CHD (Congenital Heart Disease) – 0.5-1% of population

Cyanotic CHD

1) Truncus Arteriosus (increased pulmonary vascular markings, aka PVM’s)
2) Transposition of Great Vessels - #1 cause of cyanosis in 1st month; “egg on a string”
3) Tricuspid atresia (decreased PVM’s)
4) Tetralogy of Fallot - #1 cause of cyanosis in >1 month, “Boot shaped” - pulmonary obstruction, RVH, VSD, overriding aorta (decreased PVM’s)
5) TAPVR – “snowman heart” (increased PVM’s)

Acyanotic CHD – VSD, ASD, PDA

<table>
<thead>
<tr>
<th>VSD</th>
<th>#1 cause of CHD, usually presents @ 1-2 months with murmur, poor feeds, sweating, FTT. If left untreated, patient may present with cyanosis as pulmonary vascular disease worsens – Eisenmenger’s syndrome</th>
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<tr>
<td>ASD</td>
<td>females, fixed split S2, murmur presents after infancy</td>
</tr>
<tr>
<td>pDA</td>
<td>can close with indomethacin or surgery, machinery-like murmur @ LUSB</td>
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Down’s Endocardial Cushion Defect
Turner’s Coarctation of the aorta
Marfan’s aortic dissection and mitral valve prolapse
Kawasaki’s coronary artery aneurysms
William’s supravalvular aortic stenosis
Congenital Rubella pDA
Noonan’s pulmonic stenosis (phenotype Turner’s)
Holt-Oram ASD (and thumb abnormality)
Wide pulse pressure pDA & aortic insufficiency (both with bounding peripheral pulses)
Prostaglandin can be infused to keep a patent ductus open if the patient has ductal-dependent CHD. Side effect is apnea spells

GI

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<th>Pyloric Stenosis</th>
<th>progressive, projectile nonbilious vomiting, male, 2 weeks – 2 months, hypokalemic hyperchloremic metabolic alkalosis, 1st born, diagnose with palpable olive or US (or UGI “string sign”)</th>
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<td>Malrotation with midgut volvulus</td>
<td>#1 cause of bilious emesis in &lt;1 month old, diagnose with UGI-SBFT</td>
</tr>
<tr>
<td>Hirschsprung’s disease</td>
<td>if no passage of meconium by 24-48º</td>
</tr>
<tr>
<td>Condition</td>
<td>Description</td>
</tr>
<tr>
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<td>--------------------------------------------------------------------------------------------------------</td>
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<td>Duodenal atresia</td>
<td>“double bubble” on prenatal US – think Down’s syndrome, polyhydramnios</td>
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<td>Meconium ileus</td>
<td>95% have CF</td>
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<td>Intussusception</td>
<td>6 months-2 years, colicky abdominal pain, bilious emesis, and currant jelly stools, diagnosis and treat with enema (air versus barium)</td>
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<td>Infections</td>
<td>Salmonella (don’t treat unless &lt;2 months, asplenic, septic…)&lt;br&gt;Shigella (can have seizures)&lt;br&gt;E. Coli (HUS if 0157:H7-enterohemorrhagic)&lt;br&gt;Campylobacter (treat with macrolide), ?Guillan-Barre syndrome&lt;br&gt;Yersenia (pseudoappendicitis)&lt;br&gt;C diff colitis (follows abx - PCN/Cephalosporins/Clindamycin)&lt;br&gt;Entamoeba histolytica (hepatomegaly, travel to Mexico)</td>
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Hyperbilirubinemia
Direct – biliary atresia, neonatal hepatitis (TORCH), galactosemia, alpha-1 antitrypsin deficiency, cystic fibrosis, sepsis, TPN, Dubin-Johnson and Rotor’s syndromes
Indirect – physiologic, breast milk & breast feeding jaundice, blood group incompatibilities, RBC abnormalities (may see gallstones), Crigler-Najjar syndrome, Gilbert’s (mild jaundice in teenager during infection or starvation states)

