Prevention and Treatment Guidelines

- Adult Clinical Prevention Guidelines including Evaluation Counseling
- Childhood Immunization Schedules
- Anticipatory Guidelines for Adolescents

- Depression
- Cardiac
- Low back pain
- Asthma
- Osteoporosis

Blue Cross Blue Shield of Massachusetts

2000
# Contents

## Prevention Guidelines

- Routine Prenatal and Perinatal Care ............................................ 3
- Preventive Services for Children Ages Birth-24 months; 2-11 years old 11
- Anticipatory Guidance for Adolescents Ages 12-21 ...................... 21
- Adult Clinical Prevention Guidelines: Immunization, and Screening . 27

## Treatment Guidelines

- Asthma .............................................................. 41
- Cardiovascular Diseases, Primary Prevention and Comprehensive Risk Reduction ........................................ 51
- Colorectal Cancer .................................................. 59
- Diabetes Mellitus, Type 2 ........................................... 67
- Depression: Diagnosis and Treatment .................................. 73
- Gastroesophageal Reflux Disease ..................................... 83
- Low Back Pain ....................................................... 89
- Osteoporosis, Prevention and Treatment .......................... 93
- Patient Education and Counseling ................................... 103

## Appendix

- Complementary and Alternative Medicine .......................... 109
U.S. Preventive Services Task Force Ratings
USPSTF Task Force Ratings for Preventive Care Guidelines

Recommendations in this publication are intended as guidelines with information on the proven effectiveness of services published in medical research. For preventive services recommendations we have relied heavily on the U.S. Preventive Services Task Force (USPSTF) Second Edition, 1996. The USPSTF recommendations are highly regarded because they are rooted on medical evidence derived from a rigorous review process. We have updated the information where applicable.

Strength of Recommendations

A = There is good evidence to support the recommendation that the condition be specifically considered in a periodic health examination.

B = There is fair evidence to support the recommendation that the condition be specifically considered in a periodic health examination.

C = There is insufficient evidence to recommend for or against the inclusion of the condition in a periodic health examination, but recommendation may be made on other grounds.

D = There is fair evidence to support the recommendation that the condition be excluded from consideration in a periodic health examination.

E = There is good evidence to support the recommendation that the condition be excluded from consideration in a periodic health examination. Determination of the quality of evidence (i.e., “good,” “fair,” “insufficient”) in the strength of recommendations was based on a systematic consideration of three criteria:

- the burden of suffering from the target condition
- the characteristics of the intervention, and
- the effectiveness of the intervention as demonstrated in published clinical research. Effectiveness of the intervention received special emphasis. In reviewing clinical studies, the task force used strict criteria for selecting admissible evidence and placed emphasis on the quality of study designs.

The treatment guideline recommendations reflect the syntheses of recommendations promulgated by government health agencies, specialty societies, expert panels and other professional organizations. We have included those recommendations that follow the USPSTF’s rules of evidence as described below. At the beginning of each treatment guidelines we indicate the authority (ies) on which we based our recommendations.

Quality of Evidence

1. Evidence obtained from at least one properly randomized controlled trial.

2a. Evidence obtained from well-designed controlled trials without randomization.

2b. Evidence obtained from well-designed cohort or case-control analytic studies, preferably from more than one center or research group.

2c. Evidence obtained from multiple time series with or without evidence with or without the intervention.

3. Opinions of respected authorities, based on clinical experience; descriptive studies and case reports; or reports of expert committees.

The recommendations in this publication should not be construed as medical advice or medical opinion, neither do they indicate an exclusive course of treatment or serve as standard of medical care. As always, care should be individualized.
Routine Prenatal and Perinatal Care
Blue Cross Blue Shield of Massachusetts has adopted the American Academy of Pediatrics and the American College of Obstetricians and Gynecologists Guidelines for Perinatal Care, Fourth Edition. The Guidelines for Perinatal Care encourage all health care providers to use reproductive health screening to reduce risks, to emphasize preconception care and ongoing antepartum risk assessment as standard components of care. The following is a synthesis of a core of health care services for an uncomplicated pregnancy; it is not intended to replace a physician's judgement. Fertility issues and complicated pregnancies are beyond the scope of this synthesis. Physicians are encouraged to consult the *Guidelines for Perinatal Care*, Fourth Edition, 1997 by the American Academy of Pediatrics and the American College of Obstetricians and Gynecologists, www.acog.org.

<table>
<thead>
<tr>
<th>Event</th>
<th>Preconception visit</th>
<th>Visit 1 6-8 weeks</th>
<th>Visit 2 10-12 weeks</th>
<th>Visit 3 16-18 weeks</th>
<th>Visit 4 22 weeks</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Screening</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Risk profiles</td>
<td></td>
<td>Risk profiles</td>
<td>Weight</td>
<td>Weight</td>
<td>Weight</td>
</tr>
<tr>
<td>Height &amp; Weight</td>
<td></td>
<td>Height &amp; weight</td>
<td>Blood pressure</td>
<td>Blood pressure</td>
<td>Blood pressure</td>
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<tr>
<td>Blood pressure</td>
<td></td>
<td>OB history &amp;</td>
<td>Fetal heart tones</td>
<td>Fetal heart tones</td>
<td>Fetal heart tones</td>
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<tr>
<td>Breast exam</td>
<td></td>
<td>physical</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cholesterol + HDL</td>
<td></td>
<td>Hemoglobin</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pap smear</td>
<td></td>
<td>Rubella/rebeola</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Rubella/rubeola/varicella</td>
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<td>Varicella</td>
<td></td>
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</tr>
<tr>
<td>Abdominal/pelvic exam</td>
<td></td>
<td>ABO/Rh/Ab</td>
<td></td>
<td></td>
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<tr>
<td>Domestic abuse screening</td>
<td></td>
<td>Serologic testing (RPR or VDRL) for syphilis</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Genetic risks</td>
<td></td>
<td>Urine culture</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HIV Testing</td>
<td></td>
<td>Hep B S Ag</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Domestic abuse screening</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Counseling &amp; Education</strong></td>
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<td>Lifestyle</td>
<td>Fetal growth</td>
<td>Second trimester growth</td>
<td>Preterm labor signs</td>
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<tr>
<td>Substance use</td>
<td></td>
<td>Nutrition</td>
<td>Review lab results</td>
<td>growth</td>
<td>Class</td>
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<td>Nutrition &amp; weight</td>
<td></td>
<td>Warning signs</td>
<td>Breastfeeding</td>
<td>Quickening lifestyle</td>
<td>Family issues</td>
</tr>
<tr>
<td>Physical activity</td>
<td></td>
<td>Course of care</td>
<td>Body mechanics</td>
<td>Physiology of pregnancy</td>
<td>Length of stay</td>
</tr>
<tr>
<td>Domestic abuse</td>
<td></td>
<td>Physiology of pregnancy</td>
<td></td>
<td></td>
<td>Gestational diabetes melitus test</td>
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<td>Sexual practices prevention</td>
<td></td>
<td>Testing for risk in pregnancy</td>
<td></td>
<td></td>
<td>Rhogam</td>
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<tr>
<td>Medication</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Recording of menstrual dates</td>
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<tr>
<td><strong>Immunization and Chemoprophylaxis</strong></td>
<td></td>
<td>Td booster</td>
<td>Td booster</td>
<td>Td booster</td>
<td>Preterm labor signs</td>
</tr>
<tr>
<td>Td booster</td>
<td></td>
<td>MMR</td>
<td>Nutritional supplements</td>
<td>Nutritional supplements (high risk groups)</td>
<td>Class</td>
</tr>
<tr>
<td>MMR</td>
<td></td>
<td>Varicella</td>
<td></td>
<td></td>
<td>Family issues</td>
</tr>
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<td>Varicella</td>
<td></td>
<td>Hepatitis B</td>
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<td>Length of stay</td>
</tr>
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<td>Nutritional</td>
<td></td>
<td></td>
<td>Gestational diabetes melitus test</td>
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<td>Nutritional supplements</td>
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<td>supplements</td>
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<td></td>
<td>Rhogam</td>
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<td>Nutritional supplements</td>
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## Routine Prenatal and Perinatal Care

<table>
<thead>
<tr>
<th>Event</th>
<th>Visit 5 28 weeks</th>
<th>Visit 6 32 weeks</th>
<th>Visit 7 36 weeks</th>
<th>Visit 8-11 38-41 weeks</th>
<th>Perinatal Care</th>
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<tbody>
<tr>
<td>Screening</td>
<td>• Assess infectious disease risk</td>
<td>• Weight</td>
<td>• Weight</td>
<td>• Weight</td>
<td>1st visit, 1-6 weeks after normal delivery; 7-14 days after C-section or a complicated gestation. Follow-up care</td>
</tr>
<tr>
<td></td>
<td>• Preterm labor risk</td>
<td>• Blood pressure</td>
<td>• Blood pressure</td>
<td>• Blood pressure</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Weight</td>
<td>• Fetal heart tones</td>
<td>• Fetal heart tones</td>
<td>• Fetal heart tones</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Fetal heart tones</td>
<td>• Fundal height</td>
<td>• Fundal height</td>
<td>• Fundal height</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Check cervix</td>
<td>• Check cervix</td>
<td>• Confirm fetal position</td>
<td>• Check cervix</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Gestational diabetes mellitus test</td>
<td>• Consider culture for group B streptococcus</td>
<td></td>
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<tr>
<td></td>
<td>• Domestic abuse screening</td>
<td></td>
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<tr>
<td></td>
<td>• (Rh antibody status)</td>
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</tr>
<tr>
<td>Counseling And Education</td>
<td>• Work</td>
<td>• Travel</td>
<td>• Postpartum care</td>
<td>• Postpartum vaccinations</td>
<td>Breast feeding, interventions to increase breast feeding</td>
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<tr>
<td></td>
<td>• Physiology of pregnancy</td>
<td>• Sexuality</td>
<td>• Management of late pregnancy symptoms</td>
<td>• Post-term management</td>
<td>Postpartum depression</td>
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<td></td>
<td>• Pre-registration</td>
<td>• Pediatric care</td>
<td>• Contraception</td>
<td>• Labor and delivery update</td>
<td>Vaginal birth after cesarean delivery counseling</td>
</tr>
<tr>
<td></td>
<td>• Fetal growth</td>
<td>• Episiotomy</td>
<td>• When to call provider</td>
<td></td>
<td>Perinatal loss and fetal death</td>
</tr>
<tr>
<td></td>
<td>• Awareness of fetal movement</td>
<td>• Labor &amp; delivery issues</td>
<td>• Plans for hospital admission</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Pre-term labor symptoms</td>
<td>• Warning signs preterm labor</td>
<td>•</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>• What to do when labor begins</td>
<td>•</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Immunization and Chemoprophylaxis</td>
<td>• Rhogam</td>
<td>• Influenza</td>
<td>•</td>
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<td></td>
</tr>
</tbody>
</table>

## Immunization and Chemoprophylaxis
- Rhogam
- Influenza
Routine Prenatal and Perinatal Care

**Number of Prenatal Visits:**
Prenatal visits (including the preconception visit) are organized as described in the table of this guideline to include screening, counseling, education, and immunization and chemoprophylatic services. In accordance with the American College of Obstetricians and Gynecologists (ACOG) the number of recommended visits for uncomplicated pregnancy is as follows: first prenatal visit, periodic revisits for pregnancy evaluation and screening, monthly visits up to 28 weeks of gestation, biweekly visits up to 36 weeks of gestation, and weekly visits until delivery. The recommendations offered in this guideline are rooted in the latest available evidence, however they are not meant to replace a physician's judgement and should be tailored to the individual risks of the patient.

**Assessment and Management:** Risk evaluation at the preconception or first prenatal visit includes an evaluation of those conditions that could affect a future pregnancy:

- Modifiable risk factors for preterm labor
- Use of prescription or ever over-the-counter medications
- Work-related exposure to chemicals or infectious agents
- History of physical, emotional, or sexual abuse
- Genetic risks (age of both parents, racial background of both parents, substance abuse, presence of hereditary disorders in close relatives). Prenatal genetic screening should be performed at the preconception visit by using a questionnaire format. Genetic screening should be voluntary and informed. Early identification of genetic risks allows a woman and her family to decide whether to conceive or whether to undergo additional testing to determine if the genetic disorder might affect this pregnancy.
- Risk for modifiable infectious diseases (Rubella/varicella immunity status; HIV status of patient and partner, history of STDs; substance abuse, and tuberculosis screening for all high risk mothers).
- Nutritional adequacy — a folic acid supplement beginning at least one month prior to conception and continuing through the first trimester to reduce the risk of neural tube defects; multivitamins for multiple gestations, (women who use tobacco or drugs, complete vegetarians, and those with inadequate diets).

**Counseling and Education:** This is the primary tool used to transmit information to women about their pregnancies. Prenatal education serves to reduce modifiable risk factors and to increase pregnant women's knowledge of pregnancy changes, fetal development, etc. Prenatal smoking cessation programs can be effective in reducing smoking rates in pregnant women and reducing low birth weight babies.

**HIV:** Pregnant women should receive education and counseling about preventing HIV infection as part of regular prenatal care. Testing for HIV is recommended for all pregnant women, with their consent. Refusal of testing should be documented.

**OB History and Physical:** Abdominal and pelvic examination to evaluate gynecologic pathology should be performed at the preconception visit and the first prenatal visit.

**Prevention of Preterm Labor:** Preterm birth is defined as delivery before 37 weeks of gestation. Preterm labor occurs in 8 to 10 percent of pregnancies, but is responsible for 65 to 75 percent of all perinatal morbidity and mortality. Strategies for reducing the incidence of preterm birth have focused on provider and patient education. Pregnant women should receive information on how to identify and manage signs of possible preterm labor between 22-37 weeks gestation. A second assessment for preterm labor and birth should occur at 28 weeks gestation.

**Routine Testing:** Some laboratory tests should be performed routinely in pregnant women. The following tests are performed early in pregnancy:

- **Hemoglobin Assessment:** Recommended for all pregnant women at their first prenatal visit. Pregnant women should be encouraged to drink water or orange juice and to eat foods high in iron. Women should be counseled that drinking milk, coffee...
or tea with meals lowers iron absorption. The value of breastfeeding as primary protection against iron deficiency anemia in infants should also be reviewed.

- **ABO/Rh/ab:** D (formerly RH) blood typing and antibody screening is recommended for all pregnant women at the first prenatal visit.

- **RPR:** All pregnant women at the first prenatal visit and all high risk women at a preconception visit should undergo routine serologic testing (RPR or VDRL) for syphilis.

- **Urine Culture:** Screening for asymptomatic bacteriuria (ASB) by urine culture is recommended for all pregnant women at the first prenatal visit.

- **Triple Screen:** Maternal triple screen (alpha feto protein, HCG, and estriol) should be offered to all pregnant women optimally at 16 weeks.

- **Weight Gain:** During pregnancy weight should be monitored at each prenatal visit and based on individual needs. The Institute of Medicine has identified the following weight gain guidelines for singleton gestations: women who have a BMI < 19.8 (underweight) should gain approximately 28-40 pounds; BMI 19.8-26.0 (average weight) should gain 25-35 pounds; BMI 26.0-29.0 (overweight) should gain 15-25 pounds; and those with a BMI ≥ 29.0 (obese) should gain < 15 pounds.

- **Breast Feeding:** Because human milk is the ideal food for neonates, mothers should be encouraged to breastfeed. In addition to promoting maternal–neonatal interaction, breastfeeding alone can satisfy the infant's nutritional needs for the first 4-6 months of life. Prenatal care should include discussion of feeding plans and breast care.

- **Blood Pressure:** Screening is recommended at the preconception visit and throughout the pregnancy.

- **Fetal Heart Tones:** Fetal heat tones should be identified at 10-12 weeks and thereafter.

- **OB Ultrasound:** There is no scientific data available to support improved fetal outcomes as a result of routine ultrasound.

- **Domestic Abuse Screening:** Domestic violence is a very serious public health concern for many Americans. Due to the substantial potential benefits of stopping the cycle of abuse, providers should maintain a high index of suspicion for domestic violence when caring for pregnant women.

- **Fundal Height:** A measurement of the fundal height should be performed at each visit during the second and third trimester of pregnancy.

- **Gestational Diabetes Mellitus Test:** Although there is a lack of consensus in the literature regarding universal screening, it is recommended that all pregnant women be screened for gestational diabetes mellitus at 28 weeks gestation. For selective screening the following risk factors may be used: family history of diabetes, previous birth of a macrosomic, malformed, or stillborn baby, hypertension, glucosuria, maternal age of 30 years or older, previous gestational diabetes.

- **Examination of the Cervix:** All pregnant women should undergo digital examination at 28 weeks gestation. This is done as a screening service for preterm birth prevention. Examinations do not increase the risk of rupture membranes, rates of induction or C-section, or risk of neonatal infections.

- **Awareness of Fetal Movement:** There is no scientific evidence that a program of fetal kick counts reduces the incidence of intrauterine fetal deaths. Pregnant women should be instructed on daily identification of fetal movement at the 28 week visit.
**Influenza Vaccination:** All pregnant women in their second or third trimester of pregnancy during the flu season should be offered influenza vaccination. Vaccination is contraindicated for women with a history of hypersensitivity to chicken eggs or to vaccine components such as the preservatives.

**Confirm Position:** Physicians should confirm the fetus’s position by Leopold’s and/or cervical examination at 36 weeks.

**Group B Streptococcus Screening:** Alternative protocols for the management of group B streptococcus (GBS) in pregnancy are now widely recognized. The first is based on obtaining cultures at 35-37 weeks gestation, to determine whether the woman has anogenital GBS colonization. Parenteral broad-spectrum antibiotic treatment is recommended.

The second protocol is based on intrapartum risk screening: According to this protocol, women with the following risk factors should receive intrapartum antibiotic prophylaxis: 1) previous infant who had invasive GBS disease; 2) GBS bacteriuria during current pregnancy; 3) delivery at <37 weeks gestation; 4) intrapartum maternal temperature $\geq 38^\circ C$; 5) membranes ruptured $\geq 18$ hours.

**Vaginal Birth after Cesarean Delivery:** Unless vaginal delivery is contraindicated, women who have had one previous cesarean delivery with an incision in the lower uterine segment should be counseled and encouraged to attempt labor in their current pregnancy. This counseling can begin immediately after the cesarean delivery by obstetric staff attending to the woman’s recovery and postpartum care. The patient should be encouraged to attempt a vaginal delivery in any future pregnancy if appropriate.

**Perinatal Loss and Fetal Death:** The most important complications of fetal death relates to the psychologic and emotional consequences for the mother. Care should be taken to explain the findings, and the medical situation to her.

**Perinatal First Visit:** Approximately 4-6 weeks after delivery the mother should visit her physician for a postpartum review and examination, or sooner according to the needs of the patient.

**Follow-up Care:** The physical and psychosocial status of the mother and neonate should be subject to ongoing assessment after discharge.

---

**Genetic Screening**

Congenital abnormalities are common and frequent in the general population. A general figure for the purpose of initial counseling of patients and families is 5%.

In persons of reproductive age, genetic issues can be a source of concern and anxiety, since initial history and screening tests could uncover risk factors that require diagnostic testing during pregnancy. When these potential factors are identified early, prospective parents can be better informed about their specific risk of having a child with a genetic condition. Most importantly, the risks, benefits, advantages, and limitations of invasive prenatal diagnostic procedures should be fully discussed well in advance of an actual pregnancy.

Generally, the patient’s age and ethnic background often provide important clues to potential hereditary problems.
## Routine Prenatal and Perinatal Care

### Internet resources on genetic diagnosis and testing

The Human Genome Project, scheduled for completion in 2003, is rapidly changing the nature of genetic information. The latest information and several useful resources are best accessed on the Internet, such as:

**GeneClinics:** [http://www.geneclinics.org](http://www.geneclinics.org)
Profiles common genetic diseases and syndromes, with emphasis on diagnosis, management, and the availability of testing.

**GeneTests:** [http://www.genetests.org](http://www.genetests.org)
Lists laboratories performing both clinical and research-based testing for genetic diseases and lists contact persons within laboratory.

Lists more than 10,000 genetic disorders and how they are inherited.

### Ethnic Background and Risk for Genetic Disorders

<table>
<thead>
<tr>
<th>Ethnic Group</th>
<th>Disease</th>
<th>Carrier Risk</th>
<th>Genetic Tests</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jewish faith of Eastern</td>
<td>Gaucher disease 1 in 10</td>
<td></td>
<td>Screening tests are available for all these disorders and are somewhat easy to perform because of the small number of mutations involved. The tests are performed on peripheral blood samples.</td>
</tr>
<tr>
<td>European descent</td>
<td>Cystic fibrosis 1 in 25</td>
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<tr>
<td></td>
<td>Tay-Sachs disease 1 in 30</td>
<td></td>
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<tr>
<td></td>
<td>Canavan disease 1 in 40</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Franconi anemia 1 in 70</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Niemann-Pick disease 1 in 70</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bloom syndrome 1 in 100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>French-Canadian descent</td>
<td>Tyrosinemia 1 in 20</td>
<td></td>
<td>Currently available biochemical tests can detect most carriers for Tay-Sachs.</td>
</tr>
<tr>
<td></td>
<td>Tay-Sachs disease 1 in 50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>African descent</td>
<td>Sickle cell anemia 1 in 10 carrier risk is variable and dependent on area of origin</td>
<td></td>
<td>Carrier status for sickle cell anemia is easily determined by a blood test.</td>
</tr>
<tr>
<td></td>
<td>β-Thalassemia 1 in about 25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mediterranean descent</td>
<td>β-Thalassemia 1 in about 25</td>
<td></td>
<td>The initial evaluation for thalassemia determines hemoglobin levels and mean corpuscular volume based on a complete blood count.</td>
</tr>
<tr>
<td>(Italian, Greek, and Spanish)</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Southeast Asian descent</td>
<td>α- Thalassemia Carrier risk is variable and dependent on area of origin</td>
<td></td>
<td>Persons of Asian descent are at risk for both α-thalassemia and β-thalassemia</td>
</tr>
<tr>
<td></td>
<td>β- Thalassemia</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Northern European Caucasian descent</td>
<td>Hemochromatosis 1 in 10</td>
<td></td>
<td>Screening tests for iron overload are available and are relatively inexpensive</td>
</tr>
<tr>
<td></td>
<td>Alpha-1-Antitrypsin deficiency 1 in 100 (for Piz)</td>
<td></td>
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</table>

References


Preventive Services for Children Ages Birth-24 Months; 2-11 Years Old
PURPOSE
This guideline identifies preventive services essential to provide to all low risk/asymptomatic children. The recommendations are based on either good or fair evidence for inclusion in a periodic health evaluation (adapted from USPSTF rules of evidence). This guideline also notes those services which should not be included in light of similarly strong evidence.

The recommendations in this guideline are adapted from the American Academy of Family Physicians, the American Academy of Pediatrics, Bright Futures and the U.S. Services Prevention Task Force.

I. Infancy: Birth to 24 months.
Foundations for the health, development, and social relationships of the child are established during pregnancy and the first year of life. Health supervision is especially crucial during infancy. The most dramatic growth of the child’s life—physical, cognitive, social, and emotional occurs during infancy. By one year of age, the infant triples his birthweight, adds almost 50 percent to his length, and achieves most of his brain growth. The healthy baby has received initial immunizations against diphtheria, pertussis, tetanus, polio, Hemophilus influenza type B, and hepatitis B. Adequacy of nutrition, growth, and development are monitored. Developmental surveillance, screening questions, and assessments are a major component of the infant health supervision.

II. Early Childhood 2-6 years of age
The healthy toddler has been immunized against diphtheria, tetanus, pertussis, polio, measles, mumps, rubella, Hemophilus influenza type B, and hepatitis B. The toddler’s growth and development have been monitored, and adequate nutrition has been ensured through dietary supervision and supplemental vitamins, fluoride, and iron when necessary. By the end of early childhood, some children have had to contend with significant disease or disability, and virtually all have experienced the common nonpreventable early childhood illnesses.

III. Middle Childhood 7-11 years of age
As entry into elementary school approaches, the child’s school readiness and ability to separate from parents gains importance. Greater demands for impulse control are now being placed upon the child. The child is expected to obey rules, get along with others, and be non-disruptive. As the child becomes independent and interested in exploring the neighborhood, the health professional has new injury prevention issues to discuss with the parents.

With the child’s gains in cognitive development, the ability to communicate becomes more sophisticated. The health professional should speak directly with the child about family, friends, excitement, or fears about going to school.
Health Maneuvers | Recommendations
--- | ---
Visit schedule: | The schedule of visits below synthesizes the recommendations of the USPSTF, Bright Futures, AAP and AAFP. No scientific evidence currently exists to support any particular schedule of well child visits. The schedule recommended in these guidelines coincides with immunizations and reflects current general practice in Massachusetts and Blue Cross Blue Shield of Massachusetts coverage. Additional visits may be recommended for children with special health needs (for example, those who live in poverty, dysfunctional families, or at risk for abuse and/or neglect) or considered at higher risk by the clinician.

BCBSMA reimbursement Schedule for well-child visits. | Schedule of visits:
Birth to 24 months: (0-1 year = 6 visits) First week, 1, 2, 4, 6 and 9 months 
(1-2 years =3 visits) 1 year, 15, and 18 months
Ages 2-6 years: annually
Ages 7-11 years: annually

Physicians should view visits, whether acute or chronic in nature, as an opportunity for preventive counseling and anticipatory guidance for pediatric patients.

