

Children's Endocrinology Clinic



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Welcome

Thank you for referring your patients to our division. We are striving to provide the best possible experience for your patients and also meet your needs as a primary care provider. To that end, we have created referral guidelines that will help you perform preliminary laboratory and radiologic evaluations prior to your patient seeing one of our subspecialists. Remember, these are just guidelines and if you are unable to perform a work-up, we will still see your patient in a timely manner. Also, we are not expecting anyone to interpret the lab or radiology results; thus please call our clinic if you feel there is an urgent consult required. We have attempted to delineate specific cases where an urgent referral is indicated.

While we would like all laboratories to be created equal and perform the same test in the same way, they are not. Thus, we usually prefer lab tests to be performed at CPL, LabCorp, Quest or Esoterix. However, even among these facilities, they don't always have the ideal endocrine tests available and we may send blood to special reference laboratories. We ask that you inform your patients while you are performing a preliminary work-up, that there may be other labs or tests that are warranted.

We generally prefer to review our own bone ages, as there is a lot of variation among radiologists. We have access to studies performed at ARA, ARC, Seton, CPRMC and some Telerad facilities. If you perform a bone age outside of one of these facilities, please send the image on a CD with your patient. This will help us give a more complete, efficient work-up of your patient.

We have attempted to label which tests should be performed at 8 a.m., fasting or both. If a work-up calls for these special conditions, all the labs can be performed at that time (there should not be a need for two separate lab draws).

The referral guidelines have several sections of key facts about certain conditions. Please review these when you are making a referral, as this information may guide your work-up. We have also included an algorithm for treating vitamin D deficiency. This treatment protocol is one of many ways to treat this condition; however, it should only be followed if the patient has normal Ca, Phos and PTH levels. If the patient has abnormal levels, multiple fractures or signs of rickets, please contact our office for a referral or more instructions.

If you have any questions or concerns about these guidelines, please contact the doctor on-call and we will be happy to discuss them with you. As always, if you feel you have an endocrine emergency, please call our clinic, 512-628-1830 or the after-hours doctor on call Medlink 512-323-5465.

We look forward to working with you as we care for the children of Central Texas.

Regards,

The Division of Pediatric Endocrinology
Dell Children's Medical Center of Central Texas

Clinic information

Office hours: 8 a.m.-4:30 p.m.
Main office number: 512-628-1830
Fax number: 512-628-1831
After hours contact: Medlink 512-323-5465

Regardless of location, please use
the pediatric endocrinology main
office number to reach our staff.

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Common indications for referral

Concern for congenital adrenal hyperplasia (CAH)

Indication	Congenital adrenal hyperplasia
ICD-10 code	Congenital adrenogenital disorders (E25.0)
Findings	Abnormal 17OHP on newborn screening
Evaluation	<ul style="list-style-type: none"> • General physical exam, weight and vital signs, genital exam • Labs: <ul style="list-style-type: none"> - Serum 17-hydroxyprogesterone (17-OHP) - Electrolytes (BMP)
Treatment	Discuss with doctor on-call with any lab abnormalities or concerns
Red flags	Hyponatremia, hyperkalemia, poor weight gain, ambiguous genitalia
Referral timeframe	<ul style="list-style-type: none"> • If electrolytes concerning for low Na, elevated K — Discuss with MD on-call immediately and prepare to send to ER <ul style="list-style-type: none"> - Day time: 512-628-1830 - After hours: 512-323-5465 (Medlink) • If electrolytes are normal, please call doctor on-call if 17OHP elevated
Additional information	Fax the following items to 512-628-1831 <ul style="list-style-type: none"> • Laboratory results • Clinic notes • Growth chart

