1 CHAPTER 1 Searching for evidence

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The shape of clinical literature

The mass of published literature now far exceeds our ability to cope with it as individuals; the evidence for practice is out there but in blinding volume and in a bewildering array of formats and platforms. Experienced clinicians in the past have tended to choose one or two principal sources of information, often old friends such as PubMed, a general journal such as BMJ or the New England Journal of Medicine, plus two or three journals in their specialty – say, Urology, BJU International or European Urology – and stick with them. This is no longer sufficient to allow a practitioner to keep up with new relevant and applicable clinical research. However, in a very positive turn of events over the past decade, the geometrically growing mass of published clinical research has brought with it the development of resources to summarize and synthesize this new knowledge and present it in methodologically sound and extremely accessible formats. Armed with these resources and a few relatively simple techniques, it is indeed possible to find evidence for practice quickly and efficiently.

The literature of evidence for practice follows a hierarchical structure based on the degree of processing and appraisal applied to the primary research literature [1] (see Box 1.1). Summaries and syntheses of the evidence, including practice guidelines, are at the top, followed by preappraised synopses, with primary studies at the base. Typically, the search for evidence for clinical practice starts at the top, in the summaries and syntheses, dropping down to synopses and systematic reviews. If a satisfactory result has not been found or if the searcher wishes for more recent evidence, primary research studies are the final resource. Unfortunately, the primary literature is massive: a simple PubMed search for prostate cancer at the time of this writing (November 2015) turned up over 131 000 references. Using Clinical Queries, as we recommend in PubMed to filter in the research literature, in this case for therapy studies, reduced the number to 3450 randomized controlled trials (RCTs) and 3271 systematic reviews. These very daunting numbers persuade clinicians of the value of starting at the top of the evidence pyramid for general questions. For more specific questions, search results will usually be less alarming.

Some "federated searches" are available that are structured to search simultaneously through all three categories of evidence and present the results according to evidence levels. TRIP (Turning Research Into Practice, https://www. tripdatabase.com) is one such search engine, freely accessible worldwide (registration is free and provides more unrestricted access to content than unregistered use).

The approach for finding evidence for practice is exactly the opposite of that for conducting a literature review at the beginning of a research project. In the case of the literature review, one conducts a thorough search of all appropriate bibliographic databases: MEDLINE (whether via PubMed or some other search interface), EMBASE, Web of Science, Scopus, Biosis Previews, plus resources such as the Cochrane Library, to ensure one has not missed an important controlled trial or systematic review, and databases listing clinical trials in progress, to ensure that all relevant studies have been found. If possible, one consults a research librarian to be sure that no stone has been left unturned.

However, to find evidence to apply to clinical problems, the search begins with synthesized resources, progresses through selected, preappraised resources, and moves into bibliographic databases of primary studies only if no satisfactory

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BOX 1.1 A hierarchy of resources.

1 Summaries, syntheses and guidelines

- 1.1 Point-of-care summaries (e.g. DynaMed, UpToDate)
- **1.2** Practice guidelines (e.g. NICE, International Guidelines Clearinghouse)

1.3 Evidence-based textbooks (e.g. *Campbell–Walsh Urology* and other textbooks available via Clinical Key, Access Medicine, and Books@Ovid)

2 Preappraised research

2.1 Synopses of systematic reviews (e.g. DARE [Database of Abstracts of Reviews of Effects], *ACP Journal Club*)

2.2 Systematic reviews (e.g. Cochrane Reviews)

2.3 Synopses of primary studies (e.g. *ACP Journal Club, Evidence-Based Medicine,* McMasterPLUS)

3 Primary studies

- 3.1 Filtered (e.g. Clinical Queries in MEDLINE/PubMed)
- 3.2 Unfiltered (e.g. PubMed, EMBASE, BIOSIS, Web of Science)

answer has been found in the first two resource classes. With a literature review, the search is exhaustive. With the search for clinical evidence, it is acceptable to stop when a good answer has been found.

Some of the resources described in this chapter are free; most are broadly available to those affiliated with medical societies or institutions or are available by individual subscription. New synthesized resources, point-of-care resources in particular, are continually emerging as established resources evolve. How does one choose among these resources? Availability and affordability are two obvious factors, but consider also how well a resource covers your discipline, how current the resource is, and how quickly it updates and includes new evidence, whether its inclusion practices are transparent and its authorship explicitly stated, whether the evidence is assessed for quality and citations are provided for all summaries and recommendations, and whether there are numerical estimates of effect provided within the summaries. Ease of use is vitally important. Some recent studies have compared point-of-care resources for currency, inclusion of new evidence, and ethical factors [2-4]. Consideration of all of these factors will assist clinicians to become enlightened consumers of complex information resources.

A case to consider

Mr. W, 63 years old and otherwise fit and healthy, has been referred to you with symptoms of benign prostatic hyperplasia (BPH) (frequency, nocturia, and slow flow). Digital rectal examination reveals an enlarged prostate gland, about 45 g, with no nodules. His postvoid is approximately 100 mL and he reports three documented urinary tract infections over the course of the last year. His serum creatinine and prostate-specific antigen (PSA) levels are normal. He has been advised by his family physician that he may require surgery to resolve his condition. He is apprehensive about this and asks if there are medical interventions for the BPH that could be tried first. He has searched the web and has found information that saw palmetto may be an effective herbal remedy to improve his voiding symptoms.

What do you want? Asking a focused clinical question

The first two steps of the protocol of evidence-based practice (Assess, Ask, Acquire, Appraise, Apply) [5] involve *assessing* the situation – pulling out the salient features of a patient's presentation and history – and *asking* one or more questions that are both focused and answerable. Assessing the situation may require some background information about the condition itself – for example, "how does BPH promote voiding complaints?" Background information is most readily found in textbooks. Online textbooks are preferable to the heavy printed tomes of earlier years for reasons of accessibility and currency.

To find primary research evidence to apply to the patient at hand, however, a focused, answerable question must be crafted. Asking a focused clinical question is a mental discipline that will also pay off enormously in effective searching and in finding good evidence to apply to practice. Assigning a domain – therapy/prevention, diagnosis, prognosis, etiology/harm – is the essential first step in framing the question, because questions are asked differently, depending on the domain (Box 1.2). Often questions regarding a single case will fall into multiple domains. In this instance, separate focused questions for each relevant domain will result in clearer answers.

Once the domain has been established, the elements of the focused clinical question (PICOT) must be identified:

• *P*=Population. The patient's characteristics, including age, gender, and condition, plus other relevant clinical or medical history features.

