

-- *"What have you heard about:*
-- *- hand-expressing breastmilk?*
-- *- breastpumps?*
-- *- using formula?*
-- *- giving the baby a bottle?"*

-- *"Which method of expressing milk has worked best for you or someone you know?"*

-- *"Where have you been able to find breastpumps? How much do they cost?"*

-- *"If you have ever expressed milk, about how much were you able to express at one time?"*

-- *"Can anyone describe what frozen breastmilk looks like?"*

-- *"How long can breastmilk be stored in the refrigerator? In the freezer?"*

-- *"What are some ways to thaw out frozen breastmilk?"*

Substance Use/Abuse:

-- *"What are some of the things you've heard that get passed into breastmilk?"*

-- *"What are the effects of (discuss substances such as cocaine, crack, speed, and heroin, alcohol, marijuana, nicotine, caffeine, and over-the-counter medicines) on babies who are breastfed?"*

-- *"What have you heard about using drugs while breastfeeding?"*

-- *"What kinds of things would you consider to be drugs?"*

-- *"What have you heard about mothers who:*

- *- drink beer?*
- *- wine?*
- *- hard liquor?"*

- *"How do you feel about mothers who:
 - smoke cigarettes?
 - smoke marijuana?"
 - take pills?
 - use cocaine or crack?
 - use other drugs?
 - take prescribed or over-the-counter medicines?"*
- *"What about breastfeeding mothers who do these things?"*
- *"What is a safe amount of: beer? wine? hard liquor?"
(and so on, as above...)*
- *"What have you heard you should do if you get sick? What kinds of medicines do you think are okay to take while breastfeeding?"*

*** Breastfeeding Older Infants:**

- *"When do you think you might stop breastfeeding? What are your reasons?"*
- *"When do you feel is a good time to wean a baby?"*
- *"When is a child too old to be breastfed? Reasons?"*
- *"What do you know about what others have done (family, friends, neighbors...)?"*
- *"Does anyone have any suggestions about weaning?"*
- *"What have you heard are some of the differences between weaning from a bottle and from the breast?"*
- *"How do you handle nursing in public?"*
- *"What have you found to be advantages/drawbacks about nursing an older infant?"*
- *"What happens when a nursing baby gets teeth?"*
- *"Has anyone here ever tandem nursed (nursing both an infant and the older sibling) or known anyone who has? What can you tell us about it?"*

* **Mother's Nutritional Needs:**

- *"What have you heard about:
 - what breastfeeding mothers must eat?
 - what breastfeeding mothers cannot eat?"*
- *"What have you heard are good foods for breastfeeding moms?"*
- *"How does the food a mother eats affect her milk supply?"*
- *"How do you feel about what you ate while you were pregnant?"*
- *"How do you feel about what you're eating now; what you'd like to eat?"*
- *"What happens to you if you're not eating right? How does it affect your baby?"*
- *"Has anyone heard of certain foods you're not supposed to eat while breastfeeding?"*
- *"Can anyone share some nutritious types of foods that are easy to fix and fit well into your schedule?"*
- *"How do you handle it if your baby seems fussy after eating something that you think might have caused this?"*
- *"How much:
 - milk
 - fruits and vegetables
 - meat/protein
 - grainsshould you eat?"*
- *"How do you feel about drinking milk?"*
- *"What have you heard about dieting while breastfeeding?"*

4) Closing the Session.

- Summarize the key points of the discussion.
- Close the meeting and thank everyone for coming and sharing with the group.

INFANT DISCUSSION SESSION FLOW CHART

(Note: The sequence of the sessions is by infant age group, and not by session number).

<u>AGE GROUP/PURPOSE</u>	<u>METHOD</u>	<u>SESSION</u>
Certification of Infant.	Individual	I-1
After Session B-2 for breastfeeding women; infants before 4 months of age.	Group Discussion	I-2
Infants between 4 and 6 months of age.	Group Discussion	I-3
Mid-point assessment, infants between 6 and 8 months of age.	Individual (Required)	I-6
Infants between 7 and 8 months of age.	Group Discussion	I-4
Infants between 9 and 12 months of age.	Group Discussion	I-5

The Session Outlines that follow begin with I-1 and I-6, which are the Individual Assessment sessions. The Nutrition Education group discussion session then follows; the same session outline is used for I-2, I-3, I-4, and I-5.

INDIVIDUAL ASSESSMENT AND PLAN

OBJECTIVE:

The WIC participants will receive individualized counseling from a competent professional authority and be able to identify:

- 1) Appropriate feeding practices pertaining to the infant.
- 2) Risk factors that qualified the infant for WIC.
- 3) Where to go for other needed health and/or social services.

BACKGROUND INFORMATION:

- 1) "Facilitating WIC Discussion Groups" above, (page Intro-1).
- 2) All topics listed in the Infant Study Guide (following) may be relevant.
- 3) "Goal Setting" -- see page CH-6.

METHOD:

The competent professional WIC authority will use active listening skills to address the parent/guardian in a one-on-one discussion that targets particular concerns of each individual infant. The nutritionist will review client information, note possible areas of need, and provide information, referrals, and follow-up scheduling as necessary.

MATERIALS NEEDED:

- 1) Growth Charts.
- 2) Diet Recall Form.
- 3) Referral List.

INDIVIDUAL ASSESSMENT

PURPOSE:

As the infant goes through different stages, parents may have many questions about their infant's feeding practices. Therefore, it is important that an individual nutrition assessment session is scheduled when the infant is between 6 and 8 months of age.

When infants are certified, between birth and 6 months of age, their certification extends to their first birthday. Therefore, their certification period may extend beyond 6 months. When infants are certified during this time, federal regulations require a mid-point nutrition assessment of an infant's weight, height, diet, and iron level. This is a required session for all infants certified under the age of 6 months.

But even more, it's very important for the mother and her infant to benefit from this informative evaluation.

OBJECTIVE:

The parent/guardian of the infant will receive personalized counseling from a competent professional authority and be able to identify:

- 1) Feeding practices that are appropriate to the infant's age and development.
- 2) Any sources of health services needed.
- 3) The infant's iron level.

BACKGROUND INFORMATION:

- 1) "Facilitating WIC Discussion Groups" above, (page Intro-1).
- 2) All topics listed in the Infant Study Guide (following) may be relevant.

METHOD:

The competent professional WIC authority will use active listening skills to address the parent/guardian in a one-on-one discussion that targets particular concerns of each individual infant. The nutritionist will review client information, note possible areas of need, and provide information, referrals, and follow-up scheduling as necessary.

MATERIALS NEEDED:

- 1) Growth charts.
- 2) Diet Recall form.
- 3) Referral list.

SESSION OUTLINE:

- 1) Opening the Session.
 - * Assess the diet.
 - * Assess hemocrit.
 - * Discuss iron level and food intake.

- 2) Ask general, non-specific, open-ended questions to involve the parent/guardian in arriving at ideas to improve the infant's diet.
 - *"What ideas do you have for feeding your baby?"*
 - *"What do you like best about feeding your baby?"*
 - *"What feeding practices have worked the best when feeding other babies?"*
 - *"Are there any concerns you have about feeding your baby?"*

Record information in the comment section of the Diet Recall form.

- 3) If necessary, revise the nutrition plan for the infant. Explain to the parent/guardian the benefit of attending the discussion sessions.

- 4) Closing the Session.
 - Summarize the key points of the discussion.
 - Thank the parent/guardian for coming.

TALKING ABOUT YOUR BABY

Introduction

The following pages contain the infant nutrition education curriculum. Its purpose is to facilitate discussion sessions. It includes a session outline, possible open-ended questions, and an infant nutrition study guide.

The session outline (below) contains a list of possible infant discussion session topics. **Staff should not feel compelled to cover all topics listed.** The topics that should be discussed are those that are of interest and concern to the particular group attending the session. It should also be noted that the list of possible discussion topics is not restrictive. If a topic should arise during the session that is not on the list, staff should feel free to address it or make referrals.

A list of possible open-ended questions, to enhance discussion in certain topic areas, is provided. **Again, staff should not feel compelled to ask all of the questions listed.** Questions are provided only to generate ideas and enhance discussion. Staff should feel free to use any open-ended questions that are not on the list.

A summary of resource information for each topic is located in the Infant Nutrition Study Guide. The Infant Nutrition Study Guide should provide staff with enough information and resources to facilitate discussions in topic areas.

Although sessions will still be coded I-2 through I-5, there is only one session for the entire curriculum. Any one of these topics can arise at any session and should be discussed as appropriate to the age group of the target audience. Topics that should be discussed are those brought up by the participants.

Note: Discussion Session codes, which are provided for documentation purposes, are age-related rather than topic-related. The preceding flow-chart (page IN-1) will apply to scheduling infants for nutrition education.

TALKING ABOUT YOUR BABY

ALTERNATIVE TITLES:

"Development in the First Year."

"Tell Us How Your Baby Is Doing."

OBJECTIVE:

WIC participants will receive information and support on nutrition and infant development.

BACKGROUND INFORMATION:

The following are excellent sources of accurate infant nutrition information:

- 1) Required Study Guide (follows).
- 2) "Your Baby and Child", P. Leach; Alfred A. Knopf, Inc., New York, NY, 1992.
- 3) "Child of Mine", E. Satter; Bull Publishing Co., Palo Alto, CA, 1991.
- 4) "How To Get Your Kid to Eat...But Not Too Much", E. Satter; Bull Publishing Co., Palo Alto, CA, 1987.

METHOD:

Involving participants in a facilitated group discussion.

MATERIALS NEEDED:

- 1) Reference books/manuals listed above.
- 2) Infant nutrition pamphlets (to provide to participants on the basis of individual needs).
- 3) Flip charts and markers (optional).

- 4) Video - "Lily Feeds Her Baby" (optional).
- 5) Video - "Lily Gets Her Money's Worth" (optional).

POSSIBLE DISCUSSION TOPICS:

Session Outline follows.

SESSION OUTLINE:

- 1) Opening the Session.
 - * Introductions: Introduce yourself. Give everyone the opportunity to know a little about each other, and to practise speaking to the group. Begin by having each person introduce themselves.
 - * Icebreaker Exercise (optional -- see earlier section on "Facilitating WIC Discussion Groups", page Intro-7).
- 2) Ask general, non-specific, open-ended questions to lead in to the discussion. For example:
 - *"What concerns do you have about feeding your baby?"*
 - *"How did your mother feed you?"*
 - *"Should you feed your baby differently than your mother fed you?"*
 - *"What would be the best advice you could give a new mother on infant feeding?"*
- 3) Possible Infant Discussion Topics (choose any of the following):

Note: This listing is organized alphabetically. A detailed listing follows.

- * Breastfeeding
- * Colic
- * Cow's Milk (Introduction of)
- * Cultural Feeding Practices
- * Cup (Drinking from a...)
- * Dental Care (Bottle Abuse)
- * Economical & Resourceful Food (Shopping) Practises
- * Emotional Development
- * Finger Foods
- * Food Allergies
- * Food Groups
- * Food (Home-made baby food)
- * Food Intake (Quantity)
- * Food Preparation (Storage/Sanitation)
- * Food Safety

- * Immunizations(Vaccines)
- * Infant Development
- * Infant Instincts & Reflexes
- * Infant States of Sleep & Wakefulness
- * Interpreting & Acknowledging Infant Feeding Cues
- * Mixing & Storage of Formula
- * Overfeeding
- * Parenting and Feeding Behaviors
- * Premature Infants
- * Preventing Illness
- * Safety and Feeding Your Child
- * Sick Baby (Caring for a...)
- * Special Needs Infants
- * Teething
- * Transitional Feeding (Introducing solids)
- * Water Supply Safety & Flouride Levels
- * Weight Gain (Infant)

4) Closing the Session.

- Summarize the key points of the discussion.
- Thank everyone for coming and sharing with the group.