Development
8 weeks smiles, coos, follows to midline
3-5 months rolls front to back
4-6 months rolls back to front, reaches for objects
6 months sits by self, babbles, transfers objects
9 months mama and dada (non-specific), early pincer grasp, object permanence, stranger anxiety, social games like peak-a-boo and pat-a-cake
8-10 months pulls to stand, cruises
1 year walks, mama and dada (specific) & couple other words, mature pincer grasp
18 months runs clumsily, throws ball overhand
2 years can make 2 word sentences (50+ words), kicks ball forward
3 years rides tricycle
Shapes 18 mths-scribbles, 2-copy line, 3-circle, 4-cross, 4.5-square, 5-triangle, 6-diamond
Stairs 15 mths-crawls up, 18 mths-walk upstairs with hand held, 2 y/o-climb up & down alone-2 feet per step, 3 y/o-upstairs alternating feet, 4 y/o-downstairs alternating feet
Body parts # of body parts drawn =~s # of years old

ID
FUO think infection #1, then #2 Neoplasms (leukemia, lymphoma), and #3 collagen vascular diseases (SLE, JRA, Crohn’s)
Ears S pneumo > H inf NT > Moraxella
Meningitis <2 months→GBS→E. Coli →Listeria→Amp & Claf (newborn-Amp/Gent) >2 months→S pneumo →N Meninginitis →H inf type b →Claf/Rocephin +/- Vancomycin
Rheumatic Fever nonsuppurative sequela of GAS pharyngitis, with fever and JONES criteria (J=joints=migratory polyarthritis; O=heart=endocarditis/myocarditis/pericarditis; N=nodules=subcutaneous nodules; E=Erythema marginatum; S=Sydenham’s Chorea)
TSS see fever, rash, hypotension, DIC, renal failure, conjunctival erythema, often due to staph (menstruating female with tampon, or osteomyelitis) or strep.
Pneumonia  Lobar = S pneumonia, Teen with pneumonia = Mycoplasma (cold agglutinins), Pleural effusion= GAS/Staph aureus/S pneumonia,  TB=hilar lymphadenopathy/ hemoptysis/ fever/ night sweats/ travel or prison exposure, Viral pneumonia predominates in children < 5 y/o (RSV-most common in infancy, Adenovirus-high fevers and red eyes/red throat, Influenza-high fevers/myalgias/headache, Parainfluenza)

Bronchiolitis  RSV #1, expiratory wheezes with tachypnea/retractions during December to March months, may see apneic episodes, treat with O₂ and fluids, prophylaxis preemies with Synagis (monoclonal RSV Ab)

Croup (laryngotracheobronchitis) inspiratory stridor, parainfluenza #1, winter months, hoarseness and barking cough, especially at night. Treat with Decadron, +/- Epinephrine (racemic), quiet environment

Mononucleosis school-age child or adolescent with fatigue, splenomegaly, exudative pharyngitis, and generalized lymphadenopathy. CBC with atypical lymphocytes. Diagnose with monospot (heterophile Ab) or EBV serology

UTI Gram negatives (E. Coli, Klebsiella, Proteus) VCUG and US if ≤ 5 years

Chlamydia trachomatis presents at 1-3 months of age with cough, tachypnea, rales, history of conjunctivitis, eosinophilia, without fever/wheezes

Pneumonia  Treat orally with macrolide (eye drops do not prevent pneumonia)

Cellulitis GAS + Staph aureus

Indwelling central line...Staph epidermidis infection

Stevens Johnson syndrome...think HSV, mycoplasma, or drugs(anti-seizure meds, sulfa drugs), target lesions with two or more mucous membranes involved

Roseola (HHV 6) high fever for 3 days, then macular rash immediately after the fever breaks

Erythema Infectiosum (5th disease) “slapped cheek” rash with lacy reticulations on the extremities, caused by parvovirus B 19 (can also cause nonimmune hydrops fetalis in utero, arthritis in an adolescent female, and a transient aplastic crisis in a child with hemolytic disease)