• *I*=Intervention. What intervention are you considering using? In a diagnostic question, this becomes "what new test do I wish to try?" In a prognostic question, this equates to "prognostic factor," and in the harm/etiology domain, this becomes "exposure."

• *C*=Comparison. In the therapy domain, this might be the standard of care or a placebo, where this is appropriate; in diagnosis, the comparison is always the "gold standard" diagnostic test; in the case of a causation/etiology question, this obviously might be "no exposure"; and in prognosis, this might be the lack of the relevant prognostic factor.

• *O*=Outcome. For therapy, what changes are you seeking to accomplish in the patient's condition? Are they clinical changes, such as a reduction in the number of urinary tract infection (UTI) recurrences? Or are they surrogate, such as reduction in the size of the prostate? In diagnosis, how likely

BOX 1.2 The well-built clinical question (PICOT).

Therapy

Population (patient)

How would I describe a group of patients similar to mine? (condition, age, gender, setting, etc.)

Intervention (medication, procedure, etc.)

Which main/new intervention am I considering?

Comparison

What is the alternative to compare with the intervention? (placebo, standard of care, etc.)

Outcome

What might I accomplish, measure, improve, or affect?

Type of study

What study design would provide the best level of evidence for this question?

Diagnosis

Population (patient)

What are the characteristics of the patients? What is the condition that may be present?

Intervention (diagnostic test)

Which diagnostic test am I considering?

Comparison

What is the diagnostic gold standard (or reference standard if a gold standard is not feasible)?

Outcome

How likely is the test to predict/rule out this condition?

Type of study

What study design would provide the best level of evidence for this question?

Prognosis

Population (patient)

How would I describe a cohort of patients similar to mine (stage of condition, age, gender, etc.)?

Intervention (prognostic factor)

Which main prognostic factor am I considering?

Comparison (optional)

What is the comparison group, if any?

Outcome

What disease progression can be expected (mortality, morbidity, outcomes)?

Type of study

What study design would provide the best level of evidence for this question?

Harm/Causation/Etiology

Population (patient)

How would I describe a group of patients similar to mine?

Intervention (exposure, risk factor)

Which main exposure/risk factor am I considering?

Comparison

What is the main alternative to compare with the exposure (e.g. no exposure)?

Outcome

How is the incidence or prevalence of the condition in this group affected by this exposure?

Type of study

What study design would provide the best level of evidence for this question?

Table 1.1 A simplified hierarchy of evidence.

Therapy

- Level 1. Systematic review of randomized controlled trials or n of 1 trials Level 2. Individual randomized controlled trials or observational studies with dramatic effects
- Level 3. Nonrandomized cohort or follow-up studies

Level 4. Case series, case-control, case studies, or retrospective studies Level 5. Expert opinion, bench research, or mechanism-based

reasoning **Diagnosis**

Level 1. Systematic review of cross-sectional studies with consistently applied reference standard and blinding

- Level 2. Individual cross-sectional studies with consistently applied reference standard and blinding
- Level 3. Nonconsecutive studies or studies without consistently applied reference standards.

Level 4. Case–control studies or studies with poor reference standards Level 5. Mechanism-based reasoning

Prognosis

- Level 1. Systematic review of inception cohort studies
- Level 2. Individual inception cohort studies
- Level 3. Cohort study or control arm of a randomized controlled trial
- Level 4. Case series or case-control studies, or poor quality cohort study

Harm

- Level 1. Systematic review of randomized trials, or systematic review of case–control studies based in the population of cohort studies
- Level 2. Individual randomized trials or individual case–control studies based in the population of cohort studies
- Level 3. Nonrandomized trials or follow-up studies
- Level 4. Case series, case–control studies or retrospective studies Level 5. Mechanism-based reasoning

Source: Data from Oxford Centre for Evidence-Based Medicine, OCEBM Levels of Evidence Working Group [6].

is the new test, in comparison with the gold standard, to predict or rule out the presence of a condition? In a prognostic question – often the most important for the patient – what is the expected disease progression? And in the etiology domain, how closely is this risk factor associated with the condition?

• T=Type of study. What study design will generate the best level of evidence with which to answer this question? This will vary from domain to domain, and also depending upon the subject itself (see Table 1.1).

Although the pinnacle of research quality is usually considered to be the double-blinded RCT or systematic reviews of such studies, blinding and randomization are not feasible for many kinds of investigations, particularly in surgery. Similarly, strong observational studies, specifically prospective cohort studies, are most appropriate for the prognosis domain. RCTs cannot be carried out for studies of diagnostic tests, because all subjects must receive both the gold standard test and the investigational test. For etiological studies, although RCTs are perhaps the ideal way of testing adverse drug reactions, they are ethically inappropriate for potentially harmful exposures, so case–control studies from a cohort group are perhaps the most appropriate. The Oxford Centre for Evidence-Based Medicine has a well-established table of levels of evidence appropriate for the various domains [6]. The key with study design is flexibility: the point is to find the best available evidence (as opposed to the best possible) that is relevant to the topic and applicable to the patient.

The points extracted into a PICOT structure may be framed into a question. In the case example, for instance, one question might be "In an otherwise healthy 63 year old with BPH (P), how effective is medical therapy (I), compared with surgery (C), in reducing lower urinary tract symptoms (O), as demonstrated in an randomized controlled trial or systematic review of randomized controlled trials (T)?"

Searching for clinical evidence: start with synthesized sources

First look for sources that have synthesized the best available evidence. The first mental question that must be asked is, "How common is this situation and how likely am I to find an answer derived from the best evidence?" The more common a condition is, the more likely it is that good summarized point-of-care resources and practice guidelines will be available (Box 1.1). The next step down would be pre-appraised sources, including systematic reviews (which arguably could also be considered synthesized sources), and synopses of both systematic reviews and good-quality individual clinical studies. Finally, if nothing that specifically addresses your question emerges from these two sources, delve into primary studies. The following sections provide examples of how to access a selection of these resources.

Point-of-care summaries

Point-of-care information resources have been available as long as medicine has been practiced, traditionally taking the form of handbooks and textbooks. The key is to look for references to find where their information came from, whether those sources were grounded in primary research, and, if so, whether that research is believable, important, and applicable to your patients.

Point-of-care resources available now are very different from the traditional handbooks. They are elaborately produced, explicitly linked to the evidence, and designed for rapid, easy use by clinicians. The best of them incorporate aspects of systematic reviews into their methodology, requiring critical appraisal of the primary research that they cite and discussion of the quality of evidence behind recommendations made.

