KPCO Adult Cardiovascular Disease and Stroke Prevention Guideline

Refer to Health Connect Home Page – Cardiovascular Clinical Tools

Screening

Assess Global 10-year Cardiovascular Disease (CAD) and Stroke/TIA Risk

Risk

- **Low <10%**
- **Moderate 10-20%**
- **High >20%**

High CAD Risk :
Known Coronary Artery Disease "CAD"
CAD risk equivalents:
- **Diabetes mellitus (DM) age 40-80**
- **Stroke/Transient ischemic attack (TIA)**
- **Peripheral arterial disease (PAD)**
- **Abdominal aortic aneurysm (AAA)**
- **Chronic Kidney Disease (CKD) GFR <45**
- **High Framingham risk ">20%"**

Therapeutic Lifestyle Changes (TLC)

- **If overweight, reduce weight by 5-10%**
- **Reduced trans and saturated fat/ cholesterol intake**
- **Assess & address tobacco use**
- **Aerobic physical activity 30 min/ day, most days**
- **Limit alcohol consumption to 1-2 drinks/ day**
- **Identify and manage depression**

Normal BMI 18.5-24.9;
BMI >30 screen for DM if other risks

Aspirin

- **No**
- **Insufficient data** Shared decision making
- **Yes** **RECOMMENDED** dose 81-325 mg

Aspirin in DM without CAD
Recommended in men age ≥ 50, women age ≥ 60 with 1 additional risk factor (Fam hx, Smoking, Dyslipidemia, HTN, Albuminuria)

Blood pressure

Treatment target <140/90 for most patients including those with non-proteinuric * DM & CKD
<130/80 in Heart Failure (HF), Stroke/TIA, PAD, AAA, CAD, * Proteinuria ≥ 500 mg/d

All patients
- If systolic >20 mmHg or diastolic >10 mmHg above BP goal- start 2 drugs -preferably diuretic plus ACE-I.
- Recheck BP after 1 min when BP > 140/90

Statins

- **Based on LDL goal**
- **Based on LDL goal**
- **Yes** **IRRESPECTIVE** of LDL level

Special Populations
- **Heart Failure / Myocardial Infarction (MI)**: use Angiotensin Converting Enzyme inhibitor (ACE-I)* and Beta blocker.
- **Post stroke / TIA:** use ACE-I* & diuretic.
- **DM:** use ACE-I*
- **CKD:** use ACE-I*

* Use Angiotensin Receptor Blocker (ARB) if ACE-I intolerant

Lipids

Treatment priorities: 1) Statins when indicated 2) Achieve LDL goal, 3) Achieve non-HDL goal
Document CAD risk status & LDL goal in problem list in patient chart.

10-year CAD Risk	CAD Risk Status	Patient Examples Use Framingham risk on HC HealthTRAC tab when available	LDL Goal	LDL to refer to RD	LDL to start Drug
> 30%	Very High	Unstable or recurrent CAD CAD + DM or CAD + active/multiple risk factors	<70 MD decision	>70	≥70
> 20%	High	Stable CAD or CAD equivalents Some Middle-aged patients with >2 RFs + Metab Sx or hsCRP 2.0-10.0, twice, 2 weeks apart	<100	>70	≥100
11 –20 %	Moderate	3 or more conventional RFs Many patients with Metabolic syndrome 50 yr old w/ hsCRP 2.0-10.0 twice 2 wks apart & Metab Sx	<130	>100	≥130
5 –10 %	Low	Patients < age 50 with just 1-2 conventional RF	<130	>130	≥160
< 5 %	Very Low	Most patients < 30 years	<160	>160	≥190

Statin Key Points
- **First line drug therapy for Acute Coronary Syndrome(ACS):** Atorvastatin 40-80 mg qd
- **For low/moderate FR, Diabetes without CAD, & CAD equivalent :** start with *Simvastatin* 40 mg qd
- **DM age ≥ 40:** statins irrespective of LDL
- **DM age < 40:** individualize
- **High risk:** start statin with TLC
- Achieve LDL goal within 1 year
- In DM, increase statin when LDL >130

Revised Dec 2010
BP goal update Jan 2011
Statin Therapy update Oct 2012
Affiliate Provider Version

This document represents the Kaiser Permanente Colorado version of the Colorado State CVD & Stroke Prevention guideline 2008, originally adapted in 2008 with permission from The Colorado Clinical Guideline Collaborative and the Colorado Prevention Center and updated in 2010.

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Risk Assessment & Therapeutic Lifestyle Changes

These guidelines are applicable to adults ages 18 to 80.

