



The Teaching Physician

for those who teach students and residents in family medicine

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Clinical Guidelines That Can Improve Your Care

Use of Nonsteroidal Anti-inflammatory Drugs: An Update for Clinicians. A Scientific Statement From the American Heart Association

By Diana Heiman, MD, University of Connecticut

Three weeks ago, I had a patient walk into my office and say, "Why did that doctor give me naproxen; doesn't he know it will give me a heart attack?!" True story. She had looked it up on the Internet and literally believed it would cause her harm from one dose.

So what is the risk of using non-steroidal anti-inflammatory drugs (NSAIDs) in a patient with or at risk for cardiovascular disease?

This guideline¹ reviews the available data to come up with the most evidence-based recommendations that we currently have. It should be

noted that there is currently an ongoing randomized controlled trial (RCT) evaluating the risk-benefit ratio of celecoxib compared to ibuprofen and naproxen with regard specifically to cardiac endpoints (primary) as well as gastrointestinal (GI) endpoints (secondary).² Obviously, when this data is available, all of the things we talk about today may change.

The risk of cardiovascular events from NSAID use relates to the cyclooxygenase (COX)-2 selectivity. Of the available NSAIDs in the United States, celecoxib is the most COX-2 selec-

tive, and naproxen is the least COX-2 selective. Data bear out that naproxen is the safest NSAID with regard to cardiovascular events; overall, the relative risk is 0.64 when compared to COX-2 selective agents. Having said that, naproxen does have a higher rate of GI events as COX-1 selectivity is related to GI risk.

The guideline recommends a step-wise approach to treating musculoskeletal pain. The first step should always be nonpharmacologic if possible (eg, physical therapy, heat or cold therapy). If additional pain control is necessary, the first step should include acetaminophen, aspirin (ASA), tramadol, and short-term use of narcotics. In all cases, the lowest effective dose should be used for the shortest time necessary. If these medications fail to control the pain, nonacetylated salicylates may

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Information Technology and Teaching in the Office

Using Images on the Internet to Enhance Patient Care, Learning, and Teaching

By Richard Usatine, MD, University of Texas Health Science Center at San Antonio

Using Images to Make a Diagnosis

We all see visible clinical findings on patients that we do not recognize. When this happens, go online, and look for a close match. Try the Google search engine. Try a Google image search and follow the leads. Of course this is easiest to do if you have a good differential diagnosis of what you were looking at and want to confirm your impression. If you don't have a diagnosis in mind you may try putting in descriptive words and looking for an

image that matches what you are seeing. If the Google image search does not work, try a Google Web search and follow the links for other clues.

Finally, there are dedicated atlases on the Internet by organ system that can help you find the images you were looking for. Most of these atlases have their own search engines that can help direct you to the right diagnosis.

Here is a table of some of the best resources currently available online:

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Use of Nonsteroidal Antiinflammatory Drugs

then be considered. These medications all have no negative impact on cardiovascular outcomes. Step three crosses the line to NSAID use. The recommendation is to start with non-COX-2 selective NSAIDs such as naproxen unless there is significant GI risk; prior GI bleed, or ulcer. Step four moves to more COX-2 selective agents such as diclofenac or meloxicam. And finally, if all else fails, move to a COX-2 selective agent (see Tables 1 and 2).

Clearly, this is a simplified algorithm, and specific conditions deserve mention: (1) history of or risk for GI bleed—acetaminophen should preferentially be utilized, but a pre-pulse inhibition (PPI) may be used with a traditional low-dose aspirin (ASA) or a COX-2 selective agent may be preferred if cardiac risk is low, (2) patients with or at risk for cardiovascular disease—overall increased risk with any NSAID use, especially COX-2 selective, but the risk is not currently quantifiable on the individual patient level, (3) patients on ASA for cardiac protection—avoid ibuprofen (only NSAID proven to interfere with COX-1 effect of ASA on platelets) or dose 30 minutes after ASA or 8 hours before ASA dose and avoid enteric-coated form.

Overall, the jury is still out as to the true risk of a cardiac event when using NSAIDs. Musculoskeletal pain is common, as is NSAID use, and we should all be aware of the risks and benefits involved to the individual patient in our office.

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2. PRECISION trial—Prospective randomized evaluation of celecoxib integrated safety versus ibuprofen or naproxen. No. NCT00346216. www.clinicaltrials.gov.

