images and graphics, the Micromedex drug database, MedCalc 3000 calculators and ICD9/ICD10 codes. *DynaMed Plus* provides citation links to the supporting articles for the given topic.
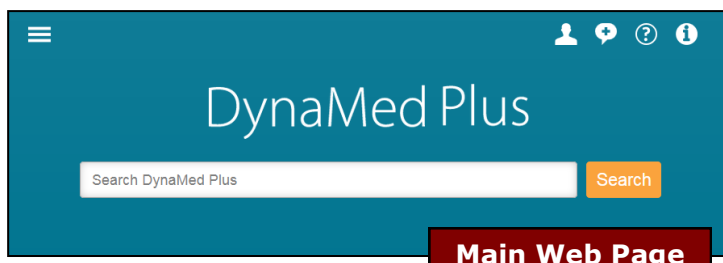
To find a topic, image or calculator, type a few words into the Search box.
- You now have two choices for searching:
    1. Pick a topic from the drop down which will take you directly to the subject or
    2. Use the **Search** function that will pull up all the resources that contain the word or phrase you typed. Search results are organized with images listed first, then calculators, followed by topics.

The following is an example of the **Search** feature using the term "diabetes risk".

TIP: Selecting the *DynaMed Plus* logo next to the search button takes you back to the homepage.

DynaMed Plus – Web Version

Each topic begins with a section called Overview and Recommendations which is a summary of the major content. Blue text are always hyperlinks to either definitions, other topics, or other places within the current topic.

For ease of finding answers to specific clinical questions, you have the ability to Search Within Text which will highlight all occurrences of the term and allow you to jump to the Next or Precious incidence of the term.

DynaMed Plus – Web Version

Following citation links to the original articles thru PubMed
All article reviews are graded with either a Level of Evidence or Strength of Recommendation, and linked to the original article citation in PubMed (see below). If you should have any problems or issues obtaining an article, contact the Maguire Medical Library, (850) 644-3883 for assistance.

DynaMed Plus Online Exercises for Practice

1. A 65 year old Jewish woman is worried that she may get Parkinson's Disease because her father was diagnosed with it when he was 65. He was a heavy smoker. She does not smoke or drink alcohol or coffee. What do you tell her?

2. What might she do to help prevent Parkinson's Disease?

3. Can you give her any information to take home with her?

DynaMed Plus — MOBILE Version

The mobile version of DynaMed Plus contains all of the content that is on the web.The app is designed to update in the background Search results are organized like the online version. Sections within topics are accessed by a button at the top right of the screen. You can *Search Within Text* in a topic for terms or phrases. Terms will be highlighted and navigation between terms is at the bottom of the screen.
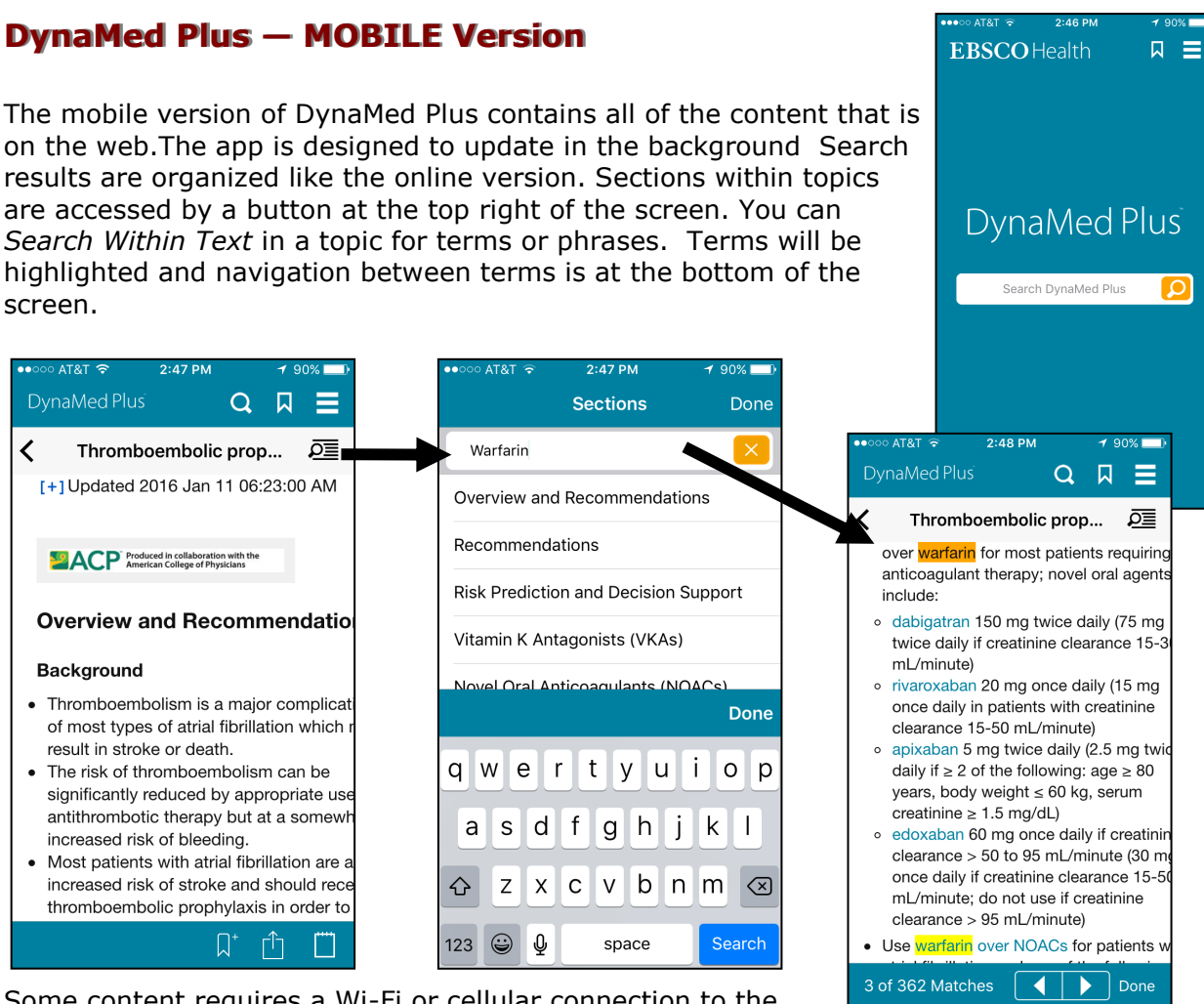
Some content requires a Wi-Fi or cellular connection to the web to access. These include definitions of terms and links to referenced journal articles.

Reference links are embedded in the content which will direct you to the mobile PubMed listing for the article. Online, the Find@FSU button will appear, linking to the full text article. On the app, the button will not appear, but there are links to the full text articles which may work. Many of the journal sites are mobile-formatted.

DynaMed Plus Mobile Exercise for Practice

What is the prognosis for a 60 y/o female with Stage IV metastatic breast cancer?

Medscape Reference Website

While not the most current, evidence-based disease reference, the disease references in Medscape, which used to be called eMedicine, are very popular with students because the content will show up in a Google search. The site contains a nice collection of images.

Search for Topic Desired

Use Tabs and Links to navigate monograph

Medscape Exercises for Practice
A) What is the mortality rate for persons with Acute Respiratory Distress Syndrome?

B) A 55 year old man is having trouble sleeping at night. He wants to know if there is a particular medicine he should take as he has seen quite a few advertised on the television.

Medscape App (disease information)

Medscape is also available as a free resource on mobile devices. In addition to the disease content from eMedicine, it contains a drug reference, interaction checker, and procedures section that is unique. You should use the Search feature to find the condition desired because tapping on Diseases and Conditions brings up a list of specialties.

The disease reference is organized into the following categories: clinical presentation, differential, workup, treatment & medications, medications, and follow-up. Under Workup, if there are histological findings, imaging studies and such, there are sometimes images. Look for Media Gallery which will contain all the images from that condition.

The sections are accessed by touching the link under the condition name at the top center.
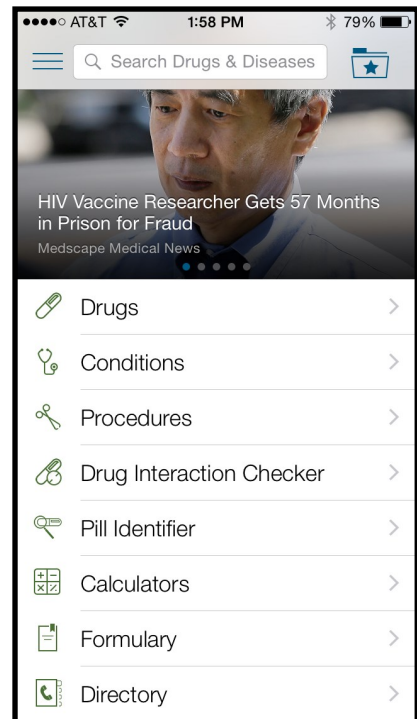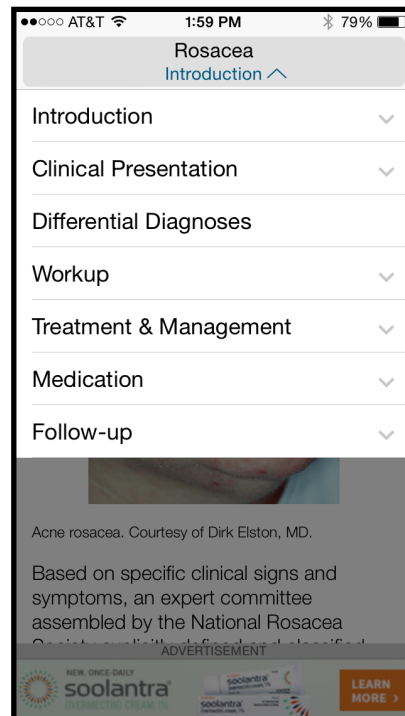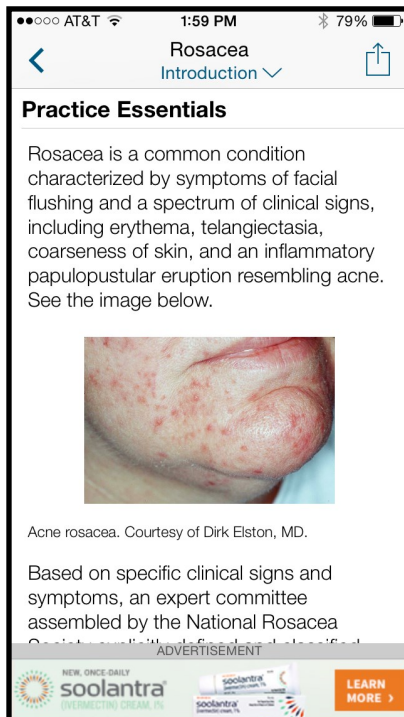
PEPID Web Version

PEPID, which used to stand for "Portable Emergency Physician Information Database" when it was developed back in the '90s, is now a very comprehensive, highly respected reference that is available in a variety of formats for all specialties and types of providers. We have purchased the Clinical Rotation Companion, which is their top-of-the-line resource, and compares with Epocrates Essentials in its usefulness at the point of care. Here we will discuss the disease reference aspects of PEPID. We will emphasize the way that disease summaries are linked to drug information, images, and the evidence-based FPIN clinical inquiries.

From the library web page, click on the **PEPID** link in Quick Links list. You will see the main interface and Table of Contents in the middle, with navigation tabs at the top of the screen.

To find information on a disease or condition, type the first few letters of the condition in the **search** box. The alphabetical list will automatically advance to find the first letters you have typed. When you see the condition, click on it, such as **Otitis** at right. The TOC on ENT conditions will open. Find Otitis Media, and click on Diagnosis or Treatment depending on your clinical question.

PEPID Web Version (continued)

Here is the Treatment section of the Otitis Media monograph. Notice that the drugs are highlighted and underlined. These are linked to the extensive Drug Reference section of PEPID. We will look at those links in the Mobile version. However, here note the links to the Evidence-Based Inquiry.

Subsections	Otitis Media: Treatment
Acute Tx	**Acute Treatment**
- Empiric Tx	1. Antibiotics are not necessary to treat uncomplicated acute otitis media in an otherwise healthy child **(Go to Evidence-Based Inquiry)**
-- No Recent Tx	2. Consider observation without antibiotics for 48-72 hr if:
-- Recent Tx	○ Child 6 mo to 2 yo only if:
- Clinical Failure	■ Diagnosis is uncertain
- Less Effective Abx	■ Child otherwise healthy
- Prophylaxis	■ Sx not severe
Follow Up	○ Child >2 yo
- ENT Referral	■ Otherwise healthy, and symptoms not severe
- Admit	3. Empiric treatment
Prevention	○ No evidence supports any of the commonly used antibiotic regimens over another **(Go to Evidence-Based Inquiry)**
Evidence-Based Inq	○ Otalgia Analgesia:
	■ Oral
	■ **Acetaminophen** +/- **ibuprofen** for fever & pain control
	■ Topical anesthetics
	■ Useful option for acute ear pain due to otitis media or otitis externa **(Go to PURL)**
	○ No antibiotics in past month
	■ **Amoxicillin: (Go to Evidence-Based Inquiry)**
	■ First-line choice **(Go to Evidence-Based Inquiry)**
	■ Regular dose: 40 mg/kg/day div BID-TID
	■ High-dose: 80-90 mg/kg/day div q12 hr or q8 hr PO (>2 yo) , no Otalgia

Otitis Media: Treatment

Evidence-Based Inquiry

1. If a child with acute otitis media is treated with antibiotics, what is the proper duration of therapy?
2. Does Prevnar vaccine change the incidence of otitis media?
3. What treatment options for pediatric acute otitis media are safe and effective?
4. Should you use antibiotics to treat acute otitis media in children?
5. Does pneumococcal conjugate vaccine prevent otitis media?
6. In children with acute otitis media (AOM), when are antibiotics warranted and what is the appropriate duration of treatment?
7. Are oral steroids effective in reducing hearing loss and improving language development in children with otitis media with effusion?

Clicking on the link will jump down to the Evidence-Based Inquiries in FPIN on otitis media. Selecting the one shown will pull up the summary of the evidence on treatment of OM shown below..

What treatment options for pediatric acute otitis media are safe and effective?

Summary

1. Safe treatment options include immediate administration of antibiotics or analgesics alone
   ○ Although treating with antibiotics right away may increase the rate of clinical improvement, antibiotic use increases the risk of vomiting, diarrhea, and rash
   ○ Many different antibiotics may be effective for treatment of acute otitis media (AOM), however, a recent guideline from the AAP and the AAFP recommends amoxicillin as the first-line choice
   ○ Longer antibiotic use reduces the risk of treatment failure in the first 20 days
   ○ Both ibuprofen and acetaminophen reduce earache

Evidence

1. The evidence reviewed here evaluates the overall efficacy of antibiotics compared with nonantibiotic treatment, the comparative efficacy of different antibiotics, optimal treatment length, and pain control in children with AOM
2. **TREATMENT: IMMEDIATE, DELAYED, OR NONE**
   ○ An evidence report/technology assessment and an evidence review have addressed the question of AOM treatment in children (**1, 2**)

PEPID Web Version (continued)
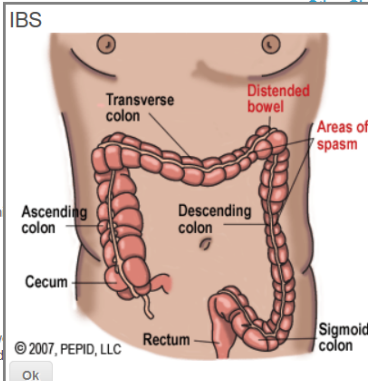
PEPID includes **illustrations** including Clinical Anatomy, Examination, Rhythm Strips, Women's Health & Obstetrics, Anesthesia / Blocks, Airway, Trauma, Procedures and other images. Look for the View Image link to pull up images in the medical content or use the **Table of Contents** to see all **Illustrations**.

