Non-Cancer Health Screening

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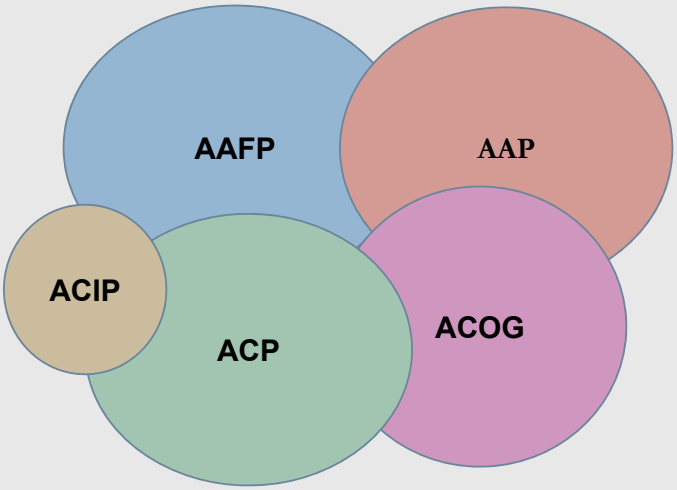
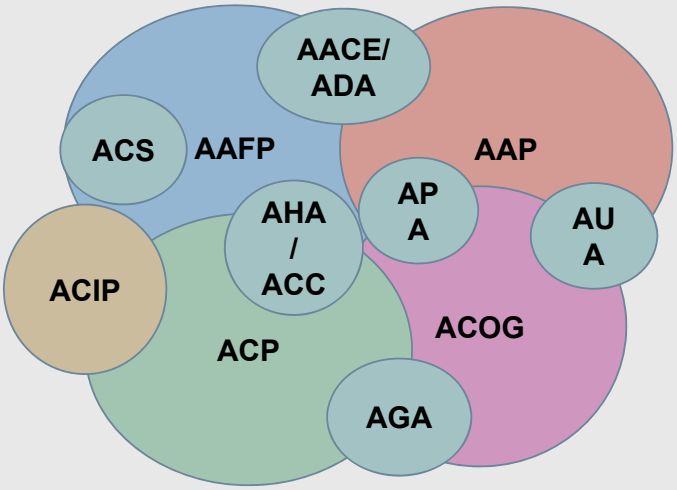
Overview

- Discuss the abundance of medical bodies with screening recommendations
- Discuss the role of the USPSTF
- Review recommendations for children and adolescents including physical examinations, screening questionnaires, laboratory testing, and behavioral interventions.
- Compare and contrast different medical groups including USPSTF and AAP

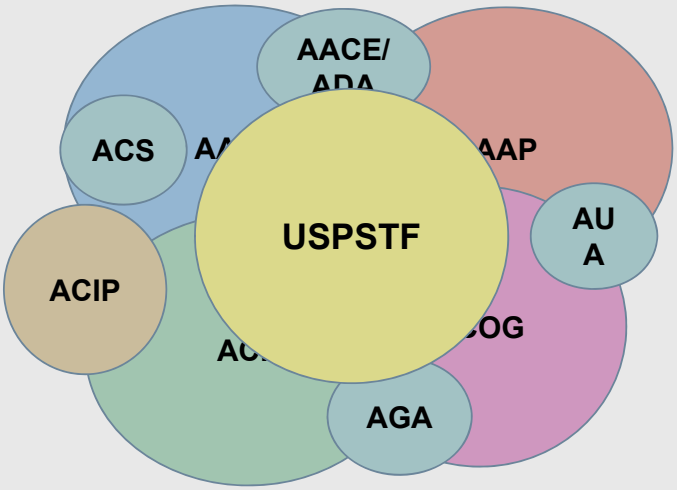
What should a primary care physician do?



What should a primary care physician do?

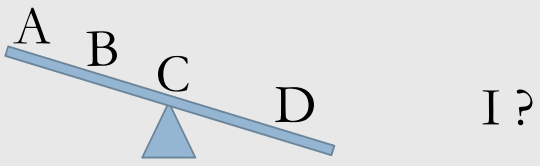


What should a primary care physician do?



U.S. Preventive Services Task Force

- Panel of experts who make evidence-based recommendations on clinical prevention services.
- Diverse members including IM, FM, pediatrics, OB/GYN, behavioral health, and nursing.
- They do not take into account the cost of various screening services.
- They recommend a letter grade based on the amount of evidence and assessment of the benefits and the risks.
- To reiterate this is for screening in those who are asymptomatic and at low risk.