Table 1

Stepped Approach to NSAID Use for Musculoskeletal Pain in Patients with CV Disease or Risk Factors for Ischemic Heart Disease

	Treatment	Caveats
<i>Basics for All Patients</i>	Physical therapy, cold/heat	None
Step 1	Non-NSAID pharmacologic therapy: acetaminophen, ASA, Tramadol, short-term narcotics	• Caution with acetaminophen and liver toxicity (especially with alcohol)
Step 2	Nonacetylated salicylates (sodium salicylate, magnesium salicylate, choline salicylate, choline magnesium trisalicylate, and salsalate)	• Cannot be used with ASA allergy
Step 3	Non-COX-2 selective NSAIDs	• Use lowest dose possible • Use in patients at low risk of thrombosis • Add ASA 81mg plus PPI for those at increased risk of thrombosis.
Step 4	NSAIDs with some COX-2 selectivity	• Monitor for increase in blood pressure, edema, GI bleed, decrease in renal function
Step 5	COX-2 Selective NSAIDs	

NSAIDs—nonsteroidal antiinflammatory drugs
ASA—aspirin
COX—cyclooxygenase
PPI—pre-pulse inhibition
GI—gastrointestinal

Table 2

Relative COX-1 and COX-2 Selectivity³

Medication	Selectivity
Rofecoxib (Vioxx)	Highly COX-2 selective (>50 fold)
Valdecoxib (Bextra)	
Etodolac (Lodine)	Moderately COX-2 selective (5–50 fold)
Meloxicam (Mobic)	
Celecoxib (Celebrex)	
Diclofenac (Voltaren)	
Ibuprofen (Motrin)	
Tolmetin (Tolectin)	Not COX-2 selective (<5 fold)
Naproxen (Anaprox, Naprosyn)	
ASA	
Indomethacin (Indocin)	
Ketoprofen (Orudis)	
Ketorolac (Toradol)	

COX—cyclooxygenase

3. Warner TD, Mitchell JA. Cyclooxygenases: new forms, new inhibitors, and lessons from the clinic. *FASEB J* 2004;18(7):790-804.

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Using Images on the Internet

DermAtlas	http://dermatlas.org/	Johns Hopkins University
DermIS	http://dermis.net	Derm Information Systems from Germany
Dermnet	http://www.dermnet.com/	Skin Disease Image Atlas
Interactive Derm Atlas	http://www.dermatlas.net/	From Richard Usatine, MD
ENT	www.entusa.com	From an ENT physician
Eye	www.eyerounds.org	From University of Iowa
Infectious Diseases	http://phil.cdc.gov/	CDC Public Health Image Library

Using Images to Build Trust in the Patient-Doctor Relationship

If you are seeing a patient with a mysterious illness that remains undiagnosed, and you figure out the diagnosis, you can often bridge the issue of mistrust and anxiety by showing the patient the picture of another person with the diagnosis. Use your atlas for that purpose and supplement this with the Internet. This is especially important for a patient who has gone undiagnosed or misdiagnosed for some time. “Seeing is believing” for many patients. Patients can see the similarities between their condition and the other images and feel

reassured that your diagnosis is correct. Write down the name of the diagnosis for your patient, and use your patient education skills.

Do be careful when searching for images on the Web in front of patients. Sometimes what pops up is not “pretty” (or for that matter G or PG rated). I turn the screen away from the patients before I initiate the search and then screen out what I will show them. Another option is to do the search in another room first, but this limits the spontaneity of the process and adds time to an already busy schedule. I always ask first if they would want to see some pictures of other

persons with a similar condition and if it is “OK to search” in front of them. Most patients are delighted—but you may have an occasional patient who does not want to view the images.

When you teach, model this behavior in front of your students. Show them how the Internet at the point of care can help with caring for patients.

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Clinical Guidelines That Can Improve Your Care

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POEMs for the Teaching Family Physician

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Teaching Points—A 2-minute Mini-lecture

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Teaching Points—A 2-minute Mini-lecture

Infectious Mononucleosis in a Young Athlete

By Peter Carek, MD, MS, Medical University of South Carolina

Editor's Note: The process of the 2-minute Mini-lecture is to get a commitment, probe for supporting evidence, reinforce what was right, correct any mistakes, and teach general rules. In this scenario, Dr Carek (Dr C) works with a third-year student (MS3) who has seen a young athlete with fatigue and sore throat.

