



Update week 29 & 30 - 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

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

For live updates you can follow me on twitter

Key Publications

1. **Could statins be of use in the treatment (liver)cancer?**
2. **What is the right statin before a PCI?**
3. **The role of statins in primary stroke prevention in diabetic patients**
4. **AKI triggered dialysis patients show improved outcomes with statins**
5. **Neurodegenerative diseases - in depth review on the role of statins**

WORLD CONGRESS
OF INTERNAL MEDICINE
THE 37TH WCIM 2024
PRAGUE
CZECH REPUBLIC
30. 10. – 2. 11. 2024
THE CAPITAL CITY OF INTERNAL MEDICINE
WWW.WCIM2024.COM



Join us in Prague!

Beyond cholesterol, atorvastatin's therapeutic potential in liver cell carcinoma

Statins, traditionally used to lower cholesterol levels, are recognized to have additional, pleiotropic effects. This study aimed to assess the pleiotropic effects of three statins, atorvastatin, simvastatin, and rosuvastatin, on hepatocellular carcinoma (HepG2) cells. Using MTT assay, the cytotoxic effects were assessed. The influence of statins on reactive oxygen species (ROS) production and glucose production was also determined. Results showed that all tested statins had cytotoxic effects on HepG2 cells, with atorvastatin and simvastatin (lipophilic statins) showing more pronounced effects than rosuvastatin (hydrophilic). Furthermore, statins increased ROS production and glucose production and excretion. The less pronounced pleiotropic effects of rosuvastatin are hypothesized to arise from its structural differences, including its hydrophilic nature, leading to lower cellular accumulation. The article also provides background information on statins, including their mode of action, pleiotropic effects, and classification based on structure and solubility. Statins can be lipophilic (e.g., simvastatin, atorvastatin) or hydrophilic (e.g., rosuvastatin), which determines their transport mechanisms into cells. The liver, central to lipid and statin metabolism, is where statins predominantly exert their effects. In conclusion, the study underscores the diverse effects of different statins on HepG2 cells and implies potential applications in cancer therapeutics, although further research is warranted.

Some pleiotropic effects of statins on hepatocellular carcinoma cells: Comparative study on atorvastatin, rosuvastatin and simvastatin. *Adv Med Sci* 2023; 68:258-264 Dautović E, Rustemović-Čorbić M, Srabović N *et al.* <http://www.ncbi.nlm.nih.gov/pubmed/?term=37478516>

High intensity statins superior for pre-PCI

Statin medications are commonly used to manage cholesterol levels. Their intensity, i.e., the dosage and strength, can vary. This study focused on the impact of high-intensity statin treatment on microcirculation (small blood vessels) function in CHD patients after they have undergone PCI. High-intensity statin treatment showed similar Myocardial Blush Grade (MBG) results in comparison to non-high-intensity statin treatment after PCI. However, high-intensity statin treatment significantly reduced the Index of Microcirculatory Resistance (IMR), thus improving microcirculation function in CHD patients post-PCI. The results suggest that starting high-intensity statin treatment before PCI, where there are no contraindications, could be beneficial for patients. This study specifically compared high-intensity statin treatment to non-high-intensity treatment concerning microcirculation function after PCI. It included comprehensive parameters like TIMI (Thrombolysis in Myocardial Infarction) flow grading, MBG, and IMR to assess the impact. Only randomized controlled trials (RCTs) were incorporated to increase reliability. Additional analyses (like subgroup analysis, sensitivity analysis, and publication bias analysis) were performed to ensure the robustness of the results. Limitation of this study were that studies may have had populations with varying characteristics, introducing bias. Not all included studies may have had a blinding method, and the number of RCTs specifically focusing on IMR and MBG was limited. The authors concluded that high-intensity statin treatment, when compared to non-high-intensity treatment, showed improved outcomes in TIMI grading and IMR for CHD patients post-PCI. It suggests that such treatment can effectively enhance microcirculation function. However, future research with larger sample sizes and higher quality is essential to validate these findings.

