

Parenting 101 Baby Basics

Michael D. Patrick, Jr., MD, FAAP
Assistant Professor of Pediatrics
The Ohio State University College of Medicine
Nationwide Children's Hospital

Parenting 101: Baby Basics

- **Baby Jobs – eat, grow, pee/poop, sleep**
- **Babies don't come with user manuals**
- **Parents WILL find information**
- **Not all information is evidence-based**
- **Physician Job = provide the BEST information**
- **Keep it practical and understandable**

Introduction

- **Let's embark on a broad survey of baby topics**
 - **Survivor-guide style**
 - **Low tech (no apologies)**
 - **High impact**
 - **The stuff parents want to know**
 - **The stuff they don't teach in medical school**

Feeding: Breast Milk is Best

- **Exclusive nutrient source x first 6 months**
- **Use until age 12 months (or longer)**
- **Free and convenient**
- **Antibodies transfer immunity**
- **Easy-to-Digest Proteins**
- **Lipid mix provides optimal absorption**
- **Minerals bound to digestible proteins**

Breast Feeding Tips

- **Expect Challenges and get help early**
- **La Leche League, breastfeeding consultants**
- **More stimulation = more production**
- **Pump and Store**
- **Store in meal-sized increments**
- **Store in glass or made-for-BM plastic**

Breast Milk Storage Times

- **Room temperature: 6 hours**
- **Insulated cooler with ice packs: 1 day**
- **Refrigerated storage: 1 week**
- **Freezer storage: 6 months**
- **Thaw in fridge or warm water**

Infant Formula

- **Cow milk base – tweaked by formula company**
- **Organic and soy-based options**
- **Sensitive (lactose free)**
- **Hydrolyzed proteins (hypoallergenic)**
- **Thickened with rice starch (GERD)**
- **Added soy fiber (Diarrhea)**

Formula Feeding

- **To start: hours and ounces match up**
 - **1-2 ounces every 1-2 hours**
 - **2-3 ounces every 2-3 hours**
- **Titrate up or down depending on:**
 - **Growth and hydration**
 - **Spit Ups**

Animal Milk

- **No cow or goat milk in first year of life**
- **Poor iron absorption**
- **Protein sensitivity / gut wall inflammation**
- **GI bleeding common**
- **Severe anemia can result**

Baby Food

- **Parents (and grandparents) antsy to start**
- **Good reasons to wait**
 - **Food allergies**
 - **Obesity**
 - **Choking**
- **AAP now recommends starting at 6 months**
- **Child should be developmentally ready**

Baby Food

- **Stage 1 – cereals, fruits, vegetables, meat**
- **Stage 2 – combinations**
- **Stage 2.5 – thicker / textures**
- **Stage 3 – chunks**
- **Stages 4 & 5 – toddlers**

- **Juice – after 6 months, limit to 4 oz per day**

Vitamins & Minerals

- **Formula contains all necessary nutrients**
- **No supplements needed for healthy babies**

- **Nursing moms should maintain good nutrition**
- **Breast milk deficient only in Vitamin D**
- **AAP: give all BF babies Vitamin D 400 IU / day**

Vitamins & Minerals

- **Vegan Diets lack Vitamin B12 (anemia, CNS)**
 - **Supplement mother or baby**
- **Premature babies have fewer iron stores**
 - **Supplement baby**

Fluoride

- **Not necessary during first 6 months**
- **Fluoride IS PRESENT in breast milk**
- **Supplement if local water < 0.3 PPM**
- **Substitute tap water with fluoridated water**
- **Fluoride drops are an option (not ideal)**
- **Well water should be tested if used**
- **Too much fluoride is also a concern (Fluorosis)**

Spit Ups (GERD)

- **Common!**
- **Warning Signs**
 - **Projectile nature, blood, bile**
 - **Poor growth, choking, wheezing**
- **Happy spitters = laundry problem**
- **Treatment – smaller, more frequent feeds**
- **Consider thicker feeds (watch weight!)**
- **H2 blockers, PPIs (if fussy or airway irritation)**
- **Surgical treatment rarely necessary (Nissen)**