SPECIFIC INFANT DISCUSSION TOPICS:

*** Breastfeeding:**

- *"What do you think is the best way to feed your baby?"*
- *"Are all women able to breastfeed their babies?"*
- *"What might prevent a woman from breastfeeding?"*
- *"What kinds of special help do all new mothers and babies need?"*
- *"How can other family members best help you with the new baby?"*
- *"How are these needs different for breastfeeding mothers and infants as compared to bottle fed infants and mothers?"*
- *"How are they the same?"*

*** Colic:**

- *"What is colic?"*
- *"What can be done to help an infant with colic symptoms?"*
- *"What are some possible causes of colic?"*

*** Cow's Milk (Introduction of...):**

- *"What age would you recommend cow's milk and why?"*
- *"What can happen if a baby is given cow's milk too early?"*
- *"How does cow's milk differ from breastmilk or formula?"*

*** Cultural Feeding Practises:**

- *"Are there any family traditions that have been passed down from one generation to the next concerning feeding your baby?"*

-- *"What are some feeding practices you use with your child that have been influenced by your family customs?" (For example: herbal teas to relieve an upset stomach).*

Cup (Drinking from a...):

-- *"When should infants start drinking from a cup?"*

-- *"Why do you think it's important that infants learn to drink from a cup?"*

-- *"What are ways parents can encourage babies to switch from a bottle to a cup?"*

-- *"How long did it take your baby to become skilled at drinking from a cup?"*

-- *"What are the pros or cons of having an older child drinking from a bottle?"*

Dental Care (Bottle Abuse):

-- *"How many teeth do each of your babies have?"*

-- *"When should care of baby's teeth begin?"*

-- *"How do you clean your baby's teeth and gums?"*

-- *"What is nursing bottle mouth? Why does this happen?"*

-- *"Give examples of things that should not be put in your baby's bottle."*

Economical & Resourceful Food (Shopping) Practices:

-- *"What cost more, larger or smaller quantities?"*

-- *"Do convenience foods cost more?"*

-- *"Why should you make a shopping list?"*

-- *"Can you use coupons with your WIC check?"*

-- *"Are generic brands not as good as other "name" brands?"*

-- *"When is the best time to go shopping?"*

-- *"Do you read food labels? Why or why not?"*

* **Emotional Development:**

-- *"What do you think of when you hear the phrase "emotional development?"*

-- *"What do you think determines how well your baby develops emotionally?"*

-- *"When do you hug, smile, talk, or sing to your baby? Why are these activities important?"*

-- *"What toys does your baby play with?"*

-- *"When do you read to your baby?"*

-- *"What other persons in your family interact with your baby? How does your baby respond to these people?"*

-- *"What is the atmosphere like at meal times in your house?
How does this atmosphere affect how well your child eats?"*

-- *"What do you say to your child when he/she is doing something wrong?"*

-- *"What are some things you do if your child does something real good?"*

-- *"When your child feels bad, what do you do to cheer him/her up?"*

-- *"How can you tell when your child is enjoying something?"*

-- *"When you were younger, what did your parent or guardian do that made you feel important and special?"*

Finger Foods:

-- *"When does a baby show readiness for finger foods?"*

-- *"What would you consider a finger food?"*

* **Food (Home-made Baby Food):**

- *"What are the advantages and disadvantages of making your own baby food?"*
- *"What are some utensils you need for making baby food?"*
- *"Why is it important to clean all utensils and our hands before preparing foods?"*
- *"How do you make baby food?" (For example, how do you make the meat you and your family are having for dinner into something your infant can eat?)*

* **Food Intake (Quantity):**

- *"How much should an infant eat?"*
- *"What determines how much an infant should eat?"*
- *"What is the starting point in determining infant food intake?"*
- *"What does a baby expend energy on?"*

* **Food Preparation (Storage/Sanitation):**

- *"How long can you keep an opened jar of baby food? How should you store it?"*
- *"How do you store homemade baby food? How long can you keep home-made baby food in the refrigerator? In the freezer?"*
- *"If your baby eats directly from the container of baby food (instead of eating the food from a clean dish), what should be done with any food leftover in the jar? Why?"*
- *"Should microwave ovens be used to warm baby foods? Why or why not?"*

Food Safety:

- *"What do you think of when you hear the phrase "Food Safety"?"*
- *"Why is it important to buy undented cans of food?"*
- *"How can you safely defrost foods?"*
- *"Why is it important to sterilize infant bottles and feeding utensils?"*
- *"Why is it important to keep cold foods cold and hot foods hot?"*
- *"How do you know when fish, chicken, or red meats are cooked thoroughly? Why is this important?"*

Immunizations:

- *"Why does your baby need immunizations?"*
- *"How do you know when your baby needs to be immunized?"*
- *"What are some side effects (reactions) to immunizations?"*
- *"What should you do about these side effects?"*
- *"How painful is the injection to the baby?"*

Infant Development:

- *"What types of skills does a baby develop in his/her first year?"*
- *"When do these skills develop?"*
- *"How did you feel when your baby learned new skills?"*
- *"What can parents do to help their infants develop the appropriate skills and at the appropriate pace."*

*** Infant Instincts and Reflexes:**

- *"What reflexes are babies born with?"*
- *"What is the rooting reflex?"*
- *"Can infants focus on objects? On moving objects?"*
- *"Can infants tell their mother's voice from the voices of other women? Have you noticed this with your infant?"*
- *"Can infants distinguish their mothers' smell from that of other women?"*
- *"Can infants tell the difference between salty, sweet, bitter and sour tastes? Have you noticed this with your infant?"*

*** Infant States of Sleep and Wakefulness:**

- *"What does your baby look like when asleep? Is his/her breathing regular or irregular? Does your baby move alot?"*
- *"How long does your baby sleep each day?"*
- *"How long is your baby awake each day?"*
- *"Has the time that your baby sleeps and is awake changed as he/she has gotten older?"*

*** Interpretating & Acknowledging Infant Feeding Cues:**

- *"How do you communicate with your baby?"*
- *"How does your baby communicate with you?"*
- *"How do you know when your baby needs to:*
 - *be changed?*
 - *be fed?*
 - *stop being fed?*
 - *be cuddled?*
 - *sleep?"*
- *"What might happen if an infant's messages are ignored?"*

- *"Why is understanding and responding to your infant's messages important?"*
- *"What does it feel like to be able to know what your baby wants or is trying to tell you? What does it feel like when you can't understand what your baby is trying to tell you?"*
- *"How does knowing what your baby is trying to tell you help during feeding?"*
- *"What is a good way to respond to a crying baby?"*

*** Mixing & Storage of Formula:**

- *"How do you sterilize your bottles and formula?"*
- *"How do you measure your formula, water, etc.?"*
- *"How long do you keep prepared formula for?"*
- *"How do you store prepared formula?"*
- *"Why is it important to prepare formula correctly? What happens if the formula is too concentrated? Too diluted?"*

*** Overfeeding:**

- *"What happens if you overfeed your baby?"*
- *"How can overfeeding happen?"*
- *"Why do you think some people feel that a healthy baby is a fat baby?"*
- *"What do you think about your baby's weight? Too fat? Too thin? OK? Why?"*
- *"Who can you ask to find out if your baby is too fat or too thin?"*
- *"What are some things you can do to avoid over or underfeeding your baby?"*
- *"When your baby does not want to eat anymore at feeding time, but he's still got some formula or food left, what should you do?"*

* **Parenting and Feeding Behaviors:**

- *"What are some of the enjoyable parts of parenting?"*
- *"What are some of the difficult parts of parenting?"*
- *"What do you do to handle the more difficult, or frustrating parts of parenting?"*
- *"What positive or happy experiences have you had feeding your baby?"*
- *"What negative or difficult experiences have you had feeding your baby?"*
- *"What habits, good or bad, do you as a parent feel that you or others have that influence your baby's lifelong eating habits?"*

* **Premature Infants:**

- *"What would be some special concerns you have for feeding a premature infant?"*
- *"What are some challenges you've had in feeding your premature infant?"*

* **Preventing Illness:**

- *"What are some preventative actions that you can take to keep your child from getting sick?"*
- *"How many immunizations has your child gotten so far? Why are these important?"*
- *"How often do you take you child to the doctor?"*
- *"How does smoke from others affect your baby? What can you do to protect your child from this smoke (passive smoke)?"*
- *"Why is it important to thoroughly cook meats, especially chicken?"*
- *"How can you tell if chicken is cooked thoroughly?"*
- *"If you are sick, what are some things you can do to keep your child from catching your illness?"*

* **Safety and Feeding Your Child:**

- *"When you were pregnant, what were some things you did to make sure your baby had a safe environment inside of you?"*
- *"Have you baby-proofed your home? If so, how?"*
- *"What have you learned about infant safety now that you're a parent? What safety advice would you give other new parents if you could?"*
- *"Why are car seats necessary every time your infant travels in a car?"*
- *"What kind of car seat do you have? Do you put it in the front or back seat? To what age should children ride in car seats?"*

* **Sick Baby (Caring for a...):**

- *"How long should you wait before calling a doctor about a fever or rash or bowel abnormality?"*
- *"When else should you call the doctor?"*
- *"What is a normal temperature and when is a fever dangerous?"*
- *"What are some common symptoms of sick infants?"*

* **Special Needs Infants:**

- *"What are some concerns you have about your baby's health and feeding?"*
- *"What are some of the challenges of feeding a special needs child?"*
- *"Where can you get information or help on feeding a special needs child?"*

Teething:

- *"What are some signs that your baby is teething?"*
- *"What have you heard about teething causing fever or other infections?"*
- *"What can you do to make teething less painful for your infant?"*

Transitional Feeding:

- *"What is transitional feeding?"*
- *"When are babies ready for solid foods? What skills should babies have before they should be given solid foods?"*
- *"What's a good first solid food for babies?"*
- *"In what order should other foods be given?"*
- *"What are finger foods? When is a baby ready for finger foods?"*
- *"What are some examples of finger foods that could cause choking?"*
- *"What's the best way to introduce new foods to babies?"*
- *"What are some signs that your child may be allergic to a food? What should you do?"*
- *"What do babies (under 1 year old) need in addition to eating solid foods?"*
- *"Why should babies be given a variety of foods from the food groups?"*
- *"What are some foods that shouldn't be given to an infant?"*
- *"What advice would you give to other parents about transitional feeding? What worked well for you? What didn't work well?"*

Water Supply Safety and Fluoride Levels:

- *"What is your main source of water?"*
- *"What does safe water mean to you?"*

- *"Has anyone had their water tested to determine if it's safe?"*
- *"How did you go about having it tested?"*
- *"What minerals does your water contain?"*
- *"How can you kill bacteria in your water to make it safer?"*
- *"What happens to minerals when water is boiled?"*
- *"Is bottled water safe? What is distilled water?"*
- *"Does your water have fluoride in it? Why do cities add fluoride to the water supply?"*
- *"Why is it important to know if your water is fluoridated?"*

Weight Gain:

- *"What is appropriate weight gain for infants?"*
- *"What factors will influence birth weight?"*
- *"What factors will influence infant weight gain?"*
- *"How can you tell if your baby is gaining enough or too much weight?"*

BREASTFEEDING

Breastfeeding is by far the best way to feed a baby. Most women know this. Breastfeeding is not always easy for women who live in societies where there is little support. Some women find that breastfeeding is easy and satisfying, right from the start. On the other hand, many women find it difficult to do without support.

All women who breastfeed their new babies can benefit from support, especially during the first three to four weeks. Support can come from friends, husband or partner, family, doctor, nurse, midwife, lactation consultant, breastfeeding support group, peer counselor, nutritionist, or another woman who has breastfed.

The three main areas of support include:

- Good emotional support on an ongoing basis while a woman is getting breastfeeding established or on solving problems.
- Real practical help with household tasks, such as shopping, cooking, cleaning, and caring for older children.
- Skilled assistance if there are any difficulties getting started or if any problems develop.

For specific information on all aspects of breastfeeding, from advantages to problem solving as well as how to support your breastfeeding client, refer to the sources listed below.

Sources: "Bestfeeding: Getting Breastfeeding Right For You", M. Renfrew, C. Fisher, and S. Arms; Celestial Arts, Berkeley, CA, 1990.

"Breastfeeding: A Problem Solving Manual", 3rd Edition, S. Saunders, J. Carroll, and C. Johnson; Essential Medical Information Systems, Dallas, TX, 1990.

