

SECTION 1.9: FOOD TEXTURE AND LIQUID CONSISTENCY BASICS

WHAT ARE COMMON FOOD TEXTURES AND LIQUID CONSISTENCIES?

Foods and liquids come in a variety of different textures and consistencies. As young babies, we are given only liquids. As we grow and develop our feeding skills, we experience different solid food textures such as blended cereals, vegetables, mashed fruits and soft table foods. Finally, as our skills fully mature, we can eat all types of foods, including tougher meats and breads. For children who may experience challenges with eating and drinking, finding the right food texture and liquid consistency that is easiest and safest can be hard. Because of this, it's helpful for caregivers to understand different textures and consistencies and which may be best suited for a child based on his skills and needs.

TYPES OF TEXTURES AND CONSISTENCIES²⁰


There are many different types of food textures and liquid consistencies. Foods and liquids are either naturally these textures and consistencies or they can be altered to become a more well-suited texture or consistency for a particular child. Food and liquid can be altered by using tools such as utensils, blenders or thickening agents.

SOLID FOOD TEXTURES	DESCRIPTION	EXAMPLE FOODS
Pureed/Extremely Thick	<ul style="list-style-type: none"> ○ Usually eaten with a utensil ○ Cannot drink from a cup or straw ○ Does not require chewing ○ Smooth, no lumps ○ Does not pour ○ Falls off spoon in single spoonful and holds shape on plate/tray/table 	Blended vegetables, fruits and meats, thick cereals
Minced and Moist	<ul style="list-style-type: none"> ○ Can eat with utensil, chopsticks or sometimes hands ○ Can be shaped and scooped on plate/tray/table ○ Small lumps visible ○ Lumps are easy to squish with tongue ○ Moist and soft ○ Minimal chewing is required ○ Does not require biting 	Finely minced meats, finely minced or mashed fruits, vegetables and fish, thick cereals with small lumps

Soft and Bite Sized	<ul style="list-style-type: none"> ○ Can eat with utensil, chopsticks or hands ○ Soft, tender and moist bite-sized pieces ○ Can be cut without a knife ○ Can be mashed or broken down with utensil ○ Chewing is required ○ Does not require biting 	Cooked-tender meats, flaky fish, mashed fruits, steamed or boiled vegetables, soft cheese and eggs, soaked breads that are “moist” to touch
Regular	<ul style="list-style-type: none"> ○ Normal, everyday foods of varying textures (soft, hard, crunchy, fibrous, chewy, dry, stringy, crispy, crumbly, etc.) ○ Includes mixed or dual consistencies (foods + liquids → soups and stews) ○ Age-appropriate ○ Developmentally appropriate based on skill-level of child ○ Chewing and biting may be required based on food texture 	All meats, vegetables, fruits, cheese, eggs, breads

LIQUID CONSISTENCIES	DESCRIPTION	EXAMPLE LIQUIDS
Thin	<ul style="list-style-type: none"> ○ Fastest flowing liquid ○ Flows like water ○ Can drink from any nipple, cup, syringe or straw 	Water
Slightly Thick	<ul style="list-style-type: none"> ○ Slightly slower flowing than water ○ Slightly thicker than water ○ Can drink from any nipple, cup, syringe or straw 	Breastmilk, formula
Mildly Thick	<ul style="list-style-type: none"> ○ Slower flowing than slightly thick liquids ○ Thicker than slightly thick liquids ○ Flows off of spoon quickly, but slower than thin liquids ○ Can drink from spoons, most open cups and some closed cups and straws ○ More effort required to drink from straw 	Fruit nectars
Moderately Thick	<ul style="list-style-type: none"> ○ Slower flowing than mildly thick liquids ○ Thicker than mildly thick liquids ○ Flows off of spoon slowly in dollops ○ Can drink from spoons and open cups ○ Smooth texture without lumps ○ No chewing or processing required 	Runny pureed fruits and rice cereals, sauces, gravies, honey
Extremely Thick/Pureed	<ul style="list-style-type: none"> ○ Slowest flowing liquid ○ Thickest liquid ○ Usually eaten with a utensil ○ Cannot drink from cup or straw 	Blended vegetables, fruits and meats, thick cereals