Overview of screening in pediatric population

- Physical examination
  - Critical congenital heart disease
  - Blood pressure and obesity screening
  - Vision, dental, hearing assessment
  - Development dysplasia of the hip
  - Scoliosis
- Screening Questionnaires
  - Speech/language and autism screening
  - Depression
  - Intimate partner violence
- Laboratory testing
  - Newborn Screening, Bilirubin
  - Lead and anemia
  - Lipids and diabetes
  - HIV, HCV, HBV, STIs
- Behavioral interventions
  - Tobacco and alcohol use
  - Illicit substance use
  - Counseling for STI prevention

Pediatric examination screening

	USPSTF	AAP	Others
Newborn CCHD		AAP, HHS: pulse oximetry >24 hrs old	
HTN	Screening <18 yo (I)	Annually at 3 yo, or at every visit in high risk	NHLB: at 3
Obesity	Screen at 6yo+, then refer (B)	Measure BMI at 2 yo	NAHMD wt/ht every well child 0-24mo, BMI at 24mo
Vision	Vision screening at least once in children 3-5 yo to detect amblyopia or its risk factors (B); screening children <3 yo (I)	AAP, AAPOS, AAO: visual exam 6 mo-3, ocular history; consider instrument-based screening 1-3; visual acuity starting at 3, and at 4-5, repeat red reflex and cover-uncover test	

Pediatric examination screening

	USPSTF	AAP	Others
Dental	Children 6 mo – 5 yo: Apply fluoride to primary teeth (B); prescribe fluoride supplement to high-risk 6+mo (B)	Assess by 6 mo.; 1st dental visit by 1yo; fluoride supplementation; fluoride varnish every 6 mo (3 mo if high risk)	ADA: refer to dentist within 6 mo. 1st tooth but by 12 mo; fluoride q 6 mo or daily if high risk
Hearing	"decided not to review"	Universal newborn screening by 3 mo., referral by 6 mo.; once during early, middle and late adolescence	
Dev. Hip dysplasia	"decided not to review"	AAP, AAOS: newborn and periodic surveillance PE; US between age 6 wk-6 mo. if high risk or abnormalities	
Scoliosis	Screening 10-18 yo (I)	AAP, AAOS: scoliosis screening in girls at 10 & 12 yo; males once at 13 or 14 yo.	

Screening Questionnaires

	USPSTF	AAP	Others
Speech/Lang	In children <5 yo (I)	Development screening every well visit 0-3 yo with standard tests at 9, 18, and 24 or 30 mo.	
Autism	Children 18-30 mo without parental concerns (I)	Universal screening at 18 and 24 mo. (M-CHAT or ASQ)	
Depression	Screen 12-18 yo, ensure adequate treatment/ follow-up (B); Suicide screening (I)	Annual emotional and behavioral problem screening 12-21 yo	
IPV	All women of childbearing age, refer if positive (B)	AAP, ACOG, AAN: all favor IPV screening	

Pediatric laboratory testing

	USPSTF	AAP	Others
Newborn Metabolic Sc.	"will not duplicate work"	HHS, AAP: recommend screening all infants, each panel varies slightly between states	
Bilirubin	Decided not to review	Universal screening in newborns 35+ weeks gestation	
Lead	Asymptomatic 1-5 yo without risk factors (I)	Recommend at 12-24 mo. if live in high-prevalence area, have lead hazards, home built <1960,or immigrants	Medicare: all children at 12 and 24 mos.
Anemia	Screening children 6-24 mo. (I)	Screening at 12 mo. (earlier if high risk)	

Pediatric laboratory testing

	USPSTF	AAP	Others
Lipids	Screening in those <20 yo (I)	NHLB, AAP: universal screening pre-pubertal (9-11 yo) and post-pubertal (17-21 yo), as early as 2 yo if RF	
DM	"in process"		ADA: 10 with BMI >25 and 1+ RF (FHx, race, HTN/HLD/PCOS)
HBV	Adolescents and adults at increased risk (B)		CDC/AASLD: high-risk groups; if starting immunosuppressants, HD; if elevated ALT

