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HEALTHY CHILD

A COMPLETE PARENT'S GUIDE
FOR AN OPTIMAL PEDIATRIC HEALTH

2nd Edition

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Note: This book is not intended to replace a doctor. Always consult with your pediatrician for advice and/or when your baby might be showing any sign of sickness. Each child is different. The authors are not responsible of any misuse or misinterpretation of any part of the book.

Foreword

Dr. Sandra El Hajj is a gifted health professional, specialized in Preventive Global Health. Such a unique specialty is exceptional in the region. In the era of advanced medical services; disease prevention remains the unsurpassed strategy.

Over the years she enlightened populations about the essential role of prevention for a safe & happier longer healthier life. Her scope of work was at a national and international level both in the U.S.A. and the gulf region. Her most recent achievements include establishing "Global Organization for Preventive Health"; www.globalhealthorganization.com in 2014. This is an international organization operating in Lebanon, Jeddah and USA; its main function includes research, health reforms, health policies, allocation of resources, as well as planning, developing, implementing, and evaluating safety, social development and preventive health awareness campaigns related to disease prevention & health.

The organizing committee of the Elite Pediatric GI Congress; Dubai 2016; invited Dr. El Hajj to be a guest of honor and to write a parent's guide to educate the public about their kids health. Parents will find this book a gold mine to all what they need to know to support the healthy growth of their kids by making the best informed decisions. Sandra has the gift of making complex concepts accessible to the reader, whether they are parents or health care providers. This book will be a valuable gift offered to the parents and doctors attending the Parents' Educational Session in conjunction with medical Congress for the pediatricians.

As a father and a practicing pediatrician I found this book a precious and rich resource for the parents to have a healthy start for their kids.

Dr. Mohammed Miqdady

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Chapter 1

BASICS FOR CHILDCARE AND FEEDING

Pregnancy is one of the most demanding periods in a woman's life. 9 months of combined joy, worry, laughter, excessive care, and prudence comes to an end with the most wonderful rewards of all time: a baby. From the moment you hold your baby in your arms, your bumpy ride to a never-ending worrying road starts. A new ride that makes you in complete charge of the health and well-being of your precious little one! The key to raising a healthy happy child is to start with a healthy newborn.

Breastfeeding.

Just like any success story, you need to have a solid and steady start in order to reach a perfect end result. Breastfeeding your baby is the most precious gift you give this child. While pregnant, make your plans include breastfeeding and shape your whole environment to be able to offer this "magic potion" to your baby. Understand these five facts: 1) there is no such thing called "I have no milk", 2) your breast size has nothing to do with the quantity of milk expressed, 3) the more you breastfeed your baby, the more milk you will produce, 4) as long as you are eating healthy nutritious food and nursing, your milk flow will be more than ok, 5) breastfeeding should start in the first hour after delivery! Breastfeeding should not be a choice but merely a necessity!

Duration of breastfeeding.

Most international health and medical organizations agree on the necessity of exclusive breastfeeding for the first 6 months, which will provide all the necessary nutrients to your baby's optimal growth and health. After this period, breastfeeding should be continued complemented by other kinds of food. There is a controversy as to how long a baby should be breastfed after the first 6 months: the American Pediatrics association advises complemented breastfeeding until at least the age of 1 year, while the World Health Organization encourages its continuation until the age of 2 years.

Why your milk is a “magic potion”.

The mother’s milk starts off being a yellowish sticky substance called “colostrum”. This colostrum usually worries most mothers.

Colostrum is the first form of human milk that precedes the commonly known white milk. It is more packed with carbohydrates, fat, vitamins, minerals, antibodies, immune factors, enzymes and white blood cells. These work on boosting the immune system of your newborn and help fighting viruses and bacteria.

For example, in case a mother catches a cold while breastfeeding. Her body will form antibodies to help fight off the infection. Both the cold virus and the mother’s antibodies will be passed on to the baby through the milk. This will ensure a quick recovery for the baby in case he caught the cold or even a total protection preventing the child from getting sick at all.

A breastfed child is more protected from otitis infections, gastroenteritis, respiratory illnesses, sudden infant death syndrome, necrotizing enterocolitis, obesity, and hypertension. Also, studies showed that exclusive breastfeeding for at least 4 months can delay and even prevent the occurrence of atopic dermatitis, cow milk allergy, urinary tract infections and wheezing.

Breastfeeding offers protection to the mother as well as it reduces the risk of breast and ovarian cancer, type-2 diabetes and post-partum depression.

Breastfeeding and a clever child.

A large study, done on 17 046 healthy breastfeeding infants, showed that an exclusive and prolonged (up to 12 months) duration of breastfeeding can improve the child's cognitive development. Breastfed children tend to have higher IQ's than non-breastfed ones

Breastfeeding and Jaundice

Jaundice is when your baby's skin and eye white turn yellowish. If your baby is breastfeeding and had this condition for a week after birth, then it is most probably what is called "breast milk jaundice". About 1/3 of breastfed babies develop jaundice and it is equally found in boys and girls. Jaundice is when the bilirubin pigment is not well broken down by the liver to be excreted in the stool.

Breast milk jaundice happens when the mother's milk either lets the baby absorb some of the bilirubin in the intestines, or prevents the liver from functioning normally in breaking down this pigment. Keep a close follow-up on your baby to make sure that breast milk jaundice is resolving on its own. Keep breastfeeding your child & consult his pediatrician. Most of the time, no treatment is needed, but if the levels are very high, the baby might be placed under special blue lights. This is called phototherapy.