Rubeola (measles) Koplik spots, 3 C's(cough/ coryza/conjunctivitis), and maculopapular rash

HSV encephalitis altered mental status and focal seizures

Fever with neutropenia...think Gram negatives, especially Pseudomonas

Exudative Pharyngitis...GAS, EBV, Arcanobacterium, Adenovirus Rare – tularemia, diphtheria, leukemia
Congenital CMV  most common congenital infection with blueberry muffin rash, hepatosplenomegaly, and periventricular calcifications, hearing loss

Congenital Toxo  more ophthalmologic findings, diffuse cerebral calcifications, and communicating hydrocephalus

Congenital Rubella deafness (sensorineural), cataracts, and CHD (pDA)

Septic Arthritis  presents with hip pain, fever, and decreased ROM at hip joint with legs held flexed, abducted, and externally rotated, caused by S aureus > GAS, and is a surgical emergency

Epiglottitis  2-7 y/o toxic child with high fever, drooling, sits upright, muffled voice, H inf type b, respiratory distress with inspiratory stridor, can visualize on lateral neck xray, diagnose with direct examination or laryngoscopy in a controlled environment

Staph species  Gram + cocci in clusters
Strep species  Gram + cocci in pairs/chains
Neisseria species  Gram negative intracellular diplococci

**Heme/Onc**

Sickle Cell disease  presents at 6 months age as HgbF decreases, functionally asplenic, AA, increased risk of infection with encapsulated bugs and Salmonella osteomyelitis, aplastic/pain crisis/acute chest syndrome, acute dactylitis, prophylax with penicillin

Hemophilia A  in male (X-linked recessive), intramuscular hematomas and hemorrhoses, circumcision bleeds, factor VIII deficiency -- prolonged PTT. Treat with factor 8 concentrate

VWF  most common bleeding disorder, usually nose bleeds/gingival bleeds/petechiae/heavy menses, prolonged bleeding time - treat with DDAVP; Humate or cryoprecipitate if severe

ITP  1-4 y/o child with viral infection in the proceeding 1-4 weeks, autoimmune with decreased platelets (petechiae, nose bleeds) and normal WBC’s & RBC’s. Treat with IVIG/anti-D Ig/steroids

Anemia  in child, #1 cause is iron deficiency (decreased MCV, increased RDW).may be seen with ingestion of large amounts of cow’s milk

Wilm’s  #1 renal mass, asymptomatic unilateral abdominal mass +/- HTN/hematuria, association with aniridia & hemihypertrophy, may be bilateral, distorts renal calyces in IVP
Neuroblastoma: abdominal mass involving adrenal glands, better if <1 year old, can be anywhere along the sympathetic chain (Horner’s syndrome and Opsoclonus Myoclonus syndrome), metastatic disease can lead to periorbital ecchymosis and proptosis, displaces renal calyces on IVP

ALL: good prognosis in kids, especially if 1-10 years old at diagnosis - #1 cancer in kids, may present with pancytopenia or high WBC’s - relapses at CNS, testes, and bone marrow

AML: Auer rods on blood smear, abnormal WBC’s with anemia & thrombocytopenia, may present with chloromas (“knots” on scalp)

Lead poisoning: microcytic hypochromic anemia with basophilic stippling, lead lines in bones and gums, opacities on intestinal xray, presents asymptomatic or abdominal complaints (constipation, vomiting) / encephalopathy (widened sutures)

Osteosarcoma: #1 long bone tumor in children, “sunburst” pattern, metaphyseal

Ewing’s Sarcoma: mid-shaft bone tumor in an adolescent male

Vitamin K deficiency: classic onset at 2-7 days of life in infant delivered at home, more common in preemies and breast fed infants, with bleeds from GI tract/circumcision/cutaneous/intracranial, increased PT/PTT, decreased factors 2/7/9/10...may have earlier onset if mother was on anticonvulsant therapy during pregnancy

