

## **CHAPTER 7**

**TITLE: HEALTHY WEANING OF MAMMALS AND INFANT NURSING**

**NAME: KIKELOMO ALABA**

**INSTITUTION: THE FEDERAL POLYTECHNIC ILARO, OGUN, NIGERIA**

**DEPARTMENT: NUTRITION AND DIETETICS**

**E-MAIL:kikelomoalaba1@gmail.com**

**TEL: 08038603941**

### **INTRODUCTION**

Weaning is the process of moving a baby from a diet of the mother's milk to solids. It can also be referred to as the process of gradually introducing a mammal infant to what will be its adult diet and withdrawing the supply of the mother's milk. The first weaning helps lay the foundations for healthy eating habits and teaches the baby to eat from a spoon, swallow, and eventually chew.

The process takes place only in mammals, as only mammals produce milk. The infant is considered to be fully weaned once it is no longer fed any breast milk (or breast milk substitute). As they grow, food will eventually provide all the nutrients the little one needs, but for now it is just about getting them used to new tastes and textures.

### **SETTING UP HEALTHY EATING HABITS**

The baby will naturally be more receptive to sweet tastes at first, but we believe starting with veggies will really benefit their health in the long run. In fact, research has shown that encouraging veg intake during weaning helps to shape the little one's preferences, forming healthy habits for the future.

It is important to introduce different single veggie flavours early in weaning, without making them sweeter by mixing with fruit. They might pull a face at first, but it is worth persevering.

On average, it takes around a month to go through the 5-step weaning plan, but every baby is

different - some get the hang of eating solids quickly, and others take a little more time to get used to new flavours and textures. They all get there in the end, so do not rush - it is fine to repeat steps until the baby is ready to move on.

As a rough guide, little ones start weaning at around 6 months and the 5 steps in this plan typically take around a month to complete. When the little one is ready to start, they will find a way to let you know:

- sit up and hold their head steady
- seem interested in the food or take it from the plate
- pick things up to put in their mouth
- swallow some food when it is offered to them.

Signs are rarely seen in combination until around 6 months. Simply waking up during the night and/or sucking their fists are not considered to be signs of being ready for weaning.

Weaning should not occur before 17 weeks. If the mother thinks the little one is ready before 6 months but is only showing one or two signs, then a healthcare practitioner should be consulted.

## **BABY-LED WEANING**

Baby-led weaning means letting the baby feed themselves right from the very start of the weaning process. This could be with soft finger foods to grab and learn how to eat, and by giving the baby a spoonful of mashed food to feed themselves.

## **MOTHER-LED WEANING**

Mother-led weaning is when the weaning is initiated by the mother as a result of her work. It means the baby is not ready for weaning but was forced to be weaned.



## **WAYS TO WEAN**

However, whatever way is chosen to wean, focus on building healthy habits and make it fun. How and when to wean a human infant is controversial. The American Academy of Pediatrics recommends feeding a baby only breast milk for the first six months of its life. Many mothers find breastfeeding challenging, especially in modern times when many mothers have to return to work relatively soon after the birth of their child.

The American Academy of Pediatrics, the World Health Organization, the National Health Service Choices UK, and the National Health & Medical Research Council in Australia recommend waiting until 6 months to introduce baby food. However, many baby food companies market their "stage 1" foods to children between 4 and 6 months old with the precaution that the food is meant to be consumed in addition to breast milk or formula and is just for "practice". These practice foods are generally soft and runny. Examples include mashed fruit and vegetables. Certain foods are recommended to be avoided. The United Kingdom's NHS recommends withholding foods including those "that contain wheat, gluten, nuts, peanuts, peanut products, seeds, liver, eggs, fish, shellfish, cows' milk and soft or unpasteurized cheese" until a baby is six months old, as they may cause food allergies or make the baby ill. However, recommendations such as these have been called into question by research that suggests early exposure to potential allergens does not increase the likelihood of allergies, and in some cases reduces it.

In many cultures around the world, weaning progresses with the introduction of food that has been pre-chewed by the parent along with continued breastfeeding, a practice known as premastication. The practice was important in human history in that it naturally gave a child a greatly improved protein source and also prevented iron deficiency. The pre-chewing of food also gives the baby long-term immunological benefits through factors in the mother's saliva. However, pre-masticated food from caregivers of lower socioeconomic status in areas of endemic diseases can result in passing the disease to the child.

No matter what age baby food is introduced, it is generally a very messy affair, as young children do not have the coordination to eat "neatly". Coordination for using utensils properly and eating with dexterity takes years to develop. Many babies begin using utensils between 10 and 14 months, but most will not be able to feed themselves well until about 2 or 3 years of age.

### **MILK STILL MATTERS**

When you start weaning, milk remains the main source of nutrition for your baby. If you are between 6 and 12 months, stick to your pre-weaning routine, and your baby will drop a feed when they're ready. As a general guide, bottle-fed babies need around 500-600ml of milk a day. If you are breastfeeding, feed on demand as well as offering foods.

Unless they are drinking over 500ml of formula milk a day, the Department of Health recommends giving little ones from 6 months to 5 years supplements containing vitamins A, C and D.