Navigation of PEPID

PEPID has a medical dictionary accessed from the last tab on the navigation bar. Because it was originally designed to be an emergency reference, there is also extensive information like the section on Toxicology (above), and protocols for ACLS, ATLS, and PALS. Search for these like you would any disease or drug.

PEPID Mobile Version

The Mobile version of PEPID is very similar to the Web version. To get to the Medical Content, when PEPID opens, select the **CRC Platinum Suite**. Type the first few letters of the condition you are looking for and the Index will jump to the closest word. Tap the condition. The Table of Contents will come up. Select the specific condition. In this example, Migraine Diagnosis, Treatment or Prevention. The navigation pane for the section retracts from the right with a little arrow. Internal links are imbedded to drugs and other topics.

Tap the drug to jump to the drug monograph.

Epocrates Online and Dynamed Plus — MedCalc 3000 Medical Equations

Epocrates and Dynamed Plus features an impressive collection of medical calculators pro-duced by MedCalc3000. These are not available on the Mobile version of Epocrates, but are in Dynamed Plus. Instead the Epocrates App has a the MedMath calculators which have been available free for the PDA for years. MedCalc has unit and dose converters as well as calculators that it calls Medical Equations. See the next page for a list of these Medical Equations.

1. Pick your calculator from list

Iron Replacement (parenteral dosing) for Iron Deficiency

$$Dose = 0.3 * Weight * (100 - (Hgb * 100) / AgeFactor)$$

2. Enter values and units

Input:

Age Factor: ○ Adult >= 33 lb (14.8) ● Child < 33 lb (12)
Weight: 48 lb
Hgb: 9 gm/dL

Result:
Dose 360.00 mg
Decimal Precision: 2
Calculate

3. Click Calculate/Recalculate

The same **MedCalc3000** calculators that are in **Epocrates Online** can also be found in **Dynamed** online, **Medscape, MerckMedicus, Facts and Comparisons** online, Up-To-Date, and a number of other commonly used medical resources. **Dynamed Plus** lists calculators in their Search Results. Epocrates does not.

Exercises for Practice

What is the predicted peak flow for a 60 year old woman with asthma? She is 5'2".

Epocrates Online and Dynamed Plus MedCalc Medical Equation Calculators

A-a Gradient
a/A Ratio
AaPO2 Correction for FIO2
Absolute Lymphocyte Count
Absolute Neutrophil Count
Absolute Reticulocyte Count
Allowable Blood Loss
Amikacin Dosing q24hr (also Kanamycin and Streptomycin)
Amikacin Dosing to Produce Desired Peak and Trough Levels
Amikacin Level Prediction from Maintenance Dosing
Amikacin Steady State Dosage Adjustment
Aminoglycoside Clearance Estimate
Amortization of Student Loans
Anion Gap Delta Delta Gradient Multicalc®
Anion Gap Delta Delta Ratio Multicalc®
Anion Gap in Hypoalbumin States
Anion Gap
Ascites Albumin Gradient
Basal Energy Expenditure (Harris-Benedict estimation)
Bayesian Statistics I MultiCalc®
Bayesian Statistics II MultiCalc®
Benefit Increase / Number Needed to Treat Multicalc®
Bicarbonate Deficit
Blood Pressure Percentiles for Boys (2 - 17 years)
Blood Pressure Percentiles for Girls (2 - 17 years)
Body Mass Index (Quetelet's index)
Body Mass Index Percentiles for Boys (2 - 20 years)
Body Mass Index Percentiles for Girls (2 - 20 years)
Body Surface Area (Du Bois Method)
Body Surface Area (Mosteller, square root method)
Burn Injury Fluid Resuscitation (Brooke estimate)
Burn Injury Fluid Resuscitation (Demling dextran estimate)
Burn Injury Fluid Resuscitation (Evans estimate)
Burn Injury Fluid Resuscitation (Modified Brooke crystalloid estimate)
Burn Injury Fluid Resuscitation (Slater estimate)
Burn Injury Fluid Resuscitation, Adult (Parkland crystalloid estimate)
Calcium Correction in Hypoalbuminemia (SI units)
Calcium Correction in Hypoalbuminemia
Carbon Dioxide Production
Carboplatin AUC Dose Calculation (Calvert formula)
Cardiac Output MultiCalc®
Cardiac Output
Chi Square Analysis
Closing Capacity to Total Lung Volume Capacity
Closing Capacity
Closing Volume to Vital Capacity Ratio
Confidence Interval of a Binomial Proportion
Confidence Interval of a Difference Between Proportions
Confidence Interval of a Ratio of Proportions
Confidence Interval of a Ratio of Ratios
Confidence Interval of a Survey
Creatinine Clearance (measured)
Creatinine Clearance (measured, SI units)
Creatinine Clearance by Mass

Creatinine Clearance Estimate by Cockcroft-Gault Equation (SI units)
Creatinine Clearance Estimate by Cockcroft-Gault Equation
Creatinine clearance estimate for changing serum creatinine
Creatinine Kinetics Multicalc®
CSF IgG Index
CSF Protein Concentration Correction in Blood Contaminated CSF
CSF WBC Correction in Blood Contaminated CSF
Digitalis Body Load
Dose Adjustment for Body Surface Area
Dose Driven IV-Drip Rate Calculator
Epidural Formulation Compounding Calculator
Epoprostenol (Flolan) Infusion Rate Calculator
Estimated Blood Volume
Estimated Date of Delivery (EDD) Pregnancy Calculator
False Negative Rate from Sensitivity and Prevalence
False Negative Ratio from Sensitivity and Prevalence
False Positive Rate from Specificty and Prevalence
False Positive Ratio from Specificity and Prevalence
Fractional Excretion of Amylase (Amylase to creatinine clearance ratio)
Fractional Excretion of Sodium (SI units)
Fractional Excretion of Sodium
Fractional Excretion of Urate
Friedewald Equation for Low Density Lipoprotein (LDL)
Friedewald Equation for Low Density Lipoprotein (LDL, SI units)
Functional Residual Capacity
Gentamicin Dosing q24hr
Gentamicin Dosing to Produce Desired Peak and Trough Levels
Gentamicin Level Prediction from Maintenance Dosing
Gentamicin Steady State Dosage Adjustment
Gestational Age from Estimated Date of Delivery (EDD)
Glomerular Filtration Rate Estimate by Quadratic Equation
Glomerular Filtration Rate Estimate by Schwartz Formula
Glomerular Filtration Rate Estimate by the Abbreviated MDRD Study Equation (SI units)
Glomerular Filtration Rate Estimate by the Abbreviated MDRD Study Equation
Glomerular Filtration Rate Estimate by the MDRD Equation (SI units)
Glomerular Filtration Rate Estimate by the MDRD Equation
Gorlin Formula for Valve Area
Height for Age Percentiles for Boys (2 - 20 years)
Height for Age Percentiles for Girls (2 - 20 years)
Height Potential Prediction by Mid-parental Height
Hemoglobin A1C Estimation from Mean Plasma Glucose
Hemoglobin A1C to Mean Plasma Glucose Estimation
Henderson-Hasselbach Equation
Hepatitis C Fibrosis Prediction Score

HOMA Formula: Homeostasis Model Assessment of Insulin Resistance
Housestaff Activity Index
Hyponatremia Correction Infusate Rate
Ideal Body Weight Percentage
Ideal Body Weight
IME Adjusted Ratio for Medical Education Medicare Payments to Teaching Hospitals
In-Flight PaO2 Estimation (using PFT's)
In-Flight PaO2 Estimation
Infant Head Circumference for Age Percentiles (< 36 months)
Infant Length for Age Percentiles (< 36 months)
Infant Weight for Age Percentiles (< 36 months)
Infant Weight for Length Percentiles (< 36 months)
Inspiratory Capacity
International Normalized Ratio of Prothrombin Time (INR)
Iron Replacement (parenteral dosing) for Iron Deficiency
IV Drip Maintenance Rate Calculator
Kappa Measurement of Inter-observer Agreement MultiCalc®
Kappa Measurement of Inter-observer Agreement: Bennett's Kappa
Kappa Measurement of Inter-observer Agreement: Cohen's Kappa
Kappa Measurement of Inter-observer Agreement: Scott's Kappa
Kt/V Dialysis Dose Barth Formula
Kt/V Dialysis Dose Basile Formula
Kt/V Dialysis Dose Daugirdas Formula
Kt/V Dialysis Dose Formulae MultiCalc®
Kt/V Dialysis Dose Jindal Formula
Kt/V Dialysis Dose Kerr Formula
Kt/V Dialysis Dose Keshaviah Formula
Kt/V Dialysis Dose Lowrie Formula
Lean Body Weight (Female)
Lean Body Weight (Male)
Lean Body Weight Based on Creatinine Production
Likelihood Ratio MultiCalc®
Likelihood Ratio of Negative from Raw Data
Likelihood Ratio of Positive from Raw Data
Lung Age Estimation for Smoking Cessation Counseling
Lung Volume Multicalc®
Maintenance Fluid Calculation for Children
Mean Corpuscular Hemoglobin Concentration
Mean Corpuscular Hemoglobin
Mean Corpuscular Volume
Mean Vascular Pressure (systemic or pulmonary)
MELD Score for End-Stage Liver Disease (NOT appropriate for patients under the age of 12)
MELDNa Score for End-Stage Liver Disease (NOT appropriate for patients under the age of 12)
Nasal Canula Oxygen Fractional Inspired O2 (FIO2) Estimate
Negative Predictive Value from Raw Data
Negative Predictive Value of a Test
Normal Range for Body Weight
Number Needed to Harm (NNH) from Odds Ratio (OR) and Patient Expected Event Rate (PEER)
Number Needed to Treat (NNT) from Odds Ratio (OR) and Patient Expected Event Rate (PEER)
Odds from Probability

Epocrates Online and Dynamed Plus MedCalc Medical Equation Calculators

Odds Ratio and Relative Risk
Osmolal Gap Calculator (SI units)
Osmolal Gap Calculator
Osmolality Estimator (serum)
Osmolar Clearance
Overall Accuracy of a Test from Raw Data
Overall Accuracy of a Test from Sensitivity, Specificity and Prevalence
Oxygen Consumption
Oxygen Content of Arterial Blood
Oxygen Content of Venous Blood
Oxygenation Index (OI)
paO2 / FIO2 Ratio (for MODS Calculation)
PaO2 Correction for FIO2
Peak Expiratory Flow Prediction
Peak Expiratory Flow Variability in Asthma
PELD Score for End-Stage Liver Disease (patients less than 12 years old)
PFT Adjusted Predicted Values for Men MultiCalc®
PFT Adjusted Predicted Values for Women MultiCalc®
PFT Predicted Values for Boys MultiCalc®
PFT Predicted Values for Girls MultiCalc®
PFT Predicted Values for Men MultiCalc®
PFT Predicted Values for Women MultiCalc®
Phenytoin Free (Unbound) Drug Level (Adjusted for Hypoalbuminemia)
Phenytoin Total Drug Level (Adjusted for Hypoalbuminemia and Renal Function)
Pneumothorax Degree of Collapse
Positive Predictive Value from Raw Data
Positive Predictive Value of a Test
Post Test Odds from Pre Test Odds and Likelihood Ratio MultiCalc®
Post Test Odds of a Negative from Raw Data
Post Test Odds of a Negative Result from Sensitivity Specificity and Prevalence
Post Test Odds of a Positive from Raw Data
Post Test Odds of a Positive Result from Sensitivity Specificity and Prevalence
Post Test Probability from Likelihood Ratios and Multiple Test Results
Post Test Probability from Pre Test Probability, Sensitivity and Specificity
Pre Test Odds from Prevalence
Pre Test Odds from Raw Data
Pregnancy Gestation by LMP and Ultrasound Biometry
Pressure Adjusted Heart Rate (For MODS calculation)

Prevalence of a Finding or Disease from Test Data
Probability from Odds
Protein Bound Calcium
Protein Catabolic Rate (normalized PCR)
Protein Catabolic Rate
Pulmonary Vascular Resistance
Pulse Pressure Variation (percentage)
QT Interval Correction (EKG)
QUICKI Formula for Insulin Resistance
Red Blood Cell Volume by Radionucleotide Dilution
Renal Failure Index
Residual Renal Function in Hemodialysis Patients (Kru)
Residual Volume to Total Lung Capacity Ratio
Respiratory Quotient
Reticulocyte Production Index
Right to Left Shunt Fraction Qs/Qt
Risk Increase / Number Needed to Harm Multicalc®
Risk Reduction / Number Needed to Treat Multicalc®
Sensitivity of a Test
Serum Sodium Concentration Change Considering Infused and Excreted Cations
Sodium Change in Hyperlipidemeia
Sodium Change in Hyperproteinemia
Sodium Correction in Hyperglycemia
Sodium Deficit in Hyponatremia
Specificity of a Test
Stool Osmolal Gap
Survey Sample Size with Population Correction
Survey Sample Size
Systemic Vascular Resistance
Systolic Pressure Variation (percentage)
Time Averaged Concentration of Urea in Hemodialysis
TIPS Risk predictor / Survival predictor (Transjugular Intrahepatic Portosystemic Shunt)
Tobramycin Dosing to Produce Desired Peak and Trough Levels
Tobramycin Level Prediction from Maintenance Dosing
Tobramycin Steady State Dosage Adjustment
Total Body Water (BIA formula)
Total Body Water Estimation Based on Weight Alone
Total Body Water in Men (Humes-Weyer formula)
Total Body Water in Men (Johansson formula)
Total Body Water in Men (Lee formula)
Total Body Water in Men (Watson formula)
Total Body Water in Women (Humes-Weyer formula)

Total Body Water in Women (Johansson formula)
Total Body Water in Women (Lee formula)
Total Body Water in Women (Watson formula)
Total Daily Energy Requirement Estimate
Total Lung Capacity
Transferrin Saturation
Transtubular Potassium Gradient at CCD
True Negative Ratio from Specificity and Prevalence
Urea Reduction Percentage in Hemodialysis (PRU)
Urea Reduction Ratio in Hemodialysis (URR)
Urinary Protein Excretion Estimation
Vancomycin Dosing to Produce Desired Peak and Trough Levels
Vancomycin Level Prediction from Maintenance Dosing
Vancomycin Steady State Dosage Adjustment
Ventilation Index
Very Low Density Lipoprotein (VLDL)
Vital Capacity
Volume of Distribution of Urea
Water Deficit in Hypernatremia
Weight Based Dosage Calculator
Weight for Age Percentiles for Boys (2-20 years)
Weight for Age Percentiles for Girls (2-20 years)
Weight for Height Percentiles for Boys (77-121 cm tall)
Weight for Height Percentiles for Girls (77-121 cm tall)
WHO Assessment of Malnutrition in Boys 0 to 2 Years Old
WHO Assessment of Malnutrition in Boys 2 to 5 years Old
WHO Assessment of Malnutrition in Girls 0 to 2 Years Old
WHO Assessment of Malnutrition in Girls 2 to 5 years Old
Winter's Formula for Expected PCO2
Z Score to Percentile Estimation

Consider highlighting calculators that might be useful to you

Epocrates Online and Dynamed Plus — MedCalc Clinical Criteria Calculators

The MedCalc 300 Clinical Criteria Calculators include diagnostic, risk, and other decision support calculators based on criteria and numbers. The full list of these follows on the next page.

