# In-Clinic Guide to Medical Management of Pediatric Overweight and Obesity[4]

## Overweight and Obesity

Weight _____Height _____Height percentile _____
BMI _____ **BMI percentile** _____
BP _____ **BP percentile** _____

**Labs:**

**If BMI is 85th-94th percentile without Risk Factors***
- Fasting lipid profile

**If BMI is 85th-94th percentile with ≥1 Risk Factor(s)* and ≥ 10 y.o.**
- Fasting lipid profile
- ALT and AST
- Hgb A1C[3]♦

*Risk Factors

1st or 2nd degree FHx:
- Early CVD
- Hyperlipidemia
- T2DM
- Overweight or obesity
- HTN

Patient Medical Hx:
- Acanthosis Nigricans
- Elevated BP
- PCOS
- Tobacco use
- Race/ethnicity (Hisp, NA, AA)

**If BMI is ≥95th percentile and ≥ 10 y.o. without Risk Factors***
- Fasting lipid profile
- ALT and AST
- Hgb A1C[3] ♦

♦ **NOTE:** 2-hr glucose challenge (OGTT) is the preferred test for diagnosing impaired glucose tolerance. [1]

## Dyslipidemia [2]

**First Screen (fasting lipid profile):**
Recommended when child is between 2 and 10 y.o. with 1 of the following:

**FHx Risk** (in 1ST or 2ND degree relative)
- Dyslipidemia (Tchol >240mg/dL)
- CV event before 55 y.o. (men), 65 y.o. (women)
- Unknown FHx

**Patient Risk**
- BMI ≥85th percentile
- Diabetes
- HTN (Stage 1 or greater)
- PCOS
- Tobacco use

If normal, repeat every 3-5 years

**Intervention**
- LDL <110 mg/dL is ideal
- Lifestyle intervention includes diet, exercise, weight management
- Consider medication if ≥ 8 y.o. and LDL is:
  ≥ 190 mg/dL, or
  ≥ 160 mg/dL with 2 risk factors or FHx of early CVD
  ≥ 130 mg/dL with diabetes
- For high triglycerides or low HDL: Weight management and exercise
- Isolated fasting triglycerides >400 mg/dL: Begin medication

## Assessment and Interventions

- Assess dietary and activity habits
- Use an encounter form to assess readiness to change and make goals
- Use Motivational Interviewing approach
  - Ask permission to discuss weight
  - Practice reflective listening
  - Identify "change talk"
  - Affirm feelings and positions
  - Summarize stated plan

## Evidence-Based Interventions

Assist patient to select specific lifestyle change goal:

**KEY MESSAGES:**
**7:** Eat breakfast 7 days a week
**5:** Eat 5 fruits and vegetables every day
**2:** Screen time (TV, video, computer) is no more than 2 hours per day
**1:** Exercise at least 1 hour every day
**0:** No sweetened drinks

1. American Diabetes Association (2002). Screening for diabetes. *Diabetes Care, 25*(s1). s 21-s24. doi: 10.2337/diacare.25.2007.S21
2. Daniels S.R. & Greer, F.R. (2008). Lipid screening and cardiovascular health in childhood. *Pediatrics,122*(1), 198-205. doi: 10.1542/peds.2008-1349.
3. The International Expert Committee (2009). International expert committee report on the role of the A1C assay in the diagnosis of diabetes, *Diabetes Care, 32*(7). 1-8. doi: 10.2337/dc09-903
4. Krebs,N. F., Himes J.H., Jacobson D., Nicklas T.A Guilday P., & Styne, D. (2007). Assessment of child and adolescent overweight and obesity. Pediatrics,120; S193-S228. doi: 10.1542/peds.2007-2329D.

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5. **Hypertension Work Up** [1] (using appropriate size cuff at heart level on a calm child)

| | | Pre-Hypertension | Stage 1 HTN | Stage 2 HTN |
|---|---|---|---|---|
| **Definition** | BPs on 3 different occasions systolic OR diastolic | ≥90th % - <95th% | 95th % - 5mm Hg above 99th% | > 5mm Hg above 99th % |
| **Evaluation** | UA / UC | | ✓ | ✓ |
| | BUN/CR, lytes | | ✓ | ✓ |
| | CBC | | ✓ | ✓ |
| | Renal ultrasound | | ✓ | ✓ |
| | ECHO cardiogram | | ✓ | ✓ |
| | Retinal exam (referral) | | ✓ | ✓ |
| | Further imaging and labs | | | Refer to Peds HTN w/in 2 wks. Immediately, if symptomatic |
| **Lifestyle Modifications** | Weight loss, if indicated | ✓ | ✓ | ✓ |
| | Exercise, 30-60 mins/d | ✓ | ✓ | ✓ |
| | Decrease sedentary activities | ✓ | ✓ | ✓ |
| | DASH diet | ✓ | www.nhlbi.nih.gov/health/public/heart/hbp/dash/new_dash.pdf | ✓ |
| | Tobacco cessation | ✓ | ✓ | ✓ |
| **Medications IF…** | (Refer as needed) | Existing co-morbidities (diabetes, chronic renal or cardiac disease) | · End organ damage<br>· HTN is secondary<br>· Symptomatic<br>· Diabetes, type 1 or 2<br>○ Persistent despite 6 mo of lifestyle modification | Always |
| **Follow- up** | | In 6 months | Regularly/Refer if meds required | Frequently until stabilized |

**Polycystic Ovary Syndrome (PCOS)** [2]

| **Definition**: | **Physical Exam:** | **Evaluation:** | **Treatment**: |
|---|---|---|---|
| • Persistent anovulation<br>• Lab or clinical evidence of hyperandrogenism<br>• History:<br>• Menses<br>• FHx of PCOS<br>• Premature adrenarche<br>• Rapidity of onset of androgenic changes<br>• Hirsutism – any depilatory measures | • Hirsutism<br>• Acne<br>• Clitoromegally<br>• Virilization<br>• Premature adrenarche if pre-menarchal | • TSH, Prolactin, Pregnancy test<br>• Lipid profile, fasting<br>• If amenorrheic: Provera challenge (10 mg Provera qd x 10d)<br>• +/- Total testosterone<br>• +/- DHEA-S<br>• +/- 17-OH progesterone, 8am and fasting<br>• If sxs of Cushing's: dexamethasone suppression test<br>• If obesity/acanthosis: fasting and/or 2 hr glucose as in obesity protocol | • Weight loss, if indicated<br>• Estrogen/progesterone combo (OCP, patch, ring)<br>• Consider metformin<br>• Refer for severe or recalcitrant hirsutism |

1. 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
2. Speroff and Fritz, 2005; AACE. *Endocrin Pract*. 2005