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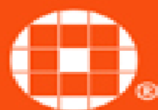

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Pocket PEDIATRICS

Fourth Edition

Pocket PEDIATRICS

Fourth Edition

Edited by
PARITOSH PRASAD, MD, DTM&H, MBA
Attending Physician, University of Rochester Medical Center

Associate Editors
FRANCIS COYNE, MD
Attending Physician, University of Rochester Medical Center
GUYLDA JOHNSON, MD
Chief Resident, University of Rochester Medical Center

Philadelphia • Baltimore • New York • London
Buenos Aires • Hong Kong • Sydney • Tokyo

Acquisitions Editor: James Sherman
Product Developmental Editor: Cindy Yoo
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Marketing Manager: Kirsten Watrud
Production Project Manager: Justin Wright
Design Coordinator: Stephen Druding
Manufacturing Coordinator: Lisa Bowling
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CONTRIBUTORS

Asim Abbasi, MD
Attending, University of Rochester Medical Center

Alice Baker, MD
Fellow, Yale School of Medicine

Jenny Beuschel, MD
Resident, University of Rochester Medical Center

Grace Black, MD
Attending, University of Rochester Medical Center

Charlotte Blumrosen, MD
Attending, University of Rochester Medical Center

Benjamin Briggs, MD
Attending, University of Rochester Medical Center

Melissa Carmen, MD
Attending, University of Rochester Medical Center

Ryan Carrier, MD
Resident, University of Rochester Medical Center

Maria Cordisco, MD
Attending, University of Rochester Medical Center

Francis Coyne, MD
Attending Physician, University of Rochester Medical Center

Rajiv Devanagondi, MD

Attending, University of Rochester Medical Center

Hannah Doyle, MD
Resident, University of Rochester Medical Center

Nicholas Farris, MD
Attending, University of Rochester Medical Center

Jinia El Feghaly, MD
Attending, University of Rochester Medical Center

Hayley Flanagan, MD
Resident, University of Rochester Medical Center

Chin-To Fong, MD
Attending, University of Rochester Medical Center

Megan Gabel, MD
Attending, University of Rochester Medical Center

Mykael Garcia, MD
Attending, University of Rochester Medical Center

Kunali Gurditta, MD
Resident, University of Rochester Medical Center

Cindy Hernandez, MD
Resident, University of Rochester Medical Center

Sonia Mukund Joshi, MD
Resident, University of Rochester Medical Center

Amanda Kaley, MD
Resident, University of Rochester Medical Center

Rafi Kazi, MD
Attending, University of Rochester Medical Center

Katherine A. Krol, MD
Attending, University of Rochester Medical Center

Justin Lansinger, MD
Resident, University of Rochester Medical Center

Anne Lips, MD
Resident, University of Rochester Medical Center

Bethany A. Marston, MD
Attending, University of Rochester Medical Center

Irene Martinez, MD
Resident, University of Rochester Medical Center

Victoria Mattick, MD
Resident, University of Rochester Medical Center

Shelby Nelipovich, MD
Resident, University of Rochester Medical Center

Grace Ng, MD
Resident, University of Rochester Medical Center

Stephanie E. Nonawzki, MD
Resident, University of Rochester Medical Center

Rebekah Prasad, NP
Nurse Practitioner, University of Rochester Medical Center

Michelle L. Prong, MD
Resident, University of Rochester Medical Center

Erin Rademacher, MD
Attending, University of Rochester Medical Center

Rebekah Roll, MD

Resident, University of Rochester Medical Center

Justin Rosati, MD
Attending, University of Rochester Medical Center

Laura Saldivar, MD
Resident, University of Rochester Medical Center

Amy Seagroves, MD
Attending, University of Rochester Medical Center

Kimberly Seymour, MD
Resident, University of Rochester Medical Center

Tyler Stephen, MD
Fellow, University of Rochester Medical Center

Jessica Stern, MD
Attending, University of Rochester Medical Center

