

Time	Narration
00:00	Welcome to the spoken tutorial on comparison of mother's milk with other substitutes.
00:08	In this tutorial we will learn about:
00:11	Advantages of mother's milk.
00:15	Harmful effects of formula feed and animal milk.
00:20	Breast milk is a liquid source of complete nutrition.
00:25	It contains water, carbohydrates , fats and proteins .
00:32	Various vitamins, minerals, hormones and enzymes are also present in it.
00:40	This milk provides growth factors and immune protective factors to the infant.
00:48	Components of mother's milk are discussed in detail in another tutorial.
00:55	Please visit our website for more details.
00:59	Let us look at some interesting facts about mother's milk.
01:04	A mother's milk is specially suited for her own infant.
01:10	Its composition does not remain constant.
01:14	It varies as per the changing needs of the growing infant.
01:19	It changes from feed to feed, day to day and month to month.
01:27	The composition changes even during a single feed.
01:32	Let us understand this with the help of an example.
01:37	Mother's milk at the beginning of a feed has protein , sugar and is watery.
01:45	This helps to quench the infant's thirst.
01:49	Towards the end of the feed, the milk becomes thick and creamier.
01:56	It is rich in good fats which helps to keep the infant full and satisfied.
02:03	The volume of mother's milk also changes depending on the age of the infant.
02:10	Many mothers choose some alternatives of their milk to feed the infant.
02:16	For example, formula feed or animal milk.
02:22	In this tutorial, we will be comparing them with mother's breast milk.
02:28	First, let us understand what is formula feed?
02:33	Formula feed is an industrially prepared food product for infants.
02:39	It is usually in powder or liquid form.
02:43	They are fed to the infants through bottles,
02:46	cups or
02:48	spoons.
02:50	Formula feeds consist of dehydrated animal milk,
02:54	soya milk and
02:56	vegetable oils.
02:59	Emulsifiers, artificial sugars and preservatives are also added to it.
03:06	All formula feeds are very expensive.
03:10	Unlike mother's milk, its composition is not unique for each infant.
03:16	It is a standard product with the same composition for all the infants.

03:22	Formula feeds do not have antibodies, living cells and good bacteria.
03:29	Many of the enzymes get destroyed in processing of formula feeds.
03:36	Hence, there is a poor absorption of nutrients from them.
03:41	Formula fed infants have different gut composition than those who are breastfed.
03:49	This may have a long term consequence on the infant's health.
03:54	Formula feeding reduces the growth of good bacteria in the intestine.
04:01	It promotes the growth of disease causing bacteria.
04:06	It also increases the risk of intestinal complications in premature infants.
04:14	This can lead to the damage and death of intestinal tissue in those infants.
04:21	Such babies are critical because their intestinal tissue dies.
04:27	Formula fed infants often have a stomach upset.
04:32	They may face issues like abdominal gas,
04:36	bloating and diarrhea.
04:39	Infants who are formula fed are more likely to get problems of obesity.
04:45	The risk of developing diabetes
04:48	and hypertension later in life is also high.
04:53	The chances of sudden death in formula fed infants below 1 year of age is high.
05:01	Bottle feeding also causes breathing through the mouth instead of the nose.
05:07	All these reasons may increase the risk of sleep apnea .
05:13	It is a condition in which breathing is interrupted while sleeping.
05:19	Bottle feeding can result in dental caries and
05:22	protrusion of the front teeth.
05:26	The risk of infections is higher in formula fed infants.
05:31	For example: Pneumonia,
05:34	diarrhea and ear infections.
05:37	They are more likely to have asthma and wheezing as well.
05:43	Formula feeding may increase the risk of skin allergies in infants.
05:49	Negligence in preparing the formula feed correctly can cause more harm.
05:56	Let's understand this with an example.
05:59	If too much powder is added to water, it results in dehydration in infants.
06:07	It can also cause a rise in the body's sodium levels.
06:12	As a result, the infant can show signs like irritability,
06:17	lethargy and
06:19	seizures.
06:21	High sodium levels also put a load on the immature kidneys of the infant.
06:27	As mentioned earlier, formula feeds are expensive.
06:32	To use it economically, mothers may add less powder in excess water.
06:39	If less powder is used, infants can remain hungry

