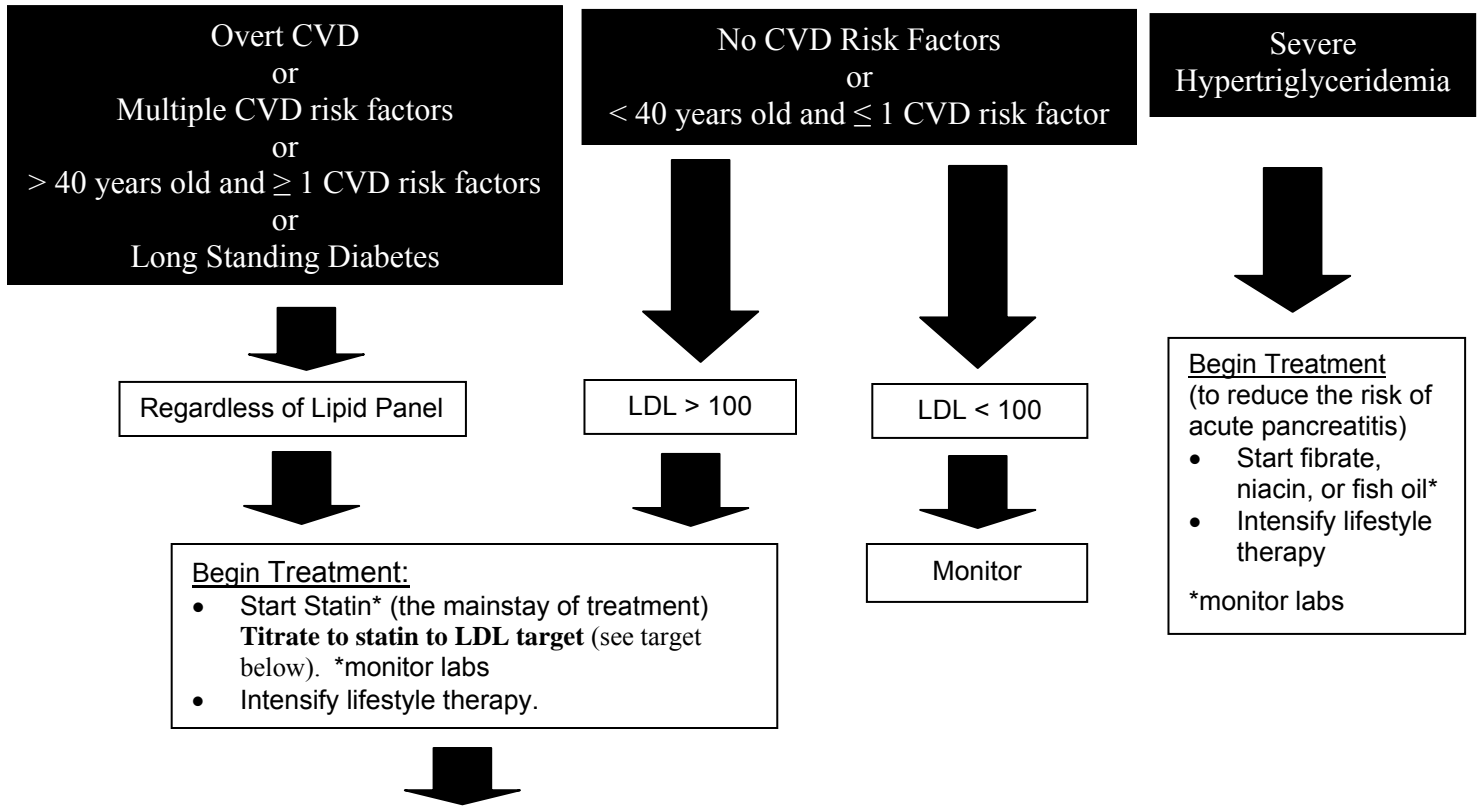


# LIPID MANAGEMENT IN ADULTS WITH DIABETES

Check lipid panel annually (every 2 years if low risk panel)  
Recommend basic lifestyle therapy for all patients



## Additional Treatment if Needed:

- If LDL goals not met on maximum tolerable dose of statin:
  - May consider addition of a fibrate, niacin, bile acid sequestrant, or a cholesterol absorption inhibitor as a second agent (monitor labs); however, evidence in large clinical trials specific to diabetes patients (such as ACCORD and AIM-HIGH) demonstrating that combination therapy offers improved CVD risk reduction over statins alone is elusive.
- If TG persists above goal and HDL persists below goal for a patient on a statin:
  - May consider addition of fibrate to statin, as subgroup analysis in the ACCORD trial possible benefit for patients with TG ≥ 204 and HDL ≤ 34.