Disorders of glucose homeostasis

Indication	Diabetes mellitus
ICD-10 codes	Type 1 DM (E10.65) Type 2 DM (E11.65) Hyperglycemia (R73.09)
Findings	<ul style="list-style-type: none"> • Increased thirst and urination • Weight loss • Vomiting (DKA) • Lethargy (DKA) • Deep respirations (DKA)
Evaluation	<ul style="list-style-type: none"> • Fingertick blood glucose • Urinalysis for KETONES and glucose • Hemoglobin A1c • If not acutely ill, consider STAT chemistry panel to determine disposition (direct admission vs ER)
Treatment	None
Red flags	If the patient is vomiting, lethargic, or has abnormal respirations: send immediately to the Dell Children's ER and notify endocrine doctor on-call
Referral timeframe	<p>Urgent</p> <ul style="list-style-type: none"> • Fasting BG > 126 mg/dL or if a random BG >200 mg/dL, call doctor on-call • Hemoglobin A1c 6.5% or greater, call doctor on-call • For all new diagnoses of diabetes mellitus, please call doctor on-call and inform phone concierge call is urgent • On-call phone numbers: <ul style="list-style-type: none"> - Day time: 512-628-1830 - After hours: 512-323-5465
Additional information	N/A

Indication	Impaired glucose tolerance/prediabetes
ICD-10 codes	Impaired glucose tolerance (R73.02) Impaired fasting glucose (R73.01)
Findings	<ul style="list-style-type: none"> • Obesity (BMI >95 percentile for age and sex) • Acanthosis • Family history of diabetes • May not have increased thirst or urination
Evaluation	<ul style="list-style-type: none"> • Fasting glucose • Hb A1c • Chemistry panel with renal function and liver function tests
Treatment	None
Red flags	<ul style="list-style-type: none"> • Call endocrine on-call if concern for new onset diabetes mellitus (see above) • Call endocrine on-call for fasting glucose >126 mg/dL, random BG >200 mg/dL, or Hb A1c 6.5% or greater. • Send to ER if concern for DKA
Referral timeframe	<ul style="list-style-type: none"> • Prediabetes (Hb A1c 5.7%-6.4%) — routine referral (first available) • New onset diabetes (Hb A1c 6.5% or greater) — call endocrine on-call (as above)
Additional information	<p>Fax the following items to 512-628-1831</p> <ul style="list-style-type: none"> • Growth chart • Laboratory test results • Recent clinic notes

Disorders of glucose homeostasis: Important facts to remember

- Signs of DKA warrant an urgent call and immediate referral to the emergency department and notify doctor on-call. Daytime: 512 628-1830. After hours: 512-323-5465 (Medlink)
 - Vomiting, deep respirations, altered signs of consciousness
 - Large ketones in urine
 - CO₂ <15 on chemistry panel
- If diabetes is clinically apparent, please call immediately.
- Definitions/cut-offs:
 - Normal: ≤ 5.6%, fasting glucose ≤ 99mg/dL
 - Prediabetes: 5.7-6.4%, fasting glucose 100-125 mg/dL
 - Diabetes: ≥ 6.5%, fasting glucose ≥ 126 mg/dL, random glucose ≥ 200 mg/dL
- Fasting or random serum insulin concentrations in the screening for Type 2 diabetes in youth is not recommended as they have not been found to be predictive of dysglycemia. Please perform alternative screening tests (hemoglobin A1c, fasting glucose) if suspicious for diabetes mellitus.
- Obesity before age 5 years is considered early onset and may indicate a genetic cause of obesity, warranting a non-urgent referral to endocrinology.

Disorders of pubertal development

Indication	<p>Premature thelarche (girls) Precocious puberty (girls)</p>
ICD-10 codes	<p>Premature thelarche E30.1 Precocious puberty E30.1</p>
Findings	<ul style="list-style-type: none"> • Girls <8 years of age with breast development • For girls <2 years of age without red flags, no evaluation or referral needed
Evaluation	<ul style="list-style-type: none"> • Bone age • 8 a.m. labs: <ul style="list-style-type: none"> - TSH and T4 or Free T4 - Pediatric LH - Pediatric FSH - Ultrasensitive estradiol
Treatment	None
Red flags	<ul style="list-style-type: none"> • Call doctor on-call for any girl 2-6 years of age with breast development • Call doctor on-call for any girl <8 years of age with any of the following red flags features: <ul style="list-style-type: none"> - Breast development which is progressing over time - Accelerated growth - Vaginal bleeding - Headaches or visual changes - Multiple cafe au lait spots >1.5cm (possible McCune Albright Syndrome)
Referral timeframe	<ul style="list-style-type: none"> • For patients without the above red flags, the referral is routine • Recall — Girls <2 years of age with breast development but no other symptoms do not need referral
Additional information	<p>Fax the following items to 512-628-1831</p> <ul style="list-style-type: none"> • Growth chart • Bone age (and have parent bring copy of CD to appointment) • Lab results • Relevant clinical notes with physical exam that includes Tanner stage