Chloe Michelle Swanger, MD
Resident, University of Rochester Medical Center

Jennifer Tich, MD
Resident, University of Rochester Medical Center

Rahul Uppal, MD
Resident, University of Rochester Medical Center

PREFACE

In the 15 years since its initial publication, *Pocket Pediatrics* has been put to the test by several new generations of interns and residents. Their input and insight has resulted in this fourth edition of *Pocket Pediatrics*. As ever, we remain committed to creating a highly portable, rapid reference for the pediatric health care practitioner in training with a specific emphasis on high-yield information and evidence-based practice.

To that end, this new edition has been updated throughout. As before, this handbook is not meant to be a comprehensive treatment of the whole of pediatrics, or even an exhaustive treatment of the specific topics discussed within its pages. The topics were chosen because they are believed to represent the core knowledge one would wish to have at one's disposal. The information collected on each topic was selected and organized to present a high-yield overview of each subject by currently training residents revised by actively practicing pediatric attendings. Each section has been rereviewed with an eye to presenting the most up-to-date evidence-based practices and society and association guidelines, with citations to point interested readers in the direction of more complete treatments of each topic. Where evidence is lacking, we have included accepted best practices as well as expert opinions.

We acknowledge as well that this handbook will forever be a work in progress, as our understanding of pediatrics continues to grow and as, day by day, new knowledge about disease processes, new laboratory tests and procedures, and new evidence-based practice guidelines are added to our collective armamentarium. We have endeavored to make the following text as current as possible, but it should never take the place of clinical experience and clinical judgment.

Paritosh Prasad, MD, MBA, DTM&H

ABBREVIATIONS

2/2	secondary to
AAP	American Academy of Pediatrics
ABG	arterial blood gas
ABPA	allergic bronchopulmonary aspergillosis
Abx	antibiotics
AD	autosomal dominant
ADR	adverse drug reaction
aka	also known as
AOM	acute otitis media
AR	autosomal recessive
ARFID	avoidant restrictive food intake disorder
AS	ankylosing spondylitis
ASD	atrial septal defect
Assn	association
AV	atrioventricular
AVM	arteriovenous malformation
AVNRT	AV nodal reentrant tachycardia
AVRT	AV reentrant tachycardia
AVSD	atrioventricular septal defect
BMV	bag-mask ventilation
BPD	bronchopulmonary dysplasia
btwn	between
BZD	benzodiazepine
CAH	congenital adrenal hyperplasia
CF	cystic fibrosis
CHD	congenital heart disease
CMP	complete metabolic panel
CO	cardiac output
CPB	cardiopulmonary bypass
CSI	cervical spine injury
CXR	chest x-ray
d	day
Def	definition

depol	depolarization
Dx or Dz/dz	disease
ECG	electrocardiogram
ED	emergency department
ENT	ear, nose, and throat
EoE	eosinophilic esophagitis
Eos	eosinophils
Epi	epidemiology
ETT	endotracheal tube
FH	family history
FPIES	food protein–induced enterocolitis syndrome
FTT	failure to thrive
GA	gestational age
GBS	group B streptococcus
GBS	Guillain–Barré syndrome
GCS	Glasgow Coma Scale
G-CSF	granulocyte colony–stimulating factor
gen	generation
GERD	gastroesophageal reflux disease
GIR	glucose infusion rate
gtt	guttae (Latin for drips)
Hb/Hct	hemoglobin/hematocrit
HFNC	high-flow nasal cannula
HPF	high-power field
HPV	human papillomavirus
HR	heart rate
hr	hour
HSCT	hematopoietic stem cell transplant
HSM	hepatosplenomegaly
Hx	history
hyperK	hyperkalemia
I:E ratio	inspiratory:expiratory ratio
ICH	intracranial hemorrhage
ICI	intracranial injury
ICP	intracranial pressure
IFN_{γ}	interferon gamma
irreg	irregular
IUD	intrauterine device