Newborn Growth

- **Babies are born with extra fluid on board**
- **Leaves wiggle room for feeding delay**
 - **Latching problems, milk production problems**
- **Acceptable loss = 10% of birth weight**
- **Monitor hydration status**
- **Back to birth weight by age 2 weeks**

First Month Growth Averages

- **Average weight gain = 2/3 ounce per day**
- **Average length gain = 1.5 to 2 inches**
- **Average head circumference gain = 3 cm**

Growth Charts

- **Compare child's growth to known population**
- **"Standard" chart = multi-ethnic Americans**
- **Measure weight, height, head circ, BMI**
- **Reported in % tiles (normal = 5 - 95 % tile)**
- **Allow for snap shots in time**
 - **Is baby maintaining appropriate % tile?**
 - **Consider family growth and ethnic group**

Growth Charts

- **Special well-standardized growth charts**
 - Premature babies
 - Trisomy 21
 - Turner Syndrome
- **Beware of online ethnic growth charts**
 - Out of date
 - Limited sample sizes

Developmental Milestones

- Screen with standardized, validated tool
- Important part of every well-child encounter
- **Denver Developmental Screening Test**
 - Commonly used
 - Gross and fine motor
 - Receptive and expressive language
 - Personal and social skills
 - Results in “Risk Category”
 - Normal, Questionable, Abnormal

Autism Screening

- **AAP and CDC recommends screening at**
 - 18 and 24 months of age
- **Many tools available**
 - Ages and stages questionnaires (ASQ)
 - Communication and symbolic behavior scales (CSBS)
 - Parents' evaluation of developmental status (PEDS)
 - Modified checklist for autism in toddlers (MCHAT)
 - Screening tool for autism in toddlers and young children (STAT)

Developmental Delay

- **Like growth, development occurs with variety**
- **Potential causes of developmental delay**
 - Family pattern (especially if delay is not global)
 - Poor stimulation (young parents, depressed mom)
 - Disease State (Autism, Genetic Syndromes)
- **Outcomes improve with**
 - Early identification
 - Early intervention

Early Intervention

- **Available in all states (federally funded)**
- **Ohio: Help Me Grow (Ohio Dept of Health)**
- **Multidisciplinary**
 - **Social Work, PT, OT, Speech, Dietician**
- **Often effective when stimulation issues are the cause of delay**
- **Persistent delay requires referral to a developmental specialist**

Nationwide Children's Hospital

- **Developmental Resources**
 - **Child Development Center**
 - **Center for Autism Spectrum Disorders**
 - **Multidisciplinary**
 - **Full support of all pediatric specialties**
 - **Genetics Clinic**
 - **Diagnosis and management of genetic disorders**
 - **Genetic counseling**
 - **Pregnancy planning**

Infant Urination

- **Urine production is ONE indicator of hydration**
- **Others**
 - **Weight loss**
 - **Tachycardia**
 - **No tears, dry mouth, cracked lips**
 - **Sunken fontanelle, sunken eyes**
 - **Poor skin turgor, delayed capillary refill**

Infant Urination

- **Normal urine output**
 - **6 or more wet diapers in 24 hours**
 - **Absorbent diapers make determination difficult**
- **Concentrated Urine (baby needs more fluid)**
 - **Small volume with strong odor**
 - **Brick Dust**
 - **Pink / red / orange powdery stain in diaper**
 - **Uric acid crystals**

Infant Stool

- **Wide range of normal consistency**
 - Thin yellow seedy, mustard-like, formed clay
- **Wide range of normal frequency**
 - Several stools per day, 1-2 x per week
- **Volume, consistency, frequency, color, smell**
 - Depend on diet, gut absorption, transit time
 - Mix of bacterial colonization

Concerning Stool

- **Red**
 - Possible blood
 - Confirm with stool guaiac
 - Other possibilities
 - Diet
 - Medications
 - Purple dyes
 - Iron precipitation (cefdinir/Omnicef)