Bill the following CPT codes for well child visits. These preventive medicine codes include counseling/anticipatory guidance, and risk factor reduction interventions

<table>
<thead>
<tr>
<th>New patient:</th>
<th>Established patient:</th>
</tr>
</thead>
<tbody>
<tr>
<td>99381 (up to 1 year)</td>
<td>99391 (up to 1 year)</td>
</tr>
<tr>
<td>99382 1-4 years of age</td>
<td>99392 1-4 years</td>
</tr>
<tr>
<td>99383 5-11 years of age</td>
<td>99393 5-11 years</td>
</tr>
</tbody>
</table>

Bill counseling codes 99401-99404 for above age groups for counseling/anticipatory guidance, and risk factor reduction interventions provided separately from the preventive medicine exam.

Risk assessment | Each preventive visit is an opportunity to identify which infants and children require counseling and special testing. The health professional should speak directly to the child about family, friends, excitement, or fear about school.

Interval history | Updating of the previously obtained medical and family medical history is recommended by the AAFP.

Developmental/Behavioral assessment | Developmental progress, development surveillance, screening questions, and assessments for infants and young children are important. Formal assessment is indicated if there are signs of developmental delays.
<table>
<thead>
<tr>
<th>Health Maneuvers</th>
<th>Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Physical examination</strong></td>
<td>For much of the physical examination, the inclusion of specific components is left to clinical discretion and the specific needs of the child. However, there are services that are clearly of no overall value (routine urinalysis, routine hemoglobin testing, routine tuberculin skin test, and routine blood chemistries).</td>
</tr>
<tr>
<td><strong>Plotted height &amp; weight</strong></td>
<td>Measure and plot on a standard chart the child’s height and weight. Determine the body mass index (BMI). If a child has a BMI &gt;95th percentile for age and gender, or &lt;5th percentile, refer for dietary assessment and counseling. Children with a BMI between the 85th and 95th percentile need initial evaluation and counseling for obesity.</td>
</tr>
<tr>
<td><strong>Vision</strong></td>
<td>Vision screening for amblyopia and strabismus is recommended for all children. Many infants and young children are at high risk for vision problems because of hereditary, prenatal, or perinatal factors. Amblyopia, a leading cause of visual impairment in children, results from visual problems in very early life. These problems can be prevented or reversed with early detection. Myopia is found in 2 percent of those entering first grade and 15 percent of those entering high school.</td>
</tr>
<tr>
<td><strong>Hearing</strong></td>
<td>Hearing screening for all newborns prior to discharge with evoked otoacoustic emission testing. Subsequent testing as per schedule.</td>
</tr>
<tr>
<td><strong>Hemoglobin or Hematocrit</strong></td>
<td>It is recommended that a hemoglobin or hematocrit be performed once during infancy. The performance of both hemoglobin and hematocrit provides no additional information.</td>
</tr>
<tr>
<td><strong>Tuberculin skin test</strong></td>
<td>The infrequency of positive testing and the uncertain benefits of chemoprophylaxis in a low-risk population suggests that this test be performed for only those at special risk for tuberculosis. Testing criteria include: any person who is suspected of having active tuberculosis, new immigrants from endemic areas should be tested on arrival; children living in households with or having close contact with known cases of tuberculosis or exposed to others in high-risk categories. If screening is done, it should be performed via intradermal injection rather than the less reliable tine test.</td>
</tr>
<tr>
<td><strong>Blood lead testing</strong></td>
<td>Detection of lead exposure before the development of potentially irreversible complications allows the clinician to recommend environmental interventions and to begin medical treatment with chelating agents. Screening should be done in accordance with state law.</td>
</tr>
<tr>
<td><strong>Neonatal screening</strong></td>
<td>Metabolic screens and other interventions in the first week of life should be performed according to state law. Infants who do not receive phenylalanine testing before 24 hours of age should receive a repeat screening test before the third week of life. Premature infants and those with illnesses should be tested at or near 7 days of age.</td>
</tr>
<tr>
<td><strong>Counseling and education</strong></td>
<td>Counseling and educational messages are to be provided by the primary care physician, nurse, or other health professional or educator. Some counseling should be carried out at each preventive care visit as well as other times at the physician’s discretion. Counseling and education should be offered at every opportunity and tailored to the specific needs of the pediatric patient. Repetition of counseling messages is desirable. A wide variety of counseling and educational messages are recommended. Delivering them all in one visit may be overwhelming to both the patient and the provider. The recommendation is to spread out the messages across several visits when possible.</td>
</tr>
</tbody>
</table>
### Preventive Services for Children Ages Birth-24 Months; 2-11 Years Old

<table>
<thead>
<tr>
<th>Health Maneuvers</th>
<th>Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tobacco</strong></td>
<td>Smoking exposure (in home, at day care, etc.) should be established at every health supervision or respiratory complaint visit. Respiratory complaint visits include visits for earaches, nasal congestion, sore throats and coughs. If anyone is smoking around the child, the caretaker who is a smoker should be advised and supported in quitting. There is no evidence that recommending smoking away from a child is an effective alternative to discontinuing smoking altogether.</td>
</tr>
<tr>
<td><strong>Lipid testing</strong></td>
<td>Measurement of a non-fasting total cholesterol is recommended once for children and young adults between the ages of 2 and 19 who have either a primary relative (parent, grandparent, or adult sibling) with a history of coronary heart disease or peripheral vascular disease prior to the age of 55 years in men or prior to the age of 65 in women, or a parent with a history of total cholesterol &gt;300 mg/dl. The NCEP guideline recommends screening if parental levels are &gt;240 mg/dl.</td>
</tr>
<tr>
<td><strong>Prevent dental and periodontal disease</strong></td>
<td>Advising parents to put infants and children to bed without a bottle may reduce the risk of baby tooth decay. Clinicians should counsel parents to ascertain the fluoride concentration of their water supply.</td>
</tr>
<tr>
<td><strong>Prevent household and recreational injuries</strong></td>
<td>Counselling the parents of children on measures to reduce the risk of unintentional injuries from residential fires and hot tap water, drowning, poisoning, bicycling, firearms, and falls is recommended.</td>
</tr>
</tbody>
</table>
## Health Guidance

<table>
<thead>
<tr>
<th>Visit Schedule</th>
<th>Infancy</th>
<th>Early Childhood</th>
<th>Middle Childhood</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neonatal Screening (State Requirement)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Risk Assessment</td>
<td></td>
<td></td>
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<tr>
<td>Interval History</td>
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<tr>
<td>Complete Physical Exam</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Head Circumference (though 18 months)</td>
<td></td>
<td></td>
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<tr>
<td>Developmental / Behavioral</td>
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<td></td>
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<tr>
<td>Plotted Height &amp; Weight</td>
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<tr>
<td>Vision &amp; Hearing (by suggestive assessment)</td>
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<tr>
<td>Hemoglobin or Hematocrit (at least once during infancy)</td>
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<tr>
<td>Blood Pressure</td>
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<tr>
<td>Eye Examination for Amblyopia &amp; Strabismus</td>
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<tr>
<td>Oral Health</td>
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<tr>
<td>Screening Procedures for High-Risk Groups</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Tuberculosis Skin Test (PPD)</td>
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<tr>
<td>Blood Lead Testing</td>
<td></td>
<td>9-12 months</td>
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<tr>
<td>Lipid Screening</td>
<td></td>
<td></td>
<td>9-12 months</td>
</tr>
<tr>
<td>Hearing</td>
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<td>prior to discharge</td>
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<td></td>
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<tr>
<td>Counseling &amp; Education</td>
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<tr>
<td>Nutrition</td>
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<td></td>
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<tr>
<td>Breast Feeding</td>
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<tr>
<td>Physical Activity</td>
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<tr>
<td>Substance Use/Abuse</td>
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<tr>
<td>Tobacco (incl. Passive Exposure)</td>
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<tr>
<td>Poison Prevention</td>
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<tr>
<td>Injury Prevention</td>
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<tr>
<td>Violence &amp; Abuse</td>
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<td></td>
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<tr>
<td>Skin Cancer</td>
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<tr>
<td>Coping Skills</td>
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<tr>
<td>Safety Belts / Helmets</td>
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<tr>
<td>Viral Upper Respiratory Infection</td>
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<tr>
<td>Immunizations</td>
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<tr>
<td>Hepatitis B</td>
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<td>1</td>
<td></td>
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<tr>
<td>DtaP / DTP</td>
<td></td>
<td>1</td>
<td></td>
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<tr>
<td>Hib</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Polio</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>MMR</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Varicella</td>
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<td>1</td>
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</tr>
</tbody>
</table>

Blue Cross and Blue Shield of Massachusetts has adopted the Massachusetts Department of Public (DPH) Health Childhood Immunization Guidelines. Consult DPH’s website for any updates. www.state.ma.us/dph
Vaccines are one of the greatest achievements of biomedical science and public health. At the beginning of the 20th century, infectious disease exacted an enormous toll on the population. In 1900, few effective treatment and preventive measures existed to prevent infectious diseases.

Dramatic declines in morbidity have been reported for the nine vaccine preventable diseases (listed below) for which vaccination was universally recommended before 1990 (excluding hepatitis B, rotavirus, and varicella). Morbidity associated with smallpox and polio caused by wild-type viruses has declined 100% and nearly 100% for each of the other seven diseases.

An estimated 11,000 children are born each day in the United States. Each child requires 15–19 doses of vaccine by 18 months of age to be protected against 11 childhood diseases.

To achieve the full potential of vaccines, parents must be educated to recognize vaccines as a means of mobilizing the body’s natural defenses and to seek vaccinations for their children. Health care providers must be aware of the latest development and recommendations, and should use information technology to support timely vaccinations.
As part of the Massachusetts Health Partnership Alliance, Blue Cross Blue Shield of Massachusetts has adopted the Massachusetts Department of Public Health Childhood Immunization Schedule summarized below. For a complete immunization schedule clinicians can access the Massachusetts Department of Public Health website at http://www.state.ma.us/dph.

### Immunization is **A recommendation**

<table>
<thead>
<tr>
<th>Preventive Service</th>
<th>Relevant Population</th>
<th>Clinical Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hepatitis B</td>
<td>Infants</td>
<td>Birth is the preferred age for the first dose, and should be given by 2 months of age.</td>
</tr>
<tr>
<td></td>
<td>Children 7–18 months</td>
<td>1st dose during first visit; 2nd dose 1-2 month after the 1st visit, 3rd dose 6 months after the 2nd visit.</td>
</tr>
<tr>
<td>DTaP</td>
<td>Infants</td>
<td>1st dose at 2 months, 2nd dose at 4 months, 3rd dose at 6 months, 4th dose 15-18 months.</td>
</tr>
<tr>
<td></td>
<td>Children 11–12 years</td>
<td>Td booster if it has been &gt; 5 years since the last dose.</td>
</tr>
<tr>
<td>Haemophilus (Hib)</td>
<td>Infants</td>
<td>1st dose at 2 months, 2nd dose at 4 months; 3rd dose at 6 months. The fourth dose should not be given before the first birthday and should be given at least 2 months after the third dose.</td>
</tr>
<tr>
<td>Polio</td>
<td>Infants</td>
<td>An all-inactivated polio vaccine (IPV) schedule is now recommended. A minimum of one month is needed between doses 1, 2, 3, and 4. A 6-month minimum interval is preferred between doses 3 and 4. 1st dose at 2 months; 2nd dose at 4 months; 3rd dose may be given as early as 6 months of age. 4 doses are usually needed to complete the primary series, although only 3 doses are necessary when the 3rd dose is given on or after the fourth birthday.</td>
</tr>
<tr>
<td></td>
<td>Children</td>
<td></td>
</tr>
</tbody>
</table>
### Table of reported cases of vaccine preventable diseases in Massachusetts, 1998 & 1999

<table>
<thead>
<tr>
<th>Preventive Service</th>
<th>Relevant Population</th>
<th>Clinical Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MMR</strong></td>
<td>Children</td>
<td>MMR should not be given before the first birthday. Doses given before this birthday should be considered invalid. 1st dose between 12-15 months. The 2nd dose is recommended at ages 4-6 years but may be given at any time provided there is a 4-week minimum interval between dose. Give 2nd dose of MMR if not previously administered.</td>
</tr>
<tr>
<td></td>
<td>11–12 years of age</td>
<td><strong>A Recommendation</strong></td>
</tr>
<tr>
<td><strong>Varicella</strong></td>
<td>Children</td>
<td>Varicella should not be given before the 1st birthday. Doses given before this birthday should be considered invalid. Vaccinate susceptible children</td>
</tr>
<tr>
<td></td>
<td>11–12 years of age</td>
<td>2 doses are required with a 4-week minimum interval between doses.</td>
</tr>
<tr>
<td></td>
<td>Children&gt;13 years</td>
<td><strong>A Recommendation</strong></td>
</tr>
<tr>
<td></td>
<td>References</td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
</tbody>
</table>
INTRODUCTION
Changes in adolescent morbidity during the past several decades have created a health crisis including: unintended pregnancy; STDs including HIV; alcohol and drug abuse; suicide and eating disorders. This health crisis requires a fundamental change in the emphasis of adolescent services; more health services need to be devoted at the primary and secondary prevention of these major health threats. School and community organizations have responded by increasing health education programming. Primary care physicians and other health providers must respond by making preventive services a greater component of their clinical practice.

These guidelines are adapted from the American Medical Association’s Guidelines for Adolescent Preventive Services (GAPS) and from the Maternal and Child Health Bureau of the U.S. Public Health Service’s Bright Futures. These guidelines are compliant with the Commonwealth of Massachusetts Early and Periodic Screening, Diagnosis and Treatment (EPSDT) Medical Protocol and Periodicity Schedule.

ADOLESCENTS’ SPECIAL NEEDS
Adolescents have unique health care needs. Health supervision of adolescents consists of anticipatory guidance that helps promote health, prevent mortality and morbidity, and enhance development and maturation.

The periodicity and manner in which services are delivered to adolescents can be important determinants of the effectiveness of preventive services. The rapid behavioral changes that occur during adolescence require frequent visits to screen for health risk behaviors and to provide health guidance. Health care providers should tailor services to the individual and keep information shared by the adolescent during the medical visit confidential.

The recommendations in these guidelines are adapted from:

- GAPS — Guidelines for Adolescent Preventive Services (AMA)
gaps@ama-assn.org

## Preventive Health Services for Adolescents

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Health Guidance</th>
<th>Screening History</th>
<th>Physical Assessment</th>
<th>Tests</th>
<th>Immunizations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Development</td>
<td>Abuse</td>
<td>Blood pressure</td>
<td>Cholesterol</td>
<td>Hep A</td>
</tr>
<tr>
<td></td>
<td>Diet and physical activity</td>
<td>Alcohol and other drug use</td>
<td>BMI</td>
<td>GC, Chlamydia, Syphilis &amp; HPV</td>
<td>Hep B</td>
</tr>
<tr>
<td></td>
<td>Healthy lifestyles*</td>
<td>Depression</td>
<td>Comprehensive exam</td>
<td>HIV</td>
<td>MMR</td>
</tr>
<tr>
<td></td>
<td>Injury prevention</td>
<td>Eating disorders</td>
<td></td>
<td>PAP smear</td>
<td>Td</td>
</tr>
<tr>
<td></td>
<td>Oral health</td>
<td>Hearing</td>
<td></td>
<td>TB</td>
<td>Varicella</td>
</tr>
<tr>
<td></td>
<td>Parenting**</td>
<td>Risk for suicide</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>School performance</td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td></td>
<td>Sexual activity***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tobacco use</td>
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<tr>
<td></td>
<td></td>
<td>Vision</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

### Procedure Age of Adolescent

#### Health Guidance
- Development: Early
- Diet and physical activity: Early
- Healthy lifestyles*: Early
- Injury prevention: Early
- Oral health: Early
- Parenting**: Middle

#### Screening History
- Abuse: Middle
- Alcohol and other drug use: Middle
- Depression: Middle
- Eating disorders: Middle
- Hearing: Middle
- Risk for suicide: Middle
- School performance: Middle
- Sexual activity***: Middle
- Tobacco use: Middle
- Vision: Middle

#### Physical Assessment
- Blood pressure: Late
- BMI: Late
- Comprehensive exam: Late

#### Tests
- Cholesterol: Early
- GC, Chlamydia, Syphilis & HPV: Early
- HIV: Early
- PAP smear: Early
- TB: Early

#### Immunizations
- Hep A: Early
- Hep B: Early
- MMR: Early
- Td: Early
- Varicella: Early

---

1. Perform screening test once if family history is positive for early cardiovascular disease or hyperlipidemia.
2. Screen at least annually if sexually active.
3. Screen if high risk for infection.
4. Screen annually if sexually active or if 18 years or older.
5. Screen if positive for exposure to active TB or lives/works in high-risk situation, e.g., homeless shelter, health care facility.
6. Vaccinate if at risk for hepatitis A infection.
7. Vaccinate if has not already received hepatitis B series.
8. Vaccinate if no reliable history of chicken pox.

* Includes counseling regarding sexual behavior and avoidance of tobacco, alcohol, and other drug use.

**A parent health guidance visit is recommended once during early adolescence (ages 11–14) and once during middle adolescence (ages 15–17).

***Includes history of unintended pregnancy and STD.

■ Indicates the recommended schedule for preventive services.
# Recommendations

## HEALTH GUIDANCE

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Development</td>
<td>To promote a better understanding of physical growth, psychosocial and psychosexual development, and the importance of becoming actively involved in decisions regarding their health care.</td>
</tr>
<tr>
<td>Diet and physical activity</td>
<td>To discuss dietary habits, including the benefits and the methods to achieve healthy diet and safe weight management. Encourage physical activity.</td>
</tr>
<tr>
<td>Healthy lifestyles</td>
<td>To discuss responsibility about sexual behaviors, including abstinence.</td>
</tr>
<tr>
<td>Injury prevention</td>
<td>To reduce injuries and to resolve interpersonal conflict without violence or the use of weapons.</td>
</tr>
<tr>
<td>Oral health</td>
<td>To be encouraged to visit a dental care provider on a regular basis.</td>
</tr>
<tr>
<td>Parenting</td>
<td>Parents or other adult caregivers should receive health guidance at least once during their child’s early adolescence, and once during middle adolescence.</td>
</tr>
</tbody>
</table>

## SCREENING HISTORY

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abuse</td>
<td>Inquire about emotional, physical, and sexual abuse.</td>
</tr>
<tr>
<td>Alcohol and other drug use</td>
<td>Screen for use of alcohol and other abusable substances, and over-the-counter or prescription drugs — including anabolic steroids for nonmedical purposes.</td>
</tr>
<tr>
<td>Depression</td>
<td>Screen for behaviors or emotions that indicate recurrent or severe depression or risk of suicide. Screening for depression or suicidal risk on adolescents who exhibit cumulative risk.</td>
</tr>
<tr>
<td>Eating disorders</td>
<td>Screen for eating disorders and obesity by determining weight and stature, and asking about body image and dieting patterns.</td>
</tr>
<tr>
<td>Hearing</td>
<td>Pure-tone audiometry is recommended once between 12–15 years, and 18. More frequent screening is advisable if the adolescent is exposed to loud noises, has recurring ear infections, or reports problems.</td>
</tr>
</tbody>
</table>

*Physicians are encouraged to establish office policies regarding confidential care for adolescents.*
### SCREENING HISTORY (continued)

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk for suicide</td>
<td>If suicidal risk is suspected, evaluate adolescent immediately and refer to a psychiatrist or other mental health professional.</td>
</tr>
<tr>
<td>School performance</td>
<td>To screen for learning or school problems.</td>
</tr>
<tr>
<td>Sexual activity</td>
<td>To counsel about involvement in sexual behaviors that may result in unintended pregnancy and STDs, including HIV infection.</td>
</tr>
<tr>
<td>Tobacco and substance use</td>
<td>To counsel about the benefits of avoiding tobacco, alcohol, and other abusable substances, and anabolic steroids.</td>
</tr>
<tr>
<td>Vision</td>
<td>Visual activity test is recommended once between ages 11–15 or more frequently if the adolescent is not tested at school or reports problems.</td>
</tr>
</tbody>
</table>

*Physicians are encouraged to establish office policies regarding confidential care for adolescents.*

### PHYSICAL ASSESSMENT

<table>
<thead>
<tr>
<th>Routine exam</th>
<th>An annual routine exam is recommended to help the adolescent cope with developmental challenges.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blood pressure</td>
<td>All adolescents should be screened annually for hypertension.</td>
</tr>
<tr>
<td>BMI</td>
<td>Adolescents with a body mass index (BMI) equal to or greater than the 95th percentile for age and gender are overweight. These individuals should have an in-depth dietary and health assessment to determine psychosocial morbidity and risk for future cardiovascular disease. Adolescents with a BMI between the 85th and 94th percentile are at risk for becoming overweight.</td>
</tr>
<tr>
<td>Comprehensive exam</td>
<td>Adolescents should have a complete physician examination during three preventive visits: once during early adolescence (ages 11–14), once during middle adolescence (ages 15–17), and once during late adolescence (ages 18–21) unless more frequent examinations are warranted by clinical signs or symptoms. From ages 1–21, all adolescents should have an annual prevention services visit.</td>
</tr>
</tbody>
</table>
## Recommendations

### TESTS

**Cholesterol**

Hyperlipidemia screening is recommended if either of the following risk factors are present:

- Parents with a blood cholesterol level >240 mg/dl
- Parents or grandparents with a history of coronary or peripheral vascular disease before 55 years of age

**GC, chlamydia, syphilis & HPV**

Sexually active adolescents should be screened annually for STDs. If a presumptive test for STD is positive, tests to make a definitive diagnosis should be performed and a treatment plan instituted. The frequency of testing for syphilis depends on the sexual practices of the individual and the history of previous STDs.

**HIV**

Offer confidential HIV screening to adolescents at risk for HIV infection. Perform testing only after informed consent is obtained from the adolescent, and only in conjunction with both pre- and post-test counseling.

**TB**

Give adolescents a tuberculin skin test (a PPD, not a Tine test) if they have been exposed to active tuberculosis. If positive, treatment should follow CDC treatment guidelines. The frequency of testing depends on risk factors of the individual adolescent.

**Pap smear**

Sexually active female adolescents should receive an annual Pap smear. Refer adolescents with a positive Pap test for further diagnostic assessment and management.

### IMMUNIZATIONS

**Hep A**

Should be given to adolescents who travel or live in countries with high or intermediate endemicity of hepatitis A virus (HAV), live in communities with high endemic rates of HAV, have chronic liver disease, are injection drug users or are males who have sex with males.

**Hep B**

If not administered previously, use a series of three doses:

- First dose at elected date
- Second dose one month after
- Third dose six months after first dose

**MMR**

Administer a second dose of MMR at age 11–12 years, if not administered previously or if immunization status is uncertain. Do not administer if adolescent is pregnant.

**Td**

Administer 10 years after previous DTP or Td booster, usually at 12–16 years of age.

**Varicella**

Vaccinate if no reliable history of chicken pox exists.
Adult Clinical Prevention Guidelines: Immunization, Screening, and Counseling

Section 5
In collaboration with the Massachusetts Health Quality Partnership, (MHQP) Blue Cross Blue Shield of Massachusetts (BCBSMA) has adopted the Massachusetts Department of Public Health (MDPH) Immunization Schedule, which is partially reproduced here. See the MDPH web site www.state.ma.us/dph for full text on adult immunization.

Recommended schedule for adults > 18 years of age

Immunization is an ☐ A recommendation

Contraindications: Refer to vaccine package inserts and Advisory Committee on Immunization Practices (ACIP) statements for precautions and contraindications to vaccines.

<table>
<thead>
<tr>
<th>Preventive Service</th>
<th>Relevant Population</th>
<th>Clinical Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Td. (Tetanus, Diphtheria)</td>
<td>Young adults &amp; adults in high-risk groups: (men who have sex with other men, people with a history of sexual activity with multiple partners in previous years, travelers to countries where HBV is endemic).</td>
<td>All unvaccinated adults should receive a full primary series of Td vaccine. Booster every 10 years.</td>
</tr>
<tr>
<td>MMR (Measles, Mumps, Rubella)</td>
<td>All adults born in the US in 1957 or later should receive at least 1 dose of MMR. Two doses of MMR are indicated for adults born in the US in or after 1957 if they are: Health care workers, college students, persons in institutional settings, International travelers, contacts of confirmed or suspect cases</td>
<td></td>
</tr>
<tr>
<td>Varicella</td>
<td>All adults without a reliable history of chicken pox or herpes zoster (shingles).</td>
<td>Varicella vaccine is specifically indicated for high-risk groups such as: susceptible persons living in households with children, immunocompromised adults, health care workers, persons living or working in setting where transmission is likely (day care providers, teachers of young children, residents/staff in institutional settings), and susceptible international travelers.</td>
</tr>
<tr>
<td>Influenza</td>
<td>All adults starting age 50</td>
<td>Every year once, between September/March</td>
</tr>
<tr>
<td>Pneumococcal (if indicated)</td>
<td>All adults 65 years of age &amp; older Persons 2-64 years of age who have a chronic illness such as cardiovascular disease or pulmonary disease, liver disease, alcoholism, diabetes mellitus and CSF leaks.</td>
<td>Recommended for all immunocompetent (well, healthy) individuals 65 years of age and older. Institutionalized persons &gt;50 years of age should be immunized. Revaccinate if indicated.</td>
</tr>
<tr>
<td>Preventive Service</td>
<td>Relevant Population</td>
<td>Clinical Intervention</td>
</tr>
<tr>
<td>-------------------</td>
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</tr>
<tr>
<td>Hepatitis B</td>
<td>Young adults &amp; adults in high-risk groups</td>
<td>Recommended for all young adults not previously immunized. High-risk groups include men who have sex with other men, injection drug users, heterosexuals with &gt;1 partner in 6 months, persons recently diagnosed with STDs, healthcare workers, patients undergoing hemodialysis, recipients of clotting concentrates, and travelers to areas where HBV infection is endemic.</td>
</tr>
<tr>
<td>(if indicated)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hepatitis A</td>
<td>Adults in high-risk groups</td>
<td>High-risk groups include: traveling or working outside the US (except Canada, Western Europe, Australia, New Zealand and Japan, men who have sex with men, illegal drug users, people with exposure to HIV-infected primates, people with occupational exposure, people with liver disease, chronic Hep B and C infections.</td>
</tr>
<tr>
<td>(if indicated)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Meningococcal</td>
<td>Persons &gt;2 years of age who: have terminal complement component deficiencies, have anatomic or functional asplenia, travel to countries where N. meningitidis is hyperendemic or epidemic Laboratory personnel</td>
<td>Health care providers should provide information to college students, particularly freshmen who live in dormitories, and their parents about the risks of meningococcal disease and the benefits of vaccinations.</td>
</tr>
<tr>
<td>(if indicated)</td>
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</tr>
</tbody>
</table>

For full text on adult immunization, see the MDPH website: [www.state.ma.us/dph](http://www.state.ma.us/dph)
Clinical Preventive Services

The implementation of preventive services is high on the nation’s agenda. The US Department of Health and Human Services has published *Healthy People 2010: National Health Promotion and Disease Prevention Objectives*. The 3 major goals of this document are to: 1) reduce health disparities among Americans; 2) achieve access to preventive services for all Americans, and 3) increase the span of healthy life for all Americans. Although there are still some areas of disagreement among expert groups, there is general agreement among the major authorities on recommendations for preventive care and health promotion counseling at every patient visit.