Growth and your baby

Your baby's first year is always highlighted by fast growth. By the time your baby is 6 months old; his weight would probably reach the double of his birthweight.

It is very essential to keep monitoring the normal growth of your child in terms of weight, height, head circumference and BMI. These need to be monitored by his pediatrician at every visit to ensure that your child is healthy and growing at a normal rate. At every visit, your child's pediatrician will fill in the current measurements using a graph that is internationally adopted, which will help keep tract of the growth of the baby. Boys and girls have different charts. Starting the age of 2 years, the baby's BMI will start being taken into consideration to detect any sign of underweight, overweight or obesity.

Birthmarks.

Birthmarks are very common skin patches that appear during the first weeks of your baby's life. These come in many colors, shapes and textures. They may look large on a baby's size but eventually will fade and become barely noticeable as your child grows. Most birthmarks need no treatment and are harmless. These are the most common marks.

1- ***Strawberry hemangioma***: they are soft, red colored raised birthmarks. They happen when a group of immature veins and capillaries break away from the baby's circulatory system during his fetal development. They are mostly common among white babies.
2- ***Salmon patch***: these are light pink patches that appear on the baby's forehead, eyelid or back of the neck. They usually fade away by age 2 yrs.
3- ***Mongolian Spots***: these are blue greyish marks that look like bruises and appear on the buttocks, back, legs or shoulders of a dark skinned child. These are not common in Mediterranean children.
4- ***Port-wine stain***: they are purple red marks that appear everywhere on the body. They do not usually fade with time.
5- ***Café-au-lait spots***: these are flat small patches that are darker than the baby's overall skin. They range in color from light to dark brown and

increase in size with age. If your baby has 6 or more of these patches, ask his pediatrician to check them out.

6- ***Congenital pigmented nevi***: these are moles that come in different sizes and can be hairy. Small ones are more common than larger ones. These can be risky in the future and should be followed up by your child's pediatrician.

Sleeping Positions & Safety.

The American Academy of Pediatrics recommends that your baby sleeps on his back and considers it the safest way to prevent sudden infant death syndrome SIDS, which is the main cause of newborn deaths in the United States. This position is recommended at least for the first 6 months of age. Putting your baby on the side is another safe sleeping position for your baby as long as you can see his face at all times. Make sure to empty the bed from anything that might cause a blockage in the breathing airways of your baby such as pillows, quilts, comforters, and plush toys. The best way is for your baby to sleep on a firm mattress covered by a sheet. Avoid waterbeds or sofas that might be fluffy. Pacifiers may help reduce the risks of SIDS, but don't force your baby to take it if he does not want it. The temperature of your baby's bedroom needs to be comfortable. Keep your baby away from

Bathing your baby.

Bathing your baby and picking the right bath products for him are of high importance. Please do not attempt to soak your baby in water mixed with coarse salt. It will irritate your his skin. When picking the shampoo, look for a no-tears product. Bathing can be in a baby tub or sponging on a towel. It depends on how comfortable you are in handling your baby. If you are picking the tub, make sure your arm is stretched around his shoulder and holding firmly his arm (from the opposite side) in a ring. The other hand will be used to apply the soap. There are so many foam or plastic seats to help. After his bath, dry off the water very well and apply a dash of baby oil, massaging it on the entire body. Massages are very important for babies as they help a good flow of blood and a relaxed set of muscles. A study done in England showed that babies who have been receiving regular body massages were more relaxed, cried less, had lower stress

hormones and were more likely to have a better sleep pattern (due to the release of melatonin hormone).

Burping Baby.

It is essential to burp your baby after each feeding, especially when he starts bottle feeding. Sometimes, it might take your child more time than others. Be patient! As soon as your baby starts crawling and moving, he will be able to release gastric gas on his own. The best position that helps your baby burp is the one that puts some pressure on his stomach. For example, try to hold your baby up on your shoulder and patting him gently on his back. Another way would be to lay your baby flat on his stomach across your legs and gently pat his back.

Colic Baby.

A “colic” baby is a child who is healthy and well fed but experiences repeated scenes of excessive crying that is due to stomach pain caused by gases. These episodes are normal as long as they occur no longer than 3 hours per day, 3 days per week, and for a period of about 3 weeks. During these episodes, the baby might clench his hands and curls his toes while bringing his legs towards his abdominal area.

You can try to prevent these episodes by decreasing the amount of caffeine in your diet if you are still breastfeeding, holding your child upright when feeding him to prevent him from swallowing air while eating, and trying to burp him several times during a feeding. In general, breastfed babies do not experience colic attacks. In case your baby had this kind of crying episodes, you can try

soothing him by carrying him or doing motion vibration. You can also place your baby on his belly and try gently rubbing his back or expose him to white noise.

Several researches were made to understand the many ways that could treat a colic baby, whether a massage or a crib vibrator would work out better. The results were the same in terms of soothing the crying baby.

Colic will take its course naturally and disappears on its own after about 6 weeks. So, a treatment is normally not recommended. You need to keep in mind that the best way to soothe a crying a baby would be to stop transferring him between friends and relatives. Your baby needs to feel secure; and the best way to offer it to him would be to carry him so he can smell you. Hold him by placing his head over your heart area. There is nothing more comforting for a baby than to hear the heartbeats of his mother and smell her.

Teething.

