

## Type 2 DM – Lipids

### Step 1: Ensure triglycerides (TG) are not dangerously high

TG > 500

Restrict fats, Intensify blood glucose control, R/O hypothyroidism or other causes.  
Consider: Gemfibrozil, Fish Oil, Niaspan

### Step 2: Check LDL

LDL Goal is < 100

Consider LDL < 70 for known CVD

LDL < 100

Therapeutic Lifestyle Changes

LDL > 100

Start Simvastatin 40mg at bedtime  
If goal LDL not achieved with Simvastatin 80mg, consider switching to Atorvastatin 80mg daily

### Step 3: Check Triglycerides

Triglyceride Goal is < 150

TG > 150

Increase Statin Dose,  
Start Fish Oil, Gemfibrozil 600mg BID,  
or Niaspan 500mg HS

**All Adults with Diabetes > Age 30**

ASA 81mg daily if no history of CVD

Ref: ADA Clinical Practice Recommendations 2007 & ATP III  
[http://care.diabetesjournals.org/content/vol30/suppl\\_1/](http://care.diabetesjournals.org/content/vol30/suppl_1/)  
<http://www.nhlbi.nih.gov/guidelines/cholesterol/index.htm>

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Medication	LDL	HDL	TG	Start Dose	Max Dose
<b>Statins</b>					
Simvastatin (Zocor®)	-20-50%	+5-10%	-15-30%	40mg HS	80mg HS
<i>Atorvastatin (Lipitor®)</i>	-20-55%	+5-10%	-15-30%	10-20mg daily	80mg daily
<b>Fibrates</b>					
Gemfibrozil (Lopid®)	-0-20%	+10-25%	-20-35%	600mg BID	
<i>Fenofibrate (Tricor®)</i>	-20%	+9-15%	-20-35%	145mg daily	
<b>Others</b>					
Niacin (Niaspan®)	-5-20%	+10-30%	-10-35%	500mg HS	2-3g HS
<i>Ezetimibe (Zetia®)</i>	-13%	+1-4%	-8-11%	10mg daily	
<i>Cholesevalam (Welchol®)</i>	-15-20%	+3%	+0-5%	3 tab BID or 6 tab daily	
<i>Fish Oil (Omacor®)</i>	+45%	+9%	-45%	4g / day	
<i>Fish Oil (OTC)</i>	+5-10%	+1-3%	-25-40%	2-4g EPA + DHA	

Drugs names in *italics* are not on the National Core Formulary

Note: Atorvastatin 80mg is on the formulary while lower doses are not

### Contraindications

**Statins:** active liver disease, ETOH abuse, pregnancy & lactation

**Niacin:** active gout or PUD, active liver disease, pregnancy & lactation

**Gemfibrozil:** active liver disease, gallbladder disease, pregnancy & lactation

### Lab Monitoring

#### ALT

Simvastatin	Baseline, 6 mos then yearly
Simvastatin 80mg	Baseline, 3 mos, 6 mos then yearly
Atorvastatin 80mg	Baseline, 12 weeks, then every 6 mos
Niacin	Baseline, Q 3 mos for 1 year then Q 6 mos
Gemfibrozil	Baseline, Q 3 mos for 1 year then Q 6 mos
Discontinue or restart at lower dosage if ALT > 3 times ULN	
Omacor	Periodic ALT

#### Other Lab Tests – Check CK if muscle pain

Niacin Follow glucose closely; Check uric acid levels at baseline and when dose is stable; may check in patients suspected of gout.

#### Combination Therapy

**Fibrates (Gemfibrozil) & Statin:** begin with low doses of Simvastatin (5-20mg); obtain baseline CK and recheck if complaints of muscle symptoms.

**Other Combinations:** Obtain baseline ALT and CK. Follow strictest monitoring guidelines.