Pediatric laboratory testing

	USPSTF	AAP	Others
HIV	15-65 yo average risk, all pregnancy (A)	Once btw 15-18 yo; annual reassessment and testing in high risk	CDC: 13-65 yo unless prevalence <0.1%
HCV	18-79 yo (B)	Screening infants born to mothers or those with risk factors	CDC: at least once in 18+ unless prev <0.1%
Gonorrhea/ Chlamydia	Sexually active women 24 or younger, older women if high risk (B); Sexually active men (I)	Annual screening women 25 or younger, annual screening in MSM	ACOG: similar to USPSTF
Syphilis	Adults who are at high risk (A)	Adolescents (11-21 yo) who are at high risk	

Pediatric screening/behavioral interventions

	USPSTF	AAP	Others
Alcohol and illicit substances	Screening 18 and older for high-risk alcohol/drugs, provide brief intervention (B); Screening 12-17 (I)	Screen all adolescents with validated tool at well visit	ACOG, WHO: screen all women before pregnancy and in 1st trimester
Tobacco	Provide interventions to prevent initiation of tobacco use in children/adolescents (B); Interventions in those who already use tobacco (I)	Brief counselling to prevent tobacco use in children/adolescents; all teenagers screen for tobacco use (including e-cigarettes)	
STI prevention	Behavioral counselling for all sexually active adolescents/adults at risk for STIs (B)		

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The childhood growth chart

Which lipid tests should I order?

Health Screening for Non-Malignant Diseases

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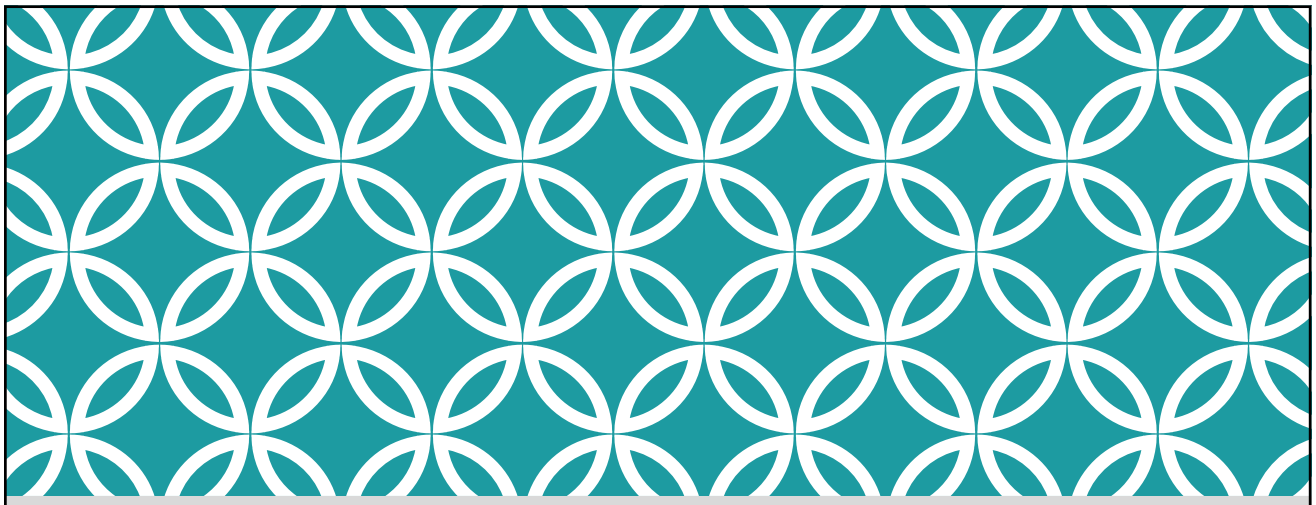
OBJECTIVES

