= Premastication =

Premastication , pre @-@ chewing , or kiss feeding is the act of chewing food for the purpose of physically breaking it down in order to feed another that is incapable of masticating the food by themselves . This is often done by the mother or relatives of a baby to produce baby food capable of being consumed by the child during the weaning process . The chewed food in the form of a bolus is transferred from the mouth of one individual to another , either directly mouth @-@ to @-@ mouth , via utensils , hands , or is further cooked or processed prior to feeding .

The behaviour was common throughout human history and societies and observed in non @-@ human animals . While premastication is less common in present @-@ day Western societies it was commonly practiced , and is still done in more traditional cultures . Although the health benefits of premastication are still being actively studied , the practice appears to confer certain nutritional and immunological benefits to the infant , provided that the caretaker is in good health and not infected by pathogens .

= = Behavioural roots = =

Premastication and mouth @-@ to @-@ mouth feeding in humans is postulated to have evolved from the regurgitation of food from parent to offspring or male to female (courtship feeding) and has been observed in numerous mammals and animals of other species . For instance , food begging behaviour observed in young wolves , wild dogs and certain gulls species , which involves the young approaching the beak or mouth of the adult with their own whereupon gaping their mouths or nuzzling , the adult would regurgitate portions of food to feed the young . However , in the aforementioned animals , this nuzzling behaviour and other types of mouth @-@ to @-@ mouth contact are also used for bonding , socialization , and courtship .

= = = In apes = = =

Young orangutans also beg for food by such contact and accordingly their caretakers regurgitate to feed them . Indeed , behaviours of mouth to mouth feeding of premasticated food and ritualized mouth to mouth contact for bonding has been observed in anthropoid great apes such as gorillas , orangutans , and chimpanzees . All of this supports the idea that human behaviours of kissing and feeding of premastication foods , either directly or indirectly from the mouth , have their behavioural roots in higher animals and ancestral great apes .

= = = Human kiss precursor = = =

In all human cultures premastication / kiss @-@ feeding or kissing between mother and infant has been observed in all with kissing believed to be a socially ritualized form of feeding premasticated food . There is high similarity in the execution of kiss @-@ feeding and human kisses (e.g. French kiss) ; in the former , the tongue is used to push food from mother to child with the child receiving both the mother 's food and tongue in sucking movements , and the latter simply forgoes the premasticated food . In fact , observations across various species and cultures confirms that the act of kissing and premastication have most likely evolved from the similar relationship @-@ based feeding behaviours .

= = History and culture = =

Written records of premastication have been found in Ancient Egypt , though the practice likely extends back into prehistoric times to non @-@ human ancestors . For instance , in the Ancient Egyptian Ebers medical papyrus , a mother was instructed to give a medical remedy to a child through premastication . In the fifth century A.D. Roman culture , premastication of infants ' food by caretakers was also common , though the lack of sanitation along with the practice contributed to

infant mortality . Infants in Medieval Europe were fed an assortment of mashed , premasticated food or bread softened with liquids .

Due to attitudes in Western medicine in the 1940s and 1950s , Native American and Fijian cultures and societies were strongly dissuaded from premastication due to concerns about the hygiene of the practice . However , the lack of knowledge regarding premastication and its prohibition by missionaries and doctors instead caused severe anemia in the infants of the population , or resulted in malnourished infants and children deprived of nourishment .

Although less prevalent in modern post @-@ industrial Western societies , the offering of premasticated foods to infants is found in many traditional cultures and offers their infant numerous benefits . In North America , premastication is still commonly used by Black and Hispanic mothers , and commonly used by women of Inuit and Aleut peoples .

In many human cultures , the act of premastication and direct mouth @-@ to @-@ mouth feeding is linked with the showing of affection , known as kiss feeding . In the Manus cultures of the Admiralty Islands , the act of premastication has been used by a women to remind children and descendants of their obligations to her . Some human cultures such as the people of Papua New Guinea in fact use mouth to mouth contact primarily for feeding premasticated food , with sexual kissing only observed after the arrival of Europeans . This form of feeding is believed to have evolved into the modern human acts of kissing and French kissing .

Many Western societies have strong aversions toward premastication , which have been compared to their similar criticisms and aversion towards breastfeeding in previous generations for similar rationale , with the same societies finding breastfeeding to be a disagreeable practice performed only by the uneducated lower classes or untempered foreign cultures . For instance , in the late 1800s the medical community of Texas was embroiled in a debate on premastication , with those supporting the practice arguing its benefits and those against it stating that it is " filthy and replusive and ... barbaric " .