Indication	Precocious puberty (boys)
ICD-10 codes	Precocious puberty E30.1
Findings	Boys <9 years of age with either: <ul style="list-style-type: none"> • Testicular enlargement (≥ 4 mL or >2.5 cm) • Penile enlargement • Pubic hair (also see premature adrenarche discussions)
Evaluation	<ul style="list-style-type: none"> • Bone age • 8 a.m. labs: <ul style="list-style-type: none"> - TSH and T4 or Free T4 - Pediatric LH - Pediatric FSH - Pediatric Testosterone by mass spectroscopy - AFP and hcG tumor markers
Treatment	None
Red flags	Call doctor on-call for any boys with these findings <ul style="list-style-type: none"> - Daytime 512-628-1830 - After hours 512 323-5465 (Medlink)
Referral timeframe	Urgent
Additional information	Fax the following items to 512-628-1831 <ul style="list-style-type: none"> • Growth chart • Bone age results (and have parent bring a copy of CD to appointment) • Lab results • Relevant clinical notes with physical examination including Tanner stage

Indication	Delayed puberty
ICD-10 codes	Delayed puberty E30.0
Findings	<ul style="list-style-type: none"> Boys: No testicular enlargement (<4 mL or <2.5 cm) by 14 years of age Girls: No breast development by 13 years of age or no menses by 15 years of age (Note: In girls with no menses by 15 years and notable short stature, consider Turner Syndrome)
Evaluation	<ul style="list-style-type: none"> Bone age 8 a.m. labs: <ul style="list-style-type: none"> TSH and T4 or Free T4 Pediatric LH Pediatric FSH Boys: Pediatric testosterone Girls: Ultrasensitive estradiol; high resolution Karyotype (if suspect Turner Syndrome)
Treatment	None
Red flags	<p>Call doctor on-call for suspected delayed puberty with any of the following red flag features:</p> <ul style="list-style-type: none"> Concerns regarding short stature Concerns for diabetes insipidus (excessive thirst, urination) Neurologic signs/symptoms
Referral timeframe	Routine referral, if above red flags are not present
Additional information	<p>Fax the following items to 512-628-1831</p> <ul style="list-style-type: none"> Growth chart Bone age results (and have parent bring a copy of CD to appointment) Lab results Relevant clinical notes with physical examination including Tanner stage

Indication	Premature adrenarche (girls)
ICD-10 codes	Premature adrenarche (E27.0)
Findings	<ul style="list-style-type: none"> • Scenario 1: Girls < 7 years with one or more of the following signs: pubic hair, axillary hair, body odor, clitoral enlargement, but no breast development • Scenario 2: Girls 7-8 years with one or more of the above signs and accelerated growth or clitoral enlargement • Scenario 3: Girls 7-8 years with one or more of the above signs but no accelerated growth or clitoral enlargement
Evaluation	<ul style="list-style-type: none"> • Bone age • 8 a.m. labs: <ul style="list-style-type: none"> - 17-Hydroxyprogesterone - Pediatric testosterone by mass spectroscopy (ultrasensitive) - DHEAS - Pediatric LH - Pediatric FSH
Treatment	None
Red flags	<p>Scenarios 1 and 2 — Call endocrinologist on-call to discuss</p> <ul style="list-style-type: none"> • Daytime: 512-628-1830 • After-hours: 512-323-5465 (Medlink)
Referral timeframe	Scenario 3: Routine referral
Additional information	<p>Fax the following items to 512-628-1831</p> <ul style="list-style-type: none"> • Growth chart • Bone age results (and have parent bring a copy of CD to appointment) • Lab results • Relevant clinical notes with physical examination including Tanner stage