IUGR	intrauterine growth restriction
IV	intravenous
IVH	intraventricular hemorrhage
IVIG	intravenous immunoglobulin
JVP	jugular venous pressure
LAD	left-axis deflection
LAD	lymphadenopathy
LARC	long-acting reversible contraceptive
LBBB	left bundle branch block
LBW	low birth weight
LFTs	liver function tests
LLSB	left lower sternal border
LOC	level of consciousness
LR	lactated Ringer's
LTM	long-term monitoring
LUSB	left upper sternal border
LVH	left ventricular hypertrophy
MAOI	monoamine oxidase inhibitor
Mgmt	management
mo	month
MOA	mechanism of action
Mod	moderate
NAC	*N*-acetylcysteine
NADPH	nicotinamide adenine dinucleotide phosphate
NEC	necrotizing enterocolitis
Neuts	neutrophils
Nml/norm	normal
NS	normal saline
OSA	obstructive sleep apnea
PCOS	polycystic ovarian syndrome
PDA	patent ductus arteriosus
pHTN	pulmonary hypertension
Plts	platelets
PMH	past medical history
PO	per oral (by mouth)
PPROM	premature prolonged rupture of membranes
Pts	patients

PTX	pneumothorax
PVL	periventricular leukomalacia
r/o	rule out
RAD	right-axis deviation
RAE	right atrial enlargement
RBBB	right bundle branch block
RD	registered dietitian
resp	respiratory
RF	risk factors
ROM	rupture of membranes
RR	respiratory rate
RVH	right ventricular hypertrophy
SC	subcutaneous
SCFE	slipped capital femoral epiphysis
SDH	social determinants of health
SES	socioeconomic status
Sev	severe
SG	specific gravity
SH	social history
SIADH	syndrome of inappropriate antidiuretic hormone
SIDS	sudden infant death syndrome
SMA	spinal muscular atrophy
Staph	*Staphylococcus*
Strep	*Streptococcus*
SVT	supraventricular tachycardia
Sxs	symptoms
TCAs	tricyclic antidepressants
TG	triglycerides
TR	tricuspid regurgitation
TV	tricuspid valve
Tx	treatment
UOP	urine output
URI	upper respiratory infection
US	ultrasound
VAERS	Vaccine Adverse Event Reporting System
Vfib	ventricular fibrillation
VLBW	very low birth weight
VT	ventricular tachycardia

w/	with
WBC	white blood cell
Wk	week
WPW	Wolff–Parkinson–White
yr	year

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(*Pediatrics.* 2022;149(3):e2021052138)

Age	Gross Motor	Visual Motor/ Problem-Solving	Language	Social/ Adaptive
1 mo	Raises head from prone position	Visually fixes, follows to midline, has tight grasp	Reacts to sound	
2 mo	Holds head in midline, holds head up when on tummy, opens hands briefly	Watches you as you move, looks at toy for several seconds	Makes sounds other than crying, reacts to loud sounds	Recognizes parent, regards face, smiles socially (after being stroked or talked to)
4 mo	Holds head up steady without support, holds a toy if put in hand, brings hands to mouth, pushes up to elbows when on tummy	If hungry opens mouth when sees bottle/breast, looks at hands	Turns head to voice, cooing ("ooo" and "ahhh")	Enjoys looking around, smiles on own, looks to get your attention
6 mo	Rolls from tummy to back, leans on hands to support when sitting	Unilateral reach, uses raking grasp, puts things in mouth	Makes squealing noises, blows "raspberries," takes turns making sounds	Recognizes that someone is a stranger, laughs
9 mo	Sits without support, uses fingers to "rake" food toward themself, moves things from one hand to the other	Looks for objects when dropped out of sight, bangs 2 things together	Makes different sounds like "mamamama" and "babababa," lifts arms to be picked up	Shows several facial expressions (happy, sad, etc), looks when you call name, plays peekaboo, starts exploring environment
12 mo	Pulls up to stand, cruises, drinks from cup without a lid as you hold it, uses pincer grasp	Puts something in a container (ie, block in a cup), looks for things they see you hide	Calls parent "mama" or "dada," waves bye-bye, understands "no"	Plays gesture games (eg, pat-a-cake)
15 mo	Takes a few steps on own, uses fingers to feed themself	Tries to use things the right way (phone, cup, or book), stacks at least 2 small objects like blocks	Tries to say 1–2 words besides mama or dada like "ba" or "da," looks at familiar object when you name it, follows directions	Copies other children, shows affection, claps, hugs stuffed doll or other toy

