Dyslipidemia: What’s New In The Guidelines?

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Disclosures

- No actual or perceived conflicts of interest to report
Suggested Reading

- 2013 ACC/AHA Guideline on the Treatment of Blood Cholesterol to Reduce Atherosclerotic Cardiovascular Risk in Adults. JACC 2014;63:2889-2934
- 2013 ACC/AHA Guideline on the Assessment of Cardiovascular Risk. JACC 2014;63:2935-2959

Learning Objectives

- Recognize how the new cholesterol treatment guidelines differ from previous cholesterol treatment guidelines
- Recall which groups of patients would benefit from treatment with a statin
- Promote appropriate dose of statin according to specific patient characteristics
Intent of the Guideline

Evidence
• foundation for treatment of cholesterol in adults (≥ 21 years of age)

Review
• ASCVD related RCTs, systematic reviews and meta-analyses

Prevention
• Primary and Secondary

Goal
• simplify the decision regarding initiation of therapy

Substantial Changes of 2013
Cholesterol Guidelines – Key Points

No more treatment goals of LDL < 100 mg/dl or < 70 mg/dl

Identified 4 groups for primary and secondary prevention

Important to match up the appropriate intensity level of statin therapy to achieve relative reductions in LDL

New global risk assessment tool developed

Safety recommendations
Classification of Evidence

SIZE OF TREATMENT EFFECT

<table>
<thead>
<tr>
<th>CLASS I</th>
<th>Benefit &gt;&gt; Risk</th>
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<tr>
<td>Procedure/Treatment SHOULD be performed/administered</td>
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<th>CLASS IIa</th>
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<td>Additional studies with focused objectives needed; IT IS REASONABLE to perform procedure/administer treatment</td>
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<td>Procedure/Treatment</td>
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<td>END OF TREATMENT EFFECT</td>
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LEVEL A
Multiple populations evaluated
Data derived from multiple randomized clinical trials or meta-analyses
- Recommendation that procedure or treatment is useful/effective
- Sufficient evidence from multiple randomized trials or meta-analyses

LEVEL B
Limited populations evaluated
Data derived from a single randomized trial or nonrandomized studies
- Recommendation that procedure or treatment is useful/effective
- Evidence from single randomized trial or nonrandomized studies

LEVEL C
Very limited populations evaluated
Only consensus opinion of experts, case studies, or standard of care
- Recommendation that procedure or treatment is useful/effective
- Only expert opinion, case studies, or standard of care

2013 Cholesterol Treatment Guidelines

CHOLESTEROL EXPERT PANEL—CRITICAL QUESTIONS

<table>
<thead>
<tr>
<th>No.</th>
<th>Question</th>
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<tr>
<td>CQ1.</td>
<td>What is the evidence for low-density lipoprotein cholesterol (LDL-C) and non-high-density lipoprotein cholesterol (non-HDL-C) goals in the secondary prevention of atherosclerotic cardiovascular disease (ASCVD)?</td>
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CQ1 What is the evidence for LDL or non-HDL goals in Secondary Prevention

- No data regarding treatment or titration to a specific LDL-C goal in adults with CHD or CVD
- Insufficient evidence to support setting LDL-C goals in CHD or CVD
- No RCTs that reported non-HDL levels

CQ2 What is the evidence for LDL or non-HDL goals in Primary Prevention

- RCT not available regarding dose titration to achieve a specific LDL goal
- Insufficient evidence in women without CHD or CVD to evaluate the reduction in CVD risk with achieved LDL < 130 or < 100 mg/dl
- Six RCTs - no evidence regarding dose titration to achieve a specific LDL-C goal in primary prevention
2013 Cholesterol Treatment Guidelines

Meant to define practices that meet the needs of patients in most circumstances

Not a replacement for clinical judgment

Ultimate decision about care of a particular patient must be made by the healthcare provider and patient in light of patient-specific circumstances

Shared Decision Making

In caring for most patients, clinicians can employ the recommendations confidently to reduce the risk of ASCVD

Lifestyle as the Foundation

Therapeutic Lifestyle Change

Remains a crucial component of health promotion and ASCVD risk reduction

Heart Healthy Diet

- vegetables, fruits and whole grains
- low fat dairy products, poultry, fish, legumes, non-tropical vegetable oils, nuts
- limits sweets, sugar sweetened beverages, red meats