MS3: The patient is a 20-year-old male college student who plays goalie for the soccer team. He presents complaining of a sore throat for the past 2 to 3 days. He does not relate a fever, though he does indicate that he has been really tired since the sore throat started.

Dr C: What did you find on physical examination?

MS3: On physical exam, he has both anterior and posterior cervical adenopathy. His oropharynx was mildly erythematous but without any exudate. Otherwise, I didn't see anything significant on his physical exam.

Dr C: OK. Anything else?

MS3: Before he was put in the exam room, the nurse sent him to the lab for a Rapid Strep test. She told me the test was negative. So, I think that he probably has a viral pharyngitis and just requires symptomatic care.

Dr C: That sounds reasonable. In this age group, which specific viral illness should you suspect?

MS3: Um—you mean rhinovirus?

Dr C: Maybe. But I was thinking about mono. Think of mono in patients between 10 to 30 years old with sore throat, fever, fatigue, and cervical adenopathy. If you look, you can find adenopathy elsewhere—in the inguinal areas or axillae. According to one study, palatal petechiae or splenomegaly are very specific. So, if a finding is specific, it helps to . . . ?

MS3: To rule in the diagnosis. SpIn: Specific test to rule In.

Dr C: And to rule out the diagnosis?

MS3: Sensitive.

Dr C: Fatigue or adenopathy are the most sensitive findings. So the absence of fatigue or adenopathy helps to rule out mono. Good. Any lab tests that would help?

MS3: There's the mono test or Monospot?

Dr C: Right. The heterophile test. What can you tell me about that test?

MS3: Well, on pediatrics, they said that the test can be a false negative.

Dr C: That's right. You can repeat the test in a week, if you think it was falsely negative, and the patient is still sick. But if we really need an answer in the next day or so, we may want to consider ordering a more sensitive test, the Viral Capsid Antigen (VCA)-IgM. What's one big deal related to mono and this patient?

MS3: Splenomegaly.

Dr C: Great. Why?

MS3: It can rupture. So the patient is not supposed to play football or contact sports?

Dr C: For how long?

MS3: I don't know.

Dr C: Almost all ruptures occur in the first 3 weeks of illness. So patients should be kept out of athletic activity for at least 3 to 4 weeks, and they are asymptomatic. Some researchers have recommended using ultrasound at 3 weeks to determine whether or not the athlete can return to play. But this strategy increases the cost of care substantially—and so is not automatically done. I'll give you a good article (Ebell M. Epstein-Barr virus infectious mononucleosis. *Am Fam Physician* 2004;70:1279-87, 1289-90) that reviews the evidence on mono. Let's go finish up with this patient.

Alec Chessman, MD, Medical University of South Carolina, Editor

**From the “Evidence-based Practice” HelpDesk
Published by Family Physicians Inquiries Network
(FPIN)**

Should Children Be Screened for Diabetes?

By Elizabeth Placek, DO; C. Randall Clinch, DO, MS, Wake Forest University

Evidence-Based Answer

The American Diabetes Association (ADA) recommends screening for type 2 diabetes mellitus among high-risk children beginning at 10 years of age or the onset of puberty, whichever is earlier. (SOR C, based on expert opinion.) It is unclear, however, if such screening reduces long-term complications from the disease.

Data from a 2001 population-based, observational study of physician-diagnosed diabetes among youth less than 20 years of age revealed a crude prevalence of 1.82 cases per 1,000 (95% CI, 1.78–1.87 cases per 1,000 youth).¹ The incidence of type 2 diabetes in children is increasing and accounts for up to 45% of all newly diagnosed cases.²

An ADA consensus statement developed in 2000 by a panel of experts specializing in diabetes among children recommends screening at-risk children for type 2 diabetes mellitus. Criteria for screening include body mass index higher than the 85th percentile for age and sex, or weight more than 120% of ideal, along with two other risk factors. Risk factors include:

- A family history of type 2 diabetes
- Signs of insulin resistance or conditions associated with insulin resistance (ie, acanthosis nigricans, hypertension,

dyslipidemia, or polycystic ovarian syndrome)

- Maternal history of gestational diabetes

• Being a member of an ethnic group at increased risk (ie, African American, Native American, Hispanic American/Latino, Asian American, and Pacific Islander)

For overweight children with two additional risk factors, the recommendation is that screening begin at 10 years of age or the onset of puberty, whichever is earlier. The recommended test is a fasting plasma glucose with repeat screening every 2 years.²