Teething starts at the age of 6 months and can continue until the age of 3 years when your baby will have his 20 primary teeth. Your baby becomes fussier when he is teething and possibly drool; which might cause chin, face and chest rashes. There is nothing to worry about as long as the symptoms are mild and lasts only few days before the tooth appears. To help your baby, you can give him a cold teething ring or rub his gum gently with a clean finger for couple of minutes several times a day.

Breastfeeding and drugs interaction.

The moment you know you are pregnant, you start writing the list of precautions and restrictions to keep your pregnancy safe and going well. When you deliver your baby, you carry on with these precautions that start turning into short-term habits, especially if you are breastfeeding. It is true that you need to watch your

daily food intake to make sure you are not eating items that might end up reaching your baby's system through your milk and causing him discomfort. Now the real concern is when you face the need to take a certain medicine. Your best deal is to stay away from sick people. Take your precautions at any time: wash your hands regularly, sanitize them using alcohol-based hand gels, don't touch your face with unwashed hands. Eventhough some medicines might be considered safe, your best option is to opt from taking any. If you suffer from a chronic illness, they need to check with your doctor as to what is the best treatment plan that might have the least effect or no effect at all on your child.

Stool changes

Parenthood is one long road filled with upsurging surprises. Among the many intriguing faces is the analysis parents do of their baby's stool to understand whether the baby is feeding well and/or suffer from any gastric problem. I am sure no one can hide the surprising and fearful face parents have when checking the first passed stool of their first newborn. This is what is called meconium. Meconium is a black tar-like stool that is very sticky. It is what your baby will pass the first few days while he is emptying his intestines from what he has been exposed to in your uterus. Meconium passing indicates a good and healthy bowel movement. The transitional stool is a greenish yellowish grainy stool that appears around the 4^{th} day of life. The yellow stool (mustard color) starts appearing around day 5 or 6 and is what is called "the normal milk of a breastfed baby".

When your baby passes a stool that has mucous in it, it is a sign of a virus or stomach flu. Consult your pediatrician about what needs to be done. When your baby passes a hard pellet-like stool, he might be having constipation and if the stool is very lose, greener than usual and watery; then it is diarrhea.

Your baby is ready for solids.

Complementary feeding should start at the age of 6 months. This is when the mother's milk is not enough to provide the full nourishment needed for the baby. The period between 6 and 23 months in a baby's life is usually critical and that's when nutritional deficiencies, growth problems and infectious illnesses

start peaking. Complementary food should be highly nutritious, given at the right age and in the proper way, and safe.

Your child is ready to get introduced to solids if he can sit up and hold his head and neck up well, can hold the food in his mouth instead of just drooling it all over, he knows that he is hungry when he feels it, and shows interest to the food you are eating or is around him.

Introducing solids.

Now that your baby's digestive system can handle food other than the milk, a new era unfolds. The most preferred first baby food would be a single grain such as rice, oat or wheat. These are usually fortified in iron and are added to the milk or to a little bit of water. They boost your baby's iron intake. You need to start adding it gradually for your baby to start gradually getting used to a thicker liquid. Start by adding 1 small spoon then increase the quantity with time.

In parallel, you can start your baby on single food cooked and pureed fruits and vegetables in whatever order you wish. Don't add sugar or salt. Wait 3 to 4 days between each new food item to make sure that your baby has no allergic reaction towards it and to give him time to get used to its taste. These include carrots, peas, corn, squash, pears, sweet potatoes, apples… Check below for more details.

Fruits: around 6 months (apples, banana, pears, avocadoes), 6-8 months (apricots, nectarines, mango, peach, plums, prunes, pumpkin), 8-10 months (cantaloupe, blueberries, cherries, coconut, figs, grapes, kiwi) and 12 months (strawberries & citrus).

Vegetables: around 6 months (green beans, sweet potatoes, squash), 6-8 months (carrots, peas, zucchini), 8-10 months (asparagus, broccoli, cauliflower,

cucumbers, eggplants, onions, white potatoes), 10-12 months (dried beans, lentil, spinach, tomatoes).

Meats & proteins: 6-8 months (chicken, turkey), 8-10 months (beef, eggs, pork), 10-12 months (fish).

Milk after Breastfeeding.

Despite what most people think, a child should not start taking regular cow's milk once weaned. Your child has special nutritional needs that should be met. Only a proper powdered baby formula would provide these nutrients in the amount needed. As a matter of fact, some of these formulas are packed with the same nutrients found in a mother's milk, making them the next best option for your child. When buying your formula, always check for the expiration date, and don't buy a dented or damaged container. Children must receive all their nutritional needs from what they ingest.

Vitamins & Minerals. Among the many nutrients necessary for a proper healthy child growth, there are the vitamins A, C, D, E, K, niacin and thiamin; the calcium, zinc, and iron minerals; and choline. All these work to ensure an optimal bone, brain and visual development for your child.

- **Vitamin A** is an antioxidant that helps vision, reproduction, bone growth, cell functions and the immune system
- **Vitamin C** is an antioxidant that promotes healing and helps a better absorption of Iron. It is good for the bones, the skin and the connective tissues.
- **Vitamin D** plays a role in maintaining a healthy nervous, muscular and immune system. It helps the body absorbs Calcium.
- **Vitamin E** is an antioxidant that helps boosting the immune and metabolic system.
- **Vitamin K** helps the body make a certain protein that is needed for healthy bones and tissues as well as proper blood clotting following a bleeding.

