Lipid Management in Diabetes: ADA Guidelines 2025

Lifestyle Interventions, Monitoring, and Pharmacological Therapy for ASCVD Prevention

- Ali Abdi, Medical intern
- Dr Nasim Ebadati Nakhjiri
- Family medicine department
- Ziaeian Hospital, Tehran university of medical sciences

- 12 Khordad 1404

Introduction

•Atherosclerotic Cardiovascular Disease (ASCVD) remains a major complication in individuals with diabetes.
•Effective lipid management is crucial for reducing ASCVD risk.
•This presentation outlines key recommendations from the ADA Guidelines 2025 regarding lipid management in diabetes.

Lifestyle Interventions for Lipid Profile Improvement

- Weight loss (if indicated).
- Adoption of a Mediterranean or DASH eating pattern.
- Reduction of saturated fat and trans fat intake.
- Increased intake of dietary n-3 fatty acids, viscous fiber, and plant stanol/sterol.
- Increased physical activity.
- When Indicated: Elevated triglyceride levels (≥ 150 mg/dL [≥ 1.7 mmol/L]) and/or low HDL cholesterol (< 40 mg/dL for men, < 50 mg/dL for women).
- Action: Intensify lifestyle therapy and optimize glycemic management.
- Rationale: Glycemic management can beneficially modify plasma lipid levels, especially with very high triglycerides.
- Tailored Approach: Nutrition intervention should be individualized based on age, pharmacologic treatment, lipid levels, and medical conditions.

Ongoing Therapy and Monitoring with Lipid Panel

•**Adults with Prediabetes or Diabetes:** Obtain a lipid profile (total cholesterol,
•LDL cholesterol, HDL cholesterol, and triglycerides) at:
•Time of diagnosis.
•Initial medical evaluation.
•Annually thereafter, or more frequently if indicated.
•**Individuals < 40 years:** At least every 5 years after initial evaluation
(more frequent for youth-onset Type 1 diabetes).
•Timing:At initiation of statins or other lipid-lowering therapy.
•4–12 weeks after initiation or a change in dose.
•Annually thereafter.
•Purpose: Facilitates monitoring response to therapy and informs medication-taking behavior.
•Clinical Judgment: Recommended if LDL cholesterol levels
are not responding despite medication adherence.

Statin Treatment: Primary Prevention

- **General Principle:** Statins are the drugs of choice for LDL
- cholesterol lowering and cardioprotection in diabetes due to robust evidence of ASCVD outcome benefits.
- **Recommendation 10.19 (Ages 40–75 years, without ASCVD):**
- **Action:** Use **moderate-intensity statin therapy** in addition to lifestyle therapy.
- **Recommendation 10.20 (Ages 20–39 years, with additional ASCVD risk factors):**
- **Action:** It may be **reasonable to initiate statin therapy** in addition to lifestyle therapy.
- **Recommendation 10.21 (Ages 40–75 years, at higher cardiovascular risk):**
- **Risk Factors:** One or more additional ASCVD risk factors.
- **Action: High-intensity statin therapy** is recommended.
- **Goals:**
    - Reduce LDL cholesterol by ≥ 50% of baseline.
    - Obtain an LDL cholesterol goal of < 70 mg/dL (< 1.8 mmol/L).

Statin Treatment: Primary Prevention

- **Recommendation 10.22 (Adjunctive Therapy for Higher Risk, 40–75 years):**
- **When Indicated:** Multiple additional ASCVD risk factors and an LDL cholesterol ≥ 70 mg/dL (≥ 1.8 mmol/L).
- **Action:** It may be **reasonable to add ezetimibe or a PCSK9 inhibitor** to maximum tolerated statin therapy.
- **Recommendation 10.23 (Adults > 75 years, already on statin):**
- **Action:** It is **reasonable to continue statin treatment.**
- **Recommendation 10.24 (Adults > 75 years, initiating statin):**
- **Action:** It may be **reasonable to initiate moderate-intensity statin therapy** after discussion of potential benefits and risks.

Table 10.1—High-intensity and moderate-intensity statin therapy

High-intensity statin therapy (lowers LDL cholesterol by ≥50%)	Moderate-intensity statin therapy (lowers LDL cholesterol by 30–49%)
Atorvastatin 40–80 mg	Atorvastatin 10–20 mg
Rosuvastatin 20–40 mg	Rosuvastatin 5–10 mg
	Simvastatin 20–40 mg
	Pravastatin 40–80 mg
	Lovastatin 40 mg
	Fluvastatin XL 80 mg
	Pitavastatin 1–4 mg

Once-daily dosing. XL, extended release.

