

Link Between Statins and Developing Diabetes



Do Statins Increase the Risk of Diabetes?

Research suggests statins can raise blood sugar levels to varying degrees, depending on the type and dose. While all statins have this potential effect, the overall risk of developing diabetes with statin therapy appears to be about 10% higher over five years.

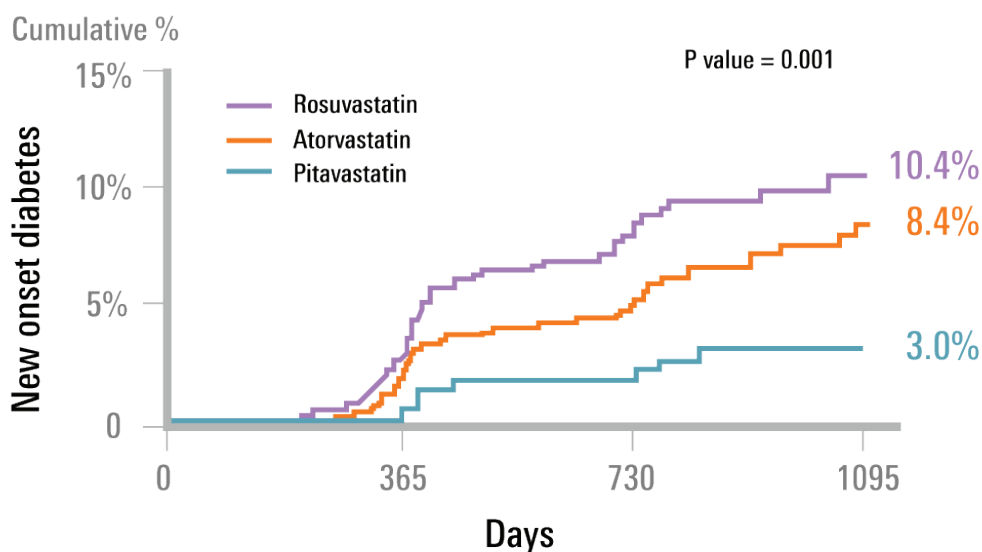
Higher-intensity statins like atorvastatin (40-80mg) and rosuvastatin (10-20mg) are associated with a greater risk of new-onset diabetes compared to moderate or low-intensity statins.

Do Certain Statins Have a Reduced Risk for Developing Diabetes?

Yes, some statins may have a smaller impact on changes to blood sugar levels and the risk of developing diabetes compared to others.

A recent study¹ in heart attack patients compared moderate-intensity pitavastatin, rosuvastatin, and atorvastatin. It found that **pitavastatin was associated with a lower risk of new-onset diabetes** compared to both rosuvastatin and atorvastatin at moderate doses.

Comparing Moderate Intensity Statin Doses of Pitavastatin (ZYPITAMAG®) vs. Rosuvastatin (CRESTOR®) vs. Atorvastatin (LIPITOR®)



KEY TAKEAWAY: While statins can slightly increase blood sugar level and the risk of new on-set diabetes, the added risk is significantly counterbalanced by the reduction in heart disease risk that statins provide.

This document is intended for educational purposes. We suggest bringing this information with you to discuss with your healthcare provider at your next visit.