- **Niacin, Folic acid** and **thiamin** are B-vitamins that help the body generate energy from the food that is being ingested. Folic Acid helps the body make new healthy cells.
- **Calcium** is the essential mineral for bone growth. A high calcium diet inhibits the accumulation of fat leading to overweight and obese children.
- **Zinc** helps the proper functioning of the immune and digestive system. It helps regulate stress and acne. Zinc helps children have a proper growth and prevent acute diarrhea.
- **Iron** is an essential mineral that helps producing red blood cells responsible of carrying oxygen to the entire organs. It is an essential element for the proper functioning of the human body.
- **Choline** is a vital element for proper brain development as well as a healthy liver function.

Probiotics. These are live bacteria and yeast that work on improving your child's digestive system. Eventhough most people think that bacteria is a disease causing agent, some of them are found in our bodies and help us stay healthy. Their role is to replace the lost amount of good bacteria, decrease the amount of bad bacteria that makes us ill, and create an internal balance for our digestive system. So, when trying to settle for your child's formula, look for these components. There are several kinds with different roles:

1) ***Lactobacillu***s helps regulating diarrhea and facilitate the digestion of milk, especially for people who are lactose intolerant (who cannot digest the sugar found naturally in the milk).
2) ***Bifidobacterium*** helps calming down the symptoms of irritable bowel syndrome.

Probiotics have several health benefits: 1) maintaining optimal health, 2) provides a natural defense for the body, 3) helps the body produce vitamins, 4) support healthy digestion, 5) decrease the number of microbes in the mouth that can cause dental caries, 6) reduces the development of allergies in children A study done on healthy Japanese children showed that those who were drinking a follow-up formula containing probiotics had better mucosal resistance against gastrointestinal infections.

L.reuteri is a kind of probiotics that has been under the radar for a while now. A study done on children in daycares showed that those who drank formula containing *L. reuteri* had shorter and less frequent diarrhea episodes in the absence of any respiratory illness. Children were found to have less sick days.

Another study showed that drinking formula containing *L.reuteri* helps colonizing the gut with this bacterium that aids boosting children's resistance to infectious diseases, improving the iron levels, and protecting them from nutritional deficiencies .

Prebiotics. **Prebiotics and probiotics work together synergistically. Even if you take a large amount of probiotics, it will not help your body unless you provide the prebiotics as well.**

DHA/ARA. Docosahexaenoic acid and arachidonic acid are 2 important ingredients found in some kinds of your child's formulas. They are what we call the effective kind of fat that is usually found in fish oils and eggs, which helps the proper development of your child's brain and nervous system. Some studies found that when you child drinks his formula that has these 2 ingredients; he will have a better cognitive and visual development.

Growing up milk.

Different ages have different Nutritional needs. Babies less than 1 year old should be exclusively breastfed until 6 months and thereafter as a complementation to solids introduction. When your child turns one, his needs cannot be satisfied cow's milk alone. Specialized growing up milk is needed to support his growth, development and strengthen his immunity. Growing up milk will help him to achieve most of his daily needs as he starts joining the family meals. The nutrients content of Growing Up Milk product

are available on Nutritional Information table on the pack, check to see if it contains:

- **Essential Vitamins and Minerals, including iron to prevent iron deficiency anemia and zinc for his brain development**

- **Omega 6. Omega 3 for brain development**

- **Probiotic and prebiotics whose benefits were mentioned in previous pages**

Vaccination.

Vaccines are designed to be given routinely during well-child care visits. They are extraordinarily safe. Vaccines are a safe and effective way to prevent serious diseases.

***Vaccines are very effective*:** With the vaccine programs initiated before 1980, diseases like: Diphtheria, Measles, Mumps, Pertussis, Poliomyelitis, Rubella, with the congenital rubella syndrome, and the tetanus disappeared. With the vaccine programs initiated after 1980 , diseases like Hepatitis, A Hepatitis B. Hib invasive, Pneumo invasive and varicella decreased significantly. For every dollar spent, vaccine programs saved much more in direct medical cost and in societal costs.

Vaccines are very safe: Safety testing begins as soon as a new vaccine is contemplated, continues until it is approved by the FDA, and is monitored indefinitely after licensure.

- Vaccination during infancy has no adverse effect on long –term neuropsychological outcome
- There is no increased risk of febrile seizures within 6 weeks of vaccination
- No data support the hypothesis that MMR would cause pervasive developmental disorder or inflammatory bowel disease.
- Data do not support a causal association between MMR vaccine and Autism.
- There is no association between MMR vaccination and autism or the "new variant" form of autism with developmental regression and bowel problems.
- Data do not support a correlation between thimerosal - containing vaccines (Mercury Compound) and the incidence of autism.The IOM's Committee on immunization safety review rejects a causal relationship between the MMR thimerosal – containing vaccines and autism.

Smoking Parents.

Smoking has long been researched and studied. All results indicated that the only outcome of this bad habit is sickness and deterioration of the human body. Whether you are a smoker or being exposed to it as a second-hand smoker, the

outcome is equally negative. It is the responsibility of each non-smoking person to keep his health safe by staying away from those who smoke.

From another angle, if you are a hookah (chicha) smoker, don't fool and convince yourself that it is a non-harmful way of socializing and unwinding! Arguileh or chicha smoking delivers the same addictive nicotine drug found in cigarettes. As a matter of fact, the way you smoke the arguileh makes you absorb more toxins and in a deeper way than when smoking a cigarette. When you heat the tobacco from the charcoal, it produces a smoke high in Carbon monoxide, metals and other chemicals leading to cancer. **A study showed that a 1 hour chicha session makes its user inhale about 90,000 ml of smoke while 1 cigarette lets him inhale 500-600 ml. Also, the smoke produced by the chicha has a bigger hazardous impact on the people sitting around its smoker. So, in other words, you are putting yourself and your entourage at very high health risks every time you enjoy an arguileh!**

According to the center for disease prevention and control, second hand smoke delivers more than 7,000 chemicals to the individual, hundreds of which are toxic and about 70 are carcinogenic.