The fasting plasma glucose test and 2-hour oral glucose tolerance test have been shown to have acceptable sensitivity and specificity for screening high-risk children. A fasting plasma glucose concentration of 126 mg/dL or higher (fasting=no caloric intake for at least 8 hours) is more commonly used secondary to lower cost and greater convenience. Although the US Preventive Services Task Force found good evidence that available screening tests can accurately detect type 2 diabetes during an early, asymptomatic phase in adults, evidence is limited in reference to children, and the Task Force made no formal recommendation for or against routine screening in this population.³

A retrospective chart review of electronic health data (2002–2004) from more than 7,700 patients ages 10 to 19 years from an urban primary care clinic in Boston revealed higher screening rates among patients meeting ADA screening criteria. However, less than half of those adolescents meeting criteria for screening were screened.⁴ Further evidence is necessary to determine if screening for diabetes among pediatric patients decreases morbidity and premature mortality associated with diabetes.

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LOE—level of evidence

Jon O. Neher, MD, University of Washington, Editor

HelpDesk answers are provided by *Evidence-Based Practice*, a monthly publication of the FPIN Consortium (www.ebponline.net)

POEMs for the Teaching Physician

Montelukast = Fluticasone + Salmeterol for Mild Persistent Asthma

Clinical Question: Are there good alternatives to the twice-daily inhaled corticosteroids in patients with mild persistent asthma?

Setting: Outpatient (specialty)

Study Design: Randomized controlled trial (double-blinded)

Funding: Industry and government

Allocation: Uncertain

Synopsis: The standard recommendation for patients with mild persistent asthma is to control symptoms and prevent exacerbations by using inhaled corticosteroids, usually twice daily. However, compliance is an issue, particularly for patients whose symptoms are usually mild, and many patients just don't like inhalers. In this study, patients older than 6 years who met criteria for mild persistent asthma were initially given open-label treatment with fluticasone propionate (Flovent) 100 mcg twice daily for 4 to 6 weeks. If their symptoms were well controlled, the 500 patients were then randomized to one of three treatment groups: (1) montelukast 5 mg to 10 mg at bedtime, (2) fluticasone 100 mcg twice daily, or (3) fluticasone 100 mcg plus salmeterol 50 mcg at bedtime. Groups were balanced at the start of the study, with each group including approximately 25 children aged 6 years to 15 years and approximately 140 patients older than 15 years. Although allocation concealment was not described, analysis was by intention to treat, and outcome assessors appear to have been masked to treatment assignment. Patients were followed up for 16 weeks. The primary outcome was the time to treatment failure, defined

as an urgent medical consultation or hospitalization, the need for systemic corticosteroids, or a significant decrease in the FEV1 or peak expiratory flow rate, needing 10 or more puffs per day of rescue beta-agonist, physician discontinuation because of safety reasons, or refusal to continue. There was no difference in treatment failure rates between groups 2 and 3 (20%), but the failure rate was higher in the group taking montelukast (30.3%). However, most of the "failures" were based on physiologic measures of lung function. If you only look at failures based on patient-oriented outcomes, the difference between groups largely disappears: 10.7% for fluticasone twice daily, 11.1% for fluticasone plus salmeterol, and 13.3% for montelukast. Minor adverse events were similar between groups, but fewer patients in the montelukast group developed an upper respiratory infection (26.7% for montelukast compared with 38% in the other two groups; number needed to treat to harm=9; 95% CI=5-71). They also developed fewer viral respiratory infections (7.3% versus 14% to 15%).

Bottom Line: At first glance the results seem to favor fluticasone plus salmeterol over montelukast for step-down therapy in patients with mild persistent asthma. However, a closer look at the benefit of the former (based largely on disease-oriented end points) and its potential harms (more respiratory infections) makes montelukast look like an excellent alternative, particularly given the concerns regarding long-term use of long-acting beta-agonists and corticosteroids. (LOE = 1b)

Source article: American Lung Association Asthma Clinical Research Centers, Peters SP, Anthonisen N, et al. Randomized comparison of strategies for reducing treatment in mild persistent asthma. *N Engl J Med* 2007;356:2027-39.

As-needed Steroid + Beta-agonist Works Well in Mild Persistent Asthma

Clinical Question: Do inhaled corticosteroids really have to be taken daily by patients with mild persistent asthma?