1. Pick your calculator from list or you can Search by Specialty where they have grouped both medical equations and clinical criteria calculators by specialty.

Examples presented here are the Atrial Fibrillation and Arterial Thromboembolism Risk calculator at right, and the Warfarin Dosing Tree Calculator below.

Exercise for Practice
A 40 year old woman has just had a mastectomy. She had a grade 1 tumor, no lymph nodes and no lymphatic or vascular invasion. What is her Breast Cancer Recurrence risk?

Epocrates Online and Dynamed Plus— MedCalc Clinical Criteria Calculators

Acetaminophen (Paracetamol) Toxicity Assessment

Activity Score for Nursing Home Patients

AIDS Progression Estimate While on Anti Viral Rx

Alcoholic Liver Disease Combined Index (Clinical and Laboratory -- CCLI) Criteria for One Year Mortality Prognosis

Alcoholic Liver Disease: Criteria for One Year Mortality Prognosis

Androgen Deficiency in Aging Males (ADAM) Screener

Anthrax Screening for Exposed Patients TreeCalc®

Aortic Stenosis and Valve Replacement Prediction TreeCalc®

APACHE II Scoring System and Mortality Estimates (Acute Physiology and Chronic Health Disease Classification System II)

APACHE II Scoring System by Diagnosis

Apgar Score

Arterial Blood Gas Interpretation TreeCalc®

Asthma Hospitalization One Year Risk TreeCalc®

Atrial Fibrillation and Arterial Thromboembolism Risk

Atrial Fibrillation CHADS(2) Score for Stroke Risk

Atrial Fibrillation Five Year Risk of Stroke or Death

Atrial Fibrillation Five Year Risk of Stroke

Autoimmune Hepatitis Diagnostic Criteria

Bacterial Meningitis Score for Children

Barrett Esophagus Progression Risk TreeCalc®

Behcet's Syndrome International Study Group Criteria

Behcet's Syndrome Japanese Ministry of Health and Welfare Criteria

Benign Positional Vertigo Decision TreeCalc®

Bleeding Risk (any bleeding complication) on Warfarin Therapy

Bleeding Risk (major complication) on Warfarin Therapy

Bleeding Risk Index for Warfarin Therapy

BODE Index for COPD Survival Prediction

Bowel Obstruction Diagnosis: Utility of X-ray

Breast Cancer Recurrence Risk After Mastectomy (simple)

Canadian Head CT Rule for Minor Head Injury

Cardiac Risk Index for AAA Surgery (Lee)

Cardiac Risk Index for Abdominal Surgery (Lee)

Cardiac Risk Index for Non-AAA Vascular Surgery (Lee)

Cardiac Risk Index for Orthopedic Surgery (Lee)

Cardiac Risk Index for Thoracic Surgery (Lee)

Cardiac Risk Index in Noncardiac Surgery (Detsky et. al.)

Cardiac Risk Index in Noncardiac Surgery (Goldman, et. al.)

Cardiac Surgery Risk Assesment Scale (UPMC Shadyside Hospital, 2002)

Carpal Tunnel Syndrome Bivariate Decision TreeCalc®

Carpal Tunnel Syndrome Multivariate Decision TreeCalc®

Cesarean Section Delivery Probability Among Nulliparous Women TreeCalc®

Cesarean Section Delivery Probability Among Parous Women TreeCalc®

Child Turcotte Pugh Classification for Severity of Liver Disease (SI units)

Child Turcotte Pugh Classification for Severity of Liver Disease

Chronic Fatigue Syndrome Diagnostic Criteria

CIWA-Ar Clinical Institute Withdrawal Assessment for Alcohol Scale

Clock Drawing Task (Cognitive Impairment Screening)

Cognitive Impairment Screening with 6 Questions

Community-Acquired Pneumonia Severity Index (PSI) for Adults

Conjunctivitis Agent Prediction (bacterial or other)

CURB Pneumonia Severity Score

CURB-65 Pneumonia Severity Score

Depression (any) Screening by a Two Item PHQ-2

Depression (major) Screening by a Two Item PHQ-2

Diabetes Risk Score (Type 2)

Diabetes Screening TreeCalc®

Diabetes Type Predictor TreeCalc®

DVT Probability: Ambulatory Score System (Constans, 2003 paper)

DVT Probability: Kahn Score System

DVT Probability: St. Andre Score System

DVT Probability: Wells Score System

Ectopic Pregnancy Risk Estimation TreeCalc®

Ehlers-Danlos Syndrome IV (vascular type) Diagnostic Criteria

ELBW Infant Prognosis Prediction

Endocarditis Diagnostic Criteria -- Duke Criteria

Epworth Sleepiness Scale (ESS)

Esophageal Varices: Prediction from Platelet Count to Spleen Diameter Ratio

EuroSCORE for Cardiac Surgery Risk Assessment (additive version)

Fall Risk in Elderly Hospitalized Patients

Fear Avoidance Beliefs Questionaire (FABQ) about Physical Activity

Fear Avoidance Beliefs Questionaire (FABQ) about Work

Fracture Index WITH known Bone Mineral Density (BMD)

Fracture Index WITHOUT known Bone Mineral Density (BMD)

Framingham 10 Year Coronary Risk Prediction by LDL (1998 paper)

Framingham 10 Year Coronary Risk Prediction by Total Cholesterol (1998 paper)

Framingham 10 Year Risk of General Cardiovascular Disease (2008 paper)

Gail Model for 5 Year Risk of Breast Cancer (1999 paper)

Gail Model for 5 Year Risk of Breast Cancer in Black Women (2007)

Gail Model for Predicting Individual Breast Cancer Risk (1989 Paper)

Geriatric Depression 1 Item Screener

Geriatric Depression 4 Item Scale

Geriatric Depression Scale

Glasgow Coma Scale

GRACE Score for Acute Coronary Syndrome Prognosis

Gurd's Diagnostic Criteria for Fat Embolism Syndrome

Hepatitis C Cirrhosis Probability

Hepatitis C Outcome TreeCalc®

Hepatitis Discriminant Function for Corticosteroid Rx in Alcoholic Hepatitis

Inferior Wall M.I. in Vector and Scalar Electrocardiography

Inferior Wall Myocardial Infarction Diagnosis TreeCalc®

Influenza Diagnosis and Treatment TreeCalc®

Intracranial Bleeding Risk from Thrombolytic Therapy of MI

Irritable Bowel Syndrome Diagnostic Criteria (Manning Criteria)

Jones Criteria for Diagnosis of Rheumatic Fever

Kawasaki Disease Diagnostic Criteria

Left Atrial Thrombus Resolution in Mitral Stenosis Patients on Anticoagulation (for up to 34 months)

Left Bundle Branch Block in Vector and Scalar Electrocardiography

Left Ventricular Capture Loss in Resynchronization Biventricular Pacing TreeCalc®

Left Ventricular Hypertrophy in Vector and Scalar Electrocardiography

Low Back Pain Evaluation TreeCalc®

Lower GI Bleeding and Risk of Severe Bleeding

Lung Cancer One Year Risk Estimation (for smokers 50-75 years old)

M.I. Criteria for Likelihood in Chest Pain with LBBB

M.I. Prediction Decision TreeCalc®

MEDS Score: Mortality in ER Sepsis

Metabolic Syndrome Criteria (AACE 2003)

Metabolic Syndrome Criteria (AHA/NHLBI 2005))

Metabolic Syndrome Criteria (ATP III)

Metabolic Syndrome Criteria (EGIR)

Metabolic Syndrome Criteria (IDF 2005)

Metabolic Syndrome Criteria (WHO 1998)

Migraine Screener

Migraine With Aura Diagnostic Criteria

Migraine Without Aura Diagnostic Criteria

MODS Score: Multiple Organ Dysfunction

Mortality After Hospitalization in Older Adults (SI units)

Mortality After Hospitalization in Older Adults

Multiple Myeloma Diagnostic Criteria

Mycoplasma Pneumoniae Prediction TreeCalc®

Mycoplasma Pneumoniae Prediction in Children with Pneumonia

Myelodysplastic Syndrome International Prognostic Scoring System

NASH Fibrosis Risk (Nonalcoholic Steatohepatitis) TreeCalc®

Neurofibomatosis Type 2 Diagnostic Criteria (1987 NIH)

Neurofibomatosis Type 2 Diagnostic Criteria (1991 NIH)

Neurofibromatosis Type 1 Diagnostic Criteria

New Orleans Head CT Criteria

Newborn Hyperbilirubinemia Assessment

Epocrates Online and Dynamed Plus— MedCalc Clinical Criteria Calculators

NIH Stroke Score

Non Q Wave Myocardial Infarction Prediction

Nonbiliary Cirrhosis Prognostic Criteria for One Year Survival

Norton Scale to Stratify Risk of Pressure Sores

Obesity Management Guidelines, National Institutes of Health / NHLBI TreeCalc®

Omeprazole Therapeutic Gain (over placebo) in Dyspepsia

Omeprazole Therapeutic Index in Dyspepsia

Osteoporosis Risk Assessment by Composite Linear Estimate (ORACLE score)

Osteoporosis Risk Assessment Index (ORAI)

Osteoporosis Risk SCORE (Simple Calculated Osteoporosis Risk Estimation)

Osteoporosis Self Assessment Tool for Men

Osteoporosis Self Assessment Tool for Women

Oswestry Disability Index Version 1

Oswestry Disability Index Version 2

Ottawa Ankle Rule for the Use of X-Ray in Ankle Injury

Ottawa Foot Rule for the Use of X-Ray in Foot Injury

Ottawa Knee Rule for use of X Ray in Knee Injury

Pacer Need After Heart Valve Surgery

Palliative Prognostic Score in Terminal Illness

Pancreatitis Prognosis Criteria When Disease Due To Gallstones

Pancreatitis Prognosis Criteria

Panic Disorder Screener

Perioperative Cardiac Evaluation TreeCalc®

Pittsburgh Knee Rule for X-Ray Evaluation of Knee Injury TreeCalc®

Pneumonia Mortality in Nursing Home Patients by Logistic Regression

Pneumonia Mortality Prediction in Nursing Home Patients (SI Units)

Pneumonia Mortality Prediction in Nursing Home Patients

Pneumonia Mortality Predictor In the Elderly

Pneumonia Probability in Nursing Home Patients

Pneumonia Risk in Post Operative Period of Non-Cardiac Surgery

Polycythemia Vera Diagnostic Criteria

POSSUM Score for Orthopedic Procedure Prognosis (SI Units)

POSSUM Score for Orthopedic Procedure Prognosis

PROCAM Risk Score (Munster Heart Study imperial units)

PROCAM Risk Score (Munster Heart Study)

Prostatism Symptom Score

PTCA Complication Prediction Score (death, MI, urgent bypass)

PTCA Mortality Prediction

Pulmonary Embolism Risk by Pisa Study (with chest x-ray)

Pulmonary Embolism Risk by Pisa Study (without chest x-ray)

Pulmonary Embolism Wells Score

Pulmonary Fibrosis Survival Prediction (CRP Score for abbreviated model)

Pulmonary Fibrosis Survival Prediction (CRP score for complete model)

Rabies Post Exposure Prophylaxis (PEP) TreeCalc®

Renal Artery Stenosis Prediction Rule

Respiratory Failure Risk in Post Operative Period of Non-Cardiac Surgery

Rheumatoid Arthritis Clinical Disease Activity Index CDAI

Rheumatoid Arthritis Criteria (1987 revision, American Rheumatism Association)

Rheumatoid Arthritis Disease Activity Score DAS-28

Rheumatoid Arthritis Simplified Disease Activity Index SDAI

Roland-Morris Disability Score

Romhilt-Estes Criteria for Left Ventricular Hypertrophy

Rotator Cuff Tear Diagnosis

SARS (Severe Acute Respiratory Distress Syndrome) CDC Case Definition (4/20/2003) TreeCalc®

SARS Prognosis Predictor (basic parameters)

SARS Prognosis Predictor (with lab and x-ray parameters)

Septic Arthritis Prediction in Pediatric Hip Pain Syndrome

Smallpox Risk Assesment (CDC version 1.0, 2002) TreeCalc®

Smoking Cessation and Intervention TreeCalc®

Solitary Pulmonary Nodule Malignancy Risk

Sore Throat (Pharyngitis) Evaluation and Strep Prediction (Attia)

Sore Throat (Pharyngitis) Evaluation and Treatment Criteria (McIsaac)

Spinal Manipulation Success Prediction for Low Back Pain

Stage III Pressure Ulcer TreeCalc®

Stage IV Pressure Ulcer TreeCalc®

Stress Test Outcome Risk Factors

Stroke Recovery Prediction

Stroke Risk in Diabetes Type 2 UKPDS 60

Stroke Risk in Patients 55-84 Years Old (Framingham data)

Suggested Management of Patients with Raised Lipid Levels TreeCalc®

Syncope Risk Prediction

Systemic Lupus Erythematosis American Rheumatism Association 11 Criteria

Systolic Murmur Significance Probability

Thrombolysis in Myocardial Infarction (TIMI) Score for ST Elevation Acute Myocardial Infarction

Thrombolysis in Myocardial Infarction (TIMI) Score for Unstable Angina Non ST Elevation Myocardial Infarction

Thyroid Disease Screening for Females More Than 50 Years Old TreeCalc®

TIA Prognosis: Risk of Stroke by 90 Days After Presentation

Tuberculosis Risk Prediction

Unstable Angina and Tirofiban Benefit Prediction

Unstable Angina Outcome Prediction

Unstable Angina Risk Stratification (Piombo)

Unstable Angina Risk Stratification (Solomon)

Vector and Scalar Electrocardiography

Venous Leg Ulcer Healing Prediction

Warfarin Dosing Nomogram for 10 mg Initiation (Crowther) TreeCalc®

Warfarin Dosing Nomogram for 10 mg Initiation (Kovacs) TreeCalc®

Warfarin Dosing Nomogram for 5 mg Initiation (Crowther) TreeCalc®

Warfarin Dosing TreeCalc®

Warfarin Weekly Dose Estimate in Non-rheumatic A-fib

Waterlow Scale for Stratification of Pressure Sore Risk

Epocrates App Mobile Calculators

●●●●○ AT&T 📶   3:46 PM   ⬈ ❊ 78% ▬
Calculators   _e_

Categories   ›

CALCULATORS

A-a O2 Gradient

Absolute Neutrophil Count

Anion Gap (Serum)   ›

Anion Gap (Urine)   ›

Basal Energy Expenditure   ›

Body Mass Index   ›

Body Surface Area (Dubois)   ›

Body Surface Area (Gehan & George)

Cor...