A systematic review and meta-analysis of the effect of high-intensity statin on coronary microvascular dysfunction. *BMC Cardiovasc Disord* 2023; 23:370 Huang B, Han X, Pan Y, Chen D. <http://www.ncbi.nlm.nih.gov/pubmed/?term=37488501>

Statins reduced stroke risk in diabetic patients

This study examines the protective benefits of various statin classes, intensities, and cumulative doses against primary ischemic stroke in Type 2 Diabetes Mellitus (T2DM)

patients. T2DM significantly heightens the risk of ischemic stroke. Notably, statins have been known to reduce recurrent ischemic stroke risk in patients with heart diseases but remain unverified for primary ischemic stroke prevention in T2DM patients. Using the Cox hazards model, the study compared T2DM patients who received statins against those who didn't. The findings indicate a notable risk reduction in the former. Different statin classes, such as pitavastatin and rosuvastatin, among others, showed significant reductions in primary ischemic stroke incidence. Moreover, higher cumulative defined daily doses (cDDD) per year correlated with increased stroke risk reduction. Statins likely offer cerebrovascular protection through various mechanisms, including reductions in embolic stroke incidents and stabilization of vulnerable atherosclerotic plaques. One novel finding is that an optimal daily dose intensity of 0.89 DDD for statin use is associated with the least primary ischemic stroke risk in T2DM patients.

The study's strength lies in its large sample size and usage of real-world, long-term data, making it a pioneering exploration into the dose-dependent protective effects of different statin classes against primary ischemic stroke in T2DM patients. However, limitations include the absence of laboratory data, which restricts deeper insights into LDL-C reduction and potential anti-inflammatory effects of statins. In summary, the research underscores the potential of persistent statin use in reducing primary ischemic stroke risk in T2DM patients, especially when considering statin class and dosage. Further research is needed to elucidate the specific mechanisms driving these protective effects.

Protective Effects of Different Classes, Intensity, Cumulative Dose-Dependent of Statins Against Primary Ischemic Stroke in Patients with Type 2 Diabetes Mellitus. [Curr Atheroscler Rep_2023](http://www.ncbi.nlm.nih.gov/pubmed/?term=37515725); Yu JM, Chen WM, Shia BC, Wu SY. <http://www.ncbi.nlm.nih.gov/pubmed/?term=37515725>

Statins improve risk and survival in AKI related dialysis patients

This analysis explores the link between statin use after renal replacement therapy (RRT) and mortality rates in patients with acute kidney injury that requires dialysis (AKI-D). The analysis draws on data from the Medical Information Mart for Intensive Care IV database between 2008 and 2019. Among the 1,035 patients with AKI-D, only about a quarter were administered statins post-RRT. The study found that patients receiving statins exhibited a considerably lower 1-year mortality risk (49.2%) compared to those who didn't receive the medication (69.6%). Statins, primarily recognized for lowering cholesterol, have other properties beneficial for patients, including anti-inflammatory, antioxidant, and immunomodulatory effects. The therapeutic benefits of statins have been validated in previous studies, particularly for their role in reducing cardiovascular events and improving patient outcomes. However, the novelty of this study lies in its focus on the period after RRT in patients with AKI-D. The researchers further emphasized that even younger patients (below 50 years) showed improved survival rates when administered statins. However, the study does have limitations. Being a retrospective study, the generalizability of its findings is limited. Additionally, missing demographic data could have influenced the outcomes. Despite the promising results, further prospective research is essential to validate the findings. In conclusion, statin therapy after RRT appears to reduce both 1-year and in-hospital mortality rates, even in younger AKI-D patients.

Association of statin use after renal replacement therapy with mortality in patients with dialysis-requiring acute kidney injury. [International urology and nephrology_2023](http://www.ncbi.nlm.nih.gov/pubmed/?term=37458929); Chang HH, Liu WC, Tsai TC. <http://www.ncbi.nlm.nih.gov/pubmed/?term=37458929>

Comprehensive review the effects of simvastatin on neurodegenerative diseases

The article highlights the potential of simvastatin, a cholesterol-lowering drug, in addressing brain complications and diseases. Statins, which are designed to decrease plasma cholesterol levels, can be classified based on their solubility. Simvastatin, due to its high lipophilicity, is effective in crossing the blood-brain barrier. This unique feature has led researchers to believe that simvastatin could be employed in the treatment of various brain complications, such as tumors and neurological disorders like Alzheimer's, Parkinson's, and Huntington's diseases. The article, however, emphasizes that the specific mechanisms by which simvastatin might alleviate these conditions remain unclear. The significance of

cholesterol in brain function and health is underscored by the observation that the brain, accounting for about 2% of body weight, contains around 23% of the body's total cholesterol. Cholesterol's pivotal role in the brain includes components like myelin, synaptogenesis, and neurite outgrowth. Aberrant brain cholesterol levels have been linked to a spectrum of neurological diseases. In concluding, the article suggests that simvastatin might go beyond merely reducing cholesterol, potentially offering therapeutic benefits for brain-related complications. But it also acknowledges the current controversy surrounding simvastatin's effectiveness in this role. The potential of simvastatin remains promising, but the call is clear: more in-depth research is required to understand its precise impact on neurological diseases associated with abnormal cholesterol metabolism.

