

# PEDIATRIC CARDIOLOGY & CONGENITAL CARDIAC SURGERY (PCCS)

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*Issued in the interest of children with Congenital Heart Disease.*

## HYPERTENSION IN PEDIATRIC PRACTISE

**How is Hypertension defined :**

**1. Hypertension:**

is defined as Systolic BP (SBP) and/or diastolic BP (DBP) that is  $\geq 95$ th percentile for gender, age, and height on 3 occasions.

**2. Prehypertension:**

in children is defined as average SBP or DBP levels that are  $\geq 90$ th percentile but  $\leq 95$ th percentile.

**Normal Values: (available on websites mentioned as refernces)**

The 2004 normal values are currently defined on the basis of

- Age
- Sex and
- Height of the patient

**Height has been added in the variables taken into account for an accurate assessment of normal BP.**

### A FEW THUMB RULES:

- **BP more than 120/80 for any age is abnormal !(JNC 7 recommendations)**
- BP that is  $>90$ th percentile but  $<95$ <sup>th</sup> percentile had been designated as “**high normal**” BP : these pts are at heightened risk for developing hypertension.
- **White Coat Hypertension:** is when BP is always increased in the doctors office but never when measured outside

### WHEN TO MEASURE BP IN THE BUSY OUTPATIENT IN THE UNDER 3 YR OLD

- History of prematurity, very low birth weight, or other neonatal complications
- Congenital heart disease (repaired or nonrepaired)
- Recurrent urinary tract infections, hematuria, or proteinuria
- Known renal/urologic malformations or Family history of congenital renal disease
- Solid-organ transplant/Malignancy or bone marrow transplant
- Treatment with drugs known to raise BP (eg. Steroids, beta agonists for asthma)
- Other systemic illnesses associated with hypertension (neurofibromatosis, tuberous sclerosis, etc)

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WHAT TO DO ON RECORDING HYPERTENSION FOR THE FIRST TIME**

Pre-Hypertension	Recheck BP in 6 months
Hypertension	
Stage I (95 <sup>th</sup> to 99 <sup>th</sup> Centile)	Recheck BP in a week
Stage II (>99 <sup>th</sup> Centile)	If Asymptomatic: Evaluate for Etiology
	If Symptomatic: Evaluate & start medical Mx immediately

**HOW TO INVESTIGATE A PT WITH HYPERTENSION**

**To Identify Cause**

**In all Children with BP > 95<sup>th</sup> Centile**

- CBC
- Urea, Creatinine, Electrolytes, Urine RE & Culture
- Renal U/S

**To Identify Co-morbidity**

- Lipid Profile, Fasting glucose
- Polysomnography (15% children with HTN have a Hx of snoring and 1-2% have sleep Disorder)

**To Identify End Organ Damage**

- Echocardiogram
- Retinal Exam

**WHEN TO INITIATE PHARMACOLOGICAL TREATMENT**

- Symptomatic hypertension
- Secondary hypertension
- Hypertensive target-organ damage
- Diabetes (types 1 and 2)
- Persistent hypertension despite nonpharmacologic measures

**REFERENCES**

<http://pediatrics.aappublications.org/cgi/content/full/114/2/S2/555>

[www.bluebabies.yourmd.com](http://www.bluebabies.yourmd.com)

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