1. Select Calculator

On the iPhone and other platforms, Epocrates has included the popular MedMath calculators. There aren't many calculators in MedMath, which is why we recommend that students download Archimedes or use the calculators in PEPID and Essential Evidence Plus. See the list of calculators in MedMath below.

Calculators

❊ 78% ▬

‹   **Clear All**   _e_

Body Mass Index

Height

| 5 | 8 | ft/in |

Weight

| 160 | | lb |

RESULTS

BMI:

24.3

2. Change units
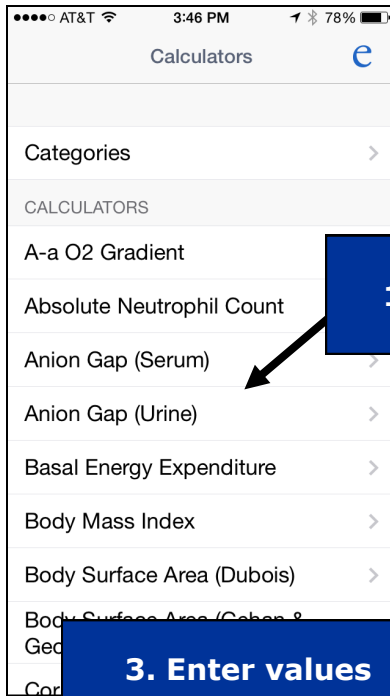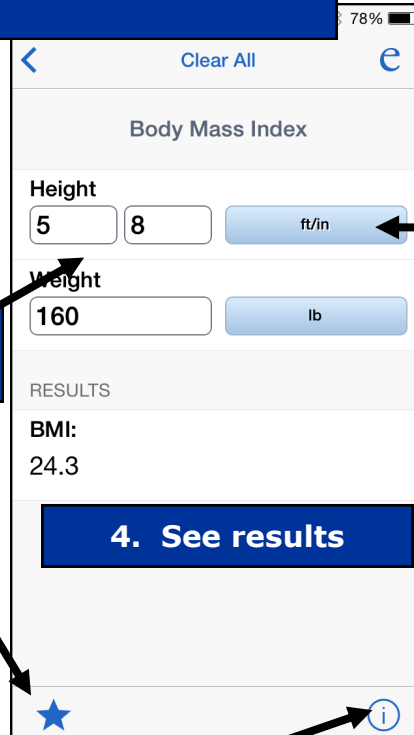
3. Enter values

4. See results

★   ⓘ

Note: Add to Favorites Star

Tap for information regarding calculator

3:47 PM   ⬈ ❊ 78% ▬

...formation   Done

Body Mass Index

Calculator Info

Wt(kg) / (Ht(m))²

The BMI (Quetelet Index) is highly correlated with direct measures of body fat in most populations.
25-29.9: Overweight
  >=30: Obese

Calle EE et al. NEJM 1999;341:1097-1105.
Keys A et al. J Chronic Dis 1972;25:329.

Calculators in Epocrates
A-a O2 Gradient
Absolute Neutrophil Count
Anion Gap (serum)
Anion Gap (urine)
Basal Energy Expenditure
Body Mass Index (Quetelet's index)
Body Surface Area (Du Bois Method)
Body Surface Area (Gehan & George)
Corrected QTc
Corrected Serum Calcium
Corrected Serum Phenytoin
Corrected Serum Sodium
Creatinine Clearance (Cockcroft-Gault)
Creatinine Clearance (measured)
Dosing Calculator
Fractional Excretion of Sodium
GFR Estimation using the MDRD Equation (Modification of Diet in Renal Disease Study Group)
Henderson-Hasselbalch Equation
Hepatitis Discriminant Function
Ideal Body Weight (Devine)
Ideal Body Weight (Robinson)
Kt/V (Daugirdas)
LDL Cholesterol
MELD Score (Mayo/UNOS)
Mean Arterial Pressure
Osmolality (serum)
Parkland Formula
Peak Flow (predicted)
Pediatric Maintenance Fluids
Pregnancy Tool
Reticulocyte Production Index
Unit Converter
Water Deficit

Exercises for Practice

What is the body mass index and ideal body weight for a 38 year old woman who is 5'2" and weighs 138 lbs? Is she overweight?

Clinical Rules, Decision Trees or Criteria Calculators

These calculators are truly decision support tools in that they influence how a case is managed. Examples might include the Ottawa Ankle Rule calculator below that tells whether an x-ray is necessary for an ankle sprain or a calculator that assigns the NIH Stroke score.

Essential Evidence Plus (EE+) Online and Mobile

The complete EE+ database is available on either the web, desktop or the Mobile versions. EE+ has a large number of calculator like tools which can be incorporated into the decision making process of the clinical encounter. Let's look at each of these types of tools.

Decision Support Tools (Calculators)

More than 225 calculators designed to help estimate the likelihood of a diagnosis, calculate a patient's risk for disease, estimate a prognosis, or calculate a drug dose.

Purpose: To support the clinical decision making of a healthcare professional by offering risk and probability assessments

Example: The clinical decision rules can help evaluate patients with ankle sprains, (Ottawa Ankle Rule at right), estimate the risk of stroke in patients with atrial fibrillation, or assist in determining doses of drugs like warfarin.

Detailed Description: These clinical decision rules are created based on results of valid and relevant studies. Each calculator has a **more information** button that references the study and outlines its characteristics. Each calculator asks users to provide patient information and leads to a result that is specific for the patient.

From http://www.infopoems.com/support/ProductManual/IR_Databases.pdf

Finding the Decision Support Tools

Online, the index of Clinical Rules and Calculators is found under Browse Our Databases and Interactive Tools on the main page. You must then drill down to find the calculator you want by system.

On a mobile device, follow the same link to Decision Support Tools. Click on any category to expand it to show all the calculators in that category.

See a list of the decision support tools (calculators) in EE+ on the next several pages.
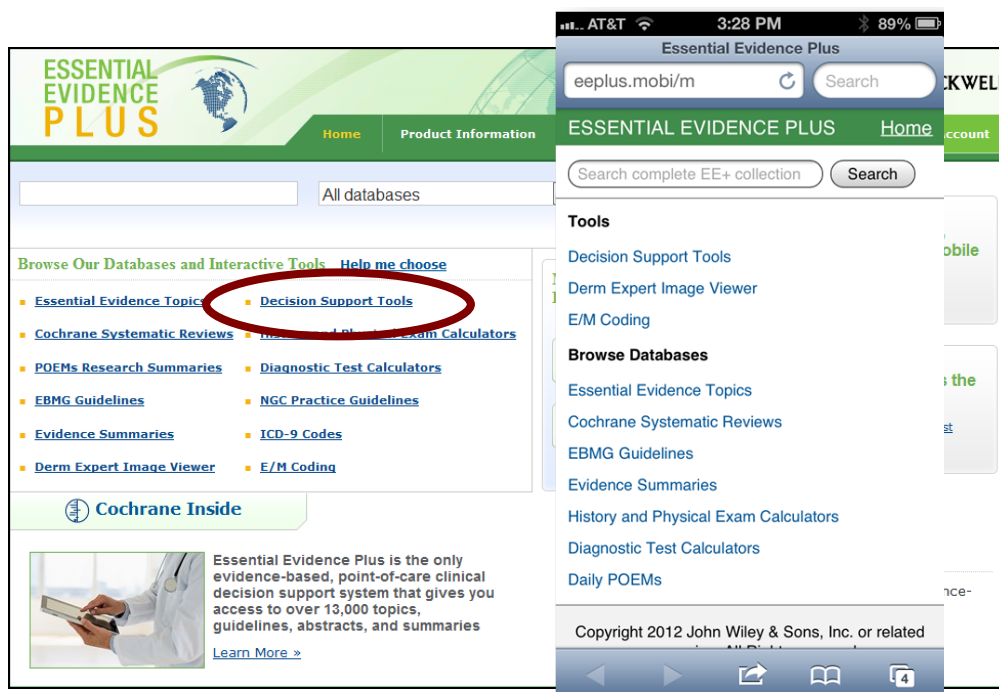
EE+ Clinical Rules and Calculators

CV: Acute MI/unstable angina
6 month ACS mortality (GRACE score)
ACI-TIPI risk score
ACS - prob of successful medical tx
Acute MI diagnosis (Goldman algorithm)
Intracranial hemorrhage risk w/ thrombolysis
Invasive vs conservative management
Mortality in ST elevation AMI
Probability of normal LVEF
Prognosis based on initial ECG
Prognosis in non-ST elevation AMI (TIMI)
Prognosis in ST elevation AMI (TIMI)
Risk of death in AMI
Tirofiban benefit in unstable angina/ NQWMI
Unstable angina prognosis (Piombo)

CV: Angioplasty
Angioplasty complication rate (Bates)
Angioplasty complication rate (CADILLAC)
Angioplasty complication rate (Kimmel)
Angioplasty complication rate (Mayo)
Angioplasty complication rate (Resnic)
Angioplasty mortality (Michigan score)

CV: Chest pain and CAD
Antiplatelet therapy recommendations
Aortic thoracic artery dissection diagnosis
CAD mortality risk
Chest pain diagnosis in primary care (Bosner)
Chest pain risk stratification (modified TIMI)
Panic disorder among chest pain patients
Pretest probability of CAD (Diamond-Forrester)
Probability of complications requiring ICU care
Probability of left main CAD
Probability of significant CAD in outpatients
Risk of AMI with normal or near-normal ECG
Stress test interpretation (adenosine SPECT)
Treadmill interpretation (Duke score)

CV: DVT and PE
Bleeding risk on warfarin
DVT: clinical diagnosis
PE diagnosis (revised Geneva)
Pulmonary embolism diagnosis (Geneva)
Pulmonary embolism diagnosis (Hoellerich)
Pulmonary embolism diagnosis (Pisa)
Pulmonary embolism diagnosis (Wells)

CV: Heart failure
CHF prognosis (Killip class)
Framingham criteria for heart failure
Heart failure diagnosis with proBNP
Heart failure prognosis for inpatient (Fonarow)
Heart failure prognosis for inpatient (Lee)

ESSENTIAL EVIDENCE PLUS · Home

Search all of EE- Go   Back

Screening: cardiac risk profile (Framingham data)

Decision Support Calculators · 1994-09-01

Estimate risk of a variety of cardiovascular outcomes based on Framingham study data

Age (yrs): 58

Systolic Blood Pressure (mm Hg): 130

Cholesterol (mg/dl):
Total: 225
HDL: 40

☑ Male
☐ Diabetic
☑ Smoker
☐ Evidence of LVH by ECG

Calculate

10 year Risk of the following events

Chronic Heart Disease: 22.4% **(ideal 7.6%)**
CHD Death: 6.6% (ideal 1.1%)
Miocardial Infarction: 15.8% (ideal 2.8%)
Stroke: 3.6% (ideal 1.5%)
Cardio Vascular Disease: 31.5% (ideal 10.8%)
CVD death: 6.4% (ideal 1.5%)
what is "ideal"? An "ideal" patient has the following characteristics:
- SBP: 120
- total Cholesterol: 160
- HDL: 45
- non-smoker hide

More Info

    Back

Screening: cardiac risk profile (Framingham Data)
Useful tool to encourage patients to lower cholesterol, stop

Chest pain: probability of significant CAD in outpatients

CV: HTN, lipids, screening
Hypertension: renal artery stenosis diagnosis
Screening: cardiac risk profile (Framingham data)
Screening: NCEP ATP III lipid guideline

CV: Other
Atrial fibrillation risk (10 year)
PAOD diagnosis (Doppler)
Peripheral vascular disease prognosis
Return of spontaneous circulation after cardiac arrest (RACA)

CV: Pre-op evaluation
AAA surgery mortality risk
Atrial fib risk post-op CABG
CABG risk score
Implantable cardioverter-defibrillator risk score
Non-cardiac surgery risk (Detsky score)
Post-operative pneumonia risk
Post-operative prognosis (Surgical Apgar)
Pre-op evaluation (ACC/AHA)
Prognosis after ortho surgery (POSSUM)
Ruptured AAA repair prognosis (Glasgow)
Simple cardiac risk score (Lee)
Vascular surgery risk

CV: Stroke, Aneurism, AVM
Acute stroke prognosis (6 variable score)
Acute stroke prognosis (early recovery)
Acute stroke prognosis (Wang 30 day score)
Acute stroke prognosis - 30 day (Wang)
Acute stroke prognosis - 6 mos (G-Score)
Brain AVM prognosis
Carotid endarterectomy prognosis
Cerebral aneurysm rupture risk
Hemorrhage after thrombolysis for CVA (HAT)
Intracranial hemorrhage prognosis
Ischemic vs hemorrhagic stroke (Besson)
Ischemic vs hemorrhagic stroke (Efstathiou)
NIH stroke scale
Stroke diagnosis (Cincinnati Stroke Scale)
Stroke risk - atrial fib (Framingham)
Stroke risk - atrial fib (SPAF)
Stroke risk - atrial fib (vanWalraven)
Stroke risk - diabetics (UKPDS)
Stroke risk - next 5 yrs in elderly
Stroke risk after TIA (ABCD rule)
Stroke risk in atrial fib (CHADS-VASC)
Stroke risk with TIA (ABCD2)
TIA prognosis

CV: Valve and endocarditis
AV replacement in aortic stenosis
Endocarditis prognosis
Left atrial thrombi disappearance after commissurotomy
Pacing need after valve surgery

Drug dosing
ACE inhibitor cough risk

Adverse drug reaction risk in hospitalized elderly (GerontoNet Score)
Hydronephrosis in patients with acute kidney injury
Lithium dosing

Endocrinology
Bariatric surgery risk score
Basal energy requirements
BMI and body surface area calculator
Diabetes mellitus screening
Diabetes risk score
Diabetes risk score (Bang)
Diabetic foot ulcer risk
Hypercalcemia: probability of malignancy
Ideal body weight (adults)
Michigan Neuropathy Screening Instrument
Precocious puberty: need for brain imaging

Epidemiology
Diagnostic test calculator (LR and post-test probability)
Treatment calculator (NNT, RRR, and ARR)

Fluids/electrolytes
Anion gap
Pediatric IV fluid calculator
Serum osmolality calculator

Gastroenterology: GERD/dyspepsia
Dyspepsia: predicting response to omeprazole
Dyspepsia: probability of ulcer
GERD diagnosis (Manterola)
GERD diagnosis (Zimmerman)
GERD: Barretts prognosis

Gastroenterology: GI Bleed
GI bleed (lower): prognosis
GI bleed (upper): predicting need for intervention
GI bleed (upper): probability of persistent bleeding after injection
GI bleed: identification of low risk GI bleeds
GI bleed: inpatient mortality risk

Gastroenterology: Hepatic
Abnormal liver function work-up
Bleeding risk after hepatic resection
Cirrhosis: probability of varices
End stage liver disease prognosis
Fibrosis (severe) in NASH
Fibrosis probability (FIB4 index)
Hepatitis C: probability of cirrhosis
Hepatitis C: probability of fibrosis
Hepatitis C: prognosis
NASH in obese patients (HAIR score)
Probability of severe fibrosis in hepatitis C