Clinical Preventive Services have a substantial impact on many of the leading causes of disease and death.

In clinical practice, at least 4 components are necessary for the successful delivery of preventive health care:

- knowledge
- skills
- attitude
- organizational structure


**Desired Components of a Primary Care Preventive Services Office Practice**

1. Health risk appraisal
2. Guidelines and protocols for preventive services
3. Reminder system or flow chart outlining past and current due preventive services
4. Paramedical personnel to perform health promotion, counseling, and provide educational information
5. Follow-up system for test results and future preventive services.

## Adult Preventive Care Recommendations

<table>
<thead>
<tr>
<th>Preventive Service</th>
<th>Patient Population</th>
<th>Periodicity</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Routine check-up</td>
<td>M, F, 19-49</td>
<td>Every 3 years</td>
<td>The frequency of the physical health examination (PHE) should ultimately reflect the unique health risks of individual patients</td>
</tr>
<tr>
<td></td>
<td>50+</td>
<td>Annually</td>
<td></td>
</tr>
<tr>
<td>Routine diagnostic tests</td>
<td>M, F</td>
<td>None</td>
<td>Routine CBCs, chest X-ray (for lung cancer), urianalyses, and chemistry profiles in asymptomatic patients are of unproven effectiveness and should be discontinued. Routine screening for thyroid disease is not recommended. TSH measurements may be recommended on other grounds, and may have value in high risk individuals. D Recommendation</td>
</tr>
<tr>
<td>Height &amp; weight</td>
<td>M, F</td>
<td>As part of the routine physical health examination</td>
<td>Periodic height &amp; weight measurements are recommended. Overweight adults should be counseled on the risks of being overweight, and the benefits of physical activity and a healthy diet. B Recommendation</td>
</tr>
<tr>
<td><strong>CANCER SCREENING</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mammogram and Clinical Breast Exam</td>
<td>F, 40-49</td>
<td>Optional</td>
<td>The USPSTF recommends screening every 1-2 years, with mammography alone or mammography and CBE for women aged 50-69. Because there is controversy regarding the screening interval for women 40-49, the decision is left to the patient/physician team. A Recommendation</td>
</tr>
<tr>
<td></td>
<td>50-69</td>
<td>Yearly</td>
<td></td>
</tr>
<tr>
<td>Cervical Cancer (Pap smear)</td>
<td>All women with the onset of sexual activity</td>
<td>At least every 3 years</td>
<td>The interval for each patient should be recommended by the physician based on risk factors (e.g., early onset of sexuality, multiple partners). Women who have had a hysterectomy in which the cervix was removed do not require Pap testing unless the hysterectomy was performed because of cervical cancer or its precursors. A Recommendation</td>
</tr>
<tr>
<td></td>
<td>All women aged 65+</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>See geriatric guidelines.</td>
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</tbody>
</table>

31
### Adult Preventive Care Recommendations

#### CANCER SCREENING (continued)

<table>
<thead>
<tr>
<th>Preventive Service</th>
<th>Patient Population</th>
<th>Periodicity</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Colorectal cancer</strong></td>
<td>M, F 50+</td>
<td>Low-risk, asymptomatic persons</td>
<td>Moderate-risk persons: Same options as low-risk people, surveillance should begin at age 40 or 10 years before the youngest case in the family</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Choose one of the following: FOBT yearly, with DCBE or Flex sigmoidoscopy every 3-5 years OR colonoscopy every 10 years</td>
<td>Colorectal cancer is the second leading cause of cancer-related deaths in the US. In 2000, approximately 130,000 cases of the disease will be diagnosed. <strong>Low-risk asymptomatic persons:</strong> age 50 or older, have a family history of colorectal cancer limited to non-first-degree relatives, and no other risk factors (65-75 percent of people) <strong>Moderate-risk persons:</strong> one or more first-degree relatives with colorectal cancer or personal history of colorectal neoplasia (20-30 percent of people) <strong>High-risk persons:</strong> hereditary or genetic predisposition for development of colorectal cancer and those patients with inflammatory bowel disease (6-8 percent of people).</td>
</tr>
</tbody>
</table>

| **Prostate cancer** | Male Starting age 50 | Routine screening is not recommended | Because of the uncertainties in the reliability of the screening tests, and the risk associated with aggressive early treatment, BCBSMA takes the position that screening should be undertaken as an individualized decision by patients following counseling by physicians. The benefits of screening are still being studied.* |

| **Testicular cancer** | Male 20-35 | During every physical examination | Testicular cancer is one of the most common form of cancer in young men between the ages 20-35. The major predisposing risk factor is cryptorchidism. The two screening tests are physician palpation of the testes and self-examination by the patient. |

* The National Cancer Institute (NCI) is currently conducting the Prosian Cancer Screening Trial to determine if certain screening tests reduce the number of deaths from these cancers. The DRE and PSA are also being studied to determine whether yearly screening decreases one’s chance of dying from prostate cancer.
### Adult Preventive Care Recommendations (cont’d)

<table>
<thead>
<tr>
<th>Preventive Service</th>
<th>Patient Population</th>
<th>Periodicity</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CARDIOVASCULAR DISEASE (CAD)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blood pressure</td>
<td>M, F starting age 21+</td>
<td>At least every 2 years and during every office visit for other reasons. Measurements from 130 to 139 mm Hg systolic or 85 to 89 mm Hg diastolic should have follow-up measurements within 1 year.</td>
<td>Hypertension is the leading risk factor for CAD, congestive heart failure, stroke, ruptured aortic aneurysm, renal disease, and retinopathy. Heart disease is the leading cause of death in the US. Despite some of the gains obtained through the efforts of programs such as the 1973 National Consensus on Hypertension and the 1997 Joint National Committee on Prevention, Detection, Evaluation and Treatment of High Blood Pressure, many people have undiagnosed hypertension. About half of patients who are on medication for hypertension have blood pressure inadequately controlled.</td>
</tr>
<tr>
<td>Cholesterol</td>
<td>M, F</td>
<td>Once starting at age 20, every 5 years thereafter or physician discretion.</td>
<td>Elevated serum cholesterol is an important risk factors for CHD in both men and women. Periodic screening is most important when cholesterol levels are increasing (e.g., middle-aged men, perimenopausal women, and persons who have gained weight).</td>
</tr>
<tr>
<td>Vision screening</td>
<td>Elderly 65+</td>
<td>The optimal frequency is left to the physician assessment.</td>
<td>Routine screening is recommended among the elderly using Snellen acuity testing.</td>
</tr>
</tbody>
</table>
Adult Preventive Care Recommendations (cont’d)

Substantial gaps remain in the delivery of appropriate screening and counseling services related to health behaviors. Unhealthy diets, smoking, physical inactivity, and alcohol consumption account for a majority of preventable deaths. Data indicate that risk assessment and counseling interventions are delivered less frequently than other preventive interventions. Although time is an important constraint in the primary care setting, evidence demonstrates that brief clinician counseling is effective. Clinician counseling should be tailored to the individual risk factors, needs, preferences, and ability of each patient.

<table>
<thead>
<tr>
<th>Preventive Service</th>
<th>Patient Population</th>
<th>Periodicity</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SEXUALLY TRANSMITTED DISEASES</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chlamydia screen</td>
<td>All women with the onset of sexuality</td>
<td>Routine screening during pelvic examination, yearly if sexually active</td>
<td>Because infection with C. trachomatis is the most common bacterial sexually transmitted disease in the US and increases the risk of infertility and ectopic pregnancy. Routine screening for asymptomatic infection with C. trachomatis is recommended for all sexually active female adolescents and for other women at high risk for chlamydial infection. The prevalence of chlamydia infections is highest among young women age 15-19.</td>
</tr>
<tr>
<td>HIV</td>
<td>M + F</td>
<td>Periodically</td>
<td>Most people infected with HIV eventually develop the acquired immunodeficiency syndrome (AIDS). Within 10 years of infection with HIV, about 50% of persons develop clinical AIDS, and another 40% or more develop other illnesses associated with HIV infection. There is currently no available curative treatment for AIDS. Clinicians need to assess the risk factors for HIV infections by obtaining a careful sexual history and inquiring about drug use.</td>
</tr>
</tbody>
</table>
### Counseling to . . . | Efficacy of Risk Reduction
--- | ---
**Prevent dental and periodontal disease** | Counseling patients to visit a dental care provider on a regular basis is recommended based on evidence for risk reduction gathered from such visits.  

뇌 | B Recommendation

**Promote a healthy diet** | Adults and children over age 2 should limit dietary intake of fat (especially saturated fat). Both diet and exercise should be designed to achieve and maintain a desirable weight. Adolescents and adults should reduce total fat intake to less than 30% of total calories per day and dietary cholesterol to less than 300 mg per day.  

뇌 | A Recommendation

**Promote physical activity** | Counseling to promote regular physical activity is recommended for all children and adults. This recommendation is based on the proven efficacy of regular physical activity (i.e., walking) in reducing the risk of CHD, hypertension, obesity, and diabetes.  

뇌 | A Recommendation

**Prevent HIV infection and other STDs** | Empathy, confidentiality, and a non-judgmental, supportive attitude are important when discussing issues of sexuality. Ideally, counseling information should be given both verbally and in the form of education materials.

**Promote depression awareness** | Although there is insufficient evidence to recommend for or against the routine use of a standardized questionnaire to screen asymptomatic persons for depression, clinicians should maintain a high index of suspicion. Depression is the most common psychiatric condition in the general population, with a prevalence between 3-5%. Depression often goes unrecognized by patient and physician. Physician education in recognizing and treating affective disorders is strongly recommended.  

뇌 | C recommendation

**Prevent low back pain** | Low back pain is nearly universal and affects 60–80% of U.S. adults at some time in their lives. Up to 50% have back pain within a given year. Although there is insufficient evidence that exercise (flexion, extension, aerobic, or general fitness exercises) protects against the development of low back pain, the effect is modest and of unknown duration, and the intervention has not been demonstrated in typical clinical settings. There is insufficient evidence to recommend for or against counseling patients to prevent low back pain. There is insufficient evidence to recommend for or against educational intervention or the use of mechanical supports in the prevention of low back pain. Recent studies have found counseling for low back pain not to be effective.  

뇌 | C Recommendation

See low back pain guideline.

**Menopause Management** | Menopausal women should receive individual counseling about the management of menopause, including the risks and benefits of hormonal and non-hormonal therapies.
### Counseling to... Efficacy of Risk Reduction

| Prevent motor vehicle injuries | Clinicians should regularly urge their patients to use lap/shoulder belts for themselves, their passengers, and for their children who have outgrown safety seats. Passengers should not ride in the cargo beds of pickup trucks, station wagons or vans except when those areas are fitted with passenger seats and passengers are properly restrained in them. All patients should be counseled regarding the dangers of operating a motor vehicle while under the influence of alcohol or other drugs. | A Recommendation |
| Prevent tobacco use | One in four people whom physicians see in their practice is a smoker. Tobacco use accounts for one out of every five deaths in the U.S. It is the most important modifiable cause of primary death, responsible for an estimated 5 million years of potential life lost. The counseling message consists of asking every patient about tobacco use, advising smokers to quit, asking how interested they are in quitting, and providing counseling assistance where appropriate. An additional message should be to avoid passive exposure to smoke. Pregnant women and parents with children living at home should be counseled on the potentially harmful effects of smoking on fetal and child health. | A recommendation |
| Prevent use of alcohol and other drugs | There is insufficient evidence to recommend for or against routine screening for drug abuse with standardized questionnaires or biologic assays. The ideal strategy for preventing morbidity and mortality from alcohol and other drug abuse resides through discussion during check-ups and other visits. | |
| Prevent violence and abuse prevention | The medical community is uniquely positioned to play an important role in the prevention of violence and abuse. Physicians should be alert for symptoms and signs of various presentations of family violence, and suicidal ideation in persons with risk factors. | C recommendation |
| Prevent skin cancer | Skin cancer can be prevented by avoiding exposure to the sun. Wear of SPF 30 sunscreen is recommended. | |
| Encourage healthcare proxy | Everyone is at risk of a medical crisis, healthcare proxy allows a patient’s wishes to drive medical decision making in the event the patient is incapable of communicating his/her wishes during a medical crisis. Healthcare proxy can take several forms: **living will**: a legal document giving written instructions regarding under which circumstances the person would/would not wish particular types of medical care to be provided, withheld or withdrawn; **durable power of attorney for health care**: the legal designation of another person to speak on the patient’s behalf regarding medical care choices; **oral declarations**, verbal statements to family or friends regarding medical care preferences. Oral statements have legal standing, however, physicians have more confidence in written statements. The Patient Self-Determination Act is intended to encourage wider use of healthcare proxy. It is recommended to inform patients older than 65 years of age about healthcare proxy either through dialogue or pamphlet. Regulations from the 1987 Omnibus Budget and Reconciliation Act have mandated inquiry about healthcare proxy in hospitalized and institutionalized patients. | |
### Geriatric Health Maintenance

The U.S. population of adults age 65+ years is growing rapidly in number and proportion to the overall population. This population is expected to double from approximately 33.5 million in 1995 to 69.4 million in 2030. Due to the aging of persons born during 1945-1965 (i.e., baby boomers) and increased life expectancy, adults age 85+ years, are the fastest-growing segment of the population; during 1995-2030, their numbers are projected to increase from 3.6 million to 8.5 million.

**SOURCE:** MMWR/ Nov 17, 1999/ Vol.48/ No SS-8

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### Geriatric Health Maintenance Recommendations

#### HISTORICAL INFORMATION

**Tobacco**

The number of deaths attributable to smoking increases after age 65 years. Smokers are more likely to refrain from smoking if their physician recommends it. Encourage smokers repeatedly to quit smoking. Pharmacological measures may be useful.

- **A Recommendation**

#### PHYSICAL EXAMINATION

**Height and Weight**

A key preventive strategy in caring for older persons is maintaining adequate nutrition. Nutritional status can be assessed by inquiring about anorexia or weight loss. Regularly recording the weight of elderly patients is essential for detection of unrecognized weight loss.

- **B Recommendation**

**Blood Pressure**

Heart disease and cerebrovascular disease are the number 1 and number 3 causes of death among persons age 75+.

In accordance with the USPSTF recommendation, blood pressure measurements should occur at least once every 2 years. Elderly persons found to have hypertension should be managed with behavioral modification and pharmaco-therapy in accordance with The Joint National Committee on Detection, Evaluation, and Treatment of High Blood Pressure.

- **A Recommendation**

**SOURCE:** Adapted from Mayo Clin Proc 1996;71:289-302
## Geriatric Health Maintenance

### Geriatric Health Maintenance Recommendations (continued)

<table>
<thead>
<tr>
<th>Section</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hearing and Vision</strong></td>
<td><strong>B Recommendation</strong></td>
</tr>
<tr>
<td>Hearing loss</td>
<td>affects a third of 65-year old individuals, two-thirds of those older than 70+, and three-fourths of those 80+. Presbycusis is the most common type of hearing loss in elderly persons. Older patients may not complain of or even realize the presence of a hearing impairment. It is recommended that all older adults undergo an annual hearing assessment and otologic examination.</td>
</tr>
<tr>
<td>Vision:</td>
<td>With normal aging, increased visual impairment can result from macular degeneration, cataracts, glaucoma, and diabetic retinopathy. Many older adults are unaware of impaired vision, including losses in peripheral acuity. Screening eye examinations performed in geriatric day-care and outpatient settings have disclosed that up to a third of those examined had previously undiagnosed conditions, most of which were treatable. Biennial full eye examinations for persons &gt;65 years of age, annually for diabetic persons.</td>
</tr>
</tbody>
</table>

| **Gait and Falls** | As a result of aging, illness, pain, and disuse, older adults commonly show changes in their gait that can result in imbalance and falls. One in five older adults has a disorder in gait or transferring ability. Among persons 75+, 30% report difficulty with stairs, 40% cannot walk 1/2 mile, and 7% need assistance to walk at all. Approximately 30% of noninstitutionalized older adults fall each year. There are several available assessment instruments that can accurately screen for gait and balance impairments. A multicenter trial has demonstrated that interventions directed at modification of these gait abnormalities result in a reduction in the risk of falls and injury. The various treatment options include environmental safety changes, gait retraining, strengthening exercises, use of gait aids, and treatment associated with pain, medical disorders, and podiatric conditions. It is recommended that providers caring for older individuals inquire about falls or fear of falling and perform periodic evaluation of gait and balance in elderly patients. |

### SCREENING TESTS

| **Breast Cancer** | Several screening strategies have been recommended for detection of breast cancer, including breast self-examination, clinical breast examination, and mammography. Breast self-examination has a low sensitivity — between 20 and 30% (and even lower among elderly women). |
| **Cervical Cancer** | Elderly women have often been underscreened. Among professional organizations, no consensus exists about screening guidelines for elderly women. The Canadian Task Force and the USPSTF recommend discontinuing Pap smears at ages 70 and 65 years, respectively, if previous smears have consistently been normal. Surprisingly, 27% of new cases of cervical cancer and 41% of annual deaths from cervical cancer occur in women who are age 65+. |
### Geriatric Health Maintenance Recommendations (continued)

#### Colorectal Cancer

See full guideline.

Colorectal cancer is the second most common cause of cancer mortality. The incidence rate for those ages 65+ is 337.1 per 100,000. The currently available tests for colorectal cancer screening are: digital rectal examination, the fecal occult blood test (FOBT), flexible sigmoidoscopy, barium enema examination, radiography and colonoscopy. We recommend screening with a sigmoidoscopy every 3-5 years in average risk persons age 65+.

Because the mean life expectancy at 75 years is 12 years, screening can be discontinued at age 75 years in most elders.

- B Recommendation

#### VACCINATIONS

**Influenza**

95% of influenza-related deaths occur in persons ages 60+. All person 65+ should be vaccinated every year once during September/March.

- A Recommendation

**Pneumococal**

Pneumococcal disease is a major cause of morbidity and mortality in the elderly. The vaccine is inexpensive, and side effects are rare. With the increasing problem of antibiotic-resistant strains of pneumococci, providing vaccine prophylaxis is compelling once at age 65 (Pneumovax 23, Pnu-Immune 23).

- A Recommendation

#### OTHER INTERVENTIONS REQUIRING PHYSICIAN’S VIGILANCE IN CARING FOR THIS POPULATION:

**Skin Cancer**

Annual inspection of patients who have a family history or previous personal history of a skin cancer precursor lesions and those with increased exposure to sunlight.

- C Recommendation

**Feet**

Foot problems frequently occur in elderly patients. Physicians can identify foot problems by simply examining the feet and by asking about the presence of pain. This is a minimal effort intervention.

#### During the medical visit, make sure to inquire about the following:

- Bowel patterns, esp. constipation
- Cardiovascular system (e.g. chest pain, SOB, claudication)
- Dizziness
- Falls
- Functional change over past year or since last night
- Hearing or visual changes
- Medication use
- Musculoskeletal stiffness or pain
- Sleep patterns
- Urinary patterns, especially incontinence
- Weight change

*SOURCE: American Geriatric Society. Geriatrics at your fingertips, 2000 edition, p. 4*
Polypharmacy-related issues are a major concern in the geriatric population.

How to Prescribe Appropriately and Avoid Polypharmacy

1. **Obtain a complete drug history.** Be sure to ask about previous treatments and responses, and other prescribers. Ask about allergies, OTC drugs, nutritional supplements, alternative medications, alcohol, tobacco, caffeine, and recreational drugs.

2. **Avoid prescribing before a diagnosis is made.** Consider nondrug therapy. Eliminate drugs for which no diagnosis can be identified.

3. **Review medications regularly and before prescribing a new medication.** Discontinue medications that have not had the intended response or are no longer needed. Monitor the use of prn and OTC drugs.

4. **Know the actions, adverse effects, and toxicity profiles of the medications you prescribe.** Consider how these might interact or complement existing drug therapy.

5. **Start chronic drug therapy at a low dose and titrate on basis of tolerability and response.** Use drug levels when available.

6. **Attempt to maximize dose before switching or adding another drug. Encourage compliance with therapy.** Educate patient and/or caregiver about each medication, its regimen, the therapeutic goal, its cost, and potential adverse effects or drug interactions. Provide written instructions.

7. **Avoid using one drug to treat the side effects of another.** Attempt to use one drug to treat two or more conditions.

8. **Avoid combination products.**

9. **Communicate with other prescribers.** Don't assume the patient will — they assume you do!

10. **Avoid using drugs from the same class or with similar actions.**
    (e.g., alprazolam and zolpidem).

EARLY INTERVENTION IS KEY TO PREVENT LUNG FUNCTION DECLINE

Overview of the 1997 National Heart, Lung and Blood Institute Asthma Guidelines:

By far the most important change in the 1997 guidelines is the evolution of the definition of asthma. For over 35 years, asthma was regarded as an episodic, reversible airway constriction. Since 1997, advances in medical research have demonstrated that asthma needs to be considered as a chronic airway inflammatory disease characterized by at least partially reversible airway constriction. This understanding has led to changes in our approach to treatment and prophylaxis. Controller medications, which treat the underlying inflammation, have become standards in the treatment of moderate and severe disease, and also play a role in prophylaxis of patients who experience recurrent flare-ups. Because airways inflammation persists after a patient's symptoms have been alleviated, clinicians should continue the use of anti-inflammatory medications until the inflammation has resolved.

Pediatric Asthma

In June 2000, Blue Cross Blue Shield of Massachusetts has adopted the pediatric asthma recommendations promulgated by the Pediatric Asthma Work Group of the Managed Care Public Health Collaborative of New England. The Work Group represents the efforts of a managed care and public health organizations, and other asthma-related organizations from New England. The goal of the Work Group is to reduce the incidence and prevalence of childhood asthma in New England.

In addition the Work Group recommends the use of Pediatric Asthma: Promoting Best Practice — Guide for Managing Asthma in Children, published by the American Academy of Allergy, Asthma, and Immunology (AAAAI) as a user-friendly resource tool, aimed specifically at pediatric asthma. If you wish to obtain a copy of the Pediatric Asthma Work Group, contact Blue Cross BlueShield, Health Care Quality Department at (617) 832-5994.

Pediatric asthma management follows the adult recommendations for effective asthma management guidelines outlined below.

- The 1997 Asthma Guidelines focus on four aspects of care:
  1. Assessment and Monitoring
  2. Identifying Asthma Triggers
  3. Pharamacotherapy
  4. Educating Patients on Pharmacotherapy

- Treatment Goals:
Pharmacology therapy — inhaled corticosteroids (ICSs) are the most potent and effective agent for long-term management of persistent asthma at all levels: mild, moderate and severe. The consequences of delaying or not using ICS therapy for persistent asthma are decreased control of asthma, increased risk of hospitalization and/or emergency department visits, and no alteration of the natural cause of the disease.

Assessment and Monitoring:

Asthma symptoms alone — coughing, wheezing, chest tightness, shortness of breath are not diagnostic because patients tend to underestimate the severity of their disease and report good health unless the physician asks the relevant questions.

Assessment requires classification of asthma severity.

Pulmonary function testing should be viewed as standard measurement for monitoring asthmatics.
Identifying Asthma Triggers:
Opportunities of exposures to asthma triggers need to be identified with information from the patient.

Pharmacotherapy:
Pharmacotherapy for asthma falls into 2 categories: quick relief and long-term control. Quick relief (β2-agonists, anticholinergics, and systemic corticosteroids) should be used infrequently, only for exacerbations.

Long-term medications include ICSs, (cromolyn sodium and nedocromil, long-acting β2-agonists, methylxanthines, leukotriene modifiers, and systemic corticosteroids).

As control is gained over the disease, the medication profile must be modified. This is known as step-up and step-down therapy.

Refer to the sample treatment plans.

Educating patients on pharmacotherapy:
Asthma therapies have 2 routes of administration: systemic and inhaled. Systemic medications can be taken via oral or parenteral routes. Inhaled medications are delivered by metered-dose inhalers, dry powder inhalers, or nebulizers. Patients need to be educated on the proper use of an inhaler.

It is important for physicians to understand the multiple factors in inhaled medication pharmacokinetics. Different drugs have different dosage requirements. When physicians consider a drug dose for a patient, they must also consider the likelihood of adherence or compliance by the patient.

Educating Patients on Asthma
A physician may ask questions such as these when examining a patient with a possible diagnosis of asthma.

1. Do you have troublesome cough, particularly at night?
2. Are you awakened by coughing or difficulty breathing?
3. Do you cough or wheeze after physical activity?
4. Do you have breathing problems during a particular season?
5. Do you cough, wheeze, or develop chest tightness after exposure to allergens?
6. Do colds “go to your chest” or last more than 10 days?
7. Do you use any medications? How often?
8. Are your symptoms relieved after you take medication?