The Potential Therapeutic Application of Simvastatin for Brain Complications and Mechanisms of Action. Pharmaceuticals (Basel, Switzerland) 2023; 16Vuu YM, Kadar Shahib A, Rastegar M. <http://www.ncbi.nlm.nih.gov/pubmed/?term=37513826>

Relevant Publications

1. Association of Thiazide Diuretics With Diabetes Progression, Kidney Disease Progression, Cardiovascular Outcomes, and Death Among Patients With Diabetes Who Initiate Statins. Am J Cardiol 2023; 203:274-284 Afify H, Gonzalez-Morales U, Asmar A *et al.* <http://www.ncbi.nlm.nih.gov/pubmed/?term=37516035>
2. Established and Emerging Lipid-Lowering Drugs for Primary and Secondary Cardiovascular Prevention. Am J Cardiovasc Drugs 2023; Michaeli DT, Michaeli JC, Albers S *et al.* <http://www.ncbi.nlm.nih.gov/pubmed/?term=37486464>
3. LP(a): Structure, Genetics, Associated Cardiovascular Risk, and Emerging Therapeutics. Annu Rev Pharmacol Toxicol 2023; Tasdighi E, Adhikari R, Almaadawy O *et al.* <http://www.ncbi.nlm.nih.gov/pubmed/?term=37506332>
4. A mobile health application for patients eligible for statin therapy: app development and qualitative feedback on design and usability. BMC medical informatics and decision making 2023; 23:128 Cao W, Li L, Mathur P *et al.* <http://www.ncbi.nlm.nih.gov/pubmed/?term=37468892>
5. Risk of diabetes with statins: comparing apples with oranges. Bmj 2023; 382:1720 Braithwaite B. <http://www.ncbi.nlm.nih.gov/pubmed/?term=37495256>
6. Discharge prescription patterns for antiplatelet and statin therapy following carotid endarterectomy: an analysis of the vascular quality initiative. BMJ Open 2023; 13:e071550 Eppler M, Singh N, Ding L *et al.* <http://www.ncbi.nlm.nih.gov/pubmed/?term=37491096>
7. Higher risk of future events, mortality and greater healthcare use among patients with increasingly recurrent atherosclerotic cardiovascular disease events in Taiwan: a retrospective cohort study. BMJ Open 2023; 13:e064219 Hsu CY, Chen WJ, Lin HJ *et al.* <http://www.ncbi.nlm.nih.gov/pubmed/?term=37474164>
8. Effect of proprotein convertase subtilisin/kexin type 9 inhibition on cancer events: A pooled, post hoc, competing risk analysis of alirocumab clinical trials. Cancer medicine 2023; Mohammadi KA, Brackin T, Schwartz GG *et al.* <http://www.ncbi.nlm.nih.gov/pubmed/?term=37458138>
9. Triglycerides and risk of cardiovascular events in statin-treated patients with newly diagnosed type 2 diabetes: a Danish cohort study. Cardiovascular diabetology 2023; 22:187 Kristensen FPB, Christensen DH, Mortensen MB *et al.* <http://www.ncbi.nlm.nih.gov/pubmed/?term=37495999>
10. Residual Coronary Risk Factors Associated With Long-Term Clinical Outcomes in Patients With Coronary Artery Disease Treated With High- vs. Low-Dose Statin Therapy - REAL-CAD Substudy. Circulation journal : official journal of the Japanese Circulation Society 2023; Higuma T, Akashi YJ, Fukumoto Y *et al.* <http://www.ncbi.nlm.nih.gov/pubmed/?term=37482412>