Concerning Stool

- **Black Tarry**
 - Meconium (amniotic fluid ingestion)
 - Iron supplements
 - GI Bleed
- **White / Light Gray**
 - Antacid ingestion
 - Biliary obstruction (especially with jaundice)
- **Greasy**
 - Cystic Fibrosis

Concerning Stool

- **Diarrhea (watery, increased volume)**
 - Viral and bacterial infections
 - Juice intake
 - Lactose intolerance
 - Milk or food allergy

Blood in the Stool

- **Possible causes**
 - Anal fissure
 - Swallowed maternal blood
 - Necrotizing Enterocolitis
 - Food allergy (cow milk protein)
 - Bacterial Infection
 - Salmonella
 - Shigella
 - E Coli O157:H7

Blood in Stool

- **Possible causes**
 - GI Bleed
 - Malrotation with mid-gut volvulus
 - Intussusception
 - Meckel's Diverticulum
 - Inflammatory Bowel Disease
 - Coagulation Disorders

Blood in Stool

- **Considerations**
 - **Degree and duration**
 - **Other symptoms**
 - **Bilious vomiting**
 - **Fever**
 - **Fussiness**
 - **Physical examination**
 - **Anal fissure**
 - **Weight loss**
 - **Tender / distended abdomen**

Blood in Stool

- **Work-up**
 - **Depends on symptoms, history, physical**
 - **Imaging: Plain Films, Upper GI, Ultrasound**
 - **Stool culture**
 - **CBC, Coags**
 - **Formula Change**

Constipation

- **UNLIKELY constipation**
 - 1 or 2 bowel movements/week (as usual pattern)
 - Struggling / straining to have a bowel movement
- **LIKELY constipation**
 - Dramatically fewer bowel movements than before
 - Large, hard stool +/- trace blood on surface
 - Frequently straining > 10 minutes without success
 - Fussy, spitting up more than usual

Constipation Treatment

- **Rectal Stimulation**
- **Glycerin Suppositories**
- **Juice**
 - Apple, Pear, Prune
 - Undigested sugar (sorbitol) increase osmotic load
 - Use full-strength adult juice (processed)
 - Dose: 1 ounce per month of age QD or BID
 - Max dose 4 ounces per serving

Severe / Stubborn Constipation

- **Consider referral to GI specialist**
- **Possible causes**
 - **Hirschprung's Disease**
 - **Spinal Cord Abnormalities**
 - **Spina Bifida**
 - **Tethered Cord**
 - **Hypothyroidism**
 - **Other metabolic disorders**

Normal Infant Sleep

- **Prior to 6 months: anything goes!**
- **By age 6 months**
 - **2/3 of babies wake/cry only 1 night per week**
 - **1/3 of babies wake/cry 6-7 nights per week**
 - **By age 15 months, these wake/cry 2 nights per week**
 - **By age 24 months, these wake/cry 1 night per week**
- **Most infants wake every night**
 - **The difference is self-soothing vs crying**
 - **Self-soothing is an important skill and can be learned**

Cry It Out Method

- **Controversial in the parent world**
 - **Some swear by it**
 - **Some equate it with child abuse**
- **Start at 6 months of age**
 - **Infant should be put to bed AWAKE**
 - **Develop a plan for response to crying**
 - **Stick with the plan!**
 - **Modified “Ferber” Plan**

Cry It Out Method

- **Studies have shown**
 - **Converts wake/criers to self-soothers**
 - **No adverse effect on long-term mental health**

Colic

- **Begins by age 2-3 weeks!**
- **Usually resolves by 4 months of age**
- **Affects 25% of all infants**
- **Usually occurs around the same time each day**
- **Most common: late afternoon / evening**

Colic

- **Description**
 - **Infant seems angry, difficult to console**
 - **Tense belly, drawn up legs, clenched fists**
 - **Cries > 3 hours per day!**
- **Possible Causes**
 - **CNS immaturity**
 - **GI sensitivity**
 - **Recent study: ? improvement with probiotics**