Risk Assessment

- **CAD risk status:** If data is missing for Framingham: order lipid profile, obtain BP, document tobacco status.
- **Screening**
  - **Age and frequency:**
    Obtain lipid profile (screening non-fasting OK for initial screen) for all patients once 18-39 yo; every 5 years in 40-80 yo; individualize for >80 yo or significantly reduced life expectancy.
  - **PAD:** Assess ankle-brachial index (ABI; reliable measure of pre-clinical atherosclerosis).
  - **AAA:** One-time screening with abdominal aortic ultrasound for males 65-75 yrs who ever smoked.
- **Family history**: Premature coronary artery disease (CAD) in a first-degree relative (males <55 yrs, females <65 yrs) increases risk.
- **Metabolic syndrome:** increases risk of CAD and DM. Characterized by at least 3/5 of the following: waist circumference (men >40 in, women >35 in) OR BMI >27, TG >150, HDL-c <40 men or <50 women, treated HTN or BP ≥ 130/85, FBS 100-125 still present after 3-6 months of TLC. Treat all lipid and non-lipid risk factors.
- **Risk factors to consider when determining LDL goal on statin & no pre-statin lipid available**
  1) Cigarette smoking w/in past 2 years 2) BP≥140/90 or on BP therapy; 3) HDL< 40 mg/dL; 4) Premature CAD in parent, child or sibling (males <55 yrs, females <65 yrs) 5) patient's age (males >45 yrs , females > 55 yrs); 6) BMI >30; 7) physical inactivity.
- **Adjust risk per clinical judgment** when other risk markers are present:
  - **Metabolic syndrome:** ↑RR~1.5X, roughly equal to adding 2 points to the Framingham score.
  - **hsCRP:** may be helpful when treatment decision is uncertain in pts w/moderate risk & LDL at goal in men >50yo or women >60yo. Consider statin if hsCRP 2-10 (2 measurements, 2 wks apart)
  - **Other emerging risk factors** independently increase CAD risk beyond Framingham (exact additional attributable risk unknown; likely overlaps with metabolic syndrome). Total Framingham point score adjustment recommended (add no more than 4 points).
  - **Not recommended** due to lack of evidence: *routine* testing of hsCRP, lipid sub-fraction testing, and ultrafast CT

Therapeutic Lifestyle Changes (TLC)

- **Tobacco cessation: ASK** about tobacco use, **ASSESS** readiness to quit in the next 30 days, **ASSIST** by referring to the Colorado Quitline **(See CQL fax referral form on KP Portal*)** and prescribing tobacco cessation medications.
  Tobacco Reduction Guideline on KP Portal* KP members may cal 1-866-659-2656 for help to quit.
- **Weight management:** Weigh and assess BMI, document height at each visit. Assist with weight maintenance or 5-10% weight loss. **Refer members to weight management options. Members contact 1-866-868-7112. See KP CMI Obesity & KPCO HEAL guidelines in Clinical Library/Cardiovascular.**
- **Nutrition:** TLC, DASH or Mediterranean diets
  TLC: 25-35% total fat, <7% saturated fat, <1g trans fat/1000 calories, <200 mg cholesterol, calories to meet energy needs or weight loss if appropriate.
  DASH and Mediterranean diets: fruits, vegetables, whole grains, low-fat dairy, fish, lean meats, poultry, nuts and legumes, olive oil
  Sodium: < 2300 mg/day in young healthy individuals and < 1500 mg/day in all African Americans, those age > 40, and pts with DM, HTN, or CKD
  Additional: High fiber 25-35 g/day, Plant sterols/stanols 2 g/day
  Refer members to cholesterol class or registered dietitian
  Members contact 1-866-868-7112
- **Alcohol:**
  Assess for excess alcohol consumption. >1/day for women, >2 per day for men.
  One drink = 12 oz of beer, 5 oz of wine, or 1.5 oz of liquor.
  Refer members to chemical dependency as appropriate
- **Physical activity:**
  To manage weight/prevent weight gain, encourage 30-60 minutes moderate-to-vigorous activity (e.g. brisk walking) most days of the week.
  Include strengthening exercises up to 30 min 2x/wk. Balance activity with caloric intake.
- **Depression:** Independent risk factor for CVD (↑ RR 1.5-2). Incidence of depression is 3-5 times higher in CVD patients vs. general population. Assess for and treat depression.
  See KP CMI Depression Guideline on KP Portal*.
- **Stress management (SM):** Emerging evidence links stress with CAD; consider implementing SM techniques.

*KP Portal – http://providers.kp.org/cod/clinicalguidelines.html

Treatment & Documentation of CV Risk Status

Aspirin

- Indicated in **high risk,** less evidence for use in **moderate** risk patients. Providers should weigh the risks and benefits before recommending.

Blood pressure

- Manage with TLC and medication. **See KPCO HTN practice guideline on KP Portal*.**
- **Pre-hypertension:** systolic BP 120-139 or diastolic BP 80-89 – recommend TLC.