MCV: Microcytic: iron deficiency, thalassemia, lead poisoning, sideroblastic anemia
Normocytic: acute blood loss, chronic disease, disorders with hemolysis (extrinsic/ intrinsic)
Macrocytic: folate & vitamin B12 deficiency, normal newborn

Hemoglobin: physiologic nadir at 1-2 months old...as low as 9 g/dL normal

**Genetics**

Trisomy 21: Down’s, high risk Alzheimer’s, single palmar crease, hypotonia, up slanted palpebral fissures, low set ears, hypothyroid, duodenal atresia, increased risk Hirschsprung’s, Endocardial Cushion defect, MR, hearing loss, leukemia (AML>ALL), atlantoaxial instability

Trisomy 18: Edward’s, overlapping fingers, rocker bottom feet, prominent occiput, micrognathia

Trisomy 13: Patau’s, polydactyly, microcephaly, cleft lip/palate, microphthalmia, scalp defects
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<td>Turner's</td>
<td>XO, female, wide spaced nipples, web neck, short stature, primary amenorrhea secondary to ovarian dysgenesis, coarctation of aorta, congenital lymphedema, kidney problems (horseshoe kidney)</td>
</tr>
<tr>
<td>Sturge Weber</td>
<td>sporadic inheritance, facial port wine stain, meningeal involvement with seizures, glaucoma</td>
</tr>
<tr>
<td>Neurofibromatosis</td>
<td>AD, café au lait spots, axillary/inguinal freckling, Lisch nodules, neurofibromas at time of puberty, osseus bone lesions</td>
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<tr>
<td>Tuberous sclerosis</td>
<td>AD, seizures (infantile spasms), MR, heart rhabdomyomas, adenoma sebaceum, ash leaf spots, shagreen patch</td>
</tr>
<tr>
<td>Cystic Fibrosis</td>
<td>chromosome 7, AR, bugs (Staph aureus and pseudomonas), recurrent pneumonia/diarrhea/FFT/rectal prolapse/polyps in nose</td>
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<tr>
<td>Prader-Willi</td>
<td>H3O (early Hypotonia, Hypomentia, Hypogonadism, Obesity with voracious appetite), small hands &amp; feet, almond-shaped eyes</td>
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<td>Marfan’s</td>
<td>tall, connective tissue disease, subluxed eyes, flexible, AD, aortic dissection (vs. homocystinuria – phenotypic Marfan’s with increased risk of thromboembolism)</td>
</tr>
<tr>
<td>Klinefelter’s</td>
<td>XXY, small testes, mild MR, gynecomastia</td>
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<tr>
<td>William’s</td>
<td>elfin facies, cocktail personality, high calcium @ birth, MR, supravalvular aortic stenosis</td>
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<td>Fragile X</td>
<td>mental retardation, male, large ears and big testes</td>
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<tr>
<td>VACTER</td>
<td>association with Vertebral, Anorectal, Cardiac, TE fistula (can’t pass NG tube), and Radial/Renal abnormalities</td>
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<td>RENAL</td>
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<td>Hematuria</td>
<td>#1 cause is hypercalciuria (urine Ca/Cr ratio &gt;0.2)</td>
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<td>PSGN</td>
<td>blood and some protein in “smoky/tea/cola” urine, hypertension, &amp; edema, S/P strep infection by 2-3 weeks, low C3, elevated ASO titer</td>
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<td>HSP</td>
<td>palpable purpura of the buttocks and lower extremities, renal involvement, arthritis, GI (pain, bleeds)</td>
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<td>RTA</td>
<td>cause of FTT in 1st year of life, usually with paradoxical alkaline urine, normal anion gap metabolic acidosis, hyperchloremia</td>
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<tr>
<td>Potter’s syndrome</td>
<td>renal agenesis, oligohydramnios, flat facies and pulmonary hypoplasia</td>
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“double bubble” on prenatal US – think Down’s syndrome, polyhydramnios