11. Economic Burden Associated with the Treatment with a Cardiovascular Polypill in Secondary Prevention in Spain: Cost-Effectiveness Results of the NEPTUNO Study. Clinicoecon Outcomes Res 2023; 15:559-571 Cordero A, Dalmau González-Gallarza R, Masana L *et al.* <http://www.ncbi.nlm.nih.gov/pubmed/?term=37489131>
12. Assessing the Link Between Statins and Insulin Intolerance: A Systematic Review. Cureus 2023; 15:e42029 Dabhi KN, Gohil NV, Tanveer N *et al.* <http://www.ncbi.nlm.nih.gov/pubmed/?term=37465091>
13. Chronic Anti-HMG-CoA Reductase Positive Necrotizing Myositis With Remote Exposure to Statins. Cureus 2023; 15:e40552 Salar T, Jimenez M, Hameed M, Ocon A. <http://www.ncbi.nlm.nih.gov/pubmed/?term=37465805>
14. Fibrates, Hypertriglyceridemia, and CVD Risk: Where Do We Stand After the PROMINENT Trial for Triglyceride Lowering? Current cardiology reports 2023; Chukwurah MI, Miller M. <http://www.ncbi.nlm.nih.gov/pubmed/?term=37505399>
15. Lipid Disorders and Metabolic-Associated Fatty Liver Disease. Endocrinology and metabolism clinics of North America 2023; 52:445-457 Anwar SD, Foster C, Ashraf A. <http://www.ncbi.nlm.nih.gov/pubmed/?term=37495336>
16. Cardiovascular events in patients treated with bempedoic acid versus placebo: systematic review and meta-analysis. European heart journal. Cardiovascular pharmacotherapy 2023; Mutschlechner D, Tscharrre M, Huber K, Gremmel T. <http://www.ncbi.nlm.nih.gov/pubmed/?term=37463824>
17. In-hospital initiation of PCSK9 inhibitors in ACS: pros and cons. EuroIntervention : journal of EuroPCR in collaboration with the Working Group on Interventional Cardiology of the European Society of Cardiology 2023; 19:e283-e285 Krychtiuk KA, Claeys MJ, Gencer B, Mach F. <http://www.ncbi.nlm.nih.gov/pubmed/?term=37458121>
18. Statins for primary prevention in multimorbid patients: to prescribe or not to prescribe? A qualitative analysis of general practitioners' decision-making processes. Family practice 2023; Onaisi R, Bezzazi A, Berthouin T *et al.* <http://www.ncbi.nlm.nih.gov/pubmed/?term=37463339>
19. Risk Factors for Vulnerable Plaque Detected Using Near-Infrared Spectroscopy in Patients Receiving Statin Therapy with No History of Coronary Artery Disease. Int Heart J 2023; 64:577-583 Suzuki N, Yokoi T, Kimura T *et al.* <http://www.ncbi.nlm.nih.gov/pubmed/?term=37518337>
20. Combination Therapy With Lower Statin Dose and the Race to LDL-C Goal: A Clear Winner? J Am Coll Cardiol 2023; 82:411-413 Ben-Yehuda O. <http://www.ncbi.nlm.nih.gov/pubmed/?term=37495277>
21. Combination Lipid-Lowering Therapy in Patients Undergoing Percutaneous Coronary Intervention. J Am Coll Cardiol 2023; 82:401-410 Lee SJ, Joo JH, Park S *et al.* <http://www.ncbi.nlm.nih.gov/pubmed/?term=37495276>
22. The prognostic role of the low and very low baseline LDL-C level in outcomes of patients with cardiac revascularization; comparative registry-based cohort design. Journal of cardiothoracic surgery 2023; 18:240 Rezaee M, Fallahzadeh A, Sheikhy A *et al.* <http://www.ncbi.nlm.nih.gov/pubmed/?term=37507734>
23. Real-world pharmacogenetics of statin intolerance: effects of SLCO1B1, ABCG2, and CYP2C9 variants. Pharmacogenetics and genomics 2023; 33:153-160 Lönnberg KI, Tornio A, Hirvensalo P *et al.* <http://www.ncbi.nlm.nih.gov/pubmed/?term=37490620>
24. Recent advances in the management and implementation of care for familial hypercholesterolaemia. Pharmacol Res 2023; 194:106857 Lan NSR, Bajaj A, Watts GF, Cuchel M. <http://www.ncbi.nlm.nih.gov/pubmed/?term=37460004>
25. Long-term statin therapy is associated with severe coronary artery calcification. PLoS One 2023; 18:e0289111 Ngamdu KS, Ghosalkar DS, Chung HE *et al.* <http://www.ncbi.nlm.nih.gov/pubmed/?term=37498869>
26. Is there a difference between aortic and brachial vein blood lipoprotein and total cholesterol levels? Rev Assoc Med Bras (1992) 2023; 69:e20221424 Yuksek U, Cerit L, Yaman B *et al.* <http://www.ncbi.nlm.nih.gov/pubmed/?term=37466588>
27. Statin therapy and anthracycline-related cardiac dysfunction: a meta-analysis of randomized clinical trials. Acta oncologica (Stockholm, Sweden) 2023; 1-4 Masson W, Barbagelata L, Lobo M, Del Castillo S. <http://www.ncbi.nlm.nih.gov/pubmed/?term=37493519>