Screening Basics

Value of health screening

Top 10 screenings

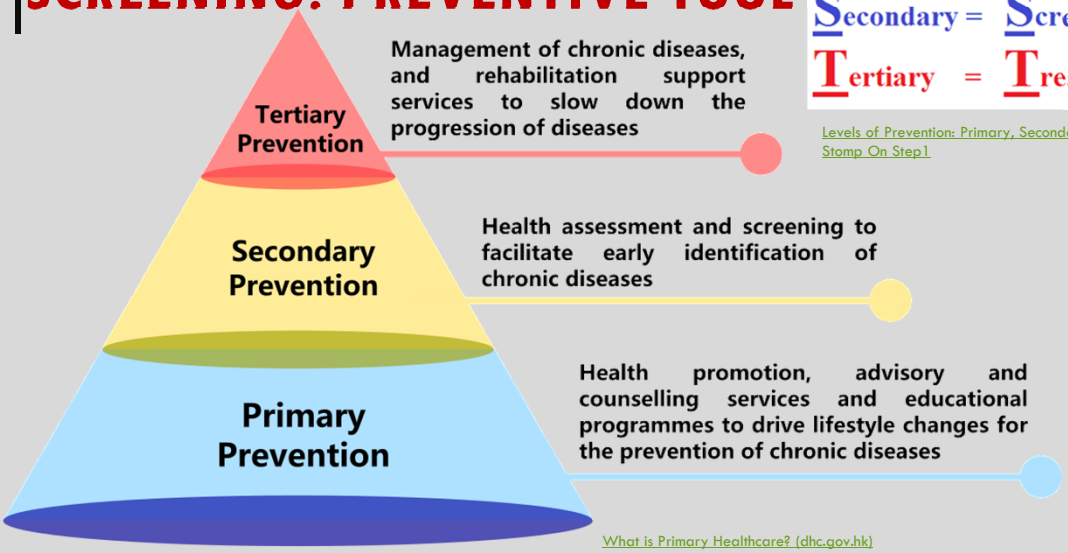
Special populations



SCREENING BASICS | USPSTF , AAFP

SCREENING: PREVENTIVE TOOL

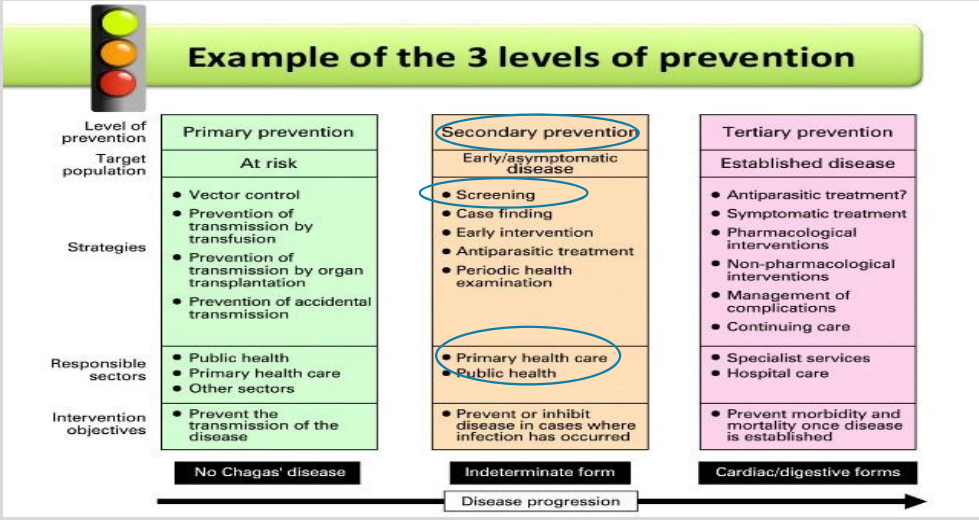
Primary = **P**revention
Secondary = **S**creening
Tertiary = **T**reatment



Levels of Prevention: Primary, Secondary & Tertiary | Stomp On Step1

What is Primary Healthcare? (dhc.gov.hk)

EXAMPLE



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EPIDEMIOLOGY TIPS

Disease	Test
Serious (high M&M)	Sensitive / Specific
Treatable	Low risk
Pre-clinical detectable period	Tolerable
Early intervention = better outcomes	Cost effective
Prevalent	

EVIDENCE UTILIZATION

Recommending forces and centers review the scientific evidence based on its methodology, precision of outcomes, consistency of results, and directness of evidence (***Quality of the evidence***)

Strength of recommendation: benefits, risks, burden, cost, our confidence in the evidence behind it (***Strength of Recommendation***)

RECOMMENDATIONS VS. EVIDENCE

Grade of recommendation	Level of evidence	Type of study
A	1a	Systematic review of (homogeneous) randomized controlled trials
	1b	Individual randomized controlled trials (with narrow confidence intervals)
B	2a	Systematic review of (homogeneous) cohort studies of " exposed" and "unexposed" subjects
	2b	Individual cohort study / Low-quality randomized controlled trials
	3a	Systematic review of (homogeneous) case-control studies
	3b	Individual case-control studies
C	4	Case series, low-quality cohort or case-control studies
D	5	Expert opinions based on non systematic reviews of results or mechanistic studies