	<ul style="list-style-type: none"> ○ Does not require chewing ○ Smooth, no lumps ○ Does not pour ○ Falls off spoon in single spoonful and holds shape on plate/tray/table 	
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TRANSITIONAL FOODS	DESCRIPTION	EXAMPLE FOODS
	<ul style="list-style-type: none"> ○ Foods that change texture (transition) when eating ○ Change due to added moisture (saliva), temperature or pressure ○ Minimal chewing needed and do not require biting ○ Good for teaching new skills such as chewing 	<p>Ice chips, ice cream/sherbet, wafers, waffle cones, some biscuits/cookies/crackers, mashed potato crisps, etc.</p>

WHY MIGHT A CHILD NEED A DIFFERENT TEXTURE OR CONSISTENCY?

There are many reasons why a child may need to be offered a certain food texture or liquid consistency. As caregivers, sometimes we know these reasons and sometimes we unfortunately do not. However, as caregivers, we can discover potential reasons and signs by learning about a child, and noticing how they are doing before, during, after and in-between feedings.

Common reasons a child might need a different food texture or liquid consistency:

- Medical conditions involving reflux, the lungs or heart
- Children born early (prematurity)
- Children born exposed to substances (drugs and/or alcohol)
- Structural differences such as cleft lip or palate
- Neuromuscular disorders such as cerebral palsy
- Developmental disabilities such as Down syndrome
- Social-emotional or environmental factors (limited experience, no caregiver, stressful experiences)



A boy is served a tray full of many different food textures.

COMMON SIGNS A CHILD MIGHT NEED A DIFFERENT FOOD TEXTURE OR LIQUID CONSISTENCY:

- Coughing
- Congestion
- Noisy or “wet” sounding voice or breathing
- Upper respiratory infections
- Difficulty breathing while eating
- Crying or unhappy at meal times
- Oral aversions or “refusals” to eat or drink
- Choking on food or liquid
- Unusually long meal times (more than 30-40 minutes per meal)
- Difficulty chewing
- Avoiding certain food textures or liquid consistencies
- Vomiting
- Concerns with weight and nutrition



LEFT: Children with Down syndrome sometimes need different textures or consistencies due to low muscle tone in the mouth and throat.

RIGHT: Children with cerebral palsy sometimes need different food textures or liquid consistencies due to tight muscle tone in the body and difficulty controlling muscles for eating and swallowing.

WHAT IS THE IMPORTANCE OF CHOOSING THE RIGHT TEXTURE AND CONSISTENCY?




Choosing the right texture and consistency for a child helps make mealtimes safe and comfortable. Offering a texture and consistency that fits a child’s skill level is critical in supporting successful feeding. Additionally, for children with difficulties eating and drinking, modifying food textures and liquid consistencies is a strategy that can be used to increase child safety and well-being. More specifically, certain textures and consistencies can protect a child’s airway and make feedings less tiring and stressful. This improves a child’s ease with feeding and aids in her overall health and nutrition.



When children can eat and drink safely and comfortably, they tend to eat and drink more. They also grow healthy and strong.

Choosing an appropriate texture and consistency is important because:

- ① It is a primary step in a child’s development of oral motor skills.
- ② It allows a child to experience new textures and sensations in a safe way.
- ③ It offers a safer feeding experience for a child.
- ④ It offers a more comfortable and enjoyable feeding experience for a child.