"Counseling the Nursing Mother", 2nd Edition, J. Lawless and C. Woessner. Avery Publishing, Garden City Park, NY, 1990.

"Breastfeeding for Healthy Mothers, Healthy Babies", Best Start Training Manual, State of Florida Department of Health (see copy following Session B-2, above).

COLIC

When babies have long periods of hard crying, and seem to be in some sort of physical discomfort for no apparent reason that you or your doctor can discover, they are considered "colicky". "Colic" is a catchall word meaning "loud, persistent screaming for undetermined reasons." Doctors seem to know little or nothing about the true cause of this kind of crying. Many doctors feel that it is the result of a variety of causes -- such as temperamental, physiological and environmental factors.

So what can a mother or father do about colic? Calm, gentle handling is essential. Many doctors feel that frequent, shorter feedings are easier for baby to handle than long feedings. If your baby shows signs of colic, you'll want to be sure they get nothing else but breastmilk or formula. Avoid giving juice or water. Some babies also react to vitamins, especially those with added fluoride.

Occasionally, something the mother eats might be a possible cause of colicky symptoms in her baby. Some possibilities include certain vitamins, food supplements such as brewer's yeast, large amounts of caffeine or foods or drinks with artificial sweeteners. In the case of breastfed babies, some foods (i.e. milk or food containing milk) in the mother's diet can make her baby uncomfortable. This is more likely to occur if there is history of allergy in the family.

Source: "The Womanly Art of Breastfeeding", La Leche League International; New America Library, New York, NY, 1987.

COW'S MILK (INTRODUCTION OF...)

Breastmilk or an iron fortified formula should be given through the first year of life. Cow's milk has higher levels of protein and minerals than breastmilk or iron fortified infant formula. This is not desirable for infants because these high levels of protein and minerals can place stress on the immature kidneys. The immature digestive system of the young infant is not able to adequately break down whole milk.

When your baby is more than eight months old, and eats foods from all the food groups, you can start to introduce whole cow's milk in very small amounts from a cup; for example, an ounce a day from a cup would be good to start with. Then, gradually increase the amount. Do not give your baby low fat or skim milk until two years of age.

Sources: "Infant Nutrition Module", Florida's Nutrition Paraprofessional Training Guide, State of Florida Department of Health and Rehabilitative Services; March 1989, page 21.

WIC Pamphlet: Infant Nutrition #4: "More Grub".

CULTURAL FEEDING PRACTICES

Family traditions have a strong influence on food choices. Preferred foods are those that are familiar and were introduced early in life. For example, tortillas and rice are preferred over bread in some cultures.

Different cultures believe that certain foods are either appropriate or inappropriate for certain meals. Social factors also play a role in food choices. Parental eating practices and preferences may be imitated by their children. A teenager's diet and food choices may be influenced by peer group pressures.

Superstitions and food fads may influence food selection and food avoidance. Drug, alcohol and tobacco use has an impact on one's food choices. Food may either lose its importance to the substance "abuser", or else the individual doesn't have enough money to buy food.

CUP (DRINKING FROM A...)

Between seven and twelve months, infants are developmentally ready and usually interested in learning to drink from a cup. Delaying the change to a cup during this period can lead to a refusal to change at an older age. At first, the infant should be allowed to play with a cup to become familiar with it. When liquids are first introduced from a cup, the infant's lips may not close around the edge of the cup and liquids will leak. Cups with lids and spouts are helpful.

Infants need help holding the cup during the early weeks of cup feeding, and only a small amount of liquid should be put in the cup. Learning to drink from a cup is a gradual process usually starting when an infant can drink from a cup with assistance and ending when the infant is receiving all of his/her liquids in a cup (around 12 to 18 months.)

To begin the process, choose a feeding in which the infant is least interested (for example, the late afternoon feeding), and introduce a cup in place of the bottle. Continue with the cup at this feeding for a week or two before another bottle feeding is stopped. The procedure should continue gradually until the infant is entirely weaned from the bottle. Often infants will be almost entirely weaned by 12 months, but still require a bottle at bedtime until 18 months or so. As long as the infant is not allowed to suck the bottle through the night, this is acceptable.

As the baby gets used to drinking from a cup, formula, breast milk or juice may be offered. Sweetened beverages should never be given to babies. Some babies do not want to give up breast or bottle feeding or are unwilling to drink from a cup. The weaning process often requires much patience from the parents.

Source: "Infant Nutrition Module", Florida's Nutrition Paraprofessional Training Guide, State of Florida Department of Health and Rehabilitative Services; March 1989, page 21.

* Care of Gums and Teeth:

Primary teeth normally begin to appear near six months of age and are subject to decay from the time they first appear. However, care of gums and teeth should begin BEFORE teeth appear.

Baby's gums should be cleaned before teeth appear with a clean cloth or gauze. This will remove milk film from the mouth and familiarize the infant with having his/her mouth cleaned. Clean themouth after feedings. This practice should continue after the appearance of baby teeth.

Nearer the age of 12 months, a soft small toothbrush can be used by the parent to brush the baby's teeth. Because babies are likely to swallow toothpaste, it is not recommended at this age.

(For information on Flouride, see "Water Supply Safety").

* Nursing Bottle Mouth:

This is the decay of teeth caused by putting the baby to bed with a bottle filled with anything other than water. As sugars from the drink remain inside the mouth, acids form and cause tooth decay.

Nursing Bottle Mouth (baby bottle tooth decay) can be prevented by:

- Good dental health should be started early in life.
- Never put babies to bed with bottles of infant formula, milk, juice or sweet drinks.
- Toddlers should not be allowed to carry around a bottle filled with juice, etc.
- The introduction of a cup should begin near six months of age, and weaning from bottle to cup should be completed near the infant's first birthday (See "Using a Cup").
- Pacifiers should not be dipped in honey, syrup or sugar.
- Tooth decay also occurs when the mother falls asleep with the infant at the breast during breastfeeding.

Sources: "Your Child's Health", B. Schmitt, M.D.; Bantam Books, New York, NY, 1991.

WIC Pamphlet: "Put Your Child to Bed with a Teddy Bear, Not a Bottle."

"Infant Nutrition Module", Florida's Nutrition Paraprofessional Training Guide, State of Florida Department of Health and Rehabilitative Services; March 1989, page 21.

ECONOMICAL AND RESOURCEFUL FOOD (SHOPPING) PRACTICES

Here are some helpful, money-saving hints for economical grocery shopping:

- Cut out coupons from your local paper. You can use coupons along with your WIC check when purchasing WIC foods.
- Buy larger quantities of food. Smaller packages cost more per unit price.
- Convenience foods cost more than non-convenience items. For example, already prepared scalloped potatoes cost more than fresh potatoes.
- Never shop when you are hungry.
- Make a list before you go shopping.
- Go shopping once a week.
- Buy fruits and vegetables that are in season.
- Buy generic or store brands.
- Read food labels to ensure that you are getting the most nutritious foods for your money.

Source: "Buy Better to Eat Better", Food and Nutrition Service, United States Department of Agriculture.

EMOTIONAL DEVELOPMENT

The main determinant of an infant's emotional development is the infant's immediate surroundings -- that is, the people and conditions surrounding him/her. Essential for survival is the infant's ability to adapt to his/her environment and conditions to which he/she is subject. Therefore, it is extremely important for the parents to focus on the amount of positive contact they have with their baby. This positive contact is beneficial to the emotional development of the baby.

When the baby is first born, the parents should show warm, personal contact by holding their baby close while feeding him/her. The parents should show affection by touching, hugging, smiling, and talking to their baby as much as possible. The parents should be able to note several different responses from their baby at this time. A "happy" baby will express his/her comfort by actions such as smiling, gurgling, and even chuckling out loud.

It is important that both parents interact with their infant. This interaction can be feeding, changing diapers, or simply playing with the baby. The infant will actually initiate the playing, so all the parents need to do is respond to the action. One does not need to spend an extreme amount of money on expensive toys in order to amuse one's baby. Babies can be captivated by ordinary household items (for example, pots, pans, etc.), being careful that they are of no potential harm to the baby.

Parents need to talk and sing to their baby, starting the day that he/she is born. It is important to remember that babies must first receive language before they are able to express language. Reading and showing pictures to a baby will help immensely in exposing him/her to language. When the infant is able to eat the same food as the parents eat, the parents need to remember that their infant imitates the models of food acceptance set for him/her. The infant learns how to control his/her parents by accepting or rejecting certain foods. Emotional factors influence food acceptance and intake. Thus the baby should be allowed to eat at the dinner table with the rest of the family. Furthermore, the dinner table should not be the place for family battles or punitive action toward children. The parents should provide a setting which is comfortable, both free from stress and unreasonable demands.

Creative play and spontaneous learning are more advantageous to the infant during his/her early years. Infants tend to get bored and not follow through with things that they do not consider fun. Also, unreasonable demands placed upon children inhibit their learning abilities much more than they can contribute to them.

Since the infant's emotional development is molded by the people surrounding him/her (especially by the parents), it is extremely important to devote as much encouragement and attention as possible to the growing child.

These factors are most essential in order for a child to grow up with a high self esteem and to be emotionally stable.

- Sources:
- "Infants and Mothers: Differences in Development", T. B. Brazelton; Dell Publishing Company, Inc., New York, NY, 1983.
- "Nutrition In Infancy And Childhood", 3rd Edition, P. L. Pipes; Mosby College Publishing, St. Louis, MO, 1981.
- "Parent Power", J. Rosemond; Ancrews/McMeel, 1986.

FINGER FOODS

A baby will show a readiness for finger foods around 7-8 months. These foods are called finger foods because they allow the infant to practice using their hands and fingers to feed themselves. Some indicators of readiness for finger foods are the ability to grasp, demonstrating a hand to mouth route of the grasped object, and good sitting posture.

The shape and the size of the food presented to the infant are very important. Finger foods should be small pieces of soft food which can be easily dissolved or dislodged if they become stuck in the throat.

* Some examples of good choices of finger foods are:

- soft peeled fruit;
- small pieces of cooked vegetables;
- crackers;
- mild cheeses;
- small pieces of tortillas.

* Some not-so-good choices, that could easily cause choking, would be:

- popcorn;
- raisins;
- nuts;
- candy;
- chips.

Source: "Infant Nutrition Module", Florida's Nutrition Paraprofessional Training Guide, State of Florida Department of Health and Rehabilitative Services; March 1989, pages 40-41.

FOOD ALLERGIES

The most common chronic condition affecting children is allergies. The incidence of food allergies is greater during infancy. Children whose parents have allergic reactions to food are at a greater risk of having food allergies.

The physical symptoms of allergies are the result of antigen-antibody reactions. Antibodies are substances produced by our body in response to foreign substances (antigens) found in the allergenic food. Any tissue in the body can be the site of an immune reaction.

Allergic responses to food result in a variety of symptoms that include runny nose, diarrhea, vomiting, malabsorption, abdominal pain, hives, eczema, irritability and hyperactivity. Symptoms are not specific for any food or for allergies alone. They mimic those of other health problems (for example, the common cold or the flu).

Reactions may occur immediately after a food is eaten (within 4 hours) or may be delayed (occurring within 4 to 72 hours). The immediate reaction is thought to be caused by intact antigens present in the food, while the delayed reaction is caused by antigenic properties of compounds formed during digestion of the allergenic food. Any food is potentially allergenic. There is no agreement on the most important food allergens. However, milk, wheat, eggs, and corn are consistently listed as the most allergenic foods. Other foods to which children are often allergic include chocolate, oranges, soy, legumes, rice, fish, beef, pork, and chicken. Food additives such as flavorings and colorings are other items that often cause allergic reactions.

The variability of symptoms makes diagnosis of a food allergy a challenge for physicians. Skin tests may identify some food allergens but are generally considered unreliable. Diagnoses are made from dietary histories coupled with parents' perceptions of symptomatic responses to food; food diaries in combination with records of careful observations of symptoms; and elimination diets (suspect-foods are systematically eliminated and then possibly returned to the diet to see if allergic reactions occur).