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95% have CF

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Bloody Diarrhea

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Shigella (can have seizures)  
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<td>#1 cause is orthostatic (get a.m. 1st void urine)</td>
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<td>Nephrotic Syndrome</td>
<td>heavy proteinuria, hypoalbuminemia, edema, hyperlipidemia, with increased risk of S pneumo peritonitis and increased risk of thromboembolism, treat with steroids and salt restriction</td>
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<tr>
<td>Eagle Barrett Syndrome</td>
<td>aka Prune Belly syndrome, with triad: deficient abdominal musculature, cryptorchidism, and urinary tract abnormalities</td>
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<td>Enuresis</td>
<td>voluntary or involuntary loss of urine after a developmental age when bladder control should be established, usually by 5 y/o. Can treat with alarm systems, imipramine, or DDAVP (side effect of hyponatremia). If secondary enuresis, think DM vs. DI vs. UTI</td>
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<td><strong>Endocrine</strong></td>
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<td>Congenital hypothyroid</td>
<td>(low T4, high TSH) Hispanic female &gt; male, constipation, feeding difficulties, hypothermia, macroglossia, large AF, umbilical hernia, MR</td>
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<td>DKA</td>
<td>presents with abdominal pain, vomiting, Kussmaul breathing, low pH, ? coma - treat with insulin and IVF’s</td>
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<td>Type I DM</td>
<td>presents with polyuria, polydipsia, polyphagia, and weight loss</td>
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<td>Type II DM</td>
<td>overweight, acanthosis nigricans (sign of insulin resistance), often Hispanic or African American with polyuria/polydipsia/polyphagia</td>
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<td>Ambiguous genitalia</td>
<td>in female, #1 cause is Congenital Adrenal Hyperplasia</td>
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<td>CAH</td>
<td>(like Addison’s), see increased K⁺, decreased Na⁺, and hypoglycemia, with increased adrenal sex hormones - 21 OH deficiency &gt;11 OH deficiency, may be salt loser - usually CAH presents at 1-3 weeks of age(vs. Addison’s = teen with weakness, increased tan, vomiting, weight loss)</td>
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<td>Short Stature</td>
<td>#1 cause is delayed puberty (see delayed bone age and delayed Tanner maturation, reassure)</td>
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<td>Puberty</td>
<td>1st sign is Female - breast enlargement Male - testes enlarged</td>
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<td>SIADH</td>
<td>see low serum Na⁺, increased urine osmolality</td>
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DI

- high serum Na⁺, decreased urine osmolality
- central = decreased release of ADH
- nephrogenic = defective ADH receptor, sex-linked recessive
  (versus dehydration – high Na⁺, increased urine osmolality)

Texas Newborn Screen

- Congenital Adrenal Hyperplasia, galactosemia, hypothyroid, PKU,
  sickle cell disease (all autosomal recessive except hypothyroid)

Galactosemia

- E. Coli sepsis at 1 week of age, cataracts, hepatomegaly with direct
  hyperbilirubinemia, hypoglycemia, + urine reducing substances

Rickets

- usually secondary to breast feeding without supplementation and
  with poor UV exposure, typically in African Americans.
- Symptoms – craniotabes, rachitic rosary, widened wrists and
  ankles, bowlegs
- labs: #1 is low phosphorous
- Treatment: Vitamin D and sunlight

Final adult height

- [(dad’s + mom’s height) +13cm or 5 in in males vs. -13cm or 5 in
  in females]/2

Neurology

Seizures

- F = Febrile (6 mths-6yrs, generalized, <15 minutes)
- E = Epilepsy (infantile spasms = hypersrrhythmia, Absence = 3/sec
  spike and wave activity with sudden cessation of motor
  activity, blank stare, and eyelid flickering
- B = Brain (tumor, bleed, hydrocephalus, AV malformation)
- R = Trauma (accidental vs. child abuse)
- I = 4 I’s (Infection with meningitis/HSV encephalitis/Shigella,
  Ischemia/hypoxia in first 3 days of life, Ingestion with
  cocaine/theophylline, IEM)
- L = Low pyridoxine
- E = Electrolytes (hypoglycemia #1, hypocalcemia in DiGeorge’s
  syndrome with absent thymus/ heart murmur/
  immunodeficiency, hypo- or hypernatremia,
  hypomagnesemia)