BENEFITS OF APPROPRIATE TEXTURES AND CONSISTENCIES	DESCRIPTIONS (WHAT THIS LOOKS LIKE)
<p>Oral Motor Skills</p> 	<ul style="list-style-type: none"> ○ Teaches children how to use their mouths in different ways based on the textures and consistencies ○ Teaches children how to eat and drink more challenging foods and liquids
<p>Sensory Development</p> 	<ul style="list-style-type: none"> ○ Provides children the chance to try new, different food textures and liquid consistencies ○ Prepares children for a variety of foods and liquids adults eat and drink
<p>Health and Well-being</p> 	<ul style="list-style-type: none"> ○ Creates a safer eating and drinking experience ○ Offers a more comfortable and enjoyable eating and drinking experience ○ Reduces the occurrence of illness, meal refusals, malnourishment, dehydration and death

TYPICAL DEVELOPMENTAL FOOD EXPECTATIONS TIMELINE: SOLID FOOD TEXTURES

There is an important and typical time frame (age range) for when a child learns to eat each food texture. However, it is necessary for caregivers to consider not only the child's age, but also his developmental skill level and overall readiness when deciding when to introduce each texture. Although a child may be a certain age, it is more important that he has the necessary skills and he is safe to transition to a new food texture.

Below are the typical developmental skills that support the process of learning to eat each food texture and the developmental age at which they are often seen.

AGE	DEVELOPMENTAL SKILL	FOOD TEXTURES
0 – 5/6 Months	<ul style="list-style-type: none"> ○ Sucking 	<ul style="list-style-type: none"> ○ Liquids via breast and/or bottle
5-6 Months	<ul style="list-style-type: none"> ○ Sucking ○ Tongue thrust lessens ○ Mouth opens for spoon ○ Food moves from front of tongue to back 	<ul style="list-style-type: none"> ○ Smooth pureed foods
7-9 Months	<ul style="list-style-type: none"> ○ Up and down munching pattern for chewing develops ○ Tongue thrust lessens even more ○ Movement of tongue from side to side develops 	<ul style="list-style-type: none"> ○ Thicker, smooth pureed foods ○ Foods that dissolve with saliva such as teething biscuits, buttery crackers, etc. ○ Soft table foods such as bananas, avocado, well-cooked carrots and squash, etc.
12-14 Months	<ul style="list-style-type: none"> ○ Munching pattern continues to develop ○ More mature chewing (rotary chew) emerges 	<ul style="list-style-type: none"> ○ Same as above
14-18 Months	<ul style="list-style-type: none"> ○ Rotary chew continues to develop ○ Lip movement and closure increases 	<ul style="list-style-type: none"> ○ Soft meats and mixed textures such as cereal with milk, soup, rice and beans, etc.
18-24+ Months	<ul style="list-style-type: none"> ○ Rotary chew is fully developed ○ Lip closure is adequate for chewing and swallowing ○ Jaw stability improves and allows biting through foods of different thicknesses 	<ul style="list-style-type: none"> ○ Meats ○ Raw fruits and vegetables ○ Mixed textures



TYPES OF SOLID FOOD TEXTURES

There are many different types of solid food textures. A child who is developing typically will eventually try all textures as she grows older and as her skills develop. However, for a child who has challenges eating, she may need certain textures (and avoid eating others) to ensure her health and comfort when feeding. Whatever the type of texture offered, it should be age-appropriate and it must match a child's skills and physical needs. So, it's helpful to understand the differences in order to make the best choice for every child. Ultimately, a child will let caregivers know which food textures she is able to manage and when she is ready to try something new.

PUREED

Pureed foods are blended foods that are smooth (no lumps) and not sticky. With the right blender or tools, most foods can be made into purees.

BEST FOR: Most children 6 months and older



ESPECIALLY GOOD FOR:

- new eaters
- younger children 6-9 months old
- children with limited chewing skills
- children with limited tongue movement or control
- children with missing teeth/dental issues
- children who tire easily with munching and chewing
- children who experience pain or discomfort with chewing and/or swallowing

A puree is too thick if it sticks to a utensil or does not fall off of a utensil when tilted.