When foods to which a child is allergic have been identified, they are eliminated from the diet. This may cause no difficulty if the child is allergic to only one food, particularly if it is not often mixed with others. However, if food allergies are multiple and/or include foods basic to culturally accepted diets such as milk, wheat and eggs, parents may need help in identifying hidden sources of the food, finding acceptable substitutes and where such foods may be purchased, methods of preparation, and menu planning. Parents must learn to read ingredient statements on labels to avoid hidden sources of allergens and may need to be referred to cookbooks prepared for individuals with food allergies.

Parents should have instructions about the foods their children can consume as well as those that must be avoided. Infants allergic to cow's milk may be offered soy milk. Some children however, are allergic to soy and/or the corn syrup that many manufacturers add to these products. Commercially manufactured or homemade meat-base formulas prepared according to a recipe

devised by Rowe may offer acceptable substitutes for infants. A formula composed of pure amino acids (Nutramigen) may be required for some young infants.

Corn is extremely difficult to avoid. Corn starch is present in salad dressing, most sauces, many puddings and baking mixes, and a large number of other commercially prepared foods. Corn syrup is an ingredient that many manufacturers use in candy, sugar-coated cereals, and formula products.

If wheat is eliminated from the diet, alternate grains for baking must be found. Soy, rice, rye, and potato flours are often acceptable, but require special recipes and a sizeable investment of time in food preparation.

If eggs must be omitted, products containing eggs, including noodles, mayonnaise, and many ice creams, puddings, and baked products should also be eliminated. Recipes for baking without eggs are needed as well as commercial sources of ice cream and bread prepared without eggs.

Allergic reactions of the immediate type may make eating an aversive experience and cause children to reduce the number and quantity of foods they voluntarily consume. Malabsorption secondary to food allergies may increase nutritional deficits. Energy and nutrient intakes of children with multiple food allergies should be carefully monitored. Diets of children who are allergic to milk should be monitored for sufficient calcium and vitamin D levels. Diets of children allergic to citrus fruits should be monitored for vitamin C content. The adequacy of intakes of the B vitamins should be checked when one or more cereal grains are limited.

Children often spontaneously recover from food allergies by 5 years of age. Foods to which a child is allergic should be singularly introduced and the child observed for symptoms as he or she grows older. If allergic reactions to food continue, both parents and children need continuing support as they exercise willpower in refusing allergenic foods and in selecting a combination of foods to meet appropriate nutrient needs.

Source: "Nutrition In Infancy And Childhood", 2nd Edition, B. S. Worthington-Roberts, J. Vermeersch, and S. R. Williams; Mosby College Publishing, St. Louis, MO, 1981.

THE FOOD GROUPS

Instead of talking about food groups in terms of the "Four Food Groups", it is now popular to picture them using the Food Pyramid. The Food Pyramid follows the Dietary Guidelines for Americans, which are eating guidelines for good health. The Food Pyramid organizes the food groups into a triangle-pyramid shape, based on how much we should get from each food group in our diet. By following the Pyramid, we should get a balanced diet, adequate in the nutrients we need, but also appropriate in terms of fat, sugar, sodium and fiber.

For infants, these guidelines are still applicable. Infants who have mastered eating solid foods (See Transitional Feeding, below) should have a balanced diet, with a variety of foods from each of the food groups. Sugary desserts and high sodium foods (for example, high-sodium meats, processed foods, or foods cooked with extra salt) should be avoided for infants. Adding butter and other fats to foods is not necessary for infants (the baby needs fat in the diet, but gets what he needs from formula or breastmilk). However most professionals agree that skim or low fat milk should not be given to children under the age of 2. Giving your infant a balanced diet with foods from each of the groups will ensure that your baby gets the right amount of nutrients he/she needs.

Why is a diet with variety important? The different food groups provide different nutrients. No one food group can provide all the nutrients that your body needs so we must eat from a variety of groups of foods. The following is a description of each of the food groups and the nutrients they provide:

*** Bread, Cereal, Rice and Pasta Group.**

This group forms the base of the pyramid (the group we should get the largest number of servings from) and provides carbohydrates (sugars) which our body uses for energy. Complex carbohydrates are long chains of sugars and are found in breads, pasta, tortillas, cereals, and rice. Complex carbohydrates often contain fiber, an undigestible carbohydrate which helps keep our bowel movements regular. For infants, the bread group, through fortified infant cereal, is a good source of iron. Iron is needed for red blood cells to function properly in their role of carrying oxygen to different parts of the body.

Simple carbohydrates are short chains of sugar and are found in fruit, but also in soda pop, candies, cookies, cakes, and other sweets. Except for fruit, foods with mostly simple sugars don't give us any other nutrients (like vitamins and minerals), and often lead to tooth decay. These foods may be high in calories (fuel for activity) and fill us up temporarily, but they offer little in terms of good nutrition.

*** Vegetable Group.**

Along with the fruit group, vegetables form the next level on the pyramid. Vegetables also contain fiber and several important vitamins and minerals such as vitamin A, which is found in dark leafy green and brightly colored vegetables (such as carrots or squash). Vitamin A is needed for tissue (for example, skin and the lining of the mouth), growth and maintenance, and good vision. Vitamins and minerals are substances which help our body convert other nutrients into other substances our body needs, like energy, muscle and bone.

*** Fruit Group.**

The fruit group is also an excellent source of vitamins and minerals, especially vitamin C (which is also found in vegetables). Vitamin C is necessary for growth and maintenance of tissue. Citrus fruits such as oranges and grapefruit, and juices made from such fruits are excellent sources. Green and red peppers, broccoli, spinach and tomatoes are also good sources.

*** Milk, Yogurt and Cheese Group.**

Along with the meat group, this group makes up the next level of the pyramid. The milk group is an important source of calcium (a mineral needed to build and strengthen bone and teeth), and protein. Protein is an important nutrient for growth and building muscle and blood cells, and also for helping our body carry out all its necessary functions (for example, making energy from food). Infant formula falls within this category; it is fortified enough with extra nutrients that are added during manufacturing that it is the only food infants need usually up to the age of six months. Similarly, breast milk contains nearly all the nutrients an infant will need usually until the age of 6 months.

Fat is provided in this group and also in the meat group. Fat serves as an important energy source for infants. Fat is needed to build cells and tissue, especially those that make up the nervous system. Fat is also needed to help maintain body temperature, and also is used in our body to build tissue which cushions and protects other body parts.

*** Meat, Poultry, Fish, Dry Beans & Eggs Group.**

This group provides high quality protein and many vitamins and minerals, especially iron. Beans also contain fiber. Peanut butter also falls into this group. This is because nuts and seeds are also a source of protein. However infants should not be given nuts and seeds as they may cause choking. The meat group also may be a source of fat in the diet (beans, fish and poultry tend to be lower in fat than red meats, eggs and peanut butter). Of importance to remember is that for infants, dietary fat is necessary for growth and development.

* The "Others" Group.

This is represented by the tip of the pyramid because these foods are extras and should make up a very small portion of our diet. These are usually foods you add to other foods (ketchup, mustard, salad dressing, butter, jelly, and cooking oil or lard; or candies, cakes, soda pop, etc.). Such foods should be used sparingly. Infants (and the rest of us) **do not need** these foods, but for adults they help make other foods more tasty. Avoid extra sugar and salt in your baby's diet.

Sources: "The Food Guide Pyramid", published jointly by the United States Department of Agriculture and the Food Marketing Institute, 1992.

"Recommended Dietary Allowances", 10th Edition; National Research Council, National Academy Press, Washington, D.C., 1989.

"Child of Mine", E. Satter; Bull Publishing Co., Palo Alto, CA, 1991.

FOOD (HOME-MADE BABY FOOD)

Baby food can be made at home and can be prepared from table foods, fresh fruits and vegetables. Home-made baby food is also more nutritious and much less costly than baby food bought in a jar.

Home-made baby food is also easy to make. Remember food safety and make sure you clean dishes, utensils, equipment and counter tops before preparing baby foods. Remember to wash your hands.

- To prepare fresh vegetables, wash and peel them. Then place them in a small amount of boiling water. Cook them until they are tender. Mash or blend the vegetables.
- To prepare canned vegetables, buy the unsalted brands. If they are from a salted brand, rinse and strain the vegetables. Add water and mash or blend.
- To prepare fresh fruit, wash, peel, and remove seeds or pits. Add fruit to a small amount of boiling water. Mash or blend the fruits. Do not add sugar or honey; fruits have enough natural sugar.
- To prepare canned fruits, avoid excess sugar by using fruit canned in juice. Blend or mash the fruit.
- To prepare meats, remove the bones, fat and skin. Simmer meat in a small amount of water until it is soft or tender. Place meat in grinder or blender until it is smooth.
- To prepare other table foods, boil or blend until they are soft. Mash, blend or push through a strainer of medium gauge.

(For tips on safely storing and preparing food, see "Food Safety" and "Food Preparation").

Source: New Mexico Department of Health. Selected content adapted from "How To Make Your Own Baby Food", by Loretta Pacheco and Larinda Worth. With permission from Maricopa County Department fo Health Services, Arizona.

FOOD INTAKE (QUANTITY)

Individual differences among infants in nutrient reserves, body composition, growth rates and activity patterns make defining nutrient requirements impossible. There is no specific requirement regarding actual food intake (quantity or amount) on reference.

Estimated nutrient requirements come from intakes of normal infants and from human milk. Recommendations are based on the infant's age and are set from birth to six months and from six months to a year of age. The Recommended Daily Allowances (RDA's) give nutrient requirements, but no guidelines on how much food to eat to meet these requirements.

Energy intake may be determined by body size, physical activity and rate of growth. The birth weight should be a starting point in determining food intake. Most infants start at different points and grow at different rates, so food intake should be will vary accordingly.

Fifty percent of the energy expenditure in infants comes from the basal metabolic rate. Energy expended for growth during the first four months is 32.8% of intake. Energy expended for growth during the last eight months of infancy is 7.4% of intake. Energy expenditure from physical activity increases as motor skills increase. Energy expenditure will also determine food intake (quantity and type of food).

Source: "Nutrition Throughout the Life Cycle", D. Williams and B. Worthington; Mosby College Publishing, St. Louis, MO, 1988.

FOOD PREPARATION: SANITATION AND STORAGE

Food should be placed into a clean feeding dish before it is served to the baby. Leftovers should be discarded. If the baby is fed directly from the baby food jar or if leftover food is returned to the jar, the baby's saliva will enter the food. The bacteria from the saliva can cause the food to spoil. If the baby was not fed directly from the jar, any uncontaminated food left over in the jar can be tightly re-sealed and stored in the refrigerator, for up to 48 hours.

For home-prepared baby foods, thoroughly wash and rinse all equipment to be used. Fruits and vegetables should be washed, removing skin, pits, and seeds. Then boil or steam in a small amount of water to preserve the nutrients. Spoons used to "taste test" foods should not be put back into the food. If the food is not eaten immediately after it is prepared, it must be properly stored in a refrigerator for up to 48 hours, or in a freezer for up to 1 month. For single servings, the food can be frozen in clean ice cube trays or muffin tins and covered with aluminum foil. Once frozen, the food can be removed from the tray and stored in plastic bags or glass jars. The frozen foods can be placed in a dish and thawed in the refrigerator or warmed in an oven or pan of water on the stove. Any thawed, heated food that is not eaten should be thrown away.

Microwave ovens should not be used to warm baby foods, whether left in the jar or placed in another container. The unevenness in the consistency of the baby foods causes the watery or more liquid parts to heat up faster in the microwave than the thicker or more solid parts. This can allow pockets of steam to form. It is safer to heat baby foods using conventional methods than to risk burns from splattered food or exploding jars. Serve the food at room temperature or warm it slightly by setting the jar or other container in a pan or dish of warm water for a few minutes.

Source: "Infant Nutrition Module", Florida's Nutrition Paraprofessional Training Guide, State of Florida Department of Health and Rehabilitative Services; March 1989.

FOOD SAFETY

Food safety is the proper handling and storage of food. Food safety is important because improper care of food products can cause food poisoning. Food poisoning is caused by germs in foods that multiply at room temperature. The germs make people sick by causing flu and stomach bug-like symptoms. Foods that are most likely to cause food poisoning include milk, dairy products, eggs, meat, poultry (chicken and turkey), and seafood.