Table 1: Grading Recommendations

Grade of Recommendation	Clarity of risk/benefit	Quality of supporting evidence	Implications
1A. Strong recommendation, high quality evidence	Benefits clearly outweigh risk and burdens, or vice versa.	Consistent evidence from well performed randomized, controlled trials or overwhelming evidence of some other form. Further research is unlikely to change our confidence in the estimate of benefit and risk.	Strong recommendations, can apply to most patients in most circumstances without reservation. Clinicians should follow a strong recommendation unless a clear and compelling rationale for an alternative approach is present.
1B. Strong recommendation, moderate quality evidence	Benefits clearly outweigh risk and burdens, or vice versa.	Evidence from randomized, controlled trials with important limitations (inconsistent results, methodologic flaws, indirect or imprecise), or very strong evidence of some other research design. Further research (if performed) is likely to have an impact on our confidence in the estimate of benefit and risk and may change the estimate.	Strong recommendation and applies to most patients. Clinicians should follow a strong recommendation unless a clear and compelling rationale for an alternative approach is present.

https://www.uptodate.com/home/grading-guide#GradingRecommendations

Table 1: Grading Recommendations

Grade of Recommendation	Clarity of risk/benefit	Quality of supporting evidence	Implications
1C. Strong recommendation, low quality evidence	Benefits appear to outweigh risk and burdens, or vice versa.	Evidence from observational studies, unsystematic clinical experience, or from randomized, controlled trials with serious flaws. Any estimate of effect is uncertain.	Evidence from observational studies, unsystematic clinical experience, or from randomized, controlled trials with serious flaws. Any estimate of effect is uncertain.
2A. Weak recommendation, high quality evidence	Benefits closely balanced with risks and burdens.	Consistent evidence from well performed randomized, controlled trials or overwhelming evidence of some other form. Further research is unlikely to change our confidence in the estimate of benefit and risk.	Weak recommendation, best action may differ depending on circumstances or patients or societal values.

