



Statin and Icosapent Ethyl Use and Lipid Control in US Adults with Diabetes According to DM Risk Groups, Sex and Ethnicity in the NIH Precision Medicine Initiative *All of Us* Research Program



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Background

- Statin therapy is recommended for all adults with diabetes, with high intensity statin for those at higher risk and icosapent ethyl (pure EPA fish oil) for those at higher risk who have elevated triglycerides.
- Data on statin therapy intensity and icosapent ethyl use are limited among recent real-world cohorts of people with diabetes mellitus (DM).
- We studied statin intensity and icosapent ethyl use with lipid levels among US adults with DM across risk groups, sex and ethnicity.

Objectives

- Examine statin and icosapent ethyl use according to DM risk groups, sex and ethnicity.
- Compare LDL-C and triglyceride levels across risk groups, sex and ethnicity among US adults with DM.
- Examine sociodemographic indicators of disparities in use of icosapent ethyl and high intensity statins.

Methods

Among adults ≥18 years of age with DM from the NIH Precision Medicine Initiative *All of Us* Research Program, we categorized risk groups as:

- Low risk with ≤1 DM risk factor
- High risk with ≥2 DM risk factors
- DM with known ASCVD

Risk factors included:

- Age >60 years
- Hypertension
- LDL-C ≥160 mg/dL
- Cigarette smoking
- HDL-C <40 mg/dL for males and <50 mg/dL for females

- We then examined the percentage of people on low, moderate, and high-intensity statin therapy and at LDL-C levels <70 mg/dL, 70-99 mg/dL, and ≥100 mg/dL. We also studied the percentage of people on icosapent ethyl and examined triglyceride (TG) levels <100 mg/dL, 100-149 mg/dL, and ≥150 mg/dL.
- We used a chi-squared test of proportions to compare icosapent ethyl and statin use according to risk group, sex and ethnicity.
- We also performed multiple logistic regressions that assessed the relation of demographic factors to icosapent ethyl and statin use.

Results

Table 1. Statin and Icosapent Ethyl Use in US Adults with Diabetes Mellitus According to Risk Group, Gender and Ethnicity

Proportion (%)	Total (N=42064)	≤1 Diabetes Risk Factors without ASCVD (N=12261)	≥2 Diabetes Risk Factors without ASCVD (N=12962)	Diabetes with ASCVD (N=16312)	Female (N=24668)	Male (N=16522)	Non-Hispanic White (N=18574)	Non-Hispanic Black (N=11418)	Hispanic or Latino (N=9115)	
Statin Use										
- No statin use	57.7%	75.9%	62.3%	39.9%*	61.1%	52.4%*	55.9%	57.8%	60.3%*	
- Low intensity	1.7%	1.1%	1.9%	2.1%*	1.7%	1.7%*	2.1%	1.5%	1.3%*	
- Moderate intensity	28.5%	16.3%	24.5%	35.9%*	25.2%	28.5%*	28.0%	26.5%	23.5%*	
- High intensity	14.1%	6.7%	11.3%	22.1%*	12.0%	17.3%*	14.0%	14.2%	14.9%*	
Icosapent Ethyl Use Among those with TG ≥150 mg/dL										
	1.7%	1.1% [†]	1.3% [†]	2.2% [†]	1.6%	2.1%	2.1%	1.2%	2.0%	