Keep food safe by buying safe food. At the store, buy cans and jars that look perfect. Do not buy dented cans. Do not buy cracked jars. Make sure all lids are closed tight. Do not buy cracked or broken eggs. Open the carton and make sure all eggs are whole and not broken. Keep the juices that drip from raw meat, poultry, and seafood away from other foods. Buy milk and other cold foods last. This will give them less time to warm up before you get home. If you buy prepared store foods also buy them last so they have less time to cool down.

Keep food safe at home. After shopping, get home as soon as possible. Store foods in the refrigerator or freezer right away. Make sure your kitchen is clean. Wash your hands before cooking. Wash cooking equipment properly. Wash fresh fruits and vegetables. Meats, poultry and fish can spread germs quickly. Keep these foods away from other foods. Throw away paper towels. Defrost foods in the refrigerator, not in warm water or on top of the counter. Always remember that germs multiply best at room temperature. Keep hot foods hot and cold foods cold to prevent food poisoning.

Infant bottles and feeding utensils need to be sterilized. Unused milk in the bottle needs to be disposed of because the saliva from the baby's mouth has germs and can also enhance the spread of germs.

(See also: "Food Preparation", "Mixing and Storing Infant Formula", and "Water Supply").

Sources: U.S. Department of Health and Human Services; Public Health Service, U.S. Food and Drug Administration, February 1991.

Food Safety and Inspection Service, U.S. Department of Agriculture.

*** *"Why Should I Immunize My Child?"***

Immunizations offer protection from life-threatening childhood diseases.

*** *"What Is an Immunization?"***

Initial immunizations are received by infants from breastmilk. Medical immunizations are required by law. When a child is immunized, he/she is given a substance by oral drops or injection. The method of immunization depends on the disease the child is being immunized against. The substance given is actually a weak form of the germ which causes the disease the child is being immunized against. However, this germ is now too weak to cause the disease. What happens instead is that the child's body makes substances to fight the germ. These substances are called antibodies. Antibodies act like weapons which fight the germs. When immunized for a particular disease, your child will now have the antibodies (weapons) to fight germs that cause that particular disease, in case your child is ever exposed to these germs again.

*** *"When Should I get My Child Immunized?"***

Your doctor may remind you when your child's immunizations are due but it is up to parents to make sure their child actually gets the immunization. Parents should ask their child's doctor for an immunization record card to keep track of the child's immunizations. Immunization records should be brought to the child's health check-ups; they are also needed for school enrollment.

Refer to the New Mexico Public Health Office for a current immunization schedule.

*** *"Where Can I Get My Child Immunized?"***

The child's doctor or doctors at a community clinic can give immunizations. Check with these sources for other agencies providing immunizations in your community.

*** *"Will the Injection Be Painful to my Baby?"***

Some parents find the thought of their baby in pain quite upsetting. However, the injections are given quickly and many babies don't even have time to cry before they've forgotten that anything happened. Often, this is a more painful process for the parents. However, the pain involved with an injection is minor compared to the pain and suffering often caused by the disease the child is being immunized against.

*** "Are There Any Side Effects From Being Immunized?"**

Serious reactions are rare, but they do occur. For example, out of three million people who are immunized against polio, one person actually gets polio. Thus, the risks of a serious reaction are miniscule. Immunizations protect children from life-threatening diseases, most of which do not have an antibiotic or other medicine for treating them. Information sheets which describe possible reactions are available from your child's doctor or clinic.

SYMPTOMS:

Although many children show no reactions or side effects from the immunization, there are possible non-serious side effects in some children. These include:

- Painful & swollen injection site.
- Irritability and fretfulness.
- Moderate fever (101-103 degrees) for 24-48 hours following the injection.
- Fine rash all over the body (shows up 1-2 weeks after receiving a measles immunization).
- Swollen glands after mumps vaccine.

THERAPY:

* To deal with a fever:

- Give extra fluids. Breast-feeding babies may need more nursing.
- Try a lukewarm bath to bring down a fever.
- Give acetaminophen (Temptra, Tylenol) according to package directions for the child's age and weight.

* For irritability/fretfulness:

- Extra holding & cuddling.

* For a painful injection site:

- Apply cool moist cloth to injection site.
- Keep elastic or tight clothing away from site.

CALL YOUR DOCTOR IF:

- The fever lasts longer than 48 hours.
- The fever goes higher than 103 degrees and you can't control it.
- Your child has vomiting and/or diarrhea.

* Do not hesitate to call a doctor with questions or concerns about these or any other side effects.

Sources:

"Your Baby & Child, From Birth to Age Five", P. Leach; Alfred A. Knopf, Inc., New York, NY, 1992.

"Your Child's Health", B. Schmitt, M.D.; Bantam Books, New York, NY, 1991.

"When Your Child Gets Immunized", State of New Mexico Public Health Division.

INFANT DEVELOPMENT

Reflexes are automatic body reactions to specific stimulation, such as the knee jerk or the Moro reflex. Many reflexes remain through adulthood, but the newborn also has some primitive reflexes that disappear as the cortex is fully developed.

Age	Process	Description
0-1 month	Reflexes	Almost entirely practice of built-in reflexes, such as sucking and looking. These reflexes are modified as a result of experience.
1-4 months	Primary	The infant tries to make interesting circular things happen again with his body, reactions such as getting their thumb into their mouth. Visual and tactile explorations are more systematic. But infants in this stage still do not appear to distinguish between body and outside objects or events. They do not link their own actions to results outside themselves.
4-10 months	Secondary circular reactions	Infant tries to make external things happen, such as moving a mobile by hitting it. Begins to coordinate information from two senses and develops the object concept.
10-12 months	Coordination of secondary schemes	Infant begins to combine actions to get things he/she wants, such as knocking a pillow in order to reach a toy. Uses strategies.
12-18 months	Tertiary circular	Experimentation begins. Infant tries new ways of playing with or manipulating objects. Improved motor skills.
18-24 months	Beginning of thought	The child uses images, perhaps words or actions to stand for objects.

Source: "The Developing Child", H. Bee; Harper and Row, New York, NY, 1985.

INFANT INSTINCTS AND REFLEXES

* **ROOTING:**

An infant touched on the cheek will turn toward the touch and search for something to suck on.

* **SUCKING:**

When an infant gets his/her mouth around something suckable, he/she will suck.

* **SWALLOWING:**

This reflex is present at birth, though it is initially not well-coordinated with breathing.

* **MORO:**

Also called the "Startle Reflex". When an infant hears a loud noise or gets any kind of physical shock, he/she will throw both arms outward and arch her back.

* **BABINSKY:**

An infant stroked on the bottom of her foot will first splay out her toes and then curl them in.

* **GRASP:**

An infant touched on the palm of the hand will curl their fingers around your hand or any graspable object.

* **STEPPING:**

A very young infant held so that their feet touch the ground will show walking-like movements.

In addition, newborns/infants display the following perceptual skills:

* **SIGHT:**

Ability to focus both eyes on the same point (the best focus point is about 8 inches away). This is about the same distance from the mother's face to her breast and baby's face when the baby is being breastfed or bottlefed. The ability to follow a moving object with the eyes is not developed at birth, but improves rapidly.

* **SOUND:**

Ability to respond to various sounds, particularly those in the pitch and loudness range of the human voice. Ability to make discriminations among very slightly different linguistic sounds (like "pah" and "bah"). Ability to locate the source of a sound. Ability to discriminate the mother's voice from other voices in the first day or within a few days of birth.

* **SMELL:**

Strong reaction to some smells such as ammonia or anise. Discriminates the smell of the mother's breast pad from that of a strange woman, beginning at about 1 week of birth.

*** TASTE:**

Ability to tell the difference between salty and sweet tastes. Prefers sweet taste. Ability to tell the difference between sour and bitter.

*** TOUCH:**

Response to touches over most of the body, especially to touches on the hands and mouth.

Source: "The Developing Child", H. Bee; Harper and Row, New York, NY, 1985.

INFANT STATES OF SLEEP AND WAKEFULNESS

State	Characteristics
DEEP SLEEP	Eyes closed, regular breathing, no movement except occasional startles.
ACTIVE SLEEP	Eyes closed, irregular breathing, small twitches, no gross body movements.
QUIET AWAKE	Eyes open, regular breathing, no major body movements.
ACTIVE AWAKE	Eyes open, irregular breathing, movement of head, limbs, and trunk.
CRYING AND FUSSING	Eyes partly or entirely closed, vigorous diffuse movement with crying or fussing noise.

Source: "The Developing Child", H. Bee; Harper and Row, New York, NY, 1985.

INTERPRETING AND ACKNOWLEDGING INFANT FEEDING CUES

Communication is the most basic component of our humanness. It is so basic that, without positive mother-infant interactions, infants may fail to thrive. Communication between a parent and an infant is the cradle from which each infant's growth and development, mental and physical health, intellectual functioning, social attachment and future capacity to parent ultimately emerge.

Mother-infant pairs at risk for disorders in communication may:

- Threaten the emotional, social, nutritional and/or intellectual development of the infant.
- Adversely affect the mother's self esteem, her capacity to fulfill the maternal role, and her ability to act on her environment.
- Drastically impair the cyclic, synchronous nature of mother-infant communication, hence perpetuating the disorder.

*** Interpreting and Acknowledging Infant Feeding Cues:**

Understanding your infant's cues is key to a successful feeding experience. Often parents do not pay attention to messages that the infant is giving. For example, an infant who turns his head away from the spoon may be signalling that he is full. Some parents will ignore this cue and continue to feed the child, although the child is trying to say that he's had enough food for now.

Being able to determine what your infant is trying to "tell" you and responding appropriately to his messages has several important benefits. First of all, a communication bond is established between parent and child. The infant is able to trust you when you are in tune with, and when you respond to, his messages. For example, hunger may initially be a frightening experience for the infant. If you can identify and respond to his "hungry signals" (for example, a certain kind of cry) in time, the infant will be less fearful of hunger and less tense or upset at feeding time. The infant also learns from this that his feelings are important.

(See "Parenting and Feeding Behaviors" and "Emotional Development" for further information).

Secondly, being able to determine whether your child is hungry, tired, frightened, or simply needs a diaper change allows you to get to know your baby better. Deciphering and meeting your baby's needs will not only bring satisfaction to the child, but gratification to yourself. Also, whether a child thrives in terms of growth and feeding has been shown in many studies to be a result of the strength of the parent-child communication bond. For example, parents who know their baby's signals for when they are full are less likely to overfeed or underfeed their babies.

Getting to know your baby's messages is a process that requires attention, patience and understanding. Babies come equipped with certain cries, "looks", actions (for example, wriggling or becoming tense and rigid), and other behaviors (for example, the rooting reflex). Being able to determine what your baby is telling you is a matter of experience and sometimes trial and error. However, your attentiveness and intuition will help you in understanding the infant's messages.

During feeding, your baby may be sending you many messages. Your baby may be letting you know if he is hungry or full. Babies may scream or cry or squirm when they are hungry. When they are getting full, the rate of sucking or wanting food may slow down. When they are full, they may let you know by clenching their mouth shut, turning away from the nipple or spoon, or by throwing up. Your baby will have his/her own signals. Figuring out these signals will make the feeding experience less frustrating for both you and your infant.

Many parents become concerned that their baby is getting too much or not enough food. Concerns of not getting enough food may lead to force feeding; for example, a parent who is forcing the nipple into the mouth of a baby who is squirming and turning away. Some parents may fear a fat baby so they'll stop the feeding after a certain amount of milk, even when the child may be indicating he wants more, by crying or squirming. While such concerns are understandable, following your baby's messages will ensure that your child is getting what he/she needs. Babies know what and how much they need. For example, a baby who is going through a growth spurt may consume more milk than usual. A baby who has just finished a growth spurt may eat less than usual. Your job as parent is to interpret and respond appropriately to your baby's signals, by providing more or less food. Forcing an infant to eat, or starving the infant, simply does not work to meet a baby's growth and health needs. Furthermore, these actions can undermine the parent-child bond, leading to tense and often unsuccessful feeding experiences and poor growth. Infants are quite capable of regulating their food intake. Unfortunately, some parents, by not responding to their infants messages, disrupt this self-regulation.