Primary Prevention of Atherosclerotic Cardiovascular Disease Events

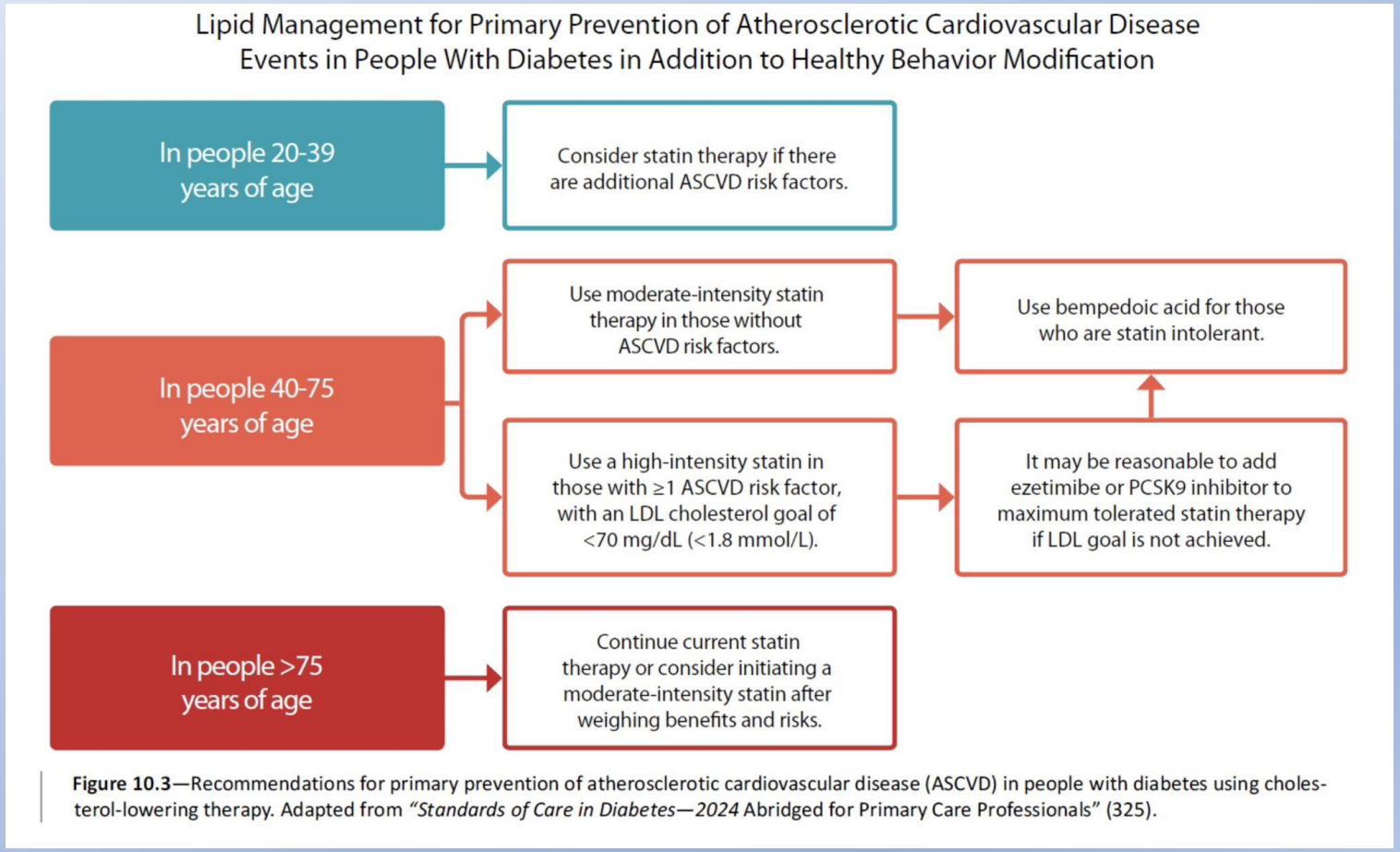

Figure 10.3—Recommendations for primary prevention of atherosclerotic cardiovascular disease (ASCVD) in people with diabetes using cholesterol-lowering therapy. Adapted from *"Standards of Care in Diabetes—2024* Abridged for Primary Care Professionals" (325).

