

Brenner Children's Hospital, Pediatric Endocrinology Consult and Referral Guidelines

Diagnosis/Symptom	When to initiate referral	Referring providers initial evaluation may include:	What should referring provider send	Referral timeframe and child's potential work-up
<p>Short Stature</p> <p>*Growth is better evaluated after age 2 years. Please note that poor weight gain in the face of normal linear growth is evaluated at the Amos Cottage Kids Eat Clinic. Exceptions include infants with midline defects or males with hypospadias, micropenis, or cryptorchidism</p>	<ul style="list-style-type: none"> - Child is < 3% in height - Child is > 2 years old and growth velocity is < 4 cm/year for greater than 1 year - After age 3 and crossing percentiles on repeated measurements 	<p>History and physical exam</p> <p>Labs:</p> <ul style="list-style-type: none"> - CMP - CBC - UA - ESR - TSH - Free T4 	<p>Essential:</p> <ul style="list-style-type: none"> - All prior growth curves and data - Relevant lab studies if done - Pertinent medical records 	<p>Routine</p> <p>*If the referring provider feels there is a need for an urgent evaluation, please contact the pediatric endocrinologist on call</p> <p>Work-up:</p> <ul style="list-style-type: none"> - History, physical exam, evaluation of growth charts - Evaluation of prior labs - Additional labs if needed including hormone studies - Imaging studies may be necessary - Monitoring of interval growth
<p>Precocious Puberty</p>	<ul style="list-style-type: none"> - Breast development in a girl <8 years old - Testicular enlargement (4 ml or >2.5 cm) or pubic hair in a boy <9 years old 	<p>History and physical exam</p> <p>Labs:</p> <ul style="list-style-type: none"> - TSH - Free T4 	<p>Essential:</p> <ul style="list-style-type: none"> - Prior growth curves and data - Relevant lab studies if done - Pertinent medical records 	<p>Routine, except for vaginal bleeding in a girl <9 years old</p> <p>*If the referring provider feels there is a need for an urgent evaluation, please contact the pediatric endocrinologist on call</p> <p>Work-up:</p> <ul style="list-style-type: none"> - History, physical exam, evaluation of growth charts - Evaluation of prior labs

Call 336-713-4500 to schedule an appointment with a pediatric endocrinologist.

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				<ul style="list-style-type: none"> - Additional labs if needed including hormone studies - Imaging studies may be necessary, including bone age
<p>Early Breast Development</p> <p>*A little breast development in girls 12-24 months of age is not uncommon and usually not of concern</p>	<ul style="list-style-type: none"> - Progressing over time - Accelerated growth - Vaginal bleeding - Other signs of pubertal development - Café au lait spot on physical exam (possible McCune Albright syndrome) 	<p>History and physical exam</p> <p>Labs:</p> <ul style="list-style-type: none"> - TSH - Free T4 	<p>Essential:</p> <ul style="list-style-type: none"> - Prior growth curves and data - Relevant lab studies if done - Pertinent medical records 	<p>Routine</p> <p>*If the referring provider feels there is a need for an urgent evaluation, please contact the pediatric endocrinologist on call</p> <p>Work-up:</p> <ul style="list-style-type: none"> - History, physical exam, evaluation of growth charts - Evaluation of prior labs - Additional labs if needed including hormone studies - Imaging studies may be necessary, including bone age
<p>Early Pubic Hair Development</p> <p>*Fine, downy and non-pigmented short hair is not considered secondary, sexual pubic hair</p>	<ul style="list-style-type: none"> - Pubic hair in girls <8 years old which is progressing - Pubic hair in boys <9 years old which is progressing - Accelerated growth 	<p>History and physical exam</p>	<p>Essential:</p> <ul style="list-style-type: none"> - Prior growth curves and data - Pertinent medical records 	<p>Routine</p> <p>*If the referring provider feels there is a need for an urgent evaluation, please contact the pediatric endocrinologist on call</p> <p>Work-up:</p> <ul style="list-style-type: none"> - History, physical exam, evaluation of growth charts - Evaluation of prior labs - Additional labs if needed including hormone studies