https://www.uptodate.com/home/grading-guide#GradingRecommendations

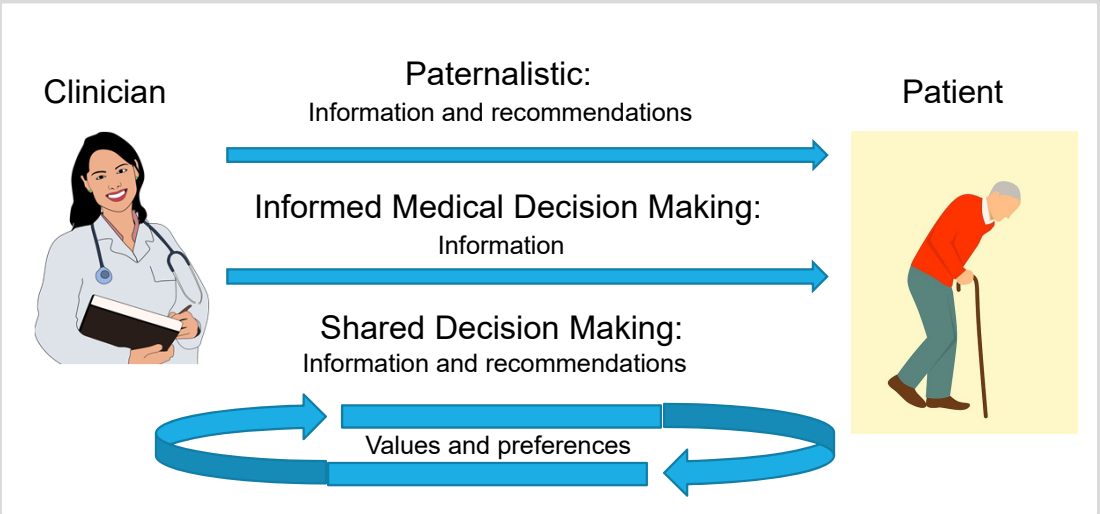
Table 1: Grading Recommendations

Grade of Recommendation	Clarity of risk/benefit	Quality of supporting evidence	Implications
2B. Weak recommendation, moderate quality evidence	Benefits closely balanced with risks and burdens, some uncertainly in the estimates of benefits, risks and burdens.	Evidence from randomized, controlled trials with important limitations (inconsistent results, methodologic flaws, indirect or imprecise), or very strong evidence of some other research design. Further research (if performed) is likely to have an impact on our confidence in the estimate of benefit and risk and may change the estimate.	Weak recommendation, alternative approaches likely to be better for some patients under some circumstances.
2C. Weak recommendation, low quality evidence	Uncertainty in the estimates of benefits, risks, and burdens; benefits may be closely balanced with risks and burdens.	Evidence from observational studies, unsystematic clinical experience, or from randomized, controlled trials with serious flaws. Any estimate of effect is uncertain.	Very weak recommendation; other alternatives may be equally reasonable.

https://www.uptodate.com/home/grading-guide#GradingRecommendations

No evidence of the effectiveness of a service ≠ the service is ineffective

SHARED DECISION MAKING



A Simple Approach to Shared Decision Making in Cancer Screening -- FPM (aafp.org)

TOP 10 *

Smoking
Obesity
Sexual transmitted diseases screening
HIV screening
Hepatitis C screening
Depression
HTN screening
Lipoid DO
DM screening
Osteoporosis

PERSPECTIVE

Table 1. Leading Causes of Death in Adults 65 Years and Older in the United States, 2002

Heart disease
Malignant neoplasms
Cerebrovascular diseases
Chronic lower respiratory disease
Influenza and pneumonia
Alzheimer's disease
Diabetes mellitus
Nephritis, nephrotic syndrome, and nephrosis
Unintentional injuries
Septicemia
Note: Listed in descending order of frequency.

Table 2. Actual Causes of Death Among Persons of all Ages in the United States, 2000

Actual cause	Percentage
Tobacco use	18.1
Poor diet and physical inactivity	15.2
Alcohol consumption	3.5
Microbial agents (e.g., influenza, pneumonia)	3.1
Toxic agents (e.g., particulate air pollution, environmental tobacco smoke, radon)	2.3
Motor vehicle crashes	1.8
Firearms	1.2
Sexual behavior	0.8
Illicit drug use	0.7

JAMA 2005:293(3):293-294

SMOKING

SOR : A

Who: All adults ,

When: Every visit

Rationale: 1 in 5 smoke, premature death, high M&M

Screening test: 5 As

OBESITY

SOR B

Who: All adults

When: undetermined

Rationale: 1 in 3 , associated with high CHD risk

Screening test: BMI (specific & Wt)

SEXUAL TRANSMITTED ILLNESSES SCREENING

SOR B

Who: Sexually active women (<24 years & older with risk factors)

When: Annual

Rationale: Common, asymptomatic, infertility, PID

Screening test: Chlamydia , Gonorrhea , Syphilis

HIV SCREENING

SOR A

Who : Adults <=65 yoa , pregnant women

When: At least once, every pregnancy

Rationale: Cost effective in early dx, prevent AIDS, reduce transmission

Screening test: HIV non reactive Ab 1 &2

HEPATITIS C SCREENING

SOR B

Who: adults aged 18 to 79 years

When: Once per adult life

Rationale: Most common chronic blood born carcinogenic virus

Screening test: Hep C Quant PCR

DEPRESSION

SOR B

Screen with adequate systems in place to ensure accurate diagnosis, effective treatment, and appropriate follow-up

Who: Adults aged >= 18 yoa

When: Unidentified

Rationale: Leading cause of disability in persons 15 years and older, minimal risk , great benefit due to high morbidity

Screening test: PhQ9 , PhQ2

HYPERTENSION

SOR A

Who: All adults > 40 yoa, or younger with risk factors

When: Annual (every 3-5 years for younger adults with no RF)

Rationale: Minimal risk, great benefit, reduces cardiovascular disease

Screening test: In office BP measurement, Ambulatory BP measurement (ABPM). Encourage outside clinic readings for confirmation.