[†]p value <0.01, *p value <0.001 across risk, sex or ethnic groups

Figure 1. Distribution of LDL-C by Risk Group, Sex and Ethnicity

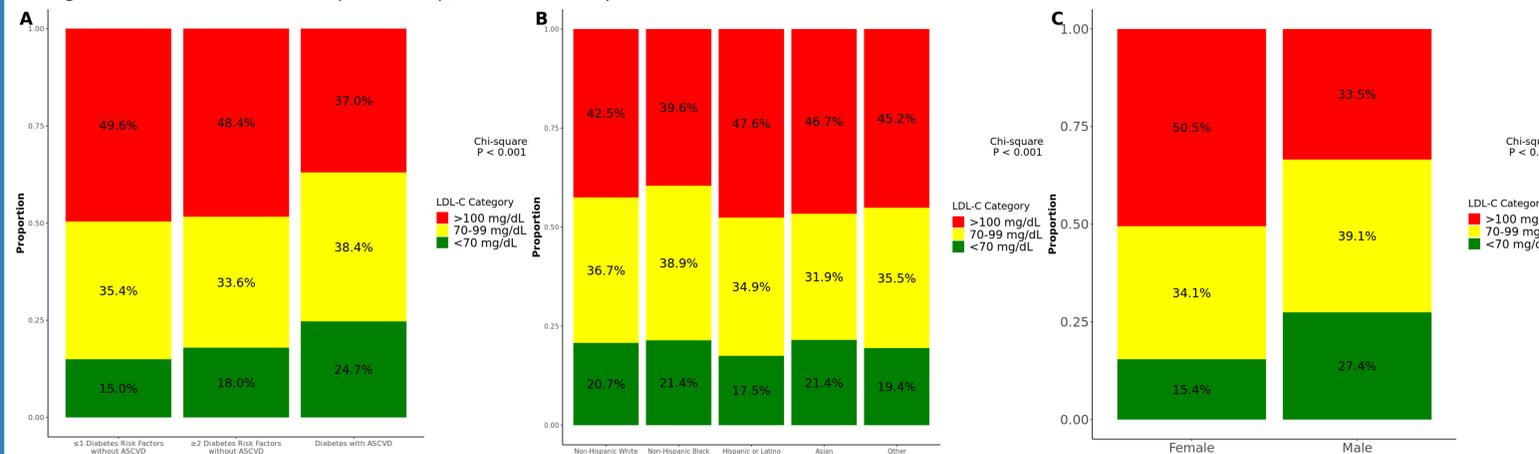


Figure 2. Distribution of Triglycerides by Risk Group, Sex and Ethnicity

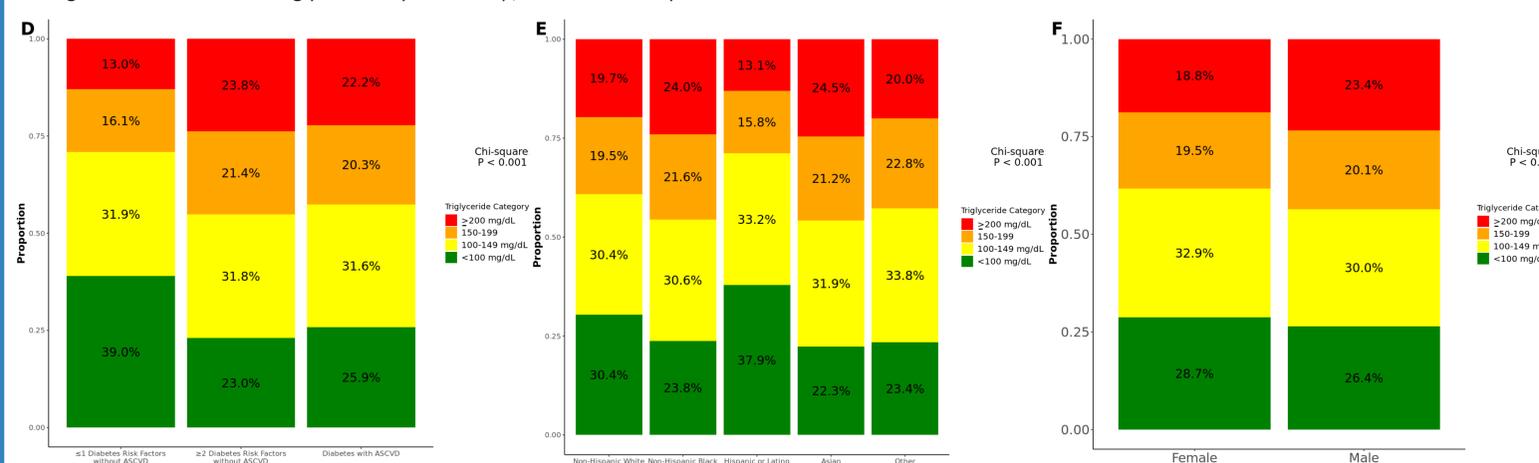


Table 2. Icosapent Ethyl Logistic Regression

Variable	Odds Ratio	95% CI
Age	1.01	[1.00, 1.02]
Gender: Male	3.25	[2.45, 4.37]
Ethnicity: Non-Hispanic Black	0.26	[0.15, 0.42]
Hispanic or Latino	0.69	[0.45, 1.02]
Asian	1.15	[0.45, 2.40]
Other	1.21	[0.70, 1.94]
Have health insurance	0.68	[0.37, 1.40]
Income: 10k-25k	1.45	[0.91, 2.36]
25k-35k	1.94	[1.15, 3.30]
35k-50k	2.03	[1.22, 3.42]
50k-75k	1.88	[1.15, 3.15]
75k-100k	1.11	[0.60, 2.04]
More than 100k	1.12	[0.65, 1.94]
DM Risk Group: ≥2 Diabetes Risk Factors without ASCVD	1.74	[1.12, 2.78]
Diabetes with ASCVD	2.81	[1.86, 4.37]

Reference Groups: Gender: Female; Race: Non-Hispanic White; Health insurance: None; Income: <10k; DM risk group: <1 Diabetes Risk Factor

Results Summary

- Our 42,064 participants with DM included 27.1% non-Hispanic black and 21.7% Hispanic.
- Inadequate statin use and improperly controlled LDL-C remain common, with 33.8% of people on high-intensity statins having LDL-C levels ≥100 mg/dL.
- Additionally, 1.7% of those with TG levels ≥150 mg/dL were on icosapent ethyl.
- Males and people in the higher risk groups were more likely to be on icosapent ethyl based on logistic regression analysis.
- From the ethnicities studied, Non-Hispanic black people were least likely to be on icosapent ethyl based on logistic regression analysis.

Strengths

- The participants in this study reflect the diversity of the United States and include people who haven't taken part in or have been left out of health research before.

Limitations

- This is a cross-sectional study and we do not have multiple measures to assess adherence since we have data from only one time point.

Conclusions

- Guideline-recommended use of high intensity statins among our higher risk DM patients is lacking, with many having inadequately controlled LDL-C levels.
- Moreover, icosapent ethyl use remains low, even among those with high TG levels.
- Further provider and patient education need to be prioritized—especially among those at highest risk.

Disclosures

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