Exercise

- adults should engage in aerobic physical activity to lower LDL and non-HDL cholesterol
- 3-4 sessions per week, lasting 40 minutes per session
- Moderate to vigorous intensity physical activity
Statin Are King

* Time course established

Initiating Statins

Benefit exceeds risk of initiating statins in 4 treatment groups

1. Anyone with clinical ASCVD
2. Anyone with LDL-C ≥ 190 mg/dl
3. Anyone 40-75 yo w/ DM & LDL 70-189 mg/dl
4. Anyone 40-75 yo w/out DM, w/ 10 yr ASCVD risk ≥ 7.5%
Initiating Statins – Group 1 - 3

Heart-healthy lifestyle habits are the foundation of ASCVD prevention (See 2013 AHA/AACC Lifestyle Management Guideline)

1. **Clinical ASCVD**
   - Age ≥ 21 y and a candidate for statin therapy

2. **LDL-C ≥ 190 mg/dL**
   - Yes
   - Age ≤ 75 y
   - High-intensity statin (Moderate-intensity statin if not candidate for high-intensity statin)
   - No
   - Age > 75 y OR if not candidate for high-intensity statin
   - Moderate-intensity statin

3. **Diabetes**
   - LDL-C 70-189 mg/dL
   - Age 40-75 y
   - Yes
   - Estimated 10-y ASCVD risk ≥ 7.5%
   - High-intensity statin

4. **Regularly monitor adherence to lifestyle and drug therapy with lipid and safety assessments (See Fig 5)**

Initiating Statins – Group 4

Diabetes
- LDL-C 70-189 mg/dL
- Age 40-75 y

4. **Primary prevention**
   - (No diabetes, LDL-C 70 to 189 mg/dL, and not receiving statin therapy)
   - Estimate 10-y ASCVD risk every 4-6 y using Pooled Cohort Equations

5. **Clinician-Patient Discussion**
   - Prior to initiating statin therapy, discuss:
     1. Potential for ASCVD risk-reduction benefits
     2. Potential for adverse effects and drug-drug interactions
     3. Heart-healthy lifestyle
     4. Management of other risk factors
     5. Patient preferences
     6. If decision is unclear, consider primary LDL-C ≥ 190 mg/dL, family history of premature ASCVD, lifetime ASCVD risk, abnormal CAC score or ABI, or hs-CRP ≥ 2 mg/L

6. **Emphasize adherence to lifestyle**
   - Manage other risk factors
   - Monitor adherence

7. **Encourage adherence to lifestyle**
   - Initiate statin at appropriate intensity
   - Manage other risk factors
   - Monitor adherence (See Fig 5)
High Intensity Statin Therapy

Daily dose lowers LDL-C, on average by ≥ 50%

• atorvastatin 40-80 mg
• rosvastatin 20 (40) mg

Moderate Intensity Statin Therapy

Daily dose lowers LDL on average by 30% - < 50%

• Atorvastatin 10 (20) mg
• Rosuvastatin (5) 10mg
• Simvastatin 20-40mg
• Pravastatin 40 (80) mg
• Lovastatin 40mg
• Fluvastatin XL 80mg
• Fluvastatin 40mg bid
• Pitavastatin 2-4mg
Low Intensity Statin Therapy

Daily dose lowers LDL on average by < 30%

- Simvastatin 10 mg
- Pravastatin 10-20 mg
- Lovastatin 20 mg
- Fluvastatin 20-40 mg
- Pitavastatin 1 mg

Initiating Statins – Group 2-4

No Clinical ASCVD
Not currently on cholesterol-lowering drugs
Initial evaluation prior to statin initiation
- Fasting lipid panel
- ALT
- Hemoglobin A1c (if diabetes status unknown)
- CK (if indicated)
- Consider evaluation for other secondary causes (Table 6) or conditions that may influence statin safety (Table 8, Rec 1)

Evaluate and Treat Laboratory Abnormalities
1. Triglycerides ≥500 mg/dL
2. LDL-C ≥190 mg/dL
   - Secondary causes (Table 6)
   - If primary, screen family for FH
3. Unexplained ALT ≥3 times ULN
Statin Adverse Effects

