



Guide to Using the BP% and BMI% Charts for Boys and Girls

The charts provide a BP% for age and gender along with BMI% ranges for age and gender (<50%, 50%-84%, 85%-94%, 95%-99% and >99%). This chart will not give you a precise BMI% but a “range” to correlate with a weight category diagnosis (see below). If you are suspicious that your patient is underweight (BMI<5% for age and gender), you will need to use an actual CDC BMI% chart for that child’s age and gender.

1. You will need the following information to use these charts:

- Gender
- Age
- Weight in pounds (lbs)
- Height in inches or centimeters (cm)
- Blood Pressure

Test Case: 12 year old girl who is 63 inches tall, (159 cm), weighs 135 lbs., and has a blood pressure of 120/63.

2. First find the correct gender chart, then the correct age. Ages are listed on far left side.

3. Find the nearest matching height either in cm or inches (also near the far left side). Left of the patients’ height you will find a height percentile (5th, 10th, 25th, 75th, 90th, or 95th). The test case is nearest the 75% for height.

4. Evaluate BP%

Follow the height row horizontally across the page to the right. Look for the BP value that most corresponds to the highest number (either systolic or diastolic), of the patients blood pressure reading. You are not looking for an exact match. The test case girls BP of 120/60 put her in the 90th % for BP because even though her diastolic is equal to the 50th%, her systolic BP is higher than the diastolic. Blood pressure percentiles lower than the 50th% are not associated with significant risk.

5. Blood Pressure Definitions:

BP's on 3 separate occasions taken in the right arm, with arm at heart level

- Pre-Hypertension (systolic or diastolic): $\geq 90\%$ - $\leq 95\%$
- Stage 1 HTN (systolic or diastolic): 95%- 5mm above the 99%
- Stage 2 HTN (systolic or diastolic): $> 5\text{mm}$ above 99%

6. Evaluate BMI%

Continue along the row to the right, look for your patient's weight in lbs. Again you may not find the exact weight but look for a range... Test case 12 year old weighs 135lbs. she weighs more than the 50th%, so continue right, she also weighs more than the 85th%, but she does not weigh enough to put her into the 95th% (she would need to weigh 146lbs.). So we know her BMI% is $>85^{\text{th}}\%$ but $< 95^{\text{th}}\%$. You can then look at what she should weigh to have a BMI% of the 50th%, in her case she would need to weigh 124lbs.

7. Weight Category Diagnosis

- BMI% $<5\%$ = Underweight
- BMI% $\geq 85\% < 95\%$ = Overweight
- BMI% $\geq 95\%$ = Obese
- BMI% $\geq 99\%$ has no specific name but those patients are considered high risk, and are treated differently in terms of Stages of Treatment (*See Expert Committee on Recommendations for prevention and Treatment of Pediatric Overweight)

8. Summary of Test Case:

- Height is 75%
- Blood Pressure is 90%
- BMI% is $> 85\%$ but $< 95\%$

9. Now what?

- a. For HTN see the HTN Worksheet*. This will instruct you in how to evaluate, treat and follow up on your patients with abnormal blood pressure findings.
- b. For Overweight or Obesity follow the Expert Committee's Recommendations for the Identification and Treatment of Overweight Children.

(www.ama-assn.org/ama/pub/category/11759.html)

*Based on The Fourth Report on the Diagnosis, Evaluation, and treatment of High Blood Pressure in Children and Adolescents: Pediatrics Vol. 114 No. 2 August 2004, pp.555-576