Colic

- **Take home for moms and dads**
 - **Colic is COMMON**
 - **3 + hours of crying each day is frustrating**
 - **Frustration and anger are normal responses**
 - **Put baby in safe place and walk away**
 - **Parents need respite care!**
 - **The end is in site (most cases resolve by 4 months)**

Conclusion

- **Infants don't come with instruction manuals**
- **Bad advice is readily available**
- **Primary care doc MUST remain trusted source**

Resources for Parents

- **PediaCast (www.pediacast.org)**
 - Weekly podcast – radio talk-show format
 - Nationwide Children’s Hospital
 - News parents can use
 - Answers to listener questions
 - Interviews with pediatric experts
- **AAP (www.HealthyChildren.org)**
 - Comprehensive site
 - Up-to-date well-child and disease information
 - Geared toward parents

Parenting 101 Injury Prevention

Dr. Sarah Denny, MD, FAAP
Assistant Clinical Professor, Pediatrics
Nationwide Children’s Hospital

Why Injury?

- **Unintentional injury is the leading cause of death in children and adolescents in the United States**
- **1 child dies from an injury every hour, and every 4 seconds, a child is treated for an injury in an Emergency Department**

Leading Causes Of Unintentional Injury Deaths in Children < 1 year

- **Suffocation**
- **Motor vehicle traffic**
- **Drowning**
- **Burn/Fire**

Infant Suffocation Deaths

Suffocation deaths

- **Sleep related suffocation/asphyxiation**
- **Choking**
- **Strangulation**
- **Other**

Sleep Related Deaths in Infants

- 1. Asphyxiation**
- 2. SIDS**
- 3. Undetermined**

Types of Asphyxiation

- 1. Suffocation by soft bedding**
- 2. Overlay**
- 3. Wedging or entrapment**
- 4. Strangulation**

Suffocation deaths

- 68% are sleep related
- 84% of infant suffocations occur in the first 6 months of life
- Increasing
- Males are at slight increased risk
- Rate of suffocation deaths in African American babies are 165% times that of Caucasian babies

Preventing Suffocation Deaths in Infants



- Back to sleep
- Firm surface
- Room sharing without bed sharing
- Keep soft objects and loose bedding out of the crib

AAP Safe Sleep Recommendations

- Prenatal care
- Avoid smoke exposure
- Avoid drugs and alcohol during pregnancy
- Breastfeed
- Pacifier at nap and bedtime
- Avoid overheating
- Immunize



Image provided courtesy of Kansas Infant Death and SIDS Network

Child Passenger Safety

AAP best-practice recommendation

- **ALL infants and toddlers should ride in a rear-facing car seat until they are 2 year old or until they outgrow their car seat**



Image provided courtesy of Wendy Thomas, Seattle, WA.

AAP best-practice recommendation

- All Children 2 years or older, or those younger than 2 years who have outgrown the rear facing weight or height limit for their CSS should use a forward facing CSS with a harness for as long as possible



AAP best-practice recommendation

- Children who have reached the weight or height limit of their forward-facing CSS should use a belt-positioned booster seat



Booster Seats



AAP best-practice Recommendation

- **When children are old enough and large enough to use the vehicle seat belt alone, they should always use lap-and-shoulder seat belts for optimal protection**

AAP best-practice Recommendation

- All Children Younger than 13 years should be restrained in the rear seat for optimal protection



Free downloadable posters, fact sheet and other campaign materials available at <http://www.safercar.gov/parents/TRS/toolkit.htm>

Image provided courtesy of NHTSA

Installation

- According to the National Highway and Traffic Safety Administration, 3 out of 4 child passenger safety seats are installed incorrectly.
- 20% of all drivers of child passengers do not read any instructions on how to install car seats

5 most common installation mistakes

- Wrong harness slot used
- Harness chest clip too low
- Loose car seat
- Loose harness
- Seat belt placement was wrong



Image from Wikipedia

Drowning

Drowning

- **The majority of infants drown in the home, either in the bathtub or in large buckets**
- **Lapse of supervision is the most common factor in drowning deaths**
- **Bathing seats are not a safety device and infants should not be left unattended in the seat**