Gastroenterology: Lower GI
Chronic constipation diagnosis
Diarrhea: need for cultures in nosocomial diarrhea
Mortality following colorectal surgery
Rome I Criteria for irritable bowel
Small bowel obstruction: need for surgery

Gastroenterology: Other
Abdominal pain diagnosis (men)
Appendicitis diagnosis (Alvarado score)
Appendicitis diagnosis (Ohmann)
Dehydration diagnosis (Gorelick)
Post-op nausea and vomiting

Gastroenterology: Pancreas
Acute pancreatitis: prognosis (Imrie score)
Acute pancreatitis: prognosis (Ranson score)
Pancreatitis prognosis (BALI model)

Gynecology and obstetrics
Apgar score
Cephalic version success
Diagnosis of polycystic ovarian syndrome
Edinburgh Postpartum Depression Scale (EPDS)
Induction of labor: Bishop score
Induction of labor: Dhall score
Pregnancy wheel
Probability of gestational diabetes
Probability of successful VBAC
Risk of ectopic pregnancy with 1st trimester pain or bleeding
Risk of malignancy index for ovarian cancer
Successful VBAC at 40-42 weeks
Urinary incontinence diagnosis

Hematology/Anticoagulation
Bleeding risk (HAS-BLED score)
Bleeding risk (HEMORR2HAGES)
Bleeding risk in elderly on warfarin at 90 days
Bleeding risk on warfarin
Bleeding risk on warfarin at 3 and 12 mos (OBRI)
Hemorrhage on warfarin in AF (ATRIA score)
Heparin dosing by weight
Risk of bleeding with warfarin treatment for DVT
Warfarin dose (elderly)
Warfarin dosing: adjustment
Warfarin dosing: initial
Warfarin initial dose (10 mg protocol)

Infectious disease
AIDS progression likelihood
Bacteremia risk (age 3 to 36 months)
Chagas Heart disease prognosis
Influenza diagnosis (adults)
Leprosy: predicting nerve function impairment
Lyme meningitis diagnosis (Rule of 7's)
Meningitis diagnosis children (Bacterial Meningitis Score)
Need for LP in children with meningeal signs
New head CT lesions in HIV patients
Orbital abscess in patients with periorbital infection
Rochester criteria - pediatric fever
Prognosis in pandemic infection
SARS diagnosis
Sepsis treatment (goal-directed therapy)
TB isolation decision-making (Wisnivesky)

Musculoskeletal: Diagnostic criteria
Ankylosing spondylitis diagnosis
Ankylosing spondylitis diagnosis (Gran)
Rheumatoid arthritis diagnostic criteria
SLE diagnostic criteria

Musculoskeletal: Need for imaging
Ankle injury: is x-ray needed (Ottawa)
C-spine radiography (NEXUS)
C-spine radiography rule (Canadian)
Foot injury: is x-ray needed (Ottawa)
Head CT after minor head injury (Canadian)
Head CT after minor head injury (New Orleans)
Knee injury: is x-ray needed (Ottawa)
TBI in children < 2 years: need for CT
TBI in children 2+ years: need for CT

Musculoskeletal: Osteoporosis
Fracture risk with steroid treatment
Hip fracture risk in women (FRACTURE)
Hip fracture risk in women (FRAMO)
Osteoporosis risk (men)
Osteoporosis screening (Dutch instrument)
Osteoporosis screening (NOF)
Osteoporosis screening (ORAI)
Osteoporosis screening (OST)
Osteoporosis screening (SCORE)

Musculoskeletal: Other
Back pain evaluation guideline
Benefit from spinal manipulation
Carpal tunnel: success of medical tx
Familial Mediterranean fever diagnosis
Fibromyalgia screening
Gout diagnosis
Knee surgery referral guide
Neck pain prognosis at 6 months
Netherlands rheumatoid arthritis score
PMR disease activity score
Rotator cuff diagnosis
Septic arthritis diagnosis
TMJ disorders diagnosis

Neurology
30 day syncope prognosis (San Francisco Rule)
Cognitive impairment screening (6 item screener)
Cognitive impairment screening (AD8)
Delirium probability in elderly inpatient
Delirium probability at discharge
Dementia screening (Time and Change test)
Driving competency screen for elderly (Clock test)
Glasgow Coma Score
Headache diagnosis in children
Intracerebral hemorrhage with IV alteplase (SITS)
Meningitis diagnosis children (Bacterial Meningitis Score)
Mental status screen (GOAL score)
Migraine screener
Mini-Cog
Need for mechnical ventilation in Guillan-Barre
Nontraumatic coma prognosis
Pediatric head injury prognosis
Probability of bad outcome in syncope
Status epilepticus prognosis

Oncology: Other
Overian cancer dx: M and B rules
Probability of cancer with unwanted
    weight loss

Oncology: Prognosis
Bladder cancer prognosis
Chronic lymphocytic leukemia prognosis
Colon cancer hepatic metastasis
Febrile neutropenia in CA risk score
Gastric cancer prognosis
Melanoma 10 year prognosis
Melanoma 2 and 5 year prognosis
Non-small cell lung cancer
Pancreatic neuroendocrine tumor prog-
    nosis
Post-op mortality for CRC surgery in
    elderly
Probability that prostate CA is indolent
Prostate CA: prognosis for abnl post-op
    PSA
Prostate cancer (d'Amici)
Prostate cancer (UCSF-CAPRA)
Prostate cancer - predicting histologically
    aggressive tumors
Renal cell CA prognosis (metastatic)
Spinal metastases
Spinal metastasis prognosis
Terminal lung cancer
Thyroid cancer 5 year
Oncology: Risk
Breast cancer (Gail model)
Esophageal cancer risk with dysphagia
Hepatic metastasis from CRC prognosis
Lung cancer
Ovarian cancer risk (Harvard)
Ovarian cancer risk (SEER)
Pancreatic cancer
Proximal colon cancer
Pulmonary nodule (PET + Swensen rule)
Pulmonary nodule (Swensen rule)

Overall mortality and screening
1 year mortality after discharge in elderly
10 year mortality for various conditions
4 year mortality in older adults
ACLS termination criteria
APACHE 2 score
BLS termination criteria
Charlson Comorbidity Index
Cooper Clinic Risk Index (15 yr mortality)
CPR prognosis (inpatient)
Exercise capacity by age
Height estimation from knee/heel meas-
    ure
Hospital d/c prognosis for elderly
In-hospital mortality of elderly patients
    (MEWS)
Individualized screening guidelines
    (USPSTF)
Out-of-hospital CPR prognosis
Prognosis: Palliative Prognosis Score
Sepsis mortality risk

Perinatal and infant
Bilirubin prediction based on initial level
Difficult IV access in children (DIVA
    score)
Neonatal jaundice guideline (AAP)
Prognosis with LBW (500-999 gms)
Respiratory prognosis NICU

(Richardson)
Serious bacterial infection risk
Severe bacterial infection 1 wk to 3 yrs
    (Lab Score)

Psychiatric and substance abuse
Adolescent substance abuse (CRAFFT)
Adult ADHD screener (WHO ASRS)
Alcohol withdrawal management
Alcoholic hepatitis prognosis
    (discriminant fxn)
Alcoholic hepatitis prognosis (Glasgow)
AUDIT-C (alcohol use disorder screen)
Bipolar disorder (Mood Disorder Ques-
    tionnaire)
CAGE score (alcoholism screening)
Depression screening
Depression screening (PHQ-2)
Depression screening in elderly
Eating disorder likelihood
Generalized anxiety disorder diagnosis
    (GAD-2)
Generalized anxiety disorder diagnosis
    (GAD-7)
Panic disorder (single question)
Panic disorder (three question)
Perinatal depression
Risk of repeated self-harm or suicide
Social anxiety disorder diagnosis (Mini-
    SPIN)
Suicidal ideation risk
Which high users are somatizers

Renal disease
Acute renal failure diagnosis (FE-Na)
BPH symptom index (AUA)
Chronic kidney disease screening test
Creatinine clearance (MDRD 4 variable)
Creatinine clearance (MDRD 6 variable)
Creatinine clearance calculator
Dialysis prognosis
GFR estimation (quadratic equation)
Nephropathy risk with PCI
Probability of dialysis post-operatively
Renal lithiasis diagnosis (Elton)
Renal lithiasis diagnosis (Eskelinen)
UTI diagnosis
UTI diagnosis (Leibovici)
UTI diagnosis (McIsaac)
UTI diagnosis girls < 2 years

**Respiratory disease: Asthma and
    COPD**
Asthma relapse in adults
COPD diagnosis
COPD prognosis (BODE index)
Peak flow - normal values
Peds asthma - hospitalization risk

**Respiratory disease: Bronchiolitis
    and croup**
Bronchiolitis: need for hospitalization
Croup score (Syracuse)
RSV prognosis (pediatric)

Respiratory disease: Other
A-a gradient
ABG interpretation
Acute lung injury vs pulmonary edema
    diagnosis
Bacteremia risk in older patients with

    CAP
Hypersensitivity pneumonitis diagnosis
Inhalation anthrax diagnosis
Pleural effusion (Light's criteria)
Post-op likelihod of pneumonia
Post-op need for mechanical ventilation
Pulmonary fibrosis survival
Sleep apnea diagnosis
TB isolation decision-making (El-Solh)

Respiratory disease: Pneumonia
Diagnosis of pneumonia (Diehr)
Diagnosis of pneumonia (Heckerling)
Diagnosis of pneumonia (nursing home)
Diagnosis of pneumonia (Singal)
Hospitalization or death due to flu or
    pneumonia
Mycoplasm in children with pneumonia
Pneumonia in wheezing children
Pneumonia prognosis (CURB-65)
Pneumonia prognosis (Pneumonia Se-
    verity Index)
Pneumonia prognosis: mortality in elder-
    ly
Pneumonia prognosis: nursing home
Severe pneumonia probability (Spanish)

**Respiratory disease: Upper respirato-
    ry disease**
Sinusitis diagnosis (Berg)
Sinusitis diagnosis (Williams)
Strep diagnosis in sore throat
Strep score (pediatric)

Respiratory disease: Vent weaning
CROP index
Rapid Shallow Breathing score
Ventilation index

Skin disease
Necrotizing fasciitis diagnosis
Predicting pressure ulcer development
    with Braden Score
Venous leg ulcer healing

Surgery and trauma
Bowel obstruction diagnosis: need for x-
    ray
Burn injury prognosis
Burn injury prognosis (Belgian)
Clinically important brain injury 2-18 yrs
    (PECARN)
Common bile duct stone risk
Fall risk in assisted living
Fall risk in elderly
Hip fracture length of stay in NH
Hip fracture prognosis
Intimate partner violence screening
    (combined protocol)
Lap chole: probability of conversion
Need for massive transfusion in trauma
Pediatric appendicitis score
Peritonitis prognosis (Mannheim)
Prognosis in near drowning
Severe head injury prognosis
Spinal cord injury prognosis
Traumatic brain injury prognosis
    (Marshall CT score)
Traumatic wound infection risk

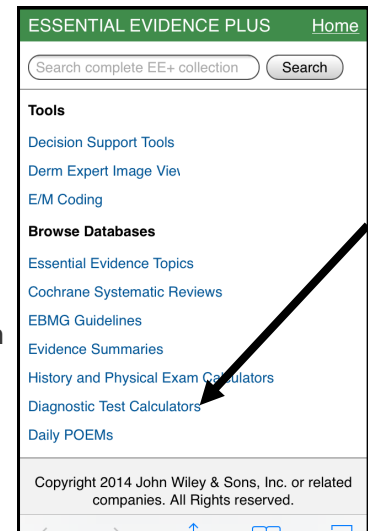## Essential Evidence Plus Clinical Rules and Calculators

Diagnostic Test Calculators

Calculators of the clinical performance of a diagnostic test

Purpose: To help clinicians choose the best diagnostic test and interpret the test results

Example: The calculator answers questions such as: What is the best test to rule out renal artery stenosis? (below) What is the likelihood of Trichomonal infection in women with Trichomonas on pap smear? What is the 10-year mortality risk for a patient who smokes and has hypertension?

Detailed Description: The tool offers test characteristics and an estimate of the probability of disease before doing the test. The calculator also outlines the probability of the disease based upon the results of test. Users can choose from one of several tests based on what is available and whether they are interested in ruling-in or ruling-out a disease. Additionally, users can change the probability of disease based upon a clinical decision rule or gestalt. This allows users to tailor test result interpretations to the clinical circumstances.

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Browse Databases

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Cochrane Systematic Reviews

EBMG Guidelines

Evidence Summaries

History and Physical Exam Calculators

Diagnostic Test Calculators

Daily POEMs

Go to **Diagnostic Test Calculators**, then find **Cardiovascular**, then **Hypertension > Renal Artery**

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Search all of EE+ — Go — Back

Diagnostic Test Calculator — 2005-08-01

Determine the likelihood of a patient having a disease based on the results of a diagnostic test.

Symptom: Hypertension
Disease: renal artery stenosis
Show test summary

Diagnostic Tests: (sorted by LR+)

8.0 - CT angiography

Definitions

LR+: 8.0 **Sensitivity:** 64%
LR-: 0.4 **Specificity:** 92%

Pre-test Probability (%) ?
10 — Update

Hypertension: renal artery stenosis probability calculator

Change Pretest Probability to value etimated. Select test to compare here

Determine the likelihood of a patient having a disease based on the results of a diagnostic test.

Symptom: Hypertension
Disease: renal artery stenosis
Show test summary

Diagnostic Tests: (sorted by LR+)

8.0 - CT angiography

Definitions

LR+: 8.0 **Sensitivity:** 64%
LR-: 0.4 **Specificity:** 92%

Pre-test Probability (%) ?
24 — Update

71.6% - with disease if test is positive
11.0% - with disease if test is negative

More Info — Back

Diagnostic Test Calculator — 2005-08-01

Determine the likelihood of a patient having a disease based on the results of a diagnostic test.

Symptom: Hypertension
Disease: renal artery stenosis
Show test summary

Diagnostic Tests: (sorted by LR+)

8.0 - Ultrasonography

Definitions

LR+: 8.0 **Sensitivity:** 84%
LR-: 0.2 **Specificity:** 90%

Pre-test Probability (%) ?
24 — Update

71.6% - with disease if test is positive
5.4%   - with disease if test is negative

More Info — Back

Determine the Pretest probability of your patient having renal artery stenosis using the *Hypertension: renal artery stenosis diagnosis* clinical calculator. Using the *Hypertension -> Renal artery stenosis* diagnostic test calculator, compare Ultrasonography with CT Angiography for the best test with a patient with a 24% pretest probability of renal artery stenosis. Ultrasonography has the same positive predictive value and is noninvasive as well. Click **More Info** for references.

Definitions:

Pretest: Best estimate of percent with disease before any testing or probability based on calculation

Sensitivity: Percent with disease who have a positive test

Specificity: Percent without disease who have a negative test

LR: Likelihood ratio for each level of test. The higher it is, the better it rules -in disease. The lower it is, the better it rules it out.