Study Design: Randomized controlled trial (double-blinded)

Funding: Industry

Allocation: Concealed

Setting: Outpatient (specialty)

Synopsis: For years we've been telling our patients with mild persistent asthma that they have to take their corticosteroid inhaler every day, not as needed. But is that really true? These researchers identified 510 patients who were given a 4-week course of beclomethasone dipropionate 250 mcg twice daily plus albuterol inhaler to be used as needed. Those with good control while using this regimen were then randomized to one of four groups: (1) continued beclomethasone 250 mcg twice daily plus albuterol as needed, (2) beclomethasone 250 mcg plus albuterol 100 mcg twice daily plus albuterol as needed, (3) albuterol as needed only, and (4) beclomethasone 250 mcg plus albuterol 100 mcg to be used as needed only. Patients received placebo inhalers to maintain masking, and outcomes were assessed by researchers masked to treatment assignment. Of 466 who started the study, 393 completed the 6-month study; dropouts were similar between groups. Half the patients were women, and the mean age was 39 years. A variety of physiologic measures of lung function showed that the as-needed combination of steroid and beta-agonist was better than albuterol alone and as effective as the traditional combination of daily steroid and as-needed beta-agonist. More important, patients using the steroid and beta-agonist combination only as needed had fewer exacerbations than the albuterol-only group (0.74 per

year versus 1.63 per year; $P < .001$) and a similar number as the group taking beclomethasone daily with as-needed albuterol. In addition, patients using the combination of steroid and beta-agonist as needed used less total steroids than those taking them daily (18 mg versus 78 mg). The percentage of symptom-free days was also similar between the groups who took steroid plus beta-agonist as needed and those who took them daily.

Bottom Line: For patients with mild persistent asthma, symptoms and exacerbations can be controlled just as well using a combination of beclomethasone 250 mcg plus albuterol 100 mcg used as needed instead of daily. This approach reduces the amount of steroids given and may result in better compliance as well. (LOE = 1b)

Source article: Papi A, Canonica GW, Maestrelli P, et al, for the BEST Study Group. Rescue use of beclomethasone and albuterol in a single inhaler for mild asthma. *N Engl J Med* 2007;356:2040-52.

Aspirin Dose >81 mg Daily Not Beneficial for Secondary Prevention of CVD

Clinical Question: What is the optimal dose of aspirin for secondary prevention

of stroke or myocardial infarction?

Study Design: Systematic review

Funding: Unknown/not stated

Setting: Various (meta-analysis)

Synopsis: Approximately one third of the US adult population takes aspirin daily for the prevention of cardiovascular disease; pharmaceutical research suggests that 60% take 81 mg and 35% take 325 mg. These authors conducted a systematic review of the literature to determine the optimal dose of aspirin for the secondary prevention of cardiovascular disease. The authors searched MEDLINE, EMBASE, and bibliographies to identify 11 studies: eight randomized controlled trials (RCTs) and three observational studies enrolling more than 41,000 patients. Although no attempts were made to locate unpublished data, it is unlikely that enough of such trials exist to change these results. Some of the studies enrolled patients after stroke or transient ischemic attack; the remaining studies enrolled patients after myocardial infarction (MI). End points included death and major cardiovascular events. None of the 11 studies showed any benefit to increasing aspirin dose above 81 mg daily. Interestingly, two prospective trials actually showed increased rates of death, MI, or stroke

in patients taking higher doses of aspirin. The authors also reviewed the literature on adverse effects of aspirin. Three RCTs and one meta-analysis demonstrated an increased risk of bleeding with higher doses of aspirin. One subsequent meta-analysis failed to show any relationship between aspirin dose and gastrointestinal bleeding. Nevertheless, given the lack of benefit and possible risk of higher doses, this information is likely relevant to point-of-care decision making.

Bottom Line: In this systematic review of 11 studies including more than 41,000 patients, no evidence was found to support aspirin doses above 81 mg for the secondary prevention of stroke or myocardial infarction. In addition, higher doses of aspirin are likely to increase the risk of major bleeding. (LOE = 1a-)

Source article: Campbell CL, Smyth S, Montalescot G, Steinhilber SR. Aspirin dose for the prevention of cardiovascular disease: A systematic review. *JAMA* 2007;297:2018-24.

LOE—level of evidence. This is on a scale from 1a (best) to 5 (worst). 1b for an article about treatment is a well-designed randomized controlled trial with a narrow confidence interval.