Indication	Premature adrenarche (boys)
ICD-10 codes	Premature adrenarche (E27.0)
Findings	<ul style="list-style-type: none"> • Scenario 1: Boys < 7 years with one or more of the following signs: pubic hair, axillary hair, body odor, penile enlargement, accelerated growth; but NO testicular enlargement (<4 mL or <2.5 cm) • Scenario 2: Boys 7-8 years with one or more of the above signs and accelerated growth • Scenario 3: Boys 7-8 years with one or more of the above signs but no accelerated growth and no testicular enlargement
Evaluation	<ul style="list-style-type: none"> • Bone age • 8 a.m. labs: <ul style="list-style-type: none"> - 17-Hydroxyprogesterone - Pediatric testosterone by mass spectroscopy (ultrasensitive) - DHEAS - Pediatric LH - Pediatric FSH - Ultrasensitive estradiol
Treatment	None
Red flags	<p>Scenarios 1 and 2 — Call endocrinologist on-call to discuss</p> <ul style="list-style-type: none"> • Daytime: 512-628-1830 • After-hours: 512-323-5465 (Medlink)
Referral timeframe	Scenario 3: Routine referral
Additional information	<p>Fax the following items to 512-628-1831</p> <ul style="list-style-type: none"> • Growth chart • Bone age results (and have parent bring a copy of CD to appointment) • Lab results • Relevant clinical notes with physical examination including Tanner stage

Disorders of pubertal development: Important facts to remember

- Standard FSH, LH, Estradiol and Testosterone assays are not reliable in children. Please use the test codes provided.
- Consider imaging such as pelvic ultrasound or brain and pituitary MRI if warranted.
- In benign premature thelarche, the nipples are not usually dark or enlarged as is seen in precocious puberty.
- Fine downy and non-pigmented short hair is not considered sexual pubic hair.
- Pubic hair on the suprapubic area is more indicative or precocious puberty than hair on the labia majora or scrotum.

Growth abnormalities

Indication	Failure to thrive
ICD-10 codes	Failure to thrive R62.51 Malnutrition, unspecified E46
Findings	<ul style="list-style-type: none"> • Scenario 1: Height <3rd percentile and weight <3rd percentile • Scenario 2: Height ≥3rd percentile but weight <3rd percentile
Evaluation	<ul style="list-style-type: none"> • IGF-BP3 (insulin-like growth factor binding protein 3) • IGF-1 (insulin-like growth factor 1) • TSH, Free T4, CBC, CMP • Celiac screening (Anti-tissue transglutaminase IgA and total IgA level)
Treatment	None
Red flags	If a patient has hypoglycemia and failure to thrive, call the doctor on-call to discuss <ul style="list-style-type: none"> - Daytime 512-628-1830 - After hours 512 323-5465 (Medlink)
Referral timeframe	<ul style="list-style-type: none"> • Routine referral (next 1-3 months) • For scenario 2: consider evaluation by gastroenterology instead of endocrinology 512-628-1810
Additional information	Fax the following items to 512-628-1831 <ul style="list-style-type: none"> • Growth chart • Laboratory results • Clinical notes • Bone age (have parent bring on disc)

Indication	Short stature
ICD-10 codes	Short stature R62.52
Findings	<ul style="list-style-type: none"> • Current height <3rd percentile • Crossing height percentiles on repeated measurements • Growth is >4 in below midparental height
Evaluation	<ul style="list-style-type: none"> • Calculate mid-parental height • IGF-1 (insulin-like growth factor 1) • IGF-BP3 (insulin-like growth factor binding protein-3) • TSH, free T4, CBC, CMP • Celiac screening (anti-tissue transglutaminase IgA; total IgA level) • Bone age (if >4 years of age) • For females, consider HIGH RESOLUTION karyotype for Turner Syndrome
Treatment	None
Red flags	<p>Poor height velocity or crossing percentiles AND severe headaches or blurry vision, call doctor on-call to discuss</p> <ul style="list-style-type: none"> - Daytime 512-628-1830 - After hours 512 323-5465 (Medlink)
Referral timeframe	If no red flags as above, routine (likely will be seen in 1-3 months)
Additional information	<p>Fax the following items to 512-628-1831</p> <ul style="list-style-type: none"> • Growth chart • Relevant clinic notes • Laboratory results • Bone age (have parent bring copy of CD to appointment)