LR+: Positive likelihood ratio (how well a positive test rules-in disease)

LR-: Negative likelihood ratio (how well a negative test rules-out disease)

LR = 1: No change in disease likelihood

Prob: Probability of disease for patients with this test result

Essential Evidence Plus Clinical Rules and Calcula-

History and Physical Test Calculators
Calculates the value of various history or physical findings
Purpose: To support the clinical decision making of a clinician by offering information re-
garding the likelihood of patients having a disease based on information gathered dur-
ing a history and physical evaluation
Example: What is the likelihood of strep throat in a patient with tonsillar exudates? In a
patient with low back pain, what symptoms are indicators of ankylosing spondylitis?
(Below)
Detailed Description: The calculator gives users the probability of the disease based up-
on the results of clinical evaluation before doing additional testing. Users can choose
one of several elements of the history and physical. They can also change the probabil-
ity of disease based upon a clinical decision rule or gestalt. This allows users to tailor
interpretation of the clinical circumstances to decide if additional testing is worthwhile.

On the main page select History and Physical DB
Pick Musculoskeletal, and find Back Pain > Ankylosing Spondylitis

ESSENTIAL EVIDENCE PLUS   Home

Search all of EE-   Go   Back

Ankylosing spondylitis diagnosis

Decision Support Calculators   2006-08-01
                        For
patients under age 50 with > 3 mos back pain

☑ Morning stiffness > 30 min
☐ Improvement in back pain with exercise but not with rest
☑ Awakening because of back pain during 2nd half of night only
☑ Alternating buttock pain

Probability of ankylosing spondylitis as cause of pain is 39.4%, given 5% overall probability of AS.

   More Info

                        Back

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Use the Ankylosing Spondylitis
calculator to determine pretest
probability of AS.

Determine the likelihood of a patient having a disease based on information gathered during a history and physical evaluation.

Symptom: Back pain
Disease: ankylosing spondylitis
Show test summary

Diagnostic Tests: (sorted by LR+)

30.3 - Chest expansion < 2.5 cm   ▼

Definitions

LR+: 30 **Sensitivity:** 9%
LR-: 0.9 **Specificity:** 100%

Pre-test Probability (%) ?
34   Update

94.0% - with disease if test is positive
31.9% - with disease if test is negative
More Info   Back

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Back pain -> ankylosing spondylitis

Diagnostic Test Calculator   2012-08-01

Determine the likelihood of a patient having a disease based on the results of a diagnostic test.

Symptom: Back pain
Disease: ankylosing spondylitis
Show test summary

Diagnostic Tests: (sorted by LR+)

17.5 - Plain radiograph

Definitions

LR+: 18 **Sensitivity:** 35%
LR-: 0.4 **Specificity:** 98%

Pre-test Probability (%) ?
34   Update

90.0% - with disease if test is positive
15.3% - with disease if test is negative
More Info   Back

Back pain -> ankylosing spondylitis

Physical exam determining chest expansion of less that 2.5
cm is shown to be a 94% positive likelihood of ankylosing
spondhlitis based on a 39% pretest probability calculated
based on history. Drop down the list to see other findings
and compare their positive predictive value.

Using the 94% likelihood based on the low chest expansion,
you can then use the diagnostic test calculator to select the
best test to order to confirm your diagnosis. (right). With a
94% pretest probability, x-ray has a positive predictive val-
ue of 94.5%,meaning that if the x-ray is positive, there is a
99.6 chance that the patient has ankylosing spondylitis.

Exercise for Practice
You suspect that a 45 year old
man might have osteoarthritis.
He has pain when he flexes his
knee. Using the a Diagnosis
History and Physical calculator,
with a 70% pretest probability
of osteoarthritis, what is the
probability of him having osteo-
arthritis based on this finding?

Exercises for Practice

Essential Evidence Plus Clinical Rules and Calculators, Diagnostic test Calculators and History and Physical Exam Calculator

A 24 year old female comes to her doctor because one leg seems to be swollen while the other is not. She says that she has been in bed for several days with the flu, but otherwise has no other pertinent history. The doctor examines the patient and finds that she has pitting edema in the swollen leg, and the circumference of the calf is 4 cm larger than the unaffected leg.

IR Decision Support Calculators
A) Using a clinical decision rule, estimate the probability of DVT in her patient (Level 1a evidence). The DVT decision support calculator should give her clinical guidance depending on the outcome of the ultrasound and d-dimer, if indicated.

IR Diagnostic Test Calculator
B) If she desires more information on the accuracy of the ultrasound on this particular patient. Using the diagnostic test calculator for "DVT suspected (symptomatic) → DVT (all) (diagnostic test)" based on the pretest probability calculated above, determines the likelihood of DVT if the venous ultrasound is either positive or negative. Compare to d-dimer.

IR Diagnostic Test Calculator
C) Based on history and physical exam you suspect that a 25 year old man with positive hematuria has about a 50% chance of having kidney stones. (renal lithiasis) Using the Diagnostic test calculator, with a 50% pretest likelihood of stones, what is the better test to order, an IVP or a helical CT?

PEPID Calculators (Both Medical Calculators and Decision Support)

PEPID provides a comparable number and variety of calculators and decision support tools to Epocrates Online's MedCalc 3000. Unlike Epocrates, the tools are available in PEPID online and on the mobile device.

The calculator icon on the navigation toolbar will take you to the calculator alphabetical like on the web. Calculators appear individually in the PEPID index. There is also a link to the calculator index in the Table of Contents. The fastest way to find a calculator is to search for it in the Search box.

The calculators appear in the far left column on the Online version. Links are embedded into content in the right column. Below is the IADL content in the Geriatrics section of the resource. Note the (Open Calc) by the title. Click this to bring up the interactive calculator in the left column.
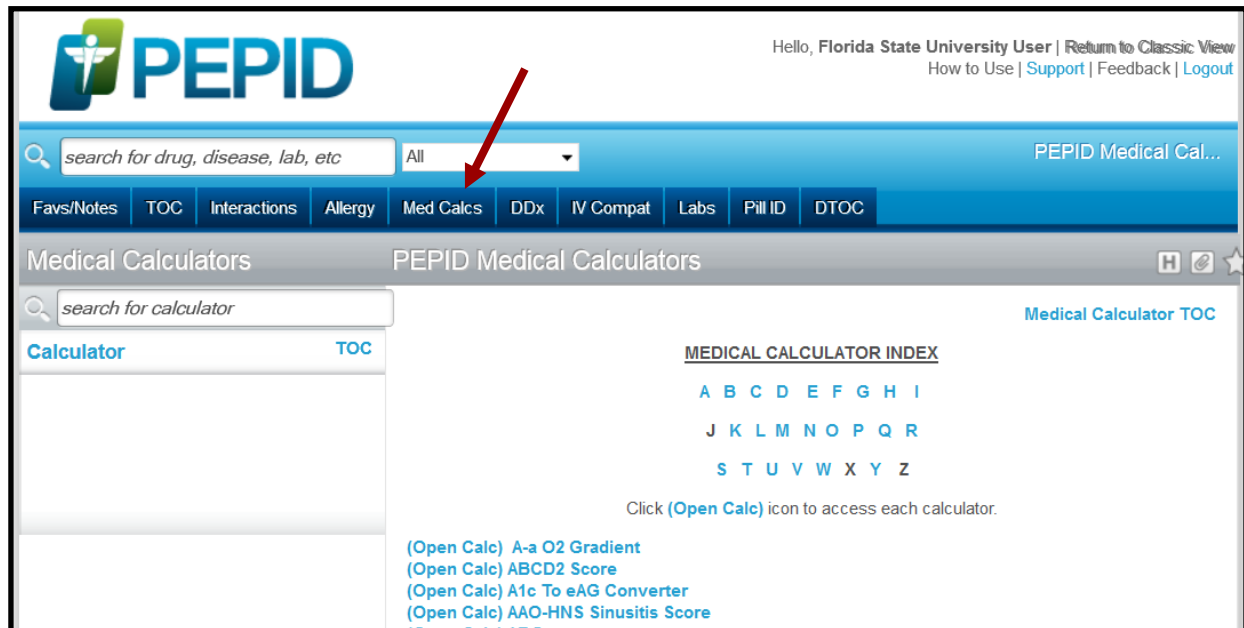
Included with each calculator is a description of the tool, with instructions for scoring and interpreting the calculation.
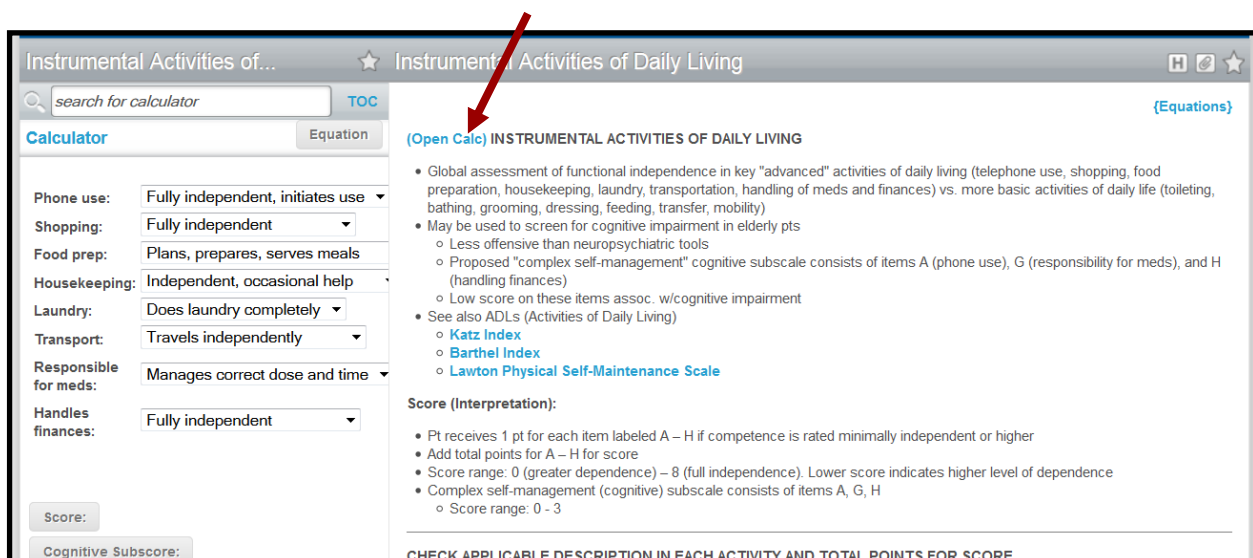
PEPID Calculators on the Mobile device

PEPID calculators on the Mobile device are accessed the same way as on the web, however, you are limited to one screen instead of three columns.

You can use the Table of Contents to look at calculators classified into categories.

You can also click on the calculator icon on the navigation bar to jump to the alphabetical listing of all calculators.

Below is the same IADL calculator as shown on the web version on the previous page.

Click the little calculator icon to open the tool which will score your results.

Images are from the iPhone version of PEPID.
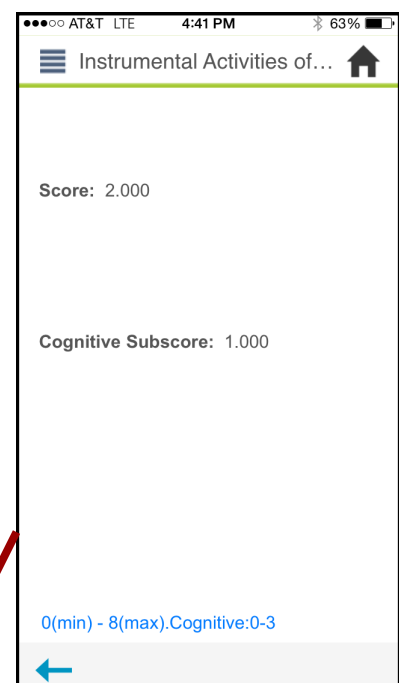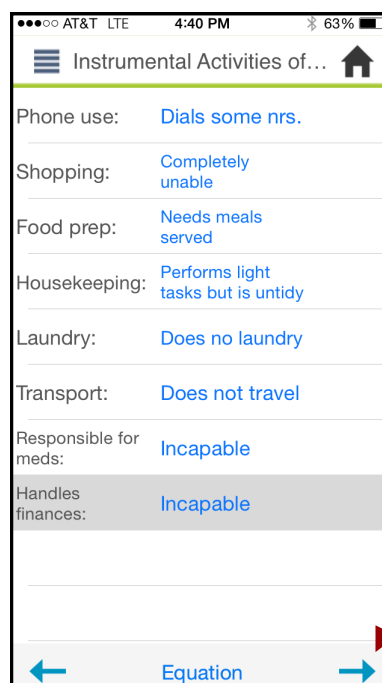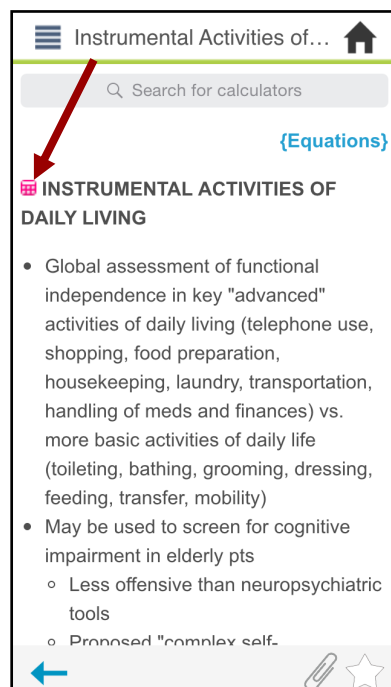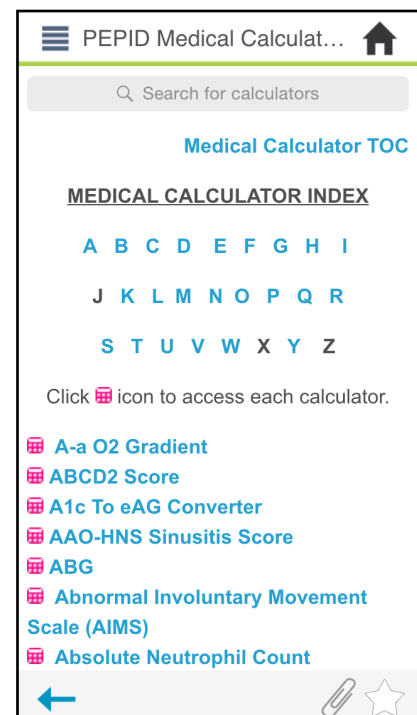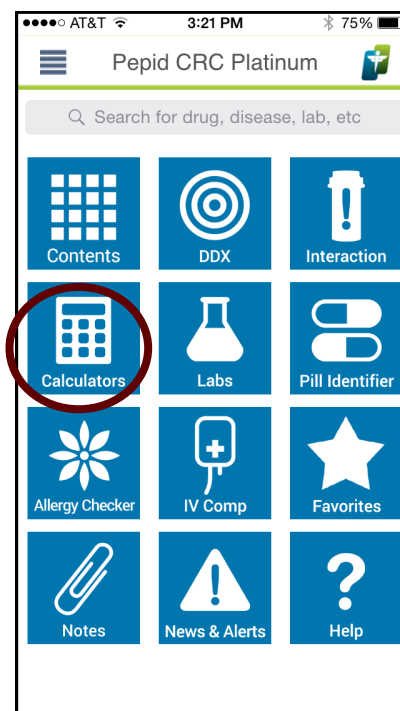
PEPID Calculators

