# Screening Reference Guide - Blood Pressure (Adult and Pediatric)

Use this blood pressure chart to work out what the blood pressure readings mean. This is a screening and not intended to be a diagnosis for high blood pressure as we are only doing one reading.

**NOTE: BP reading is considered abnormal if either value (systolic or diastolic) is outside the normal range.**

**Table 1: Children age 13 + and adults[1]**

| BP Reading Category | Systolic mmHg (upper number) | | Diastolic mmHg (lower number) | Action |
|---|---|---|---|---|
| Hypotensive | Less than 90 | and | Less Than 60 | Referral |
| Normal | Less Than 120 | and | Less Than 80 | none |
| Elevated | 120-129 | and | Less Than 80 | Referral |
| High Blood Pressure Hypertension Stage 1 | 130-139 | or | 80-89 | Referral |
| High Blood Pressure Hypertension Stage 2-a | 140-159 | or | 90-99 | Referral |
| On- Site Action Required for Blood Pressure Readings Below | | | | |
| High Blood Pressure Hypertension Stage 2-b | 160-180 | or | 100-120 | Immediate (Urgent) Referral to Event on- site Medical Services |
| Hypertensive Crisis | Higher Than 180 | and/or | Higher than 120 | Immediate (Urgent) referral to Event On-site Medical Services |

**Table 2: Children Age 8-12 Blood Pressure Values Requiring Further Evaluation by Medical Professional[2]**

| Age | Blood Pressure Values* | | | |
|---|---|---|---|---|
| | Systolic mm Hg | Diastolic mm Hg | | |
| 8 | 107 | 69 | Referral | ***122/84 or above*** → *Urgent Referral to Medical Services* |
| 9 | 107 | 70 | Referral | ***124/86 or above*** → *Urgent Referral to Medical Services* |
| 10 | 108 | 72 | Referral | ***124/87 or above*** → *Urgent Referral to Medical Services* |
| 11 | 110 | 74 | Referral | ***126/88 or above*** → *Urgent Referral to Medical Services* |
| 12 | 113 | 75 | Referral | ***128/90 or above*** → *Urgent Referral to Medical Services* |

**Any BP reading repeatedly at or above the systolic or diastolic values listed in table 2 requires further evaluation.*

## On-Site Follow Up to Blood Pressure Results

1. Test BP in right arm. If the right side is in normal range – you are done. No need to test left arm
2. If the right side is abnormal, do the left arm. If the left confirms the right (either hypertensive or hypotensive), then you are done (*and referral is needed*).
    a. If the left is normal, but the right is not, then let the athlete rest, drink water, and redo the right. If right is now normal too, then the athlete is normal. If the right is persistently abnormal, then the right-side rules the diagnosis *(and referral is needed)*
    b. In the rare case that the left is more abnormal than the right, the most abnormal reading wins *(and referral is needed),* but we recommend you let the athlete rest, drink water, and reconfirm.
    c. If the right is more than 20 mm/hg greater than the left, not only is the athlete hypertensive, but they should be referred for a medical evaluation to rule out possible coarctation of the aorta *(referral required)*

**Urgent Referral: Per SOI Policy, if the athlete is competing and in Hypertension 2b or Hypertensive Crisis for repeated readings, you are required to notify the coach and send the athlete to the medical event staff for immediate medical clearance prior to competition.**

References:

1. Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines, the 2017 Guideline for the Prevention, Detection, Evaluation and Management of High Blood Pressure in Adults. November 2017. http://hyper.ahajournals.org/content/guidelines2017
2. Flynn JT, Kaelber DC, Baker-Smith CM, et al. Clinical Practice Guideline for Screening and Management of High Blood Pressure in Children and Adolescents. Pediatrics. 2017;140(3):e20171904 (not available for free download)

July 2019 update


# 6 SIMPLE STEPS TO GET AN ACCURATE **BLOOD PRESSURE READING**

The common positioning errors can result in inaccurate blood pressure measurement. Figures shown are estimates of how improper positioning can potentially impact blood pressure readings.

Sources:

*Pickering, et al.* Recommendations for Blood pressure Measurement in Humans and Experimental Animals Part 1. Blood Pressure Measurement in Humans. Circulation. 2005; 111: 697-716.

*Handler, J.* The importance of accurate blood pressure measurement. *The Permanente Journal/Summer* 2009/Volume 13 No. 351

This graphic was modfied from materials from American Medical Association and The John Hopkins University. The original content can be found at https://www.ama-assn.org/ama-johns-hopkins-blood-pressure-resources.

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