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				- Imaging studies may be necessary, including bone age
<p>Premature Menses</p> <p>Consider vaginal foreign body</p>	<ul style="list-style-type: none"> - Vaginal bleeding in girls <10 years old - Vaginal bleeding in any girls without other signs of puberty 	<p>History and physical exam</p> <p>Labs:</p> <ul style="list-style-type: none"> - TSH - Free T4 - Prolactin 	<p>Essential:</p> <ul style="list-style-type: none"> - Prior growth curves and data - Relevant lab studies if done - Pertinent medical records 	<p>Urgent if < 9 years old, Call the pediatric endocrinologist on call to arrange an urgent appointment</p> <p>Routine, if 9-10 years old</p> <p>Work-up:</p> <ul style="list-style-type: none"> - History, physical exam, evaluation of growth charts - Evaluation of prior labs - Additional labs if needed including hormone studies - Imaging studies may be necessary, including bone age
<p>Delayed Puberty</p>	<p>For girls: no breast development by 13 years old, or no menses by 16 years old</p> <p>For boys: no testicular enlargement (<4 ml or 2.5 cm) by 14 years old</p>	<p>History and physical exam</p> <p>Labs:</p> <ul style="list-style-type: none"> - TSH - Free T4 - Prolactin 	<p>Essential:</p> <ul style="list-style-type: none"> - Prior growth curves and data - Relevant lab studies if done - Pertinent medical records 	<p>Routine</p> <p>*If the referring provider feels there is a need for an urgent evaluation, please contact the pediatric endocrinologist on call</p> <p>Work-up:</p> <ul style="list-style-type: none"> - History, physical exam, evaluation of growth charts - Evaluation of prior labs - Additional labs if needed including hormone studies - Imaging studies may be necessary, including bone

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				age
Congenital Hypothyroidism	Abnormal newborn screen	History and physical exam - Follow state lab recommendations regarding repeat thyroid level testing	- Newborn screen results - Any additional lab work	Urgent , Call the pediatric endocrinologist on call to arrange an urgent appointment Work-up: - History, physical exam - Evaluation of prior labs - Additional labs if needed - Imaging studies may be indicated
Acquired Hypothyroidism (Hashimoto's Thyroiditis) *Slight elevations of TSH (< 10 mIU/ml) in obese children are secondary to obesity. No referral is indicated unless thyroid antibodies are positive. *Children with Trisomy 21 often have mildly elevated TSH levels (5-10 mIU/ml) with normal free T4 levels. Generally referral is not needed unless there are positive thyroid antibodies or rising TSH. Call with questions.	- Elevated TSH (> 10 mIU/ml), low free T4 - If TSH <10 mIU/ml and free T4 is normal, consider obtaining thyroid antibodies (thyroglobulin and thyroid peroxidase antibodies) and repeat TSH and free T4 in 2-3 months prior to referral	History and physical exam Labs: - TSH - Free T4 Thyroid scan or ultrasound are not needed and not indicated.	Essential: - Prior growth curves and data - Relevant lab studies if done - Pertinent medical records	Routine *If the referring provider feels there is a need for an urgent evaluation, please contact the pediatric endocrinologist on call Work-up: - History, physical exam, evaluation of growth charts - Evaluation of prior labs - Additional labs if needed - Imaging studies may be necessary
Hyperthyroidism (Grave's Disease) Frequently goiter present, but certainly not always.	- Suppressed TSH - Elevated free T4 and/or total T3	History and physical exam Labs: - TSH - Free T4 - Total T3	Essential: - Relevant lab studies if done - Pertinent medical records	Urgent if patient is symptomatic. Call the pediatric endocrinologist on call to arrange an urgent appointment

