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## Walking it off: How effective is exercise for management of peripheral artery disease?

### CLINICAL QUESTION

What is the evidence for exercise in the management of patients with peripheral artery disease (PAD)?

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### BOTTOM LINE

In patients with PAD, exercise therapy improves maximum walking distance and pain-free walking distance by up to ~200 meters over 2 to 78 weeks compared to usual care. No benefit has been demonstrated for amputation or mortality. The most commonly studied exercise is supervised walking 2-3 times per week for 30-60 minutes, although other supervised activities (example resistance training) may be beneficial in those who cannot tolerate walking.

### EVIDENCE

- Results statistically significant unless otherwise noted.
- Exercise versus usual care +/- exercise advice in patients with PAD (mean age 67, 67% male, mean Ankle Brachial Index 0.67, pain free walking distance 110-266m):<sup>1</sup>
  - Four systematic reviews, 9-41 randomized controlled trials (RCTs), 391-1938 patients:<sup>1-4</sup>
    - Pain-free walking distance improvement: 23 to 174 meters over 2 to 78 weeks.
    - Maximum walking distance improvement: 41 to 218 meters over 2 to 78 weeks.

- Improvement likely clinically relevant.<sup>5,6</sup>
  - Two systematic reviews, 1-8 RCTs, 177-937 patients:<sup>1,4</sup>
    - No difference in mortality,<sup>4</sup> amputation, or adverse events (example cardiovascular events) at up to 78 weeks.
- Different types of exercise:
  - Network Meta-analysis, 42 RCTs, 3515 patients:<sup>7</sup>
    - Maximum walking distance:
      - Improved with supervised and home-based exercise (187m and 89m respectively) at <1 year.
      - Only supervised programs continued to demonstrate benefit (201m) between 1-2 years.
  - Systematic review, 10 RCTs, 527 patients:
    - Supervised walking not superior to other supervised exercise (example resistance training, Nordic walking, combination exercises, arm ergometry, or cycling) for pain-free or maximum walking distance.<sup>8</sup>
    - Limitations: Based on small sample sizes, low quality evidence.
  - RCT, 305 patients: Home-based exercise inducing maximal pain superior to exercise inducing no pain (34.5m versus -6.4m).<sup>5</sup>
    - Limitations: Heterogeneous individual response.
    - Systematic reviews: No difference between exercising with no-to-mild pain versus moderate-to-maximal pain.<sup>1</sup>

## CONTEXT

- Most common recommendations included supervised walking 2-3 times per week for 30-60 minutes.<sup>4,9</sup>
- Patient understanding of physical activity for PAD should be explored:
  - 63% identified walking as the primary etiology for their pain, 90% thought walking would worsen symptoms.<sup>10</sup>

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