Strategy for Enhancing Adherence
The physician must provide some reassurance regarding the patient’s underlying fears. Most patients will not be able to focus on or remember the physician’s recommendations.

SOURCE: Evans D. To help patients control asthma the clinician must be a good listener and teacher [editorial]. Thorax 1993;48:685-7.
## Asthma Guidelines

### The Goal of Treatment is Control of Asthma

- Infrequent episodes
- No chronic symptoms, including nocturnal symptoms
- No emergency visits (or minimal)
- Minimal PRN beta-agonist
- No limitations on activities, including exercise
- Near normal PEF or FEV₁
- No adverse effects from medicine
- Meet expectations of patient and family, and ensure that they understand and are satisfied with care

1 Percent of personal best
2 Rescue medications are to be used on an “as needed” basis for acute symptoms.
3 Refer to specialist

PEFR = peak expiratory flow rate

### Avoid or Control Triggers

#### Step 1 Mild Intermittent

**Patient Factors**
- **Sx:** Two or fewer times/week
  - No symptoms and normal peak flows between episodes
- **Nighttime Sx:** Two or fewer times/month
  - FEV₁ 80% or more of predicted; PEFR values vary less than 20%

**Daily Controller Meds**
- None needed

#### Step 2 Mild Persistent

**Patient Factors**
- **Sx:** More than twice a week, but not every day
  - Episodes may affect activity
- **Nighttime Sx:** More than twice a month
  - FEV₁ 80% or more of predicted; PEFR values vary less than 20%-30%

**Daily Controller Meds**
- Either inhaled corticosteroids (low dose), cromolyn or nedocromil
- Sustained release theophylline (an alternative but not preferred)
- Leukotriene modifiers may be considered

**Rescue Meds**
- Short-acting inhaled beta-agonist
- PRN for symptoms

#### Step 3 Moderate Persistent

**Patient Factors**
- **Sx:** Continual symptoms
  - Limited physical activity
- **Nighttime Sx:** Frequent
  - FEV₁ 60% or less of predicted; PEFR values vary more than 30%

**Daily Controller Meds**
- Inhaled corticosteroids at higher dose and long-acting bronchodilator, especially for nighttime symptoms or
- Low dose theophylline serum levels 5-15 mcg/mL

**Rescue Meds**
- Used on a daily basis indicates the need for adding long-term control therapy.

#### Step 4 Severe Persistent

**Patient Factors**
- **Sx:** Continual symptoms
  - Limited physical activity
- **Nighttime Sx:** Frequent
  - FEV₁ 60% or less of predicted; PEFR values vary more than 30%

**Daily Controller Meds**
- Inhaled corticosteroids (high dose) and
- Long-acting bronchodilator, and
- Corticosteroids tablets or syrup long-term

**Rescue Meds**
- Used on a daily basis indicates the need for adding long-term control therapy.

### Avoid or Control Triggers

#### Avoid or Control Triggers

- Leukotriene modifiers may be considered
- Sustained release theophylline (an alternative but not preferred)
- Either inhaled corticosteroids, cromolyn or nedocromil
- Low dose theophylline serum levels 5-15 mcg/mL
- Inhaled corticosteroids at higher dose and long-acting bronchodilator, especially for nighttime symptoms or
- Corticosteroids tablets or syrup long-term

**Rescue Meds**
- Short-acting inhaled beta-agonist
- PRN for symptoms

### Step-Up

- If control is not achieved, consider step-up, but first, review patient medication technique, compliance, and environmental control (avoidance of allergens or other trigger factors).

### Step-Down

- Review treatment every 3 to 6 months
- If control is sustained for at least 3 months, a gradual stepwise reduction in treatment may be possible.

### Rescue Meds

1. Used on a daily basis indicates the need for adding long-term control therapy.
2. Refer to specialist

PEFR = peak expiratory flow rate

### Source

Lemanske RF, Busse WW; Asthma. JAMA, Dec 10, 1997 - Vol 278, No 22; 1855-1873

Please see Sample treatment plans.
Asthma Guidelines—Sample Plan 1

Sample long-term treatment plan for mild-intermittent asthma.

<table>
<thead>
<tr>
<th>Clinical condition or patient status</th>
<th>Baseline plan and when asthma is under control</th>
<th>At the first sign of a cold or mild attack†</th>
<th>For rapidly worsening asthma (severe attack)</th>
<th>For cough or wheeze with exercise</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peak flow (percent personal best)</td>
<td>80 percent or above</td>
<td>50 to 80 percent</td>
<td>Below 50 percent</td>
<td></td>
</tr>
<tr>
<td>Medication – Reliever:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inhaled short-acting beta 2-agonist*</td>
<td>2 puffs as needed</td>
<td>2 puffs every 4 hr‡¶</td>
<td>2 to 4 puffs every 20 minutes for 3 doses then 2 to 4 puffs every 4 hours</td>
<td>2 puffs 5 to 10 minutes before exercise</td>
</tr>
<tr>
<td>Albuterol</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corticosteroid tablet or syrup</td>
<td>0</td>
<td>0</td>
<td>Begin with 1 to 2 mg per kg per day§ Notify doctor</td>
<td></td>
</tr>
</tbody>
</table>

**Note:** Footnotes are for clinicians only.

* Use more than twice per week may indicate need to initiate long-term controller (anti-inflammatory) therapy. See long-term treatment plan for mild persistent asthma.

† If viral infections provoke severe attacks (exacerbations), consider short course of steroid tablets or syrup at the first sign of a cold or viral illness; see dose next column.

‡ The need for beta 2-agonist* for more than 24 to 48 hours indicates at least a moderate attack; consider short course of corticosteroid tablets or syrup.

§ Maximum corticosteroid dose: 60 mg per day, 3- to 11-day course.

¶ If beta 2-agonist* needs to be given for 24 hours or longer more often than every 6 weeks, initiate long-term controller (anti-inflammatory) therapy. See sample long-term treatment plan for mild-persistent asthma.

The four treatment samples presented are adapted from: Mellins, Robert B., Evans, David; Clark, N; Zimmerman, B and Wieseman, S. Developing and Communicating a Long-Term Treatment Plan for Asthma. American Family Physician, April 15, 2000, vol 61, number 8, pages 2419-2426. are a useful and simplified system for organizing the clinician’s recommendations. Sample for long-term treatment plan for severe-persistent asthma includes children recommendations.
### Asthma Guidelines—Sample Plan 2

Sample long-term treatment plan for mild-persistent asthma.

<table>
<thead>
<tr>
<th>Clinical condition or patient status</th>
<th>Baseline plan and when asthma is under control</th>
<th>At the first sign of a cold or mild attack</th>
<th>For rapidly worsening asthma (severe attack)</th>
<th>When there is no cough or wheeze for 2 months</th>
<th>For cough or wheeze with exercise</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Peak flow</strong> (percent personal best)</td>
<td>80 percent or above</td>
<td>50 to 80 percent</td>
<td>Below 50 percent</td>
<td>Over 80 percent for 2 months</td>
<td>2 puffs 5 to 10 minutes before exercise**</td>
</tr>
<tr>
<td><strong>Medication – Reliever:</strong> Inhaled short-acting beta 2-agonist* Albuterol</td>
<td>2 puffs as needed</td>
<td>2 puffs every 4 hr§</td>
<td>2 to 4 puffs every 20 minutes for 3 dosesII then 2 to 4 puffs every 4 hours</td>
<td>2 puffs as needed</td>
<td>2 puffs 2 to 3 times per day#</td>
</tr>
<tr>
<td><strong>Controller:</strong> (1) Inhaled low-dose corticosteroid† Beclomethasone 42 µg or (2) Nonsteroid‡ Nedocromil (Tilade)</td>
<td>1 to 4 puffs 2 times per day</td>
<td>1 to 4 puffs 2 times per day</td>
<td>1 to 4 puffs 2 times per day</td>
<td>0</td>
<td>2 puffs 2 to 3 times per day#</td>
</tr>
<tr>
<td>Corticosteroid tablet or syrup</td>
<td>0</td>
<td>0</td>
<td>Begin with 1 to 2 mg per kg per day¶ Notify doctor</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

**Note:** Footnotes are for clinicians only.

* Daily or increasing use indicates need for more long-term controller (anti-inflammatory) therapy.
† Equivalent drugs: fluticasone 44 (Flovent), 1 to 2 puffs, 2 times per day; flunisolide 250 (Aerobid), 1 puff, 2 times per day; budesonide 200 (Rhinocort), inhalation once per day; or triamcinolone 100 (Azmacort), 2 to 4 puffs, 2 times per day.
‡ Nonsteroids include cromolyn (Intal) and nedocromil (Tilade). In young children, these may be tried before inhaled steroids. Antileukotriene agents may also be considered as an alternative: zafirlukast (Accolate), 20 mg 2 times per day, or zileuton (Zyflo), 600 mg, 4 times per day, for patients > 12 years of age; montelukast (Singulair), 5 mg once per day for patients 6 to 14 years of age, and 10 mg once per day for patients > 15 years age.
§ The need for beta 2 agonist* for more than 24 to 48 hours indicates at least a moderate attack; consider short course of corticosteroid tablets or syrup.
II If there is not a good response, patient should be instructed to seek emergency care immediately. If there is a good response, patient should remain in this column and notify doctor.
¶ Maximum steroid dose: 60 mg per day, 3- to 11-day course.
# When free of symptoms for 4 to 6 months, may try discontinuing controller medicines.
** If it is difficult to take short-acting beta 2-agonist* before exercise, consider long-acting beta 2-agonist* to protect against exercise-induced bronchospasm for up to 8 hours.
## Asthma Guidelines—Sample Plan 3

Sample long-term treatment plan for moderate-persistent asthma.

<table>
<thead>
<tr>
<th>Clinical condition or patient status</th>
<th>Baseline plan and when asthma is under control</th>
<th>At the first sign of a cold or mild attack</th>
<th>For rapidly worsening asthma (severe attack)</th>
<th>When there is no cough or wheeze for 2 months</th>
<th>For cough or wheeze with exercise</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peak flow (percent personal best)</td>
<td>Baseline — 60 to 80 percent Under control — 80 percent or above</td>
<td>50 to 80 percent</td>
<td>Below 50 percent</td>
<td>Over 80 percent for 2 months</td>
<td></td>
</tr>
<tr>
<td>Medication — Reliever: Inhaled short-acting beta 2-agonist*</td>
<td>2 puffs as needed</td>
<td>2 puffs every 4 hr§</td>
<td>2 to 4 puffs every 20 minutes for 3 doses — then 2 to 4 puffs every 4 hours</td>
<td>2 puffs as needed</td>
<td></td>
</tr>
<tr>
<td>Controller: (1) Inhaled medium-dose corticosteroid† Beclomethasone 84 µg or Antileukotriene‡</td>
<td>2 to 4 puffs 2 times per day</td>
<td>2 to 4 puffs 2 times per day</td>
<td>2 to 4 puffs 2 times per day</td>
<td>1 puff # 2 times per day</td>
<td></td>
</tr>
<tr>
<td>Corticosteroid tablet or syrup</td>
<td>0</td>
<td>0</td>
<td>Begin with 1 to 2 mg per kg per day¶ Notify doctor</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note:** Footnotes are for clinicians only.

* Daily or increasing use indicates need for more long-term controller (anti-inflammatory) therapy.
† Equivalent drugs: fluticasone 44 (Flovent), 1 to 2 puffs, 2 times per day; flunisolide 250 (Aerobid), 1 puff, 2 times per day; budesonide 200 (Rhinocort), inhalation once per day; or triamcinolone 100 (Azmacort), 2 to 4 puffs, 2 times per day.
‡ Nonsteroids include cromolyn (Intal) and nedocromil (Tilade). In young children, these may be tried before inhaled steroids. Antileukotriene agents may also be considered as an alternative: zafirlukast (Accolate), 20 mg 2 times per day, or zileuton (Zyflo), 600 mg, 4 times per day, for patients > 12 years of age; montelukast (Singulair), 5 mg once per day for patients 6 to 14 years of age, and 10 mg once per day for patients > 15 years of age.
§ The need for beta 2-agonist* for more than 24 to 48 hours indicates at least a moderate attack; consider short course of corticosteroid tablets or syrup.
II If there is not a good response, patient should be instructed to seek emergency care immediately. If there is a good response, patient should remain in this column and notify doctor.
¶ Maximum steroid dose: 60 mg per day, 3- to 11-day course.
# When free of symptoms for 4 to 6 months, may try discontinuing controller medicines.
** If it is difficult to take short-acting beta 2-agonist* before exercise, consider long-acting beta 2-agonist* to protect against exercise-induced bronchospasm for up to 8 hours.
Asthma Guidelines—Sample Plan 4

Sample long-term treatment plan for severe-persistent asthma.

<table>
<thead>
<tr>
<th>Clinical condition or patient status</th>
<th>Baseline plan and when asthma is under control</th>
<th>For rapidly worsening asthma (severe attack)</th>
<th>When there is no cough or wheeze for 2 months</th>
<th>For cough or wheeze with exercise</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peak flow (percent personal best)</td>
<td>Baseline – Below 60 percent Under control – 80 percent or above</td>
<td>Below 50 percent</td>
<td>Above 80 percent for 2 months</td>
<td>2 puffs 5 to 10 minutes before exercise</td>
</tr>
<tr>
<td>Medication – Reliever: Inhaled short-acting beta 2-agonist* Albuterol</td>
<td>2 puffs as needed</td>
<td>2 to 4 puffs every 20 minutes for 3 doses? then 2 to 4 puffs every 4 hours</td>
<td>2 puffs as needed</td>
<td></td>
</tr>
<tr>
<td>Controller: (1) Inhaled high-dose corticosteroid† Beclomethasone 84 µg and (2) Long-acting beta 2-agonist* and (3) Antileukotriene‡</td>
<td>4 to 5 puffs 2 times per day 2 puffs 2 times per day</td>
<td>4 to 5 puffs 2 times per day 2 puffs 2 times per day</td>
<td>2 to 4 puffs 2 times per day 2 puffs 2 times per day</td>
<td></td>
</tr>
<tr>
<td>Corticosteroid tablet or syrup</td>
<td>0.25 to 2 mg per kg per day§</td>
<td>2 mg per kg per day Notify doctor</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

Note: Footnotes are for clinicians only.

* Daily or increasing use indicates need for more long-term controller (anti-inflammatory) therapy.
† Equivalent drugs: fluticasone 110 (Flovent), 2 to 3 puffs, 2 times per day; flunisolide 250 (Aerobid), 2 to 3 puffs, 2 times per day; budesonide 200 (Rhinocort), 1 to 2 inhalations, 2 times per day; or triamcinolone 100 (Azmacort), > 6 puffs, 2 times per day.
‡ Antileukotriene agents may be used as additive therapy: zafirlukast (Accolate), 20 mg 2 times per day, or zileuton (Zyflo), 600 mg 4 times per day, for patients > 12 years of age; montelukast (Singulair), 5 mg once per day for patients 6 to 14 years of age, and 10 mg once per day for patients > 15 years of age.
§ Maximum corticosteroid dosage: 60 mg per day. With improvement, gradually lower dose and if possible change to every other day schedule.
¶ If there is not a good response, patient should be instructed to seek emergency care immediately. If there is a good response, patient should continue in this column and notify doctor.
¶ When free of symptoms for 4 to 6 months, reduce inhaled corticosteroids to medium dose.
Circumstances for Considering Consultation or Referral to an Asthma Specialist

- Instability of the patient's asthma, uncontrolled asthma may be associated with widely variable pulmonary functions and possibly high morbidity and mortality. Early comprehensive intervention may prevent these events. Such interventions should include development of a long-term treatment plan.

- When the patient's response to treatment is limited, incomplete or very slow, and poor control interferes with the patient's quality of life.

- When, in spite of taking anti-inflammatory medications regularly, the patient must use inhaled beta agonist frequently, exclusive of its use in exercise-induced asthma.

- If there is a need for frequent adjustments of therapy because of unstable asthma.

- For identification of allergens or other environmental factors which may be causing the patient's disease; patients with asthma must have access to a thorough etiologic evaluation.

- When allergen immunotherapy is a consideration.

- When the patient and the primary care giver (parent or guardian) need intensive education in the role of allergens and other environmental factors.

- When family dynamics interfere with patient care and/or there is a need for further family education about asthma.

- When a patient has a chronic cough, refractory to usual therapy.

- When co-existing illnesses and/or their treatment complicate the management of asthma.

- When the patient has recurrent absences from school or work due to asthma.

- When the patient is experiencing continuing nocturnal episodes of asthma.

- When the patient is unable to participate in normal daily activities and sports because of limited exercise ability despite use of inhaled-beta2-agonists prior to exercise.

- When the patient requires multiple medications on a long-term basis.

- When frequent bursts of oral corticosteroids or daily oral cortico-steroids are required.

- When the patient exhibits excessive lability of pulmonary function, e.g., highly variable peak flow rates.

- When the diagnosis of asthma is in doubt.

- When there is concern about side effects that have occurred or may occur, e.g., use of oral inhaled corticosteroids in children.

- When preventive measures need to be considered for the high-risk, predisposed infant with a family history of asthma or atopy.

- Sudden severe attacks of asthma.

- Hospitalization of the patient for asthma.

- Severe episodes or respiratory failure requiring artificial respiration.

- When emergency room visits are required to control the patient's asthma.

- When the patient asks for a consultation.

Source: Asthma Specialist Consultation Guidelines; J Allergy Clin Immunol. Nov 1995;96 (5,pt2)
Effective and Dosing of Steroid Inhalers

Steroid metered dose inhalers have different effectiveness on a per microgram basis. They also differ in the amount of micrograms per inhalation. The table is a guide to dose and effectiveness. Prolonged use of the highest doses of inhaled steroids has been associated with cataract development and measurable adrenal suppression (but the clinical consequences of these side effects have not been well studied).

<table>
<thead>
<tr>
<th>Level</th>
<th>Medication</th>
<th>Amount (mg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>Triamcinolone</td>
<td>100</td>
</tr>
<tr>
<td>Intermediate</td>
<td>Beclomethasone</td>
<td>84</td>
</tr>
<tr>
<td></td>
<td>Budesonide</td>
<td>200</td>
</tr>
<tr>
<td></td>
<td>Flunisolde</td>
<td>250</td>
</tr>
<tr>
<td>High</td>
<td>Fluticasone</td>
<td>44, 110, 220</td>
</tr>
</tbody>
</table>

*Source: NAEPP, 1997 Guidelines*

Special Circumstances: Pregnancy

Symptoms in about one third of pregnant women with asthma will improve during pregnancy, one third will be unchanged, and one third will worsen. Pregnancy is associated with changes in lung volumes; there is an increase in tidal volume and a 20 percent to 50 percent increase in minute ventilation. This change has been attributed to a response to increased circulating progesterone, which acts as a respiratory stimulant.

Suggested Medications for Use in Asthma during Pregnancy

<table>
<thead>
<tr>
<th>Category</th>
<th>Medication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bronchodilators</td>
<td>Terbutaline by inhalation, Theophylline</td>
</tr>
<tr>
<td>Antibiotics</td>
<td>Penicillins, Cephalexin</td>
</tr>
<tr>
<td>Anti-inflammatories</td>
<td>Cromolyn sodium, Beclomethasone dipropionate</td>
</tr>
<tr>
<td>Allergy medication</td>
<td>Tripelennamine hydrochloride, Nasal beclomethasone (for allergic rhinitis)</td>
</tr>
<tr>
<td>Prednisone</td>
<td></td>
</tr>
</tbody>
</table>

Cardiovascular Disease: Primary Prevention and Comprehensive Risk Reduction
CARDIOVASCULAR DISEASES
The goal of the guidelines is to improve cardiovascular health and quality of life through the prevention, detection, and treatment of risk factors, and prevention of recurrent cardiovascular events. The two guidelines: Cardiovascular Diseases, Primary Prevention and Comprehensive Risk Reduction; and Cardiovascular Diseases, Primary Prevention and Comprehensive Risk Reduction are adapted from the American Heart Association (AHA) based on the finding of an AHA consensus panel.

Heart disease is the leading cause of death for all Americans, a major cause of disability and a significant contributor to increases in health care costs.

Epidemiologic and statistical studies have identified a number of factors that increase the risk of heart disease. In addition, clinical trials and prevention research studies have demonstrated effective strategies to prevent and controls these risk factors and thereby reduce illness, disabilities, and deaths caused by heart disease.

The main points of the guidelines are:
- Prevention and reduction of the risk of heart disease
- Screening and appropriate pharmacological management
- Prevention of cardiovascular disease recurrence.

Opportunities
Primary prevention. The risk factors for heart disease include high blood pressure, cigarette smoking, high blood cholesterol, and overweight. Physical inactivity and diabetes are additional risk factors. The lifetime risk for developing heart disease is very high in the U.S: one of every two males and one of every three females aged 40 years and under will develop heart disease sometime in their life. Primary prevention through lifestyle interventions promoting heart healthy behaviors and appropriate pharmacological management is a major strategy to reduce the development of heart disease.

Being overweight or obese is a serious health concern affecting, children, adolescents and adults. Some 97 million adults are obese or overweight and thus are at increased risk of illness from high blood pressure, high cholesterol and other lipid disorders, type 2 diabetes, CHD, stroke and other diseases.

Smoking cessation plays a critical role in preventing cardiovascular disease with major and immediate health benefits for men and women of all ages.

Risk factor detection and treatment: Screening to identify individuals with risk factors, particularly for high blood pressure, and high blood cholesterol, is an important step in referring them to ongoing care. Numerous studies have demonstrated that dietary and pharmacologic therapy can reduce the incidence of cardiovascular disease. These interventions, coupled with other lifestyle changes, such as smoking cessation, increasing physical activity, and maintaining a healthy weight, can be even more effective in lowering the risk of cardiovascular disease.
**Cardiovascular disease recurrence:** Persons with established heart disease face a risk five to seven times higher for heart attack and CHD death. About 50 percent of all heart attacks and at least 70 percent of CHD deaths occur in individuals with prior symptoms of CVD.

Risk factor control can greatly reduce the risk of subsequent cardiovascular events in persons with established heart disease. Clinical trials have demonstrated that lowering LDL cholesterol levels in CHD patients dramatically reduces heart attacks, CHD and CVD deaths, and total deaths. Clinical trials have also clearly demonstrated that lowering blood pressure in persons with heart disease reduces CVD endpoints and deaths from all causes. Many CHD patients, however, are not getting the aggressive risk factor management they need. Despite the clinical evidence, and the development and promotion of clinical practice guidelines, physicians are continuing to underutilize recommended therapies. As the number of older adults rises, these guidelines need to be incorporated into clinical practice.

Prior to the publication of this AHA guideline, a Blue Cross Blue Shield of Massachusetts (BCBSMA) Coronary Risk Reduction Task Force developed a related guideline based on the *Summary of the Second Report of the National Cholesterol Education Program Expert Panel on the Detection Evaluation and Treatment of High Blood Cholesterol in Adult (NCEP) (Adult Treatment Panel II).*

Much of that guideline is included in the AHA guideline included here, but the AHA guideline does not specify the frequency of measurement of lipid levels while trying to reach the AHA goals, and for ongoing monitoring. We have included that element of the BCBSMA Task Force recommendation to provide some guidance on the critical issue in lipid management.
# Primary Prevention of Cardiovascular Diseases

<table>
<thead>
<tr>
<th>Risk Intervention</th>
<th>Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Smoking:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Goal</strong></td>
<td>Ask about smoking status as part of routine evaluation. Reinforce nonsmoking status. Strongly encourage patient and family to stop smoking. Provide counseling, nicotine replacement, and formal cessation programs as appropriate.</td>
</tr>
<tr>
<td><strong>Complete cessation</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Blood pressure control:</strong></td>
<td>Measure blood pressure in all adults at least every 2 years. Promote lifestyle modification: weight control, physical activity, moderation in alcohol intake and moderate sodium restriction. If blood pressure &gt; 140/90 mm Hg after 6 months of lifestyle modification or if initial blood pressure &gt; 160/100 mm Hg or &gt;130/85 mm Hg with heart failure, renal insufficiency or diabetes, add blood pressure medication. Individualize therapy to patient’s age, race, need for drugs with specific benefits, etc.</td>
</tr>
<tr>
<td><strong>Goal</strong></td>
<td></td>
</tr>
<tr>
<td>&lt;140/90 mm Hg or &lt;130/85 mm Hg if heart failure, renal insufficiency or diabetes</td>
<td></td>
</tr>
<tr>
<td><strong>Cholesterol management:</strong></td>
<td>Ask about dietary habits as part of routine evaluation. Measure total and HDL cholesterol in all adults ≥ 20 y and assess positive and negative risk factors at least every 5 years. For all persons: promote AHA Step I diet (≤ 30 percent fat, &lt;10 percent saturated fat, &lt;300 mg/d cholesterol), weight control, and physical activity. Measure LDL if total cholesterol ≥ 240 mg/dL or ≥ 200 mg/dL with ≥ 2 risk factors or if HDL &lt;35 mg/dL.</td>
</tr>
<tr>
<td><strong>Primary goal</strong></td>
<td></td>
</tr>
<tr>
<td>LDL&lt;160 mg/dL if 0-1 risk factors or LDL &lt;130 mg/dL if &gt; 2 risk factors</td>
<td></td>
</tr>
<tr>
<td><strong>Secondary goals</strong></td>
<td></td>
</tr>
<tr>
<td>HDL&gt;35 mg/dL; TG &lt;200 mg/dL</td>
<td></td>
</tr>
<tr>
<td>*<em>LDL ≥160 mg/dL with 0-1 risk factors; or ≥130 mg/dL on 2 occasions with ≥2 risk factors; then Start Step II diet (≤30 percent fat, &lt;7 percent saturated fat, &lt;200 mg/dL cholesterol) and weight control, Rule out secondary causes of high LDL (LFTs, TFTs, UA).</em></td>
<td>Risk factors: age (men ≥45 y, women ≥55 y or postmenopausal), hypertension, diabetes, smoking, HDL &lt;35 mg/dL, family history of CHD in first-degree relatives (in male relatives &lt;55 y, female relatives &lt;65 y. HDL ≥60 mg/dL, subtract 1 risk factor from the number of positive risk factors.</td>
</tr>
<tr>
<td><strong>LDL ≥160 mg/dL plus 2 risk factors; or ≥190 mg/dL; or ≥220 mg/dL in men &lt;35 y; or in pre-menopausal women; then consider adding drug therapy to diet therapy for LDL levels &gt; those listed above that persist despite Step II diet</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Suggested drug therapy for high LDL levels (≥160 mg/dL) (drug selection priority modified according to TG level)</strong></td>
<td></td>
</tr>
<tr>
<td>TG &lt;200 mg/dL</td>
<td>TG 200-400 mg/dL</td>
</tr>
<tr>
<td>Statin, Resin, Niacin</td>
<td>Statin, Niacin</td>
</tr>
<tr>
<td>If LDL goal not achieved, consider combination drug therapy.</td>
<td></td>
</tr>
</tbody>
</table>
### Physical activity:
**Goal**
Exercise regularly 3-4 times per week for 30-60 minutes

Ask about physical activity status and exercise habits as part of routine evaluation. Encourage 30 minutes of vigorous-intensity dynamic exercise 3 to 4 times per week as well as increased physical activity in daily life style activities (e.g., walking breaks at work, gardening, household work). Advise medically supervised programs for those with low functional capacity and/or comorbidities.