Another example is an infant who looks tense or nervous before feeding. Perhaps talking to the baby in a soothing voice or cuddling the baby will help him relax before and during the feeding. Determining what your baby is trying to tell you and meeting his needs strengthens the bond between parent and child, and contributes to successful feeding experiences.

Sources: "Child of Mine", E. Satter; Bull Publishing Co., Palo Alto, CA, 1991.

"How to Get Your Kid to Eat...But Not Too Much", E. Satter, Bull Publishing Co., Palo Alto, CA, 1987.

MIXING AND STORAGE OF FORMULA

Mixing formula correctly is very important. If you make the formula too concentrated (not using enough water) the baby's digestive system and kidneys will have a hard time handling such a great amount of nutrients at once. The baby may also become dehydrated because of the small amount of water in an overconcentrated formula. The baby may also become overweight because he/she is getting such a large amount of calories per feeding. If you underconcentrate the formula (make it with too much water) the formula is too dilute and not providing enough nutrients. This can lead to impaired growth.

* Preparing Formula:

To prepare a standard dilution (20 calories per fluid ounce) of infant formula from concentrated liquid, mix equal volumes of concentrated liquid with water. For example, 1 fluid ounce concentrated liquid plus 1 fluid ounce of water = 2 fluid ounces of formula.

To prepare a standard dilution (20 calories per fluid ounce) of infant formula from powder, mix 1 scoop of powder with 2 fluid ounces of water. This yields 2.2 fluid ounces of formula.

(If your baby has special needs, your doctor may have you prepare formula in a slightly different way to tailor the formula to your infant's needs.)

When mixing formula, follow these guidelines and tips:

- Measure warm water at eye level in a liquid-measuring cup.
- Use water that is warm to the touch, rather than cold or hot.
- Add water first, then the powder.
- Measure the powder. Heap the powder a little, tap the scoop lightly, and level with a knife.
- Use one level scoop for 2 ounces (1/4 cup) of water.
- Mix right away to prevent lumps from forming.
- Store the mixed formula in a covered jar in the refrigerator at 35 to 40 degrees. Do not keep for more than 24 hours.

* **Sterilization:**

Remember to sterilize bottles & other utensils for the first 3 months. Three techniques are commonly used for sterilization:

-- **Aseptic Method:**

Boil everything before you assemble the bottle (i.e. water, bottles, nipples, measuring and mixing equipment). Boil the water for 5 minutes, and the equipment for 20 minutes.

-- **Terminal Sterilization:**

Prepare the formula as usual. Place the entire bottle, nipple, ring, etc. into the pot with 3 inches of water. Cover and boil for 25 minutes. Tighten rings.

For these two methods, refrigerate the bottles and use within 48 hours.

-- **Single bottle method:**

Fill each bottle with correct amount of water needed to make one bottle. Terminally sterilize. When the bottles cool, tighten the rings and store for no more than 3 days at room temperature. When feeding time arrives, add powdered formula to one bottle. Shake well to mix the formula and water. (This technique may be useful for parents who don't have a refrigerator).

Sources: "Your Baby and Child", P. Leach; Alfred A. Knopf, New York, NY, 1992.

"Child of Mine", E. Satter; Bull Publishing Co., Palo Alto, CA, 1991.

OVERFEEDING

The prevalence of obesity is increasing among children in the U.S. Obesity may be the result of overeating, underexercising, social or psychological influences, slow or inflexible body metabolism, or a genetic predisposition.

Among infants, overfeeding by parents may lead to obesity. Overfeeding occurs when:

- The infant's signals for thirst are misinterpreted as signals for hunger. The baby is then given calorie-containing formula instead of water (which has zero calories). Extra calories not needed by the infant for growth or metabolism may be stored as fat, leading to overweight.
- The formula is too concentrated. Over-concentrated formula contains too many nutrients (calorie containing fat, carbohydrates, and protein). The baby will get too many calories at each feeding.
- The baby is given additional foods (solids, juice) before he/she needs them. Also giving baby foods such as sweets and sugarladen desserts (because they provide extra unneeded calories) may contribute to obesity.

Some people feel that a healthy child is a fat child. While only 10% of fat babies become overweight as adults, being fat is not necessarily an indicator of one's level of health. Note too, that parents who are concerned that their baby may be too fat may try to underfeed their baby. This may lead to impaired growth, altered metabolism, and nutrient deficiencies. Often parents who have problems with their own eating will want a thin child and thus send the child mixed messages about eating. Most obese mothers are chronic dieters who are more likely to use external cues for regulating their infant's feeding (for example, time and quantity) rather than interpreting and acknowledging their infant's messages about whether he is hungry or full. Unfortunately, many obese parents receive pressure from health professionals to prevent obesity in their children.

Some people have noticed that breastfed babies feed more often than formula fed babies. This occurs because breastmilk is digested more quickly than formula. Thus the food goes through the digestive system faster, so the baby nurses more frequently. However, this is not an example of overfeeding. As the baby's stomach grows as he gets older, his stomach can hold more food per feeding. Therefore, the number of feedings may decrease as he gets older.

How can you avoid overfeeding (or underfeeding) your baby? Get to know your infant's signals for when she is hungry, full, thirsty, or needs to be cuddled (**See "Interpreting and Acknowledging Infant Feeding Cues for further information"**). Infants will take in as much food as they need, and as frequently as they need, to grow and have energy. Don't push more food or formula on your baby when your baby is signalling that he/she is full. If your baby is giving a "hungry signal", see if he/she wants more food. Give your baby sterilized and cooled

water to quench thirst. Being able to interpret and respond appropriately to your infant's cues help prevent over- and underfeeding and can make feeding time a more pleasant experience.

Don't use food or formula as a pacifier when the baby simply wants to be held. Avoid unneeded sweets and desserts. Avoid over- or under-concentrating formula by preparing formula as directed. If you have concerns about your baby's weight, speak with your doctor and/or the WIC nutritionist.

Sources: "Child of Mine", E. Satter; Bull Publishing Co., Palo Alto, CA, 1991.

"Your Baby and Child", P. Leach; Alfred A. Knopf, New York, NY, 1992.

PARENTING AND FEEDING BEHAVIORS

Parenthood is a new developmental phase, with new tasks of child care and guidance to be learned and re-learned, and new roles to grow into. A couple's attitude toward the future is changed enormously by their 7 or 8 pound stake in it.

Parenthood can also be fatiguing and upsetting, for there may be heavy economic pressures on top of the new responsibility. Parenthood is fun and frustration, joy and jealousy, worry and wish fulfillment, gratification and grief. A baby's dependence on parents makes them feel important and needed, although sometimes the demands seem very great.

The parents' capacity to give this huge supply of love and attention depends upon how satisfied they are with themselves as people. This in turn depends how loved they themselves were as children and upon how good the relationship between the two of them is now.

*** What the Baby Needs:**

Babies indeed need loving care, not just care, in order to thrive. No one can truly love until they have been loved. The human infant, literally helpless, cannot live without having his/her needs met. Someone else must catch their signals about hunger and discomfort, and do something in response to those signals: feed, hold, and change them. Feeding the infant in a relaxed manner - holding them close so that whether nourishment comes from breast or bottle, it is sure to come from the heart. The baby held in loving arms while being fed is more likely to feel warmly welcome in their new world.

(For further information, see "Interpreting and Acknowledging Infant Feeding Cues).

Gaining a sense of trust is the most important development in a baby's first year. Usually the baby stops crying when he/she hears steps at the door, sees the father's face at the crib, or hears the sound of the mother's voice. The baby communicates trust through his/her voice and body movements -- the only means available.

The baby soon develops another way of communicating: the smile. This reaction usually appears at about 3 months. This is a powerful weapon, one that can probably hook his/her parents for life. It is the first freely given reward for the care the baby has received.

The normal sights and sounds of a household are the basic data from which learning grows. Being talked to, seeing shapes, movements, and colors, hearing sounds -- these experiences stimulate the baby and are good for him/her. As the baby approaches their first birthday, he/she eagerly takes them in.

Parental feelings of competence and satisfaction or dissatisfaction with the parental role are psychological factors that also have an influence on the food intake and feeding behaviors of children (see "Interpreting and Acknowledging Infant Feeding Cues" and "Emotional Development" for further information).

Many feeding difficulties arise because changes are expected to take place too abruptly or because adults fail to realize how difficult some of these tasks are for the infant and the young child. A child can and will learn these new things, but neither the parent nor the child should become upset over failures at first.

The stage of developing independence between 9 and 16 or 18 months of age can either be exciting or distressing for parents. If parents understand that exploring everything new is very important to an infant, they can encourage this exploration by providing new textures and flavors in foods. Be patient with the baby during this learning period. Pick a time or times of the day to allow the baby to "play " with the food. Each infant develops at his or her own rate. There is no specific age at which an infant should be able to feed him/herself. The process of learning to eat independently continues into the second year of life.

Lifelong eating habits are formed in childhood, and early positive experiences with foods can encourage acceptance of them later in life. Parents should serve as good examples for their children by being open to trying new foods themselves.

Source: "Infant Nutrition Module", Florida's Nutrition Paraprofessional Training Guide, State of Florida Department of Health and Rehabilitative Services, March 1989.

PREMATURE INFANTS

A birth defect is a disorder of body structure or function due to a prenatal cause. There are about 3,000 birth defects. They can be genetic, like Downs Syndrome or the result of environmental influence, like fetal alcohol syndrome. They may be evident at birth, or they may not be apparent until adulthood. Prematurity is the leading cause of birth defects.

* Nutrition for Premature Infants.

The growth rate of the premature infant should parallel the expected in-utero growth rate. The premature infant also has a small gastric capacity but a great need for calories. Generally, the premature infant has adequate gastric capacity, intestinal motility, and absorption to tolerate small, frequent feedings. Gastric capacity expands during the first few weeks of life, enabling the infant to tolerate larger feedings. Overfeeding increases the risk of vomiting, which can lead to dehydration, loss of hydrochloric acid, and alkalosis. The premature infant regurgitates feedings easily because of poor muscle tone in the cardiac sphincter. Bubble the infant frequently during feeding.

- Feedings should be adequate in calories, fluid, electrolytes, iron and vitamins to meet the needs of the infant. Inappropriate weight gain in relation to caloric intake can indicate problems.
- Unusually large weight gain for caloric intake may indicate excessive fluid retention. No weight gain or a loss with adequate caloric intake may indicate acidosis, sepsis, or malabsorption.
- Allow the infant to rest prior to feeding. The premature infant tires easily from procedures and will eat better if rested.

The infant's ability to hear, see, smell and touch are intact. Give him/her the opportunities to develop these capabilities and encourage the development of their interaction potential by providing sensory input. Physical contact is important for a sense of security. The premature infant's reflexes and responses to their environment are immature. Reassure parents that as the infant matures, they will change their response and reflex behavior.

Children with special healthcare needs include children with a broad range of disabilities and illnesses. All of these children require a wide variety of services from many agencies and professionals. Both preventative and curative nutritional care services are essential in enabling developmentally disabled and chronically ill children to reach their maximum potential.

Refer to "Nutrition Screening for Children with Special Needs -- Identifying Kids at Risk" (the CHEWS Manual) for guidelines for basic problem-specific nutrition information.

PREVENTING ILLNESS

Many parents show extreme concern that their child has been getting ill far too often. This concern stems from their belief that these illnesses must be signs or symptoms of a more serious underlying disease. It should be noted that the average child becomes afflicted with infections ten to fifteen times a year. As the child grows older the rate of attack for infections will decrease. This is because their immune system will build up antibodies against previously encountered infections.

*** Immune System Deficiencies.**

Children with immune system deficiencies (i.e. inadequate antibody or white blood cell production) will usually have two or more bouts per year of the following infections: pneumonia, sinus infections, lymph nodes with excessive drainage, and/or boils. Children with immune system deficiencies will also have a much slower healing rate from infections than will children who have an adequate immune system. Another sign of immune system deficiency is that children do not properly gain weight. If a child exhibits recurring ear infections, it does not necessarily mean that the child has a serious health problem; it could simply be that the child's Eustachian tubes just don't drain properly.