Our example is DynaMed, an evidence-based, peer-reviewed point-of-care resource, with somewhat broad subject coverage, very rapid updating, and explicit links to the primary literature and practice guidelines supporting its statements and recommendations. DynaMed provides extensive coverage of causation and risk factors, complications and prognosis, in addition to presenting in an outline format approaches to history taking, physical examination, and diagnosis, prevention, and treatment. The coverage for urology appears to be very good. It is available by subscription worldwide and is also available to members of universities, teaching hospitals, and associations, such as the Canadian Medical Association. Further information is available at DynaMed's website, www.dynamed.com.

Let us see how DynaMed handles our question about medical management of BPH. A simple search for BPH produced the outline for a chapter on benign prostatic hyperplasia (Figure 1.1). This search was done in mid-November 2015: note the update of 2 November 2015, referring to a NICE practice guideline on lower urinary tract symptoms.

To begin to address our query regarding the effectiveness of medical treatment of BPH, we will look at the treatment outline. Note that there are recommendations in the outline that indicate simply the level of evidence but not the source. To find the actual evidence, we would click on the hotlink for the specific therapy—alpha-1 blockers, for example, or diet (Figure 1.2) – and find both a summary of the evidence and a link to the PubMed record for the relevant study or studies; this in turn provides a direct link to the original article.

Scrolling down past surgical interventions, we find "phyto-therapies" (Figure 1.3).

To delve further into the evidence behind this summary statement in search of an answer for our patient's question, we click on the link for saw palmetto (Figure 1.4), and find information that is more in depth, leading to the studies that were the evidence behind their recommendations(Figure 1.5).

If we wish to pursue this to the actual study, the active link provides us access through PubMed (Figures 1.6 and 1.7).

Beyond evidence-based recommendations for the management of specific conditions, DynaMed also provides direct access to national and international practice guidelines and links for patient information (Figure 1.8).

Practice guidelines

Practice guidelines focus on patient management and summarize current standards of care. The best guidelines are based explicitly on the best available clinical evidence, indicating levels and grades of evidence supporting each recommendation and linking to the primary research on which the recommendation is based. The source and purpose of individual guidelines are important: are the guidelines produced by professional societies to promote optimum care or are they the product of healthcare providers such as health maintenance organizations (HMOs) or insurers, where the aim might be cost-effectiveness in disease management. The American Urological Association

	ਅ Search ?				
	Result List I 2 of 31 Expand All Collapse All A A A Search Within Text				
Get CME for this Topic	Benign prostatic hyperplasia (BPH)				
Urinary retention	Updated 2015 Nov 02 02:43:00 PM: NICE guideline on assessment and management of lower urinary tract symptoms in men (National Guideline				
General Information	Clearinghouse 2015 Nov 2) view update Show more updates				
Epidemiology	Related Summaries				
Etiology and Pathogenesis	Urinary retention				
History and Physical	General Information				
Diagnosis	Epidemiology				
Treatment	Etiology and Pathogenesis				
Complications and	🕑 History and Physical				
Prognosis	🕑 Diagnosis				
Prevention and Screening	🕑 Treatment				
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Guidelines and Resources	Prevention and Screening				
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Benign prostatic hyperplasia (BPH)

Treatment overview:

- watchful waiting
 - recommended for (AUA Standard)
 - mild symptoms of lower urinary tract symptoms (LUTS) secondary to BPH (American Urological Association Symptom Index [AUASI] score < 8)
 - moderate or severe symptoms (AUASI score ≥ 8) who are not bothered by their LUTS symptoms
 - $\circ\,$ behavioral strategies (diet and activity) that may reduce urinary symptoms include
 - limiting fluid intake in evening
 - · avoiding excess alcohol and highly seasoned or irritative foods
 - increasing physical activity (level 2 [mid-level] evidence)
- medical management options for patients with moderate-to-severe symptoms of BPH
 - alpha-1 blockers (AUA Option)
 - drug doses include alfuzosin 10 mg, doxazosin 2-8 mg, tamsulosin 0.4-0.8 mg, terazosin 2-10 mg, and silodosin 8 mg orally once daily
 - allow 2-4 weeks to assess treatment response
 - caution if using phosphodiesterase-5 inhibitor or undergoing cataract surgery
 - alpha-1 blockers appear effective for symptom improvement (level 2 [mid-level] evidence, level 1 [likely reliable] evidence for terazosin); clinical efficacy similar for licensed alpha-1 blockers evaluated (level 2 [mid-level] evidence)
 - alpha-1 blockers may increase risk for dizziness, hypotension or syncope (level 2 [mid-level] evidence)
 - 5-alpha reductase inhibitors (5-ARIs) if estimated prostate size > 30 g or PSA level > 1.4 ng/mL (AUA Option)
 - drug doses include dutasteride 0.5 mg and finasteride 5 mg orally once daily
 - allow ≥ 3 months to assess treatment response
 - · 5-ARIs improve symptoms and reduces risk of acute urinary retention and surgery for BPH, but increases sexual adverse effects

Figure 1.2 Screenshot from DynaMed on BPH on behavioral and medical therapy.

guidelines are available free of charge at the Association's website, www.auanet.org/guidelines. European Association of Urology guidelines are also available for members (or for a fee for nonmembers) from the association's website, www.uroweb.org. National Guideline Clearinghouse (www.guideline.gov) is an excellent international source of practice guidelines, available free as an initiative of the Agency for Healthcare Research and Quality (AHRQ) in the United States. The National Guideline Clearinghouse has inclusion criteria:

- surgical options include
 - transurethral resection of the prostate (TURP) (AUA Option)
 - transurethral vaporization of the prostate (AUA Option)
 - transurethral incision of the prostate (TUIP) if estimated prostate size < 30 g (AUA Option)
 - laser therapies (AUA Option)
 - prostatectomy if estimated prostate size > 80 g (AUA Option)
- most transurethral surgical treatments appear to have similar efficacy for reducing LUTS due to BPH (level 2 [mid-level] evidence)
- prostatic urethral lift (UroLift) improves lower urinary tract symptoms in men with benign prostatic hypertrophy without increasing risk of erectile dysfunction (level 1 [likely reliable] evidence)
- · minimally invasive therapies
 - $\circ\,$ treatment options for bothersome moderate or severe LUTS due to BPH include
 - transurethral needle ablation (TUNA) (AUA Option)
 - transurethral microwave thermotherapy (TUMT) (AUA Option)
 - National Institute for Health and Care Excellence (NICE) recommends AGAINST offering minimally invasive treatments
 - limited evidence to determine which minimally invasive intervention is most effective, but all appear less effective than TURP (level 2 [mid-level] evidence)
- phytotherapies, dietary supplements, and other nonconventional therapies not recommended for management of LUTS due to BPH (AUA Recommendation)
 - some specific saw palmetto extracts shown not to improve LUTS in men with BPH (level 1 [likely reliable] evidence), effect of saw palmetto (considering any formulation) on urinary symptoms appears inconsistent (level 2 [mid-level] evidence)
 - phytotherapies with possible efficacy include beta-sitosterols, Pygeum africanum (African plum), and Cernilton (rey grass extract) (level 2 [mid-level] evidence)

Figure 1.3 A screenshot from DynaMed on BPH showing on surgical treatment options.