74,102 subjects in 35 randomized clinical trials with statins

1.4% incidence of elevated hepatic transaminases (1.1% incidence in control arm)

Dose-dependent phenomenon that is usually reversible

15.4% incidence of myalgias* (18.7% incidence in control arm)

0.9% incidence of myositis (0.4% incidence in control arm)

0.2% incidence of rhabdomyolysis (0.1% incidence in control arm)

*The rate of myalgias leading to discontinuation of atorvastatin in the TNT trial was 4.8% and 4.7% in the 80 mg and 10 mg arms, respectively

Source: Kashani A et al. Circulation 2006;114:2788-2797

Statin Safety (CQ3)

Characteristics predisposing to statin AEs

- Multiple comorbidities, impaired renal or liver fxn
- Hx of statin intolerance or muscle disorders
- Unexplained ALT elevations ≥ 3 x ULN
- Concomitant use of drugs affecting statin metabolism
- Age > 75 yo
- Hx hemorrhagic stroke
- Asian ancestry
**Statin Safety (CQ3)**

**Creatine Kinase (CK)**
- **Baseline CK should not** be measured routinely before starting statin
- Baseline CK reasonable for patient believed to be at increased risk for adverse muscle events
- During statin therapy, reasonable to measure CK in patients with muscle symptoms

**Hepatic Transaminase (ALT)**
- **Baseline ALT should be** obtained before starting statin
- During statin therapy, reasonable to measure ALT if patient has symptoms of hepatotoxicity

**Statin Safety (CQ3)**

Decreasing the statin dose may be considered when 2 consecutive values of LDL are < 40 mg/dl

Harmful to initiate simvastatin at 80mg qd or increase dose to 80mg qd

Glucose should be monitored routinely – if diabetes develops, **not an indication to stop statin**
Statin Safety (CQ3)

**Obtain history of prior or current muscle symptoms to establish baseline**
- Pain, tenderness, stiffness, cramping, weakness, fatigue

**If unexplained severe muscle symptoms or fatigue develop**
- Promptly discontinue statin
- Address possibility of rhabdo (CK, creatinine, UA for myoglobin)

**If mild to moderate muscle symptoms develop**
- Discontinue statin
- Evaluate for other conditions that might contribute
- If symptoms resolve – rechallenge statin (same or lower dose)

**Confusion or memory impairment**
- Evaluate for nonstatin causes as well as statin association

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Statin Safety - FDA Feb 2012 Update

**Simvastatin dosing guidelines (CYP3A4)**
- Patients taking diltiazem or verapamil – 5-10mg, 10mg max
- Patients taking amiodarone, amlopidine or ranolazine – 5-20 mg, 20 mg max
- Due to risk of developing myopathy and/or rhabdomyolysis on the combo

- Contraindicated with Lovastatin (and RYR)
  - Itraconazole
  - Ketoconazole
  - Posaconazole
  - Erythromycin
  - Clarithromycin
  - Telithromycin
  - HIV protease inhibitors
  - Nefazodone
  - Gemfibrozil
  - Cyclosporine
  - Boceprevir
  - Telaprevir
Statin Monitoring

Adherence to statin and TLC

- Fasting lipids panel within 4-12 weeks after initiation or dose adjustment of statin
- Fasting lipid panel every 3-12 months after dose stable

Optimize statin therapy

- Maximum tolerated intensity of statin should be used if recommended intensity is not tolerated

Insufficient response to statin therapy

- Reinforce adherence (statin and TLC)
- Exclude secondary causes of hyperlipidemia
- High intensity statin ≥ 50% LDL reduction
- Moderate intensity statin 30-50% LDL reduction
- LDL levels and % reduction used only to assess response and adherence
Non Statin Therapies Offer No Benefit

- Statins response not as expected
- Statins not tolerated at recommended intensity
- Statin intolerance

Treatment of hypertriglyceridemia (TG > 150 - < 500)

Intensive Life-style modifications

- weight control (reduction if necessary)
- increased physical activity
- restriction of alcohol
- restriction of dietary fat in extreme cases
- Diabetes
  - GOOD GLYCEMIC CONTROL IS CENTRAL TO CONTROLLING TRIGLYCERIDES
Fibrin Acids: Place in therapy

