

## Adherence and Monitoring of Hypertensive Patients.



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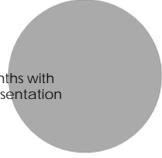
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## Conflicts of Interest

- ▶ Speaker has no conflicts of interest to disclose
- ▶ I have had no financial relationship over the past 12 months with any commercial sponsor with a vested interest in this presentation



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Brought to you though a partnership:



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*Thank you for taking part in this training  
to enhance your skills to care for  
patients with Hypertension.*



<https://www.smm.org/heart/heart/pumping.htm>

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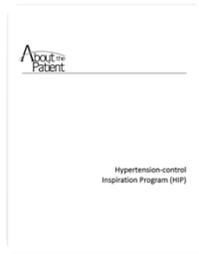
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### Three Module Series

- ▶ Workflow
- ▶ Inspiring Patients
- ▶ Vital Signs Review



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### Objectives

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|---|---------------|
| ▶ Outline the components for pharmacy staff and eligible patients for the Hypertension-control Inspiration Program (HIP). | ▶ On-Line     |
| ▶ Determine the best way to use pharmacy staff to deliver disease and medication management services.                     | ▶ On-Line     |
| ▶ Optimize engagement of eligible patients through active listening, motivational interviewing and SMART goal setting.    | ▶ On-Line     |
| ▶ Determine patient's medication barriers to adherence.   | ▶ Live Course |
| ▶ Optimize accurate blood pressure assessment via aneroid sphygmomanometer.   | ▶ Live Course |
| ▶ Optimize accurate pulse and respiration assessment.   | ▶ Live Course |

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### Quiz

- ▶ A 57 year old customer comes for a blood pressure check. He is currently on a combination blood pressure medication. His past two readings in his log from 3 months ago: 134/82 and 140/94. Today his average blood pressure is 144/98. The next **best** step is...
  - A. Recommend increase in current medication.
  - B. Educate on the consequences of elevated blood pressure.
  - C. Educate on DASH diet since he is almost at goal.
  - D. Identify any barriers to medication adherence.

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### Quiz

- ▶ A 63 year old customer comes for a blood pressure check because he does not think he needs medication. He takes three medications at maximum doses for his blood pressure. Today his average blood pressure is 118/84. The next **best** step is...
  - A. Emphasize that the physician ordered the medication.
  - B. Educate on the complications of uncontrolled blood pressure.
  - C. Ask an open ended question to understand his concern.
  - D. Contact his primary provider to decrease medication dosing.

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Hypertension-control Inspiration Program (HIP)  
VITAL SIGNS REVIEW

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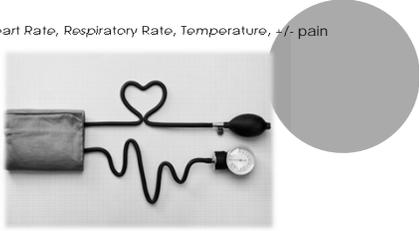
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### Vital Signs

- ▶ Blood Pressure, Heart Rate, Respiratory Rate, Temperature, +/- pain




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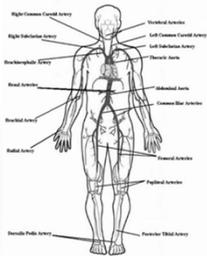
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### Anatomy Review




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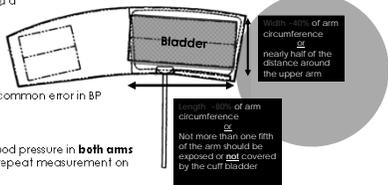
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### Blood Pressure

- ◆ Measured by a Stethoscope and a Sphygmomanometer



- ◆ **Inaccurate cuff size** is the most common error in BP measurement
- ◆ In "new" to you patient take blood pressure in **both arms** and for subsequent monitoring repeat measurement on arm with higher pressure

<http://circ.ahajournals.org/content/88/5/2460.full.pdf>

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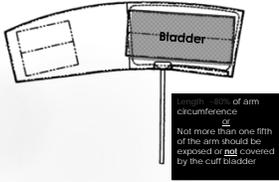
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### Blood Pressure