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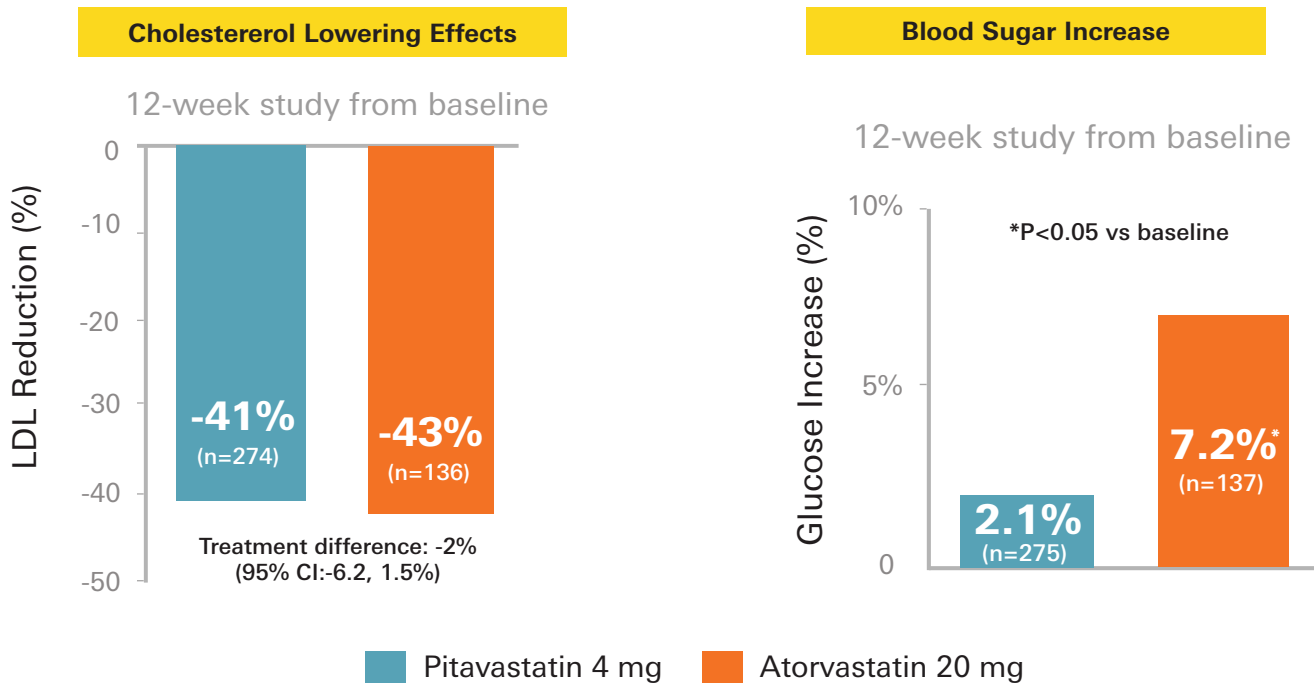
Can Statins Increase Blood Sugar?

- Yes. Statins slightly raise blood sugar levels (A1C and fasting glucose levels). This can happen in both people with and without diabetes.
- However, not all statins have the same effect on blood sugar.

Pitavastatin (ZYPITAMAG®) vs. Atorvastatin (LIPITOR®)

A study compared pitavastatin to atorvastatin in people with type 2 diabetes and high cholesterol.²

- **Cholesterol-lowering effects:** Both statins effectively lowered cholesterol. 4mg of pitavastatin lowered cholesterol (41%) similarly to 20mg of atorvastatin (43%).
- **Blood sugar effects**
Pitavastatin: Had minimal impact on blood sugar levels (2.1%).
Atorvastatin: Significantly increased blood sugar levels (7.2%) compared to baseline.



How Statins Affect Glucose Levels



Statins and Blood Sugar in People with Diabetes

- People with type 2 diabetes taking statins may experience a slight increase in blood sugar levels.
- **Pitavastatin lowers blood sugar levels compared to other statins**

A 2018 study³ reviewed 23 clinical trials to see how different statins affect blood sugar in people with type 2 diabetes. This study found that the “moderate-intensity pitavastatin” was linked to lower blood sugar levels (A1C and fasting blood sugar) compared to statins like atorvastatin and rosuvastatin.

If you have type 2 diabetes and your cholesterol is high (above 70 mg/dL), current guidelines recommend starting you on a moderate or high-intensity statin between the ages of 40 and 75. This is because diabetes significantly increases the risk of heart disease, and statins can help lower that risk.