- Lower TG but not CV risk
- Do not initiate gemfibrozil in patient on statin – increased risk for muscle symptoms
- Consider fenofibrate in combo with low or moderate intensity statin when TG ≥ 500 mg/dl
- Monitor renal status when fenofibrate is prescribed

Omega 3 Fatty Acids

- Can be used if TG ≥ 500 mg/dl
- Not associated with decreased risk for CVD
- 3-4g/day of DHA+EPA → 45%↓ in TG
- 2 fish meals/week can provide about 400-500mg/day of DHA+EPA
Red Yeast Rice (RYR)

<table>
<thead>
<tr>
<th>Name</th>
<th>Efficacy</th>
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Double Blind, Placebo Control, 62 statin intolerant pts (myalgias) x 24 wks  
Dose 6.12mg monacolin K qd, LDL ↓35mg/dl, no diff in pain severity score at 12 or 24 wk |
| ~1800-2400 mg bid |  
Red yeast rice (RYR) is the product of yeast (Monascus purpureus) grown on rice.  
Used as a condiment in Asia. |
Double Blind, prava 20mg vs RYR 2400mg bid, 43 statin intolerant pts (myalgias) x 12 wks  
Dose 9.96mg monacolin K qd, PO w/drawal of tx → no difference in PO (1 RYR v 2 Prava), no diff in muscle strength, LDL RYR ↓30%, Prava ↓27% |

Marked Variability of Monacolin Levels in Commercial Red Yeast Rice Products

Buyer Beware!


Table 2. Total Monacolin, Monacolins K and KA, and Citrinin Content per 600-mg Capsule of 12 Commercially Available Red Yeast Rice Products

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<th>Red Yeast Rice Product in 600-mg Capsules</th>
<th>Monacolin Level, mg/cap</th>
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<td>Total Monacolins</td>
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<tr>
<td>B</td>
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<tr>
<td>C</td>
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Evidence Gaps

Other race/ethnic groups
Younger diabetics
Use of statins for primary prevention in adults > 75
Benefits of various lipid therapy combos in ASCVD risk reduction (not lipid changes)
Risk of new onset diabetes associated with statin therapy
No specific recommendations on NYHA Class II-IV heart failure or patients on maintenance hemodialysis

VIEWPOINT

2013 ACC/AHA Cholesterol Treatment Guideline
What Was Done Well and What Could Be Done Better
Seth S. Martin, MD, Thura T. Abd, MD, MPH, Steven R. Jones, MD, Erin D. Michos, MD, MHS, Roger S. Blumenthal, MD, Michael J. Blaha, MD, MPH

Are cardiologists refusing to follow new cholesterol recommendations?

By Deborah Kotz | GLOBE STAFF APRIL 02, 2014

WASHINGTON -- Criticism over new cholesterol treatment recommendations appears to be growing, judging by remarks made by cardiologists this week at the annual meeting of the American College of Cardiology, the group that issued the new guideline last November along with the American Heart Association.
Take Home Messages

**Pharmacist Involvement**
- Screening – identification of patients at risk
- Monitoring and management of adverse effects
- Partnering with the patient for adherence strategies
- Identification of appropriate statin intensity
- Health coaching – emphasis on lifestyle modifications

**Change of mindset with monitoring**
- No longer focused on LDL level

**Despite criticisms, implementation has happened**
- Millions more treated with statins
- Issues with access, cost, long term effects of new DM

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**Take Home Messages**

**Who should get which therapy at what intensity**

- Focus on statin intensity in high risk groups instead of specific target LDL level
- 4 groups for statin therapy
- New global risk assess tool
- Considers risk reduction benefits and adverse effects of statin treatment

- Clinical ASCVD
- LDL level ≥ 190 mg/dl
- Patients with DM age 40-75 w/ LDL 70-189 mg/dl
- ≥ 7.5% estimated 10 year ASCVD risk and age 40-75
Stephen, a 52-year-old white jogger with a BMI of 25, wants you to assess his cardiovascular risks. He had scheduled his visit after taking his father to another physician to discuss his father’s blindness, which is related to type 2 diabetes. Both his parents have hypertension that is controlled with medication; neither smokes.