### Weight management:
**Goal**
BMI 21-25 kg/m²

Measures patient's weight and height, BMI, and waist-to-hip ratio at each visit as part of routine evaluation. Start weight management and physical activity as appropriate. Desirable BMI range: 21-25 kg/m². Desirable waist circumference < 40 inches in men and <36 inches in women.

### Diabetes management:
Near normal fasting plasma glucose and near normal HbA1c (<7)

Appropriate hypoglycemic therapy to achieve near normal fasting plasma glucose as indicated by HbA1c. Treatment of other risks (e.g., physical activity, weight management, blood pressure and for cholesterol management see recommendations for patients with coronary disease on the next page.)

### Estrogens:

Given the overall uncertainty about the true benefit of ERT in the prevention of cardiovascular disease, patient preference is the dominant factor in making any decision. Careful counseling about the risk/benefit issues of HRT is strongly recommended.

---

* Frequency of Measuring Lipid Levels — The BCBSMA Task Force guideline recommends the following: If LDL ≥ 160 mg/dL with 2 or more risk factors; or ≥ 190 mg/dL; these patients are identified as high risk. Schedule repeat lipid measurements every 6-8 weeks until controlled. Measure lipids quarterly or semi-annually thereafter.

TG indicates triglycerides; LFTs, liver function tests; TFTs, thyroid function tests; UA, uric acid; CHD, coronary heart disease; and BMI body mass index (704.5).
### Lipid management:

#### Primary goal
- LDL < 100 mg/dL

#### Secondary goals
- HDL > 35 mg/dL
- TG < 200 mg/dL

#### Recommendations
- Start AHA Step II Diet in all patients: ≤ 30 percent fat, < 7 percent saturated fat, < 200 mg/d cholesterol and promote physical activity. Assess fasting lipid profile. In post-MI patients, lipid profile may take 4 to 6 weeks to stabilize. Add drug therapy according to the following guide:

<table>
<thead>
<tr>
<th>LDL level</th>
<th>Drug therapy to consider</th>
</tr>
</thead>
<tbody>
<tr>
<td>LDL &lt; 100 mg/dL</td>
<td>No drug therapy</td>
</tr>
<tr>
<td>LDL 100 to 130 mg/dL</td>
<td>Consider adding drug therapy to diet, as follows:</td>
</tr>
<tr>
<td>LDL &gt; 130 mg/dL</td>
<td>Add drug therapy to diet, as follows:</td>
</tr>
</tbody>
</table>

#### Suggested drug therapy**

<table>
<thead>
<tr>
<th>TG level</th>
<th>Drug therapy</th>
</tr>
</thead>
<tbody>
<tr>
<td>TG &lt; 200 mg/dL</td>
<td>Statin, Resin, Niacin</td>
</tr>
<tr>
<td>TG 200 to 400 mg/dL</td>
<td>Statin, Niacin</td>
</tr>
<tr>
<td>TG &gt; 400 mg/dL</td>
<td>Consider combined drug therapy (niacin, fibrates, Statin)</td>
</tr>
</tbody>
</table>

If LDL goal not achieved, consider combination drug therapy.

### Physical activity:

#### Minimum Goal
- 30 minutes 3 to 4 times per week

#### Recommendations
- Assess risk, preferably with exercise test, to guide prescription. Encourage minimum of 30 to 60 minutes of activity 3 or 4 times weekly (walking, jogging, cycling, or other aerobic activity) supplemented by an increase in daily lifestyle activities (e.g., walking breaks at work, gardening, household work). Maximum benefit 5 to 6 hours a week. Advise medically supervised programs for moderate- to high-risk patients.
## Comprehensive Risk Reduction for Patients with Coronary and Other Vascular Disease

| Risk Intervention                        | Recommendations (continued)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|------------------------------------------|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Weight management:                       | Measures patient's weight and height, BMI, and waist-to-hip ratio at each visit as part of routine evaluation. Start weight management and physical activity as appropriate. Desirable BMI range: 21-25 kg/m². Desirable waist circumference < 40 inches in men and <36 inches in women.                                                                                                                                                                                                                                                   |
| **Goal**                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| BMI 21-25 kg/m²                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Diabetes management:                     | Appropriate hypoglycemic therapy to achieve near normal fasting plasma glucose as indicated by HbA1c. Treatment of other risks (e.g., physical activity, weight management, blood pressure and for cholesterol management see recommendations above).                                                                                                                                                                                                                                                                                   |
| Near normal fasting plasma glucose and near normal HbA1c (<7) |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Antiplatelet agents/anticoagulants:      | Start aspirin 80 to 235 mg/d if not contraindicated. Manage warfarin to international normalized ratio = 2 to 3.5 post-MI in patients not able to take aspirin.                                                                                                                                                                                                                                                                                                                                                               |
| ACE inhibitors post-MI:                  | Start early post-MI in stable high-risk patients (anterior MI, previous MI, Killip class II ([S³ gallop, rales, radiographic CHF]). Continue indefinitely for all with LV dysfunction (ejection fraction ≤ 40 percent) or symptoms of failure. Use as needed to manage blood pressure or symptoms in all other patients.                                                                                                                                                                                                                       |
| Beta-blockers:                           | Start in high-risk post-MI patients (arrhythmia, LV dysfunction, inducible ischemia) at 5 to 28 days. Continue 6 months minimum. Observe usual contraindications. Use as needed to manage angina, rhythm, or blood pressure in all other patients.                                                                                                                                                                                                                                                                                        |
| Estrogens:                               | Given the overall uncertainty about the true benefits of estrogen replacement therapy in a woman after MI, patient preference is the dominant factor in making any decision after careful counseling about the risk/benefit issues of HRT.                                                                                                                                                                                                                                                                                                                                                           |

**Frequency of Measuring Lipid Levels — The BCBSMA Task Force guideline recommends the following for patients with existing coronary heart disease who are on drug therapy (LDL ≥ 130mg/dL): Schedule repeat lipid measurements every 6-8 weeks until controlled. Measure lipids quarterly or semi-annually thereafter.**

ACE indicates angiotensin-converting enzyme; MI, myocardial infarction; TG, triglycerides; and LV, left ventricular.


Available Resources:

The American Heart Association (AHA) has several tools to help both physicians and patients manage their heart condition. For a list of available resources, contact the AHA at: 1-800-611-6083, and see BCBSMA Catalog of Patient Education and Resources.
Colorectal Cancer
**PURPOSE**

This guideline synthesizes the most recent colorectal cancer screening guidelines recommendations from the American Cancer Society, the American Society of Colon and Rectal Surgeons, Centers for Disease Control, and The U.S Preventive Services Task Force. The recommendations presented in these guidelines are targeted to low or average risk individuals (65 to 75 percent of people). The treatment and management of colorectal cancer is beyond the scope of these guidelines.

The main points of the guidelines are to:

- Increase the number of individuals who are up-to-date with colorectal cancer screening.
- Promote physician and patient discussion of colorectal cancer risk and available screening tests to increase patients' participation in screening.
- Abandon unproductive processes for colorectal cancer screening such as:
  a. patients with history of colorectal cancer who receive FOBT
  b. Patients with a history of colorectal cancer who receive flexible sigmoidoscopy.

Blue Cross Blue Shield of Massachusetts supports screening for colorectal cancer with a colonoscopy every 10 years for low- to average-risk individuals (consult subscriber certificate for preventive care benefits).

**COLORECTAL CANCER SCREENING FACTS**

Colorectal cancer, or cancer of the colon or rectum, is the second leading cause of cancer-related deaths in the United States for both men and women combined. An estimated 129,400 new cases of colorectal cancer occurred in the United States during 1999. In 2000, approximately 130,000 cases of the disease will be diagnosed, and more than 56,000 deaths will be attributed to this cancer. Colorectal cancer is a disease for which screening and preventive measures have proven effective. The lifetime risk of developing colorectal cancer is 2.5 to 5 percent in the general population. The risk becomes two to three times higher in 5 to 10 percent of people who have a first-degree relative with an adenomatous colon polyp or colon cancer. The lifetime risk of dying of colorectal cancer in the U.S. has been estimated to be 2.6%.

**WHO SHOULD GET SCREENED**

Although there is limited information on the optimal age to begin or end screening, the age groups in which screening has been shown to decrease mortality are ages 50-80 for FOBT and over 45 for sigmoidoscopy. The recommendations in these guidelines focus mainly on low- to average-risk individuals aged 50-75 years old, with no personal history of polyps/and or colorectal cancer, no family history of colorectal cancer in first degree relative and no other risk factors. Since colorectal cancer is slow-growing in adults older than age 65 and of average-risk who are expected to live an additional 13 years, (the mean life expectancy at 75 years of age is 12 years), screening can be discontinued at age 75 years in most elders who have been adequately screened up to that age. Screening beyond this age is at the physician’s discretion according to the individual’s particular medical profile.

**Colorectal Cancer Screening Guidelines**

Blue Cross Blue Shield of Massachusetts advocates screening for colorectal cancer for low- to average-risk individuals by one of the following screening test beginning at age 50 years.

1. Fecal occult blood testing annually (especially for individuals nervous about other tests)
2. Flexible sigmoidoscopy
3. Double contrast barium enema (DCBE)
4. Colonoscopy
The Role of Polyps in Colorectal Cancer
Polyps can be hyperplastic or adenomatous. Between 70 to 90 percent of colorectal cancers occur from adenomatous polyps, and 10 to 30 percent from sessile adenomas. The larger the polyp, the greater the risk of malignancy. The average time from onset of a polyp to onset of carcinoma, called the "dwell time" is 10 to 15 years. Dwell time varies with the location of the cancer. Small or hyperplastic polyps of 5 mm have very little malignant potential. Polyps between 5 to 10 mm are considered small, and polyps ≥ 10 mm are considered large. Polyps > 2 cm have a 50 percent chance of becoming malignant.

Options for Colorectal Cancer Screening
Aggressive removal of colon polyps is the standard approach to cancer prevention. Screening and polypectomy can reduce the rate of colon cancer by approximately 80 percent.

1. Digital rectal examination
The digital rectal examination is of limited value as a screening test for colorectal cancer. The examiner's finger, which is only 7-8 cm long, has limited access to the rectal mucosa, which is 11 cm in length. A negative digital examination provides little reassurance since only fewer than 10 percent of tumors can be palpated by the examining finger.

2. Fecal Occult Blood Testing (FOBT)
   The performance and effectiveness of FOBT must be viewed in the context of confirmatory diagnostic evaluation
FOBT detects blood in the stool and is useful as a screening option because cancers and adenomatous polyps bleed more than normal mucosa. Screening is usually based on two samples from three different stool specimens. However, colorectal cancers often do not bleed in the early stage, when it is most curable. Thus cancers found by FOBT are more likely to be advanced than those found by sigmoidoscopy or colonoscopy, Dukes stage C or D (see table). FOBT is a low-cost and non-invasive test. Patients with a positive test will need to undergo a colonoscopy to confirm the diagnosis.

Annual screening is recommended. Complications of FOBT result mostly from the false-positive aspects of the test. Patient compliance rates in studies of FOBT vary widely, from 30 to 90 percent.

The limitations of FOBT are:

a. Limited for early detection. Most useful in detecting cancer because larger polyps are most likely to bleed.

b. Substantial number of false-positive tests is an important concern (discomfort, cost, and possible complications associated with follow-up diagnostic evaluations such as colonoscopy and barium enema). Due to the false-positive rate, about one-third of the entire screened population of asymptomatic patients underwent colonoscopy for abnormal FOBT results within a 13-year period.

Flexible Sigmoidoscopy
Screening with the 60 cm flexible sigmoidoscope allows the visualization of the left side of the colon. For patients with identified suspicious lesions, a biopsy needs to be performed. If the pathologic finding is an adenoma, a colonoscopy is the appropriate follow-up procedure. A disadvantage of flexible sigmoidoscopy screening is that it detects only 65-75 percent of polyps and about half of all colorectal cancers. Sigmoidoscopy can also produce false-positive results, primarily by detecting polyps that are unlikely to become malignant during the individual's lifetime.
FOBT and Sigmoidoscopy
One controlled trial has studied the benefit of adding FOBT to screening sigmoidoscopy. After 5 to 11 years of follow-up, mortality from colorectal cancer was lower in those receiving combination screening.

Double-Contrast Barium Enema (DCBE)
Available data suggest that the sensitivity of DCBE is 50 to 80 percent for polyps < 1 cm in diameter, 70 to 90 percent for polyps > 1 cm, and 55 to 85 percent for Dukes Stage A and B cancers. Lack of sensitivity is mostly due to inadequate visualization of parts of the bowel and to errors in interpretation. Positive findings lead to a colonoscopy.

Colonoscopy
Colonoscopy is considered the gold standard for diagnosing colorectal cancer. Colonoscopy permits the evaluation of the entire colon. The most important advantage of colonoscopy is to allow both diagnosis and removal of adenomatous polyps and treatment of cancer. Colonoscopy can detect cancers and polyps; it is less accurate in detecting small polyps. Complications of colonoscopy include perforation, hemorrhage, respiratory depression due to sedation, arrhythmia during the procedure, and transient abdominal pain.

Polyp Surveillance
If the biopsy report is normal mucosa, return to screening schedule displayed in the main algorithm of this guideline. Patient counseling on education should occur at this time.

There is a lack of evidence as to the optimal screening interval. National consensus guidelines suggest an interval of 10 years for average-risk, asymptomatic individuals because it takes about 10 years for an adenomatous polyp, especially one <1cm in diameter, to become an invasive cancer. Indirect evidence from the National Polyp Study indicates that few polyps will arise and progress to cancer in less time in patients with no special risk factors.

If findings of adenomatous polyps are found and removed as part of a colonoscopic procedure, the patient now belongs in the increased risk category and should be managed accordingly.
The Dukes classification system of staging for colorectal cancer is the most useful tool for family practitioners to use in assessing the extent of and prognosis for colorectal cancer.

### Modified Dukes Staging System for Colon and Rectal Cancers

<table>
<thead>
<tr>
<th>Stage</th>
<th>Pathologic finding</th>
<th>Mean survival (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Cancer is limited to the muscular mucosa and submucosa</td>
<td>90</td>
</tr>
<tr>
<td>B</td>
<td></td>
<td>60 to 75</td>
</tr>
<tr>
<td>B1</td>
<td>Cancer extends into but not through the muscular mucosa</td>
<td></td>
</tr>
<tr>
<td>B2</td>
<td>Cancer extends through the muscle but does not involve lymph nodes</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C1</td>
<td>Cancer is contained within the confines of the bowel wall and involves lymph nodes</td>
<td></td>
</tr>
<tr>
<td>C2</td>
<td>Cancer extends through the bowel wall and involves lymph nodes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>One positive node</td>
<td>69</td>
</tr>
<tr>
<td></td>
<td>Six or more positive nodes</td>
<td>27</td>
</tr>
<tr>
<td>D</td>
<td>Cancer has metastasized to liver, bone, or lung</td>
<td>5</td>
</tr>
</tbody>
</table>

References


# Guidelines For Colorectal Cancer Screening

<table>
<thead>
<tr>
<th>Risk Category</th>
<th>Relevant Population</th>
<th>Service</th>
<th>Onset (Age)</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low or Average</td>
<td>All people 50 years or older not included in the categories below.</td>
<td>Choose one of the following: FOBT yearly with DCBE or Flex sig. every 3-5 years OR colonoscopy* every 10 years</td>
<td>Age 50</td>
<td>Every 10 years.</td>
</tr>
<tr>
<td>65% to 75% of people</td>
<td>• Single, small (&lt;1cm) adenomatous polyps</td>
<td>Colonoscopy</td>
<td>At time of index polyp diagnosis</td>
<td>Optional follow-up colonoscopy 5 years after polyp removal.</td>
</tr>
<tr>
<td>Moderate</td>
<td>• Large (&gt;1cm) or multiple adenomatous polyps of any size</td>
<td>Colonoscopy</td>
<td>At time of index polyp diagnosis</td>
<td>If normal at 3-5 years.</td>
</tr>
<tr>
<td>20% to 30% of people</td>
<td>• Personal history of curative-intent resection of colorectal cancer</td>
<td>Colonoscopy</td>
<td>Within 1 year after resection</td>
<td>If normal at 3-5 years.</td>
</tr>
<tr>
<td></td>
<td>• Colorectal cancer or adenomatous polyps in first-degree relative younger than age 50-60, or in two first-degree relatives of any age.</td>
<td>Colonoscopy or alternatively DCBE and Flex.sig.</td>
<td>Age 40 or 10 years before the youngest case in the family, whichever is earlier</td>
<td>If normal at 3-5 years.</td>
</tr>
<tr>
<td></td>
<td>• Colorectal cancer in first-degree relative older than age 50-60</td>
<td>Colonoscopy or DCBE and Flex.sig</td>
<td>As per risk recommendations. Begin at age 40</td>
<td>If normal every 5 years.</td>
</tr>
<tr>
<td>High risk</td>
<td>• Family history of familial adenomatous polyposis</td>
<td>Early surveillance with endoscopy; counseling to consider genetic testing and referral to a specialty center</td>
<td>Puberty</td>
<td></td>
</tr>
<tr>
<td>6% to 8% of people</td>
<td>• Family history of hereditary non-polyposis colon cancer</td>
<td>Colonoscopy and counseling to consider genetic testing</td>
<td>Age 20 or 10 years before the youngest case in the family, whichever is earlier.</td>
<td>Every 1-2 years.</td>
</tr>
<tr>
<td></td>
<td>• Inflammatory bowel disease (ulcerative colitis, Crohn's disease)</td>
<td>Colonoscopy with biopsies for dysplasia</td>
<td>8 years after start of pancolitis; 12-15 years after start of left or right sided colitis</td>
<td>Every 1 to 2 years.</td>
</tr>
</tbody>
</table>

## Strategies for screening:

- Blue Cross and Blue Shield of Massachusetts supports screening with colonoscopy every 10 years for low- or average-risk individuals (consult subscriber certificate for preventive care benefits).
- If both FOBT and a flex.sig are performed at a given time, the FOBT should be done first. A positive result is an indication for colonoscopy and obviates the need to do a flex.sig.
- If a patient has a negative colonoscopy because of a false-positive FOBT, rescreening is not necessary except for patients of moderate-to-high-risk as noted above.
- Following a negative colonoscopy there is no need to do an upper GI evaluation unless the screened individual has repeated evidence of upper GI tract symptoms, iron-deficiency anemia, or blood in the stools.
- Screening should always be individualized.
Diabetes Mellitus, Type 2
Diabetes Treatment Guidelines

MASSACHUSETTS GUIDELINES FOR ADULT DIABETES CARE

In 1999 the Department of Public Health, Blue Cross Blue Shield of Massachusetts, and other health plans in Massachusetts collaborated to formulate a common set of guideline recommendations for adult diabetes care. If you wish to obtain a full copy of the guidelines contact the Massachusetts Department of Public Health at: www.state.ma.us/dph/diabcon.htm

For easy reference we have condensed the guidelines into three algorithms: management of type 2 diabetes, glycemic control, and ongoing management.

Diabetes poses a significant public health challenge. Some 800,000 new cases are diagnosed each year. The occurrence of diabetes, especially type 2 diabetes and the associated complications are increasing. Diabetes is a costly disease. In 1997, the per capita expenditure for an individual with diabetes was $10,071 versus $2,669 for a person without diabetes (a 3.8-fold increase in treatment cost).

Does Treatment Matter? What the Evidence Tells us

At this point in time there is solid evidence that good diabetes care makes a great deal of difference. Results of the Diabetes Control and Complications Trial (DCCT) confirmed that intensive glycemic control in patients with type 1 diabetes affects the rate at which chronic complications develop. The DCCT strongly demonstrated the link between control and complications. Microvascular complications such as retinopathy, nephropathy, and neuropathy were significantly reduced when the average blood glucose level in the intensive control group was approximately 155 mg/dL for 6 years.

Results of the United Kingdom Prospective Diabetes Study (UKPDS), a larger, longer, and less tightly controlled study of type 2 diabetes came to the same conclusion - that microvascular complications in the study’s older cohort of patients were linked to glycemic control. By far, the most critical finding of the UKPDS was the effect of blood pressure control on cardiovascular events. Several other studies have linked the total cardiovascular event rate, an indication of large-vessel disease, is directly correlated with glycemic control.

Diabetes education, medical nutrition therapy, prophylactic use of aspirin, vaccines against flu and pneumonia, and symptomatic treatment of neuropathic pain have been proven effective. For a variety of reasons, these scientifically and economically justified prevention programs are infrequently used in daily clinical management of persons with diabetes. Strategies that would lessen the burden of this disease are not used regularly, resulting in unnecessary illness, disability, death and expense.

Consult the Catalog of Patient Education Resources for tools to help patients manage their diabetes.
Management of Type 2 Diabetes Mellitus: accounts for approximately 90% of diabetic patients in the U.S.

**Type 2 Diabetes**

**History and Physical Examination**

- **Needs stabilization?**
  - **YES**
    - *Initial stabilization for outpatients requiring immediate insulin treatment*
  - **NO**

**Recommend self-management program:**
- A. Nutrition therapy — weight loss
- B. Physical activity
- C. Education for self-management
- D. Foot care

**Set individual treatment goals:**
- A. Glycemic control — HbA1c < 7%
- B. Lipid levels — LDL ≤ 100mg/dl
- C. Blood pressure control:
  - BP ≤ 130/85mm Hg
- D. Smoking cessation if indicated

- **Needs stabilization?**
  - **YES**
    - *See Ongoing Management Algorithm for maintaining treatment goals and complication prevention*
  - **NO**

**Definition of Type 2 Diabetes**

**Diagnosis of diabetes:**
- • Fasting plasma glucose > 126 mg/dl (7.0 mmol/l) *(fasting means no caloric intake for > 8 hours)*
- • Random plasma glucose ≥ 200 mg/dl plus typical symptoms of diabetes *(Casual means anytime without regard to meals)*

**Symptoms:**
- • Polydipsia
- • Blurred vision
- • Weight loss
- • Polyuria
- • Vaginitis
- • Polyphagia

**Treatment goals not met:**
- A. Modify treatment based on appropriate conditions:
  - (hypertension, lipid, smoking cessation)
- B. See Glycemic Control Algorithm
- C. Consider referral to dietician and/or specialists
Glycemic Control Algorithm

Pharmacologic agent— Which is best?

- Insulin
- Oral Agent

Prescribe oral agent
Titrate to goal

Glycemic control achieved?

- YES
  - See Ongoing management Algorithm
- NO
  - Add second oral agent

Glycemic control achieved?

- YES
  - See Ongoing Management Algorithm
- NO
  - Insulin alone or Insulin + oral agent

In determining which Rx alternative is best, consider the following in a patient...
- Severity of disease
- Capability and motivation
- Presence of concurrent diseases and complications
- Preferences on the use, expected therapeutic effects, and possible side effects of oral agents and insulin

See Ongoing Management Algorithm
Ongoing Management Algorithm

**Ongoing management and follow-up of individuals with diabetes**

### Maintain treatment goals
- Nutrition—weight loss
- Exercise
- Monitor HbA1c every 3-6 months
- Monitor lipid profile yearly
- Monitor BP each visit
- Ask about ASA use
- Ask about tobacco use

### Annual assessment of complications
- A. Targeted history and physical exam
- B. Specialist dilated eye exam
- C. Renal assessment
- D. Comprehensive foot exam with risk assessment
- E. Cardiovascular complication assessment
- F. Special considerations

### Treatment and referral for complications
- A. Nephropathy
- B. Neuropathy
- C. Retinopathy
- D. Cardiovascular and cerebrovascular disease
- E. Peripheral vascular disease

---

The physician and patient must discuss and document treatment goals at each visit.

---

Are goals continuing to be met?

