

# A pharmacist's guide to using UpToDate

## Key UpToDate Features:

- 1 Full search functionality for pharmacists
- 2 Tables, graphics, and algorithms provide additional detail
- 3 Find useful features and relevant links within a topic
- 4 Drug information for pharmacists
- 5 Patient education leaflets
- 6 Create your own personalized homepage
- 7 Remote access

With UpToDate®, pharmacists can search topics about conditions and treatments, view tables, graphics, and algorithms, obtain drug information, analyze drug interactions, and share patient education materials.

## 1 Full search functionality for pharmacists

Enter a sign, symptom, condition, drug, lab abnormalities, or protocol. Be specific in what you are searching for.

Search UpToDate



### Examples of search terms

- |                                     |                                      |  |
|-------------------------------------|--------------------------------------|--|
| ▶ Abacavir hypersensitivity         | ▶ Geriatric — drug prescribing, etc. | ▶ Uterine Fibroids treatment                               |
| ▶ Antibiotic reaction               | ▶ Gout management                    | ▶ Stewardship — outpatient, inpatient, antimicrobial, etc. |
| ▶ Benzodiazepine use in elderly     | ▶ Herbal medicine for ovarian cancer |  |
| ▶ Embolism risk oral contraceptives | ▶ Hip fracture DVT prophylaxis       | ▶ Symptoms Stevens Johnson Syndrome                        |

**TRUSTED  
RESOURCE  
FOR PHARMACISTS**

Subscribing pharmacists say:\*


- 95%** I trust UpToDate as a point-of-care decision support resource
- 95%** UpToDate impacts patient management
- 90%** UpToDate helps prevent errors



## 2 Tables, graphics, and algorithms provide additional detail


Use filters to quickly identify graphics related to:

- Images to support choices in drug therapy for specific conditions
- Algorithms and charts for patient treatment, and management

Enter your query into the search bar. Search example: Diuretics used to treat hypertension




diuretics used to treat hyperten  

Contents 

Calculators

Drug Interactions

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All

Adult

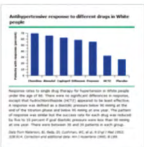
Pediatric

Patient

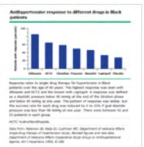
Graphics

Graphics related to your search will populate, in this example: Diuretics used to treat hypertension.

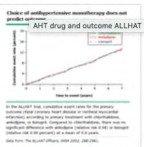
Graphics for: Choice of drug therapy in primary (essential) hypertension



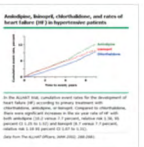
Single drug in White people



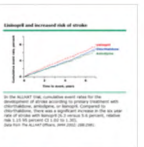
Response to antihypertensives in Black patients



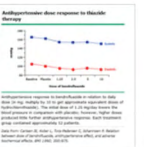
AHT drug and outcome ALLHAT




AHT drug and HF ALLHAT




AHT drug and stroke ALLHAT



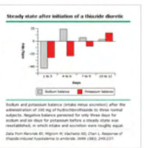
Antihypertensive dose response to thiazide therapy




Thiazide side effects and dose



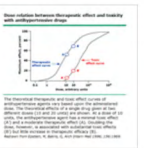
Diuretics used to treat hypertension




Time course of diuretic action



Antihypertensive therapy: No indications for specific drug



Dose response curves in HTN



Treatment of hypertension by underlying disease

Click on a graphic to view in more detail, in this example: Pharmacology of diuretics used to treat hypertension.

Pharmacology of diuretics used to treat hypertension			
	Bioavailability (%)	Half-life (hours)	Duration of action (hours)
<b>Thiazide diuretics*</b>			
Bendroflumethiazide	90	3-4	6-12
Chlorothiazide	9-56 (dose dependent)	Biphasic: Initially 1-2, then ~12	6-12
Hydrochlorothiazide	65-75	Biphasic: Initially ~5, then 6-15	6-12
<b>Thiazide-like diuretics</b>			
Chlorthalidone	65	40-60 <sup>¶</sup>	24-72
Indapamide	90	Biphasic: Initially ~14, then 25	16-36
Metolazone	65	6-20	18-25
<b>Loop diuretics</b>			
Bumetanide	80-90	1-1.5	4-6
Furosemide	47-64 (oral absorption is reportedly more variable in organ dysfunction and with gut-wall edema)	0.5-2	6-8
Torsemide	80	3.5	6-8
Ethacrynic acid	~100	2-4	12

### 3 Find useful features and relevant links within a topic

Understand evidence-based therapies for conditions.