			follows directions given with both a gesture and words, points	
18 mo	Walks independently, scribbles spontaneously, drinks from cup without lid and sometimes spills, tries to use a spoon, climbs on and off couch	Copies you doing chores, plays with toys in a simple way	Tries to say >3 words besides mama or dada, follows 1-step directions	Copies parent in tasks, points to show you, looks at a few pages in a book, helps you dress them

2 yr	Kicks a ball, runs, walks up a few stairs with or without help, eats with a spoon	Holds something in one hand while using the other hand, tries to use switches/knobs/ buttons, plays with >1 toy at a time	Uses 2-word sentences, points to at least 2 body parts, uses more gestures than just waving and pointing	Notices when others are hurt or upset, looks at your face to see reaction
30 mo	Jumps off ground with both feet, turns doorknobs, takes some clothes off, turns book pages 1 at a time	Pretend play, follows 2-step instructions, knows at least 1 color, stands on small stool to reach for something	~50 words, says >2 words with 1 action word, names things in a book, uses pronouns	Plays next to other children, sometimes plays with them, follows simple routines
3 yr	Strings items together like large beads, puts on some clothes by themself, uses fork	Copies a circle, avoids touching hot objects when warned	Talks with you in conversation using at least 2 back–forth exchanges, asks who/what/when/ where/why questions, says first name, talks well enough for others to understand most of the time	Plays in groups, shares toys, takes turns, plays well w/ others, calms down within 10 min after parent leaves
4 yr	Catches a large ball most of the time, unbuttons some buttons, holds crayon between fingers and thumb (not in a fist)	Names a few colors, draws a person with >3 body parts, tells what comes next in a story	Says song, story, or nursery rhyme from memory, answers simple questions, says sentences with >4 words	Pretends to be something during play, plays cooperatively w/ a group of children, comforts others, avoids danger
5 yr	Buttons some buttons, hops on 1 foot	Counts to 10, uses words about time, pays attention for 5–10 min during activities, writes some letters in their name, names some letters when you point	Answers simple questions about a book/story after you read, keeps conversation going with >3 exchanges, uses or recognizes simple rhymes	Plays competitive games, abides by rules, does simple chores at home, sings, dances, or acts

HEALTHCARE MAINTENANCE

(*Bright Futures Guidelines for Health Supervision of Infants, Children, and Adolescents.* 4th ed. 2017)

