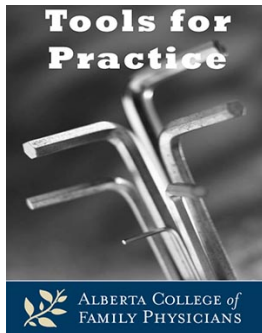


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**Evidence Updated: No new evidence**  
**Bottom Line: No change**  
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## **How does high dose statin compare to low dose in people with heart disease?**

**Clinical Question: In patients with coronary heart disease (like previous myocardial infarction), what are the benefits and harms of prescribing high dose compared to low dose statins?**

**Bottom Line: In patients with coronary heart disease, using high dose statins (compared to low-moderate dose) prevents one coronary heart disease (CHD) event for every 91 patients but results in one in 47 patients discontinuing therapy due to adverse events. However, low-moderate dose statin (compared to placebo) provides 2-3 times greater benefit than increasing to high dose statin. Therefore, getting and keeping patients on any statin is key, with dose adjusted up to tolerable levels.**

### **Evidence:**

There are at least six meta-analyses<sup>1-6</sup>:

- Most recent: Ten trials, 41,778 patients with CHD. Mean trial duration 2.5 years.
  - High dose is usually atorvastatin 80mg. Low-moderate dose varies: pravastatin 40 mg to lovastatin 5mg.
  - Outcomes:
    - No difference in death, cardiovascular death, or fatal myocardial infarction (MI).
    - High dose reduced the combined endpoint of non-fatal MI and CHD death: 9.4% vs 10.5%, Number Needed to Treat (NNT) =91 over 2.5 years.
- Other meta-analyses have similar results. High dose statins:
  - Reduced mortality in patients with acute coronary syndrome:<sup>1,3</sup> NNT=91 over two years.
  - Increased adverse events leading to stopping therapy: Number Needed to Harm (NNH) =47.

### **Context:**

- In patients with CHD, low-moderate dose statin (like 40mg pravastatin or 20-40mg simvastatin) compared to placebo:<sup>7</sup>
  - Reduced CHD: NNT=27.
  - Reduced mortality: NNT=56.
- Benefits of low-moderate dose over placebo (relative benefit 25% for CHD<sup>7</sup>) are larger than the benefits of high dose over low-moderate dose (only 10% incremental benefit<sup>1</sup>).
- Adherence to statin therapy in the community is poor (worse than trials):
  - Up to 50% discontinue statin by 3 years with adverse events often cited as a reason for stopping.<sup>8-10</sup>
  - Post-marketing data<sup>11,12</sup> indicates muscle-related side effects and transaminase abnormalities increase four-five fold when increasing atorvastatin from 40 mg to 80 mg.

**Original Authors:** G. Michael Allan MD CCFP, Marco Mannarino MD CCFP

**Updated:**  
Ricky Turgeon BSc(Pharm) ACPR PharmD

**Reviewed:**  
G Michael Allan MD CCFP

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