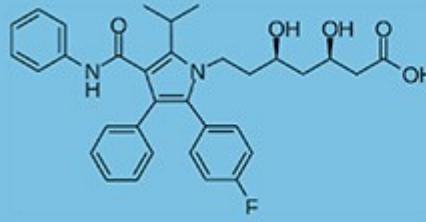


# STATIN

## NEWSLETTER



A CURATED WEEKLY OVERVIEW OF ALL STATIN PUBLICATIONS

Update week 13 & 14 - 2023

Dr. Peter Lansberg is a Dutch lipidologist, educator and innovator. He has been instrumental in setting up The Dutch National Lipid Clinic Network, the Dutch Lipid Clinic Criteria for Familial Hypercholesterolemia (FH), and the Dutch National FH screening program

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The Statin Newsletter will keep you up-to-date with all recent statin publications. Based on a curated approach to select relevant articles.

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## Key Publications

1. **Before PCI, high dose statin!**
  2. **Comparing statins for primary prevention in diabetics**
  3. **From harm to cure, statins and the liver**
  4. **Prolonged physical activity in statin users with and without SAMS**
  5. **Plaque progression despite LLT in diabetics v.s. non-diabetics**
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### High dose statins prior PCI – Meta-analysis

The efficacy of high-dose statin loading before percutaneous coronary intervention (PCI) in reducing the incidence of no-reflow phenomenon remains unclear. A recent meta-analysis of 11 studies found that high-intensity statin treatment before PCI significantly decreased the risk of no-reflow events in patients with acute coronary syndrome (ACS). This study aimed to review the evidence of pre-procedural high-dose statin therapy to reduce the no-reflow incidence after PCI. A total of 11 studies were included, with a population of 4,294 patients. The use of high-dose statins before PCI significantly reduced post-procedural no-reflow. A significant decrease in overall no-reflow events was observed with high-intensity statin treatment versus low-intensity statin/placebo among patients who were statin-naive. Acute high-dose statin therapy before PCI significantly reduces the hazard of post-PCI no-reflow events in patients with ACS. The study suggests that the administration of high-intensity statins (single dose or long-term) before PCI significantly reduces the incidence of no-reflow events among patients diagnosed with ACS. The results encourage the routine use of statins before PCI. The study has limitations, and further research is needed to determine the optimal high-intensity statin before PCI, timing relative to the procedure, and the route of administration.

**Meta-Analysis on the Efficacy of High-Dose Statin Loading Before Percutaneous Coronary**

**Intervention in Reducing No-Reflow Phenomenon in Acute Coronary Syndrome.** Am J Cardiol 2023; 195:9-16 Anayat S, Majid K, Nazir HS *et al.*  
<http://www.ncbi.nlm.nih.gov/pubmed/?term=36989606>

## **Comparing statins for primary prevention in diabetics**

How do statins affect cardiovascular mortality in patients with type 2 diabetes in a dose, class and intensity-dependent manner? Statins are commonly prescribed to help manage diabetes and reduce the risk of heart disease, but the benefits on cardiovascular mortality in patients with type 2 diabetes are still debated. The study found that persistent use of statins can reduce cardiovascular mortality, and that higher cumulative dose of statin use and higher daily intensity is associated with lower cardiovascular mortality. In particular, the optimal daily dose of statins is 0.86 DDD, and pitavastatin, pravastatin, simvastatin, rosuvastatin, atorvastatin, fluvastatin, and lovastatin users demonstrated significant reductions in cardiovascular mortality, in order of intensity. The study also suggests that statins with fewer drug interactions, such as pitavastatin or pravastatin, or those with stronger LDL-C and TG lowering effects, such as atorvastatin, rosuvastatin and simvastatin may be ideal for use in patients with type 2 diabetes. The study was conducted using data from a real-world database, and limitations include a lack of blood and lipid profiles of each patient and the possibility of unmeasured confounders.

**Long-term outcomes of statin dose, class, and use intensity on primary prevention of cardiovascular mortality: a national T2DM cohort study.** Eur J Clin Pharmacol 2023; Yu JM, Chen WM, Shia BC, Wu SY. <http://www.ncbi.nlm.nih.gov/pubmed/?term=37010535>

## **The potential benefits of statins in patients with cirrhosis**

The article discusses the potential benefits of statins, a commonly used class of lipid-lowering drugs, in patients with cirrhosis. The authors review available data on the safety, adverse effects, pharmacokinetics, and efficacy of statins in patients with cirrhosis, drawing from retrospective cohort and population-based studies. Statins are known to have pleiotropic effects, including anti-inflammatory and antiangiogenic properties, as well as effects on fibrogenesis and liver endothelial function. These effects make statins a promising candidate for use in persons with cirrhosis. The authors summarize the evidence supporting the association between statin use and reduction in the risk for hepatic decompensation and mortality in persons with established cirrhosis. They also examine evidence regarding the effects of statins on portal hypertension and their potential use in chemoprevention of HCC.