LIPID DISORDER

SOR A

Who: A non-fasting plasma lipid profile can be obtained to estimate ASCVD risk and document baseline LDL-C in adults 20 years and older who are not on lipid-lowering therapy (ACC 2018)

Men > 35 yoa, women >45 yoa *at risk of CHD. (USPSTF 2011)*

Mindshift towards who to prescribe statins to rather than absolute increase in LDL

When: Every 3-5 years

Rationale: Genetic DO, CHD risk factor

Screening test: Cholesterol, HDL , Lipid panel (irrelevant of fasting)

DIABETES MELLITUS TYPE 2

SOR B

Who: 40-70 years adults , overweight or obese

When: Every 3 years

Rationale: low cost, high morbidity, Chronic

Screening test: A1C , Fasting blood glucose, two-hour oral glucose tolerance test

OSTEOPOROSIS

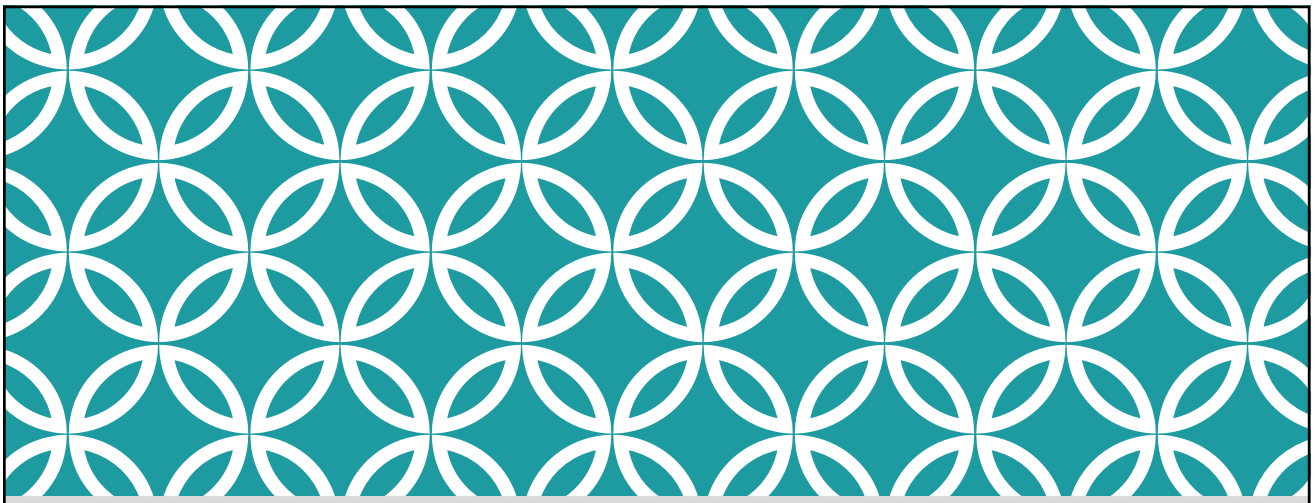
SOR B

Who: Women > 65 yoa, postmenopausal women with risk factors identified using formal risk assessment tools

When: Screening intervals based on age, baseline BMD, and calculated projected time to transition to osteoporosis. However, limited evidence from 2 good-quality studies found no benefit in predicting fractures from repeating bone measurement testing 4 to 8 years after initial screening.

Rationale: Disability, decreased QOL

Screening test: DEXA of hip & spine, Quant US of calcaneus



SPECIAL POPULATIONS | Limited studies

PREGNANT WOMEN

Hep B: SOR A

HIV: SOR A

Syphilis: SOR A

Depression: SOR B

GDM: SOR B (after 24 WGA)

Preeclampsia: SOR B (throughout pregnancy)

GERIATRICS

Abdominal Aortic Aneurysm: (SOR B)

- Men , 65-74 yoa, ever smokers
- One time Ultrasound

Fall Risk Screening : (SOR B)

- > 65 years old
- No adequate evidence behind screening tool (e.g. FRAX assessment tool)

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Thank
You
Merci
Gracias
Spacibo
Danke
Hvala
Arigatô
KamSahHamnida
TerimaKasih
Mèsi
Xièxie
Grazie
Chokrane
Dziakuju
Takk
aDank
BarakAllahuFiik
Rahmat
ThintKo
Buznyg
Blagodaram
Mercé
Taiku
Gràcies
Faleminderit
Efharisto
NajisTuke
Nirringrazzjak
Bayarlalaa
Obrigado
Salamat
Saha
Multumesc
CámOn
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KopKhunKha
GratiasAgo
Motashakkeram
Tak
Dankie
TänanVäga
GratiasAgimus
Kiitos
Tanemirt
Tenki
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