



Guide for Comprehensive Risk Reduction

Rx ✓	Intervention	Recommendations															
	Smoking: Goal -Complete cessation	Strongly encourage patient and family to stop smoking. Provide counselling, nicotine replacement, and formal cessation programs as appropriate.															
	Lipid Management: Primary goal * LDL < 2.0 (1.8) mmol/L	Start hypolipidemic diet in all patients: ≤ 30% fat, < 7% saturated fat, < 200mg/day cholesterol. 10% LDL ↓ achievable with diet. Assess fasting lipid profile. Baseline lipid profile < 24 hrs. after acute event. In post-MI patients, lipid profile may take 4 to 6 weeks to stabilize. Add drug therapy according to the following guide:															
	Secondary goal * TC/HDL<4; Apo-B<0.8 g/L	<table border="1"> <thead> <tr> <th>Lipid Profile</th> <th>1st Line Therapy</th> <th>2nd Line Therapy</th> </tr> </thead> <tbody> <tr> <td>LDL ↑</td> <td>Statin</td> <td>Resin</td> </tr> <tr> <td>LDL ↑↑ & TG</td> <td>Statin</td> <td>Niacin or Fibrate</td> </tr> <tr> <td>LDL ↑ & TG ↑↑</td> <td>Fibrate or Niacin/Niaspan®</td> <td>Combination Therapy</td> </tr> <tr> <td>TG ↑ & HDL ↓</td> <td>Fibrate or Niacin/Niaspan®</td> <td>Combination Therapy</td> </tr> </tbody> </table>	Lipid Profile	1 st Line Therapy	2 nd Line Therapy	LDL ↑	Statin	Resin	LDL ↑↑ & TG	Statin	Niacin or Fibrate	LDL ↑ & TG ↑↑	Fibrate or Niacin/Niaspan®	Combination Therapy	TG ↑ & HDL ↓	Fibrate or Niacin/Niaspan®	Combination Therapy
Lipid Profile	1 st Line Therapy		2 nd Line Therapy														
LDL ↑	Statin		Resin														
LDL ↑↑ & TG	Statin		Niacin or Fibrate														
LDL ↑ & TG ↑↑	Fibrate or Niacin/Niaspan®		Combination Therapy														
TG ↑ & HDL ↓	Fibrate or Niacin/Niaspan®	Combination Therapy															
Tertiary goal * Metabolic Syndrome TG < 1.7 mmol/l HDL 1.0mmol/l(men)/ 1.3mmol/l (women)																	
2009 CCS/Canadian guidelines for the Dx and Tx of dyslipidemia and prevention of CVD - 2009																	
(NCEP ATP III Revision 2004)																	
		<p>* Primary goal: For patients CHD Risk equivalent: any of CAD, TIA, CVA, AAA, PVD/bruits, DM with one additional categorical risk factor or for patients with very high 10-year risk for total CV events (20%).</p> <ul style="list-style-type: none"> • Target initial Rx medication dose required to achieve target LDL <2.0 (1.8) mmol/L or ≥ 50% LDL ↓. • For 10 yr CV risk for hard endpoints 10-20%, LDL Rx threshold is 3.5 mmol/L or ≥ 50% LDL ↓. • For 10 yr CV risk for hard endpoints < 10%, LDL Rx threshold is 5.0 mmol/L or ≥ 50% LDL ↓. • Consider CRP measurement for males >50 & females >60. Initiate lipid lowering if CRP >2.0 mg/L. <p>For specific medications and dosing strategy see Lipid Optimization Tool</p>															
Hypertension Goal < 140/90 (Office BP) < 135/85 (Home BP) < 130/80 (DM/CAD/CKD) < 120/80 (LVD) 2007 AHA		<ul style="list-style-type: none"> • Assess BP at all visits. Assess global CV risk. Lifestyle modifications are cornerstone of anti-hypertensive and anti-atherosclerotic therapy. • Initiate Rx immediately if hypertensive urgency. Dx HTN on second visit if : target organ damage, DM, chronic kidney disease (CKD) or BP > 180/110.Dx HTN on 3rd visit if BP ≥ 160 or ≥ 100 • Validate hypertension with: 1) Office BP(<140/90), ambulatory BP(< 135/85 daytime average/ or 130/80-24 hr average) or home/self BP(<135/85). Target < 140/90 office BP or < 130/80 DM, CAD or CKD. Target < 120/80 LVD (left ventricular dysfunction). • Initial Rx for systolic/diastolic HTN in absence of compelling indication: Low dose thiazide; β-blocker if age < 60 yr; ACE-I in non-black pts; long-acting CCB and ARB. ISH: LDD/ DHP-CCB/ARB. Combination therapies generally necessary to achieve target BP. • Consider Rx ASA (once BP controlled) and statin in HTN patients if ≥ 3 CV risks. • CHF&HTN-Rx β-blocker; ACE-I (ARB if ACE-I intolerant) & aldosterone antagonist (Class III/IV HF) • CKD or Type 2 DM with micro-albuminuria, proteinuria or nephropathy ACE-I/ARB are 1st line Rx. Combination of ACE-I and ARB not recommended in non-proteinuric CKD. 															