Statins / Lipids

- **Drug therapy:** for pts with or at-risk for CAD: 1) Moderate to high dose statins (Simvastatin 40 mg or Atorvastatin 40-80 mg per clinical status) 2) If goal LDL not achieved on statin alone, add niacin (avoid in gout or active peptic ulcer disease)
- **Lab monitoring:**
  - ***Baseline*:** 2 lipid profiles (screening non-fasting or fasting) to initiate drug therapy
  - ***If dyslipidemia identified*:** order ALT/TSH if none in past 2 yrs; Cr, urinalysis and FBS if none past 1 yr
  - ***When adjusting meds*:** FLP & ALT 6-8 weeks after drug initiated or dose change
  - ***Annual labs:*** FLP, ALT & Cr, FBS if 100-125 in past. If on niacin: FBS, uric acid and liver panel
  - ***Persistent refractory dyslipidemia*:** TSH
- **Triglyceride management:**
  - ***TG >200 after LDL goal achieved*:** establish non-HDL goal 30 mg above LDL goal
  - ***TG 500-699*:** Reinforce TLC, **Refer KP Members for individual Dietitian appt. Members contact 1-866-868-7112**
  - ***TG >700*:** Urgent Dietitian encounter **Refer KP Members for urgent appt. Dietitian appt. Members contact 1-866-868-7112**
  - ***Pharmacologic treatment options*:** ↑ statins, add Omega 3 Fatty Acids (1000-1500 DHA & EPA minimum), add fibrate, add Niacin if TG & LDL> goal and HDL low, intensive glucose control for DM pts (consider Metformin for appropriate pts)

Stroke / TIA

- ***Blood pressure control*:** most effective way to reduce risk
- ***Atrial fibrillation***: a major risk factor. Consider anticoagulation with warfarin for patients with high risk traits: **CHADS** (**C**HF, **H**ypertension, **A**ge >75, **D**iabetes, prior **S**troke).
- ***TIAs***: strong predictors of major stroke (10-fold ↑ risk).
- ***Pharmacologic treatment***: ASA is an effective first-line antiplatelet therapy for stroke/TIA prevention; effective alternatives include clopidogrel and ASA + sustained-release dipyridamole.
- ***Carotid disease***: is a risk factor for stroke/TIA.

See AHA/ASA guidelines (strokeassociation.org) for more information on stroke & TIA prevention,

Cardiovascular Assessment & Documentation

- **Diagnosis of CAD/CAD equivalent** → HT displays HIGH CAD risk status on Problem List.
- **No CAD or CAD equivalent diagnosis** → If pt has data for Framingham (Total & HDL cholesterol, BP, tobacco status, age, gender) calculate a Framingham point score & predicted % 10 year CAD risk on Problem List. Go to: **http://www.mayoclinic.com/health/heart-disease-risk/HB00047**
- **Cholesterol lowering medication** & no CAD or CAD equivalent diagnosis → Use pre-statin data to determine Framingham risk before statin. Otherwise count risk factors and correlate to examples on front of this guideline.
- **Missing data for Framingham calculation** when no CAD or CAD equivalent diagnosis→ order non-fasting lipid test to make it easy for the patient to get screened, obtain BP and tobacco status.
- **CAD risk status documented on the Problem List** → allows all team members to assist the patient in achieving lipid goals. Communicate lipid goals to the patient.

*Clinicians - adjust the raw Framingham when other risks are present to ensure the Problem List entry accurately reflects the patient's true risk.

Use risk tools other than Framingham if desired

Framingham Risk Calculation Tables

Estimate of 10-year Risk for Men

Age	Points
20-34	-9
35-39	-4
40-44	0
45-49	3
50-54	6
55-59	8
60-64	10
65-69	11
70-74	12
75-79	13

HDL	Points
≥ 60	-1
50-59	0
40-49	1
<40	2

Age	20-39	40-49	50-59	60-69	70-79
Nonsmoker	0	0	0	0	0
Smoker	8	5	3	1	1

Cholesterol	Points				
age	20-39	40-49	50-59	60-69	70-79
<160	0	0	0	0	0
160-199	4	3	2	1	0
200-239	7	5	3	1	0
240-279	9	6	4	2	1
≥ 280	11	8	5	3	1

Systolic BP	If untreated	If treated
<120	0	0
120-129	0	1
130-139	1	2
140-159	1	2
≥ 160	2	3

Estimate of 10-year Risk for Women

Age	Points
20-34	-7
35-39	-3
40-44	0
45-49	3
50-54	6
55-59	8
60-64	10
65-69	12
70-74	14
75-79	16

HDL	Points
≥ 60	-1
50-59	0
40-49	1
<40	2

Age	20-39	40-49	50-59	60-69	70-79
Nonsmoker	0	0	0	0	0
Smoker	9	7	4	2	1

Total

Cholesterol	Points				
age	20-39	40-49	50-59	60-69	70-79
<160	0	0	0	0	0
160-199	4	3	2	1	1
200-239	8	6	4	2	1
240-279	11	8	5	3	2
≥ 280	13	10	7	4	2

Systolic BP	If untreated	If treated
<120	0	0
120-129	1	3
130-139	2	4
140-159	3	5
≥ 160	4	6

MEN Point Total 10 Year Risk %

Point Total	10 Year Risk %
< 0	< 1
0	1
1	1
2	1
3	1
4	1
5	2
6	2
7	3
8	4
9	5
10	6
11	8
12	10
13	12
14	16
15	20
16	25
≥ 17	≥ 30

WOMEN Point Total 10 Year Risk %

Point Total	10 Year Risk %
< 9	< 1
9	1
10	1
11	1
12	1
13	2
14	2
15	3
16	4
17	5
18	6
19	8
20	11
21	14
22	17
23	22
24	27
≥ 25	≥ 30

10-Year Risk____