*** Infectious Diseases.**

Infectious diseases can be spread in many different ways. Respiratory infections are spread by coming in contact with secretions from the nose, mouth, or eye of an infected person, as well as by inhaling airborne droplets from a coughing or sneezing individual. Diarrhea and infectious hepatitis can be spread by fecal contamination of the hands and/or other objects. Chicken pox and fever blisters can be extremely contagious if there is contact with the discharge from the sores. However, most red rashes without a discharge are not contagious. Contaminated utensils (those utensils which have not been adequately cleaned following the use by an infected person) can be a source of respiratory or intestinal infection. Lice, ringworm, and impetigo can be spread by contact with an infected individual, or by using a comb, brush, or hat that has been contaminated.

*** Prevention.**

There are several precautions and preventive actions that can help reduce the spread of infections and diseases. Measures taken by public health organizations have had the greatest impact in preventing the spread of infectious diseases. Vaccines and immunizations are commonly employed for the control of infectious diseases like smallpox and polio. The common cold is an example of an infection in which there is no known vaccine or immunization. However, there

is a medically positive standpoint to colds, in that they do elicit the child's immune system to build up antibodies against future attack.

In the household, there are several preventive actions that can be taken in order to help reduce the spread of infection. Hand washing is strongly recommended, especially after using the toilet, changing diapers, and blowing the nose. Hand washing has been found to prevent the spread of respiratory disease and gastrointestinal infections. Parents should discourage their child from kissing their pets, especially on the mouth or nose. Parents should avoid smoking around their child, since passive smoke actually increases the frequency of respiratory infections. It is very important to thoroughly clean contaminated eating utensils, and to dispose of infected articles such as soiled tissues. When possible, clean contaminated areas with disinfectants. Encourage the thorough cooking of poultry to avoid gastrointestinal infections. If the child is exposed to any infection, the parent should contact their physician. The physician can prescribe medicine if needed.

A balanced nutritious diet will also help your child have a healthy immune system. By having your child immunized and vaccinated, and by using preventive actions in the household, you can substantially decrease the amount of infections that your child will have, and essentially will help him/her to lead a much happier, healthier life.

(For further information, see "Sick Baby (Taking Care of...)" and "Immunizations").

Sources: 1982 Red Book, 19th Edition, The American Academy of Pediatrics, Committee On Infectious Diseases, Evanston, IL, 1982.

"Guideline For Isolation Precautions in Hospitals, Infection Control 4",
J. S. Garner, 1983.

"Nutrition In The Community", A. Yanochick-Owen and R. T. Frankle; Mosby
College Publishing, St. Louis, MO, 1983.

"Your Child's Checkup", P. M. D. Klass, Mosby College Publishing, St. Louis,
MO, 1984.

SAFETY AND FEEDING YOUR CHILD

A couple should think about creating a safe environment for the baby even before conception. Since the baby's "first environment" will be the womb, it is important for pregnant women to begin prenatal care as soon as possible after conception to incur emotional and physical fitness. A physician will give her advice on good nutrition, appropriate weight gain, exercise, and talk about any substances that could be dangerous to the baby. The doctor checks her regularly so he can stay on top of any problems that could lead to complications.

Once the baby is born, new challenges in creating a safe environment appear. Early care of the infant includes proper feeding, immunizations, regular medical check-ups, as well as creating a safe, comfortable home environment and practicing behaviors that result in infant safety such as using car seats when traveling.

Creating a safe environment in your home continues as your child grows. Parents of infants, as well as toddlers and older children, need to be aware of anything that could cause injury to the child such as steps, poisonous substances and plants, sharp objects, objects that could lead to choking, electrical outlets, etc. The following guidelines provide tips for creating a safe environment for your infant, as well as for car seat safety.

*** Infant Safety.**

During their first years of life, children are totally dependent on adults to look after their safety. At this age, they have little sense of danger or self-preservation. They need safety-conscious adults to create a safe environment for them.

- Never leave your infant alone on a bed or table. Always take the baby or toddler with you when answering the phone or doorbell.
- Railings from cribs should always be kept in an upright position.
- "Baby proof" your house. Use safety gates at the bottom and top of stairs. Secure wobbly furniture, use dummy plugs to block electric sockets, secure dangling electrical cords, tablecloths or curtain cords, and keep appliances and appliance cords out of the reach of children.
- Create safe and secure barriers around fireplaces, woodstoves, etc. to avoid serious burns to children.
- Keep plastic film, bags, and pillows away from babies. These can lead to smothering. Blankets and sheets however, allow enough air to get to your baby.

- Toys with small parts should be avoided. Give your baby or toddler only those toys which are safe and appropriate for his/her age and stage of development. Read toy package guidelines and warnings.
- Babies should not be left alone in a bathtub for any amount of time, because they could drown. Babies can drown in just a few inches of water.
- Talcum powder should be avoided because a baby could inhale it and develop severe chemical pneumonia.
- A pacifier or teething ring should not be tied around the neck of a child because it could catch something and strangle them.

In a car, a baby is not protected by being held tightly in a parent's arms. A baby should always be placed in a car safety seat while riding in a car. Infant safety seats are rear-facing only and should be used from birth to approximately 20 pounds. Convertible safety seats can be used in both forward and rear-facing positions. They are useful from birth to approximately 40 pounds.

Toddler seats are forward-facing only and should be used from 20 to 45 pounds. Booster seats are forward-facing and should be used from 40 to 60 pounds. Children over 60 pounds may use a conventional seat belt without a booster seat. When possible, the car seat should be put in the back seat, which is much safer than the front seat.

A parent's attitude towards the use of safety belts and car safety seats is very important. If a parent treats buckling up as a normal part of living, something to be done automatically, children will generally follow their lead.

Sources: "Your Baby and Child", P. Leach; Alfred A. Knopf, Inc., New York, NY, 1992.

"Your Child's Health: A Pediatric Guide for Parents", B. Schmitt, M. D.; Bantam Books, New York, NY, 1991.

For additional information in New Mexico, contact The Office of Health Promotion -- Injury Control, at (505) 827-2302.

SICK BABY (CARING FOR A...)

* Symptoms.

The symptoms and signs of illness that are typically seen in young babies include:

- Cold, clammy skin.
- Pale, red rash-covered, hot, dry skin (all over).
- Higher than normal temperature.
- Sleeps and cries a lot more than usual.
- Flushed, pale, or perspiring.
- Noisy, difficult, rapid, or slow breathing.
- Coughing or sneezing.
- Irritated eyes.
- Signs of pain, such as crying or screaming.
- Lack of appetite.
- Abnormal body movements, such as twitching, stiffness, or immobility.
- Vomiting.
- Abnormal bowel movements (color, consistency, odor or frequency).
- Patchy, even itchy rash.
- Drowsy or unresponsive, and cannot be aroused.
- Restlessness, irritability.

* When To Call the Doctor.

Always think of your infant's safety first. Call a doctor if:

- The baby is under 4 months and exhibits any of the above symptoms.
- The baby has a temperature of 101 degrees or more that lasts for more than 12 to 24 hours.
- The baby has a fever with diarrhea or vomiting.
- The baby is having feeding difficulties, is in obvious pain, is unable to be comforted, has a cough, or is very lethargic.
- The baby has been sick with a mild cold and suddenly seems to get worse.
- The baby has a temperature of 103 degrees or above.
- The baby has a sore throat with fever or pus on their tonsils, or is pulling at their ears.
- The baby has been sick for two or more days with or without specific symptoms.

Source: Minnesota Early Learning Design, Parents Parts, Phase II.

SPECIAL NEEDS INFANTS

Commonly reported parental and professional concerns relating to handicapped children's food and nutrient intakes include the following:

- Slow growth in length and lack of appropriate weight gain.
- Excessive weight gain in relation to gains in length.
- Obesity.
- Iron deficiency anemia.
- Refusal of child to consume specific foods/groups of foods.
- Refusal of child to progress in feeding behavior when developmentally ready.
- Pica.
- Bizarre feeding patterns.
- Lack of appetite.
- Excessive appetite.
- Gagging, vomiting, or rumination.
- Food allergies.
- Limited food intake.
- Constipation.
- Abnormal motor patterns that affect the child's ability to consume food.
- Inability or unwillingness of the child to fingerfeed and/or to self-feed.
- Limited attention span at mealtimes.
- Disruptive behavior at mealtimes.

An example of nutritional challenges faced by a Special Needs Child are those of a child with Down's Syndrome:

The diet is calculated according to infant's needs. Due to poor muscle tone and protruding tongue, the infant may be a poor eater with a weak and ineffective suck. Allow adequate time for feeding. Do not allow the infant to become overly tired. Infant is usually very floppy and when handling the infant, support him/her well with a firm grasp. Position infant in such a manner that if vomiting should occur, he/she will not aspirate. This infant needs stimulation from the very start to begin to help him/her develop to their potential. Develop a plan so that your activity and actions lead to this goal. (The Lippincott Manual of Nursing Practise).

Special needs children are vulnerable to the same problems in nutrient intake as other children. Feeding and nutrition problems are often more severe than in the normal population, often involving motor abnormalities and/or other delays, infantilism, and lack of attention to critical periods of development.

Recommendations for intakes of energy nutrients and textures of food as well as expectations for the acquisition of self-feeding skills must be individualized for each child. Some children may have oral, fine, and gross motor, language, and personal/social development that is proceeding at a less than normal rate. Others may also have physical anomalies that imply the need for special equipment to sustain sitting posture to eat and adaptation of utensils to self-feed. Guidance and support are important for parents as they select foods that provide needed nutrients and create an environment in which the child learns to consume foods in a manner appropriate for his or her developmental level.

Sources: "Toward Healthier Babies -- a Catalog of Public Health Education Materials", The March of Dimes, White Plains, NY, 1990.

"The Lippincott Manual of Nursing Practice", Third Edition; pages 1235-1237 and 1440-1441.

"Nutrition Screening for Children with Special Needs -- Identifying Kids at Risk". SPRANS Grant #MCJ353815-01-Z.

"Nutrition in Infancy and Childhood", 3rd Edition, P. L. Pipes; Mosby College Publishing, St. Louis, MO, 1981.

TEETHING

Teething refers to the situation when your baby's teeth are working their way through the gums. This usually occurs anywhere from 6 to 10 months with the first teeth coming through the bottom jaw.

Teething may cause mild jaw pain, extra drooling, increased saliva, and a desire to chew on things. Teething does not cause fever, sleep problems, diarrhea, diaper rash, or decreased resistance to infection. Many unrelated illnesses are blamed on teething; however, more infections are common at the age the child begins teething that are not due to the teething process. Rather, the child is at the age where they lose the natural protection they had from their mother's antibodies.

To give your baby relief from jaw pain, massage the irritated or swollen gum with your finger or a piece of ice for 2 minutes. The baby may also prefer to chew on a teething ring -- this also serves to massage the gum. In addition to solid teething rings, other items that may provide relief include a wet washcloth that has been in the freezer for 30 minutes, ice, a popsicle, pieces of frozen banana, or teething biscuits.

Avoid hard foods like raw carrots that may cause choking. Also, avoid giving your baby salty or acid foods. If sucking on a nipple causes pain, use a cup to give fluids. Some babies may need acetaminophen for the pain for a few days.

Source: "Your Child's Health", B. Schmitt, M.D.; Bantam Books, New York, NY, 1991.

TRANSITIONAL FEEDING (INTRODUCING SOLIDS)

The infant makes a transition in feeding between ages 4 to 12 months, from breastmilk or breastmilk substitute to table foods. Foods added during that transition period must be appropriate both nutritionally and developmentally. They must provide the needed nutrients as well as textures and consistencies that will stimulate the child to learn a more mature eating style.

Rules about when to feed solids to infants may seem to be carved in stone when in reality "guidelines" have radically changed throughout the century. In the early 1900's, infants were rarely fed solids before the age of one. In the 1940's, it was not uncommon to see infants being fed solids by the second or third day of life. Because feeding solid food before 4 to 6 months really did not accomplish much, the trend has moved toward the delay of solid foods until 4 to 7 months. As with any change, people are fearful and worried that perhaps this "new" feeding style will be wrong or bad for their babies.