The search example below is for epilepsy treatment. Summary and recommendations provide you with a quick, clear, and concise answer.

Browse table of contents for quick access to conditions and treatments

Share topics with your colleagues

UpToDate® epilepsy

< Back Overview of the management of epilepsy in adults epilepsy Find

**Topic Outline**

- SUMMARY AND RECOMMENDATIONS
- INTRODUCTION
- CLASSIFICATION
- ANTISEIZURE DRUG THERAPY**
  - When to start antiseizure drug therapy
  - Choosing an antiseizure drug
  - Subsequent drug trials
    - Combination therapy
  - Side effects of therapy
    - Specific adverse reactions
  - Maximizing the likelihood of a successful outcome
    - Titration and monitoring
    - Patient education
    - Seizure calendar
    - Generic substitution
    - Alcohol intake
  - Nonadherence with antiseizure drug therapy
- DRUG-RESISTANT EPILEPSY
- ALTERNATIVE THERAPIES
- SPECIAL POPULATIONS
  - Women of childbearing age
  - Effect of antiseizure drugs on the fetus

**ANTISEIZURE DRUG THERAPY**

**When to start antiseizure drug therapy** — Immediate antiseizure drug therapy is usually not necessary in individuals after a single seizure, particularly if a first seizure is provoked by factors that resolve. Antiseizure drug therapy should be started in patients who are at significant risk for recurrent seizures, such as those with remote symptomatic seizures. Antiseizure drug treatment is generally started after two or more unprovoked seizures, because the recurrence proves that the patient has a substantially increased risk for repeated seizures, well above 50 percent.

The issues to be considered in deciding when to start antiseizure drug therapy are discussed in detail separately. (See "[Initial treatment of epilepsy in adults](#)", section on 'When to start antiseizure medication therapy'.)

Antiseizure drug therapy is not necessarily lifelong. (See "[Discontinuing antiseizure drug therapy](#)" below.)

**Choosing an antiseizure drug** — Approximately half of patients with a new diagnosis of epilepsy will become seizure free with the first antiseizure drug prescribed [8,9]. Tolerability of side effects is as important as efficacy in determining the overall effectiveness of treatment. No single antiseizure drug is optimal for every patient. The selection of a specific antiseizure drug for treating seizures must be individualized considering:

- Drug effectiveness for the seizure type or types (see [table 3](#) and [table 4](#)) [10]
- Potential adverse effects of the drug (see [table 5](#) and [table 6](#))
- Interactions with other medications
- Comorbid medical conditions, especially, but not limited to, hepatic and renal disease
- Age and gender, including childbearing plans
- Lifestyle and patient preferences
- Cost

In general, enzyme-inducing antiseizure drugs (eg, [phenytoin](#), [carbamazepine](#), [phenobarbital](#), [primidone](#), and less so, [oxcarbazepine](#) and [topiramate](#)) are the most problematic for drug interactions with [warfarin](#) and oral contraceptive therapy, as well as certain anticancer and anti-infective drugs (see [table 7](#)). Specific interactions of antiseizure drugs with other medications may be determined using the [Lexicomp drug interactions](#) tool.

Issues to consider in selecting a specific antiseizure drug are discussed in detail separately. (See "[Initial treatment of epilepsy in adults](#)", section on 'Selection of an antiseizure medication'.)

### 4 Drug information for Pharmacists

Access drug information to better understand prescribed medications, administrations, side effects, and drug interactions. Answer questions about dosing, adverse effects, contraindications and warnings, and more.