Mark Ebell, MD, MS, Michigan State University, Editor

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Excerpted from "For the Office-based Teacher of Family Medicine"

Teaching Preventive Medicine in an Office-based Visit

By Krupa Shah, MD, MPH, Washington University, St Louis; and Tricia Elliott, MD, Baylor College of Medicine (Fam Med 2006;38(10):693-5.)

Health promotion, disease prevention, and community health offer the greatest potential for reducing the leading causes of death and disability and for improving the quality of life across diverse populations.^{1,2} Yet, in the United States we continue to emphasize disease-based, episodic, acute care.^{3,4} Until prevention is integrated into all aspects of our health care system, significant progress toward providing comprehensive preventive services to our patients will not be possible.

The office visit provides an excellent opportunity for practicing preventive medicine and for training medical students and resident physicians to integrate preventive practices into clinical care. In 2002, the physician office visit rate in the United States was 314.4 per 100 persons. Between 1992 and 2002, the population increased by 13%, but the number of visits to physician offices increased by 17%.⁵

Integrating preventive medicine into office-based practice is not easy. Many physicians, including those training our medical students and residents, lack knowledge and skills in this area. In addition, the choreography of the clinic visit is limited by time boundaries, which challenge the physician's ability to address anything other than the most acute problems. Insurance systems are reluctant to invest in interventions that produce long-term rather than short-term benefits for the patient. Nor are they anxious to invest in interventions that benefit public health more than the health of the insured patient. Lack of continuity in doctor-patient relationships makes it difficult for physicians to treat chronic conditions or to recognize systemic factors relating to a patient's health. Patient education and

lifestyle interventions require cultural and gender sensitivity.^{6,7}

In our experience as learners and teachers, we have discovered an effective tool for teaching preventive care in ambulatory settings. This tool is the Task-oriented Processes in Care (TOPIC) model.⁸

The TOPIC model offers guidelines for optimizing physicians' patient care competency in ambulatory visits for different prototypical purposes such as a new problem visit, chronic illness visit, psychosocial visit, behavior change visit, and checkup/preventive visit.

It also provides an effective and efficient method of supervision, helping teachers tease out information and communicate the complexity of ambulatory care to learners. It provides a structured framework with consistent teaching content. By learning to apply goals-oriented tasks, the learners can develop their own solutions to clinic questions and develop therapeutic patient-physician relationships. While preventive services are provided in any type of visit, the TOPIC model provides students with a systematic approach to the patient coming for a checkup or a well-person visit.

Using the TOPIC Model to Teach Preventive Medicine in the Ambulatory Setting

To demonstrate how this works in our department, we will present a case example of one type of visit, the routine checkup:

Ms Smith, a 40-year-old woman with no significant past medical history, presents to the student or resident physician for a routine checkup.

Preceptor Teaching Points

The first step is to clarify with the learner that the primary focus of the visit is that of a checkup. In addition, assess whether the patient has additional concerns that led to the visit. Initial dialogue with the patient should include questions such as "How can I help you today?" and "Are there any specific concerns that brought you in today?" Beginning the conversation in this manner allows the patient to be open regarding her concerns and establishes a context for the overall visit.

The next step for the learner is to assess risk factors in major areas of preventive services, such as cardiovascular (CVS), cancer, injury, infectious disease (ID), metabolic and emotional health, along with previous preventive services along these areas. For our patient, questions such as past medical history with previous illnesses, family history, behavioral practices, previous immunizations, and other prior age- and gender-appropriate screenings help to develop a risk profile.

Ms Smith states that she came to the doctor for a full checkup and a pap smear. She is concerned because her sister was recently diagnosed with diabetes.

Ms Smith describes a family history of diabetes, hypertension, and osteoporosis. An administrative assistant for a large corporation, she eats out most days and "makes bad choices." Although she exercises regularly, she has smoked one pack of cigarettes per day for the past 20 years.

Ms Smith states that she received her last tetanus shot 15 years ago, her last pap smear more than 3 years ago, and she had a BTL 5 years ago. She has never had a mammogram. She also reports infrequent use of seat belts. She denies any psychological problems or significant marital or family problems.

On physical exam, Ms Smith's only significant findings include a body mass index (BMI) of 30, a blood pressure of 140/95, and acanthosis nigricans.