06:42	and lead to poor weight gain.
06:46	Hygiene needs to be maintained while preparing
06:49	and storing formula feeds.
06:52	Formula feed has to be prepared in hot and clean water.
06:58	If prepared in cold and dirty water, it can cause infection in infants.
07:05	The feeding bottles have to be cleaned
07:08	and sterilised frequently.
07:11	If it is poorly cleaned, or cleaned with dirty water, it can cause infection.
07:18	So far we discussed formula feed, let's now talk about animal milk.
07:25	Milk from cows, buffaloes, goats, etc. is called as animal milk.
07:33	Many people think that animal milk can be a substitute for breastmilk.
07:39	However, this is not true.
07:43	Let me explain to you the reason.
07:46	The nutrient composition of mother's milk and animal milk differs.
07:52	Animal's milk has a high amount of a type of protein called casein .
07:58	It is 6 to 7 times higher as compared to mother's milk.
08:05	This high casein content of animal milk forms a tough, hard curd.
08:11	It is difficult for young infants to digest casein .
08:16	Whereas, mother's milk has a high amount of whey protein.
08:22	It is easier for infants to digest whey protein as compared to casein .
08:29	Feeding cow's milk to infants increases the risk of an allergy to milk proteins.
08:36	It may also lead to iron deficiency anemia in infants.
08:43	Iron deficiency in infants can impair cognitive and physical development.
08:50	Iron in both animal milk and mother's milk is low.
08:56	But, iron in mother's milk is more easily absorbed than from animal milk.
09:03	Fifty percent of the iron from mother's milk gets absorbed.
09:09	Whereas, only 10% of the iron gets absorbed from cow's milk.
09:16	Sometimes, allergy to animal milk proteins can cause blood in stools.
09:23	This may worsen the iron levels in the infant.
09:27	Animal's milk has low contents of zinc, niacin, vitamin A, C and E .
09:35	Good fats which are required for brain development are also low in animal milk.
09:41	Thus, breastfed infants have higher IQ than infants fed formula or animal milk.
09:51	Animal milk contains a high amount of protein, sodium, and potassium .
09:58	It also has high levels of chloride and phosphorus .
10:04	This may put a load on the immature kidneys of the infants.
10:09	As a result, they may suffer from dehydration.
10:14	The high phosphate load can lead to calcium deficiency in infants.
10:20	Animal milk has other disadvantages similar to formula milk.
10:26	For example: lack of antibodies and
10:29	good bacteria in them.
10:32	Hence, it is best to avoid animal's milk until the infant is one year old.
10:40	Compared to animal and formula milk, mother's milk has environmental benefits.
10:47	Animal and formula milk involves processing,

10:50	packaging and
10:52	transportation.
10:54	This can increase the expenses and
10:57	waste production.
10:59	A lot of resources and time is also required in its preparation.
11:06	Whereas, mother's milk does not involve packaging or
11:10	transportation.
11:12	It does not produce any waste, smoke or noise.
11:18	There is a risk of spoilage too in animal milk and formula milk.
11:24	They can get spoilt due to bacterial contamination.
11:29	Whereas, mother's milk is always fresh at a warm temperature.
11:36	Substituting mother's milk with other milks has adverse effects on her health.
11:43	Women who do not breastfeed have a high risk of breast and ovarian cancer.
11:50	The risk of developing other diseases is also high.
11:55	For example: diabetes, hypertension and heart diseases.
12:02	Mothers who breastfed have better cognition at their later age.
12:08	Mothers who feed formula milk are more likely to retain their pregnancy weight.
12:14	Hence, the risk of obesity is high in them.
12:19	They are also at a risk of developing bone diseases later in life.
12:26	This may result in pain and fracture in hip or knees.
12:32	Postpartum depression can also be seen in them.
12:37	Note that, exclusive breastfeeding can act as a natural birth control.
12:43	This birth control is ineffective if the mother doesn't breastfeed exclusively.
12:50	Thus, the mother should not substitute her milk with other milks.
12:56	This increases the chances of less space between two pregnancies.
13:03	As a result, the mother and her infant are at an increased risk of malnutrition.
13:10	To conclude, there is no perfect substitute for mother's milk.
13:16	Excessive marketing and promotion of mother's milk substitutes are done.
13:22	As a result there is a decrease in exclusive breastfeeding.
13:27	However, mother's milk is the only best source of nutrition for the infants.
13:34	It is safe to consume and suited for the infant's changing developmental needs.
13:42	Breastfeeding has numerous benefits for both infant and the mother.
13:48	Thus, exclusive breastfeeding should be done upto 6 months.
13:54	After 6 months, complementary food should be started along with breastfeeding.
14:01	Breastfeeding should be continued at least until 2 years.
14:06	Correct breastfeeding techniques are explained in other tutorials.
14:12	Please watch them for effective breastfeeding.
14:17	This brings us to the end of this tutorial. Thank you for joining.