<http://circ.ahajournals.org/content/88/5/2460.full.pdf>  
<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2801571/>

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### Blood Pressure

- ◆ Ideally blood pressure should be taken after the patient is at rest for 5 minutes in a comfortably warm and quiet room on an **arm free of clothing**
- ◆ The patient/customer should have not consumed caffeine or tobacco for 30 minutes prior to measurement. No rigorous exercise for at least 30 minute prior to measurement.
- ◆ Patient position should be seated
  - ▶ In a chair with good back support where **arm is at heart level** and feet are flat on the floor (no crossed legs)



<http://circ.ahajournals.org/content/88/5/2460.full.pdf>  
<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2801571/>

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### Blood Pressure



<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2801571/>

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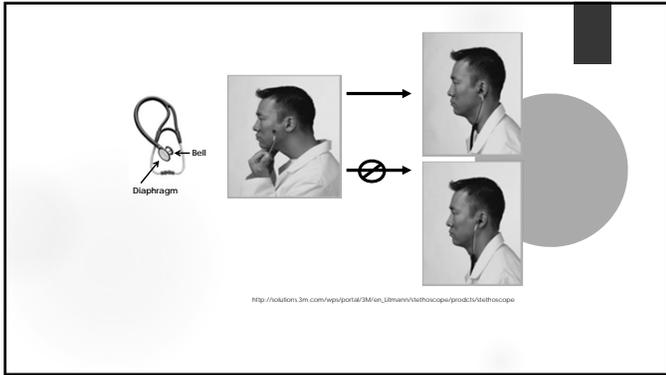
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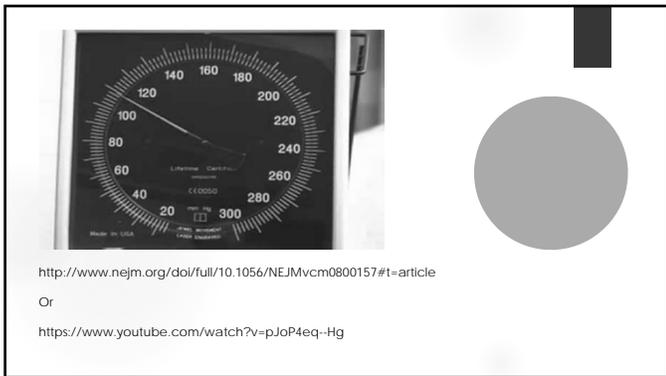
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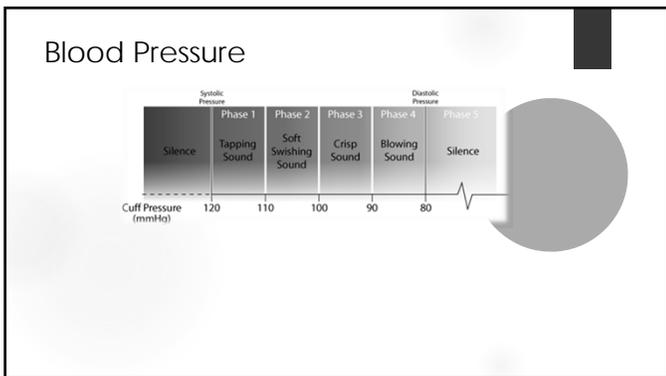
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## Blood Pressure



<https://www.youtube.com/watch?v=VJrLHePNDQ4>

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BP Simulator:

<http://www.csuchico.edu/atep/bp/bp.html>

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## Blood Pressure

<http://circ.ahajournals.org/content/88/5/2460.full.pdf>

2468 Circulation Vol 88, No 5, Part 2 November 1993

### Common Problems in Measuring Blood Pressure and Recommendations for Avoiding Them

Problem	Result	Recommendation
Equipment		
Stethoscope ear pieces plugged	Poor sound transmission	Clean ear pieces
Ear pieces poorly fitting	Distorted sounds	Adjust ear pieces to best
Ball or diaphragm cracked	Distorted sounds	Replace equipment
Tubing too long	Distorted sounds	Length from ear pieces to bell should be 12 to 15 in (30 to 38 cm)
Mercury manometer		
Mercury not at 0 at rest	Inaccurate reading	Recheck or replace mercury
Column not vertical	Inaccurate reading	Place manometer on level surface
Distortion of mercury with inflation/deflation	Inaccurate reading	Clean tubing and air vent; replace mercury
Airlock in manometer		
Needs not at 0 at rest	Inaccurate reading	Recalibrate
Backsight		
Too narrow for arm	Blood pressure too high	Use cuff length 80% of circumference
Too wide for arm	Under 5 to 6 mm Hg	Use regular, no longer cuff
Inflator system		
Faulty valves	Inaccurate reading	Replace equipment
Leaky tubing or bulb	Inaccurate reading	Replace equipment
Observer		
Eye preference	Inaccurate reading	Be aware of tendency; record blood pressure to nearest 2 mm Hg
Cut of hair	Inaccurate reading	Record to nearest 2 mm Hg
Distorted tone	Inaccurate reading	Record to nearest 2 mm Hg
Fatigue or poor memory	Inaccurate reading	Write down reading immediately
Subject		
Arm below heart level	Reading too high	Place patient with midpoint of upper arm at heart level

*"Have the subject raise the arm over the head and make a fist several times. Inflate the cuff, while the arm is still overhead but the hand is relaxed to a level 50mmHg above expected SBP, have patient lower arm rapidly, and measure the blood pressure in the usual manner. Draining the venous blood in this fashion often amplifies sound."*

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## Heart Rate/Respiratory Rate

- ▶ **Pulse:** Palpate using the pads of your fingers to assess rate and rhythm of the radial pulse



- ▶ **Respirations:** Visually inspect the chest or abdomen without the patient's knowledge



Count Pules for 30 sec. then Respirations for 30sec. and multiple both by 2

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Exam/Test	Recommended Frequency	Goal	Clinical Use
Blood Pressure	At Every Visit	Patients 18-59 or 60 and older with chronic medical conditions (Ex. Diabetes) <b>Less than 140/90mmHg</b>  Patients 60 and older <b>without</b> chronic medical conditions <b>Less than 150/90mmHg</b>	Used to evaluate the effectiveness and safety of antihypertensive drugs
Pulse	At Every Visit	60-100 bpm	Used to evaluate the effectiveness and safety of antihypertensive drugs
Respirations	At Every Visit	12-20 bpm	

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## Lifestyle and blood pressure

For each of the following factors please indicate how confident you are that it elevates blood pressure to cause harm to the body.

	Not at all confident				Extremely confident
	1	2	3	4	5
Weather					
Calcium					
Alcohol ✓					
Salt ✓					
Tobacco ✓					
Vaccinations					
Exercise					

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## Complications

For each of the following factors please indicate how confident you are that they are direct complications of consistently high blood pressure.

	Not at all confident				Extremely confident
Stroke ✓	1	2	3	4	5
Heart Attack ✓	1	2	3	4	5
Asthma	1	2	3	4	5
Blindness ✓	1	2	3	4	5
Kidney Damage ✓	1	2	3	4	5
Diabetes	1	2	3	4	5
Sexual Dysfunction ✓	1	2	3	4	5

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## Resources

- ▶ Team Up, Pressure Down. Million Hearts.  
<http://millionhearts.hhs.gov/resources/teamuppressuredown.html>
- ▶ 2014 Evidence-Based Guidelines for the Management of High Blood Pressure in Adults Report from the Panel Members Appointed to the Eighth Joint National Committee (JNC 8). *JAMA*. 2014; 311(5):507-520. doi:10.1001/jama.2013.284427.  
<http://jama.jamanetwork.com/article.aspx?articleid=1791497>
- ▶ Medication Therapy Monument in Pharmacy Practice: Core Elements of an MTM Service Model Version 2.0.  
<http://www.accp.com/docs/positions/misc/coreelements.pdf>

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