The drug information in UpToDate originates from the full Lexicomp drug reference solution. The drug monographs are abridged, intended to meet the needs for clinician prescribing. The full Lexicomp solution is intended to meet the full range of everyday needs of pharmacists by including multiple searchable content sets and a variety of tools, including formulary decision-making support.

Click "Drug Information" under Contents menus for easy access.

UpToDate® Search UpToDate

**Contents** Calculators Drug Interactions UpToDate Pathways

< Back **Drug Information**

You receive the entire UpToDate library of specialties with your subscription. Click on a section below to view a detailed list of topics associated with that particular section. If you'd like to see the table of contents for other specialties, [click here](#).

- General drug information
- Patient drug information
- What's new in drug therapy**
- International drug information (concise)
- Pediatric drug information
- Patient Education



## Drug Discovery: Stay on top of what's new in drug research.

Click on "What's new in Drug Therapy", as shown at the bottom of page 3, to see the latest evidence.

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Topic Outline

COVID-19 INFORMATION

Myocarditis after COVID-19 mRNA vaccination (June 2021)

Anticoagulation intensity in people hospitalized for COVID-19 (March 2021, Modified June 2021)

Adjunctive baricitinib or tocilizumab for COVID-19 (February 2021, Modified June 2021)

Monoclonal antibody treatment for outpatients with mild to moderate COVID-19 (June 2021)

Anaphylaxis to mRNA COVID-19 vaccines (May 2021)

Safety and efficacy of the BNT162b2 (Pfizer COVID-19) vaccine in patients with cancer (May 2021)

Antibody response to the SARS-CoV-2 mRNA vaccine in solid organ transplant recipients (May 2021)

Short-term safety of the COVID-19 vaccine in patients receiving immune checkpoint inhibitors (May 2021)

What's new in drug therapy

Authors: [Diane MF Savarese, MD, Jonathan M Zand, PharmD BCPS](#)

[Contributor Disclosures](#)

All topics are updated as new evidence becomes available and our [peer review process](#) is complete.

Literature review current through: **Jun 2021**. | This topic last updated: **Jun 30, 2021**.

The following material represents a subset of new drugs, drug approvals, drug warnings, and drugs removed from the market from the past six months. This is **not a complete list**; it includes those topics considered by the authors and editors to be of particular interest or importance. For a complete list of new drug approvals, see <http://www.lexi.com/home/newdrugs/>.

You can check drug interactions by going to the [Lexicomp drug interactions](#) program included with UpToDate.

COVID-19 INFORMATION

Myocarditis after COVID-19 mRNA vaccination (June 2021)

Vaccine regulators in the United States, Europe, and elsewhere are investigating reports of myocarditis and pericarditis following receipt of the [COVID-19 mRNA vaccines](#) [1]. Preliminary evidence suggests that the rate observed in individuals 12 to 39 years old is higher than the expected baseline rate. Most reported cases have occurred in males within a week

Search for a drug name to view a drug monograph, providing you with information on the:

✓ Right drug ✓ Right dose ✓ Right route ✓ Right time ✓ Right patient

UpToDate®

Topiramate

Find

Back

Topiramate: Drug information

Find

Topic Outline

Brand Names: US

Brand Names: Canada

Pharmacologic Category

Dosing: Adult

Dosing: Renal Impairment: Adult

Dosing: Hepatic Impairment: Adult

Dosing: Pediatric

Dosing: Renal Impairment: Pediatric

Dosing: Hepatic Impairment: Pediatric

Dosing: Geriatric

Oral: Initial: 15 to 25 mg once daily; may increase dose based on response and tolerability in 25 mg increments every 2 weeks up to 100 mg/day in 2 divided doses, and thereafter in 50 mg increments every few weeks up to 400 mg/day (Cohen 2007; Matharu 2019).

Migraine (prevention):

Oral: Initial: 25 mg once daily; increase dose in 25 to 50 mg increments at intervals  $\geq 1$  week based on response and tolerability up to 100 mg/day. Some patients may require up to 200 mg/day for optimal response; however, adverse effects may increase (Linde 2013).

Seizures:

Note: FDA-approved as monotherapy and adjunctive therapy for focal (partial) onset seizures and primary generalized tonic-clonic seizures, or as adjunctive therapy for Lennox-Gastaut syndrome; may be used off label for other seizure types.