Stephen is here to discuss the results of blood tests that had been performed before the day of the visit. “I’m an accountant, Doc, and I live by the numbers. I don’t want to be my father in 20 years,” he says.

He tells you that he has recently increased his running regimen to 3 miles a day and that he smokes a half-pack a day during tax season, when he is under stress.
Total cholesterol level is 180 mg/dl, HDL is 35 mg/dl, triglyceride level is 150 mg/dl, and the calculated low-density lipoprotein (LDL) cholesterol level is 115 mg/dl. His blood pressure is 130/85 mm Hg.

You think this is a great opportunity for shared decision making and explain that although his LDL cholesterol level is not high, he has three risk factors for heart disease and stroke
- low HDL, smokes, and is a man

You explain his estimated 10-year risk of an event such as a heart attack or stroke is 10.9%

What do you want to do???

1. Do not begin a statin
2. Begin a statin but monitor LDL
3. Begin a statin and do not monitor LDL
Polling Results

- Readers from 97 countries cast 1641 votes
- 57% (931 readers) favored not starting a statin at all
- 26% (432) would start therapy but monitor the LDL cholesterol level
- 17% (278) would start a statin and not monitor the LDL cholesterol level
- Responses were independent of geography
Reader Comments

- Many advocated for lifestyle modifications, including improved diet and exercise, stress management, and, most of all, smoking cessation.
- They stated that statins should not be considered a substitute for interventions that could contribute much more substantially to lifelong health for Stephen.
- Some were concerned that statin treatment might actually reduce the motivation to adopt a healthier lifestyle.
- Many acknowledged a lack of consensus regarding how long physicians should wait before they initiate statin treatment.

Case - 2

A 63-year-old man is seen in the office 2 weeks after a ST-elevation myocardial infarction (MI). A former smoker with hypertension, he was discharged on atorvastatin 80mg daily, dual anti-platelet therapy, long-acting metoprolol, and an ACE inhibitor.

One year before the acute MI, he was prescribed simvastatin 40 mg which was then increased to simvastatin 80 mg. He stopped the simvastatin 80 mg 2 weeks later after developing muscle cramps in his legs. At that time he was also on a calcium channel blocker for his hypertension.

Although he has no muscle symptoms since he started the atorvastatin 80 mg, he is concerned about having had muscle cramps in the past on a statin and would like to decrease the atorvastatin to 20 mg daily.
Case Example - 2

1. Which of the following statements is the best answer?

   a) Randomized trials of high intensity statin therapy versus moderate intensity statin therapy have not shown a significant difference in outcomes. He should decrease the atorvastatin to 20 mg to minimize adverse effects.

   b) Systematic meta-analyses of randomized clinical trials support using an intensive statin dose such as atorvastatin 80 mg/day over a moderate intensity statin. He should stay on atorvastatin 80 mg.

   c) He should be followed with creatine kinase (CK) values when his lipids are checked at each visit for the first year.

   d) Although his liver panel was normal in the hospital, he should have an alanine aminotransferase (ALT) done at each subsequent visit.

Case Example - 3

After 2 years of treatment with atorvastatin 80 mg daily free of muscle symptoms, the patient developed progressive muscle pains in both lower legs. He stopped the statin 2 weeks prior to his clinic visit but the muscle pain and weakness did not noticeably improve. He now wants to know if he can be switched to red yeast rice. On examination, he has mild difficulty getting out of a chair and also has weakness after doing 3 squats. He remembers he felt fine doing squats at the gym about 6 months ago.
Case Example - 3

Which of the following is the best answer?

a) He should be switched from the atorvastatin 80 mg daily to red yeast rice based on evidence in U.S. studies.
b) He should be switched to rosuvastatin 40 mg daily and given CoQ10.
c) He should be rechallenged with atorvastatin 80 mg daily.
d) He should stay off the statin until he is evaluated for possible causes of his muscle problems. A useful approach is to look for exogenous causes (e.g., medications, alcohol), systemic causes (examples include hypothyroidism, rheumatologic disorders such as polymyalgia rheumatica), and primary muscle disorders. He should be questioned about a family history of primary muscle disorders or others in the family with muscle problems taking a statin.
e) If he is African-American, CK levels are not useful in evaluating muscle symptoms.