2008 CHS www.hypertension.ca Earlier Dx is key BP control – Treat to Target Focus on Adherence Regular follow-up Rx titration Combination therapies																	



Rx ✓	Intervention	Recommendations
	Diabetes CDA 2008 Guidelines Released Sept. 2008	<ul style="list-style-type: none"> • Dx DM: FBG \geq 7.0 mmol/L or 2 hr PC Glucose \geq 11.1 mmol/L. (Normal: A1c \leq 6; FBG 4-6 mmol/L; 2 hr PC Glucose 5-8 mmol/L.) Dx Impaired Fasting Glucose: 6.1-6.9 mmol/L. Dx Impaired Glucose Tolerance: 2 hr PC Glucose 7.8-11 mmol/L. • Target euglycemia ASAP. Initiate diet to achieve weight loss (5-10%), diabetes education & exercise program. Target A1C \leq 7; FBG 4-7 mmol/L; 2 hr PC Glucose 5-10 mmol/L. Rx oral hypoglycemic for FBG \geq 7.0 mmol/L & A1C 7-9. Consider initial combination Rx for A1c \geq 9. • Aggressive BP control. Target $<$130/80 Rx ACE-i, ARB, DHP-CCB, thiazide diuretic, then cardio-selective β blocker or non-DHP-CCB. Alpha blockers not recommended as first line agent.
	Physical activity: Min. goal 30 minutes 6 to 7 times/week Cumulative 200 mins./week HR guided	<ul style="list-style-type: none"> • Assess risk, preferably with exercise test, to guide prescription. • Encourage minimum of 30-40 minutes of moderate intensity activity 3 to 5 times weekly (walking, jogging, cycling or other aerobic activity) supplemented by an increase in daily lifestyle activities (e.g., walking breaks at work, using stairs, gardening, household work) • Max benefits 5 to 6 hours per week. Medically supervised programs for moderate to high-risk patients.
	Obesity/weight management:	Start intensive diet and appropriate physical activity intervention, as outlined above, in patients $>$ 120% of ideal weight for height. Particularly emphasise need for weight loss in patients with hypertension, elevated triglycerides or elevated glucose levels. Ideal body weight BMI $<$ 25
	Antiplatelet agents/ anticoagulants:	Start aspirin 81-325 mg per day if not contraindicated. Consider clopidogrel 75mg OD post MI, post CABG, CVA, PVD in ASA intolerant or allergic patients <i>CAPRIE Trial</i> . Consider clopidogrel 75mg OD + ASA for ACS: unstable angina/non-ST elevation MI <i>CURE Trial</i> : duration of therapy 9-12 months. No chronic benefit of ASA+ clopidogrel <i>CHARISMA</i> . Consider warfarin for post MI patients unable to take aspirin (maintain INR 2-3).
	ACE inhibitors/ARBs Post MI/LV Dysfunction:	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 (EF $<$ 40%) or symptoms of CHF. Use as needed to manage HPT or symptoms in all other patients. Valsartan in ACE intolerant patients <i>VALIANT</i>
	ACE inhibitors/ARBs Vascular Disease/ Diabetes	Rx ACE inhibitors in all patients $>$ 55 yrs with evidence of vascular disease or DM and one other risk factor: <i>HOPE Trial</i> - Ramipril 2.5 \rightarrow 10 mg OD or all CAD patients $>$ 18 yrs <i>EUROPA Trial</i> -Perindopril 4 \rightarrow 8 mg OD. If LVF preserved, patient non diabetic and other risk factors optimized may not need ACE inhibitor <i>PEACE</i> . ARBs non-inferior: <i>ONTARGET Trial</i> -Telmisartan 80 mg OD.
	Beta-blockers: Post-MI	Start acutely or within a few days of event in all post-MI patients (unless contra-indication). Continue indefinitely if residual ischemia, heart failure LV dysfunction or severe co-morbidity. Continue indefinitely in low risk patients (IIa). Rx as needed to manage angina, arrhythmia or HPT.
	Beta-blockers: CHF	Rx Add Beta-blocker to ACE-inhibitor/diuretic/+/- digoxin in stable Class II-IV CHF/LVEF \leq 40% Bisoprolol 1.25 \rightarrow 10 mg OD, carvedilol 3.125 mg BID \rightarrow 25 mg BID (50 mg BID if weight $>$ 85 kg) or metoprolol 12.5 mg \rightarrow 75-100 mg BID
	Omega-3 fatty acids HOMOCYST(E)INE	Rx: Omega-3 fatty acids 1-3 gm/day. No identifiable benefit in lowering elevated homocysteine with vitamin supplements combining folic acid, B6 and B12 in patients with CVD, DM or post MI. <i>HOPE 2/NORVIT</i> .
	Estrogens	HRT not recommended for 1 ^o or 2 ^o prevention. Stop HRT in ACS, MI, PTCA, CABG, CHF, other surgery.



Rx (✓)	Risk Intervention	Date ✓ Achieved	Date ✓ Achieved	Date ✓ Achieved	Date ✓ Achieved	Date ✓ Achieved
	Ideal body weight: BMI < 27 kg/m ² (ideally < 25 kg/ m ²)					
	Girth: Targets M < 94 cm (37 inches); F < 88cm (34.6 inches). Lower in South Asians M < 90 cm and F < 80 cm. W/H M < 0.95; F < 0.9.					
	Physical activity: Minimum goal > 200 min./week					
	Smoking Goal: Complete cessation					
	Lipid Management:					
	<i>Primary goal:</i> LDL < 2.0 (1.8) mmol/L or ≥ 50% LDL ↓					
	<i>Secondary goal:</i> TC/HDL < 4; Apo-B < 0.8 g/L					
	Metabolic Syndrome HDL ≥ 1.0 mmol/L M HDL ≥ 1.3 mmol/L F					
	TG < 1.7 mmol/L					
	Apo B: <i>Hi risk</i> < 0.8 g/L; <i>Mod risk</i> < 1.05 g/L; <i>Low risk</i> < 1.2 g/L					
	Blood pressure: Targets <135/85 mm Hg for HBPM/ABPM <130/80 mm Hg for DM/CAD/CKD <120/80 mm Hg for LVD					
	Diabetes: Targets FBS 4-6 mmol/L 2hr PC Glucose 5-10 mmol/L HbA1C ≤ 7%					
	MAU: Targets Spot urine < 20/mg/L ACR < 2.0 Men ACR < 2.8 Women					
	Antiplatelet agents: ASA or Plavix					
	Anticoagulants: Target INR _____					
	ACE inhibitor/ARBs: Post-MI					
	ACE inhibitor/ARBs: Vascular protection/CAD					
	Beta-blockers: Post-MI					
	Beta-blockers CHF/LV Dysfunction: LVEF < 40%					
	Rx: Omega-3 fatty acids (salmon oil or flax) 1-3 gm/day					
	LP(a) < 30 mg/dL					
	hs-CRP High risk > 3.0 mg/L; Mod risk 1.0-3.0 mg/L; Low risk < 1.0 mg/L					
	HRT: Off					