Monotherapy: Oral: Initial: 50 mg/day; increase dose in 50 mg increments at weekly intervals based on response and tolerability up to 200 mg/day; thereafter, may further increase in 100 mg increments at weekly intervals up to 400 mg/day.

Adjunctive therapy: Oral: Initial: 25 to 50 mg/day; increase in 25 to 50 mg increments at weekly intervals based on response and tolerability up to 400 mg/day.

Tremor, essential (alternative agent for patients who fail preferred therapies) (off-label use):

The UpToDate Drug Interactions Tool differentiates between drug combinations that should be avoided or modified immediately and combinations that warrant careful monitoring to ensure a medical problem does not arise in the future.

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Calculators

Drug Interactions

You can search for drug-drug, drug-natural product, drug-alcohol, and drug-vitamin interactions. Enter the drugs, herbs, and vitamins being taken by your patient. Next, click on the combination to find out more. This may help minimize reduced or exacerbated drug effects leading to poor treatment outcomes.

Lexicomp® Drug Interactions

Add items to your list by searching below.

Enter item name

ITEM LIST

Clear List

Analyze

Warfarin

St John's Wort

Selegiline

Alcohol (Ethyl)

X

Avoid combination

C

Monitor therapy

A

No known interaction

D

Consider therapy modification

B

No action needed

More about Risk

12 Results

Filter Results by Item

X

Selegiline (Monoamine Oxidase Inhibitors)

Alcohol (Ethyl)

X

St John's Wort

Selegiline (Monoamine Oxidase Inhibitors (Type B))

D

Carbidopa and Levodopa (Levodopa-Containing Products)

Multivitamins/Minerals (with AE, No Iron)

D

Ciprofloxacin (Systemic) (Quinolones)

Multivitamins/Minerals (with AE, No Iron)

D

Warfarin (Anticoagulants)

# 5 Patient education leaflets

Enhance patient engagement and family communication with UpToDate patient education leaflets found under the “Contents” tab.

**Contents** ▾ Calculators Drug Interactions UpToDate Pathways

< Back Patient Education

**Patient Education**

UpToDate offers two levels of content for patient education:

- **The Basics** are short overviews. They are written in accordance with plain language principles and answer the four or five most important questions a person might have about a medical problem.
- **Beyond the Basics** are longer, more detailed reviews. They are best for readers who want detailed information and are comfortable with some medical terminology.

Learn more about UpToDate's patient education

**HONcode** This site complies with the HONcode standard for trustworthy health information: [verify here.](#)

To browse the available patient education topics in UpToDate, click on a category below.

Allergies and asthma	Ear, nose, and throat	Lung disease
Arthritis	Eyes and vision	Men's health issues
Autoimmune disease	Gastrointestinal system	Mental health
Blood disorders	General health	Pregnancy and childbirth
Bones, joints, and muscles	Heart and blood vessel disease	Senior health
Brain and nerves	HIV and AIDS	Skin, hair, and nails
Cancer	Hormones	Sleep
Children's health	Infections and vaccines	Surgery
Diabetes	Kidneys and urinary system	Travel health
Diet and weight	Liver disease	Women's health issues

**Two options are available:**

1. Basics
2. Beyond the Basics

**Select Category to browse topics.**  
You can also find patient education materials from within a topic.

## Topic tools

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< Back anaphylaxis Find [Print] [Share] [AA] [Bookmark]

**Patient education: Anaphylaxis (The Basics)**

View in language: English, Arabic, Spanish

**What is anaphylaxis?**

Anaphylaxis is the term doctors use to describe a serious allergic reaction. It can happen very quickly and can cause death. Anaphylaxis can happen after a person:

- Eats a food they are allergic to
- Takes a medicine they are allergic to
- Is stung by an insect they are allergic to
- Touches something made out of latex

Other triggers can also cause anaphylaxis.

You might know if you are allergic to something. But you can also have anaphylaxis even if you don't know you have an allergy.