Age	Anticipatory Guidance	Screening
Newborn	• Weight gain, feeding • Crib safety (own crib in parents' room, narrow slats w/ sides up, back to bed, no loose bedding) • Rear-facing car seat in back seat • Home safety (smoke detectors, water temp <120° F, no smoking) • Emergency phone numbers, CPR	• Newborn genetic screen • Hearing (if not done in hospital) • Postpartum depression • *Vision, BP (if risk factors/concerns)*
1 mo	• Start supervised "tummy time" • Develop routines, recognizing cues • Calm baby by rocking, talking, swaddling, never shake • Toy safety (caution w/ loops, strings, cords)	• Maternal postpartum depression • *TB (if risk factors)*
2 mo	• Strategies for ↑ fussiness • Plan for return to school/work • Keep small objects, plastic bags out of reach • Always supervise when on high place or in tub	• Verify hearing screening and rescreen if needed
4 mo	• Put to bed when awake but drowsy, can sleep in crib in own room (lower mattress before begins sitting) • Introduce cereal if child is ready • Avoid bottle in bed	• *Anemia (if preterm/LBW, not on iron-fortified formula)*
6 mo	• Support ↑s in language and cognitive development, read aloud • Introduce cereal, single-ingredient *soft* foods if ready, limit juice • Clean teeth w/ washcloth/soft brush & water • Home safety (block stairs, cleaning products, heaters, outlet covers, window guards, weapons locked, avoid infant walkers)	• Oral health risk assessment • *Lead (if risk factors)* • *TB (if risk factors)*

9 mo	• Discipline (+ reinforcement, distraction, limit use of "no") • Anticipate changing sleep pattern • Be aware of new social skills & separation anxiety • Limit or avoid TV, videos, computers • Provide 3 meals, 2–3 snacks/d; ↑ texture & variety of table foods, introduce cup • Water safety (always be w/i arm's length)	• Structured developmental screen • Oral health risk assessment
12 mo	• Discipline (time-out, praise, distraction) • Est. bedtime routine w/ reading, 1 nap/d • Supervise toothbrushing BID w/ fluoride • Encourage self-feeding (avoid small, hard food; choking) • Lock medications, know poison control number	• Anemia, lead
15 mo	• Maintain consistent routine. Present child w/ options, speak in simple clear language. • Avoid bottle in bed • Fire safety (lock matches, lighters)	
18 mo	• Support independence but set limits • Daily playtime, read, sing • Anticipate anxiety in new situations • Toilet training (when dry for 2 hr at a time, knows wet/dry/bowel movement, pulls pants up/down)	• Structured developmental screen • Autism-specific screen
2 yr	• Switch to forward-facing car seat w/ harness[a] • Help child express feelings • Encourage play w/ others • Teach personal hygiene, toilet training • Encourage active but safe play: bike helmet, supervise outdoor play, cross street w/ adult • Switch to fat-free milk[b]	• Autism screen • Lead screen • *Dyslipidemia (if risk factors)*
2.5 yr	• Repeat speech w/ correct grammar • Establish family routine including exercise	• Structured developmental screen

3 yr	• Encourage storytelling, imaginative play • Limit media exposure to <2 hr/d, no TV in bedroom • Move furniture away from windows	• Visual acuity measurement
4 yr	• Consider structured learning programs (preschool, museum trips), encourage reading • Teach safety around adults (abuse prevention) • Answer questions about body parts using appropriate terms	• Visual acuity measurement • Audiometry
5–6 yr	• Discuss school experiences • Eat breakfast; fruits and vegetables • 2 cups low-fat milk/dairy/d • 60 min mod to vigorous physical activity/d • Begin flossing daily • Water safety, swimming lessons • Use safety equipment w/ sports	• Visual acuity measurement • Audiometry (6 yr)
7–8 yr	• Once 4′9″ can stop using booster seat in car, must use lap and shoulder belt • Ask teacher for evaluation if any concerns • Encourage independence • Discuss rules and consequences • Note and discuss early pubertal changes • Supervise computer use	• Vision screen (8 yr) • Audiometry (8 yr)
9–10 yr	• Encourage self-responsibility, assign chores • Know child's friends and ensure adequate supervision, discuss bullying • Puberty, body image • Counsel about sexual activity • Counsel about avoiding tobacco, alcohol, drugs • Limit nonacademic screen time to 2 hr/d	• Snellen test (10 yr) • Audiometry (10 yr) • Universal lipid screening
11–14 yr	• Begin speaking w/ child alone at clinic visits • 3+ serving low-fat milk/dairy/d • Coping w/ stress, mood changes, nonviolent conflict resolution	• Snellen (once during time period) • *STI screening (if sexually active)* • *Substance use*