The article concludes by highlighting the ongoing prospective randomized controlled trials that are expected to expand our understanding of the safety, pharmacokinetics, and efficacy of statins in cirrhosis and guide clinical practice. Overall, the authors suggest that the available evidence supports the use of statins in persons with cirrhosis, although further research is needed to clarify their optimal dosing and safety profile in this population.

**Emerging role of statin therapy in the prevention and management of cirrhosis, portal hypertension, and HCC.** Hepatology 2023; Sharpton SR, Loomba R.

<http://www.ncbi.nlm.nih.gov/pubmed/?term=37013380>

## **statin users have no increase in muscle biomarkers after prolonged physical exercise.**

What is the effect of prolonged moderate-intensity exercise on markers of muscle injury in statin users with and without statin-associated muscle symptoms. The authors also examined the association between leukocyte CoQ10 levels and muscle markers, muscle performance, and reported muscle symptoms. Statin-associated muscle symptoms can be exacerbated by exercise, which may result in decreased physical activity or statin nonadherence. The study recruited 35 symptomatic and 34 asymptomatic statin users and 31 control subjects who walked 30, 40, or 50 km/d for 4 consecutive days. Muscle injury markers, muscle performance, and reported muscle symptoms were assessed at baseline and after exercise. The results showed that all muscle injury markers were comparable at baseline and increased following exercise, with no differences in the magnitude of exercise-induced elevations among groups. Muscle pain scores were higher at baseline in

symptomatic statin users and increased similarly in all groups following exercise. Muscle relaxation time increased more in symptomatic statin users than in control subjects following exercise. CoQ10 levels did not differ among groups and did not relate to muscle injury markers, fatigue resistance, or reported muscle symptoms. The study concluded that statin use and the presence of statin-associated muscle symptoms do not exacerbate exercise-induced muscle injury after moderate exercise. Muscle injury markers were not related to leukocyte CoQ10 levels.

**Prolonged Moderate-Intensity Exercise Does Not Increase Muscle Injury Markers in Symptomatic or Asymptomatic Statin Users.** *J Am Coll Cardiol* 2023; 81:1353-1364 Allard NAE, Janssen L, Lagerwaard B *et al.* <http://www.ncbi.nlm.nih.gov/pubmed/?term=37019582>

**The Importance of Exercise in Cardiometabolic Health in Patients Reporting Statin-Associated Muscle Symptoms.** *J Am Coll Cardiol* 2023; 81:1365-1367 Rosenson RS. <http://www.ncbi.nlm.nih.gov/pubmed/?term=37019583>

## **Plaque progression in diabetics is worse compared to non-diabetics, despite similar lipid lowering therapy**

Are there different outcomes of the coronary plaque morphology in diabetic and non-diabetic patients despite having similar lipid-lowering therapy (LLT) with statins. The study analyzed data from 239 patients with acute coronary syndrome who underwent OCT detection at baseline and at the one-year follow-up. The main endpoint was the normalized total atheroma volume changes ( $\Delta TAV_n$ ) of non-culprit subclinical atherosclerosis (nCSA). The study found that diabetic patients showed more plaque progression (PP) in nCSA with similar LDL-C reduction from baseline to one year. This was due to the lipid component in nCSA increasing in DM patients and non-significantly decreasing in non-DM patients. DM was an independent predictor of PP in multivariate logistic regression analysis. The incidence of major adverse cardiac events (MACEs) related to nCSA at three years was higher in the DM group than in the non-DM group. The study used artificial intelligence imaging software based on OCT data to compare the differences in plaque morphology and composition in nCSA between DM patients and patients without DM. The study concluded that more intensive LLT and anti-inflammatory therapy for PR in nCSA is needed for patients with DM combined with coronary artery disease.

**Morphologies and composition changes in nonculprit subclinical atherosclerosis in diabetic versus nondiabetic patients with acute coronary syndrome who underwent long-term statin therapy.** *Scientific reports* 2023; 13:5338 Meng PN, Nong JC, Xu Y *et al.* <http://www.ncbi.nlm.nih.gov/pubmed/?term=37005448>

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## **Relevant Publications**

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2. Cardiovascular Disease Risk and Statin Use Among Adults with Metabolic Dysfunction Associated Fatty Liver Disease. *Am J Med* 2023; Yeoh A, Cheung R, Ahmed A *et al.* <http://www.ncbi.nlm.nih.gov/pubmed/?term=37001720>
3. Investigations of pravastatin for the prevention of preeclampsia. *American journal of obstetrics and gynecology* 2023; Costantine MM, Clifton RG, Saade GR. <http://www.ncbi.nlm.nih.gov/pubmed/?term=36972893>
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## Basic Science

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