Indication	Obesity
ICD-10 codes	Morbid obesity (E66.01) Acanthosis nigricans (L83)
Findings	<ul style="list-style-type: none"> • Definition: BMI >95% for age and sex • Common findings: acanthosis nigricans (darkening and thickening of skin around the neck, elbows, waist, knuckles and axilla); irregular menses
Evaluation	<ul style="list-style-type: none"> • Hemoglobin A1c (prediabetes 5.7%-6.4%, diabetes 6.5% and up) • Fasting blood glucose (impaired if 100-125mg/dL, diabetes if >125mg/dL) • Lipid panel, liver function tests
Treatment	Start with encouragement of lifestyle modifications including dietary changes, increased physical activity
Red flags	If concern for diabetes (see above guidelines), call on-call doctor.
Referral timeframe	Routine
Additional information	Fax the following items to 512-628-1831 <ul style="list-style-type: none"> • Growth chart • Laboratory results • Recent clinical notes

Growth abnormalities: Important facts to remember

- Mid-parental target height (MPTH) equation is **different** for boys and girls.
 - $MPTH(\text{boys}) = [(mom's \text{ height} + 5 \text{ in}) + (dad's \text{ height})] \div 2$
 - $MPTH(\text{girls}) = [(mom's \text{ height}) + (dad's \text{ height} - 5 \text{ in})] \div 2$
 - MPTH is the average genetic target but normal children can be 2-4 inches shorter or taller than their target.
- Constitutional delay is the **most** common cause of short stature.
- Random growth hormone levels are **not** useful, please measure IGF-I and IGF-BP3 instead.
- If the bone age shows fused growth plates > 14 in girls or > 16 in boys, then **no** Endocrine referral is needed. There are **no** treatment options to increase height once growth plates are fused.
- Consider genetics referral if dysmorphic features are present.

- Key to evaluation of growth requires comparison of weight and length/height curves.
- If weight is decreasing more than length/height, refer to gastroenterology **prior** to endocrinology.
- IGF-I (Insulin like growth factor-I) levels will often be low in patients with low weight and may **not** be indicative of growth hormone deficiency.

When to worry

- Poor height velocity associated with severe headaches and/or blurry vision may be a brain tumor.
- If a child is short and in puberty, this may increase the urgency of referral.
- Short stature is more concerning if a child has a predicted height that is more than 4 inches shorter than expected for family

Thyroid disorders

Indication	Goiter
ICD-10 codes	Goiter E04.9
Findings	Important specifics/features/definitions about the diagnosis (if any)
Evaluation	<ul style="list-style-type: none"> • Thyroid ultrasound (if enlarging, asymmetric, or palpable node) • TSH • Total T4 or Free T4 • Anti-thyroglobulin antibodies and Anti-TPO antibodies
Treatment	None
Red flags	<ul style="list-style-type: none"> • Asymmetric gland • Increasing size • Causing discomfort • Abnormal thyroid biopsy
Referral timeframe	<ul style="list-style-type: none"> • For any of the above red flag findings, call doctor on-call to discuss <ul style="list-style-type: none"> - Daytime 512-628-1830 - After hours 512 323-5465 (Medlink) • Routine referral for all others
Additional information	<p>Fax the following items to 512-628-1831</p> <ul style="list-style-type: none"> • Growth chart • Laboratory results • Imaging studies (if obtained) • Clinical notes • For thyroid nodules, see page 17 • For abnormal thyroid function tests, see specific diagnoses

Indication	Hyperthyroidism
ICD-10 codes	Acquired (E05.90) Autoimmune [Graves disease] (E05.00)
Findings	<ul style="list-style-type: none"> • Hypertension • Tachycardia • Goiter • Exophthalmos • TSH <0.1 uU/mL • Elevated Total T4 or Free T4 or Total T3
Evaluation	<ul style="list-style-type: none"> • TSH • Total T4 or Free T4 • Total T3 • Consider: <ul style="list-style-type: none"> - Thyroid stimulating immunoglobulin (TSI) - Thyrotropin binding immunoglobulin (TBII) - Thyrotropin receptor antibody (Trab) - Anti-thyroglobulin antibody - Anti-TPO antibody
Treatment	None
Red flags	For any patient with concern for hyperthyroidism, call doctor on-call to discuss <ul style="list-style-type: none"> - Daytime 512-628-1830 - After hours 512 323-5465 (Medlink)
Referral timeframe	Urgent — Call doctor on-call.
Additional information	Fax the following items to 512-628-1831 <ul style="list-style-type: none"> • Clinical notes • Laboratory results • Growth chart