	• Secure alcohol and prescription medications • 13 yo may sit in front seat of car • Caution w/ drivers using any alcohol/drugs	• *Lipid screening (if abn b/w 9 and 11 yo or new risk factors)*
15–17 yr	• Driving safety: limiting night driving, teen driving, wearing seat belt • Encourage responsibility, community involvement • Violence prevention, sexual activity, substance use	• Snellen (once during time period) • Fasting lipid profile
18–21 yr	• Planning for the future • Continue discussions regarding violence prevention, sexual activity, substance use	• Snellen (once during time period) • Fasting lipids

[a] *Car Safety Seats: A Guide for Families.* AAP; 2012.
[b] *Pediatrics.* 2011;128:S213.

GROWTH & NUTRITION

Principles of Growth & Nutrition (*Bright Futures Guidelines for Health Supervision of Infants, Children, and Adolescents.* 4th ed. 2017)

- Term infants lose up to 10% BW in 1st wk but should regain by 2 wk
- Exclusively breastfed infants gain weight faster than formula-fed infants for the first few months; this slows ~3 mo
- Feeding is recommended 8–12 times a day initially without going <3 hr between feeds
- No free water until 6 mo due to immature kidneys and inability to concentrate
- No cow's milk until 1 yr of age due to risk of iron deficiency. After 1 yr of age, can feed up to a maximum of 24 oz whole cow's milk a day.
- Vitamin D: not in breast milk. Supplement (400 IU daily if breastfed, 200 IU daily if formula fed) until taking >1 L of formula or milk.

- Introduce complementary iron-rich (eg, beans, broccoli, spinach, meats) foods between 4 and 6 mo, otherwise supplement 1 mg/kg/d iron at 4 mo in exclusively breastfed infants

Average Growth & Caloric Requirements

Age	Average Weight Gain (g/d)	Daily Caloric Allowance* (kcal/kg/d)
Birth–3 mo	25–30	115
3–6 mo	20	110
6–9 mo	15	100
9–12 mo	12	100
1–3 yr	8	100
4–6 yr	6	90–100

*Breast milk and standard formula have ~20 kcal/oz.
(Table adapted from *Nelson Textbook of Pediatrics*. 20th ed. 2015)

Breastfeeding (*Pediatrics.* 2012;129(3):e827–e841)

- AAP recommends exclusive breastfeeding until 6 mo followed by breastfeeding in combination with the introduction of complementary foods until at least 12 mo of age. However, many choose to breastfeed for longer.
- Initial colostrum is high in antibodies and provides immunity boost
- Infant benefits: ↓ rates of AOM, GI infections, NEC, SIDS, asthma, eczema, and ↑IQ
- Maternal benefits: ↓ risk of breast/ovarian cancer, weight loss, cost savings
- Contraindications: galactosemia or other metabolic disorders, drug abuse (methadone is ok if on maintenance), VZV lesions on breast, HIV, HTLV 1 or 2, untreated tuberculosis. Hepatitis B and C are NOT contraindications.
- Mastitis and candida infections are NOT contraindications; however, maternal treatment is necessary