Smoking has a deep impact on babies and infants. Studies showed that kids of smoking parents are at much higher risk of:

- Developing sicknesses like bronchitis and pneumonia
- Having less-grown lungs than children not exposed to second-hand smoking
- Having recurrent wheezing and coughing episodes
- Severe asthma attacks that might pose a life threat on the child
- Developing ear infections
- Dying if exposed to smoking during the first few months

How can you protect your child? 1)do not smoke in the house, 2)do not smoke in the car and even if the window is open, 3)do not let anyone smoke in your house or your car, 4) do not go to restaurants that allow smoking, 5) watch out for non-smoking areas in restaurant as they do not offer protection against second hand smoking.

Chapter 2

GASTROINTESTINAL PROBLEMS

From the moment your child is born, you start understanding that his health is your responsibility. From growth spurts to sicknesses, your main goal is to make sure you are giving him the right attention and trying to prevent the occurrence of anything that might harm his health. One of the main problems facing your child during his first few months is gastrointestinal issues that create a disruptive chaos for few days, leaving you all worried and stressed out!

Delivery method & gut health

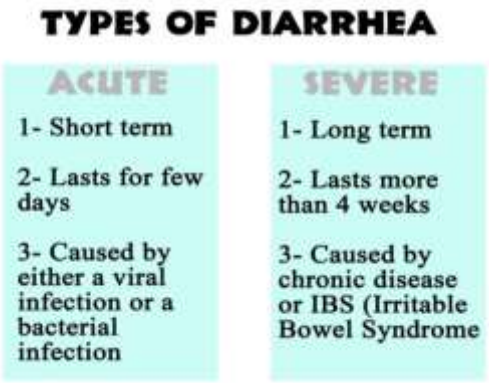
We are entering a new era in childbirth where C-section delivery (CD) is becoming the most demanded delivery option due to personal preferences and esthetic reasons. While CD might be the only way for some women due to obstetrical reasons, other women who resort to it voluntarily need to understand its risks on the baby. A large study explained that babies delivered by CD had a higher risk of neonatal depression and fetal injuries due to the incorporation of anesthesia and accompanying a poor delivery technique. From another angle, CD babies had higher risks of undergoing respiratory distress, breastfeeding complications, developing auto-immune diseases such as type-1 diabetes and allergic diseases such as asthma and allergic rhinitis. More researches are needed to explain the direct link.

Also, babies born to CD were more prone to develop celiac disease and get hospitalized of gastroenteritis. A study showed that babies born through vaginal delivery were exposed to the mothers' flora, which started up the growth of

their own healthy gut. One of the major microbes they were exposed to is the *Lactobacillus*. On the other hand, babies born to CD were starting up their gut colonies from bacteria they were exposed to from the skin of their mother and the hospital.

Diarrhea

Diarrhea is a very common issue faced by children all over the world. It's when your child passes watery and loose stool frequently. Diarrhea is when your breastfed baby passes frequent watery stool per day starting off with 1 watery stool after each meal and reaching 4 watery stools per day among other normal stools. Diarrhea can lead to dehydration if severe and stretches over a relatively prolonged time. Diarrhea in children, most often, causes weight loss and can be associated with anorexia, fever, vomiting, abdominal pain and fever.



C*auses of diarrhea.* These are numerous and include:

1- Viral Infection
2- Bacterial Infection
3- Food allergy
4- Food Intolerance
5- Parasites
6- Medications
7- Inflammatory Bowel Syndrome (IBS)

While most kinds of diarrhea resolve on their own (like viral diarrhea), some others might indicate a more serious condition that needs to be addressed immediately. Consult your pediatrician at any time especially if your baby is younger than 6 months of age. Some of the warning signs of severe diarrhea are high fever, sticky dry mouth, bloody stool, abdominal pain, vomiting, fatigue, sleepiness, and depressed soft spot on your baby's forehead.

It is always recommended, when your baby has severe diarrhea, to perform a urine and stool test and culture to identify the possibility of a bacterial infection.

Viral Infection. It happens when the child gets exposed to a virus like an adenovirus or a rotavirus. Symptoms include a short-term diarrhea of less than 5 days with no blood in the stool, possible fever and vomiting. Diarrhea, caused by a viral infection, is usually seasonal and most of time occurs due contact with an infected person. It is usually diagnosed clinically by your child's pediatrician.

Bacterial Infection. It occurs when the child gets exposed to bacteria through a direct contact with an infected animal, food, or infected individual. These bacteria can be *Escherichia coli*, *ampylobacter* sp, *Salmonella* sp, *Shigella* sp, *Yersinia enterocolitica.* The major bacterial infections' symptoms include fever, abdominal pain and bloody stool. A stool test & culture are needed to identify the microorganism and chose the best treatment plan.

Parasites. Diarrhea caused by a parasite is usually the result of traveling and using contaminated water. Its symptoms range from cramping and abdominal

pain to foul-smelling stools and anorexia. A microscopic test is needed to identify the presence of the parasite.