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		Thyroid scan or ultrasound are not needed and not indicated.		Work-up: - History, physical exam - Evaluation of prior labs - Additional labs if needed - Imaging studies may be necessary
<p>Neonatal Hyperthyroidism (Neonatal Graves)</p> <p>Most commonly this occurs in the context of maternal Grave's disease and transplacental passage of thyroid stimulating immunoglobulin.</p>	<ul style="list-style-type: none"> - Suppressed TSH - Elevated free T4 or total T3 	<p>History and physical exam</p> <p>Labs:</p> <ul style="list-style-type: none"> - TSH - Free T4 - Total T3 <p>Thyroid scan or ultrasound are not needed and not indicated.</p>	<p>Essential:</p> <ul style="list-style-type: none"> - Relevant lab studies if done - Pertinent medical records 	<p>Urgent , call the pediatric endocrinologist on call to arrange an urgent appointment or hospitalization</p> <p>Work-up:</p> <ul style="list-style-type: none"> - History, physical exam - Evaluation of prior labs - Additional labs if needed - Imaging studies may be necessary
<p>Goiter/Nodule</p>	<ul style="list-style-type: none"> - Abnormal thyroid function tests - Palpable nodules or asymmetry - Increasing in size - Causing discomfort 	<p>History and physical exam</p> <p>Labs:</p> <ul style="list-style-type: none"> - Thyroid function (TSH, free T4, total T3) - Thyroid antibodies (thyroglobulin and thyroid peroxidase) <p>*Thyroid ultrasound is not needed or indicated for goiter.</p>	<p>Essential:</p> <ul style="list-style-type: none"> - Relevant lab studies if done - Pertinent medical records 	<p>Routine</p> <p>If nodule, call the pediatric endocrinologist on call to arrange an appointment with a thyroid ultrasound.</p> <p>*If the referring provider feels there is a need for an urgent evaluation, please contact the pediatric endocrinologist on call</p> <p>Work-up:</p> <ul style="list-style-type: none"> - History, physical exam - Evaluation of prior labs - Additional labs if needed - Imaging studies may be necessary
<p>Type 1 Diabetes, new</p>	<ul style="list-style-type: none"> - Fasting blood sugar of 	History and physical exam	Essential:	Urgent , call the pediatric

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<p>onset</p> <p>Symptoms: weight loss, polyuria, polydipsia, polyphagia</p>	<p>>125 mg/dl Random blood sugar of >200 mg/dl</p>	<p>Labs: - Blood sugar - Urine for ketones</p>	<p>- Relevant lab studies if done - Pertinent medical records</p>	<p>endocrinologist on call to arrange an urgent admission (on occasion, under appropriate circumstances, urgent out-patient diabetes education may be available). Work-up: - History, physical exam - Evaluation of prior labs - Additional labs if needed - Diabetes education</p>
<p>Type 1 Diabetes, established diagnosis</p>	<p>Patient with type 1 diabetes establishes care in your practice</p>	<p>History and physical exam</p>	<p>Essential: - growth chart if available - Relevant lab studies if done - Pertinent medical records</p>	<p>Routine *If the referring provider feels there is a need for an urgent evaluation, please contact the pediatric endocrinologist on call Work-up: - History, physical exam - Evaluation of prior labs - Monitoring of Hgb A1C - Insulin adjustment - Diabetes education</p>
<p>Type 2 Diabetes, new onset</p> <p>Type 1 diabetes is still more common in obese children than type 2 diabetes. Do not assume type 2 diabetes just because the patient is obese.</p>	<p>Obese patient with: - Fasting blood sugar of >125 mg/dl Random blood sugar of >200 mg/dl</p>	<p>History and physical exam Labs: - Blood sugar - Urine for ketones</p>	<p>Essential: - Relevant lab studies if done - Pertinent medical records</p>	<p>Urgent, call the pediatric endocrinologist on call to arrange an urgent appointment or hospitalization Work-up: - History, physical exam - Evaluation of prior labs - Additional labs if needed - Diabetes education</p>