- **YES**
- **NO**

### Treatment goals not met
- A. Modify treatment based on specific conditions (hypertension, lipid, smoking cessation) and/or
- B. See Glycemic Control Algorithm and/or
- C. Consider referral to dietician or specialists


Depression: Diagnosis and Treatment
Depression is one of the most common illnesses in our society and the most common psychiatric symptom encountered by primary care physicians. Depression is a serious disabling illness. It is estimated that one in five individuals is affected by a mood disorder in his or her lifetime. The economic costs to society and personal costs to individuals and family are enormous. Nearly twice as many women (12 percent) as men (seven percent) are affected by a depressive illness each year. The World Health Organization reports that major depression is the fourth cause worldwide of loss in disability, and will be the second most important cause of disability by 2020. The good news about depression is that, if detected and treated appropriately, a complete remission occurs in 80 percent of cases. Two serious types of clinical depression are major depression and bipolar disorder.

The Diagnosis and Treatment of Depression Guideline is based on the Agency for Health Care Research and Quality, Depression Guideline Panel, and Depression in Primary Care (1993), augmented with current data when available.

OBJECTIVES

Patients with depression frequently present in primary care with somatic complaints only.

THE DIAGNOSIS OF DEPRESSION SHOULD BE CONSIDERED EARLY BY APPLYING SPECIFIC CRITERIA, NOT BY “RULING OUT” ALL OTHER DISEASES.

This guideline is designed to assist primary care clinicians to:

- Detect and document criteria related to depression in patients with frequent somatic complaints, multiple medical visits, fatigue, sleep disturbances, excessive worries and/or unexplained functional impairment.

- Evaluate patients with these presentations by asking specific questions about mood, anxiety, social and occupational functioning and the ability to enjoy life.

- Describe effective treatments to reduce symptoms and restore to previous level of psychosocial functioning.

REIMBURSEMENT

BCBSMA is committed to compensating primary care physicians for diagnosing patients with depression. Simply bill the appropriate level of evaluation and management office visit, CPT codes 99201 through 99215, and the ICD.9.CM diagnosis for depression. We do not reimburse PCPs for psychotherapy codes used by non-mental health specialists — only evaluation and management codes and psychopharmacology.

REFERRAL TO MENTAL HEALTH SPECIALISTS

Patients with depression should be referred to a mental health specialist based on the judgement of the primary care physician. While depression can be treated in the primary care setting, many cases of severe or refractory depression do require referral. BCBSMA strongly encourages communication of essential information between mental health professionals and PCPs.

GERIATRIC DEPRESSION

More than 2 million of the 34 million Americans age 65 and older suffer from some form of depression. Major depression, a significant predictor of suicide in elderly Americans, is a widely underrecognized and undertreated medical illness. Older Americans are disproportionately likely to commit suicide. Comprising 13 percent of the US population, individuals ages 65 and older account for 20 percent of all suicide deaths, with white males being particularly vulnerable. The highest rates of suicide is for white men 85 and older: 65.3 deaths per 100,000 in 1996 (the most recent year for which statistics are available), about six times the national U.S. rate of 10.8 per 100,000. Both physicians and patients may have difficulty recognizing the signs of depression. The general principles for treatment of adults with major depressive disorders apply as well to elderly patients (Strength of the Evidence = A).

74
Depression Summary Flowchart

1. **Suspect Depression**
   A. Presentations (in addition to obvious sadness and anxiety) include:
      - multiple somatic complaints
      - multiple medical visits (>5 per year)
      - fatigue
      - work or relationship dysfunction
      - sleep disturbances
      - multiple worries

2. **Interview for key symptoms of depression**
   Depression mood, anhedonia or vegetative symptom, suicidal ideation

3. **Evaluate for secondary causes of depression**
   A. Psychosocial stressors
   B. Medical illness
   C. Medications and withdrawal from medications
   D. Current substance abuse

4. **Address secondary cause and re-evaluate**

5. **Emergency?**
   NO

6. **Diagnose and Characterize Depression with clinical interview:**
   A. DSM-IV criteria
   B. History of present illness (onset and severity of symptoms, functional impairment, past episodes and psychosocial stressors.)
   C. Pertinent medical history
   D. History of substance abuse
   E. Psychiatric co-morbidities

7. **Major Depression?**
   NO

8. **Consider other somatoform disorders**

9. **Treatment Plan:**
   Patients with more severe depression should be contacted by physician at least three times between diagnosis and week 12

10. **Week 12 Evaluation:**
   - Assess response
   - Schedule follow-up visit

11. **Failure to Respond:**
   - Reassess diagnosis
   - Reassess adequacy of treatment
   - Consider referral to psychiatry

Useful interview questions for depression:
- Are you often sad, down, blue, or teary?
- Do you have your usual interest in, and look forward to, enjoyable activities?
- Are you able to have fun and experience joy?

Communicating treatment plan to a patient:
- Articulate that depression is a medical disorder.
- Integrate patient’s presenting complaint.
- Explore medication attitudes.
- Discuss adherence issues.
- Emphasize treatment instructions.
  - Take medication every day.
  - It will take 2-4 weeks to notice an effect.
  - Continue taking medication, even if you feel better.
  - Call the office if you have questions.
  - Don’t stop taking medication without discussing with me.

For an updated listing of mental health professionals dial 1-888-MED-POLI and request document #800.
1. SUSPECT DEPRESSION

Depression can be a primary disorder or secondary to substance abuse, withdrawal from substance abuse, other psychiatric illnesses, certain medical illnesses and/or certain medications. Many patients with depression do not complain of depressed mood, and physicians need to suspect depression based on a profile of risk factors and common presentations.

Presentation for depression includes:

- Multiple somatic complaints
- Fatigue
- Sleep disturbance
- Multiple (>5 per year) medical visits
- Work or relationship dysfunction
- Multiple worries

2. INTERVIEW FOR KEY SYMPTOMS OF DEPRESSION

Depressed mood or anhedonia (diminished interest or pleasure in activities) is necessary to diagnose depression. If you suspect depression on the basis of risk factors or common presentations, ask about depressed mood and anhedonia. Useful questions include:

- Are you often sad, down, blue, or teary?
- Do you have your usual interest in and look forward to enjoyable activities?
- Are you able to have fun or joy?

Sometimes depressed patients will initially deny depressed mood and anhedonia. If you still suspect depression after the patient denies these symptoms, ask about vegetative symptoms (sleep disturbances, changes in appetite and energy level). If vegetative symptoms are present, ask again about depressed mood and anhedonia. If either is endorsed, proceed to a full clinical interview.
3. EVALUATE FOR SECONDARY CAUSES OF DEPRESSION

A. Psychosocial Stressors

- Stressful life events include loss (death of a loved one, divorce), domestic abuse/violence, traumatic events (car accident), and major life changes (job change). Emotional and behavioral reactions to these social stressors include symptoms of depression.

- Patient with adjustment reactions may need only time and support. If symptoms are persistent or debilitating, medication and/or psychotherapy should be considered.

- Since these adjustment reactions can develop into a major depression or anxiety disorder, follow-up and re-evaluation are necessary.

- In the elderly, psychosocial difficulties that may interfere with optimal treatment response include: negative intercurrent life events, ongoing severe interpersonal conflicts about dependency and role transitions, prolonged or unresolved grief, and social isolation.

B. Medical Illness

The close relationship of mind and body results in the presentation of medical illness with depression in various forms consider:

- Ruling out underlying medical conditions (hypothyroidism, stroke)

- Medical illness may trigger a psychological reaction to prognosis, pain or disability (e.g., in a patient with cancer)

- Medical illness may exist concomitantly in a patient with primary mood disorder

A past medical history and brief review of systems is generally sufficient to rule out medical disorders causing depression.

Perform a focused physical examination and laboratory test(s) as indicated by the review of systems. The benefit of screening laboratory tests including thyroid tests to evaluate depression and anxiety has not been established.

Medications Reportedly Associated with Depression*

Cardiovascular Drugs
- Alpha-methyldopa (±)
- Reserpine (+ +)
- Propranolol (±)
- Guanethidine
- Clonidine
- Thiazide diuretics
- Digitalis

Anticancer Agents
- Cyclosporine

Hormones
- Oral contraceptives (±)
- ACTH (corticotropin)
- Anabolic steroids (±)
  and glucocorticoids (± ±)

Anti-Inflammatory/ Anti-Infective Agents
- Nonsteroidal Anti-inflammatory agents
  Ethambutol
  Disulfiram
  Sulfonamides
  Baclofen
  Metoclopramide

Psychotropics
- Benzodiazepines
- Neuroleptics

Others
- Cocaine (withdrawal) (± ±)
- Amphetamines (withdrawal) (± ±)
- L-dopa (±)
- Cimetidine
- Ranitidine

SOURCE: Depression Guideline Panel, Depression in Primary Care, 1993 (Agency for Health Care Research and Quality).

* This is only a partial list.
Depression in Primary Care — Detailed Summary

Reliance on laboratory tests should be increased if:

- The medical review of systems detects symptoms that are rarely encountered in mood disorders or
- The patient is older
- The first depressive episode occurs after the age of 40
- The depression does not respond fully to routine treatment

C. Review Medication and Withdrawal from Medication

- Review medication list. Some medications may be associated with depression.

4. ADDRESS SECONDARY CAUSE AND RE-EVALUATE

5. REASONS FOR CONSULTATION AND REFERRAL

A. Consultation

- Practitioner unsure of diagnosis or treatment
- Patient’s comorbid conditions raise medication dilemmas, e.g., may require ECT as first line of treatment
- Patient not responding to medication or non-adherent

B. Referral for Care

Patient shows signs of:

- Distorted reasoning
- Psychosis (hallucinations, delusions)
- Bipolar disorder
- Suicidal ideation
- Severe functional impairment

6. DIAGNOSE

<table>
<thead>
<tr>
<th>Major Depressive Episode — DSM-IV Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Major Depression</strong> (Over the last 2 weeks, nearly every day)</td>
</tr>
<tr>
<td>• Depressed mood most of the day</td>
</tr>
<tr>
<td>• Markedly diminished interest or pleasure in activities</td>
</tr>
<tr>
<td>• Significant weight loss or gain unrelated to dieting</td>
</tr>
<tr>
<td>• Insomnia or hypersomnia</td>
</tr>
<tr>
<td>• Psychomotor agitation or retardation</td>
</tr>
<tr>
<td>• Fatigue or loss of energy</td>
</tr>
<tr>
<td>• Feeling of worthlessness or inappropriate guilt</td>
</tr>
<tr>
<td>• Diminished concentration or indecisiveness</td>
</tr>
<tr>
<td>• Recurrent thoughts of death</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Initial Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Treatment Goals</strong></td>
</tr>
<tr>
<td>• Reduce/remove signs and symptoms</td>
</tr>
<tr>
<td>• Restore occupational and psychosocial functioning</td>
</tr>
<tr>
<td>• Reduce likelihood of relapse/recurrence</td>
</tr>
<tr>
<td><strong>Available Treatments</strong></td>
</tr>
<tr>
<td>• Watchful waiting</td>
</tr>
<tr>
<td>• Medication</td>
</tr>
<tr>
<td>• Consultation</td>
</tr>
<tr>
<td>• Psychotherapy</td>
</tr>
<tr>
<td>• Referral for:</td>
</tr>
<tr>
<td>- Psychotherapy</td>
</tr>
<tr>
<td>- Light therapy</td>
</tr>
<tr>
<td>- ECT</td>
</tr>
<tr>
<td>- Hospitalization</td>
</tr>
</tbody>
</table>

SOURCE: Depression Guideline Panel, Depression in Primary Care, 1993 (Agency for Health Care Research and Quality).
7. MAJOR DEPRESSION?
If criteria for major depression is met, record appropriate diagnosis in chart.

8. CONSIDER NON-DEPRESSION OR SOMATOFORM DISORDERS
Patients with some depressive symptoms who do not meet the DSM-IV criteria for Major Depression often respond positively to antidepressant medications. These depressive symptoms can cause significant impairment, suffering, and disability.

9. TREATMENT PLAN
Pharmacologic and/or non-pharmacologic interventions (psychotherapy), are effective in treating depression. Factors to consider in making treatment recommendations are: symptoms severity, presence of psychosocial stressors, and presence of co-morbid decisions.

Supportive therapy by the physician in the primary care setting is not the same as a course of psychotherapy with a mental health professional. However, education, support and reassurance by the physician are critical. Support/reassurance includes asking the patient for his/her ideas regarding the cause of depression.

a. Provide basic information on the causes, diagnosis, treatment and management of depression.

b. Encourage patients to help manage their illness in conjunction with their provider.

Antidepressant medications are up to 90% effective for treating major depression, and in most cases recommended as the first line of treatment for moderate to severe depression. For all forms of depression, the combination of psychopharmacology and psychotherapy should be considered.
TCAs and SSRIs are frequently chosen as first-line therapy because of simplicity and minimal side-effects and ease of use. For antidepressant medications, adherence to a therapeutic dose and meeting clinical goals are more important than the specific drug selected. If the initial medication response is incomplete after six weeks at therapeutic dose (e.g., partial positive response to medication), add or substitute another treatment modality.

10. SCHEDULING FOLLOW-UP CONTACTS AND VISITS

Within 7 days
- Telephone contact

After start of medication
- Follow-up visits should be scheduled:
  - One to four weeks after initiation of medication
  - Monthly until patient is stable (week 12), then every three months

- Time between visits depends on:
  - Symptom severity
  - Need for titration
  - Medication response

Providing patient support and education:
- Allows monitoring of response to determine titration
- Minimizes side effects
- Optimizes adherence
- Facilitates dosage adjustments

Referral to a mental health specialist
- Monitor need for referral

The updated Agency for Health Research and Quality on newer antidepressants (1998) reports high drop out rates observed in studies (30% on average) these rates are paralleled by high rates of medication discontinuation in observed clinical practice.

The evidence suggests that interventions that improve compliance and outcomes include:
- Frequent telephone or in-person follow-up to titrate dose, and monitor symptoms and adverse effects.
- Patient Education

All patients should be evaluated at least three times between diagnosis and week 12.
11. FAILURE TO RESPOND

If the patient has not responded at all or has only a minimal symptomatic response to medication by six weeks, three steps are needed:

- Reassessment of the adequacy of the diagnosis and
- Reassessment of the adequacy of treatment
- Consider referral to psychiatry if:
  - Clinician discomfort with the case.
  - Presence of other psychiatric conditions (e.g., personality disorder, history of mania).
  - Initial treatment does not result in a successful outcome.
  - Presence of severe symptoms and impairment in patient.
  - Patient’s request for more specialized treatment.
  - Chemical dependency questions.

Herbal Remedies:

Hypericum (St. John’s Wort) appears to be more effective than placebo for the short-term treatment of mild to moderately severe depressive disorders. Adverse effects occur significantly less frequently with hypericum compared with first generation tricyclic antidepressants. These findings are tempered by the relatively small number of trials and evidence of publication bias favoring positive trials. It is not clear whether hypericum is more or less effective than standard antidepressive agents.

## Depression in Primary Care — Detailed Summary

<table>
<thead>
<tr>
<th>Drug</th>
<th>Therapeutic Dose Start At:</th>
<th>Side Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DOSAGE RANGE</strong></td>
<td></td>
<td></td>
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<tr>
<td><strong>SSRIs</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fluoxetine (Prozac)</td>
<td>20 mg/day</td>
<td>Nausea, headache</td>
</tr>
<tr>
<td></td>
<td>10 mg/day for elderly</td>
<td></td>
</tr>
<tr>
<td>Paroxetine (Paxil)</td>
<td>20 mg/day (10mg for elderly)</td>
<td>Somnolence, dry mouth, constipation</td>
</tr>
<tr>
<td>Sertraline (Zoloft)</td>
<td>50 mg/day</td>
<td>Loose stools, nausea, headache</td>
</tr>
<tr>
<td>Citalopram (Celexa)</td>
<td>20 mg/day</td>
<td>Dry mouth, nausea, somnolence, insomnia</td>
</tr>
<tr>
<td>Fluvoxamine (Luvox)</td>
<td>20 mg/day</td>
<td>Nausea, somnolence, insomnia, headache</td>
</tr>
<tr>
<td><strong>TCAs</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Desipramine (Norpramin)</td>
<td>25-50 mg/day</td>
<td>Relatively more activating</td>
</tr>
<tr>
<td>Nortriptyline (Pamelor, Aventyl)</td>
<td>25-50 mg/day</td>
<td>Relatively more sedating</td>
</tr>
</tbody>
</table>

**Medication Selection Guidelines**
- Safety (overdose)
- Side effects
- Ease of use in achieving therapeutic dose
- Prior response — If prior response was positive, new Rx for same medication is probably appropriate. Ask why patient stopped taking medication.
- Comorbidities
- Half-life
- Cost

SOURCE: Depression Guideline Panel, Depression in Primary Care, 1993 (Agency for Health Care Research and Quality).

Unless a maintenance treatment plan is planned, antidepressant Rx is discontinued at four to nine months after complete remission, and tapered over several weeks.

Consider life-long maintenance treatment if three or more episodes of major depression.
Gastroesophageal Reflux Disease
The purpose of this guideline is to give primary care physicians who are treating GERD a synthesis of the American College of Gastroenterology (ACG) guidelines for the treatment of GERD. The latest version of the ACG was updated in 1999. It is almost impossible to live today without knowing about heartburn. GERD is the most prevalent gastrointestinal disorder treated in primary care. About 40 percent of Americans experience the symptom at least once a month, some 15 percent are suffering enough to use an antacid at least once a week, and 7 percent have daily heartburn.

The main points of the revised guidelines are:

a. Acid suppression is the mainstay therapy for GERD.

b. Lifestyle modifications are an important component of GERD treatment, and need to be reinforced at every step of the treatment.

c. H2RAs should not be co-administered with Proton Pump Inhibitors (PPIs). Since H2RAs decrease the activity of the gastric pump, PPIs act by blocking active proton pumps. as a concomitant H2RAs can severely decrease the acid-suppressive effect of a PPI.

d. Neither step-up nor step-down therapy is superior in terms of cost effectiveness or efficacy. Patients who have initially failed high-dose H2RAs therapy are unlikely to respond to H2RAs in step-down therapy.

e. Educate patients on the timing of taking PPIs. (15 to 30 minutes before breakfast for maximal benefit). H2RAs are clinically effective when taken before bedtime, PPIs are not.

Medical Presentation of GERD

Simply defined, GERD is the backward flow of gastric contents into the esophagus, making GERD an esophagogastric motility disorder.

The most common GERD symptoms are:

a. Heartburn

b. Regurgitation of gastric contents

Although heartburn is the most prominent manifestation of GERD, this common gastrointestinal disorder can produce a wide range of atypical symptoms such as:

a. Laryngitis or pharyngitis

b. Hoarseness

c. Chronic cough

d. Wheezing

e. Asthma

f. Gastrointestinal bleeding

g. Dental carries

h. Chest pain

Reflux has many causes. The most frequent cause is the malfunction of the lower esophageal sphincter (LES), the ring-like muscles of the lower esophagus which pinch the tube closed and prevent food from returning back to the esophagus. The LES relaxes during normal swallowing, a minute amount of reflux occurs as the stomach fills with food. This small and brief amount of reflux is usually not troublesome. Trouble occurs when the reflux is more pronounced or prolonged because the esophagus lacks the barrier that protects the stomach from its digestive acid and enzymes. Stomach acid then return to the esophagus producing irritation and inflammation. The erosive nature of gastric acid in reflux material can lead to esophageal injuries such as esophagitis, peptic ulcer, strictures and Barrett's esophagus, which is the most serious consequence of GERD.
Gastroesophageal Reflux Disease (GERD) Treatment Guidelines

**Initial Therapy — Lifestyle Modifications and Over the Counter Therapy**

The goal of therapy is symptom relief from the patient's perspective, improvement of symptoms, healing of esophagitis, and prevention of complications from the physician's perspective. Therapy needs to be individualized. The symptoms of GERD range from mild to severe. For patients with mild uncomplicated, uncomplicated GERD lifestyle modifications and occasional antacids will reduce symptoms.

Most GERD patients do not need any diagnostic tests. Common, mild to moderate symptoms should be treated empirically as reflux; if the treatment is successful, a diagnosis of GERD is established without testing. Tests are indicated if the symptoms are atypical, severe, or refractory to treatment.

**Alarm Symptoms**

If symptoms such as dysphagia, melena, hematemesis, persistent vomiting, involuntary weight loss >5 percent of body weight, are present, patients should be treated without the delay of an empiric therapeutic trial, and refer to a gastrointerologist immediately.

**Empiric Treatment**

a. *Lifestyle modifications.* Physicians should stress dietary prudence to patients: quit smoking, avoid foods that produce symptoms such as caffeine, chocolate, fatty foods, alcohol, and foods containing garlic or onion, spicy foods or foods with a high acid content such as citrus or tomatoes. A low fat-diet is helpful, and patients should be counseled to lose weight if appropriate.

b. *Antacids:* Antacids such as Maalox, Mylanta, Tums, Rolaids and many others similar products reduce symptoms by buffering and neutralizing gastric acid. These products are generally safe. Antacids that contain magnesium may produce diarrhea, those that contain aluminum, constipation.

**Phase I. Empiric Rx therapy with generic H₂ antagonists** is appropriate for patients who have failed lifestyle modifications and symptoms are frequent. Although H₂ blockers don’t have as quick an onset of action as antacids (90 vs. 30 minutes or less), they keep acidity under control for longer periods (9 hours vs. 1).

- Cimetidine (Tagamet) 800 mg BID or 400 mg four times a day
- Ranitidine (Zantac) 150 mg BID
- Famotidine (Pepcid) 20 mg BID for 6 weeks
- Nizatadine (Axid) 150 mg BID

H₂RAs inhibit between 60-70 percent of total 24-hour acid secretion, and they are potent inhibitors of nighttime acid secretion but somewhat weak inhibitors of meal-induced acid secretion. About two thirds of patients can be expected to experience a positive response to Phase I therapy. A step-down approach may be indicated for patients who experience reflux only twice a week with an H₂RA.

**Phase II. Patient-directed Therapy with PPI.** Acid suppression is the pillar of GERD treatment. The updated ACG guidelines emphasize the importance of PPIs which nearly eliminate stomach antibiotics, barbiturates, and theophylline have the potential to relax the LES, promoting reflux.

It is recommended to elevate the head during sleep by using a 6-inch foam wedge to elevate the head and the thorax while sleeping.

Chewing gum is also recommended. The chewing motion has shown to increase salivary flow and the concentration of bicarbonate saliva.
INITIAL THERAPY: Lifestyle Modifications and OTC Tx

- Weight loss if indicated
- Raise head of bed frame
- Avoid overeating, and reclining within an hour or two after meals
- Avoidance of precipitating foods & drinks: Coffee, tea, cola, other caffeinated drinks, greasy, spicy, or acidic food (pickles, lemons, tomatoes), garlic, onions, alcohol, chocolate, mint
- Review drug profile, and consider changes to meds that reduce LES: nicotine, nitroglycerin, calcium, channel blockers, theophylline, barbiturates. Strongly advise patients to quit smoking

4-8 weeks

PHASE I: Empiric Rx Therapy
Patient-directed tx with generic H₂ antagonists

- Cimetidine (Tagamet) 400-800mg BID
- Ranitidine (Zantac) 150-300 mg BID
- Famotidine (Pepcid) 20-40 mg BID
- Nizatidine (Axid)150 mg BID

no relief

PHASE II: 6-8 weeks
Patient-directed therapy with PPI:*

- Lansoprazole (Prevacid) 15mg QD
- Omeprazole (Prilosec) 20mg QD

*To maximize benefit, take PPI with first meal of the day.

PHASE III: Endoscopy

POSITVE

(erosions, ulceration, stricture, or intestinal metaplasia/Barrett’s)

NEGATIVE

(normal, or only mild esophagitis/ distal erythema)

(erosions, ulceration, stricture, or intestinal metaplasia/Barrett’s)

NEGATIVE

(erosions, ulceration, stricture, or intestinal metaplasia/Barrett’s)

GERD is a chronic disease. Relapse within 6 months of discontinuing therapy is the rule. Maintenance therapy at the last effective dose may be required.

Refer to Gastroenterologist

• 24-hour pH monitoring of patients with symptoms of unknown cause
• Short term administration of high dose PPI can reduce symptoms

ALARM SYMPTOMS
These clinical features may suggest an underlying disease requiring diagnosis and treated without the delay of an empiric therapeutical trial: dysphagia, melena, hematemesis, persistent vomiting, involuntary weight loss >5 percent body weight.

At Every Phase:
Reinforce lifestyle modifications; encourage step-down therapy, gradually titrating meds to symptoms.
Gastroesophageal Reflux Disease (GERD)

Acid. This is especially important for erosive esophagitis and other severe manifestations of GERD. However, this observation does not dismiss the usefulness of H2RAs, which can be effective in patients with milder GERD.

PPI therapy for 6-8 weeks with:

- Lansoprazole (Prevacid) 15 mg QD - If severe 30 mg QD
- Omeprazole (Prilosec) 20 mg QD - If severe 40 mg QD

Phase III. Endoscopy

Endoscopy is used to identify esophagitis, ulceration, stricture and Barrett’s metaplasia. If only mild esophagitis is found, the endoscopy is considered negative and the patient can be treated with short-term administration of high dose PPI; pH monitoring, which checks for abnormal acidity in the esophagus is informative. If endoscopy findings reveal erosions, ulcerations, strictures or intestinal metaplasia, the endoscopy is considered positive and the patient should be referred to a gastroenterologist. The treatment of positive findings is beyond the scope of these guidelines.

Complications of GERD

Recurrent severe reflux can lead to erosive esophagitis, chronic inflammation with or without ulceration. Esophagitis generates mild or severe burning pain, and has the potential to cause bleeding. Even after it has healed, esophagitis occasionally produces strictures — scarring that narrows the tube, making swallowing difficult or painful.

The most serious consequence of GERD is Barrett’s metaplasia, when severe inflammation produces abnormalities in the cells lining the lower esophagus. The abnormal cells are usually less sensitive to acid than normal cells, consequently the pain of esophagitis may diminish or disappear when metaplasia develops. However, the metaplastic cells can continue to evolve into dysplastic cells, which in turn evolve into neoplastic cells, triggering cancer of the esophagus, a disease that is increasingly becoming more common in the past 30 years, with the most increase in white males.