Food Allergy vs. Food Intolerance. Food Allergy is when your child gets exposed to a certain kind of food that might cause urticarial rash, lip swelling, abdominal pain, vomiting and difficulty in breathing minutes to hours after exposure. Food allergy can cause death if untreated. Food Intolerance is when your child gets nausea, vomiting, abdominal pain and diarrhea after eating a certain food. Food intolerance can be annoying but it does not pose a life risk on your child. A food intolerance or allergy test can be performed.

Treatment of diarrhea. When your child has diarrhea, you need to focus on the necessity to replace the lost fluids and prevent dehydration from occurring. Only when a bacterial infection is detected that antibiotics will be prescribed. If your baby is still breastfeeding, then continue to do so: your milk constitutes the best treatment there is. Incorporating a large amount of plain water to a child suffering from diarrhea is not recommended. At these instances, an ORAL REHYDRATION SOLUTION should be administered. ORS is a widely used treatment that can be bought without a prescription.

***Getting the best diagnosis*.** For your child's pediatrician to have the best diagnosis as to what can be causing your child's diarrhea, he would need to get clear answers from the parents regarding the following:

1- **When did diarrhea start and how often is your child passing stool?**
2- **What is the normal pattern for your baby's stool?**
3- **Is the stool loose continuously or have normal stool in between?**
4- **Is there blood or mucous in the stool?**
5- **Was your child overfed or has he been eating a lot of diuretic items (this factor depends on the age of the child since breastfeeding should be exclusive till age 6 months)?**
6- **What is the consistency and volume of the stool?**
7- **Does the stool have a terrible foul smell?**
8- **Is diarrhea accompanied by vomiting or fever?**
9- **Is your child drinking well and urinating normally?**
10- **Was the child in a different country or goes to daycare with another similar incidence?**
11- **Did the child start on a new medication (like an antibiotic)?**

FOOD POISONING

What is it? It is a disease happening in both developing and developed countries. It is characterized by a prolonged diarrhea.

How to diagnose it? A stool test and culture are needed.

How is it transferred? It can be contracted from eating a contaminated food such as: poultry, meat, seafood that got in contact with bacteria during processing. It can also come from contaminated water that is used for daily purposes such as washing fruits and vegetables. A child can also contract it due to improper handling of food and practicing poor sanitation during food processing and preparation.

What bacteria cause it? *Campylobacter jejuni, E. coli, Salmonella, Shigella, Staphylococcus, Yersinia.*

What are the symptoms? Diarrhea, abdominal pain and cramps, bloody stool, loss of appetite & vomiting, fever.

According to the answers, the doctor will tell you whether some testing needs to be done or it is a simple viral diarrhea that will resolve on its own. Please, keep in mind that whatever the cause of diarrhea is, your child has to stay hydrated at all time!

Constipation.

Among the numerous recurrent issues facing children is constipation. Constipation is defined as to when your child passes stool incompletely, painfully and unfrequently. Constipation has several reasons and is a challenging problem facing parents and healthcare givers. Pediatric constipation causes:

- Mild to severe abdominal pain,
- Loss of appetite
- Lowered self-esteem,
- Social isolation
- Family disruption.

Diagnosis. In order to have a proper diagnosis of constipation, you have to follow the Rome III pediatric criteria that state the following: A child having constipation has to have 2 or more of the following:

1. Recurrent passing of stool that tends to block the toilet due to its large diameter
2. Always having the feeling of full large intestines
3. Recurrent painful bowel movements
4. One or more fecal incontinence per week
5. Passing stool 1 or 2 times per week

During childhood, a baby has a tendency to develop constipation at the time when the parents want to toilet train him and during the first period of school. Parents need to understand that potty training is a very delicate stage in a child's life and takes time. Each child gets rid of his diapers on his own terms and when he is ready. Talk to your pediatrician about effective ways to potty train your child without pressuring or traumatizing him.

Other symptoms of constipation may include the following:

- Abdominal pain
- Little appetite
- Nausea\Vomiting
- Urinary incontinence
- Bed-wetting
- Urinary Tract Infections that keep recurring.

Types of constipation. Part of the physiological changes that happen in a child's life are intestinal ones where your little one, who used to pass stool more than twice a day when he was 1 year old and younger, starts doing it about once a day by age 2-3 yrs. When its frequency is less than that, your child might be constipated. Constipation can be either somatic of psychological.

Somatic constipation might mean that your child needs medical attention. It might be linked to Hirschsprung's disease (when your newborn doesn't pass the meconium the first 48 hrs. of life), congenital anorectal malformation, metabolic causes (diabetes mellitus, hypothyroidism…) and neurologic disorders, among many others. It is very rare and happens in less than 5% of children.

Psychological constipation is the predominant form of constipation for children and causes 95% of cases. When the child eats, his food is digested and nutrients absorbed. The 'leftovers' go down towards the anal in order for be let out from the body. When the food reaches the mucosa lower level of the rectum, that's when a child feels the urge to defecate. The anus has two sphincters: one internal which is involuntary, and the other is external and is under voluntary control. When the child refuses to defecate, he tightens the external sphincter

and pushes the feces further in, dissipating the urge of passing stool. With time and with repeated tightening of the external sphincter, the rectum starts to enlarge and it loses its strength to push out the fecal material.