Fire/Burn

Fire/Burn

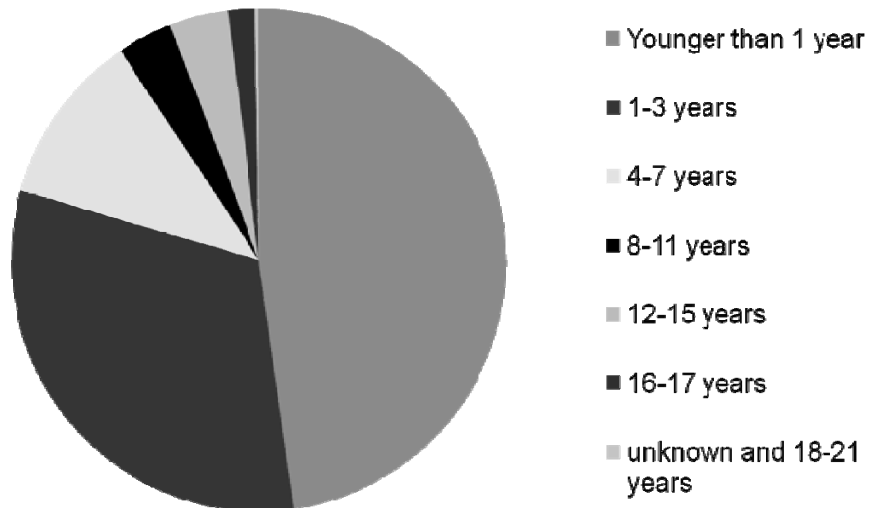
- **Majority of infant burns are due to scalding burns**
 - **Hot water heaters should be set at 120° F**
 - **Check bath water temperature before putting baby in the tub**
 - **Keep hot liquids away from the baby, never hold a hot drink and baby at the same time**
 - **Keep hot liquids and foods away from the edge of the table**
 - **Turn pot handles backward**

Fire/Burn

- **Use outlet covers**
- **Smoke detectors on every level of the house**
- **Use fireplace screens**
- **Keep space heaters at least 3 feet from curtains and other object**
- **Sleep with bedroom doors closed**

Child Abuse in Infancy

Child Abuse and Neglect Fatality Victims by Age, 2010



Shaken Baby Syndrome

- 3-4 children a day
- Parents or their partner
- Exhaustion
- Excessive crying

Prevention

- **It is ok to put a crying baby down in a safe place and take a time out to regroup**
- **Ask for help**
- **Recognize that crying is normal, not a problem**

Soothing techniques

- **Walking**
- **Rocking**
- **Pacifier**
- **Don't overfeed**
- **Rhythmic voice, vacuum, car, white noise, fan**
- **Swaddling**
- **Rubbing baby's back**

References

- CDC Vital Signs, April 2012
- Vital Signs: Unintentional Injury Deaths Among Persons Aged 0–19 Years — United States, 2000–2009. Early Release. 2012 ;61:1-7
- <http://www.cdc.gov/SIDS>
- Wonder.cdc.gov
- Task Force on Sudden Infant Death Syndrome. SIDS and Other Sleep-Related Infant Deaths: Expansion of Recommendations for a Safe Infant Sleeping Environment. *Pediatrics*.2011;128:1030-1039.
- <http://www.sidsks.org>
- American Academy of Pediatrics Committee on Injury, Violence, and Poison Prevention. Technical Report: Child Passenger Safety. *Pediatrics*.2011;127:2011-2015
- Wendy Thomas, Seattle WA
- <http://www.nhtsa.gov>
- Ruth A. Brenner, MD, MPH, American Academy of Pediatrics Committee on Injury, Violence, and Poison Prevention. Prevention of Drowning in Infants, Children and Adolescents. *Pediatrics*.2003;112,2:440 -445
- <http://www.childwelfare.gov>
- CDC. Department of Health and Human Services. A Journalist's Guide to Shaken Baby Syndrome: A Preventable Tragedy.