Guillain Barre Syndrome

- acute ascending post infectious demyelinating polyneuropathy,
  usually follows infection with campylobacter, lose DTR’s,
  increased protein in CSF tap

Cerebral Palsy

- non progressive motor disorder secondary to early brain injury

Reye syndrome

- metabolic encephalopathy, secondary to aspirin use in
  Varicella/Influenza B
SMA1 (Werdnig Hoffman)  weakness by 1st few months followed by death, disease of anterior horn cells, tongue fasciculations

Duchenne MD  Male (X-linked recessive), walks normal at first but by 3-5 years has difficulty walking, Gowers sign, pseudohypertrophy of the calves, frequent cardiomyopathies, diagnosis with CK

Botulism  acute descending flaccid paralysis, often from ingestion of Clostridium botulism spores from honey or dirt, with early cranial nerve involvement, mask-like facies, constipation, lethargy, and loss of DTR’s

Cerebellar Ataxia  usually post infectious, often following Varicella

Dermatomyositis  proximal muscle weakness with heliotrope rash and Gottron’s papules

Myelomeningocele  75% lumbosacral, bowel/bladder/lower extremity problems, 80% with hydrocephalus due to Chiari II malformation, prevent with maternal intake of folate

**Immunology**

B cell deficiency  (example X-linked agammaglobulinemia) Bacterial sinopulmonary infections starting at 6 months. Treat with monthly IVIG. May see absent tonsils and minimal lymphadenopathy

T cell deficiency  presents at birth, ? absent Thymus, viral/fungal/parasitic infections

Phagocyte Defect  1. CGD-male, with recurrent catalase positive infections (E.Coli, Staph, Nocardia), treat with prophylactic Bactrim and gamma interferon, problem with respiratory burst in phagocytes
2. LAD--delayed separation of the umbilical cord with neutrophilia

Complement C5-C9 deficiency  N meningococcus infections

**Optho**

Abnormal Red Reflex  cataracts, retinoblastoma, glaucoma, chorioretinitis

Eye Redness and discharge in neonate:
- at <48 hours – chemical conjunctivitis due to silver nitrate
- at 2-5 days – N gonorrhoeae
- at 5-14 days – Chlamydia trachomatis
Gastrochisis
herniation of abdominal contents to the right of the umbilicus, without associated covering. Rare associated intestinal atresia.

Omphalocele
herniation of abdominal contents through the umbilicus, usually the liver, and covered with peritoneum. Increased risk of other anomalies (Beckwith Wideman-big tongue, hemihypertrophy, hyperinsulinism, Wilms)

Kawasaki’s
fever ≥ 5 days, plus 4 out of 5 (bilateral non-purulent conjunctivitis, oropharyngeal involvement, cervical LAD, body rash, desquamating/swollen/red hands); see increase platelets and coronary aneurysms (need 2-D Echocardiogram), treat with IVIG and aspirin

Learning Disorder
≥16 point difference between I.Q. and achievement test scores

Legg-Calves Perthes
Usually skinny male, idiopathic avascular necrosis of the hip, 4-8 y/o with “painless limp”

SCFE
Adolescent, overweight male, “falling ice cream cone” on Xray, presents with painful limp (pain at hip/thigh/knee)

Osgood Schlatter
traction apophysitis of the tibial tubercle with unilateral lower knee pain in a 10-15 y/o male

Nursemaid’s elbow
dislocation of the radial head from longitudinal traction applied to the upper extremity while the elbow is in extension (often from jerking), and presents with the arm held in pronation across the chest

Torsion of appendix Testes
#1 cause of acute scrotal pain in a 2-10 y/o male, “blue dot”