Benign prostatic hyperplasia (BPH)

Herbal treatments:

- no dietary supplement, combination phytotherapeutic agent, or other nonconventional therapy is recommended for management of LUTS secondary to BPH (AUA Recommendation)⁽¹⁾
- National Institute for Health and Care Excellence (NICE) recommends against offering homeopathy or phytotherapy for treating LUTS in men⁽²⁾

Saw palmetto:

- available data do not suggest that saw palmetto has clinically meaningful effect on LUTS secondary to BPH (AUA Recommendation)⁽¹⁾
- general information
 - o also called saw palmetto berry, Serenoa repens, palmetto scrub, Sabal serrulata, Sabalis serrulatae, sago palm
 - medications with this ingredient include Permixon, PA109, Curbicin, Prostagalen, Prostaselect, Prostavigol, Strogen forte; based on purified lipid soluble extract of saw palmetto berry
 - o mild adverse effects include headache, nausea, dizziness, 3.1% hypertension with Permixon in 1 study, diarrhea with high doses
 - o no serious drug interactions, although studies generally excluded patients on diuretics, alpha blockers and anticoagulants
 - o concerns
 - long-term effects on lipids and bone density unknown
 - · many companies combine with other ingredients
 - trials done on commercial European products which may not be available in United States
 - Reference Alternative Medicine Alert 1998 Jan;1(1):1
- · mechanism of action unclear
 - active ingredient believed to be beta-sitosterol (Alternative Medicine Alert 1998 Jan;1(1):1)
 - saw palmetto is biochemically distinct from beta-sitosterol, saw palmetto (but not beta-sitosterol) may have alpha-1-adrenergic-blocking properties (ACP J Club 2000 May-Jun;132(3):94)

Figure 1.4 A screenshot from DynaMed on BPH with basic information on herbal treatments such as saw palmetto.

guidelines must have systematically developed recommendations or information that will assist health professionals in deciding on appropriate care, must be produced by public or private medical organizations, and must be supported by a systematic review of the literature. The full text of each guideline must also be available, and it must have been produced or revised within the past 5 years. One particular bonus in searching the National Guideline Clearinghouse is that multiple guidelines on similar topics may be compared at all points, from purpose to recommendations. For

Benign prostatic hyperplasia (BPH)

- saw palmetto, even at high dose, does not improve LUTS in men with BPH (level 1 [likely reliable] evidence)
 - based on randomized trial
 - 369 men ≥ 45 years old with BPH and LUTS were randomized to saw palmetto orally (Prosta Urgenin Uno capsules) vs. placebo for 72 weeks
 - all patients had
 - peak urinary flow rate ≥ 4 mL/second
 - American Urological Association Symptom Index (AUASI) score 8-24 (0-35 point scale with 7 items assessing frequency of LUTS)
 - saw palmetto dose was 320 mg/day (standard dose), increasing to 640 mg/day at 24 weeks, then increasing to 960 mg/day at 48 weeks
 - 96.7% (all patients who had at least 1 dose of study drug and 1 follow-up visit) were included in modified intention-to-treat analysis
 - primary outcome was change in AUASI score (3-point reduction considered clinically important)
 - comparing saw palmetto vs. placebo at 72 weeks
 - mean reduction in AUASI score 2.2 points vs. 2.99 points (not significant)
 - AUASI score reduced by \geq 3 points in 42.6% vs. 44.2% (not significant)
 - mean change in urinary peak flow rate -0.18 mL/second vs. -0.79 mL/second (not significant)
 - mean postvoid residual 4.78 mL vs. 1.17 mL (not significant)
 - no significant differences in nocturia, patient global assessments, indices of sexual function, continence, sleep quality, or prostatitis symptoms
 - Reference JAMA 2011 Sep 28;306(12):1344 full-text, correction can be found in JAMA 2012 Jun 13;307(22):2374 full-text
- specific saw palmetto extract is not effective for reducing BPH symptoms (level 1 [likely reliable] evidence)
 - based on randomized trial
 - = 225 men > 49 years old with moderate-to-severe BPH symptoms (AUASI > 7 points) and peak urinary flow rate < 15

Figure 1.5 A screenshot from DynaMed on BPH detailing trial information on saw palmetto.

JAMA. 2011 Sep 28;306(12):1344-51. doi: 10.1001/jama.2011.1364.

Effect of increasing doses of saw palmetto extract on lower urinary tract symptoms: a randomized trial.