Note: Combination therapy is associated with increased risk for abnormal transaminase levels, myositis or rhabdomyolysis

## Lipid Targets:

- LDL < 100 or
- Lower LDL 30-40% from baseline (if target LDL is not met on maximum tolerable dose of statin)
- LDL < 70 (if overt CVD)
- TG < 150
- HDL > 40 (men) or  
HDL > 50 (women)

## Lifestyle Therapy

- Reduce saturated fats intake
- Reduce trans-fat intake
- Reduce total cholesterol intake
- Increase Omega-3 fatty acids intake
- Increase viscous fiber
- Increase plant stanols/sterols
- Lose weight (if indicated)
- Increase physical activity
- Smoking cessation

## Major Risk Factors

- Hypertension ( BP ≥ 140/90 or on antihypertensive meds)
- Current cigarette smoking
- Family history of premature CHD (CHD in male 1<sup>st</sup> degree relative < 55 years or CHD in female 1<sup>st</sup> degree < 65 years)
- Age (male ≥ 45 years or female ≥ 55 years)
- Low HDL < 40mg/dL

## Table of Medications For Lipid Management

Below is a chart that lists the therapeutic agents that are approved by the FDA and may be used for lipid lowering.

<b>Lipid Lowering Medications</b>			
<b>Class</b>	<b>Generic Name</b>	<b>Trade Name</b>	<b>Contraindications</b>
HMG CoA Reductase Inhibitors ("statins")	Atorvastatin Fluvastatin  Lovastatin  Pitavastatin Pravastatin Rosuvastatin Simvastatin	Lipitor <sup>1</sup> Lescol Lescol XL Altoprev <sup>2</sup> Mevacor <sup>1</sup> Livalo Pravachol <sup>1</sup> Crestor Zocor <sup>1</sup>	<u>Absolute:</u> <ul style="list-style-type: none"> <li>Active or chronic liver disease</li> <li>Pregnancy</li> </ul> <u>Relative:</u> <ul style="list-style-type: none"> <li>Concomitant use of certain drugs<sup>3</sup></li> </ul>
Fibric acid derivatives <sup>4</sup> ("fibrates")	Gemfibrozil Fenofibrate	Lopid <sup>1</sup> Tricor <sup>1</sup> Triglide Antara (micronized) Tripix <sup>2</sup>	<u>Absolute:</u> <ul style="list-style-type: none"> <li>Severe renal disease</li> <li>Preexisting gallbladder disease</li> </ul> TriCor®4: <ul style="list-style-type: none"> <li>CrCl31-80: 48 mg/day.</li> <li>CrCl≤30: Avoid.</li> <li>Severe hepatic disease</li> </ul>
Niacin/Nicotinic acid <sup>4</sup>	Niacin Niacin ER <sup>2</sup>	Niacor <sup>1</sup> Niaspan	<u>Absolute:</u> <ul style="list-style-type: none"> <li>Chronic liver disease</li> <li>Severe gout</li> <li>Active peptic ulcer disease</li> </ul> <u>Relative:</u> <ul style="list-style-type: none"> <li>Diabetes</li> <li>Hyperuricemia</li> </ul>
Cholesterol Absorption Inhibitors	Ezetimibe	Zetia	<u>Hepatic</u> <ul style="list-style-type: none"> <li>Caution if mild liver disease</li> <li>Not recommended if moderate-or-severe liver disease</li> </ul> <u>Renal</u> <ul style="list-style-type: none"> <li>Caution if severe renal disease (CrCl &lt;30).</li> </ul>
Bile acid sequestrants ("resins")	Colestipol Colesevelam Cholestyramine	Colestid <sup>1</sup> WelChol Prevalite Questran <sup>1</sup> Questran Light <sup>1</sup>	<u>Absolute:</u> <ul style="list-style-type: none"> <li>Dysbeta-lipoproteinemia</li> <li>TG &gt;400 mg/dL</li> </ul> <u>Relative:</u> <ul style="list-style-type: none"> <li>TG &gt;200 mg/dL</li> </ul>
Omega-3 fatty acids	Omega-3 ethyl esters	Lovaza	<u>Relative:</u> Hepatic impairment
Combinations	Amlodipine & Atorvastatin Ezetimibe & Simvastatin Niacin ER <sup>2</sup> & Lovastatin Niacin ER <sup>2</sup> & Simvastatin Pravastatin & Aspirin	Caduet Vytorin Advicor Simcor Pravigard PAC	

<sup>1</sup> Available generically

<sup>2</sup> ER = extended-release

<sup>3</sup> Cyclosporine, macrolide antibiotics, various anti-fungal agents and cytochrome P-450 inhibitors (fibrates and niacin should be used with appropriate caution)

<sup>4</sup> Fibrates (esp gemfibrozil) or Niacin increase the risk of myositis, rhabdomyositis, and elevated LFTs when taken in combination with statins.