28. Evaluation of statin use and renal cell carcinoma risk identifies sex-specific associations with RCC subtypes. Acta oncologica (Stockholm, Sweden) 2023;1-6Michalek IM, Graff RE, Sanchez A *et al.* <http://www.ncbi.nlm.nih.gov/pubmed/?term=37482537>
29. Guideline-Directed Low-Density Lipoprotein Cholesterol Management After Acute Ischemic Stroke: Findings from a National Health Care Service. Am J Cardiol 2023; 203:332-338Zafzir B, Aker A, Naoum I, Saliba W. <http://www.ncbi.nlm.nih.gov/pubmed/?term=37517128>
30. Disparities in Guideline-Recommended Statin Use for Prevention of Atherosclerotic Cardiovascular Disease by Race, Ethnicity, and Gender : A Nationally Representative Cross-Sectional Analysis of Adults in the United States. Annals of internal medicine 2023; Frank DA, Johnson AE, Hausmann LRM *et al.* <http://www.ncbi.nlm.nih.gov/pubmed/?term=37487210>
31. The effects of statin therapy on brain tumors, particularly glioma: a review. Anticancer Drugs 2023; Alrosan AZ, Heilat GB, Al Subeh ZY *et al.* <http://www.ncbi.nlm.nih.gov/pubmed/?term=37466094>
32. New medicines for spontaneous preterm birth prevention and preterm labour management: landscape analysis of the medicine development pipeline. BMC pregnancy and childbirth 2023; 23:525McDougall ARA, Hastie R, Goldstein M *et al.* <http://www.ncbi.nlm.nih.gov/pubmed/?term=37464260>
33. Characteristics, management and outcomes in patients with CKD in a healthcare region in Sweden: a population-based, observational study. BMJ Open 2023; 13:e069313Agvall B, Ashfaq A, Bjurström K *et al.* <http://www.ncbi.nlm.nih.gov/pubmed/?term=37479523>
34. Impact of coronary artery calcium score screening on cardiovascular risk stratification of patients with atrial fibrillation undergoing ablation. Cardiology 2023; Lopes Fernandes SI, Cruz I, Faria R *et al.* <http://www.ncbi.nlm.nih.gov/pubmed/?term=37487471>
35. Cutaneous leukocytoclastic vasculitis associated with verapamil and atorvastatin: A case report. Clinical case reports 2023; 11:e7683Aw YTV, McGuane JT. <http://www.ncbi.nlm.nih.gov/pubmed/?term=37469372>
36. Non-alcoholic Fatty Liver Disease and Non-alcoholic Steatohepatitis with liver fibrosis as predictors of new-onset Diabetes Mellitus in People living with HIV: A Longitudinal Cohort Study. Clin Infect Dis 2023; Han WM, Apornpong T, Su Lwin HM *et al.* <http://www.ncbi.nlm.nih.gov/pubmed/?term=37477514>
37. Nonfasting remnant cholesterol and cardiovascular disease risk prediction in Albertans: a prospective cohort study. CMAJ open 2023; 11:E645-e653Weaver OR, Krysa JA, Ye M *et al.* <http://www.ncbi.nlm.nih.gov/pubmed/?term=37491049>
38. Statins for women with polycystic ovary syndrome not actively trying to conceive. The Cochrane database of systematic reviews 2023; 7:Cd008565Xiong T, Fraison E, Kolibianaki E *et al.* <http://www.ncbi.nlm.nih.gov/pubmed/?term=37462232>
39. From Studio to Rehab: A Debilitating Form of Anti-HMGCR Myopathy. Cureus 2023; 15:e40825Anim-Koranteng C, Akpoigbe O, Miller M, Averbukh Y. <http://www.ncbi.nlm.nih.gov/pubmed/?term=37489210>
40. Safety and Efficacy of Ondansetron and Simvastatin as Potential Adjunctive Treatment for Patients With Schizophrenia: A Systematic Review of Randomized Controlled Trials. Cureus 2023; 15:e40474Khan KI, Al Shouli R, Allakky A *et al.* <http://www.ncbi.nlm.nih.gov/pubmed/?term=37456496>
41. Role of Different Low-Density Lipoprotein-Lowering Medications on Secondary Prevention of Atherosclerotic Cardiovascular Disease in Patients With Diabetes Mellitus. Cureus 2023; 15:e40905Saag JL, Gross D, Stirt D *et al.* <http://www.ncbi.nlm.nih.gov/pubmed/?term=37492827>
42. Addressing Cardiovascular Risk Across the Arc of a Woman's Life: Sex-Specific Prevention and Treatment. Current cardiology reports 2023; Verghese D, Muller L, Velamakanni S. <http://www.ncbi.nlm.nih.gov/pubmed/?term=37498450>
43. The Effect of Statins on the Incidence and Prognosis of Bladder Cancer: A Systematic Review and Meta-Analysis. Curr Oncol 2023; 30:6648-6665Symvoulidis P,