Patients with esophagitis or Barrett’s metaplasia may need prolonged and sometime lifelong therapy.

GERD is a Chronic Disease

GERD is a chronic, life-long disease in most people. Relapse within 6 months of discontinuing therapy is the rule. Maintenance therapy at the last effective dose may be required. However chronic GERD therapy should not be routinely administered to all patients, but reserved for those patients with frequent and rapid symptom recurrence.

At Every Phase

Changing dietary habits go a long way toward controlling heartburn and other manifestations of GERD. The physician needs to reinforce lifestyle modifications, encourage step-down therapy, gradually titrating meds to symptoms.


Low Back Pain
Adult Low Back Pain Management

A conservative approach to the management of acute back pain of less than three months’ duration without red flags is supported by evidence. In the absence of red flags, a detailed history and focused examination are all that is needed to prescribe a conservative program. Ninety percent of back pain patients recover within 4-6 weeks.

**Causes of back pain**
- Pain in the low back is nearly universal. The association between symptoms and anatomic findings is low.
  - It is most commonly due to trauma, poor posture and degenerative conditions. Less common causes include: urinary tract infection, osteoporosis, metastatic tumor, and infection.

**Initial primary care evaluation**
- For over 90 percent of patients with acute low back pain of less than three months’ duration, a careful history and physical (to exclude conditions such as cancer, infection, cauda equina syndrome) are sufficient to make a diagnosis for symptomatic management. X-Ray, MRI, CT and bone scans are not useful in patient with uncomplicated low back pain without red flags. If symptoms continue or worsen, more intensive evaluation is needed.

**History**
The following red flag symptoms include:
- **Malignancy**
  - age > 50 without obvious precipitant for pain episode
  - history of cancer
  - unintentional weight loss
  - failure to improve after 4-6 weeks of conservative management
  - pain at rest

- **Infection**
  - immunosuppression (steroid use, chemotherapy, AIDS)
  - IV drug use
  - symptoms of a urinary infection

- **Cauda Equina**
  - urinary retention
  - saddle numbness: buttocks, posterior-superior thighs and perineal region

- **Nerve Root Compression**
  - numbness or weakness in the leg (numbness or discomfort with radiation past the knee increases the likelihood of a true radiculopathy)
  - history of trauma

**Physical examination**
Should document
- Neuromotor deficits of a myelopathy, cauda equina, or progressive neurological deficits require surgical consultation
- Testing should include ankle dorsiflexion strength, great toe dorsiflexion strength, knee and ankle reflexes, and the sensory exam of lower extremity
- Spinal tenderness on percussion suggests injury, fracture, and possibly bone cancer metastases
- The Straight Leg Raising Test (SLR) evaluates possible nerve root compression. A positive SLR test is defined as pain in the leg that radiates below the knee, with the knee extended and hip flexed between 30° and 60° with the patient supine. The symptoms should be relieved with knee flexion.
- A negative SLR rules out disc herniation in 90% of cases.

**Conservative treatment**
For acute uncomplicated low back pain, time is the most important factor for healing.
- Take patient’s symptoms seriously.
- Give your patient education materials such as: Back Pain from the Arthritis Foundation (1-800-766-9449); members can also call the Blue Care Line, 1-888-247-BLUE, for toll free 24 hour medical advice.
- Reassure patient that 70% of patients will be better within 2 weeks, and 90% will be better before 6 weeks.
- If symptoms are severe, back rest (no more than 3 days).
- Encourage early ambulation and progressive increase in activity.
- Return to work and normal activity as soon as possible with restrictions if necessary.
- Postural advice.

Second line treatment:
- Narcotic analgesics should be used cautiously and for brief periods due to potential addiction to these drugs; muscle relaxants at bedtime.

First line treatment:
- Acetaminophen for acute myalgia; OTC NSAIDS as needed especially if morning symptoms are severe.
Low Back Pain (LBP) Process Summary Flowchart

**Patient Presents with LBP**
- Primary Care Evaluation
  - History
  - Physical Examination

**Consult or refer to back specialist**
- Yes

Classify symptoms by duration and location

<table>
<thead>
<tr>
<th>Acute Low Back Pain</th>
<th>Acute Sciatica</th>
</tr>
</thead>
<tbody>
<tr>
<td>LBP that does not radiate past the knee with the current symptoms for &lt; 6 weeks</td>
<td>LBP with radiation past the knee with current symptoms for &lt; 6 weeks</td>
</tr>
</tbody>
</table>

- Conservative Treatment (X-rays and imaging initially not indicated)
- Physician review low back pain brochure with patient; reassurance about good prognosis, + narcotic analgesic if pain persists/severe, self applied heat or ice

**Follow-up visit 1-3 weeks after initial evaluation if indicated**

- Improving?
  - Yes
    - 70% of patients improve by 2 weeks
  - No

**Consider referring to physical therapist for 2-4 weeks of treatment**

- Improving?
  - Yes
    - 90% of patients improve by 4 weeks
  - No

Comprehensive reevaluation
Consider referral to back specialist
References


5. Deyora, Tsui-Wu YJ. Descriptive epidemiology of low back pain and its related medical care in the United States. 1987; Spine vol 12, (3) 246-68.


Osteoporosis, Prevention and Treatment
OSTEOPOROSIS OVERVIEW

Osteoporosis is a disease characterized by low bone mass and structural deterioration of bone tissue, leading to bone fragility and an increase susceptibility to fractures. Men as well as women suffer from osteoporosis, a disease that can be prevented and treated. Facts about osteoporosis:

- Osteoporosis is a major public health threat for 28 million Americans, 80 percent of whom are women.
- One out of every two women and one in eight men over 50 will have an osteoporosis-related fracture in their lifetime.
- More than 2 million American men suffer from osteoporosis, and millions more are at risk. Each year, 80,000 men suffer a hip fracture and one-third of these men die within a year.
- Osteoporosis can strike at any age, but is more common in older adults.
- Osteoporosis is responsible for more than 1.5 million fractures annually, including 300,000 hip fractures, approximately 700,000 vertebral fractures, 250,000 wrist fractures, and more than 300,000 fractures at other sites.
- Estimated national direct expenditures (hospital and nursing homes) for osteoporosis and related fractures is $14 billion each year.
- Nearly 28 percent of patients with hip fractures are discharged to nursing homes within the year following a fracture.

The guidelines are adapted from recommendations of the U.S. Preventive Services Task Force, the American Association of Clinical Endocrinologists, the World Health Organization, the National Osteoporosis Foundation, and the National Institutes of Health, Osteoporosis and Related Bone Diseases.

DETAILED SUMMARY

Definition of osteoporosis

Osteoporosis implies skeletal fragility and is defined as a loss of bone mass and the extent to which bone mineral density (BMD) is reduced. During one's lifetime, old bone is removed (resorption) and new bone is added to the skeleton (formation). During childhood and teenage years, new bone is added faster than old bone is removed. Bone formation continues at a pace faster than resorption until peak bone mass (maximum bone density and strength) is reached during the mid 20's. After age 30, bone resorption slowly begins to exceed bone formation. Bone loss is most rapid in the first few years after menopause but persists in the postmenopausal years. Osteoporosis occurs when bone resorption occurs too quickly or if replacement occurs too slowly. Osteoporosis is more likely to develop in both men and women if optimal bone mass was not reached during the bone building years. Osteoporosis affects the entire skeleton and fractures may occur in any bone. The most common sites are the proximal femur, spine, distal forearm (Colle's fracture), proximal humerus, ribs and pelvis.

1. Risk Factors for Osteoporosis

Risk factors that are non-modifiable:

- Gender — Women have less bone tissue and lose bone faster than men later in life due to menopause
- Age — risk increases with age after mid-life due to accelerated resorption compared with formation of bone.
- Body size — small, thin-boned persons are at greater risk.
- Ethnicity — Caucasian and Asian persons are at highest risk.
- Family history — history of osteoporosis
- Dementia
- Poor health/frailty
Risk factors that are potentially modifiable:

- Low body weight (less than 127 pounds)
- Current cigarette smoking
- Estrogen deficiency, early menopause (age less than 45) or bilateral ovariectomy, prolonged premenopausal amenorrhea (>1 year)
- Low calcium intake (lifelong)
- Alcoholism
- Previous falls and fractures
- Inadequate physical activity
- Impaired eyesight, despite adequate correction

2. Diagnosis

The World Health Organization has established the following BMD-based diagnostic criteria for women who have experienced no fragility fractures. These criteria provide the physician with a basic diagnostic framework.

- Normal: a value for BMD greater than –1 SD of the young adult mean
- Osteopenia (low bone mass): a value for BMD greater than –1 SD but less than –2.5 SD below the young adult mean value
- Osteoporosis: A BMD value –2.5 SD or greater below the young adult mean
- Persons with prior fragility fractures should be considered to have osteoporosis

Who Should be Tested for BMD?

- Postmenopausal women under age 65 who have one or more additional risk factors for osteoporosis (besides menopause).
- Women aged 65 and older regardless of additional risk factors.
- Postmenopausal women who present with fractures (to confirm diagnosis and determine disease severity).
- Women who are considering therapy for osteoporosis, if BMD testing would facilitate the decision.
- Women who have been on hormone replacement therapy for prolonged periods.

Prevention

The physician should inform the patient of all risks and benefits associated with intervention.

Physicians should emphasize prevention of osteoporosis whenever possible. Any prevention program should have two primary goals:

- To optimize bone mass, and
- To preserve skeletal integrity by reducing the risk of falls.

As part of any general osteoporosis prevention program, the physician should incorporate the following principles:

- Promote a diet with adequate calcium content. Calcium intake is a fundamental element of any osteoporosis prevention or treatment program, calcium and vitamin D supplementation should be prescribed whenever needed to achieve the recommended daily intake levels.
• Encourage good general nutrition, with adequate intake of vitamin D — especially in elderly patients
• Advocate regular weight-bearing exercise
• Strongly discourage use of tobacco
• Consider additional preventive measures, including estrogen replacement therapy or estrogen + progestin replacement therapy (hormone replacement therapy) with calcium and vitamin D supplementation, for peri and post-menopausal women at high risk of developing osteoporosis. These additional measures should be personalized to the needs of each patient.

3. Treatment
The goals of therapeutic intervention are:
• Prevent fractures
• Stabilize, or achieve a moderate increase in bone mass
• Relieve symptoms of fractures and skeletal deformity
• Maximize physical function (for example, halt progressive deformity)

Who Should be Treated:
• Women with BMD T — scores below -2 in the absence of osteoporosis risk factors.
• Women with BMD T — scores below -1.5 if other risk factors are present.
• Some patients (i.e., those over 70 years of age with multiple risk factors are at sufficiently high risk for osteoporosis that treatment is warranted without BMD testing.

Secondary Osteoporosis
Be alert to secondary causes of osteoporosis, which include a broad range of disease states and therapeutic drugs. Among men, 30 to 60 percent of osteoporosis is associated such as secondary causes, with hypogonadism, glucocorticoids, and alcoholism.

Benefits and Risks of Estrogen Therapy in Postmenopausal Women

<table>
<thead>
<tr>
<th>BENEFITS</th>
<th>RISKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Relief of menopausal symptoms</td>
<td>• Return of menstrual bleeding</td>
</tr>
<tr>
<td>• Prevention of bone loss and fractures</td>
<td>• Risk of endometrial carcinoma</td>
</tr>
<tr>
<td>• Prevention of ischemic heart disease</td>
<td>• Breast tenderness</td>
</tr>
<tr>
<td>• Prevention of dementia</td>
<td>• Risk of breast carcinoma</td>
</tr>
</tbody>
</table>


In peri-menopausal women 50 percent of osteoporosis cases are associated with secondary causes, such as: hypoestrogenemia, glucocorticoids, thyroid hormone excess, and anticonvulsant therapy.

4. General Recommendations for Postmenopausal Women

A. Calcium and Vitamin D Supplementation
The current RDA is 1200 mg per day in post-menopausal women but an adequate dietary calcium intake probably involves 1500 mg calcium per day. Calcium and vitamin D supplementation is recommended whenever dietary intake is inadequate or restricted to less than the recommended amount. When prescribing calcium supplementation, the physician should consider the individual patient’s dietary habits and prescribe the dosage necessary to raise the daily calcium intake to the recommended level.

B. Hormone Replacement Therapy (HRT)
Menopause is a major contributing factor to osteoporosis in women. Rapid bone loss may occur for up to 15 years after the menopause. Studies have shown that estrogen therapy can prevent post-menopausal bone loss. There is evidence for a beneficial effect on cardiovascular risk. Whether or not estrogen is associated with any increased risk of breast cancer remains controversial. Until additional
information becomes available, physicians should discuss this issue and the importance of regular breast examination and mammography should be stressed with patients. HRT is the first line therapy in prevention of bone loss in the perimenopausal women and for the treatment of the old postmenopausal women with low BMD.

C. Bisphosphonates

Bisphosphonates decrease bone loss resorption and have been used in a number of conditions associated with increased bone resorption. Alendronate and risedronate are approved by the FDA for the treatment and prevention of osteoporosis. Alendronate and resedronate are an effective alternative to estrogen replacement therapy for treating postmenopausal osteoporosis in women who cannot or will not take estrogen replacement therapy.

Follow-up

The physician should use follow-up BMD measurements to monitor changes in bone mass annually for established osteoporosis, and

Contraindications

The following factors are contraindications to estrogen or combination estrogen-progestin therapy.

- known or suspected pregnancy
- known or suspected cancer of the breast
- known or suspected estrogen-dependent neoplasia
- undiagnosed, abnormal genital bleeding
- active thrombophlebitis or thromboembolic disorders or a history of thrombotic disease
- hypersensitivity to the norms


every five years for persons with low bone mass.
References


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Major recommendations to the physician

1. In a clear, personalized way, counsel all women on the risk factors for osteoporosis. Osteoporosis is a “silent” risk factor for fracture just as hypertension is for stroke.

2. Implement an office-wide system to ensure that the issue of skeletal health is discussed and recorded for at-risk women at every office visit.

3. Perform evaluation for osteoporosis on all postmenopausal women who present with fractures, using BMD testing to confirm the diagnosis and determine disease severity.

4. Recommend BMD testing to postmenopausal women under age 65 who have one or more additional risk factors for osteoporotic fracture (besides menopause).

5. Recommend BMD testing to all women aged 65 and older regardless of additional risk factors.

6. Advise all patients to obtain adequate intake of dietary calcium (at least 1200 mg/d) and vitamin D (400 to 800 IU per day for individuals at risk of deficiency).

7. Recommend regular weight-bearing and muscle-strengthening exercise to reduce the risk of falls and fractures.

8. Advise patients to avoid tobacco smoking and to keep alcohol intake moderate.

9. Consider all postmenopausal women who present with vertebral or hip fractures as candidates for osteoporosis treatment.

10. Initiate therapy to reduce risk of fracture in women with BMD T-scores below -2 in the absence of risk factors and women with T-scores below -1.5 if other risk factors are present.

11. Pharmacologic options for osteoporosis prevention and/or treatment are hormone replacement therapy, alendronate, risedronate, raloxifene (prevention), and calcitonin (treatment).

SOURCE: National Institutes of Health, Osteoporosis and Related Bone Diseases.
Osteoporosis is defined as a loss of bone mineral density.

1 **Indication for Bone Densitometry**
- sex, age, low body weight (<128 lbs.), early menopause, previous fracture, glucocorticoid use, lack of calcium intake, race, low testosterone in males, heredity, lack of physical activity, lifestyles (smoking, alcohol, caffeine)

2 **Diagnosis and Treatment**
- When osteoporosis is suspected, BMD measurement is the best diagnostic tool. It helps physicians determine fracture risk and identify patients who are candidates for intervention. The World Health Organization considers a normal BMD as $>-1$ SD.

<table>
<thead>
<tr>
<th>T scores between -1 to -2.5 SD —Low bone mass—</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Initiate preventive measures</td>
</tr>
<tr>
<td>- HRT and/or calcium supplements</td>
</tr>
<tr>
<td>- Repeat bone densitometry in five years</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>T scores below -2.5 SD, or preventive intervention is ineffective (bone loss continues) —Osteoporosis—</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Initiate treatment</td>
</tr>
<tr>
<td>- Biophosphonates, calcium, HRT</td>
</tr>
<tr>
<td>- Repeat bone densitometry in one year</td>
</tr>
</tbody>
</table>

3 **General recommendations for postmenopausal women**
- 1500 mg of calcium per day, consider ER/HRT for bone, heart and cognitive benefits
  400-800 mg per day of vitamin D for optimal calcium absorption

4 **For recommendations for the use of available agents in clinical practice, see pharmacy sheet.**
Preventive Measures for Decreasing the Risk of Falls in Older Adults

**Fall Prevention for Older Adults**

Preventing falls is important for older persons and for anyone with osteoporosis. A variety of factors may lead to falls, including poor balance, muscle weakness, poor eyesight, use of alcohol and multiple medications, and environmental hazards in and outside the home.

**Tips for Patients**

- Wear supportive, rubber-soled, low-heeled shoes. Avoid walking around the house in socks or slip-on slippers.
- Keep floor free of clutter and loose cords and wires.
- Tack down carpets and use non-skid backing on rugs to prevent tripping and slipping.
- Install handrails on both sides of stairs. Have light switches at the bottom and top of stairwells to keep the area well lit.
- Install grab bars beside the toilet, in the tub, and in the shower. If unsteady on feet, try putting a plastic chair with a back and non-skid legs in the shower stall, so that you can sit while you shower. Or in the tub, use a hand-held shower head to bathe.
- Place a nightlight between bedroom and the bathroom. Place light switches within reach of bed or keep a flashlight nearby. Get up slowly from sitting or lying down to avoid dizziness.
- Cover porch steps with gritty, weatherproof paints or treads.
- Use caution when walking on highly polished floors, or floors with confusing visual patterns. Such floors can be found in the lobbies of hotels, banks, or hospitals.
- Falls are even more likely in wet or icy conditions. During the winter, use sand and salt on walkways and porch steps. Carry a small bag of sand in the car so that if the ground is icy where the car is parked, sprinkle the sand by the car door.
- Have vision and hearing checked regularly.
- Discuss side effects of drugs. Sometimes a medication can cause dizziness or lightheadedness.

**Falls are the leading cause of non-fatal injuries and unintentional injury deaths in older persons in the US**

Counsel elderly patients on measures to reduce the risk of falling, including exercise (particularly gait and balance training), safety related skills and behaviors, and environmental hazard reduction.

Identify and treat those with very low bone mass. Identify and treat sensory defects, neurologic decrease and arthritis, which can contribute to frequency of falls.

Adjust dosage of drugs with sedative effects, which could slow reflexes or decrease coordination.

Adjust dosages of drugs with hypotensive side effects.
**Osteoporosis Pharmacy Sheet**

**DRUG THERAPY**

Pharmacologic options include hormone replacement therapy (HRT), bisphosphonates, Calcitonin, and selective estrogen receptor modulators (SERMs). The decision of whether or not to initiate estrogen therapy at the time of menopause has been the subject of debate over the past 20 years, and still remains a complex issue. Presently the levels of risk and benefit are not completely understood. However, initiation of treatment affords an opportunity to discuss the risk and benefits of long-term estrogen therapy.

<table>
<thead>
<tr>
<th>Preparation</th>
<th>Available Products</th>
<th>Osteoporosis Indication</th>
<th>Usual Dose (mg/day)</th>
<th>Available Strengths (mg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conjugated Estrogens</td>
<td>Premarin</td>
<td>Prevention &amp; Treatment</td>
<td>0.625</td>
<td>0.3, 0.625, 0.9, 1.25, 2.5 cyclically 3 weeks on, 1 week off</td>
</tr>
<tr>
<td>Cenestin</td>
<td></td>
<td>Prevention &amp; Treatment</td>
<td>0.625</td>
<td></td>
</tr>
<tr>
<td>Estradiol Micronized</td>
<td>Estrace Estradiol</td>
<td>Prevention</td>
<td>0.5</td>
<td>0.5, 1.0 cyclically 23 days on, 5 days off</td>
</tr>
<tr>
<td>17 beta-Estradiol</td>
<td>Vivelle, Climara</td>
<td>Prevention</td>
<td>0.05</td>
<td>0.0375, 0.05, 0.075, 0.10 mg/24hr</td>
</tr>
<tr>
<td>Estropipate</td>
<td>Ogen, Ortho-est</td>
<td>Prevention</td>
<td>0.625</td>
<td>0.625, 1.25, 2.5 cyclically 25 days of 31-day cycle</td>
</tr>
<tr>
<td>Esterified Estrogens</td>
<td>Estratab, Menest</td>
<td>Prevention</td>
<td>0.625</td>
<td>0.3, 0.625, 1.25, 2.5</td>
</tr>
<tr>
<td>Ethinyl Estradiol</td>
<td>Estinyl</td>
<td>Prevention &amp; Treatment</td>
<td>0.02-0.05</td>
<td>0.02, 0.05</td>
</tr>
<tr>
<td>Estrogen — Progestin Combinations</td>
<td>Premphase</td>
<td>Prevention &amp; Treatment</td>
<td>0.625CE/5 MPA</td>
<td>0.625CE day 1–28, 5 MPA day 15–28</td>
</tr>
<tr>
<td></td>
<td>Prempro</td>
<td>Prevention &amp; Treatment</td>
<td>0.625CE/2.5 MPA</td>
<td>0.625 day 1–28 &amp; 2.5 MPA day 1–28</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.625CE/5 MPA</td>
<td>0.625 day 1–28 &amp; 5 2.5 MPA day 1–28</td>
</tr>
<tr>
<td>Medroxyprogesterone</td>
<td>Cycrin, Provera,</td>
<td>All preparations: Abnormal uterine</td>
<td>5–10</td>
<td>5–10 a day for 5 to 10 days beginning on day 16 or 21 or</td>
</tr>
<tr>
<td></td>
<td>Amen, CombiPatch,</td>
<td>bleeding due to hormonal imbalance</td>
<td></td>
<td>5–10 a day for 10 days beginning on day 16</td>
</tr>
<tr>
<td></td>
<td>Medroxyprogesterone</td>
<td>in absence of organic pathology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Norethindrone Acetate</td>
<td>Aygestin</td>
<td>All preparations: Abnormal uterine</td>
<td>5</td>
<td>2.5 to 10 every day for 5 to 10 days for second half of</td>
</tr>
<tr>
<td></td>
<td></td>
<td>bleeding due to hormonal imbalance</td>
<td></td>
<td>menstrual cycle</td>
</tr>
<tr>
<td></td>
<td></td>
<td>in absence of organic pathology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bisphosphonates:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alendronate</td>
<td>Fosamax</td>
<td>Prevention &amp; Treatment</td>
<td>10</td>
<td>5, 10</td>
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<tr>
<td>Risedronate</td>
<td>Actonel</td>
<td>Prevention &amp; Treatment</td>
<td>30</td>
<td>5, 30</td>
</tr>
<tr>
<td>Receptor Modulator:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Raloxifene</td>
<td>Evista</td>
<td>Prevention</td>
<td>60</td>
<td>60</td>
</tr>
</tbody>
</table>

*Source: PDR and Facts & Comparisons™*
CALCIUM AND VITAMIN D
A calcium intake of at least 1200 mg/d is recommended for postmenopausal women to:

- maximize peak bone mass
- maintain adult bone mass
- minimize age-related bone mass

Adequate calcium intake is needed in middle-aged women in order to ensure the maintenance of their adult bone mass and in elderly women in order to minimize bone loss in the later years. Elderly women who live in northern climates or who avoid sunlight may become deficient in vitamin D. Adequate levels of vitamin D are also required to ensure proper absorption of dietary calcium. The results of randomized studies have suggested that dietary supplementation with both calcium and vitamin D in the elderly will result in an increase bone mass, and a decrease in fractures.

COMMON CALCIUM SUPPLEMENTS — COMMERCIALLY AVAILABLE

<table>
<thead>
<tr>
<th>Comments</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Calcium Citrate</strong></td>
<td>Non-Prescription</td>
</tr>
<tr>
<td>Citracal 950</td>
<td>Better absorption in fasting state than calcium carbonate</td>
</tr>
<tr>
<td>Citracal Liquid</td>
<td>Does not cause gas</td>
</tr>
<tr>
<td></td>
<td>Calcium citrate raises urinary citrate, an inhibitor of kidney stone formation</td>
</tr>
<tr>
<td><strong>Calcium Carbonate</strong></td>
<td>Non prescription</td>
</tr>
<tr>
<td>Oscal</td>
<td>Gastrointestinal acid converts calcium carbonate into soluble calcium salts, taking with food improves absorption in achlorhydric patients in fasting state</td>
</tr>
<tr>
<td>Tums</td>
<td></td>
</tr>
<tr>
<td>Caltrate</td>
<td></td>
</tr>
<tr>
<td><strong>Calcium Phosphate</strong></td>
<td>Non prescription</td>
</tr>
<tr>
<td>Posture</td>
<td></td>
</tr>
</tbody>
</table>

Osteoporosis Prevention and Treatment Guideline

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<td>Non prescription</td>
</tr>
<tr>
<td>Posture</td>
<td></td>
</tr>
</tbody>
</table>
Patient Education and Counseling
**OBJECTIVES**

There are two major objectives of patient education and counseling related to primary prevention: changing health behaviors and improving health status. We excerpted the following recommendations for educating and counseling your patients from the *Guideline to Clinical Preventive Services*, of the U.S. Preventive Task Force.

**RECOMMENDATIONS**

The following 12 recommendations were chosen because they each have been found to be useful in changing certain health behaviors. Most of the suggested strategies can be easily incorporated into your practice.