3arry MJ ¹ , Meleth S, Lee JY, Kreder KJ, Avins AL, Nickel JC, Roehrborn CG, Crawford ED, Foster HE Jr, Kaplan SA, McCullough A, Andriole GL, Naslund		
AJ, Williams OD, Kusek JW, Meyers CM, Betz JM, Cantor A, McVary KT; Complementary and Alternative Medicine for Urological Symptoms (CAMUS) Study	Save items	
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AMA. 2012 Jun 13;307(22):2374.	Review Serenoa repens for benign prostatic	
Abstract	hyperplasi [Cochrane Database Syst Rev. 2012]	
CONTEXT: Saw palmetto fruit extracts are widely used for treating lower urinary tract symptoms attributed to benign prostatic hyperplasia (BPH):		
owever, recent clinical trials have questioned their efficacy, at least at standard doses (320 mold).		
	Similar articles	
JBJECTIVE : To determine the effect of saw palmetto extract (Serenca repens, from saw palmetto berries) at up to 3 times the standard dose on	Review Serenoa repens for benign prostatic	
ower uninary tract symptoms attributed to BPH.	hyperplasi [Cochrane Database Syst Rev. 2012]	
DESIGN, SETTING, AND PARTICIPANTS: A double-blind, multicenter, placebo-controlled randomized trial at 11 North American clinical sites	The effect of increasing doses of saw palmetto	
conducted between June 5, 2008, and October 10, 2010, of 369 men aged 45 years or older, with a peak urinary flow rate of at least 4 mL/s, an	fruit extract on serum prostate spe [J Urol. 2013]	
American Urological Association Symptom Index (AUASI) score of between 8 and 24 at 2 screening visits, and no exclusions.	Review Serence repens for benign prostatic	
NTERVENTIONS: One, 2, and then 3 doses (320 mg/d) of saw palmetto extract or placebo, with dose increases at 24 and 48 weeks.	hyperplasi [Cochrane Database Syst Rev. 2009]	
MAIN OLITCOME MEASURES. Difference in ALIASI score between baseline and 72 weeks. Secondary outcomes included measures of urinary	Review Serença repens monotherapy for	
where conclusing marketing productions of the section of antian level and the second and a	benign prostatic hyperplasia (BP [BJU Int. 2012]	
incline continence sleep quality and prostatilitis symptoms.	Randomized double-blind placebo-controlled	
and an analytic story quarky and provide a single more	trial of saw palmetto in man with [Lirology 2001]	

RESULTS: Between baseline and 72 weeks, mean AUASI scores decreased from 14.42 to 12.22 points (-2.20 points; 95% Cl, -3.04 to -1.36) [corrected]with saw palmetto extract and from 14.69 to 11.70 points (-2.99 points; 95% Cl, -3.81 to -2.17) with placebo. The group mean difference in AUASI score change from baseline to 72 weeks between the saw palmetto extract and placebo groups was 0.79 points favoring placebo (upper bound of the 1-sided 95% Cl most favorable to saw palmetto extract was 1.77 points, 1-sided P = .91). Saw palmetto extract was no more effective than placebo for any secondary outcome. No clearly attributable adverse effects were identified.

CONCLUSION: Increasing doses of a saw palmetto fruit extract did not reduce lower urinary tract symptoms more than placebo. TRIAL REGISTRATION: clinicaltrials.gov Identifier: <u>NCT00603304</u>. Cited by 15 PubMed Central articles
Review Prunus africana (Hook.f.) Kalkman: the

See reviews...

See all...

TEXT JAMA PMC Full text

Figure 1.6 PubMed record.

JANA The Journal of the American Medical Association	Search JAMA Q Advanced Search		
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< Previous Article >	Get 10 free CME tokens Create a personal account or sign in to get 10 free		
Original Contribution September 28, 2011	CME tokens, redeemable for 10 CME credits, courtesy of The JAMA Network and University of Alberta		
Effect of Increasing Doses of Saw Palmetto Extract on Lower Urinary Tract Symptoms	Some tools below are only available to our subscribers or users with an online account.		
A Randomized Trial FREE	🖶 Print 🔂 PDF		
Michael J. Barry, MD; Sreelatha Meleth, PhD; Jeannette Y. Lee, PhD; Karl J. Kreder, MD, MBA; Andrew L. Avins, MD, MPH; J. Curtis Nickel, MD; Claus G. Roehrborn, MD; E. David Crawford, MD; Harris E. Foster, MD; Steven A. Kanlan, MD; Andrew MCCullourb, MD; Gerald L. Andricke, MD; Michael L. Nashund, MD; O. Dale Williams, PhD;	Email i Get Citation		
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JAMA. 2011;306(12):1344-1351. doi:10.1001/jama.2011.1364. Text Size: A A A	11,604 43 Views Citations (73)		
This article was corrected View correction			

Figure 1.7 Online article on the JAMA website.

Benign prostatic hyperplasia (BPH)

Guidelines:

International guidelines:

- Sixth International Consultation on New Developments in Prostate Cancer and Prostate Diseases recommendations on evaluation and treatment of lower urinary tract symptoms in older men can be found in J Urol 2013 Jan;189(1 Suppl):S93
- Union for International Cancer Control/International Consultation on Urological Diseases/International Society of Urology (UICC/ICUD/SIU) recommendations on evaluation and treatment of lower urinary tract symptoms in older men can be found in J Urol 2009 Apr;181(4):1779

United States guidelines:

- American Urological Association (AUA)
 - AUA 2010 guideline on management of benign prostatic hyperplasia can be found in AUANet PDF or at National Guideline Clearinghouse 2011 Jun 6:25635, summary can be found in J Urol 2011 May;185(5):1793, commentary can be found in J Urol 2012 Jan;187(1):358
 - AUA Education and Research best practice policy statement on prevention of deep vein thrombosis in patients undergoing urologic surgery can be found at AUA 2008 PDF
- American College of Radiology (ACR) Appropriateness Criteria for lower urinary tract symptoms: suspicion of benign prostatic hyperplasia can be found at ACR 2014 PDF or at National Guideline Clearinghouse 2014 Oct 20:48292
- American Urological Association/Society of Urodynamics, Female Pelvic Medicine, and Urogenital Reconstruction (AUA/SUFU) guideline on adult urodynamics can be found in J Urol 2012 Dec;188(6 Suppl):2464 or at AUA/SUFU 2012 Apr PDF or at National Guideline Clearinghouse 2012 Jul 9:36909, clinical review of AUA/SUFU guideline can be found in Urol Clin North Am 2014 Aug;41(3):353
- American Association of Clinical Endocrinologists (AACE) medical guideline on clinical use of dietary supplements and nutraceuticals can be found in Endocr Pract 2003 Sep-Oct;9(5):417, correction can be found in Endocr Pract 2008 Sep;14(6):802

United Kingdom guidelines:

- National Institute for Health and Care Excellence (NICE) guidelines on
 - assessment and management of lower urinary tract symptoms in men can be found at NICE 2014 Jul:CG97 PDF or at National Guideline Clearinghouse 2015 Nov 2:49237

Figure 1.8 Practice guideline links on DynaMed.