I. **ANATOMIC**
A. NEUROVASCULAR EQUATIONS
   Cerebral Perfusion Pressure
   See also NEUROLOGIC SCORES
B. EYES, EARS, NOSE AND THROAT EQUATIONS
   Graves' Ophthalmopathy Clinical Activity Score
   Centor Criteria Score (Modified)
c. CARDIOVASCULAR EQUATIONS
   WORK INDEX
      Cardiac Work Index
         Left
         Right
      Ventricular Stroke Work Index
         Left
         Right
   VASCULAR RESISTANCE
     Pulmo Vasc Resistance
     Pulmo Vasc Resistance Index
     Systemic Vasc Resistance
     Systemic Vasc Resistance Index
   PRESSURES
     Coronary Perfusion Pressure
     Mean Arterial Pressure
     Mean Pulmo Arterial Pressure
     Pulse Pressure / Product
   OTHER
     Cardiac Index
     Cardiac Output:
       Fick Equation
       Physiologic
     Coronary Heart Disease Risk Factor Score (Female)
     Coronary Heart Disease Predictor Score (Male)
     Duke Treadmill Score
     Ejection Fraction
     H.E.A.R.T. Score
     Qs/Qt (Shunt, Fraction)
     QT Interval Correction
     Stroke Volume
     Stroke Volume Index
D. INFECTION
   MEDS Score
E. RESPIRATORY EQUATIONS
   Asthma Severity Score
   Asthma Control Score (Adults)
   Asthma Score (Peds 4 - 11 yo)
   Capacities & Ventilations
   Centor Criteria Score(Modified)
   Oxygen Calculations
   PERC Score
   Westley Croup Score
   C.U.R.B. 65 Score
   C.A.T. Score
F. GASTROINTESTINAL
   Alvarado Acute Appendicitis Score
   BISAP Score
   Rockall GI bleeding Score
   Glasgow-Blatchford Upper GI Bleeding Score
   Glasgow Pancreatitis Prognostic Criteria
   Balthazar Pancreatitis CT Severity

H. CAPACITIES & VENTILATIONS
   Alveolar Ventilation
   Bohr Equation
   Dead Space
   Enghoff Equation
   Lung Volumes
   Minute Ventilation
   Respiratiory Exchange Ratio
   Tidal Volume
I. OXYGEN CALCULATIONS
   A-a Gradient
   Arterial-Venous O2 Content Diff.
   O2 Capacity
   O2 Consumption
   O2 Consumption Index
   O2 Content
     Arterial
     Capillary
    Mixed Venous
   O2 Delivery
   O2 Delivery Index
   O2 Extraction Rate
   O2 Tension
     Alveolar
     Inspired
G. OTHER
   Barometric Pressure
   ABG
   Carbon Dioxide Production
   Disease Activity Scale
   Dynamic Compliance
   Heparin Dosing Weight - Based
   Static Compliance
   Peak Flow
II. RENAL & ELECTROLYTE EQUATIONS
A. RENAL FUNCTIONS
   Body Water Losses
     Urinary
     Fecal
     Insensate
     Water Losses in Hypernatremia
   Creatinine Clearance / For ED
   Fractional Excretion
     Potassium
     Sodium
   Glomerular Filtration Rate
     Bjornsson
     Cockcroft
     Counahan-Barratt
     Gates
     Hull
     Jelliffe
     Mawer
     MDRD
     Schwartz
     Shull
     Traub
     Zhazali-Barratt
   Filtration Fraction
   Nitrogen
     Balance
     Urine Loss
   Potassium
     Urine, Corrected
     Transtubular

Screenshot 1: Equations: Pediatric Body Mass Index

{Equations}

PEDIATRIC BODY MASS INDEX PERCENTILE CURVES IN CHILDREN & ADOLESCENTS

$$BMI = \frac{Wt}{Ht^2}$$

BMI: body mass index (kg/sq.m)
Wt: weight (kg)
Ht: height (m)

Background
1. Indirect used to
2. Data co 1970s

Interpretat age group

Screenshot 2: Equations: Pediatric Body Mass Index

1970s

Interpretation: check percentiles by sex & age group

1. **Pediatric**
   ○ Boys
     ■ Select age: 1 2 3 4 5 6 7 8 9 10
   ○ Girls
     ■ Select age: 1 2 3 4 5 6 7 8 9 10
2. **Adolescent**
   ○ Boys
     ■ Select age: 11 12 13 14 15 16 17 18 19
   ○ Girls
     ■ Select age: 11 12 13 14 15 16 17 18 19

Reference
1. Nelson WE, Behrman RE, Kliefman RM, Arvin AM. Nelson Textbook of Pediatrics,

Screenshot 3: Peds Girls BMI

Age (y) / %	5th	10th	25th	50th	75th	90th	95th
1	14.7	15	15.8	16.6	17.6	18.6	19.3
2	14.3	14.7	15.3	16	17.1	18	18.7
3	13.9	14.4	14.9	15.6	16.7	17.6	18.3
4	13.6	14.1	14.7	15.4	16.5	17.5	18.2
5	13.5	14	14.6	15.3	16.3	17.5	18.3
6							
7							
8							
9							
10							

Screenshot 4: Pediatric BMI in Girls (age 6 yo)

weight:	45	lbs
height:	45	in

Results

BMI:	15.645	kg/sq.m
Percentile:	50th to 75th	

PEPID Calculators ...continued

B. ELECTROLYTES
Anion Gap
Bicarbonate Deficit
Calcium
   Corrected
   Protein-Bound
Osmolality, Calculated
Osmolar Gap
Potassium: Total Body
Sodium
   Corrected
   Deficit
   Hypernatremia Management
   Water Losses in Hypernatremia

C. ACID BASE
ABG Analysis
Respiratory Acidosis
    Compensation
   Acute
   Chronic
   Winter's Formula
Respiratory Alkalosis
    Compensation
   Acute
   Chronic
PCO2 Compensation Expected
   Metabolic Acidosis
   Metabolic Alkalosis
Henderson-Hasselbalch Equation
Hydrogen Concentration (Kassirer-
   Bleich Equation)

D. OTHER
AST/ ALT Ratio
Blood Alcohol Level
   Calculated
   Predicted
   Mass of Pure Ethanol Consumed
Colloid-Oncotic Pressure
HIV Drug Adjustments
Iron Deficit
Low Density Lipoprotein,
   Cholesterol
Phenytoin Corrected

III. METABOLIC EQUATIONS
A. FLUID COMPARTMENTS
Body Fluid Compartments
Body Water Deficit
Free Water Deficit
Total Body Solutes

B. WEIGHT & MASSES
Body Weight
   Adjusted
   Ideal
   Ideal (Hamwi Method)
   Lean Body Weight
Body Mass
   Body Mass Index (BMI)
    Adult
    Pediatric
   Lean Body Mass
Body Surface Area
   DuBois & DuBois
   Gehan & George
   Mosteller

C. ENERGY
Energy Expenditure
   Basal
   Total
Caloric Requirements
   Non-Protein
   Protein
Basal Metabolic Rate
ABG Analysis
Glucose / HbA1C Converter

IV. HEMATOLOGIC EQUATIONS
Absolute Neutrophil Count
Blood Volume
Hemophilia
   Factor VIII Dosage
   Factor IX Dosage
Mean Corpuscular
   Hemoglobin
   Hemoglobin Concentration
   Volume
Reticulocyte
   Percent
   Corrected
   Absolute Count
Albumin
   Serum-Ascites Albumin Gradient
Glycosylated Hemoglobin
   HbA1C to Glucose

V. PEDIATRIC EQUATIONS
APGAR
Alvarado Acute Appendicitis Score
Asthma Severity Score
Croup Score
Glasgow Coma Scale
Maintenance Fluids
Peak Flows
Pediatric Risk Indicator
Pediatric Trauma Score
Peds & Adolescent BMI Percentiles
Rochester Criteria
Strep Pharyngitis Probability
Systolic Blood Pressure
Water Losses
Yale Observation Scale

VI. CONVERSION EQUATIONS
Weight
Distance
Volume
Temperature
Pressure
SI Units Conversion
Glucocorticoid Converter
Narcotic Equianalgesic Dosing
Phenytoin Corrected

VII. SCORES
A. Global Assessment Scores
Activities of Daily Living (ADLs)
   Barthel Index of ADLs
   Katz Index of ADLs
   Lawton Physical-Self Maintenance
     Scale
   Instrumental Activities of Daily
     Living (IADLs)
Drug/ Alcohol use
   Alcohol Use Disorders
     Identification Test
     (AUDIT)
   AUDIT-C
   Brief Michigan Alcoholism Test
   CAGE Questionnaire
   Clinical Institute Withdrawal
     Assessment for Alcohol
     (CIWA-Ar)
   CRAFFT Questionnaire
   Maddrey Discriminant Function
   Opioid Risk Tool

Coronary Heart Disease Predictor S...

Equations

Framingham Study: Coronary Heart Disease Predictor Score (Male)

Background

1. Based on the Framingham Heart Study for 10 year risk for developing Coronary Heart Disease
2. Simple coronary disease prediction score uses JNC-V blood pressure and NCEP cholesterol categories to predict 10 year survival multivariate CHD risk in patients without overt CHD.
3. Estimates risk for CHD over a period of 10 years base in men 30-74 years old.

Questions

1. Age
   ○ 35-7...
2. Total Ch...

Coronary Heart Disease Predictor S...

Coronary Heart Disease 10 Year Risk %

1. Patient Point Total
   ○ <-2 = 2 % 10 yr CHD Risk
   ○ -2 = 2 % 10 yr CHD Risk
   ○ -1 = 2 % 10 yr CHD Risk
   ○ 0 = 3 % 10 yr CHD Risk
   ○ 1 = 3 % 10 yr CHD Risk
   ○ 2 = 4 % 10 yr CHD Risk
   ○ 3 = 5 % 10 yr CHD Risk
   ○ 4 = 7 % 10 yr CHD Risk
   ○ 5 = 8 % 10 yr CHD Risk
   ○ 6 = 10 % 10 yr CHD Risk
   ○ 7 = 13 % 10 yr CHD Risk
   ○ 8 = 16 % 10 yr CHD Risk
   ○ 9 = 20 % 10 yr CHD Risk

CHD Risk Score (Male)

Age:	**50-54 yrs**
Total Cholesterol:	**200-239 mg/dl**
HDL-C:	**35-44 mg/dl**
Blood Pressure:	**130-139/85-89 mmHg**
Diabetes:	**Yes**
Smoker:	**Yes**

Results

CHD Risk:	10.000
Ten Year Risk:	25 % 10 yr Risk

Problem Severity Index
TWEAK Alcoholism Score

B. Neurologic Scores
AIMS (Abnormal Involuntary Movements Scale)
CHADS2 Primary Stroke Risk in Aspirin-Treated Non-valvular Atrial Fibrillation
Drug Regimen Unassisted Grading Scale (DRUGS)
Dizziness Handicap Inventory
Glasgow Coma Scale
Glasgow Coma Scale (Pediatric)
Los Angeles Prehospital Stroke Screen
Mini Mental Status Exam
NIH Stroke
Pain Assessment in Advanced Dementia (PAINAD)
Premature Infant Pain Profile
Standardized Assessment of Concussion
Tinetti Balance Score

C. Cardiovascular
ATP III Guidelines
Women
Men
Bleeding Probability after TPA or MI
Cardiac Arrest Score
CHADS2 Primary Stroke Risk in Aspirin-Treated Non-valvular Atrial Fibrillation
Coronary Heart Disease Risk Factor Score (Female)
Coronary Heart Disease Predictor Score (Male)
Duke Treadmill Score
Global Registry of Acute Coronary Events (GRACE)
Intracerebral Hemorrhage (ICH) Score
Lee Revised Cardiac Risk Index
PE, Canadian
PE, Geneva
Preoperative Cardiac Risk (ACP)
Well's PE Criteria
Well's DVT Criteria

D. GI Scores
Alvarado Acute Appendicitis Score
Bedside Index for Severity in Acute Pancreatitis (BISAP) Score
Meld Score
Meld Na Score
Peld Score
Ranson's Criteria
Rockall GI bleeding Score
Glucose / HbA1C Converter
Glasgow-Blatchford Upper GI Bleeding Score

E. Dermatological Scores
Braden Pressure Ulcer Risk Assessment
Modified Braden Q Pressure Ulcer Risk Assessment (Peds)
Norton Pressure Ulcer Risk Assessment

F. OB/Gyn Scores
APGAR
Bishop
Edinburg Postnatal Depression Scale
Premature Infant Pain Profile
Greene Climacteric Score
Osteoporosis Screening Tool

G. Orthopedic Scores
Disease Activity Score for Rheumatoid Arthritis (DAS 28)
Ottawa Knee Rule
Ottawa Foot Rule
Ottawa Ankle Rule

H. Urology Scores
AUA BPH Symptom Score

I. Infection Scores
Centor Criteria (Modified)
Community-Acquired Pneumonia Mortality Risk for Adults
Croup (Pediatric)
C.U.R.B 65 Score
MEDS Score
Pneumonia Severity Index
Sinusitis
Strep Pharyngitis Probability

J. Psychiatric Scores
Brief Psychiatric Rating Scale
Brief Fatigue Inventory
Edinburgh Postnatal Depression Scale
Geriatric Depression Scale
Problem Severity Index
SAD PERSONS Scale
Suicide Ideation Scale

K. Respiratory
Asthma Severity Score
Asthma Control Score (Adults)
Asthma Score (Peds 4 - 11 yo)
C.A.T. Score
Pram Score

Westley Croup Score

L. Trauma
Apache II
CRAMS
Glasgow Coma Scale
Glasgow Coma Scale (Pediatric)
Injury Severity Score (ISS)
Mangled Extremity Severity Score
Modified Injury Severity Score (MISS)
Pediatric Risk Indicator
Pediatric Trauma Score
Prehospital Index
Revised Trauma
Standardized Assessment of Concussion
Trauma
Trauma Infant Neurologic Score (TINS)
TRISS (Trauma Score - Injury Severity Score)
Blunt Trauma
Penetrating Trauma
Others
Snakebite Severity Score

VIII. OTHER EQUATIONS

A. Ascites
Serum-Ascites Albumin Gradient

B. Bayes Theorem

C. Burns
Estimated Affected Area
Fluid Mgmt: Parkland Formula

D. Carboplatin AUC
Calvert Formula
French Formula

E. Critical Care Equations
CO (cardiac output)
CI (cardiac index)
MAP (mean arterial pressure)
MPAP (mean pulmonary artery pressure)
PVR (pulmonary vascular resistance)
SVR (systemic vascular resistance)
CaO2 (arterial O2 content)
CvO2 (mixed venous O2 content)
C(a-v)O2 (arterial-venous difference)
O2 capacity
O2 consumption
Qs/Qt (shunt fraction)

F. Erectile Dysfunction Test

G. Heparin Dosing, Weight-Based

H. Intravenous (IV)
Dosing Calculators
Drip Rate
Drip Rate Conversion
Reverse Dosing Calculator

I. Pregnancy:
Expected Date of Delivery
Expected Gestational Age

Other Calculators

The availability of calculators exceeds the need. Most of the resources mentioned previously attempt to address the calculator needs of all specialties. As mentioned, many resources license and provide standard calculators created by **MedCalc 3000**. Others, like **Essential Evidence Plus** and **PEPID**, create their own. **Skyscape** includes **Archimedes** calculators with their Medical Library app. Some curate select calculators and provide links to those tools like **Pediatric Care Online**, listed below.

