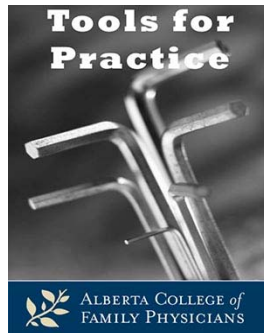


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## When Treating Blood Pressure, what is the Evidence for Specific Targets?

### Clinical Question: What is the evidence from RCTs for blood pressure (BP) targets lower than 140/90?

#### Evidence:

- Systematic Review<sup>1</sup> of 7 trials (22,089 patients), followed mean 3.8 years. Intensive targets (primarily diastolic) led to:
  - Statistically lower mean BP of 139.3/81.7 versus 143.2/85.1
  - No differences in total mortality or any cardiovascular disease (CVD) outcome.
- New trials: 4733 diabetic patients (ACCORD<sup>2</sup>), 1111 non-diabetic patients (CardioSis<sup>3</sup>) and 1094 chronic kidney disease patients (AASK<sup>4</sup>).
  - Type 2 diabetes<sup>2</sup>: Systolic BP was 119.3 versus 133.5
    - No difference in combined or individual CVD outcomes except
      - Stroke: statistically significant reduction (1.5% vs 2.6%, number needed to treat (NNT) 92)
      - Adverse reactions: statistically significant increase (3.3% vs 1.3%, NNH 50).
  - Non-diabetics<sup>3</sup>: Mean BP was 132.2/77.3 versus 135.6/78.9
    - Composite CVD outcome, statistically significant reduction (4.8% versus 9.4%, p=0.003, NNT 22).
      - Trial was not designed for this outcome and some of the outcomes could be biased by lack of blinding.
  - Chronic kidney disease<sup>4</sup>: Mean BP 130/78 versus 141/86 for 5 years, difference declined to 131/78 versus 134/78 during extended follow-up (8.8-12.2 years total).
    - No difference in primary outcome (composite: doubling of creatinine, end-stage renal disease or death)
    - Higher baseline urinary protein/creatinine (>0.22) subgroup had statistically significantly reduced primary outcome (75% versus 85%, p=0.01, NNT 10)

#### Context:

- Evidence (primarily post-hoc analyses) suggests a "J-curve" effect: <120 systolic or <60 (perhaps <70) diastolic may increase risk.<sup>5</sup>
- US<sup>6</sup> and Canadian<sup>7</sup> guidelines recommend BP targets of <140/90 for most patients and <130/80 for diabetics and those with renal disease. European guidelines<sup>8</sup>

previously recommended <130/80 for diabetics and those with CVD but now recommend targeting the range of 130-139/80-85 in most patients.

- Others<sup>5,9,10</sup> have raised concerns about the evidence for BP targets <140/90mmHg

**Bottom-line: Treating hypertension (targeting BP <140/90) lowers risk, but the current evidence for BP targets of 130/80 is inconsistent, even for patients with diabetes, renal disease, or existing cardiovascular disease. Potential benefits and harms of intensive treatment should be weighed for each patient.**

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