**TAKE INITIAL BLOOD PRESSURE:** Pt seated quietly for 5’ with back on chair, feet on ground, and UE supported horizontal at heart level, measure 1x B UE, utilize higher UE BP and signify by circling measurement. **Confirm over 2 visits.** Whelton 2017

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**SYMPTOMATIC**

BP: Potential HTN Emergency

- **>180 OR >120**
  - Whelton 2017, JNC VII 2004

  **BP:** Recheck after sitting 5 min
  - >180/120
  - ≤180/120

  Call MD, Follow MD orders, **(JNC VII 2004)**. Monitor S/S continuously and BP every 5’. If BP continues to rise, consider alternate position of comfort.

  If BP remains stable, consider performing passive interventions or testing.

  Send MD letter for BP parameters and ASCVD risk (section 1 & 2). At next visit discuss non-pharm interventions.

**Cardiovascular Symptoms**

- Sudden...
  - Severe headache
  - Nosebleeds
  - Shortness of Breath
  - Severe Anxety
  - Chest pain

  Call MD for advice.

- Sudden...
  - Chest Discomfort (Nitrroglycerin?)
  - Difficulty Speaking & Seeing
  - UE/LE/face numbness or weakness
  - Sudden trouble walking or dizziness, loss of balance, confusion

**Orthostatic Hypotension:**

1. Defined as a 20mmHg SBP or 10mmHg DBP drop in blood pressure within 1-3 minutes of standing up. (Freeman 2011, Jorachek 2017)
2. Referral to MD is recommended, especially with chronically low blood pressure, < = 85/55, only if BP causes noticeable signs and symptoms **(AHA 2011):** Nausea, dizziness, and lightheaded with activity (Bradley 2003); fainting; dehydration and unusual thirst; lack of concentration; blurred vision; cold, clammy, pale skin; rapid, shallow breathing; fatigue; and depression. **(AHA 2011)
3. Investigate whether pt has experienced prolonged bed rest; possible side effects from medications; heart, endocrine, or neurological conditions; systemic infection; or nutritional deficiency (B12 and folic acid, causing anemia). **(AHA 2013)
4. Consider referral for evaluation for diabetes, PD, and other autonomic dysregulation disorders (Pickering 2005)

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**ASYMPTOMATIC**

BP: HTN Stage 2

- **140-180 OR 90-120**
  - at 2 visits Whelton 2017

- If asymptomatic, continue PT, send MD letter for BP parameters and ASCVD risk (section 1 & 2), discuss non-pharm interventions.

**Cardiovascular Symptoms**

- Sudden...
  - Severe headache
  - Nosebleeds
  - Shortness of Breath
  - Severe Anxety
  - Chest pain

- Sudden...
  - Chest Discomfort (Nitrroglycerin?)
  - Difficulty Speaking & Seeing
  - UE/LE/face numbness or weakness
  - Sudden trouble walking or dizziness, loss of balance, confusion

**Orthostatic Hypotension:**

1. Defined as a 20mmHg SBP or 10mmHg DBP drop in blood pressure within 1-3 minutes of standing up. (Freeman 2011, Jorachek 2017)
2. Referral to MD is recommended, especially with chronically low blood pressure, < = 85/55, only if BP causes noticeable signs and symptoms **(AHA 2011):** Nausea, dizziness, and lightheaded with activity (Bradley 2003); fainting; dehydration and unusual thirst; lack of concentration; blurred vision; cold, clammy, pale skin; rapid, shallow breathing; fatigue; and depression. **(AHA 2011)
3. Investigate whether pt has experienced prolonged bed rest; possible side effects from medications; heart, endocrine, or neurological conditions; systemic infection; or nutritional deficiency (B12 and folic acid, causing anemia). **(AHA 2013)
4. Consider referral for evaluation for diabetes, PD, and other autonomic dysregulation disorders (Pickering 2005)

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BP: HTN Stage 1

- **130-139 OR 80-89**
  - At 2 visits Whelton 2017

- Continue monitoring: take BP mid-tx if performing moderate to intense exercise or Pre-Tx BP 140-180 OR 90-120

**Normal Response To Exercise**

- SBP rises in linear fashion with exertion, 7-10mmHg for every MET level (Hillgass 2nd ed, p512, ASCM 3rd ed.)
- SBP increases 20mmHg or more with Min (50-55% Max HR, 3-5/10 or 9/20 RPE) to Mod(3 – 6 METs) (60-70% Max HR or 4-6/10 or 12-14/20 RPE) (CDC, Goodman and Synder 4th ed., p191)
- SBP increases 40-50mmHg with intense (> 7 METs) (70-85% Max HR, 7-8/10 or 17/20 RPE) (CDC, Goodman & Synder 4th ed, p191)
- HR rises linearly 10bpm for each MET level (ACSM 7th ed., p171)
- PSO2 ≥ 90 – 100% (Valdez-Lowe 2009)

**Normal Post Exercise Response**

- SBP to pre-exercise level within 5-7’ of stopping & resting Pierson 2007
- HR to pre-exercise level within 3-5’ of stopping & resting Pierson 2007

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BP: Elevated

- **120-129 & <80**
  - at 2 visits Whelton 2017

PCP F/U, BP referral letter (section 1), discuss non-pharm interventions

BP: Normal

- **<120 & <80**
  - Whelton 2017

PCP F/U within 3-6 months for ASCVD risk, discuss non-pharm interventions Whelton 2017

**Proced with Tx**

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**Terminate Tx if:**

- ACSM 8th Ed
  - SBP decreases ≥ 20mmHg
  - SBP ≥ 250mmHg
  - DBP ≥115mmHg
  - HR doesn’t ↑ with exercise (Beta Blockers?)
  - Significant change in heart rhythm
  - PSO2: ≤ 70% Rajkumar 2006
  - Cardiovascular sx arise (see list)

**Normal Post Exercise Response**

- SBP to pre-exercise level within 5-7’ of stopping & resting Pierson 2007
- HR to pre-exercise level within 3-5’ of stopping & resting Pierson 2007

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**Pts with SBP and DBP in different categories should be assigned higher BP**

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**Questions for Investigation of elevated BP:** JNC VII 2004

1. What were you doing before your was BP checked?
2. When is the last time you spoke to your MD about your BP?
3. Are you taking BP meds as prescribed?
4. If has side effects or not adherent, refer to MD

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