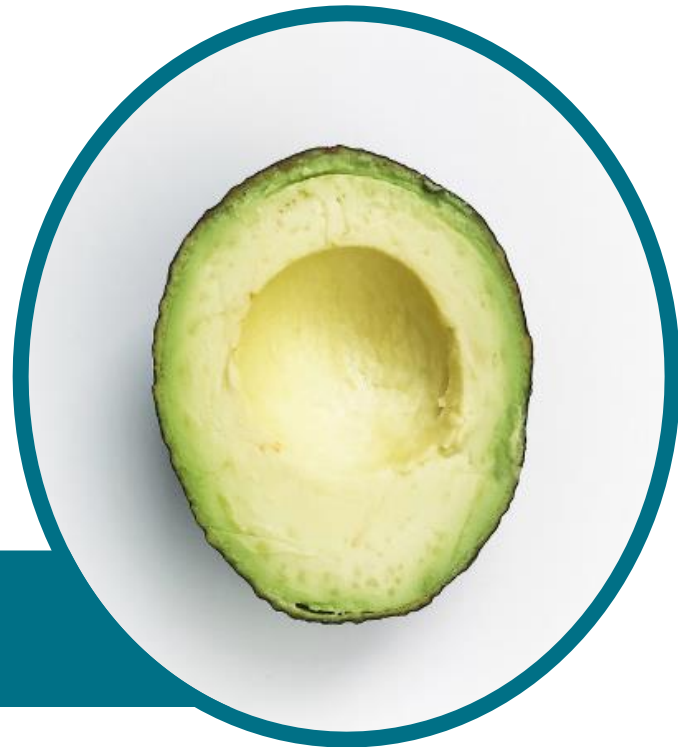
MINCED AND MOIST

Minced and moist foods are soft, wet and have visible lumps. They can be eaten using the fingers or utensils, and the lumps are easily squished using fingers or utensils. When swallowed, these foods turn into a puree. Many minced and moist foods can easily be mashed with a utensil (for example: avocado, baked sweet potato flesh, banana). Minced meats and fish can be served with thick non-pouring gravies or sauces. Breads must be “soaked” in liquids and not served dry. Cereals should be served very thick, smooth and extra liquids should be drained. Rice should not be sticky, glutinous or grainy.

BEST FOR: Most children 7 months and older

ESPECIALLY GOOD FOR:

- new eaters
- younger children 7-12 months old
- children with some munching skills
- children with some tongue movement or control
- children with missing teeth or dental issues
- children who tire easily with munching and chewing
- children who experience pain or discomfort with chewing or swallowing



If a food cannot be finely minced, it should be pureed.

SOFT AND BITE-SIZED



Soft and bite-sized foods are tender, moist and small in size to make eating safer and easier. They can be eaten using the fingers or utensils, and they can easily be cut through without the use of a knife. Meats should be served tender and no bigger than 8 millimeters (width of fingernail), and fish should be soft and flaky. Breads must be “soaked” in liquids and not served dry. Cereals should be served smooth with soft lumps and extra liquids should be drained. Rice should not be sticky, glutinous or grainy.

If a food cannot be soft and bite-sized, it should be served minced and moist.

BEST FOR: Most children 9 months and older

ESPECIALLY GOOD FOR:

- children with adequate chewing skills
- children with adequate tongue movement and control
- children who tire easily with munching and chewing may still do well with these foods or when given in smaller amounts paired with minced and moist and/or pureed foods
- older children learning how to feed themselves using utensils



Soft and bite-sized foods require that a child is able to chew foods. If a child is not yet chewing but given these foods, they are more likely to choke. Caregivers must always be cautious when trying new foods and be present with children when they are eating.

REGULAR



Regular foods are normal “table foods” that suit a child’s age and her skill level. They can be eaten using the fingers or utensils, and they may require biting and chewing. Regular food textures can be: smooth, lumpy, sticky, crispy, crumbly, crunchy, hard, tough, fibrous and chewy. Breads may be served dry and rice can be sticky, glutinous or grainy.