Statin Treatment: Secondary Prevention

- **Recommendation 10.27 (All ages with diabetes and ASCVD):**
- **Action: High-intensity statin therapy** should be added to lifestyle therapy.
- **Recommendation 10.28 (Goals & Adjunctive Therapy):**
- **Goals:**
    - Obtain an LDL cholesterol reduction of ≥ 50% from baseline.
    - Achieve an LDL cholesterol goal of < 55 mg/dL (< 1.4 mmol/L).
- **Adjunctive Therapy:** If goals are not achieved on maximum tolerated statin therapy,
- **addition of ezetimibe or a PCSK9 inhibitor** with proven benefit in this population is recommended.
- **Recommendation 10.29a (Statin Intolerance - Dose):**
- **Action:** If intended statin intensity is not tolerated, the **maximum tolerated statin dose** should be used.
- **Recommendation 10.29b (Statin Intolerance - Alternatives):**
- **Action:** For people with diabetes and ASCVD intolerant to statin therapy,

consider alternative cholesterol-lowering therapies:

- PCSK9 inhibitor therapy (monoclonal antibody treatment).
- Bempedoic acid therapy.
- PCSK9 inhibitor therapy (inclisiran siRNA).

Lipid Management for Secondary Prevention of Atherosclerotic Cardiovascular Disease Events

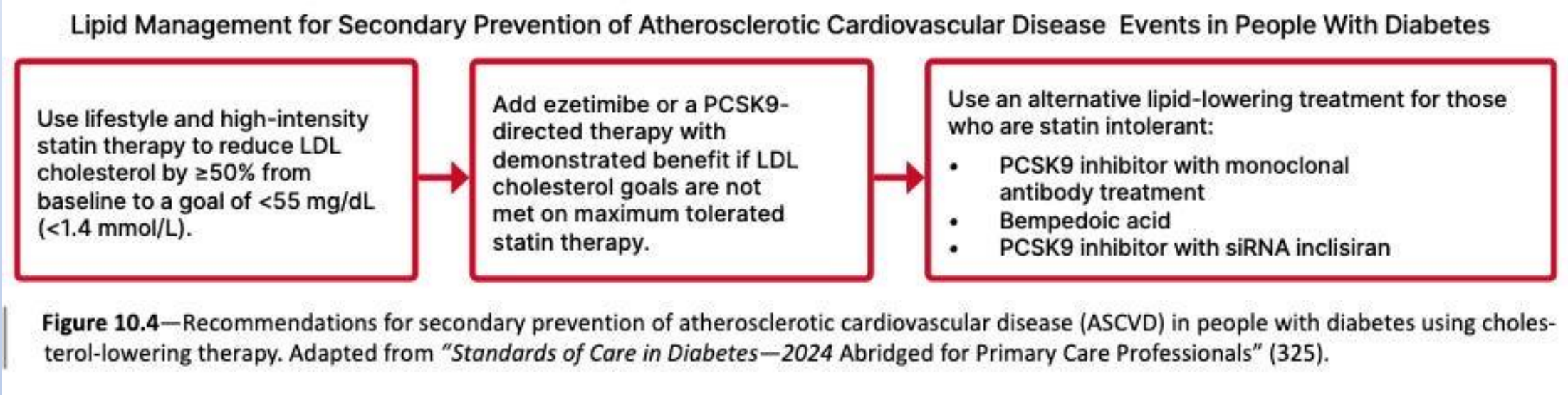

Figure 10.4—Recommendations for secondary prevention of atherosclerotic cardiovascular disease (ASCVD) in people with diabetes using cholesterol-lowering therapy. Adapted from *"Standards of Care in Diabetes—2024* Abridged for Primary Care Professionals" (325).

