

1 Assess Risks and Behaviors

Using information from the *Healthy Eating and Living Assessment* questionnaire, assess prenatal risk factors (Section 1), family history (Section 2A) and co-morbidities (Section 2B).



Document the presence of:

- Prenatal Risk Factors
- Positive Family History
- Co-morbidities

2 BMI Percentiles and Weight Category

For children < 2 yrs, record Weight to Length Percentile

For children ≥ 2 yrs, record BMI and BMI Percentile

- Underweight = BMI less than 5th percentile, or Weight/Length less than 5th percentile
- Healthy weight = BMI 5th-84th percentile, or Weight/height less than 95th percentile
- Overweight = BMI 85th -94th percentile, or Weight/height 95th percentile or above
- Obesity = BMI 95th percentile or above



Document the correct weight category:

- Obese
- Overweight
- Healthy Weight
- Underweight

3 Assess Readiness for Change

How concerned are you about your child's weight?

1 2 3 4 5 6 7 8 9 10
Not at all Somewhat Very

How ready are you to make changes in your child and family's behaviors in eating, nutrition and activity?

1 2 3 4 5 6 7 8 9 10
Not at all Somewhat Very

Document readiness for change to help guide intervention guidance (Step 5) and to schedule appropriate follow-up (Step 8)



CONCERN:

- Not at all concerned
- Somewhat concerned
- Very concerned

READINESS:

- Not at all ready
- Somewhat ready
- Very ready

4 History and Physical Examination

REVIEW OF SYSTEMS

Concern for possible underlying disease:

- Headache
- Abdominal Pain

Concern for possible co-morbidities:

- Headache
- Snoring, daytime somnolence
- Abdominal pain
- Polydipsia or polyuria
- Absent, delayed or irregular menses
- Hip or knee pain, limping
- Hirsutism or excessive acne
- Depression, anxiety, sleep disturbance
- School avoidance, social isolation
- Binge eating, vomiting

PHYSICAL EXAMINATION

Concern for possible underlying disease:

- Small stature or decreasing height velocity
- Cushingoid facies
- Goiter
- Undescended testes, small genitalia
- Dysmorphic features, small hands and feet

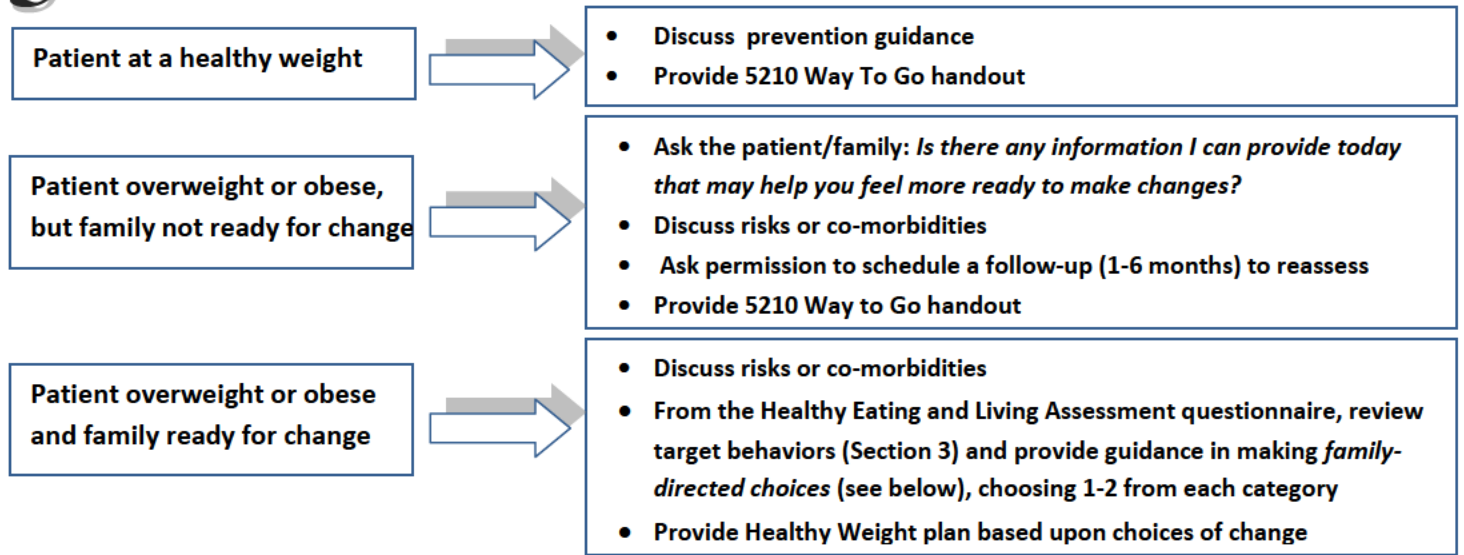
Concern for possible co-morbidities:

- Elevated blood pressure
- Papilledema
- Tonsillar hypertrophy
- Hepatosplenomegaly
- Limited hip range of motion, limping
- Lower leg bowing
- Acanthosis nigricans, purple striae



If concerns for underlying disease or for co-morbidities are present, consider additional laboratory evaluation (Step 6) or referral to appropriate subspecialty services (Step 7)

5 Intervention



Food Habits (Choose 1-2)

- Eat at least 5 fruits and vegetables each day
- Eat breakfast daily
- Reduce or skip snacks, or snack only on fruits or vegetables
- Eat together as a family
- Eliminate sweetened beverages (sweet tea, soda, sports drinks, fruit punch, lemonade, sweetened coffee drinks)
- Drink more water
- Limit 100% fruit juice to less than 6 ounces a day
- Switch to skim or 1% milk for all children older than 2 years, and for children over 12 months who are overweight or have risk factors
- Reduce desserts, candy and “junk foods”
- Gradually adjust recipes to decrease sugar and fat, and increase fiber and whole grains
- Keep portion sizes smaller than your child’s fist
- Limit second helpings to fruits or vegetables only
- Prepare less food, or remove extras from the table
- Stop eating when satisfied (rather than “full”) and allow children to stop eating when they lose interest in it
- Limit distractions like TV, computer, or phone during meals
- Limit eating out, especially at fast food restaurants
- Eat only half, or less, of restaurant portions
- Involve children in menu planning and meal preparation
- Let children help shop for healthy foods
- Avoid using food as a reward, or for any reason other than physical hunger

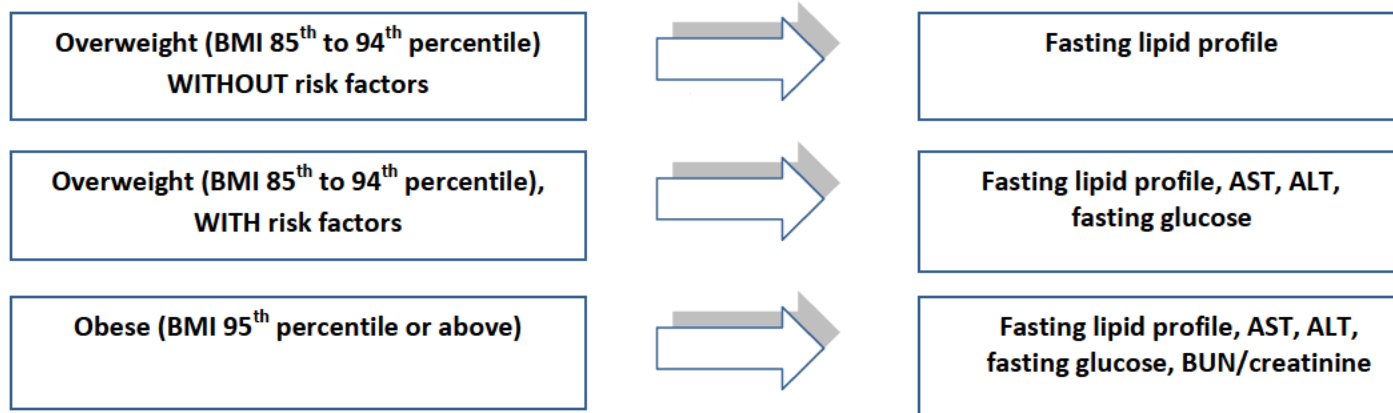
Physical Activity (Choose 1-2)

- Limit screen time (TV, video games, computer, I-pad) to less than 2 hours per day
- No screen time for children younger than 2
- Remove TV and computers from the child’s bedroom
- Get at least 60 minutes of physical activity each day (Can be done in shorter segments throughout the day)
- Participate in active sports such as swimming, soccer, running, tennis, basketball, dance, karate, or cycling
- Walk or ride a bike instead of driving a car for short trips, including to school
- Be active together as a family
- Plan indoor activities for inclement weather
- Visit parks or playgrounds

For most patients, the goal is keeping weight the same, so that BMI lowers as height increases

For patients unresponsive to treatment or with a BMI > 99th percentile, consider gradual weight loss