Statins and Blood Sugar in People without Diabetes

- Statins like **rosuvastatin and atorvastatin** may slightly increase blood sugar levels and insulin resistance in people with normal blood sugar and insulin sensitivity.
- Other statins, such as **simvastatin, pravastatin, and pitavastatin**, may have less impact on blood sugar or even improve insulin sensitivity.

A recent 2023 study⁴ analyzed data from 67 studies to understand how statins affect blood sugar (A1C) and insulin resistance (HOMA-IR) in people without diabetes.

For individuals with normal HbA1c levels (less than 6.5%), rosuvastatin and atorvastatin significantly increased A1C levels. Simvastatin, pravastatin, and pitavastatin did not show a significant increase.

Among people with normal insulin actions, rosuvastatin, simvastatin, and atorvastatin significantly increased the HOMA-IR index, indicating increased insulin resistance. Pravastatin reduced this parameter, and pitavastatin showed a slight improvement.

KEY TAKEAWAYS

- If you have type 2 diabetes, pitavastatin might be a suitable option for you.
- Statins tend to increase blood glucose and insulin resistance in individuals without diabetes. However, pitavastatin and pravastatin may have lesser of an effect than other statins.

References

- 1 Choi JY et al. *American Journal of Cardiology*. 2018;S0002-9149(18)31257-8
- 2 Gumprecht J et al. *Diabetes, Obesity and Metabolism*. 2011;13:1047-1055
- 3 Cui JY et al. *Journal of Clinical Pharmacy and Therapeutics*. 2018;43(4):556-570.
- 4 Alvarez-Jimenez L. et al. *European Journal of Pharmacology*. 2023;947:175672.

Get ZYPITAMAG® (pitavastatin) for \$1¹⁵ per day or less through Marley Drug



\$1¹⁵ Per Day or Less

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Your patient is contacted to confirm the details



The medication is shipped via priority mail

A Different Kind of Statin

ZYPITAMAG is a third-generation statin that lowers cholesterol by up to 45%.

Statin, like most medications, are metabolized by enzymes in our body. 70–80% of medications are processed by the same family of enzymes known as CYP450. When these enzyme pathways become too busy it can lead to drug interactions.

ZYPITAMAG bypasses this enzyme family and is instead mainly processed by a less busy enzyme family. This leads to a reduced potential for certain interactions with other medications.

Key Features:

- Available in 2 mg and 4 mg
- Moderate-intensity statin
- Once daily, taken with or without food
- Compatible with grapefruit juice (unlike some other statins)

Get the Best Price for ZYPITAMAG

Marley Drug will determine the most cost-effective option for you to access ZYPITAMAG (pitavastatin)—whether it’s through insurance or by cash. **No matter what, the most you will pay is \$1.15/day.**

Details and Criteria to Access ZYPITAMAG For \$1.15 per day through Marley Drug

This offer is valid for eligible patients purchasing ZYPITAMAG and may not be used for any other product. This offer is valid for the purchase of ZYPITAMAG manufactured for Medicare and lawfully purchased from Marley Drug located in North Carolina (5008 Peters Creek Pkwy, Winston-Salem, NC 27127, United States). This offer is valid for patients being treated with ZYPITAMAG for an FDA-approved indication who are 18 years of age or older. Patients will be charged \$1.15 per day for every day listed in their prescription. For example, 30 pills over 30 days will cost \$34.50. Patients will be charged a minimum \$34.50 per 30 day fill because of costs incurred for shipping and handling. This offer must not be combined with any insurance coverage. Patients using insurance to pay for their Zypitamag prescription are not eligible for this offer. Patients must not apply any out-of-pocket expenses incurred using this Savings Offer toward any insurance benefit. All Program payments are for the benefit of the patient only. The patient is responsible for applicable taxes, if any. This offer is not conditioned on any past, present, or future purchase, including refills. Offer not valid where prohibited by law or restricted. This offer is non-transferable, is limited to one per person, and may not be combined with any other offer. Offer must be presented along with a valid prescription for ZYPITAMAG at the time of purchase. Marley Drug reserves the right to change or discontinue this offer at any time without notice.