Testicular Torsion
#1 cause of acute testicular pain in a male >10 years of age, elevation of testes on affected side with absent cremasteric reflex, surgical emergency

Inguinal hernias
always require surgical repair; commonly involve bowel in males and ovary in females

Eating disorders
Anorexia is defined by body weight 15% below expected, with extreme fear of gaining weight andamenorrhea. Bulimia involves recurrent episodes of binge eating with lack of control, followed by vomiting/laxatives/exercise. Both occur more commonly in females. Can see bradycardia, hypothermia, hypotension, electrolyte disturbances, elevated BUN, bone marrow hypoplasia, constipation, and arrhythmias

Foreign body
foul smelling, purulent bloody drainage from orifice; if in airway – initial choking spell with subsequent stridor and cough
Death if < 1 y/o – perinatal problems; if > 1 y/o, most commonly from injuries

Asthma earliest symptom is often recurrent nocturnal cough, if persistent - #1 treatment is inhaled corticosteroids, highest predictor of asthma = atopy

Rett Syndrome normally developing female until 6 months-2 yrs, then loss of milestones, microcephaly, odd handringing, loss of speech

Histiocytosis X lytic bone lesions in the skull, severe seborrheic dermatitis, hepatomegaly, Birbeck’s granules

Wiskott-Aldrich X-linked recessive (male) with triad: thrombocytopenia with tiny platelets, severe eczema, and recurrent infections

Neonatal opiate withdrawal…CNS irritability with possible seizures, increased respiratory effort, diarrhea, sweating, jittery with excessive crying

Basilar skull fracture…usually of the temporal bone, with hemotympanum, CSF otorrhea or rhinorrhea, Battle’s sign (mastoid ecchymosis), and raccoon eyes

Acrodermatitis enteropathica…zinc deficiency with chronic diarrhea, alopecia, and rash around the mouth/anus/hands/feet

TTN early onset of tachypnea, retractions, and grunting, see fluid in the fissures and overaeration, often follows C-section delivery, resolves in 1-3 days (rule out RDS – in preemie; rule out GBS pneumonia – air bronchograms like RDS, but often term with temperature instability and maternal GBS +)

Congenital stridor Laryngomalacia is by far the most common cause – inspiratory stridor worse when supine; if with hoarseness – vocal cord paralysis; if occurring after prolonged intubation – subglottic stenosis

TE Fistula polyhydramnios, excessive infant oral secretions, coughing or choking with feeds, unable to pass NG tube at birth

Hearing Loss acquired most commonly due to chronic OME, presents with speech delay

Physiologic Leukorrhea…thin white asymptomatic vaginal discharge in a near-menarchal girl

Ingestions bimodal with 90% < 5 y/o (single drug) and 10% teenager (multiple drugs). Activated charcoal is often the best treatment, but doesn’t absorb iron/alcohol/caustics/hydrocarbons/lithium/heavy metals

SLE autoimmune disorder, adolescent female with BRAIN SOAP MD (Blood – anemia/ thrombocytopenia/ leucopenia, Renal problems, ANA, Immunologic – anti-dsDNA and anti-Sm Ab, Neurologic – seizures and psychosis, Serositis, Oral ulcers, Arthritis, Photosensitivity, Malar rash, Discoid rash), treat with steroids, maternal Ab can pass to fetus and cause congenital heart block
JRA most commonly presents with a 1-4 y/o blue-eyed, blonde-haired female with arthritis of the knee or ankle, high risk of uveitis, systemic form with daily spiking fevers and salmon Still’s rash

Autism develops before 30 months age, more common in males, with impairments in verbal and nonverbal communication (poor speech, doesn’t orient to name, echolalia), social interaction (plays alone, ignores others, treats people as objects), and poor imaginative activity

Physiologic pubertal gynecomastia...asymmetric or unilateral breast enlargement in a pubertal male, lasting less than 2 years, reassurance without invasive workup

Abdominal mass #1 cause in neonate is hydronephrosis/multicystic kidney disease, #1 cause in children is Neuroblastoma, followed closely by Wilm’s