### **LOCAL WEANING FOODS**

- Ogi/Akamu- maize or sorghum gruel prepared into moderately thick paste with hot water. Add beaten egg or milk
- Ogi/Akamu with ground crayfish-cooked maize gruel with clean ground crayfish
- Kanjika- ogi/akamu-maize/sorghum or addition of the two cooked to thick paste with addition of coconut water rich in Vitamin A and other food values in milk and sorghum
- Mashed yam- cook yam to soft and mash with little oil or vegetable oil and milk
- Yam balls- prepare as above, then bake lightly in the oven.
- Fruit drink- use two or three fruits e.g. oranges, pineapple, cucumber, watermelon. Wash

clean, dice, and blend all. Feed baby with spoon. Very nourishing

- Boiled beans- well-cooked beans. Cook with a pressure pot or cook overnight in a thick-bottom pot with a tightly covered lid. Add a little oil and mash together. Feed baby with spoon

- Soups- bean soup/gbegiri

- Rice pudding- ground rice cooked in water and add milk. Good and nourishing

## **ESSENTIAL WEANING EQUIPMENT**

- A few colourful baby feeding spoons and plastic bowls

- Bibs and clean cloths

- Saucepans and/or a steamer

- A hand blender or food processor

- Ice-cube trays or small containers

- Free-flow beakers

## **WEANING SAFELY**

We recommend starting weaning with smooth textures, as they are easy for the baby to learn how to swallow. If soft finger foods need to be introduced, make sure the little one is at least 6 months. If the baby cannot manage something, try not to worry too much, as their natural gag reflex will normally help them cough it up or spit it out. Never leave the baby alone when they are eating.

## **ALLERGIES & SPECIAL DIETS**

If the baby has an allergy or you would like them to follow a specific diet, feel free to talk to the medical personnel.

## **WEANING CONFLICT**

Breastfeeding in tandem

At this point, the mother tries to force the infant to cease nursing, while the infant attempts to force the mother to continue. From an evolutionary perspective, weaning conflict can be considered the result of the cost of continued nursing to the mother, perhaps exceeding the benefits to the mother, but will share less time and increased survival of the current infant. This can come about because future survival will be equally related to the mother as the current infant, but will share fewer genes- the current infant's genes. So, from the perspective

of the mother, as soon as the cost to the current infant, assuming the current infant makes sense for her to cease nursing the current infant. But, assuming the current infant's offspring exceeds the benefit to the current infant, from the perspective of the infant's own genes, it makes sense for the infant to continue nursing until the cost to future offspring exceeds twice the benefit to itself (perhaps less, depending on the number of future offspring). Weaning conflict has been studied for a variety of mammals, including primates and canines.

## **WEANING AGE**

There is significant individual and cultural variation in time of weaning. Scientifically, one can ask various questions; some of the most straightforward and empirical include:

As there are significant ranges and skew in these numbers (some infants are never weaned or only are nursed briefly, for instance), looking at the median (half-way mark) is more useful than looking at the average.

Considering biological measures of maturity, notably investigated by Katherine Dettwyler, yields a range of ages from 2 1/2 years to 7 years as the weaning age analog to other primates - the "natural age of weaning". This depends on the measure, for example: weaning in non-human primates is often associated with eruption of permanent molars (humans: 5 1/2 to 6 years); comparing duration of nursing to length of pregnancy (gestation time) yields a factor of about 6 in chimpanzees and gorillas (humans: 54 months = 4½ years); body weight may be compared to birth weight (quadrupling of birth weight yields about 2½ to 3½ years for humans; 1/3 of adult weight yields 5 to 7 years for humans); and similarly for other measures. The age at which children are normally weaned can vary significantly between cultures, "from 6 months to 5½years." (In the book of 1 Maccabees, 7:27, a mother mentions giving milk to her son for three years as though this was normal.) In Islam, the age of weaning is 2 years but can be less if the mother wants to. In Islam, other studies are possible, but in psychological factors. For example, Barbara Rogoff noted, citing a 1953 study by Whiting & Child that the most distressing time to wean a child is at 13-18 months. After this peak, weaning becomes progressively easier and less distressing for the child, with "older children frequently wean themselves."

In other mammals

In science, mice are frequently used in laboratory experiments. When breeding laboratory mice in a controlled environment, weaning is defined as the moment when the pups are transferred out of the mothers' cage. Weaning is recommended at 3 to 4 weeks after

parturition.

### **In cattle**

Weaning in cattle can be done by many methods. Dairy calves are usually weaned off their mother at birth. Beef calves are not usually weaned off their dams until the calves are between 8 and 10 months of age. Before a calf is completely weaned off of milk, for both dairy and beef cattle, the calf must have developed a fully functioning rumen. For beef cattle, there are many methods of weaning that are used. The use of these methods depends on farm management style, feed availability, condition and age of cow (dam), type of production, and whether or not the calves are heifers. Results vary between farms, and methods are still being researched as studies have shown contradicting results on stress levels of calves from different methods of weaning.