- Tsioutis C, Zamboglou C, Agouridis AP. <http://www.ncbi.nlm.nih.gov/pubmed/?term=37504348>
44. Clinical Efficacy and Safety of Bempedoic Acid in High Cardiovascular Risk Patients: A Systematic Review and Meta-analysis of Randomized Controlled Trials. Curr Probl Cardiol 2023;102003Uddin N, Syed AA, Ismail SM *et al.* <http://www.ncbi.nlm.nih.gov/pubmed/?term=37516330>
 45. Ceramides as risk markers for future cardiovascular events and all-cause mortality in long-standing type 1 diabetes. Diabetes 2023; Wretlind A, Curovic VR, Suvitaival T *et al.* <http://www.ncbi.nlm.nih.gov/pubmed/?term=37478203>
 46. Bempedoic acid as treatment for subjects at cardiovascular risk who are statin-intolerant. Expert Opin Pharmacother 2023;1-5Doggrell SA. <http://www.ncbi.nlm.nih.gov/pubmed/?term=37496276>
 47. Role of aspirin, beta-blocker, statins, and heparin therapy in septic patients under mechanical ventilation: a narrative review. Frontiers in medicine 2023; 10:1143090Al-Husin L, Abu Hmaid A, Abbas H *et al.* <http://www.ncbi.nlm.nih.gov/pubmed/?term=37492248>
 48. Cost-effectiveness analysis of implementing polygenic risk score in a workplace cardiovascular disease prevention program. Frontiers in public health 2023; 11:1139496Mujwara D, Kintzle J, Di Domenico P *et al.* <http://www.ncbi.nlm.nih.gov/pubmed/?term=37497026>
 49. Statin use impairs muscle strength recovery in post-stroke patients with sarcopenia. Geriatrics & gerontology international 2023; Matsumoto A, Yoshimura Y, Nagano F *et al.* <http://www.ncbi.nlm.nih.gov/pubmed/?term=37485543>
 50. The Effects of Statins, Ezetimibe, PCSK9-Inhibitors, Inclisiran, and Icosapent Ethyl on Platelet Function. Int J Mol Sci 2023; 24Di Costanzo A, Indolfi C, Sorrentino S *et al.* <http://www.ncbi.nlm.nih.gov/pubmed/?term=37511498>
 51. Provider adherence to American Diabetes Association cardiovascular risk-reduction guidelines: An integrative review. Journal of the American Association of Nurse Practitioners 2023; Bullock JE. <http://www.ncbi.nlm.nih.gov/pubmed/?term=37494065>
 52. Using Polygenic Risk Scores for Prioritizing Individuals at Greatest Need of a Cardiovascular Disease Risk Assessment. J Am Heart Assoc 2023; 12:e029296Chung R, Xu Z, Arnold M *et al.* <http://www.ncbi.nlm.nih.gov/pubmed/?term=37489768>
 53. Statin Use in Relation to COVID-19 and Other Respiratory Infections: Muscle and Other Considerations. Journal of clinical medicine 2023; 12Golomb BA, Han JH, Langsjoen PH *et al.* <http://www.ncbi.nlm.nih.gov/pubmed/?term=37510774>
 54. Comparison of coronary artery calcium score and cardiovascular risk-stratification by European Society of Cardiology Guidelines and Steno Type 1 Risk Engine in statin-naïve adults with type 1 diabetes. Journal of diabetes and its complications 2023; 37:108557Goh YA, Lan NSR, Linn K *et al.* <http://www.ncbi.nlm.nih.gov/pubmed/?term=37473636>
 55. Outpatient atorvastatin use and severe COVID-19 outcomes: A population-based study. Journal of medical virology 2023; 95:e28971Visos-Varela I, Zapata-Cachafeiro M, Pintos-Rodríguez S *et al.* <http://www.ncbi.nlm.nih.gov/pubmed/?term=37486310>
 56. Prevalence and risk factors for cerebral microbleeds in elderly Chinese patients with arteriosclerotic cardiovascular diseases: A single-center study. Journal of stroke and cerebrovascular diseases : the official journal of National Stroke Association 2023; 32:107268Chen Y, Liu F, Chen J *et al.* <http://www.ncbi.nlm.nih.gov/pubmed/?term=37487321>
 57. Statin Use and Chemoradiation in Esophageal Squamous Cell Carcinomas: Ready for Prime Time? J Thorac Oncol 2023; 18:970-971Lin SH. <http://www.ncbi.nlm.nih.gov/pubmed/?term=37479326>
 58. Prognostic Role of Early Cardiac Magnetic Resonance in Myocardial Infarction With Nonobstructive Coronary Arteries. JACC. Cardiovascular imaging 2023; Bergamaschi L, Foà A, Paolisso P *et al.* <http://www.ncbi.nlm.nih.gov/pubmed/?term=37480903>
 59. Screening for Lipid Disorders in Children and Adolescents: Updated Evidence Report and Systematic Review for the US Preventive Services Task Force. Jama 2023; 330:261-274Guirguis-Blake JM, Evans CV, Coppola EL *et al.* <http://www.ncbi.nlm.nih.gov/pubmed/?term=37462700>