Preceptor Priorities

Upon reviewing this cumulative information, the learner can then review established, evidence-based guidelines as recommended by professional societies and nationally based preventive organizations to offer specific clinical preventive services. For our case example above, the learner designed a risk profile and the preventive services (Table 1).

Once a risk profile for the patient has been prepared, the preceptor can introduce the learner to initiate a therapeutic relationship development with the patient. The bond of trust between the patient and the physician is vital to the diagnostic and therapeutic process. It facilitates the process of making accurate diagnoses and in providing optimal recommendations for prevention and treatment. If patients have concerns or reservations, you want to know what those are. This way you can obviate their worries and make them feel invested in and comfortable with the plan.

Preceptors should advise learners to choose preventive services of interest to and pertinent to the patient. It would be reasonable to choose one to three preventive services for this visit and perhaps addressing one to three at a follow-up visit, given the time constraints of an ambulatory clinic visit. Physicians can offer handouts on relevant preven-

tive services or have posters in the waiting area or the examination rooms.

In dealing with this case example, Ms Smith is concerned, because her sister was recently diagnosed with diabetes. Discussing with Ms Smith her risk factors for diabetes and creating a prevention plan is crucial for building trust to begin this relationship in an honest and straightforward manner. It also improves patient compliance, and the patient will likely follow-up with you.

The physician should emphasize to learners to negotiate the prevention plan with the patient and tailor it to the patient's beliefs and values. For example, the learner may really want to talk about smoking cessation during this visit, whereas Ms Smith may want to work on weight loss. The learner needs to keep the entire context of the patient in mind prior to making and offering the prevention plan.

With Ms Smith, we identified elevated blood pressure in this visit. Talking to her about her preferences and tasks in her lifestyle, you can decide with her a time line in improving her blood pressure. Ms Smith agreed to a time line of 3 months. During this time line, she was encouraged and motivated to modify her lifestyle, keep blood pressure logs, and call the office if she has any concerns or questions, with the anticipation of following-up with her in 3 months. This also supports patients'

own self-care and also reiterates the importance of the patient-physician relationship. Most importantly, during this encounter, the physician needs to be warm, attentive, and be able to attend to emotional responses and to the processes of behavior change as they arise.

Finally, emphasize to the learner that every patient-physician encounter is a lifelong learning experience, and review the relevant evidence-based clinical practice guidelines, US Preventive Task Force recommendations, American Academy of Family Physicians recommendations, and other recommendations listed in Table 2.

Conclusions

- Adequate provision of clinical preventive services by physicians has the potential to dramatically improve health while decreasing the financial burden borne by the US health care system.

- Teaching preventive medicine to medical students and residents using the TOPIC model as a tool will prepare them to fill this need and meet the future needs of our rapidly changing health care system.

- As the evidence base for health promotion and disease prevention expands and changes, future health professionals must be able to evaluate the evidence and design care that integrates these skills and knowledge.

Table 1

Risk Profile and Preventive Services

	<i>Risk Profile</i>	<i>Preventive Services</i>
Cardiovascular	Smoking, elevated blood pressure, obesity, family history of diabetes and hypertension	Blood pressure, lipid profile, glucose, smoking cessation counseling, improving diet, and exercise recommendations
Cancer	Smoking, age and sex related	Mammogram, Pap smear, smoking cessation, self/MD skin check, avoid excess sun exposure, use protective clothing and hats and sunscreen with SPF \geq 15
Injury	Infrequent seat belt use, sun exposure	Seat belt use reinforcement
Infectious disease	Last tetanus shot 15 years ago	Tetanus shot today
Metabolic	Family history of osteoporosis, perimenopausal	Calcium intake, weight-bearing exercise, smoking cessation
Emotional health	None identified	—

• Competency in delivery of health promotion and disease prevention care cannot be left to chance but must be part of the ongoing evaluation of clinical education and practice.

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Table 2

Useful Web Sites*

United States Preventive Task Force (www.ahrq.gov/clinic/uspstfix.htm)
National Immunization Program (www.cdc.gov/nip/ACIP/default.htm)
Cochrane Collaboration (www.cochrane.org)
National Guideline Clearinghouse (www.guideline.gov)
AAFP Clinical Preventive Services (www.aafp.org/x7661.xml)
<i>Evidence-based Medicine</i> journal (http://ebm.bmjournals.com)

* All accessed on August 8, 2006

AAFP—American Academy of Family Physicians

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