	Agency for Healthcare Research and Quality
	Advancing Excellence in Health Care

Visit: National Quality Me	asures Clearinghouse AHRQ Home	Sign In			
National Clearing	Guideline Help Videos RSS RSS Subscribe to weekly e-mail Site map Contact us For the second seco	web developers ^{rch} T- T +			
Home	< Back				
Guidelines	lower urinary tract symptoms				
Expert Commentaries	Run an advanced search on this term				
Guideline Syntheses	Search within: GO				
Guideline Matrix	Sort results by: Relevance (what's this?) Publication date				
Guideline Resources					
Compare Guidelines	Filter results by: All Years				
FAQ Submit Cuidelines		Compare			
About	1-20 of 99 Next >	Guidelines			
My NGC	1. ACR Appropriateness Criteria® lower urinary tract symptoms: suspicion of benign prostatic hyperplasia. 1995 (revised 2014). NGC:010457 American College of Radiology - Medical Specialty Society. View all guidelines by the developer(s)				
	2. Lower urinary tract symptoms in men: assessment and management. 2010 May (revised 2015 Jun). NGC:010731 National Clinical Guideline Centre for Acute and Chronic Conditions - National Government Agency [Non-U.S.]. View all guidelines by the developer(s)	0			

Figure 1.9 National Guideline Clearinghouse.

the question we are considering, a search on this website for "lower urinary tract symptoms" produced 99 relevant guidelines (Figure 1.9).

NICE (National Institute for Health and Care Excellence) provides practice guidelines and guidances (www.nice.org. uk/guidance). Under the broad topic of "urology" are several guidelines, including one on lower urinary tract symptoms in men, which would be highly useful in this case. NHS Clinical Knowledge Summaries are excellent practice guidelines and are available free of charge in the United Kingdom (http://cks.clarity.co.uk) and by subscription internationally (http://prodigy.clarity.co.uk).

TRIP – Turning Research Into Practice (www.tripdatabase. com) – is a federated search engine that presents a quick way of searching for guidelines, as well as searching other resources on a topic (Figure 1.10). A search for "lower urinary tract symptoms" on TRIP produced 446 North American, 363 British, 112 Australian/New Zealand, and 25 other practice guidelines, with functional links for access. Beyond providing an quick route to practice guidelines, TRIP searches evidence-based practice digests of important journal articles (e.g. *Evidence-Based Medicine*), searches for systematic reviews in both Cochrane and DARE, links to e-textbook articles, and searches PubMed applying simultaneously the quality filters for all four clinical query domains of Therapy, Diagnosis, Etiology, and Prognosis (this will be discussed later). Search results are organized hierarchically, according to evidence type.

Systematic reviews

In systematic reviews, primary research on a topic is thoroughly searched, selected through explicit inclusion criteria, and critically appraised to provide a reliable overview of a topic. Data from the included studies may be pooled (meta-analysis) to produce a statistical summary of the studies' findings.

Systematic reviews have existed since the 1970s in other disciplines but came into their own for medicine in the 1990s, with the advent of the Cochrane Collaboration. The purpose of the Cochrane Collaboration is to facilitate knowledge transfer from research to practice, and its influence on medical publishing has certainly achieved that [7]. Cochrane review groups collaborate to produce the highest standard of systematic reviews of clinical research. Among other review groups, there is a Cochrane Prostatic Diseases and Urologic

Irip	Q lov	wer urinary tra	ct symptoms		Search	Advanced PICO se Trip Rapid	I search I How to use Tr earch
Evidence 😤 Im	ages 🔤 Videos	Education	Patient Information	ন News	PubMed Clinical Queries	🖉 DynaMed	
vou had O Trip Pr Upgrade now!	emium you'd have	access to 144 furt	her Systematic Reviews,	links to 930	free full-text articles and 1,3	35 clinical tria	ls — all without adverts.
5,609 results	for "lower urina	ary tract symp	toms", by guality				Refine 6,403 results by evidence t
		, , . ,	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				All Secondary Evidence
earch Safety Net							Systematic Reviews 163 +144
nat is Search Safety Ne	?						
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Export v C	rder 🔻 🗈 Synonyms	📾 Add to automated	search Translate v				⇒Aus & NZ 112
					A Ut Cubble		⇔Canada 83
NICE Clinical Kr	nary tract sympton	ns in men - Stres	s urinary incontinence		Ok Guidednes		⇒UK 363
THEN A SHEET TRADE INT	on code outilitation .	1040					⇒ USA 354
Martin and Arts	believen at						→ Other 25
Ĵ∰Tweet this	More *						
 Tweet this 2. Lower urit 	More *	ns in men - Urina	ary retention		Uk Guidelines		Key Primary Research 40

Figure 1.10 TRIP (Turning Research Into Practice) – a federated search engine.

Cancers Group, a Cochrane Renal Group, and also a Cochrane Incontinence Group, all of them producing a substantial volume of high-quality systematic reviews. Although Cochrane Reviews tend to be very long, quick clinically oriented information can be found either in the "plain language summary" or by going directly to the "forest plots," which provide graphic presentations of the data summaries (metaanalyses) contained in the review. (For a detailed description of Cochrane Reviews and the work of the Cochrane Collaboration, see www.cochrane.org.) Previously, review articles were much relied upon for clinical information but were a mixed and often subjective bag. Cochrane systematic reviews implied an elaborate methodological protocol and became the quality benchmark for evidence for practice and for published reviews.

The Cochrane Library, which includes the Cochrane Database of Systematic Reviews, the Database of Abstracts of Reviews of Effects (DARE, an index with commentary of systematic reviews other than Cochrane Reviews), the Central Registry of Controlled Trials, the Health Technology Assessment database, and the National Health Service Economic Evaluation Database, is an excellent source of evidence for urologists. In the example, a search for "lower urinary tract symptoms" in the Cochrane Library (Figure 1.11) turned up, among other references, a Cochrane Review assessing the effectiveness of saw palmetto (*Serenoa repens*) for BPH [8], providing an answer for one of the patient's questions in our case. On the broad topic of LUTS, the Cochrane Library also produced a substantial number of

Cochrane Reviews, other published systematic reviews from DARE, clinical trials from Central, and useful studies from the Health Technology Assessment database and the NHS Economic Evaluations Database.

Textbooks and handbooks

Textbooks, particularly specialist textbooks such as *Campbell's Urology*, have been a mainstay of clinical information throughout the history of medicine. Over the past decade, however, most of the standard medical textbooks have become available in an electronic format, which changes continuously (as opposed to the large paper volumes that appear in new editions every few years). Most electronic textbooks and sets are searchable simply by keywords. Electronic textbooks usually are grouped into collections, such as Clinical Key (which includes *Campbell's Urology*), Access Medicine, and Books@Ovid. These sets are available through professional associations, universities, hospitals, or other administrative groups, and also through personal subscription.