6 Laboratory Evaluation



GUIDANCE FOR LABORATORY RESULTS

Fasting Glucose	<ul style="list-style-type: none"> • <100 – Recheck every 2 years • 100-125 – Pre-diabetes. Provide counseling. Consider oral glucose tolerance test, HbA1c. Recheck yearly • ≥126 – Diabetes. Refer to endocrine.
Oral GTT (2-hour)	<ul style="list-style-type: none"> • <140 – Recheck every 2 yrs, more frequently if weight gain continues/accelerates. • 140-199 – Pre-diabetes. Provide counseling. Consider referral to endocrine if risks present. Recheck every 2 yrs, more frequently if weight gain continues/accelerates. • ≥200 – Diabetes. Refer to endocrine.
Random Glucose	<ul style="list-style-type: none"> • ≥200 – Diabetes. Refer to endocrine.
Hemoglobin A1C	<ul style="list-style-type: none"> • ≥7 – Refer to endocrine.
Fasting LDL	<ul style="list-style-type: none"> • <110 – Repeat every 5 years • 110-129 – Repeat in 1 year • 130-159 – Obtain complete family history. Provide low cholesterol diet (AHA “Step 1” Diet). Recheck 1 year. • ≥160 w/risks, or ≥190 w/o risks – Refer to cardiology or lipid/hypertension specialist
Fasting HDL	<ul style="list-style-type: none"> • ≥40 – Routine care. Recheck every 2 years. • <40 – Increase activity and omega-3 fats (flax/fish oil). Stop smoking. Decrease sugar intake, recheck 1 year.
Fasting Triglycerides	<ul style="list-style-type: none"> • <200 – Routine care. Recheck every 2 yrs. • 200-499 – Increase omega-3 intake. Decrease saturated fat, sugar. Recheck 1 year. • ≥500 – Refer to cardiology or lipid/hypertension specialist
Liver Function Tests	<ul style="list-style-type: none"> • ALT or AST 60-200 – Lifestyle modification. Recheck 3 mos. • ALT or AST >60 for 6 mos. Or >200 at any time – Refer to GI

Table adapted with permission from Eat Smart Move More NC, North Carolina chapter of the AAP, www.eatsmartmovemorenc.com

7 Referrals/Resources

Consider referral if concerns for underlying organic illness, co-morbidities, BMI > 99th percentile or unresponsive to treatment

Referral Recommendations

Symptoms or Signs	Suspected Diagnosis	Appropriate Studies	Referral
Polydipsia, polyuria, weight loss, acanthosis nigricans	Type 2 Diabetes	Random glucose, fasting glucose, 2 hour GTT, urine ketones, HbA1c	Endocrine
Small Stature (decreasing height velocity), goiter	Hypothyroidism	Free T4, TSH	Endocrine
Hirsutism, excessive acne, menstrual irregularity	Polycystic Ovary Syndrome	Free testosterone	Adolescent medicine or Endocrine
Abdominal pain	GE Reflux, Constipation, Gall Bladder Disease	Medication trial for suspected reflux or constipation, ultrasound for GB disease	Gastroenterology
Hepatosplenomegaly, increased LFTs (ALT or AST >60 for 6 months or more)	Nonalcoholic Fatty Liver Disease	ALT, AST, bilirubin, alkaline phosphatase	Gastroenterology
Snoring, daytime somnolence, tonsillar hypertrophy, enuresis, headaches, elevated BP	Sleep Apnea, Hypoventilation Syndrome	Sleep Study	ENT or pulmonology
Hip or knee pain, limp, limited hip range of motion, pain walking	Slipped Capital Femoral Epiphysis	X-rays of hip	Orthopedics
Lower leg bowing	Blount Disease	X-ray of lower extremities and knees	Orthopedics
Severe headache, papilledema	Pseudotumor cerebri	Head CT Scan	Neurology or Neurosurgery
Depression, school avoidance, social isolation, sleep disturbances	Depression	Validated depression screen (PSC, MFQ)	Psychiatry or Psychology
Binge eating, vomiting	Bulimia	Validated screen for eating disorder	Psychiatry, psychology, eating disorders center
Dysmorphic features, small hands and feet, small genitalia, no menses, undescended testis	Prader-Willi Syndrome	Chromosomes for Prader-Willi Syndrome	Genetics

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HANDOUTS:

- o 5210 Way To Go
- o Healthy Weight Plan
- o CDC MyPlate
- o U R What U Eat
- o Breakfast is Best
- o Promote Healthy Viewing
- o Get One Hour
- o Readiness for exercise
- o Think Your Drink

POTENTIAL REFERRALS:

- o Adolescent Medicine
- o Cardiology
- o Endocrinology
- o Gastroenterology
- o Genetics
- o Hypertension/Nephrology
- o Neurology
- o Orthopedics
- o Pulmonology
- o Psychology
- o Weight Management Clinic

8 Follow-up

Schedule follow-up appointment based on weight category, presence of risk factors or co-morbidities, and readiness for change