Traditionally, beef calves are weaned by abrupt separation, where the calves are separated from their dams and have no contact with each other, or by fence line weaning, where the dam and calf have contact over a fence line. This has been shown to cause high vocalization, reduced feed intake, reduced rumination, and an increased amount of time searching for each other, as well as disrupting the social structure of the herd and of the calves. There is evidence that calves can undergo a form of depression post-weaning and have the potential to undergo illness that may need to be treated.

Two-step weaning is a newly developed method used to wean off beef calves from their dams. With this method, the calf is fitted with a nose flap that prevents suckling for a period of time, after which the calf is separated from the dam, preventing contact. The nose flap does not limit the calf from performing any behaviors other than suckling; they are still able to drink and graze normally. Most research has shown that this method reduces the amount of stress that the calves endure. Studies show that prior to separation, there is no change in feeding habits or social interaction with other members of the herd. Once showing less vocalization, less pacing, and spent more time eating than calves that were weaned on a more traditional method.

Dairy calves are separated from their dam soon after they are born in most dairy operations. In some, there is no contact between calf and cow for health-related reasons, such as preventing Johne's disease. The main purpose of separating dairy cows from their dam for the first few days is to provide milk replacer. Dairy calves are then fed colostrum from the dam for the first few days, and then milk replacer. Dairy calves do not have ad libitum milk like

beef calves. By limiting the amount of milk the calves receive, it causes the calves to consume more feed, which leads to faster development of the rumen. Dairy calves are usually weaned off milk early, usually at 4-8 weeks of age.

### **In horses**

Weaning in horses usually takes place when the foal is 4 to 5 months old, as by this point the foal no longer needs nutrients beyond what the mare offers. Prior to weaning the foal, there is usually a creep feeder set up to allow the foal to begin consuming feed that the mare cannot access. There are two main approaches to weaning foals: abrupt and gradual weaning. Abrupt weaning is when the mare and foal are separated, usually without contact, but not enough contact to allow nursing to occur, and then after some time the mare and foal are separated. The abrupt method has been shown to have higher stressful behaviour displayed. Weaning foals in groups for both methods can reduce stress in the foals.

### **In dogs**

With dogs, the puppies are slowly weaned off their mother, slowly reducing the amount of milk and care that the mother is giving to them. It generally starts when they are 7-8 weeks old. By weaning the puppies slowly, it makes it less stressful for the mother. It is generally over several weeks, making it less stressful for the mother. Naturally, in the wild, the mother will begin weaning off the puppies because it will start developing teeth, which will irritate the mother when the puppies are nursing. This causes her to continually leave the puppies for longer periods of time, causing them to gradually be weaned off their mother. Wild dogs will also regurgitate food to feed the puppies to ease them onto a new diet.

During this weaning process, the puppies will learn from their littermates and their mother certain behaviors such as understanding dominance and learning to reduce their biting habit and when to be submissive to others.

While weaning, the puppies should be fed a high-quality diet that will be fed to them for the first post-weaning period. It may be helpful to moisten the food with water or milk replacer for the first while. By feeding the puppies this, it causes the puppies to reduce how much they rely on their mother for food.

### **In rats**

Rats that are raised in a laboratory, or are bred for selling purposes, are usually weaned at the age of 3 weeks. If the pups were left with their mother then weaning would occur at the age of 3 weeks. This can have some health and behavioral benefits in the rats until they were older. If the pups were weaned at 3 weeks of age is because often the mother is pregnant again, especially in a laboratory setting or if owned by a rat breeder. The main reason that pups are weaned at 3 weeks of age is because often the mother is pregnant again, especially in a laboratory setting or if owned by a rat breeder. By the time the pups must be weaned off the mother before the next litter is born. Therefore, the pups must be weaned off the mother before the next litter is born. This will prevent trampling of the pups, as well as overcrowding, which can occur especially if the mother is being kept in a monogamous pair. Generally, the pups are separated by sex when weaning occurs, but are never housed alone. After weaning, the pups should be fed a supplemented diet for at least a month, but can be bred at 13 weeks.

### **In Kittens**

Weaning kittens involves transitioning the kittens from mother's milk to solid food. During weaning, kittens gradually progress from dependence on a mother's care to social independence. Ideally, weaning is handled entirely by the mother cat. However, if a kitten is separated from its mother, weaning may have to be done by someone.

At 24 hours after birth, kittens can discriminate between their mother's teat and a foreign teat. Studies indicate that kittens have different preferences when being weaned, and that is based on specific prenatal and postnatal exposure to various flavours. For example, kittens exposed to cheese flavour during pregnancy and the first week after birth oriented preferentially towards cheese-flavoured chicken. The weaning process normally begins when kittens are around four weeks old, and is usually completed when they reach 8-10 weeks old. It is important to note that abrupt removal from the mother can have a negative effect on the kitten's health and socialisation skills. Weaning should be done when the kitten reaches 4 weeks old. They should be placed in a separate area for a few hours at a time to reduce dependence on their mother's milk and her overall presence. The kitten should be put in their own special area with a litter box, food, and water bowls.

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