BEST FOR: Most children between 18-24 months and older

Because regular foods require more oral motor skills, they also require a child have good endurance to last the length of the meal and not tire easily.

ESPECIALLY GOOD FOR:

- children with adequate chewing skills
- children with adequate tongue movement and control
- children who do not tire easily with chewing
- older children learning how to feed themselves using utensils



TYPES OF LIQUID CONSISTENCIES

There are several different liquid consistencies. Most children who are developing typically will only need thin liquids. However, for a child who has challenges with swallowing, he may need certain liquid consistencies (and avoid others) to ensure his health and comfort when feeding. Whatever the type of consistency offered, it should be age-appropriate, and it must match a child’s skills and physical needs. So, it’s helpful to understand the differences in order to make the best choice for every child. Ultimately, a child will let caregivers know which consistency he is able to manage and when he is ready to try something new.



THIN

Thin liquids are the fastest flowing liquids. They flow the fastest because they are the least dense. Thin liquids can be taken from any nipple, teat, cup, syringe or straw.

BEST FOR: Most children 0 months and older

ESPECIALLY GOOD FOR:

- children with adequate swallowing skills
- children with adequate oral motor skills
- children with healthy bodies free from respiratory illness and fevers

SLIGHTLY THICK

Slightly thick liquids flow a little slower than water because they are more dense. They are similar in thickness to commercial baby formulas. They can be taken from a nipple, cup, syringe or straw. Slightly thick liquids can be helpful for babies who frequently spit up.

BEST FOR: Most children 0 months and older

ESPECIALLY GOOD FOR:

- children with adequate swallowing skills
- children with adequate oral-motor skills
- children with gastroesophageal reflux disease (GER, GERD) or reflux



Slightly thick liquids can be helpful for babies who frequently spit up.

MILDLY THICK

Mildly thick liquids flow quickly off of a spoon, however, more slowly than thin and slightly thick liquids. They can be taken from spoons, some nipples and straws, most cups and syringes. Some liquids are naturally mildly thick such as fruit nectars. For liquids that are not naturally mildly thick, thickening agents can be used.

BEST FOR: Most children 0 months and older (*babies younger than 6 months should only be given breast milk or formula.)

ESPECIALLY GOOD FOR:

- children with adequate swallowing skills
- children with adequate oral-motor skills
- children with slightly reduced oral motor skills
- children who have difficulty with thin liquids (impaired swallowing skills)



MODERATELY THICK

Moderately thick liquids flow easily, but slowly off of a spoon. They are smooth without bumps and can be taken from spoons and some cups. These liquids require no chewing, less effort and they allow a child more time to prepare for a swallow. There are liquids that are naturally moderately thick such as runny pureed foods, certain sauces and gravies. For liquids that are not naturally moderately thick, thickening agents can be used.

BEST FOR: Most children 0 months and older (*babies younger than 6 months should only be given breast milk or formula that is thickened)

ESPECIALLY GOOD FOR:

- children with significantly reduced oral motor skills
- children who have difficulty with thin, slightly and
- children who do best with a slow, controlled liquid

EXTREMELY THICK OR PUREED

Extremely thick liquids are similar to pureed foods. They are blended until smooth (no lumps) and not sticky. With the right blender or tools, most foods and liquids can be made into extremely thick liquids. Extremely thick liquids cannot be taken using a cup or straw – a spoon or sometimes a fork must be used. These liquids require no chewing, less effort and they allow a child more time to swallow. There are items that are naturally extremely thick such as pureed baby foods. For liquids that are not naturally extremely thick, thickening agents can be used.