60. Comparing Explainable Machine Learning Approaches With Traditional Statistical Methods for Evaluating Stroke Risk Models: Retrospective Cohort Study. JMIR Cardio 2023; 7:e47736Lolak S, Attia J, McKay GJ, Thakkinstian A. <http://www.ncbi.nlm.nih.gov/pubmed/?term=37494080>
61. Position of the Polish Cardiac Society on therapeutic targets for LDL cholesterol concentrations in secondary prevention of myocardial infarctions. Kardiol Pol 2023; Mitkowski P, Witkowski A, Stępińska J *et al.* <http://www.ncbi.nlm.nih.gov/pubmed/?term=37489830>
62. Lipoprotein(a) and carotid intima-media thickness in children with familial hypercholesterolaemia in the Netherlands: a 20-year follow-up study. The lancet. Diabetes & endocrinology 2023; de Boer LM, Wiegman A, Kroon J *et al.* <http://www.ncbi.nlm.nih.gov/pubmed/?term=37487514>
63. Assessing statins use in a real-world primary care digital strategy: a cross-sectional analysis of a population-wide digital health approach. Lancet Reg Health Am 2023; 23:100534Machline-Carrion MJ, Giroto AN, Nieri J *et al.* <http://www.ncbi.nlm.nih.gov/pubmed/?term=37497398>
64. The Clinical Significance of LDL-Cholesterol on the Outcomes of Hemodialysis Patients with Acute Coronary Syndrome. Medicina (Kaunas, Lithuania) 2023; 59Cohen-Hagai K, Benchetrit S, Wand O *et al.* <http://www.ncbi.nlm.nih.gov/pubmed/?term=37512123>
65. Acute renal failure due to rhabdomyolysis in relation to abiraterone and rosuvastatin. Nefrologia (Engl Ed) 2023; Cintra M, Pedraza Cezón LA, Martín Navarro JA *et al.* <http://www.ncbi.nlm.nih.gov/pubmed/?term=37500306>
66. Effects of Statin Treatment on the Development of Tendinopathy: A Nationwide Population-Based Cohort Study. Orthop J Sports Med 2023; 11:23259671231167851Kwak D, Moon SJ, Park JW *et al.* <http://www.ncbi.nlm.nih.gov/pubmed/?term=37465206>
67. Response to, "Statin therapy, cardiac events, and survival in patients with non-small cell lung cancer receiving definitive radiotherapy". Radiother Oncol 2023:109826Walls GM, Jain S, Hanna GG. <http://www.ncbi.nlm.nih.gov/pubmed/?term=37516365>
68. Statin therapy, cardiac events, and survival in patients with non-small cell lung cancer receiving definitive radiotherapy. Radiother Oncol 2023:109825Yegya-Raman N, Friedes C, Iocolano M, Feigenberg SJ. <http://www.ncbi.nlm.nih.gov/pubmed/?term=37516360>
69. Association between statin use and open-angle glaucoma: a nested case-control study using the Japanese claims database. Scientific reports 2023; 13:11677Yokoyama S, Nakagawa C, Hosomi K. <http://www.ncbi.nlm.nih.gov/pubmed/?term=37468563>
70. Candidate Genes for Prediction of Efficacy and Safety of Statin Therapy in the Kazakh Population. Twin Res Hum Genet 2023:1-7Tuleutayeva RY, Makhatova AR, Rakhzyhanova SO *et al.* <http://www.ncbi.nlm.nih.gov/pubmed/?term=37489533>
71. Cholesterol-Lowering Drugs as Potential Antivirals: A Repurposing Approach against Flavivirus Infections. Viruses 2023; 15Osuna-Ramos JF, Farfan-Morales CN, Cordero-Rivera CD *et al.* <http://www.ncbi.nlm.nih.gov/pubmed/?term=37515153>