NCBI Bookshelf (www.ncbi.nlm.nih.gov/sites/entrez?db= Books&itool=toolbar) (searchable) is available at no cost. E-Medicine is an excellent free textbook, triple peer reviewed and with good urology content (www.emedicine.com/ urology/index.shtml); it is most easily searchable via TRIP.

The key with all textbooks is to ensure that they are evidence based, as demonstrated by footnotes and bibliographies. With electronic textbooks, usually the notes are linked



Figure 1.11 Cochrane Library.

to the references, which in turn are linked to the PubMed record, allowing the reader to track back to the evidence underlying a statement.

Searching for clinical evidence: try preappraised sources next

In response to the volume of published clinical research and the need to extract the best and most important studies to inform practitioners, *ACP Journal Club (ACP JC)* (http://www. acpjc.org) emerged in 1991; since 2005 it has continued as a section of *Annals of Internal Medicine*. *ACP JC* provides expanded structured abstracts of articles selected from core clinical journals by an editorial board, plus a thumbnail critical appraisal of the validity, importance, and applicability of the study, all usually in a single page. *Evidence-Based Medicine* (http://ebm.bmj.com) (now *BMJ Evidence-Based Medicine*) emerged shortly thereafter, based on *ACP JC* but expanding its subject coverage beyond internal medicine to include pediatrics, surgery, obstetrics, and other disciplines. Now both sources include ratings, applied by a panel of clinical experts, showing the relative importance and newsworthiness of each study, according to discipline. *Evidence-Based Medicine* can be searched by keyword and is also available via the federated search engine TRIP.

Evidence Updates from BMJ (http://plus.mcmaster.ca/ EvidenceUpdates) (now *EvidenceAlerts*, http://plus.mcmaster. ca/EvidenceAlerts), a collaboration between *BMJ* and McMaster University's Health Information Research Unit, selects important articles from an array of 130 core journals, rates them for their importance, and provides expanded structured abstracts, but does not go the additional step of appraising the quality of the study. *Evidence Updates from BMJ* can be also searched by keyword.

The Cochrane Central Register of Controlled Trials (often known simply as "Central") is part of the Cochrane Library. It consists of studies included in Cochrane Reviews, plus other controlled studies on the same topic, selected by the review teams. Unlike the other resources, studies included in Central are not limited to a core of English-language clinical journals. No critical appraisal is provided; simple inclusion in Central achieves a preappraised status for these papers. The advantage of preappraised sources is that they remove the "noise" of minor or duplicative studies, case reports, and commentary found in the larger databases by providing highly selective smaller databases. All link to the full-text original article, usually via PubMed, so the clinician can review the original study. All of these resources provided good studies relevant to the case under consideration, and all would be appropriate for urologists (although *ACP JC* would perhaps be more applicable to medical urological questions than to surgical questions).

Searching for clinical evidence: filtering unfiltered databases

Synthesized and preappraised sources may fail to answer questions in specialties such as urology or urological surgery. Point-of-care sources may carry a limited number of topics, usually only the most commonly seen; preappraised sources and systematic reviews are most frequently in the therapeutic domain or are RCTs or systematic reviews of RCTs, which are inappropriate for surgical, procedural, diagnostic, or prognostic questions. In these cases, the large bibliographic databases of primary research evidence are the final resource.

The most commonly used health sciences database in English-language medicine is MEDLINE. Produced since 1966 by the US National Library of Medicine in Bethesda, MD, MEDLINE is available through a wide variety of search engines, the best known of which is PubMed (www.ncbi. nlm.nih.gov/sites/entrez?db=PubMed). Medline currently (2015) indexes about 5600 US and international biomedical and health sciences journals, and contains about 22 million references dating from 1950 to the present. MEDLINE's great strength lies in its system of subject headings, known as MeSH, including subheadings and limits that allow the knowledgeable searcher to conduct a very precise search. Tutorials are available online to provide more detailed instruction in searching PubMed than is possible here (www. nlm.nih.gov/bsd/disted/pubmed.html).

The Clinical Queries function in MEDLINE (Figure 1.12), also available on PubMed and other platforms, injects quality filters (search strategies based largely on study designs) into a search statement. The Clinical Queries search strategies were developed by the Health Information Research Unit at McMaster University; a detailed bibliography for the derivation and validation of their filters can be found at www.nlm. nih.gov/pubs/techbull/jf04/cq_info.html. The value added by searching with a quality filter is similar to that of preappraised sources: the removal of "noise" by extracting clinical trials from the vast sea of news, commentaries, case studies, and general articles. Care must be taken, however, with topics that do not lend themselves to RCTs, masking, or higher levels of study designs, because they will be lost when the quality filters for articles on therapy or prevention are applied. For such topics it is best to search MEDLINE without quality filters.

The PICOT question described at the beginning of this chapter provides an excellent way of crafting a sound search strategy. Starting with the population (P), then adding intervention (I) and outcome (O), and finally the study design, will enable the searcher to conduct a precise search and stay on target for answering the original question.

Other databases

Sometimes MEDLINE does not produce the desired information, possibly because it does not index all journals. Alternative databases that are useful for urology are EMBASE, Scopus, and Web of Science. EMBASE principally indexes clinical medical journals; frequently it indexes journals not caught by MEDLINE, in part because it is larger, indexing 8400 journals and holding about 28 million records. Like MEDLINE, EMBASE has a detailed subject heading thesaurus; recently, EMBASE has added MEDLINE subject headings (MeSH) to its indexing, so that it may be possible on a search platform that includes both (such as OVID) to carry a search strategy from MEDLINE to EMBASE.

Scopus and Web of Science are more general academic databases. They do not have controlled vocabularies, so topic searching must include as many synonyms as possible. Scopus indexes approximately 21 000 journals and contains about 57 million records, including book series and conference proceedings; moreover, Scopus searches international patents and the web, making it an excellent source of information about instruments, techniques, and guidelines. Web of Science covers more than 12 000 journals from 15 separate databases, dating from 1900. Articles listed in Scopus and Web of Science are not analyzed by indexers and, although this makes these indexes somewhat harder to search by subject than MEDLINE or EMBASE, it also means that newly published articles appear much more quickly. Of all the indexes, Scopus picks up new journals the fastest and provides possibly the best coverage of open-access electronic publications. A very thorough literature search, for a research project or grant proposal, would involve a detailed search of all four databases, and possibly others as well. Inevitably, there will be overlap among these databases, but there will also be previously unseen studies that you would not want to have missed.