= = Health = =

The act of premastication is commonly found in all human societies and populations , although it is less prevalent in some than others . The evolution and selective advantage of premastication behaviours is that it supplements the infant diet of breast milk by providing access to more macro- and micro @-@ nutrients . Although disease can be transmitted through saliva in the pre @-@ chewed foods , the benefits conferred outweighed any risks of the practice during the evolution of human behaviour . Furthermore , discouraging premastication as prevention to disease transmittion may prove as disastrous an infant public health policy as when infants breastfeeding was discouraged in the late 1980s and early 1990s . In the end , the potential benefits and pitfalls of this practice greatly depend on the dietary and medical circumstances of the mother and child . The true scope of the benefits of premastication and its prevalences in differenct societies is still under active research , though there appears to be some consensus on the nutritional benefits of the practice .

= = = Advantages = = =

= = = = Breastmilk supplement = = = =

Premastication is complementary to breastfeeding in the health practices of infants and young children , providing large amounts of carbohydrate and protein nutrients not always available through breast milk , and micronutrients such as iron , zinc , and vitamin B12 which are essential nutrients present mainly in meat . Compounds in the saliva , such as haptocorrin also help increase B12 availability by protecting the vitamin against stomach acid .

= = = = Infant intake of heme iron = = = =

Meats such as beef were likely premasticated during human evolution as hunter @-@ gatherers . This animal @-@ derived bioinorganic iron source is shown to confer benefits to young children (two years onwards) by improving growth , motor , and cognitive functions . In earlier times , premastication was an important practice that prevented infant iron deficiency .

Meats provide Heme iron that are more easily absorbed by human physiology and higher in bioavailability than non @-@ heme irons sources , and are recommended sources of iron for infants .

= = = = Anti @-@ allergy and immunological benefits = = = =

The infant can benefit from immunological resistance to infections and immunological hypersensitivity such as asthma can be inhibited through the antimicrobial , anti @-@ inflammatory , growth factors , and nutrient transporters in the mother 's saliva . Related to the hygiene hypothesis , it is postulated that early childhood exposure to rich microflora from premastication may be important in priming the immune system and reducing allergic responses .

Premastication may itself promote the development of infant immune systems through antibody generators in the mother 's saliva , which help prevent the development of allergies in the infant . Early infant feeding of premasticated foods such as eggs and nuts alongside breastfeeding could help promote immune tolerance and help moderate allergic responses . The practice of premastication is postulated to play an important role in the development of oral immunotolerance and help prevent the occurrence of autoimmune diseases in the infant . Although the rise in allergic and autoimmune diseases in Western societies has not been directly linked to the decrease of premastication in these same societies , researchers believe that these two phenomena are related .

= = = = Parental enzymes = = = =

Premasticated foods allow for better infant digestion through the presence of saliva enzymes lacking in infants . Alpha @-@ amylase from maternal saliva aids in digestion of starches fed to a baby . This may be important in the developed nations since " ... milk supplements containing starch are used frequently and if these are introduced into feeds at an early stage , digestion of the starch will require the action of salivary amylase ... " Children being fed mainly plant based diets by vegetarian parents also benefit from the more prevalent and different types of digestive enzymes in premasticated food . Fat digesting lingual lipase in adult saliva can also help infant digestion and fat absorption since infants generally do not produce enough of these enzymes in their digestive tracts to efficiently process the fats they consume .

= = = Disadvantages = = =

= = = = Transmission of diseases = = = =

Premastication can transmit a wide range of diseases and pathogens from infected parents to their infants through the parents ' saliva and open mouth ulcers , including HIV @-@ AIDS as well as possibly hepatitis B virus and Helicobacter pylori . Given the prevalence of HIV in populations of lower @-@ income and poorer nation @-@ states who practice premastication extensively , the practice is likely an important method for transmission of the virus in their populations . In Chile , the practice is also associated with HIV transmission from caregivers who were unaware of their infection to children under their care .

Some state that since most mothers in the West will already know if they are carrying HIV or other serious infectious agents , mothers exercising caution who wish to breastfeed or premasticate for their children should not be dissuaded by experts who use science to justify their own personal disapproval .

= = = = Establishment of cavity causing bacteria = = = =

The widespread belief that dental caries causing bacteria from the mother 's oral ecology can be transmitted to the infant through the saliva , resulting in bacterial colonization and a strong predisposition to tooth decay in the child was already falsified by a voluminous study in 1994 . Instead , it was found that children develop a higher resistance to caries if there are frequent mother ? infant salivary contacts .