Basic Science

1. Development and Characterization of Pentaerythritol-EudragitRS100 Co-processed Excipients as Solid Dispersion Carriers for Enhanced Aqueous Solubility, In Vitro Dissolution, and Ex Vivo Permeation of Atorvastatin. ACS omega 2023; 8:25195-25208Telange DR, Bhaktani NM, Hemke AT *et al.* <http://www.ncbi.nlm.nih.gov/pubmed/?term=37483203>

2. Interactions between Angiotensin Type-1 Antagonists, Statins, and ROCK Inhibitors in a Rat Model of L-DOPA-Induced Dyskinesia. Antioxidants (Basel) 2023; 12Lopez-Lopez A, Valenzuela R, Rodriguez-Perez AI *et al.*
<http://www.ncbi.nlm.nih.gov/pubmed/?term=37507992>
3. Statins suppress cell-to-cell propagation of α -synuclein by lowering cholesterol. Cell death & disease 2023; 14:474Min JO, Ho HA, Lee W *et al.*
<http://www.ncbi.nlm.nih.gov/pubmed/?term=37500624>
4. Effects of atorvastatin in suppressing pulmonary vascular remodeling in rats with chronic obstructive pulmonary disease. Clinics (Sao Paulo, Brazil) 2023; 78:100252He Y, Wang S, Li Y *et al.* <http://www.ncbi.nlm.nih.gov/pubmed/?term=37459672>
5. Retracted: The Impact of Atorvastatin on RANKL Expression in Rats during the Retention Stage after Orthodontic Tooth Movement. Comput Math Methods Med 2023; 2023:9795878Methods In Medicine CAM. <http://www.ncbi.nlm.nih.gov/pubmed/?term=37503399>
6. Identifying novel candidate compounds for therapeutic strategies in retinopathy of prematurity via computational drug-gene association analysis. Front Pediatr 2023; 11:1151239Xie EF, Hilkert Rodriguez S, Xie B *et al.*
<http://www.ncbi.nlm.nih.gov/pubmed/?term=37492605>
7. Low-Density Lipoprotein Receptor (LDLR) Is Involved in Internalization of Lentiviral Particles Pseudotyped with SARS-CoV-2 Spike Protein in Ocular Cells. Int J Mol Sci 2023; 24Uppal S, Postnikova O, Villasmil R *et al.*
<http://www.ncbi.nlm.nih.gov/pubmed/?term=37511618>
8. Active and allosteric site binding MM-QM studies of Methylidene tetracyclo derivative in PCSK9 protein intended to make a safe antilipidemic agent. Journal of biomolecular structure & dynamics 2023:1-10Irfan N, Vaithyanathan P, Anandaram H *et al.* <http://www.ncbi.nlm.nih.gov/pubmed/?term=37493394>
9. Rosuvastatin treatment alone cannot alleviate lupus in murine model: a pilot study. J Rheum Dis 2023; 30:198-203Baek WY, Lee SM, Lee SW, Suh CH.
<http://www.ncbi.nlm.nih.gov/pubmed/?term=37476679>
10. Statins influence the relationship between ATP-binding cassette A1 membrane transporter-mediated cholesterol efflux capacity and coronary atherosclerosis in rheumatoid arthritis. J Transl Autoimmun 2023; 7:100206Karpouzias GA, Papotti B, Ormseth SR *et al.* <http://www.ncbi.nlm.nih.gov/pubmed/?term=37484708>
11. Preparation of co-electrospinning membrane loaded with simvastatin and substance P to accelerate bone regeneration by promoting cell homing, angiogenesis and osteogenesis. Mater Today Bio 2023; 21:100692Al-Baadani MA, Xu L, Cai K *et al.*
<http://www.ncbi.nlm.nih.gov/pubmed/?term=3745581>
12. Nanofibrous Polycaprolactone Membrane with Bioactive Glass and Atorvastatin for Wound Healing: Preparation and Characterization. Pharmaceutics 2023; 15EI-Okaily MS, Mostafa AA, Dulnik J *et al.* <http://www.ncbi.nlm.nih.gov/pubmed/?term=37514176>

To subscribe to the Statin Literature Update Service Click [HERE](#)



Facebook



Twitter



Website

mailing address:
lansberg@gmail.com