There is one free app that is worth mentioning. **QxMD** creates a nice set of 150 calculators in their free **Calculate** app. Their calculators are very easy to use.

Calculate by QxMD

GENERAL EDITION

Copyright © QxMD Software, Inc.
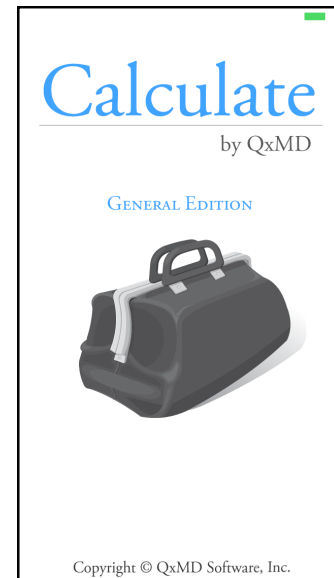
Access Medicine Calculators

Absolute Neutrophil Count
Anion Gap
APACHE II
BEE (Basal Energy Expenditure)
BMI
Body Surface Area
Calcium Salt Equivalents
Coronary Heart Disease Risk
Corrected Calcium
Creatinine Clearance
Fractional Excretion of Sodium
Free Water Deficit
GFR (Glomerular Filtration Rate)
Glasgow Coma Score
IBW (Ideal Body Weight)
IV Infusion Rate
Mean Arterial Pressure
Metric Standard Conversion
Oxygenation
Pregnancy Due Date
Serum Osmolality
SI/CU Conversion
Sodium Level Correction in Hyperglycemia
Steroid Equivalence
Temperature Conversion

Pediatric Care Online Calculators

2x2 Contingency Table (Web page) VassarStats
Ballard Maturational Assessment of Gestational Age (Web page) MedCalc
Bayesian Analysis Model (Web page) MedCalc
BiliTool™ (Web page) BiliTool, Inc.
BMI Calculator for Child and Teen (Web page) Centers for Disease Control and Prevention
Body Surface Area, Body Mass Index (BMI) (Web page) MedCalc
Catch-up Immunization Scheduler - for children 6 years and younger (Web page) Centers for Disease Control and Prevention
Clinical Risk Index for Babies (CRIB II) (Web page) SFAR
Duke Criteria for Infective Endocarditis (Web page) MedCalc
Endotracheal Tube & Umbilical Catheter (Web page) NICU Tools
Extremely Preterm Birth

Outcome Data (Web page) National Institutes of Health
Instant Childhood Immunization Scheduler - for children 6 years and younger (Web page) Centers for Disease Control and Prevention
IV Infusion Rate (Web page) MedCalc
Neonatology on the Web (Web site) Neonatology on the Web
Open Source Epidemiologic Statistics for Public Health (Web page) OpenEpi
Peak Expiratory Flow (Web site) Cornell University
Pneumothorax (Web page) Chest X-ray - Your Thoracic Imaging Resource
Quality Dividend Calculator™ (Web page) National Committee for Quality Assurance
UBC Clinical Significance Calculator (Web site) University of British Columbia

Pediatric Care Online

Pediatric Care Online, a product of The American Academy of Pediatrics (AAP), integrates many different pediatric decision support resources for quick access both online and on the mobile device. The web site has many more resources than the mobile device version.

- Point-of-Care Quick Reference – Over 240 select topics taken from the AAP Textbook of Pediatric Care outlined for quick retrieval of information
- The new AAP Textbook of Pediatric Care – Over 3000 pages of detailed information and recommendations
- Bright Futures – Comprehensive health supervision guidelines to help make the most of well-child visits
- Red Book Content– Detailed information from the AAP Red Book on over 200 childhood infectious diseases
- Interactive Periodicity Schedule – Interactive chart providing preventive screening and recommended actions for each well-child visit
- Clinical Calculators—calibrated for pediatrics, such as BMI
- Signs & Symptoms Search – Quickly suggests diagnoses based on selected signs and symptoms
- Patient Handouts - Hundreds of patient handouts with easy to read explanations for many conditions and procedures
- Forms & Tools - Hundreds of resources to help screen, track, and record clinical information
- Algorithms — Decision support for a number of pediatric conditions. See sample next page

Pediatric Care Online

This sample algorithm from the web site maps the decision tree of a pediatric patient with Otitis Media. These flow charts are huge and can be printed out and put on the wall in an exam room.
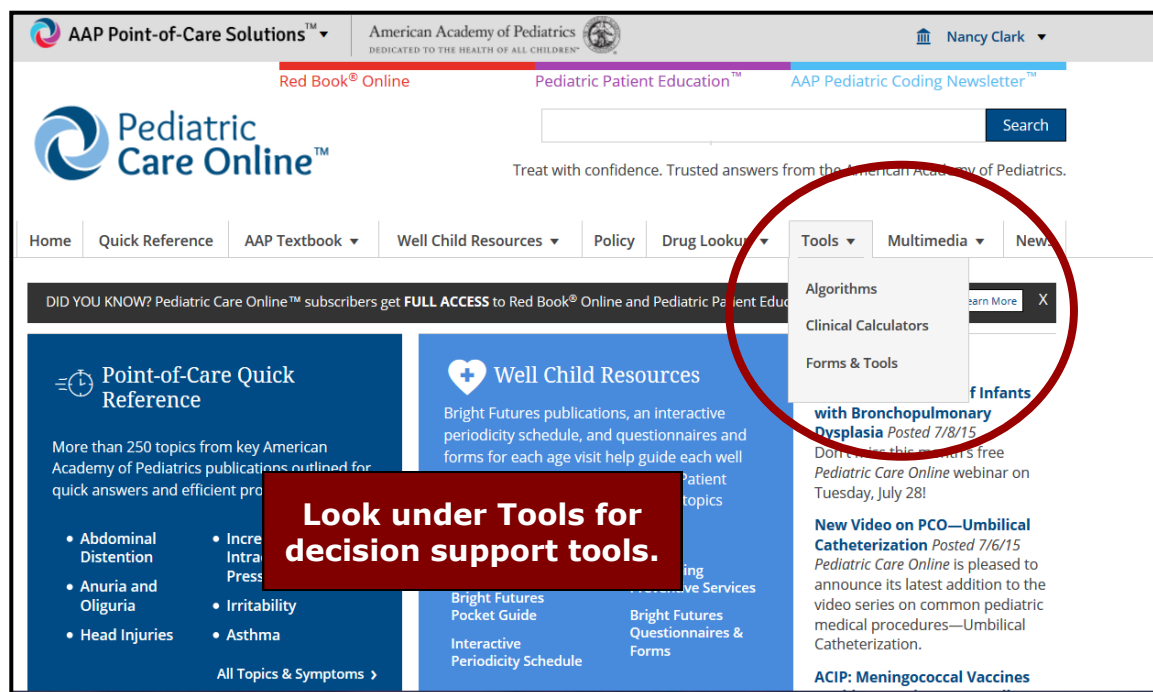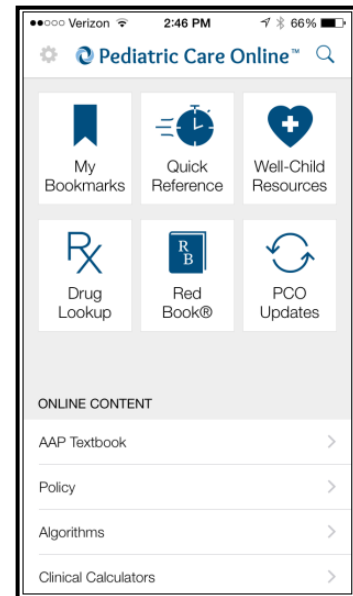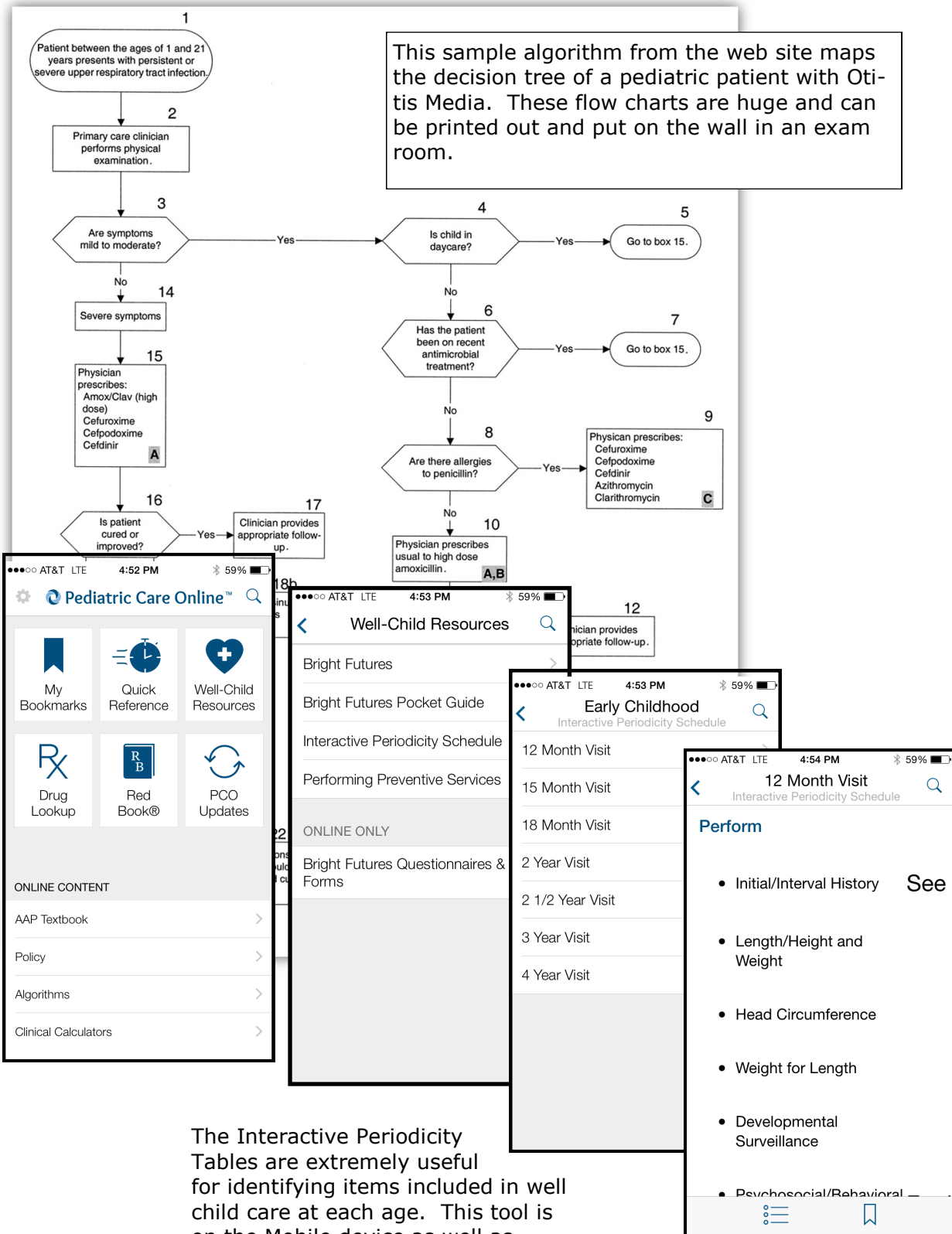
The Interactive Periodicity Tables are extremely useful for identifying items included in well child care at each age. This tool is on the Mobile device as well as

Diagnostic Test/Laboratory References

There are three handy resources that provide information about diagnostic testing: **Access Medicine** online and mobile, **PEPID** Online and mobile, and the Lab tab in **Epocrates Essentials** on the Mobile device. These are similar in that they include information on each test to include a basic description, reference range, how to interpret the test, prep and collection methods, and the cost of the test.

Access Medicine's Dx Test

Featuring the content of *Pocket Guide to Diagnostic Tests*, 6th ed., by Diana Nicoll, Stephen J. McPhee, Michael Pignone, and Chuanyi Mark Lu, this resource has the largest number and type of diagnostic test provided. It includes imaging tests, microbiology cultures, as well as diagnostic algorithms.

PEPID Lab Manual

PEPID contains an excellent lab manual both online and on the Mobile device. Use the Lab icon or table of contents to go to the Lab Manual Index and find the test.

iPhone version of Creatinine

Epocrates Essentials Lab Tab

Epocrates Lab provides only laboratory test information, but they include Panels, which the students, unfamiliar with what is on a specific panel, find very useful. You can look up a test by name or look up the panel and pick tests from the list of tests on the panel. Included in the content on each test under **Basics** is a list of panels in which this test is normally included. Cost information is very specific including the cost of both the individual test and the various panels it is in. The ICD-9 codes for those diseases for which most payers will cover the lab test are provided under the **Cost/Billing** section.

You can also **Browse** the **Lab by Panel Types** to see the labs in each panel.

Exercise for Practice
A basic metabolic panel reveals that a 30 year old man suffering from bipolar disorder has a serum calcium level of 10.9 mg/dL. He is taking lithium and valproate. Could his medications be a factor?

Labs

Q Search Labs

Specimen Type | Panel Type

ABG >
acute hepatitis panel >
anti-coagulation panel >
anti-phospholipid antibodies >
Ashkenazi panel >

Search or browse specimen type or panels

calcium

Reference Range >
Interpretation >
Basics >
Prep/Collection >
Cost/Billing >

Note Add to Favorites star

calcium
Reference Range

Adults
8.5-10.2 mg/dl
(2.13-2.55 mmol/L SI units)

Pediatric
preterm: 6.2-11.0 mg/dl
(1.55-2.75 mmol/L SI units)
neonatal: 7.6-10.4 mg/dl
(1.9-2.6 mmol/L SI units)
<24 mo: 9.0-11.0 mg/dl
(2.25-2.75 mmol/L SI units)
2-12 yrs: 8.8-10.8 mg/dl
(2.2-2.7 mmol/L SI units)

calcium
Interpretation

Low >
High >

calcium
High

Disease/Condition
familial hypocalciuria
hyperparathyroidism
hyperthyroidism
immobilization
malignancy
milk-alkali syndrome
Paget disease
sarcoidosis

calcium
Medications

calcium containing antacids class >
captopril Rx >
diuretics, thiazide class >
hydralazine Rx >
isotretinoin >
leuprolide
lithium
OCPs
paroxetine
propranolol

calcium
Cost/Billing

Test Cost
$7.20 - $9.73

Panel Cost
basic metabolic panel : $11.83 - $15.98
renal function panel : $12.13 - $16.39
comprehensive metabolic panel : $14.77 - $19.96

Commonly Associated ICD-9's
• 135 - Sarcoidosis
• 198.89 - Secondary malignant neoplasm of other specified sites
• 203.00 - Multiple myeloma without mention of having achieved remission
• 242.90 - Thyrotoxicosis without mention of goiter or other cause, without mention of thyrotoxic crisis or storm

Interpretation is linked to the **Rx** drug monographs and **Dx** disease reference sections of Essentials Click on the **> symbol** to bring up a page containing interpretation for that Dx. Use button at top to go **Back**.
Under **Cost/Billing** are **Commonly Associated ICD-9** codes to help in coding for ordering the labs.