Indication	Hyperthyroidism, neonatal
ICD-10 codes	Neonatal hyperthyroidism (P72.1)
Findings	<ul style="list-style-type: none"> • Maternal history of Graves disease • Hypertension • Tachycardia • Failure to thrive • Low TSH • Elevated Total T4 or Free T4
Evaluation	<ul style="list-style-type: none"> • TSH • Total T4 or Free T4 • Total T3 • Thyroid Stimulating Immunoglobulin (TSI) • Thyrotropin-Binding Immunoglobulin (TBII) • Thyrotropin receptor antibody (Trab) • If possible, check maternal anti-TPO antibody, anti-thyroglobulin antibody, and TSI/TBII
Treatment	N/A
Red flags	<ul style="list-style-type: none"> • For any neonate with concern for hyperthyroidism, call doctor on-call to discuss <ul style="list-style-type: none"> - Daytime 512-628-1830 - After hours 512 323-5465 (Medlink)
Referral timeframe	Urgent — Call doctor on-call.
Additional information	<p>Fax the following items to 512-628-1831</p> <ul style="list-style-type: none"> • Clinical notes • Laboratory results • Growth chart

Indication	Hypothyroidism, central
ICD-10 codes	Central hypothyroidism (E23.6)
Findings	<ul style="list-style-type: none"> • Low Total T4 or Free T4 with low or low-normal TSH • History of traumatic brain injury, midline facial defects, brain irradiation, or hypoxic brain injury
Evaluation	<ul style="list-style-type: none"> • TSH • Total T4 or Free T4 • Consider repeat labs prior to referral to assure validity • MD on-call may recommend MRI brain/pituitary with/without contrast
Treatment	N/A
Red flags	Urgent — Call doctor on-call is indicated for any concerns of central hypothyroidism <ul style="list-style-type: none"> - Daytime 512-628-1830 - After hours 512 323-5465 (Medlink)
Referral timeframe	Urgent — Call doctor on-call.
Additional information	Fax the following items to 512-628-1831 <ul style="list-style-type: none"> • Clinical notes • Laboratory results • Growth chart

Indication	Hypothyroidism, congenital
ICD-10 codes	Congenital [neonate, infant or child] (E03.1)
Findings	<ul style="list-style-type: none"> • Scenario 1: Neonate with abnormal Newborn Screening Test • Scenario 2: Infant or child with known congenital hypothyroidism and currently receiving treatment
Evaluation	<ul style="list-style-type: none"> • TSH • Total T4 or Free T4
Treatment	Discuss with doctor on-call
Red flags	N/A
Referral timeframe	<ul style="list-style-type: none"> • Scenario 1: Urgent call to MD on-call to discuss and start treatment <ul style="list-style-type: none"> - Daytime 512-628-1830 - After hours 512 323-5465 (Medlink) • Scenario 2: Call MD on-call to discuss and begin/modify therapy until the patient can be seen. Routine referral.
Additional information	Fax the following items to 512-628-1831 <ul style="list-style-type: none"> • Laboratory results • Clinic notes • Growth chart

Indication	Hypothyroidism, acquired
ICD-10 codes	Acquired (E03.8) or Autoimmune thyroiditis (E06.3)
Findings	<ul style="list-style-type: none"> • Elevated TSH • Low Total T4 or Free T4
Evaluation	<ul style="list-style-type: none"> • TSH, Total T4 or Free T4, anti-thyroglobulin antibody, and anti-TPO antibody • If TSH is abnormal but < 10uU/mL and the Total T4 and Free T4 are normal, obtain thyroid antibodies and repeat the TSH, Total T4 or Free T4 in 1-2 months. If TSH is rising and antibodies are positive, refer to endocrinology. • Thyroid ultrasound is unnecessary unless the gland is asymmetric or nodules are palpable
Treatment	Discuss with doctor on-call
Red flags	If child is <3 years, call doctor on-call to discuss case
Referral timeframe	<ul style="list-style-type: none"> • Please call doctor on-call to discuss and start treatment prior to appointment • Routine referral.
Additional information	<p>Fax the following items to 512-628-1831</p> <ul style="list-style-type: none"> • Laboratory results • Growth chart • Clinical notes