BEST FOR: Most children 6 months and older

ESPECIALLY GOOD FOR:

- younger children 6-9 months old
- children with limited oral-motor skills
- children with missing teeth or dental issues
- children with frequent respiratory illnesses and fevers
- children who have difficulty with thin, mildly and moderately thick liquids (impaired swallowing)
- children who do best with a slow, controlled liquid
- children who tire easily with munching and chewing
- children who experience pain or discomfort with chewing and/or swallowing

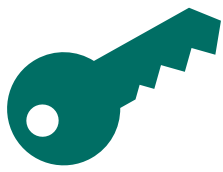


If a child is showing signs such as frequent coughing or choking with moderately thick liquids, this may mean they have a swallowing problem. Try offering extremely thick liquids.



For more information on thickening foods and liquids, refer to Appendices 9C, 9D, and 9E.

For more information on how to advance a child's diet, refer to Appendix 9F.



KEY ELEMENTS OF FOOD TEXTURE AND LIQUID CONSISTENCIES

KEY ELEMENTS	TEXTURE AND CONSISTENCY CONSIDERATIONS
Age-Appropriate	<ul style="list-style-type: none"> ○ Foods and liquids match child's age level ○ Foods and liquids aren't too challenging for age ○ Foods and liquids aren't too easy for age ○ Foods and liquids change as the child grows and develops
Developmentally Appropriate	<ul style="list-style-type: none"> ○ Foods and liquids match child's developmental skill level ○ Foods and liquids match child's physical abilities (positioning, body strength and control, use of hands, etc.) ○ Foods and liquids match child's other abilities (alertness, interest and "readiness" for feeding, visual skills, etc.) ○ Foods and liquids change as child grows and develops
Match Oral-Motor and Swallowing Skills	<ul style="list-style-type: none"> ○ Foods and liquids match child's tongue movement and control skills ○ Foods and liquids match child's lip, cheek and jaw skills ○ Foods and liquids match child's swallowing skills ○ Foods and liquids match child's dentition (teeth, missing teeth)
Efficient	<ul style="list-style-type: none"> ○ Foods and liquids match child's endurance (energy) level ○ Feeding takes 30 minutes or less
Safe and Comfortable	<ul style="list-style-type: none"> ○ Foods and liquids support safe feedings for child ○ Foods and liquids support comfortable feedings for child ○ Foods and liquids support health of the child ○ Foods and liquids support happiness and well-being of the child



FOOD TEXTURE AND LIQUID CONSISTENCY TIPS FOR EVERY CHILD

TIP 1:	<u>Always consider the individual needs of a child when choosing a texture or consistency.</u> Not every child will do well with all foods and liquids at their current ages. Children have many different strengths and special challenges that must be considered.
TIP 2:	<u>Always consider a child's skill level when choosing a texture or consistency.</u> Do not only consider a child's age when thinking about what to offer.
TIP 3:	<u>Finding the best texture or consistency can take a lot of work.</u> Caregivers may need to try a texture/consistency several times or different textures/consistencies until they find what works just right for a child. Take your time, observe how a child responds and make small changes as needed.
TIP 4:	<u>Good positioning is key.</u> Finding a safe and comfortable position for every child is critical. A stable position will always make eating and drinking easier and safer.
TIP 5:	<u>Start small and slow.</u> Offer several "trials" of a new texture or consistency in small amounts when first starting out with a child. Starting slowly lets caregivers learn how a child is managing a texture or consistency. The slower the rate and the smaller the bites/sips, the easier and safer it will be for a child.
TIP 6:	<u>Children learn best in the context of positive relationships.</u> Offering positive interactions with a child during mealtimes is the best way to support this process.
TIP 7:	<u>Messy is okay!</u> Learning to eat and drink new textures and consistencies can be messy. However, getting messy is healthy because it teaches children how foods and liquids feel, and widens their interests in trying different items.

FINAL THOUGHTS

Most children advance through all food textures and drink thin liquids easily without challenges. However, when a child displays trouble eating and swallowing, knowing how to change the foods and liquids offered to make mealtimes safer and easier is beneficial and empowering. The slower the rate and the smaller the bites or sips, the easier and safer it will be for a child.