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Description</th>
<th>For Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frame the teaching to match the patient’s perceptions.</td>
<td>Consider and incorporate beliefs and concerns of patients. You can elicit beliefs by questioning the patient.</td>
<td><em>You might say:</em> “When you think of heart disease, what do you think of?“ “What gets in the way of your eating a low-fat diet?”</td>
</tr>
<tr>
<td>Fully inform the patients of the purposes and expected effects of interventions and when to expect these effects.</td>
<td>Telling the patient when to expect to see beneficial effects from the intervention may avoid discouragement when immediate benefits are not forthcoming.</td>
<td>When rheumatologists told patients about the purpose of their medications, 79% complied four months later, compared with only 33% of those not given clear information about the purpose of the drug.</td>
</tr>
<tr>
<td>Suggest small changes rather than large ones.</td>
<td>Patients can be asked to do slightly more than they are doing now.</td>
<td><em>You might say:</em> “It is great that you are walking 10 minutes in the morning. Could you add an additional five minutes?”</td>
</tr>
</tbody>
</table>

Specific and informational instruction will generally lead to better compliance. When suggesting a physical activity program, you might ask the patient how much he or she can comfortably do now. Ask the patient to perform the activity three times a week, then add 10%–25% a week until the patient can do aerobic exercise 20–30 minutes three to four times a week.
### Patient Education and Counseling

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Description</th>
<th>For Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>It is sometimes easier to add new behaviors than to eliminate established behaviors.</td>
<td>If weight loss is a concern, suggesting that the patient begin moderate activity may be more effective than suggesting that they change their current dietary pattern.</td>
<td>You might suggest that patients park their car a block away from their destination and walk.</td>
</tr>
<tr>
<td>Link new behaviors to old behaviors.</td>
<td>Make a habit by attaching a new activity to something they already like to do.</td>
<td>You might suggest that patients exercise before eating lunch or use an exercise bike while watching the evening news.</td>
</tr>
<tr>
<td>Use the power of the profession.</td>
<td>Patients see clinicians as health experts and they regard what they say as important. Clinicians should not be afraid to be direct. The clinician should be firm yet supportive while providing messages.</td>
<td>A direct message, such as, “I want you to stop smoking” or “I want you to cut half of the fat out of your diet” is powerful, especially if it is simple and specific.</td>
</tr>
<tr>
<td>Get explicit commitments from the patient.</td>
<td>Ask patients to describe how the intended regimen will be followed. The more specific the commitment, the more likely it is to be followed.</td>
<td><strong>You might say:</strong> “Many people have problems starting or continuing an exercise program; what problems do you think you might face? How will you begin?”</td>
</tr>
<tr>
<td>Use a combination of strategies.</td>
<td>Educational efforts that integrate individual counseling and group classes are more likely to be effective than a single technique. Tailor programs to individual needs.</td>
<td>Some patients will not attend group classes; others may have inflexible work schedules. Suggest what works for the patient.</td>
</tr>
<tr>
<td>Involve office staff.</td>
<td>Patient education and counseling are responsibilities shared among physicians, nurses, health educators, dieticians, and other allied professionals. A team approach facilitates education.</td>
<td>The receptionist can encourage the patient to read materials that the clinician has reviewed, approved, and placed in the reception area.</td>
</tr>
</tbody>
</table>
Refer. In a busy practice it may not be possible to do complete patient education and counseling. In some situations, patients are best served by appropriate referrals.

Monitor progress through follow-up contact. Schedule a follow-up appointment or call within the next few weeks to evaluate progress, reinforce success, and respond to problems.

The USPSTF gives special emphasis to counseling patients about risk factors. The data suggest that among the most effective interventions available to clinicians for reducing the incidence and severity of the leading causes of diseases and disability in the United States are those that address the personal health practices of patients.

### PROCHASKA AND DICLEMENTE'S STAGES OF CHANGE MODEL

<table>
<thead>
<tr>
<th>Stage of Change</th>
<th>Characteristics</th>
<th>Techniques for Change</th>
</tr>
</thead>
</table>
| Pre-contemplation | • Not currently considering change: “Ignorance is bliss.” | • Validate lack of readiness  
• Clarify: decision belongs to them  
• Encourage re-evaluation of current behavior  
• Encourage self-exploration, NOT ACTION  
• Explain and personalize the risk |
| Contemplation | • Ambivalence about change: “Sitting on the fence”.  
• Not considering change within the next month | • Validate lack of readiness  
• Clarify: decision belongs to them  
• Encourage evaluation of pros and cons of behavior change  
• Identify and promote new, positive outcome expectations |
| Preparation | • Some experience with change and are trying to change:  
"Testing the waters"  
• Planning to act within 1 month | • Identify and assist in problem solving re: obstacles  
• Assist patient to identify social supports  
• Verify that patient has underlying skills for behavior change  
• Encourage initial small steps |
| Action | • Practicing new behavior regularly for 3-6 months: “Charge!” | • Reinforce decision to act  
• Focus on restructuring cues and social support  
• Bolster self-efficacy for dealing with obstacles  
• Combat feelings of loss with reiteration of long-term benefits |
| Maintenance | • Continued commitment to sustaining new behavior:  
"Holding steady"  
• Post-6 months to 5 years | • Plan for follow-up support  
• Reinforce internal rewards and health benefits  
• Discuss coping with relapse |
| Relapse | • Resumption of old behaviors: “Fall from grace” | • Evaluate trigger for relapse  
• Reassess motivation and barriers  
• Plan stronger coping strategies |

Adapted from Motivating Health Behavior Change: Powerful Conversations in the Exam Room. Steve Taylor, DHSc. St. Anthony Family Medicine Residency Program, Denver, CO
### LEADING CAUSES OF DEATH IN THE UNITED STATES

<table>
<thead>
<tr>
<th>Rank</th>
<th>Rank</th>
<th>Cause of Death</th>
<th>Number of Deaths 1995</th>
<th>Number of Deaths 1997</th>
<th>Age-Adjusted Death Rate 1995 (per 100,000)</th>
<th>Age-Adjusted Death Rate 1997 (per 100,000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>Heart disease</td>
<td>738,781</td>
<td>726,974</td>
<td>281.2</td>
<td>271.6</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>Malignant neoplasms</td>
<td>537,969</td>
<td>539,577</td>
<td>204.7</td>
<td>201.6</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>Cerebrovascular diseases</td>
<td>158,061</td>
<td>159,791</td>
<td>60.2</td>
<td>59.7</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td>Chronic obstructive pulmonary diseases</td>
<td>104,756</td>
<td>109,029</td>
<td>39.9</td>
<td>40.7</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
<td>Accident</td>
<td>89,703</td>
<td>95,644</td>
<td>34.1</td>
<td>35.7</td>
</tr>
<tr>
<td>6</td>
<td>6</td>
<td>Pneumonia and influenza</td>
<td>83,528</td>
<td>86,449</td>
<td>31.8</td>
<td>32.3</td>
</tr>
<tr>
<td>7</td>
<td>7</td>
<td>Diabetes mellitus</td>
<td>62,636</td>
<td>62,636</td>
<td>22.5</td>
<td>23.4</td>
</tr>
<tr>
<td>8</td>
<td>9</td>
<td>Suicide</td>
<td>30,893</td>
<td>30,535</td>
<td>11.8</td>
<td>11.4</td>
</tr>
<tr>
<td>9</td>
<td>–</td>
<td>Nephritis, nephrotic syndrome, and nephrosis</td>
<td>*</td>
<td>25,331</td>
<td>*</td>
<td>9.5</td>
</tr>
<tr>
<td>10</td>
<td>10</td>
<td>Chronic liver diseases and cirrhosis</td>
<td>24,848</td>
<td>25,175</td>
<td>9.5</td>
<td>9.4</td>
</tr>
<tr>
<td>*</td>
<td>8</td>
<td>HIV infection</td>
<td>42,506</td>
<td>*</td>
<td>16.2</td>
<td>*</td>
</tr>
</tbody>
</table>

* By 1997, HIV infection was no longer one of the top 10 causes of death in the United States

BCBSMA offers a single resource for you and your office staff to order educational materials. The Physical Resource Catalog is a compilation of tools that support our physicians and their patients. The catalog contains educational resources in the following topics:

- Allergy
- Asthma Medication Management
- Colorectal Cancer
- Cardiac
- Cholesterol
- Diabetes
- Flu
- Health Care Proxy
- Insomnia
- Lower Back Pain
- Mammography

<table>
<thead>
<tr>
<th>Medical Record Keeping</th>
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</thead>
<tbody>
<tr>
<td>Medication</td>
</tr>
<tr>
<td>Health</td>
</tr>
<tr>
<td>Obstetrics/Perinatal</td>
</tr>
<tr>
<td>Osteoporosis</td>
</tr>
<tr>
<td>Pap Smear</td>
</tr>
<tr>
<td>Pediatrics</td>
</tr>
<tr>
<td>Prevention and Wellness</td>
</tr>
<tr>
<td>Substance Abuse</td>
</tr>
</tbody>
</table>

To order a copy of the catalog, fax a request on letterhead to our warehouse at 1-800-477-9975 and address to:

Forms Management
Blue Cross Blue Shield of Massachusetts
c/o JJ Daly, Inc.
Request item #440080
Appendix: Complementary and Alternative Medicine
The use of complementary and alternative medicine (CAM) among the U.S. population is steadily increasing. Herbal supplements are widely covered in the press and are often described as “natural” and therefore safe. Because of the unabated use of herbal medications by patients, knowledge of these products (including their benefits and risks, and their ability to interact with pharmaceutical medications) will give physicians the ability to provide a balanced and objective perspective to patients wishing to explore herbal therapy.

The information provided in this chapter does not constitute an endorsement of CAM practices by Blue Cross Blue Shield of Massachusetts. It is solely intended as information to familiarize the physician with the many aspects of CAM. The regulatory status of herbs is under the jurisdiction of the Dietary Supplement Health and Education Act (DSHEA) which has defined dietary supplements to include vitamins, minerals, herbs, botanicals, amino acids, and “other dietary substances for human use to supplement the diet.” The act explicitly states that, unlike pharmaceutical preparations, dietary supplements can be marketed without proven safety or efficacy obtained through rigorous tests. It is therefore, the responsibility of the Food and Drug Administration (FDA) to ensure safety and prove that a dietary supplement is unsafe. Only after obtaining such proof, can the FDA restrict the sale of an herbal product.

Overview

CAM therapies (including dietary supplements) comprise a broad spectrum of practices and beliefs. Four of the major philosophies of natural medicine: Chinese, Ayurveda, Naturopathy, and Native American medicine offer a holistic approach to diagnosis and treatment of diseases and promoting wellness. These disciplines encompass physical, emotional, and spiritual symptoms collectively.

In the mid-1980s, the term “alternative medicine” captured the interest of the public and gained popularity in the press. Both the press and the public used this term when referring to nontraditional medical care treatments. In the 1990s, physicians and hospitals started to describe their use of nontraditional medical treatment as “complementary medicine”. This term emphasizes the use of nontraditional treatments as a complement to prescribed traditional medical treatments. Most recently physicians and other health care practitioners use “integral medicine” to describe nontraditional/alternative treatments.

The following is a brief description of the most prevalent CAM systems using the classification developed by the Office of Alternative Medicine of the National Institutes of Health. Consult the nccam-inf@nccam.nih.gov website for the latest information on CAM practices and research.

Today CAM practices may be grouped within five major domains:

1. Alternative medical systems
2. Mind-body interventions
3. Biologically-based therapies
4. Manipulative and body-based methods
5. Energy therapies

1. Alternative Medical Systems:

Ayurveda meaning “science of life”, is India’s traditional system of medicine. It places equal emphasis on body, mind, and spirit, and strives to restore the innate harmony of the individual. Some of the primary Ayurvedic treatments include diet, exercise, meditation, herbs, massage, exposure to sunlight, and controlled breathing.

Homeopathy and naturopathy are also examples of complete alternative medical systems. Homeopathic physicians believe that the more dilute the remedy, the greater its potency. Therefore homeopaths use small doses of specially prepared plant extracts and minerals to stimulate the body’s defense mechanisms and
healing processes. It is based on the principle that “like cures like,” i.e., that the same substance that in large doses produces the symptoms of an illness, cures the illness in very minute doses.

Naturopathy views disease as a manifestation of alterations in the processes by which the body naturally heals itself. It emphasizes health restoration rather than disease treatment including diet, lifestyle changes, and balancing colon flora.

Traditional Chinese medicine emphasizes the proper balance of qi (pronounced chee), or vital energy, in health and disease. Treatment methods include acupuncture, herbal medicine, oriental massage, qi gong (breathing therapy), and Tai Chi (Shiatsu) movement therapy.

Other traditional medical systems have been developed by Native American, Aboriginal, African, Middle-Eastern, Tibetan, Central and South American cultures.

2. Mind-Body Interventions
Mind-body interventions employ a variety of techniques designed to facilitate the mind’s ability to affect bodily function and symptoms. Only a subset of mind-body interventions is considered to be CAM. Many that have a well-documented theoretical basis, such as patient education and cognitive-behavioral approaches, are now considered “mainstream.” Others such as meditation, certain uses of hypnosis, dance, music, and art therapy; and prayer and mental healing are categorized as complementary or alternative.

3. Biologically Based Therapies
This category includes natural and biologically based practices, interventions, and products, many of which overlap with conventional medicine’s use of dietary supplements. They include herbal, special dietary, orthomolecular, and individual biological therapies.

Biological therapies include the use of shark cartilage to treat cancer and bee pollen to treat autoimmune and inflammatory diseases.

Herbal therapies employ individual or mixtures of herbs for therapeutic value. An herb is a plant or plant part that produces and contains chemical substances that act upon the body with pharmacological action.

Orthomolecular therapies aim to treat disease with varying concentrations of chemicals, such as magnesium, melatonin, and mega-doses of vitamins.

4. Manipulative and Body-Based Methods
This category includes methods that are based on manipulation and/or movement of the body. For example, chiropractors focus on the relationship between structure (primarily the spine) and function, and how that relationship affects, preserves and restores health. Osteopaths, who place particular emphasis on the musculoskeletal system, believe that all of the body’s systems work together, and that disturbances in one system may have an impact on functions elsewhere in the body. Massage therapists manipulate the soft tissues of the body to normalize those tissues and promote physical and mental well being.

5. Energy Therapies
Energy therapies focus either on energy fields originating within the body (biofields) or those from other sources (electromagnetic fields).

Biofield therapies are intended to affect the energy fields that surround and penetrate the human body. Some forms of energy therapy manipulate biofields by applying pressure and/or manipulating the body by placing hands in, or through, these fields.

Reiki (pronounced “Raykee”), meaning in Japanese universal life energy is based on the belief that channeling spiritual energy through the practitioner, the spirit is healed, and leads to physical healing.
Therapeutic Touch is derived from the ancient technique of “laying-on of hands”. It is based on the premise that the healing force of the therapist affects the patient’s recovery, and balances the body’s energies.

Bioelectromagnetic-based therapies involve the unconventional use of electromagnetic fields, such as pulsed fields, magnetic fields, alternating current or direct current fields, to, for example, treat asthma or cancer, or manage back pain and migraine headaches.

Patient Interest in Herbal Medicine

Data from the World Health Organization (WHO) show that 65% to 80% of the populations in the developing world depend on traditional and herbal medicines as the unique source of primary healthcare. In the European community, botanicals have an important role in national drug therapy, and many command an important share of the European pharmaceutical market with sales in excess of $7 billion.

Because the safety and efficacy of herbal dietary supplements are still mostly unknown, physicians face a challenge in advising patients who use or are seeking alternative treatments. Self-medication with these products has increased by 380% over the past seven years. In addition, some alternative health techniques are based on metaphysical concepts regarded by the scientific community as not amenable to proof. For example, the idea that the body has energy paths, or “chi”, that can be helped by herbals, acupuncture, and acupressure; the concept of the spine as the locus of health (chiropractic); and the use of undetectable amounts of diluted remedies (homeopathy).

Assessing the Scientific Literature on Botanicals

In countries such as China, Korea, Russia, India, and Europe, where herbal remedies are an integral part of the healthcare system, clinical data supporting the safety and efficacy of botanicals have been published in peer-reviewed publications. A rather large body of scientific information is available in the global literature supporting the safety and efficacy of well-known herbal remedies such as garlic, ginkgo biloba, valerian, saw palmetto, echinacea, and St. John’s Wort.

Recent international collaborative efforts have emerged in undertaking the daunting task of assessing the global botanical scientific literature. Groups such as The United States Pharmacopoeia (USP) Convention convened an Ad Hoc Advisory Panel on Botanicals to help revise the USP-Drug Information (DI) herbal monographs. In Europe, the European Scientific Cooperative on Phytotherapy (ESCOP) has initiated the herbal monographs for the European market. In 1978, the German government established an expert committee, the Commission E, to evaluate the safety and efficacy of over 300 herbs and herb combinations sold in Germany. The resulting monographs represent so far the most accurate information available on the safety and efficacy of herbs and phytomedicines. The World Health Organization’s (WHO) Traditional Medicine Program (WHO-TRM) has undertaken the assessment of safety, efficacy and quality of 58 widely used botanicals. The data will be published in a series of books WHO Monographs on Selected Medicinal Plants (Volumes I & II).

Herbal products are widely used and are available in various forms such as combination products and tea. It is important that physicians ask patients about concomitant use of herbal remedies and traditional medications.

The following is a list of the most common herbal medications that are used for therapeutic and preventive purposes. Physicians are advised to consult the FDA Public Health Advisory notices for report of additional disease/drug interactions and herbal products.
**Alternative/Complementary Medicine**

<table>
<thead>
<tr>
<th>Name</th>
<th>Suggested Use</th>
<th>Side Effects/Drug Interactions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dong Qua</strong> <em>(Angelica Sinensis)</em></td>
<td>Used in prevention and treatment of allergic symptoms, disorders of menstruation, menopause, atopic conditions, smooth muscle spasms.</td>
<td>Should not be taken with blood thinning agents and contraindicated in pregnancy.</td>
</tr>
<tr>
<td><strong>Echinacea</strong> <em>(Echinacea purpurea)</em></td>
<td>A limited amount of evidence suggests stimulation of the immune system. Mostly used in treating colds, fever, flu, bacterial and fungal infections</td>
<td>No apparent toxicity. Possible side effects are diarrhea, heartburn, intestinal upset, liver problems, and skin rash. Because Echinacea stimulates the immune system, there may be alterations in the blood levels of the following: Anabolic steroids, amiodarone (Cordarone), methotrexate (Rheumatrex), ketoconazole (Nizoral) and cyclosporine (Sandimmune).</td>
</tr>
<tr>
<td><strong>Ginkgo Biloba</strong></td>
<td>Research indicates ginkgo may be efficacious in the treatment of a wide array of conditions associated with age-related physical and mental deterioration, including Alzheimer’s disease/senile dementia. Also used as relaxant, digestive bitter, uterine stimulant.</td>
<td>Side effects are uncommon. Some GI disturbances (nausea, vomiting, increased salivation, loss of appetite), headaches, dizziness, tinnitus, peripheral visual shimmering, and skin rash have been reported to occur in some individuals.</td>
</tr>
<tr>
<td><strong>Ginseng</strong> <em>(Panax ginseng)</em></td>
<td>Used to boost energy, improve sexual performance, and reduces stress, and the effects of aging. It is also used to provide relief from menopausal symptoms.</td>
<td>Ginseng can cause a number of interactions when used with: Warfarin — can increase the anticoagulant effect and lead to bleeding. Phenezine (Nardil) — headache, trembling, and manic behavior may occur. Digoxin (Lanoxin) — difficult to monitor drug response.</td>
</tr>
<tr>
<td><strong>Hypericum perforatum L</strong> <em>(St. John’s Wort)</em></td>
<td>Mild to moderate depression, sharp nerve pain resulting from nerve injuries, asthma that is worse in damp weather, toothache, late menstruation, and headache.</td>
<td>Studies show that St. John’s Wort causes fewer side effects than prescription antidepressants. Drug interactions are common if taken with other photosensitizers (tetracyclines) and indinavir, a protease inhibitor used in the treatment of HIV infections.</td>
</tr>
<tr>
<td><strong>Kava (Piper methysticum)</strong></td>
<td>Used as a sedative for treating anxiety.</td>
<td>Potential side effects include GI and liver problems, some allergic skin reactions, yellow discoloration of skin, hair, and nails. Kava can produce deep sedation and even coma when used with alprazolam (Xanax) an antidepressant. The following drugs should not be taken with Kava: Sedatives, sleeping pills, antipsychotics, alcohol, drugs to treat Parkinson’s disease, and anesthetics used during anesthesia.</td>
</tr>
</tbody>
</table>
The following herbs and amino acids have been found to be highly toxic and should be avoided:

**Herbs**

**Chaparral:** Promoted as a natural antioxidant “blood purifier”, cancer cure, and acne treatment. Consumption in tablet form has caused toxic hepatitis, one patient has been reported to require a liver transplant.

**Comfrey:** Sold as teas, tablets, capsules, tinctures etc. is responsible for at least several cases of liver damage, and one death.

**Germander:** Marketed for the treatment of obesity and to facilitate weight loss. At least 27 cases of liver disease have been reported.

**Lobelia:** Also known as Indian tobacco. Although less potent than nicotine can potentially lead convulsions, coma and even death.

**Kombucha:** Kombucha mushrooms have been used in tea form. One death has been reported possibly linked to Kombucha.

**Jin bu Huan:** A Chinese herbal product whose label claims that it is good for “insomnia due to pain”, ulcer, neuralgia etc. Jin bu Huan has been responsible for the poisoning of at least three young children who accidentally ingested this product.

**Stephania and Magnolia:** Sold as a weight-loss treatment these herbs are toxic to the kidneys and have resulted in kidney transplant or dialysis in 20 patients.
**Yohimbe:** Marketed in a number of products for body building and “enhanced male performance”. Serious adverse effects, including renal failure, seizure and death have been reported.

**Willow Bark:** Long used for its analgesic (pain killing), antirheumatic, and fever reducing properties. Willow bark is widely promoted as an “aspirin-free” analgesic, in dietary supplement products for children. Because it shares the same chemical properties and the same adverse effects as aspirin, this claim is highly misleading. The “aspirin-free” claim is particularly dangerous on products marketed, without warning labels, for use by children and other aspirin-sensitive individuals.

**Amino Acids**

L-tryptophan: This amino acid is associated with a serious outbreak of illness and death known to be due to consumption of dietary supplements. More than 1,500 cases of L-tryptophan-related eosinophilia-myalgia syndrome (a systemic connective tissue disease characterized by severe muscle pain, an increase in white blood cells, and certain skin and neuromuscular manifestations). At least 38 patients are known to have died.

Phenylalanine: A number of illnesses, including those similar to the eosinophilia myalgia syndrome associated with L-tryptophan consumption, have been reported to the FDA.

**Advising Patients Who Seek Alternative Medical Therapies**

Asking the unasked question: After completing routine questioning to identify patient’s chief symptoms, the physician initiates a conversation about alternative therapies saying something like “Patients with (main symptom) very often use other kinds of therapy to find relief. Have you used or thought about using any other therapies like chiropractic, massage, herbs, vitamins, teas etc. for your symptom, or for other reasons?”

**In an editorial in the Annals of Internal Medicine**, Delbanco suggested the following approach for physicians to use in coping with patients and alternative therapies:

1. Remain humble about our own mixture of art and science.
2. Learn more about alternative therapies so that we can have open discussions with our patients.
3. Apply our rich scientific heritage to test alternative therapies.
4. Maintain open communication with our patients.


References and Resources


If you are interested in CAM, refer to the following resource list to learn more.

Organizations

American Holistic Medical Association
6728 Old McLean Village Dr. McLean, VA 22101 — (703) 556-9728/9245

American Association of Naturopathic Physicians
2366 Eastlake Ave East, Ste 322. Seattle, WA 98102 — (206) 323-7610

Herb Research Foundation
1007 Pearl St, Suite 200, PA 19043 — (800) 345-8112

National Center for Homeopathy
801 North Fairfax #306, Alexandria, VA 22314 — (703) 548-7790

The New England School of Acupuncture
40 Belmont St., Watertown, MA 02172 — (617) 926-1788

Internet Sites

There are numerous Web sites providing information on CAM. Unfortunately the quality of information provided varies widely. Reliable information on CAM can be accessed through the following internet addresses.

Ahealthyme.com: The Blue Cross Blue Shield of Massachusetts website is dedicated to family health and fitness. The “Ask Dr. Anne” question-and-answer column is featured along with general health information arranged by category.

American Botanical Council: http://www.herbalgram.org
Herbalgram the journal of ABC is a serious and thoughtful publication featuring articles, research reviews, phytomedicine, clinical data, historical information, legal and regulatory status on botanicals.
FDA Center for Food Safety and Applied Nutrition. There is a section that deals with dietary supplements and can be accessed through the FDA home page: www.fda.gov — The FDA website has numerous articles on dietary supplements, including a brief overview, discussions about specific products on the market, and alerts on products with serious side-effects.

Office of Alternative Medicine, NIH: www.nccam.nih.gov The purpose of this office is to evaluate alternative medicine therapies. This site is a must for anyone interested in CAM.

Books


PDR for Herbal Medicines. Montvale, NJ: Medical Economics Co. Inc. 1998. Similar to the now familiar Physician’s Desk Reference (PDR). It is indexed by both the scientific and the common names of herbs, by indications, by therapeutic category, and by adverse effects. It has a valuable drug-herb interaction guide.


Rational Phytotherapy: A physician’s Guide to Herbal Medicine. The information is organized according to body system affected.


Review of Natural Products. St. Louis, MO: Facts and Comparisons; 1999. Information is provided using detailed monographs accompanied with scientific reviews and monthly updates. A CD-ROM version is available.

Articles

A recent MEDLINE search using the term "alternative medicine" yielded 43,160 citations!

Some recent articles:


