Laboratory Testing in Statin Therapy

Screening for risk assessment

- Fasting lipoprotein profile (TC, HDL, LDL, TRIGL) glucose, eGFR.
- Patients should refrain from alcohol for 24 to 48 h.

Considering statin therapy

- TSH to identify hypothyroidism
- Baseline ALT (not AST) and CK

Monitoring statin therapy

- Fasting lipid profile: At 6-8 weeks after starting or with medication change and then every 6-12 mos.
- Liver enzymes: ALT (not AST) within the first 3 months. If normal no further testing unless symptoms develop or statin increased or switched.
- Creatine kinase: Within first 3 months. If normal no further testing unless myalgias develop or statin increased or switched.

Statin Use in Severe Frailty (≥ 7 on Clinical Frailty Scale)

Primary Prevention: It is unlikely that statins provide benefit in applicable outcomes and so there is no reason to prescribe or continue statins for primary prevention.

Secondary Prevention: Statin treatment in severe frailty is probably not necessary, although there may be extenuating individualized circumstances that shift the risk/benefit ratio.

Risk factors for myopathy

Patient-related	Statin-related
• Advanced age (age >80) • Female sex • Small body frame and frailty • Hypothyroidism • Alcoholism • Grapefruit juice consumption • Excessive physical activity • Severe renal disease • Major surgery • History of myopathy with lipid-lowering therapy (self or family members) • History of creatine kinase elevation • Multisystem disease (particularly liver, kidney, or both) • Genetic polymorphisms of CYP isozymes • Use of illicit drugs (cocaine, amphetamines)	• High-dose statin therapy • Statin properties that may increase the risk of myopathy: • Lipophilicity, high bioavailability, limited protein binding (Pravastatin is 50% protein bound, other statins are 90-98% bound.) • Drug interactions*, i.e., Medications metabolized through cytochrome P450 (3A4 or 2C9) system. Some important examples are: - Fibrates - Cyclosporine - Azole antifungals - Macrolide antibiotics - HIV protease inhibitors - Nefazodone - Amiodarone - Verapamil - Nicotinic acid - Digoxin - Fusidic acid Rosuvastatin and pravastatin are reported to have fewer drug interactions. ***Please consult pharmacist or drug interaction resources for a full list of interactions, statin-specific interactions, and the relative severity of interactions.**

Refs: Ann Intern Med 2009;150:858-68. Can J Cardiol 2011;27:635-62. Can J Cardiol 2013;29:151-167. Pharmacist's Letter Jan 2013. Cochrane 2011, CD004816