Combination Therapy for LDL Cholesterol Lowering

- **Statins and Ezetimibe:**
- **Evidence:** IMPROVE-IT trial showed significant reduction in major adverse cardiovascular events with addition of ezetimibe to moderate-intensity statin (especially in diabetes sub-analysis).
- **Statins and PCSK9 Inhibitors (Evolocumab, Alirocumab, Inclisiran):**
- **Mechanism:** Reduce LDL-C by ≈ 60% when added to maximally tolerated statin.
- **Evidence:** FOURIER and ODYSSEY OUTCOMES trials demonstrated 15–20% reduction in major adverse cardiovascular events. Inclisiran also shows significant LDL-C reduction.
- **Note:** No cardiovascular outcome trials for PCSK9 inhibitors in primary prevention.
- **Recommendation 10.33 (Statin plus Fibrate Combination Therapy):**
- **Action:** Generally **not recommended**.
- **Rationale:** Not shown to improve ASCVD outcomes; increased risk for abnormal transaminase levels, myositis, and rhabdomyolysis.
- **Recommendation 10.34 (Statin plus Niacin Combination Therapy):**
- **Action:** Generally **not recommended**.
- **Rationale:** No additional cardiovascular benefit above statin therapy alone; may increase risk of stroke and other side effects (e.g., new-onset diabetes).

Management of Other Lipoprotein Fractions & Special Considerations

- **Recommendation 10.30 (Fasting Triglycerides ≥ 500 mg/dL [≥ 5.7 mmol/L]):**
- **Action:** Evaluate for secondary causes of hypertriglyceridemia and consider medical therapy (e.g., fibric acid derivatives, fish oil) to reduce pancreatitis risk.
- **Recommendation 10.31 (Hypertriglyceridemia > 150 mg/dL [> 1.7 mmol/L] or nonfasting > 175 mg/dL [> 2.0 mmol/L]):**
- **Action:** Address and treat lifestyle factors (obesity, metabolic syndrome), secondary factors (diabetes, chronic liver/kidney disease, hypothyroidism), and medications that raise triglycerides.
- **Recommendation 10.32 (Icosapent Ethyl):**
- **When Indicated:** Individuals with ASCVD or other cardiovascular risk factors on a statin with managed LDL cholesterol but elevated triglycerides (150–499 mg/dL [1.7–5.6 mmol/L]).
- **Action:** Addition of icosapent ethyl can be considered to reduce cardiovascular risk (REDUCE-IT trial showed 25% relative risk reduction).
- **Caution:** Results not generalizable to other n-3 fatty acids.

Management of Other Lipoprotein Fractions & Special Considerations

- **Statin Intolerance (Detailed):**
- Initial steps: Switch statin type, lower dose, use non-daily dosing.
- Consider non-statin agents (PCSK9 inhibitors, bempedoic acid) as alternatives or adjuncts.
- **Recommendation 10.26 (Lipid-Lowering Care Considerations for Individuals of Childbearing Potential):**
- Generally, lipid-lowering agents should be **stopped prior to conception and avoided** if not using reliable contraception.
- **Exceptions:** Familial hypercholesterolemia or prior ASCVD event, where benefits may outweigh risks.
- Preconception counseling is essential.

Statin Safety & Cognitive Function

•**Diabetes Risk with Statin Use:**
•Modestly increased risk of incident Type 2 diabetes reported (odds ratio 1.09).
•**Clinical Takeaway:** Cardiovascular event rate reduction
with statins far outweighs the risk of incident diabetes.
•**Lipid-Lowering Agents and Cognitive Function:**
•Concerns raised, but evidence argues against an adverse association.
•Large randomized trials show no differences in cognitive tests between statin and placebo.
•No change in cognitive function reported with ezetimibe or PCSK9 inhibitors.
•**Conclusion:** Concerns about cognitive dysfunction
should not deter statin use in high-risk individuals with diabetes.

Summary & Clinical Implications

•**Integrated Approach:** Effective lipid management in diabetes requires a combination of intensive lifestyle modifications and evidence-based pharmacotherapy.
•**Statin-Centric Therapy:** Statins remain the cornerstone for primary and secondary ASCVD prevention.
•**Personalized Goals:** LDL-C goals vary based on ASCVD risk, with lower targets for secondary prevention.
•**Adjunctive Therapies:** Ezetimibe, PCSK9 inhibitors, and icosapent ethyl play important roles for high-risk individuals or those not achieving goals with statins alone.
•**Ongoing Monitoring:** Regular lipid panel assessment is critical for guiding and optimizing treatment.
•**Patient-Centered Care:** Address statin intolerance and specific considerations like childbearing potential with individualized discussions.

Declaration on the Use of AI Tools

The service Gemini 2, developed by Google, has been used to improve the content of the presentation. A first version of the work was pasted in its entirety, and the model was given the prompt [rewrite this text for me in a more academic and concise language.] The text was then iterated a few times through the model where new prompts were used to get the correct structure of the text. The final result was cut out, fact-checked, and partly rewritten by the author.

Thank you for your attention