Case Example - 4

A 44-year-old woman has a 10-year history of type 2 diabetes. She is a nonsmoker with well-controlled hypertension and microalbuminuria. She is on dietary management, metformin, and takes one omega-3 fatty acid capsule with 840 mg of EPA and DHA. She also takes lisinopril and hydrochlorothiazide for her blood pressure. She has a family history of diabetes, but not premature ASCVD. She has a BP 134/78 and a BMI of 36.0. Her fasting lipid panel reveals an LDL-C 95 mg/dL, triglycerides 350 mg/dL, and HDL-C 38 mg/dL. Her hemoglobin A1c is 7.5%.
Case Example - 4

Which of the following statements is the best answer?

a) Her LDL-C is under 100 mg/dL so she is at "goal" and does not require a statin.
b) She should start simvastatin 20 mg and fenofibrate 160 mg daily.
c) To reduce her risk of an ASCVD event, the dose of omega-3 fatty acid should be increased to 4 capsules daily to lower her triglycerides.
d) If she does not want to start a statin, a bile acid sequestrant is the next best choice for her.
e) Her 10-year ASCVD risk should be calculated to determine if she needs a high- or moderate-intensity statin.

Case Example - 5

A 26-year-old woman has an LDL-C of 260 mg/dL, HDL-C of 51 mg/dL, and triglycerides of 102 mg/dL. She reports having elevated LDL-C levels of over 200 mg/dL since her teens and has tried various diets without success but has never taken a drug to lower her cholesterol. She is worried because her father died suddenly at age 38 and her father's brother had a myocardial infarction at age 32. Both were smokers. She is currently on a 2nd generation oral contraceptive and wonders if she should get off the contraceptive pill since she is engaged to be married in 6 months. She has an occasional cigarette and says that it is "social smoking." On exam, BP is 110/60 mm Hg and BMI is 24. She has bilateral inferior pole corneal arcus, no xanthelasma, and thickened Achilles tendons. Her cardiovascular examination is normal.
**Case Example - 5**

Which of the following is the best answer?

a) She likely has heterozygous familial hypercholesterolemia and should start a high-intensity statin.
b) If her fiancee has normal cholesterol values, the likelihood of her child having her genetic condition is 1 in 4.
c) Cigarette smoking should be stopped because she is thinking about becoming pregnant.
d) She should have her oral contraceptive stopped and started on a high-intensity statin.
e) She should have an estimation of her 10-year risk of an ASCVD event before deciding if she needs statin therapy.

**Case Example - 6**

A 60-year-old African-American woman has asked whether she should be taking a statin to reduce her risk of stroke, but is worried about the statin causing diabetes. Her mother had diabetes and had a stroke at age 62. She is a nonsmoker. Blood pressure is 142/88 mm Hg on 2 antihypertensive medications and BMI is 31.

Her fasting lipid panel reveals a total cholesterol 200 mg/dL, HDL-C 55 mg/dL, triglyceride 100 mg/dL, and LDL-C 125 mg/dL. Her fasting blood sugar is 109 mg/dL and hemoglobin A1c is 5.9%. According to the Pooled Cohort Equation for African-American Women, her estimated 10-year ASCVD risk is 8.7%.
**Case Example - 6**

Which of the following statements is the best answer?

a) She should focus on lifestyle change to improve her risk factors because lifestyle has been shown to reduce ASCVD events more than statin therapy.

b) The risk of progression to diabetes with a statin outweighs any ASCVD risk reduction benefits from statin therapy. The decision about a statin should be deferred.

c) She should start a moderate or high intensity statin.

d) A high-sensitivity C-reactive protein (hs-CRP) >2 would be needed before the decision can be made whether to start a statin.

**Case Example - 7**

A 35-year-old man has a strong family history of premature coronary disease, with both father and brother having an MI before age 55. He is a nonsmoker, nondiabetic and exercises for 150 minutes/week. He has gained 10 lbs since age 18.