IUGR symmetric – early insult (chromosomal, genetic, infection); asymmetric (late insult in gestation, spares FOC, placental insufficiency common); often see hypoglycemia

Moro reflex asymmetry implies brachial plexus injury (Erb Duchenne palsy), may be very exaggerated with neurologic insults (Tay-Sachs)

Breath holding spell in a 1-2 y/o child, provoked by scolding or anger, with brief cry followed by forced expiration and apnea, +/- cyanosis and seizures, manage with support and reassurance of the parents

Sleeping events
Nightmares – occur in REM sleep in 2nd half of night, child upset but awake, consolable, may remember the event
Night terrors – occur in stage 4 NREM sleep in 1st third of night, often in a 5-7 y/o boy, confused and agitated, not consolable, and with amnesia of the event
NREM – stage 3 & 4 deep sleep, greater in 1st third of night, may see sleep walking/talking
REM – loss of activity in large muscles, high % of newborn sleep, predominates in 2nd half of night

Nutritional problems
Folate deficiency – seen with early introduction of goat’s milk
B12 deficiency – seen with Crohn’s, ileal resection, and vegetarian diets
Marasmus – severe caloric deficiency with FTT, hypothermia, emaciation, poor activity
Kwashiorkor – deficient protein intake with edema, dermatitis, and hair problems

Breast feeding contraindications active TB, HIV/AIDS, galactosemia, certain medications

Breast milk ideal source of nutrition, but low in iron/fluoride/vitamin D

Aspirin overdose causes respiratory alkalosis by directly stimulating the respiratory center, and also metabolic acidosis, N/V, tinnitus
Overdose Treatments:
Tylenol: mucormyst (N acetylcysteine—works to replenish glutathione stores)
Anticholinergic (antihistamine, Jimson weed): physostigmine
Benzodiazepines: Flumazenil
B Blocker: Glucagon
Calcium Channel Blocker: Calcium Chloride
CO Poison: 100% oxygen
Digoxin: FAB fragments
Iron: Deferoxime (not absorbed with activated charcoal)
Opiates: Narcan
Tricyclics: Sodium bicarbonate

Toxidromes
Cholinergic – (organophosphate insecticides, nerve gas, most mushrooms) -
SLUDGE (Salivation, Lacrimation, Urination, Defecation, GI, Eye-miosis)
Anticholinergic – (antihistamines, antipsychotics, atropine, tricyclics, jimson weed,
Amanita mushroom) - Blind as a bat (mydriasis), hot as a hare (hyperthermia), red as a
beet (vasodilation), dry as a bone (anhydrosis), mad as a hatter (delirium)
Sympathomimetics – (amphetamine, cocaine, theophylline, ephedrine) – seizures,
restlessness, diaphoresis, fevers, tachycardia, HTN, mydriasis
Opiates (heroin, morphine, codeine) – pinpoint pupils, euphoria, decreased pain
perception, respiratory depression, constipation
PCP – vertical nystagmus, hallucinations, psychosis
LSD – altered perception, “seeing smells and hearing colors,” tachycardia, dilated pupils

Immunizations
Killed vaccines – IPV, DTaP, Prevnar, Hib, Hepatitis A and B, Influenza
Live viral vaccines – Varicella, MMR, Rotavirus, yellow fever, smallpox, oral typhoid;
can give simultaneously at different sites, otherwise > 1 month apart
MMR causes transient anergy to TB protein, so can’t trust PPD for 2 months after MMR
Severely immunocompromised patients should not receive live viral vaccines
Contraindications: DTaP (encephalopathy within 7 days of previous dose, precaution
with seizure disorder), MMR or Varicella (pregnancy or severely
immunocompromised), Influenza (history of anaphylaxis to eggs),
IPV/MMR/Varicella (history of anaphylaxis to neomycin), for all vaccines (moderate
or severe illness regardless of fever)
IVIG – if given, should delay live viral vaccines by 6-12 months