Commonly Used Formulas

Class	Brand Names	Carbohydrate Source	Protein Source	Indications
Term formula	Carnation Good Start; Enfamil w/ Iron; Similac w/ Iron	Lactose	Cow's milk	Appropriate for most infants
Preterm formula	Enfamil 24 Premature; Preemie SMA 24; Similac 24 Special Care	Lactose	Cow's milk	<34 wk gestation; weight <1,800 g (3 lb, 15 oz)
Enriched formula	EnfaCare; Similac NeoSure	Lactose	Cow's milk	34–36 wk gestation; weight ≥1,800 g (3 lb, 15 oz)
Soy formula	Enfamil Pro-Sobee; Good Start Soy; Similac Isomil	Corn based	Soy	Congenital lactase deficiency, galactosemia
Lactose-free formula	Enfamil Lactofree; Similac Sensitive	Corn based	Cow's milk	Congenital lactase deficiency, primary lactase deficiency, galactosemia, gastroenteritis in at-risk infants
Hypoallergenic formula	Similac Alimentum; Enfamil Nutramigen; Enfamil Pregestimil	Corn or sucrose	Extensively hydrolyzed	Milk-protein allergy
Nonallergenic formula	EleCare; Neocate; Nutramigen AA	Corn or sucrose	Amino acids	Milk-protein allergy
Anti-reflux formula	Enfamil AR; Similac Sensitive RS	Lactose, thickened w/ rice starch	Cow's milk	Gastroesophageal reflux

AA, arachidonic acid references Nutramigen AA.
(Adapted from *Am Fam Physician*. 2009;79(7):565–570)

GROWTH FALTERING

(*Pediatr Rev.* 2021;42(11):590–603)

Overview

- *Growth faltering* has replaced the term *failure to thrive* to describe the effects of malnutrition, commonly thought of as crossing 2 major percentile lines or having a weight <5th percentile for age
- Most commonly due to caloric insufficiency
- In malnourishment, weight affected first, then height, and then head circ
- Ddx:
  - Inadequate caloric intake: malnourishment can be secondary to food insecurity, incorrect formula prep, feeding difficulties/motor dysfunction, poor breast milk supply
  - Inadequate absorption: milk-protein allergy, biliary atresia/liver disease, IBD, pancreatic insufficiency, necrotizing enterocolitis (NEC)/short gut, celiac disease
  - Excessive energy expenditure: hyperthyroid, growth hormone deficiency, congenital heart disease, chronic lung disease, chronic infection, genetic abnormality, metabolic disease, malignancy, OSA

Workup

- Detailed perinatal, family, and social hx including social determinants of health (SDH) screening and questions regarding cultural food practices. Food diaries to estimate caloric intake.
- Physical exam for dysmorphic features, evidence of neglect, hair/skin changes, tooth decay, organomegaly, cardiac murmur
- Observe the child feeding
- Pre- and post-feed weights to quantify intake
- Confirm results of newborn screen for hypothyroid, cystic fibrosis
- Lab tests are not generally recommended unless a specific etiology is suspected or minimal improvement with nutritional counseling (eg, cultures if infectious etiology/sepsis suspected, lead and CBC w/ MCV if lead poisoning suspected, sweat chloride test if cystic fibrosis suspected, celiac screen if celiac is suspected,

urine tests if renal concerns, HIV, etc). Baseline CBC, iron studies, and electrolytes are often obtained.
- Speech and OT (can assist w/ different bottle nipples, positions, and evaluation of infant's suck and swallow coordination)
- Nutrition, lactation, or GI consult if indicated

Management

- Outpatient: close observation, feed 120 kcal/kg/d × (median weight for age/current weight), encourage structured mealtime, lactation consult, concentrate formula to deliver calories if needed
- Inpatient: indicated when physiologic signs of malnutrition (hypothermia, bradycardia), concern for safety, electrolyte abnormalities, or weight <60% of ideal
  - Initial steps: observe feeding and latch, calorie counts, pre- and post-feed weights in breastfeeding infants (infant in same clothes, no diaper changes, before and after feed to quantify amt of breast milk delivered)
  - Multidisciplinary care including lactation, OT and speech consultation if suck/swallow reflex is uncoordinated or there is a concern for aspiration, SW referral if needed based on SDH screening
  - GI consultation may be necessary if the infant is fed an adequate amount documented during hospitalization but is not gaining weight. In some cases, NG- or G-tube placement may be required to weight restore infant if the above interventions have not been successful.
  - Monitor for refeeding syndrome when nutritionally repleting
  - Evidence for pharmacotherapy is limited; cyproheptadine is one tool to promote weight gain in children