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<p>Type 2 Diabetes, established diagnosis</p>	<p>Patient with type 2 diabetes establishes care in your practice</p>	<p>History and physical exam</p>	<p>Essential:</p> <ul style="list-style-type: none"> - growth chart if available - Relevant lab studies if done - Pertinent medical records 	<p>Routine</p> <p>*If the referring provider feels there is a need for an urgent evaluation, please contact the pediatric endocrinologist on call</p> <p>Work-up:</p> <ul style="list-style-type: none"> - History, physical exam - Evaluation of prior labs - Monitoring of Hgb A1C - Insulin or oral diabetic medication adjustment - Diabetes education
<p>Obesity (abnormal weight gain)</p> <p>Obesity with tall stature or normal height velocity is rarely of endocrine cause.</p>	<ul style="list-style-type: none"> - Clear evidence of endocrine disorder - Poor height velocity in a child who has not completed puberty, in the setting of excess weight gain 	<p>History and physical exam</p> <p>Labs:</p> <ul style="list-style-type: none"> - TSH - Free T4 - 24 hr urine for free cortisol 	<p>Essential:</p> <ul style="list-style-type: none"> - Prior growth curves and data - Relevant lab studies if done - Pertinent medical records 	<p>Routine</p> <p>*If the referring provider feels there is a need for an urgent evaluation, please contact the pediatric endocrinologist on call</p> <p>Work-up:</p> <ul style="list-style-type: none"> - History, physical exam, evaluation of growth charts - Evaluation of prior labs - Additional labs if needed - Imaging studies may be necessary
<p>Obesity and Insulin Resistance or pre-diabetes</p> <p>No endocrine referral required.</p>	<ul style="list-style-type: none"> - Fasting blood sugar between 100-125 mg/dl - 2 hour post-prandial blood sugar between 140-200 mg/dl - Elevated fasting insulin level 	<p>History and physical exam</p> <p>Labs:</p> <ul style="list-style-type: none"> - Insulin level - blood sugar, fasting <p>preferable</p>	<p>Essential:</p> <ul style="list-style-type: none"> - Relevant lab studies if done - Pertinent medical records 	<p>Refer to Brenner FIT</p>

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<p>Obesity and metabolic syndrome</p> <p>No endocrine referral required.</p>	<p>3 of 5 criteria below:</p> <ul style="list-style-type: none"> - Hypertension - Elevated triglycerides - Reduced HDL - Elevated fasting glucose - Elevated waist circumference 	<p>History and physical exam</p> <p>Blood pressure readings</p> <p>Labs:</p> <ul style="list-style-type: none"> - Insulin level - Lipid Panel 	<p>Essential:</p> <ul style="list-style-type: none"> - Relevant lab studies if done - Pertinent medical records 	<p>Refer to Brenner FIT or Cardiology Metabolic Clinic</p>
<p>Obesity and hyperlipidemia</p> <p>No endocrine referral required.</p>	<ul style="list-style-type: none"> - Total Cholesterol: >200 - Triglycerides: >150 - HDL: <40 - LDL: >150 	<p>History and physical exam</p> <p>Labs:</p> <ul style="list-style-type: none"> - Lipid panel 	<p>Essential:</p> <ul style="list-style-type: none"> - Relevant lab studies if done - Pertinent medical records 	<p>Refer to Brenner FIT or Cardiology Lipid Clinic</p>
<p>Obesity and PCOS</p>	<ul style="list-style-type: none"> - Amenorrhea/irregular menses <p>AND</p> <ul style="list-style-type: none"> - evidence of hyperandrogenism: hirsutism, severe acne, clitoromegaly, male pattern balding 	<p>History and physical exam</p> <p>Labs:</p> <ul style="list-style-type: none"> - Insulin level - Blood sugar - Lipid panel <p>Pelvic ultrasound for polycystic ovaries is not necessary</p>	<p>Essential:</p> <ul style="list-style-type: none"> - Relevant lab studies if done - Pertinent medical records 	<p>Routine or refer to Brenner FIT</p> <p>*If the referring provider feels there is a need for an urgent evaluation, please contact the pediatric endocrinologist on call</p> <p>Work-up:</p> <ul style="list-style-type: none"> - History, physical exam, evaluation of growth charts - Evaluation of prior labs - Additional labs if needed including hormonal studies - Imaging studies may be necessary

Tips for an effective visit:

- ❖ Talk with your patient and family about the reason for the referral and the questions to be answered.
- ❖ Our providers appreciate having the information ahead of time; alternatively, it can be hand carried by the family.
- ❖ Provide relevant clinic notes.

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