Perhaps parents are looking for what they simply can't have in that age between 4 months to a year: predictability! In truth, the whole period extending from the introduction of semi-solid foods to the establishment of the child on table foods is one of transition.

The infant in transition changes their feeding schedule from one that caters to his/her hungry rhythm to one that interacts with and is affected by the family eating schedule. Eating becomes more of a social event, and the baby's attention broadens out from the primary caretaker to other members of the family and other aspects of the environment. He/she becomes aware of the texture of food, the splash it makes when it drops on the floor, the way the dog darts after it, and the way his/her parents jump and run for a cloth.

This transition period is a remarkably short period of time considering the degree and types of changes that occur. The four to six month old is primarily being cuddled for nursing, while by the time he/she is 10 months old, or even eight months old, he/she is sitting up at the table with the rest of the family and quite possibly feeding themselves.

Encountering feeding problems during this stage is often an indication that the parents are not aware of the transitory nature of this stage. They allow themselves to get into a "feeding routine" and fail to progress when the child is ready. "Feeding routine" is not a concept appropriate for this stage. The only thing one should plan on is change.

(For more information see "Parenting and Feeding Behaviors" and "Interpreting and Acknowledging Infant Feeding Cues").

Parents can get through the transition period with a minimum of hassle if you start solid foodslate and progress quickly to table food. It is when foods are introduced early -- before 5 months -that you have to struggle with feeding spoons, baby-food warmers, little jars of baby food and pureeing on your own.

It is easier and better for the baby to start foods when the baby is ready for them -- somewhere between 4 to 7 months, when the baby is sitting up, drooling, and opening his/her mouth when he/she sees something approaching. These are all signals for a change in eating style -- the progression to solid foods.

Babies progress at different rates and in different styles through feeding stages. Because children do vary widely, and feeding information varies from one doctor's office to another and from one social group to another, and because there are so many ideas, myths, and persuasions about solid food introduction, it can be confusing and hard for parents when confronted with the day to day decisions.

*** Misinformation That Encourages Early Introduction of Solid Food.**

-- The 32 Ounce Rule.

Some physicians put a baby on solids when they are consuming more than 32 ounces of formula per day. The problem however, is that infants reach the 32 ounce level of formula consumption at widely differing ages. An infant in the 90th percentile for formula consumption could manage 32 ounces some time before two months, whereas the infant in the 10th percentile could not even reach 32 ounces at six months. Using 32 ounces as a milestone does not take into consideration a baby's developmental readiness or nutritional needs. It does however, sell baby food.

-- Sleeping Through The Night.

The myth is that feeding solids will make a baby feel "more satisfied" (perhaps meaning sleep longer, or may be less fussy and demanding). It is understandable that a parent might desire a demanding baby to be a good night's sleep, yet studies do not support this theory. A baby will sleep or be content for longer periods only when his/her stomach can hold more and his/her nutritional needs are not so pressing. Most babies do not reach that point before 16 weeks. Most new parents will need to get up to feed babies twice a night in the early weeks. When parents say "they are finding that hard", reassure them that it is hard! And this too shall pass.

-- Feeding Frequency.

Although some guidelines recommend introducing solids when the baby is regularly eating more often than every three hours, this does not account for breastfed babies who regularly eat every 2 hours and sometimes every hour to hour and a half. It is important to monitor **any** feeding frequency if the infant's growth is falling off the growth curve.

-- Opinionated Babies.

Some parents have been told if they wait "too long" to introduce solids, the infant will get hooked on breastmilk and won't eat anything else. There is no scientific data to support this theory. In fact, early introduction has created hassles for the mother/infant pair.

-- Solid Foods In the Bottle.

One way parents have managed to get around struggling with their infant to accept food on a spoon at an early is to mix a thin gruel of cereal, widen the hole in the bottle nipple and give solids that way. This in fact is force feeding and should be avoided. Adding cereal to formula increases the caloric density of the breastmilk substitute and could force an infant to take in too many calories.

*** When To Start Solid Foods.**

The most reasonable and logical time to begin introducing solid foods is when an infant needs them and is developmentally ready for them, generally between 4 to 7 months.

Prior to 4 to 6 months, breastmilk or a breastmilk substitute is nutritionally complete for infants. Consuming other foods at this time decreases the infant's milk consumption, jeopardizing his/her nutritional status. As an infant's caloric needs and hunger levels increase (at 4 to 7 months), infants continue to depend primarily on breastmilk or breastmilk substitute. For more information on nutrients see "Food Groups".

The two primary reasons for introducing solid foods are firstly, to provide for your infant's nutritional needs and secondly to encourage and support developmental changes. It is also important to note that many conflicts that arise with relatives and child care providers have to do with food (particularly its introduction). Keep in mind that the parent makes the ultimate decision when to introduce foods and how to do it.

*** How To Start Solid Foods.**

Introduce one new food at a time. Try it out for three or four days, checking for reactions like stomach aches, diarrhea, skin rashes and/or wheezing. These may indicate allergic reactions. Then move to the next food. Dislikes and rejections should be expected and respected. Take no for an answer and try another time. If the infant continues to reject the food, take their word for it. One can always try the rejected food later to see if they feel the same way.

*** Types of Solid Foods.**

The best first food is iron-fortified infant rice cereal mixed with breastmilk or breastmilk substitute. Rice cereal is the least likely of the grains to cause an allergic reaction. It also provides a good source of iron with a good distribution of calories among protein, fat, and carbohydrate. Once the baby is well-established on baby cereal, one feeding a day can gradually work into two, until approximately 1/2 cup of cereal is being consumed daily. Cereal can be

mixed with breastmilk that has been expressed, breastmilk substitute, whole milk, or diluted evaporated milk.

After mastering cereal, the infant is ready to progress to vegetables and fruits. Vegetables and fruits provide vitamins such as Vitamin A and Vitamin C. At this time, the amount of formula or breastmilk consumed may be declining, decreasing the amount of nutrients provided from these sources. Adding vegetables and fruits to the infant's diet compensates for the decline of nutrients from other sources.

Younger babies may need a pureed version of vegetables and fruits while older babies may be developmentally ready for diced or mashed pieces of these foods. See "Making Your Own Baby Food", "Using a Cup", and "Finger Foods" for additional information.

"Finger Foods" follow vegetables and fruits (usually somewhere around 7-10 months). These are small soft pieces of bite-size food and include different types of grain products (adult dry cereals such as Cheerios, Rice Chex, etc; small pieces of toast or tortilla, crackers, etc.), lumpy fruits and vegetables (such as cooked vegetable strips, banana pieces, etc.) and foods from the dairy group such as cheese wedges. (See the section "Finger Foods" for foods to avoid, such as peanuts). With each passing month, try to increase the amount of finger foods and decrease the amount of foods that require spoon feeding. Giving a baby "finger foods" helps him/her practice and strengthen developmental skills at this age: for example, the pincer grasp (finger-thumb pickup) and chewing skills).

Protein foods (meats) are introduced last, as the baby up until this point has received ample protein from formula or breastfeeding. Forms of meat easy for infants to handle in terms of chewing and self-feeding include chopped hamburger meat, fish (watch for bones!), and tender poultry. Firmer steaks, chops and roasts may need additional tenderizing by more cooking or grinding. Canned and preserved meats such as hot dogs and lunch meats should be avoided because of their high salt content. Pieces of scrambled egg, mashed beans, and peanut butter also provide protein.

Desserts are not necessary for infants. These foods provide little or no nutrients needed by the baby and are often high in sugar. After tasting sweet dessert foods, some babies will not want to eat the "less sweet" but more nutritious foods such as vegetables. Most of the time, the baby can eat modified versions of what your family is having for dinner (that is, smaller pieces, cooked without salt). Purchasing expensive jars of baby or "junior" foods is not necessary.

The baby will begin to adopt a 3 meal-a-day pattern (usually between 6 to 9 months), similar to that of your family. Snacks (usually 2 each day) are needed by most babies to help keep them satisfied and comfortable until the next meal. Snack ideas include any the foods mentioned previously (cereal, vegetables, fruits, and protein foods). Keep in mind that the baby still needs breastmilk or formula in addition to food, to make sure they are meeting all their nutrient needs.

Some babies drink too much juice. Often juice fills them up and makes them less hungry for other foods. Make sure you are offering your baby water regularly -- babies get thirsty too!

Sources: "Child of Mine", E. Satter; Bull Publishing Co., Palo Alto, CA, 1991.

"Your Child's Health", B. Schmitt, M.D.; Bantam Books, New York, NY, 1991.

WATER SUPPLY SAFETY AND FLUORIDE LEVELS

*** A Safe Water Supply.**

A safe water supply means ensuring the water doesn't contain harmful levels of bacteria or other substances which could make you sick. Babies, with their new but fragile immune system, need extra protection from bacteria that cause infection. While most city water is safe, sterilizing water provides an extra measure of safety against bacteria, especially for those who get water from wells. When using such water to prepare baby formula or to give water to your baby, boil the water for 10 minutes (plus one minute for each 1000 feet of elevation). Let the water cool sufficiently before mixing with formula or giving to baby. Distilled water can be substituted for boiled water. For people who use bottled water, not all bottled water is distilled, so make sure you read the labels.

Other substances in the water supply, which in high levels may be harmful to your baby, include sodium and nitrates. Very high levels of nitrates in the water supply may affect the ability of red blood cells to carry oxygen in young babies. Nitrates are not affected by boiling the water. If you're unsure about the safety of your water source contact your local Department of Health for more information.

*** Fluoride In Our Water.**

Fluoride strengthens tooth enamel and has been shown to effectively decrease the occurrence of tooth decay. For this reason, many cities choose to add fluoride (to fluoridate) to their water supply. To find out if your city fluoridates its water, you can contact the city water department.

Fluoride is needed from ages 2 weeks to 12 years. If your city does not fluoridate its water, or if you are breastfeeding, ask your doctor about a fluoride supplement. Bottled water purchased from stores usually doesn't contain enough fluoride to meet children's needs.

Too much fluoride can also cause problems with teeth. Fluorosis, or white spotting or mottling of the teeth can occur when children get 2 mg. or more of fluoride a day (you need less than 1 mg. a day to get the beneficial effects of fluoride). Cities that fluoridate their water control the level of fluoride in the water to keep it in a safe range. Children can get too much fluoride, however, if they take fluoride supplements in addition to drinking fluoridated water. Knowing if your city's water is fluoridated is therefore important. Swallowing toothpaste can also lead to consumption of too much fluoride; a ribbon of toothpaste can contain 1 mg. of fluoride.

For further information on fluoride, speak with your doctor or dentist.

Sources: "Child of Mine", E. Satter; Bull Publishing Co., Palo Atlo, CA, 1991.

"Your Child's Health", B. Schmitt, M.D.; Bantam Books, New York, NY, 1991.

WEIGHT GAIN (INFANT)

Infant weight gain is determined by genetics, environment, nutrition and health. Any of these factors may interfere or enhance infant weight gain. Average weight gain for the first four months of life is 7 to 8 ounces per week. Most normal infants will double their weight by four months and triple their weight after the first twelve months.

Birth weight should be used as the starting point for growth. An infant's birth weight is determined by the mother's pre-pregnancy weight and weight gain during pregnancy. Growth charts, used to plot weight data on growth grids to show how growth is proceeding, are good indicators of proper weight gain. Infant weight gain should proceed steadily upward along a curve on the growth chart and not bounce up or down. Illness, starvation, serious neglect or emotional disturbance may cause an infant's weight gain to decline or drop off the growth curve. Fueling growth with proper food and adequate care should lead to a steady upward weight gain along the growth curve.

Changes in body composition will influence weight gain. Total body water as a percentage of body weight decreases throughout infancy from approximately 70% at birth to 60% at one year of age. Body fat increases after birth. Fat accumulates rapidly until approximately nine months of age. Between two to six months of age the increase in adipose tissue is more than two times as great as the increase in the volume of muscle. Lean body mass also increases.

Source: "Nutrition Throughout the Life Cycle", S. Williams and B. Worthington; Mosby College Publishing, St. Louis, MO, 1988.