VACCINATIONS

- Up-to-date schedules available at: https://www.cdc.gov/vaccines/schedules/hcp/imz/child-adolescent.html
- Guide for parents: https://www.cdc.gov/vaccines/parents/index.html
- VISs are available at: http://www.cdc.gov/vaccines/pubs/vis/default.htm

Vaccine Safety

- Vaccine Adverse Event Reporting System (VAERS): http://www.vaers.hhs.gov
- Clinically significant events after vaccine admin should be documented in medical record, and VAERS form should be completed

Contraindications (https://www.cdc.gov/vaccines/hcp/acip-recs/general-recs/contraindications.html)

- To any vaccine: anaphylaxis after a previous vaccine dose or component
- Live attenuated vaccines should be administered together or at least 28 d apart
- **MMR:** pregnancy, known severe immunodeficiency; contains trace amt of neomycin
- **IPV:** contains trace amt of streptomycin, neomycin, and polymyxin-B
- **Varicella:** pregnancy, known severe immunodeficiency; contains trace amt of neomycin, precaution if received antibody-containing product w/i 11 mo
- **Rotavirus:** SCID
- **DTap, Tdap:** encephalopathy w/i 7 d of admin of previous dose
  - Defer vaccine in pts w/ progressive neurologic disorder (infantile spasms, uncontrolled epilepsy, encephalopathy) until neurologic status clarified
  - Freq boosters may result in Arthus-like reaction; painful swelling from shoulder to elbow

- **Hepatitis B vaccine:** caution in pts w/ severe yeast allergy, allergic reaction rarely occurs
- **Influenza (live attenuated):** pregnancy, known severe immunodeficiency, certain medical conditions, anaphylactic allergy to eggs
- **Influenza (inactivated):** anaphylactic allergy to eggs
- **Zoster:** suppression of cellular immunity, pregnancy

SUDDEN INFANT DEATH SYNDROME (SIDS)

Definition (*Pediatrics*. 2022;150(1):e2022057990)

- Unexplained death of an infant <1 yo after thorough evaluation (scene investigation, autopsy, clinical review)

Pathophysiology/Proposed Mechanisms

- Multifactorial, triple-risk model is most widely accepted: (1) intrinsic vulnerability, (2) exogenous trigger event, during (3) critical developmental period
- Some infants w/ SIDS have 5-HT transporter gene polymorphism at the ventral medulla → ↓s arousal to hypercarbia/hypoxemia
- Nicotine exposure alters nicotinic acetylcholine receptor expression at brainstem → impairs arousal
- Exogenous stressors, such as positioning

Risk Factors

- Prematurity, LBW, and smoke exposure
- Breastfeeding, use of pacifiers are protective factors

Prevention & Risks

- "Safe Sleep" campaign (formerly Back to Sleep) by AAP recommends putting infants to sleep on back every time until 1 yo

- No pillow, stuffed animals, or soft bedding, only firm flat crib mattress w/ fitted sheet, sleep in parents room close to parent bed on separate surface. If an infant rolls over onto their stomach, it is not necessary to put them again on their back.
- Avoid smoke, nicotine exposure, alcohol, illicit drugs during pregnancy and after birth
- Avoid overheating and ventilate room as needed, as this has been shown to be a risk factor in SIDS

SKULL DEFORMITIES

(*Pediatrics.* 2011;128:136; *Clin Pediatr (Phila).* 2007;46:292)

Principles of Skull Formation & Deformities

- Normally, anterior fontanelle will close at 9–18 mo; posterior fontanelle closes at 2 mo
- Skull deformities usually will worsen in 0- to 4-mo period and stabilize between 4 and 6 mo, improve after 6 mo
- Etiology is a combination of limited or selective head rotation, supine position (↑ w/ "Back to Sleep" campaigns), rapid growth of skull and gravity

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