Common Causes of constipation. Many reasons can lead to psychological constipation including:

1- Avoiding going to the bathroom for kids above 2 years. They might be caught off playing or feel that they do not want to lose a lot of time.
2- Lack of privacy in schools and daycare centers.
3- The child might feel that the bathroom is not clean enough and refuse to use it.
4- They might have experienced a painful defecation and feel scared from going through the same pain another time.
5- Dietary changes.
6- Shifting between formulas.
7- Eating a lot of sugar and sweets.
8- Having another illness that could have required the child of staying in bed or got him dehydrated.

Prevent constipation. Parents play a major role in preventing constipation when they keep following up their children's bowel movement even after they are toilet trained. Parents need to follow these rules:

1- Set up regular toilet habits for their kids especially in the morning or after a meal.
2- Keep encouraging their children (verbally or by rewarding them) everytime they succeed in defecating.
3- Keep your children on a high fiber diet.
4- Give your child a lot of juices especially prunes juice if he is more likely to have hard stool.
5- Increase the amount of fruits and vegetables.
6- Decrease the amount of sweets and desserts.

Chapter 3

Acid Reflux & GERD

In the pediatric world, GERD, gastroesophageal reflux disease, refers to a condition where the child has an immature and non-properly functioning lower esophageal sphincter whereas the stomach empties some of its content into the esophagus and sometimes reaching the mouth. Parents need to understand that not every child who spits up a little amount of milk has GERD. A baby who has reflux does not necessarily suffer from GERD. There is a big difference between the two. While the acid reflux can be a normal phenomenon, GERD is a medical condition that requires attention.

Symptoms.

The symptoms of GERD are caused by the failure of the baby/child to gain weight as he should, and the continuous exposure of the esophagus to the contents of the stomach. Children suffering from GERD develop the following symptoms:

- Irritability and crying before and after eating
- Sleep disturbances and possible sleep apnea
- Suppressed appetite leading to some weight loss due to difficulty in eating caused by choking and gaggling
- Frequent Vomiting
- Wheezing
- Abdominal pain & Gases
- Breathing problems
- Chest pain
- Pneumonitis that happens several times
- Chronic cough
- Laryngitis

GERD is usually diagnosed by clinical examination of these symptoms that are explained by the parents. Older children might suffer from GERD due to obesity, overweight, some medications, constipation, some kinds of food or drinks.

Treatment of Acid Reflux.

You, as a parent, can take several measures to help your baby and child who suffer from gastroesophageal reflux. These measures include:

- Keeping your baby/child's head elevated when sleeping.
- Keep your baby/child in an upright position for about half an hour (for babies) to 2 hours (for children) after every feeding.
- Depending on the age of your child, make his formula thickened by cereal powder.
- Feed your child several small meals per day instead of 3 large ones.
- Keep tract of the food items that might worsen your child's reflux.

The only way a medication might be prescribed by your doctor is when the condition is very severe.

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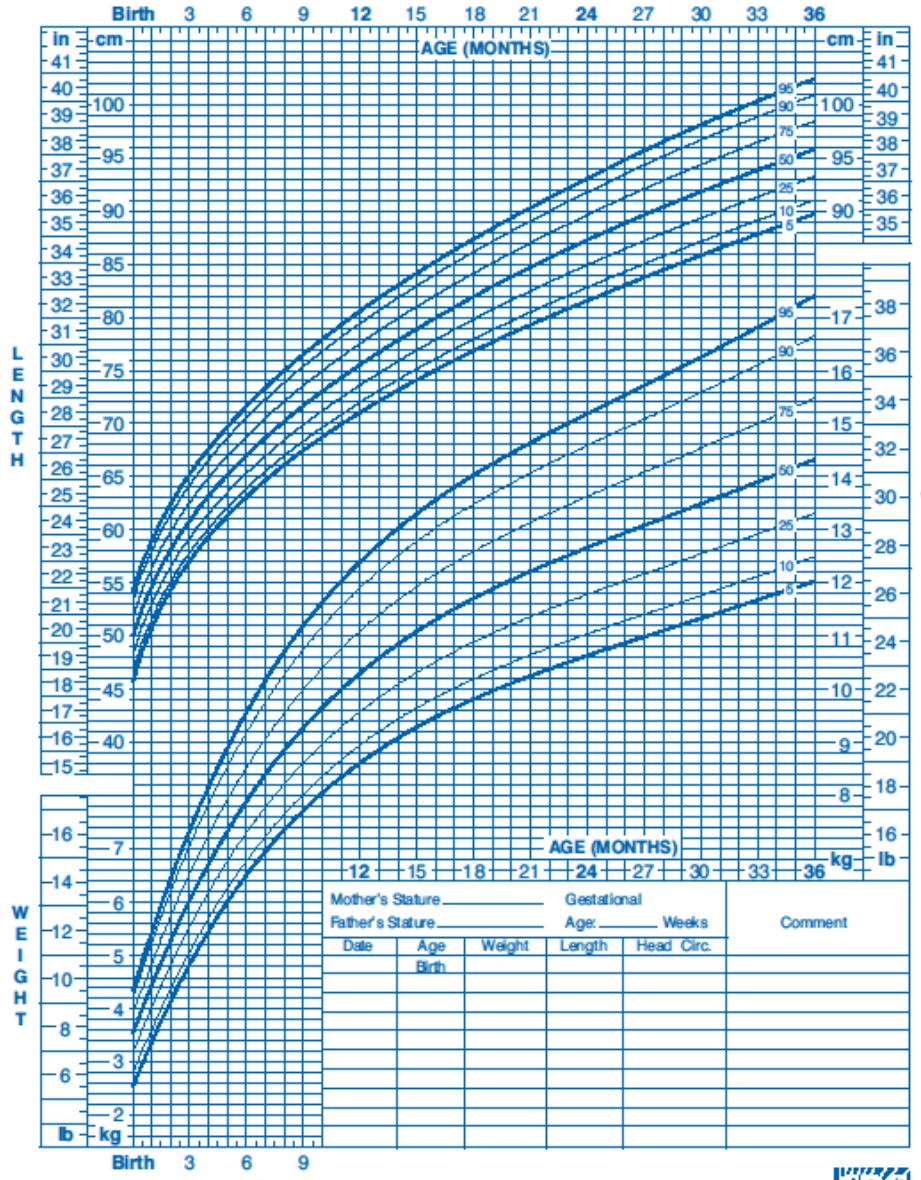
Birth to 36 months: Boys
Length-for-age and Weight-for-age percentiles