His BP is 140/90 mm Hg, weight is 170 pounds, height is 5’8”, and BMI is 24.4. On a fasting lipid panel, his LDL-C is 160 mg/dL, HDL-C 45 mg/dL and triglyceride 100 mg/dL. His fasting blood glucose is 92 mg/dL. He is on a heart-healthy diet and exercises 150 minutes a week. He and his wife would like to discuss statin therapy given his strong family history.
Case Example - 7

Which of the following is likely to be helpful in making a decision regarding statin therapy in this patient?

a) Strong family history of premature ASCVD
b) Coronary calcium score of 300 units or more
c) hs-CRP ≥2.0 mg/L
d) Lifetime risk of ASCVD
e) LDL-C ≥160 mg/dL
f) All of these factors can be considered

Clinical Case - 8

A 32-year-old Caucasian man has gained 35 pounds since he graduated from college and started working as computer programmer. He has never smoked. He has treated hypertension. He has tried several popular diets to lose weight and lost about 20 pounds each time, but he always regains the weight lost within one year. He bowls once a week.

He weighs 220 lbs and his BMI is 32.5, and the highest it has ever been. His BP is 138/92. His labs show total cholesterol 218 mg/dL, triglycerides 188 mg/dL, HDL-C 40 mg/dL, LDL-C 138 mg/dL, and non HDL-C 178 mg/dL. His fasting glucose is 101 mg/dL. His father died of an MI at age 73.
Clinical Case - 8

Which of the following should be incorporated into your advice for ASCVD risk reduction for him?

a) Refer to a program providing a series of group counseling comprehensive lifestyle change sessions.
b) Start a moderate intensity statin.
c) Try to encourage a diet that will get at least 10-15 pounds off in 6 weeks so he can keep his motivation for weight loss high.
d) Reassure him that by following a strict diet he does not need to increase his physical activity and will be able to maintain his weight over the long haul.
e) Refer for bariatric surgery.

Case Example - 9

This 55-year-old man developed exertional chest pain. He had a positive stress exercise test and a coronary angiogram that revealed 2-vessel nonobstructive coronary disease. His risk profile indicates he is a nonsmoker with treated hypertension, and a low HDL-C. His father had an MI at age 67. His mother had type 2 diabetes diagnosed at age 60. He is on a low dose aspirin, long acting beta blocker, a high-intensity statin, and an ACE inhibitor.

His BP 135/86, pulse 58, weight 183 lbs and BMI 26.3. His LDL-C is 95 mg/dL, his HDL-C 39 mg/dL and triglycerides are 145 mg/dL. His fasting glucose is 109 mg/dL. He wants to know what dietary change recommendations you would make. His cardiologist has given him physical activity recommendations.
Case Example - 9

The best answer is:

a) His lifestyle is not important as long as he is on a statin and beta blocker.

b) He should consume a dietary pattern that emphasizes vegetables, fruits, and whole grains; includes low-fat dairy products, poultry, fish, legumes, nontropical vegetable oils and nuts; and limits intake of sweets, sugar- sweetened beverages and red meats.

c) Fatty meats should be restricted, but not processed meats.

d) Not adding salt is crucial because the salt in food is negligible.

e) A Mediterranean style diet that allows commercial baked goods and French fries.

Case Example - 10

A 48-year-old man with familial hypercholesterolemia and history of 3-vessel coronary artery bypass surgery 7 years ago sees you now for statin intolerance. The maximum dose of statin that he can tolerate is rosuvastatin 10 mg twice a week. On more frequent dosing he developed shoulder, low back, and thigh aching without weakness and a normal CK level. He had similar symptoms on low doses of simvastatin, atorvastatin and pravastatin.

On rosuvastatin 10 mg twice a week, his most recent LDL-C was 168 mg/dL, triglycerides were 138 mg/dL, and HDL-C was 46 mg/dL.
Case Example - 10

Which of the following statements is the most correct answer?

a) Ezetimibe has been shown to further reduce ASCVD events when added to statin therapy. He should continue the rosuvastatin and ezetimibe 10 mg should be added.

b) Gemfibrozil has been shown to reduce ASCVD events when used as monotherapy in men with coronary heart disease. He should continue the rosuvastatin and gemfibrozil 600 mg twice daily should be added.

c) Bile acid sequestrants have been shown to reduce ASCVD events when used as monotherapy in men with primary hypercholesterolemia. He should continue the rosuvastatin and cholestyramine 4 g packet twice daily should be added.

d) He should discontinue the rosuvastatin and begin lovastatin 40 mg daily.