**Tip:** Patient information can be accessed under the contents tab, within the results page filter, and within topics.

**Patient Education: The Basics is available in English, Spanish, and Arabic.**

**You can share information with your patient via a no-reply email account.**

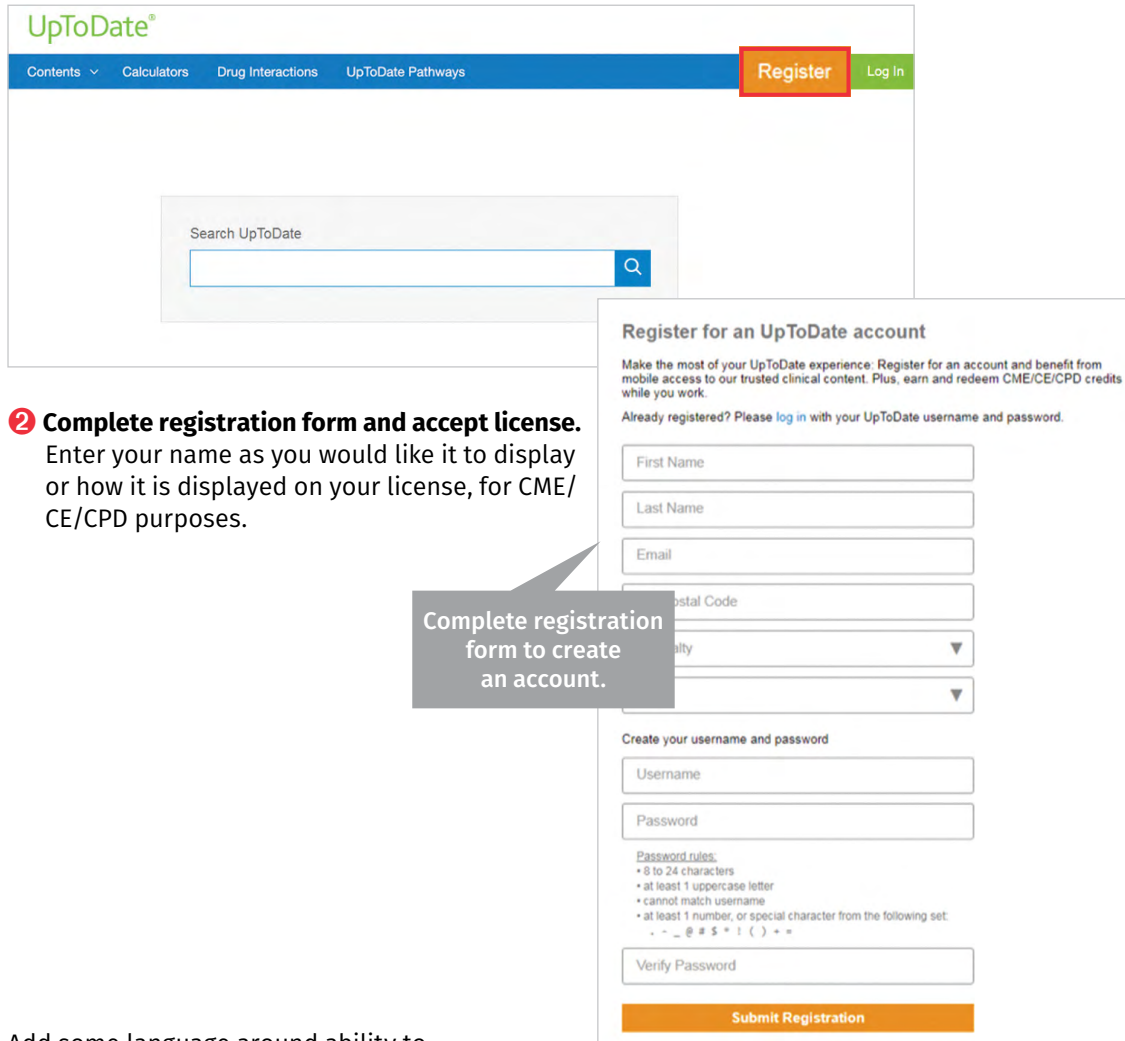
**You can bookmark search results, patient education, topics, and graphics for quicker access from your personal homepage.**

## 6 Create your own personalized homepage

With your personalized homepage, you can bookmark content for quicker access, browse your history, receive alerts, and use the UpToDate mobile app.