Indication	Thyroid nodule
ICD-10 codes	Thyroid nodule E04.1
Findings	Palpable nodule felt on exam or incidental finding on ultrasound
Evaluation	<ul style="list-style-type: none"> • TSH • Free or Total T4 • Anti-Thyroglobulin antibodies • Anti-TPO antibodies • Thyroid ultrasound
Treatment	Initial recommended treatment for this symptom/diagnosis (if any)
Red flags	<ul style="list-style-type: none"> • Palpable nodule >1cm • Family history of thyroid cancer or MEN • Increasing size of nodule
Referral timeframe	<ul style="list-style-type: none"> • Urgent <ul style="list-style-type: none"> - For red flag criteria, call the on-call endocrinologist at 512-628-1830 (day) and 512-323-5465 (After Hours) • Routine <ul style="list-style-type: none"> - Nonpalpable (<1cm) - Nodule (<1cm) on ultrasound
Additional information	<p>Notable facts</p> <ul style="list-style-type: none"> • Rising incidence of thyroid nodules in the pediatric population. • If >1cm, urgent referral and most likely fine needle aspiration will be indicated. <p>Fax the following items to 512-628-1831</p> <ul style="list-style-type: none"> • Laboratory results • Growth chart • Clinical notes

Thyroid disorders: Important facts to remember

- Metabolic syndrome and obesity can lead to slight elevation of TSH (5-10 uU/mL), then no endocrine referral needed unless positive thyroid antibodies.
- Children with Trisomy 21 often have hyperthyrotropenemia (elevated TSH levels) with normal T4, then referral only needed if antibodies are positive or additional concerns.
- Children with positive thyroid antibodies but normal thyroid function tests may never develop hypothyroidism. Can recheck periodically outpatient, at least every 6-12 months, or sooner with symptoms.

Vitamin D deficiency

Indication	Vitamin D deficiency
ICD-10 codes	Vitamin D deficiency E55.9
Findings	<ul style="list-style-type: none"> • Goal is to maintain vitamin D > 30 ng/mL • Only follow this treatment plan if the Ca, Phos and PTH are normal in the setting of a low Vitamin D. If they are abnormal, then please contact the clinic for referral or advice
Evaluation	<ul style="list-style-type: none"> • 25-Hydroxy vitamin D • Calcium • Phosphorus • Parathyroid hormone
Treatment	<p><5 yo</p> <ul style="list-style-type: none"> • Ergocalciferol (Drisdol) 8,000 IU/wk x16 wks • Drink milk • Recheck at next office visit <p>>5 yo</p> <ul style="list-style-type: none"> • ≥ 40 ng/mL <ul style="list-style-type: none"> - 800 IU daily • 25-30 ng/mL <ul style="list-style-type: none"> - Cholecalciferol 2000 IU daily • 20-25 ng/mL <ul style="list-style-type: none"> - Ergocalciferol 50,000 IU weekly x16wks - + Cholecalciferol 2000 IU daily - Recheck Vitamin D 25-OH at 17 wks <ul style="list-style-type: none"> • <30 ng/mL, then continue treatment • Recheck again in 17 wks • >30 ng/mL, then continue cholecalciferol only • <20 ng/mL <ul style="list-style-type: none"> - Ergocalciferol 50,000 IU weekly x16wks - + Cholecalciferol 3000 IU daily <ul style="list-style-type: none"> • Recheck Vitamin D 25-OH at 17wks <ul style="list-style-type: none"> - <30 ng/mL, then continue treatment <ul style="list-style-type: none"> • Recheck again 17wks - >30 ng/mL, then continue cholecalciferol only
Red flags	Concern for bone fragility, fracturing, in addition to lab abnormalities
Referral timeframe	When vitamin D deficiency goes along with abnormalities in calcium, phosphorus or PTH
Additional information	N/A



Contact us

t 512-628-1830

dellchildrens.net



Our facilities are currently taking precautions to help keep patients and visitors safe, which may include conducting screenings, restricting visitors and practicing distancing for compassionate, safe care. We continuously monitor COVID-19 guidance from the Centers for Disease Control and Prevention (CDC), and adjust our safety practices and safeguards accordingly.

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