

# EXERCISE AND SPORT SCIENCES REVIEWS



## ***ESSR Journal Club***

**Covered Article:** “Effect of Statins on Skeletal Muscle: Exercise, Myopathy, and Muscle Outcomes” by Beth A. Parker and Paul D. Thompson

*Exercise and Sport Sciences Reviews*. 40(4):188-94, October 2012.

**Journal Club Author:** LaDora Thompson

1. The concentration of low-density lipoprotein cholesterol is reduced with statins. Describe the cellular processes that produce this outcome.
2. Statins were originally prescribed for patients with cardiovascular disease; however, the use of statins has expanded to other patient populations. List some patient populations that benefit from statins use and discuss the biological rationale for the benefit.
3. Why is it impossible to discern the actual incidence of mild muscle complaints in trials sponsored by the pharmaceutical industry? Propose a study design that would identify the incidence of mild muscle complaints with statin use.
4. Studies that have examined the association between muscle strength, aerobic exercise performance, and statin use have reported inconsistent findings. What reasons might explain these inconsistencies? Propose a study that could quantify statin-induced gains in performance.
5. The article identifies several mechanisms by which statins might amplify exercise-associated muscle damage. What evidence supports these mechanisms and what are the knowledge gaps?
6. Discuss how CoQ10 influences statin-associated myopathy.
7. Describe the association between CK, statin use, muscle contractility, and membrane integrity.
8. How does advancing age influence the interaction between statin use and exercise-induced muscle injury?
9. Which genetic factors increase an individual’s susceptibility to statin myopathy? What is the biological rationale for this association?
10. The article identifies five key questions to be considered (See *Summary* section, page 193). Discuss.