NAME _____

RECORD # _____



Mother's Stature _____ Gestational

Father's Stature _____ Age: _____ Weeks

Date	Age	Weight	Length	Head Circ.	Comment
	Birth				

Published May 30, 2000 (modified 4/20/01).

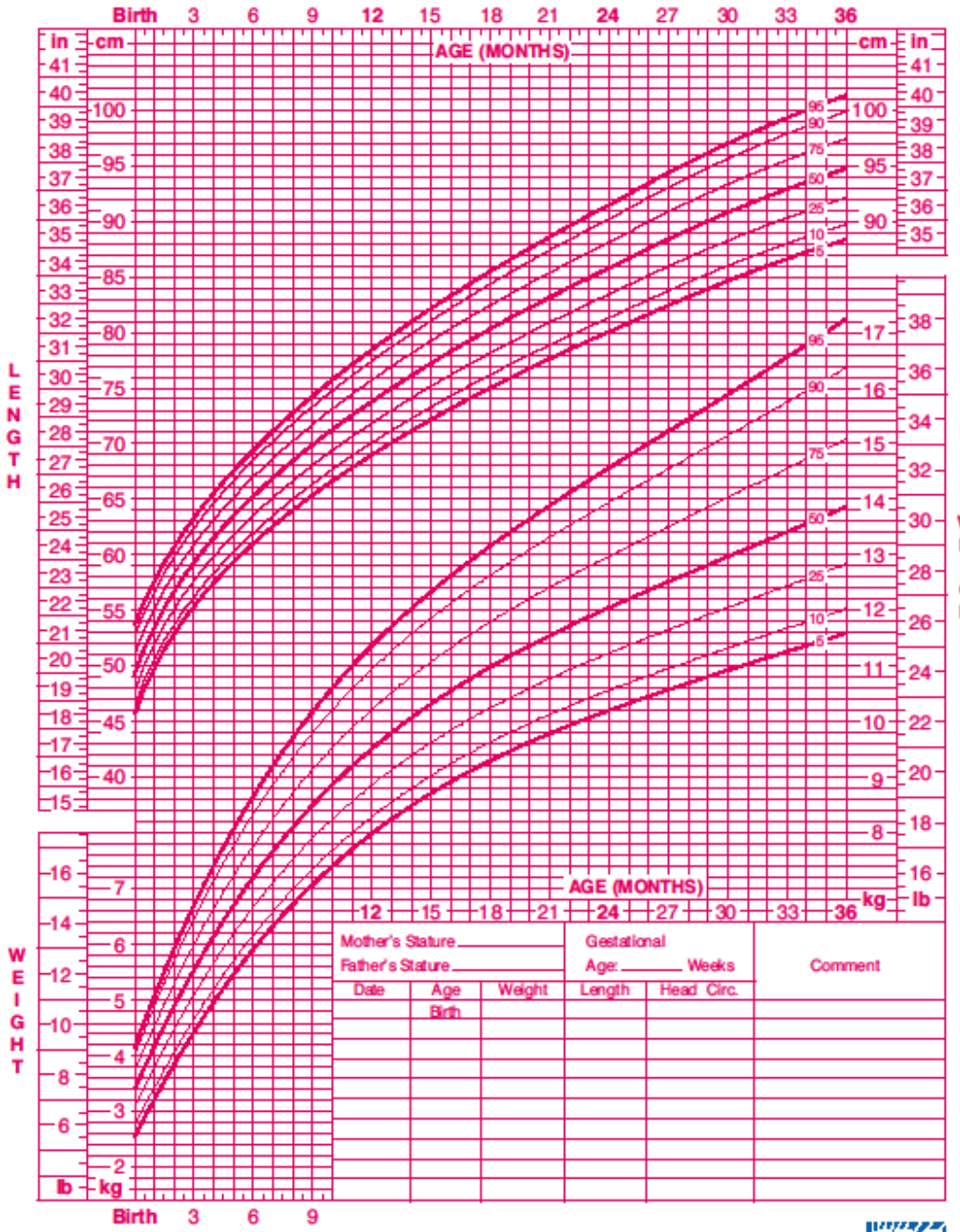
SOURCE: Developed by the National Center for Health Statistics in collaboration with the National Center for Chronic Disease Prevention and Health Promotion (2000).
http://www.cdc.gov/growthcharts

HEALTHY PEOPLE

Birth to 36 months: Girls
Length-for-age and Weight-for-age percentiles

NAME _____

RECORD # _____



Published May 30, 2000 (modified 4/20/01).
SOURCE: Developed by the National Center for Health Statistics in collaboration with the National Center for Chronic Disease Prevention and Health Promotion (2000).
http://www.cdc.gov/growthcharts

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