### TO GET STARTED, FOLLOW THESE STEPS:

- 1 **Click register.** You can create an UpToDate Account **only** from a computer within your institution or within your organization's internal network — [www.uptodate.com](http://www.uptodate.com).



The image shows the UpToDate website's registration form. The form is titled "Register for an UpToDate account" and includes a search bar at the top. The registration fields are: First Name, Last Name, Email, Postal Code, and a dropdown for Country. Below these are fields for Username and Password, with a "Verify Password" field. A "Submit Registration" button is at the bottom. A callout box points to the registration form with the text: "Complete registration form to create an account."

Register for an UpToDate account

Make the most of your UpToDate experience: Register for an account and benefit from mobile access to our trusted clinical content. Plus, earn and redeem CME/CE/CPD credits while you work.

Already registered? Please [log in](#) with your UpToDate username and password.

First Name

Last Name

Email

Postal Code

Country

Create your username and password

Username

Password

Password rules:

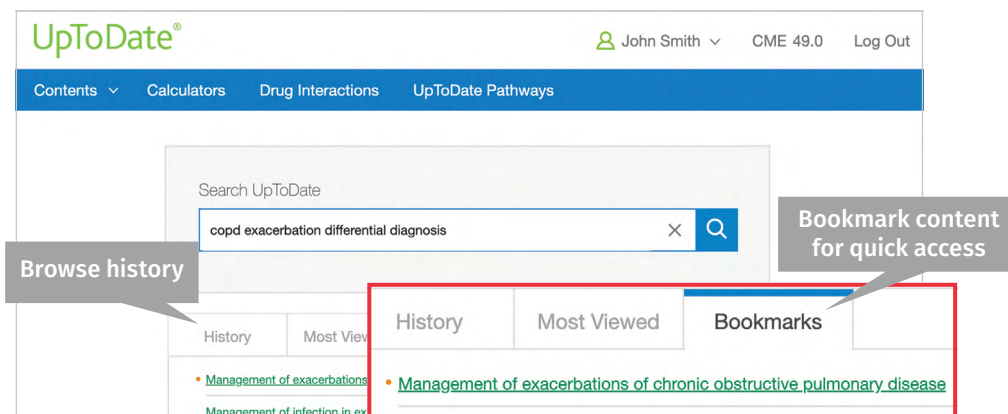
- 8 to 24 characters
- at least 1 uppercase letter
- cannot match username
- at least 1 number, or special character from the following set: . ~ @ # \$ % ^ & \* ( ) \_ + =

Verify Password

Submit Registration

- 2 **Complete registration form and accept license.** Enter your name as you would like it to display or how it is displayed on your license, for CME/CE/CPD purposes.

Add some language around ability to create bookmarks, etc. post registration.



The image shows the UpToDate website's personalized homepage. The user is logged in as John Smith, with a CME score of 49.0. The homepage features a search bar with the text "copd exacerbation differential diagnosis". Below the search bar are tabs for "History", "Most Viewed", and "Bookmarks". The "Bookmarks" tab is selected, showing a list of bookmarked items, including "Management of exacerbations of chronic obstructive pulmonary disease". A callout box points to the "Bookmarks" tab with the text: "Bookmark content for quick access". Another callout box points to the "History" tab with the text: "Browse history".

UpToDate®

John Smith CME 49.0 Log Out

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Search UpToDate

copd exacerbation differential diagnosis

History Most Viewed Bookmarks

Management of exacerbations of chronic obstructive pulmonary disease

Management of infection in ex



The orange dot alerts you to new research added since your last view of the record.

# 7 Remote access

Conveniently access UpToDate on any device. Enter your log-in credentials for remote access on your tablet or computer. Follow these instructions to download and install the mobile app:

- Go to your App Store
- Search for UpToDate
- Click on the UpToDate icon
- Download and install the app
- Enter your UpToDate username and password you created during registration the first time you access the app