Backing up your search: citation searching

Both Scopus and Web of Science allow citation searching – tracking studies that have cited other studies. Aside from its use as a quick way to determine the relative importance of an article as shown by the number of times it has been cited since publication, citation searching allows one to find newer studies on a similar topic For example, an article cited in the DynaMed chapter on Benign Prostatic Hyperplasia noted that increased physical activity reduced the risk of

PubMed Clinical Queries

Results of searches on this page are limited to specific clinical research areas. For comprehensive searches, use PubMec

lower urinary tract symptoms OR benign prostatic hyperplasia

Clinical S	tudy Categories	Systematic Reviews
Category:	Therapy	\$
Scope:	Narrow	\$

Results: 5 of 3026

Re: Randomized Controlled Trial on the Efficacy of Bladder Training before Removing the Indwelling Urinary Catheter in Patients with Acute Urinary Retention Associated with Benign Prostatic Hyperplasia.

Kaplan SA.

J Urol. 2015 Dec; 194(6):1703. Epub 2015 Sep 21.

Benign Prostatic Hyperplasia Treatment with New Physiotherapeutic Device.

Allen S, Aghajanyan IG. Urol J. 2015 Nov 14; 12(5):2371-6. Epub 2015 Nov 14.

Prostatic urethral lift: a novel approach for managing symptomatic BPH in the aging man.

Rukstalis DB.

Can J Urol. 2015 Oct; 22(5 Suppl 1):67-74.

Is Pelvic Floor Muscle Training Effective for Men With Poststroke Lower Urinary Tract Symptoms? A Single-Blinded Randomized, Controlled Trial.

Tibaek S, Gard G, Dehlendorff C, Iversen HK, Biering-Soerensen F, Jensen R.

Am J Mens Health. 2015 Oct 18; . Epub 2015 Oct 18.

Figure 1.12 PubMed Clinical Queries search.

d and information that they have found for themselves on the web, as they seek to participate in their own treatment (as the man in our case scenario has, with his query about saw palmetto).

A physician or the physician's clinic staff should be aware of reliable resources to which patients can be guided, should they express an interest. The Cochrane Collaboration is particularly interested in getting research information out to patients, and to that end now provides a "plain language summary" with each review; these are available free at www. cochrane.org/reviews. MedlinePlus (https://www.nlm.nih. gov/medlineplus) is a reliable source of sound patient information available free in a variety of formats, produced by the US National Library of Medicine for the National Institutes of Health (Figure 1.13). In the United Kingdom, NHS Choices (http://www.nhs.uk/pages/home.aspx)

BPH in men between 40 and 75 years of age [9]. You would like to find a more recent article. A citation search showed that the article had been cited 87 times (as at November 2015), according to Web of Science, and 98 times according to Scopus. Reviewing the lists of citing articles turned up clinical trials, book chapters, and retrospective cohort studies published in the past 2 years. On obscure or interdisciplinary topics, when thesaurus terms and keywords fail to produce an effective or focused search, citation tracking can be a very powerful search method.

Evidence your patients can understand

In this information-rich era, your patients will be very interested in searching for information on their own condition. They may well come to their appointment armed with studies

Results: 5 of 1584 Management of LUTS in patients with dementia and associated disorders .

Averbeck MA, Altaweel W, Manu-Marin A, Madersbacher H. Neurourol Urodyn. 2015 Nov 20; . Epub 2015 Nov 20.

Sexual Dysfunction Related to Drugs: a Critical Review. Part V: α -Blocker and 5-ARI Drugs.

Torre A, Giupponi G, Duffy D, Conca A, Cai T, Scardigli A. Pharmacopsychiatry. 2015 Nov 16; . Epub 2015 Nov 16.

Efficacy and safety of botulinum toxin injection for benign prostatic hyperplasia: a systematic review and meta-analysis.

Shim SR, Cho YJ, Shin IS, Kim JH. Int Urol Nephrol. 2015 Nov 11; . Epub 2015 Nov 11.

Current and emerging drugs for interstitial cystitis/bladder pain syndrome (IC/BPS).

Ogawa T, Ishizuka O, Ueda T, Tyagi P, Chancellor MB, Yoshimura N. Expert Opin Emerg Drugs. 2015 Nov 4; :1-16. Epub 2015 Nov 4.

Evolving and investigational therapies for benign prostatic hyperplasia.

Nair SM, Pimentel MA, Gilling PJ. Can J Urol. 2015 Oct; 22(5 Suppl 1):82-7.



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2

GO

Home \rightarrow Health Topics \rightarrow Enlarged Prostate (BPH)

Enlarged Prostate (BPH)

Also called: benign prostatic hyperplasia

On this page			
Basics	Learn More	See, Play and Learn	
 Summary Start Here Diagnosis/Symptoms Prevention/Screening Treatments and Therap 	= No links available	= Videos	
Research	Resources	For You	#ADAM.
= Journal Articles		- Facent Handouts	Get Enlarged Prostate (BPH)

Summary

The prostate is a gland in men. It helps make semen, the fluid that contains sperm. The prostate surrounds the tube that carries urine out of the body. As men age, their prostate grows bigger. If it gets too large, it can cause problems. An enlarged prostate is also called benign prostatic hyperplasia (BPH). Most men will get BPH as they get older. Symptoms often start after age 50.

Figure 1.13 Patient information on MedlinePlus.



Patient Information

- handout from National Kidney and Urologic Diseases Information Clearinghouse PDF or in Spanish PDF
- · handout from American Academy of Family Physicians or in Spanish
- handouts from Urology Care Foundation on
 - diagnosis of benign prostatic hyperplasia
 - management of benign prostatic hyperplasia
 - medical management of benign prostatic hyperplasia
 - minimally invasive management of benign prostatic hyperplasia
 - surgical management of benign prostatic hyperplasia
- technical information from Patient Plus PDF
- · handout on questions to discuss with your doctor from Harvard Medical School
- handout on prostate gland enlargement from Patient UK PDF
- · handout on prostate gland enlargement from Mayo Clinic
- handout on prostate diseases from Health In Aging

Figure 1.15 Patient information links about BPH on DynaMed.

offers a section called Health A–Z, which leads to an excellent section on Benign Prostatic Hyperplasia (Figure 1.14). DynaMed also provides a selection of patient handouts and links for further information (Figure 1.15).

Conclusion

Searching for evidence is actually relatively simple, thanks to new resources designed specifically for clinicians. It may be helpful to consult information specialists, such as experienced medical librarians or clinical informaticists, to advise on which of these resources might best fit your needs. Such professionals are themselves a resource, especially when you are stumped for evidence or are conducting an intensive literature search.

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