Welcome to an introductory topic on breastfeeding. My name is Shera Jackson. I have a PhD in Human Development and Family Studies. I currently teach at Texas Tech University in the Human Development and Family Studies program. I teach classes like Prenatal and Infant Development, Child Development, Lifespan Development, as well as a lot of their family classes.

I'm also an International Board Certified Lactation Consultant (IBCLC). This means that I've obtained one of the highest certifications or the highest certification you can get amongst lactation professionals. I have been doing this for about 10 years. I've held that certification. Prior to that, I was a certified lactation counselor. Before that, I was a lactation specialist at WIC. I began working with WIC, which is the Women, Infant, and Children's supplemental nutrition program back in 2004, in Mississippi. Then in 2005, I moved to Texas. I started a graduate program, and I also worked at a local hospital as a lactation counselor.

My primary work now, besides teaching, involves research. I do a lot of research within breastfeeding. I've looked at mother's milk and infant outcomes for premature infants. I've looked at things like maternal depression, and self-efficacy, and how that impacts the developing breastfeeding relationship. Currently, I'm conducting some research to get some
baseline information with breastfeeding mothers in South Africa. That's a little bit about me, getting you to know who I am a little bit and why I will be teaching a series on breastfeeding.

This is the first part. It's just a really basic introduction. There will be more in the future. At the end, I'll give you my email address. If there's any specific topics anyone else would like to see, or has any more questions, you can shoot me an email and we can get that added. Let's go ahead and get started.

I want to start out by just giving you some definitions, orienting you to like the words that I'll be using. The first one is breastfeeding and that's just the feeding of an infant or child at the breast. While this is usually with human milk, the child is latched on to the breast and there is transference from the mother's breast to the child, you can also supplement at the breast. For example, an adoptive parent can actually breastfeed, whether she induces her milk or whether she's actually using formula, but she's doing it through breastfeeding at the breast.

Another term that's becoming more popular within the lactation world is “chest feeding” so that even men can do this, as well. Then we also have just feeding of human milk. Feeding of human milk that can be done at the breast, which we normally call breastfeeding or chest feeding can also be done with a bottle, where the mother expresses her own milk and provides a bottle or she may purchase breast milk -- human milk -- from a milk bank or from a peer-to-peer support-type milk-sharing program.

There's finger feeding, which I'll show you a picture of that in just a minute, where we use a little, basically a capillary tube, and the milk is transferred through there, but the infant is suckling on the finger. We can also do cup feeding or spoon feeding. That's pretty much what it sounds. We put a little bit of human milk in a cup or a spoon and we just slowly pour a little bit into the infant's mouth until they swallow it. It's a very slow process. This is for people who don't want the child to receive an artificial teat.

Here's a few pictures. This is a picture of an infant who is obtaining breast-milk through a bottle. When an infant is receiving that breast milk through a bottle, there are some things that change. We'll go into that in another video. There are some things that can get lost. There's also the importance of making sure the infant is latching on to the artificial teat in the same way that it would latch onto the mother's breast.

This next picture is that picture of finger feeding. You can see the little tube running along the finger and it'll be taped down. The tube will extend about a little bit past the edge of the finger. As the infant sucks on that finger, the milk is actually transferring into the infant. We can also tape this tube to a woman's breast with the end of it protruding just past the nipple. This is what allows someone to supplement at the breast or allows, say an adoptive parent to
be able to obtain that breastfeeding experience and connection with the child while still being able to provide milk in that way. Sometimes when we're doing it at the breast, sometimes it is formula, but ideally, we're obtaining human milk.

I'd like to take a few minutes to talk about some of the recommendations. In the United States, we generally rely on what's come from the Healthy People 2020 (soon we'll have Healthy People 2030). I just want to go over some of that. This is specific to the United States. I'll get into broad international recommendations in a minute.

Within the U.S., our Healthy People 2020, we have a goal of that 81.9 percent of all new moms begin breastfeeding. That means, at birth, they are trying at least once to begin that breastfeeding relationship with their child. A lot of people quit during that first part, which is why we have more goals because it can be challenging, especially if someone has not had previous experience where they've seen others breastfeed or they were able to attend classes. It can be quite challenging to try to breastfeed.

Our next goal is that at three months, the infant is being exclusively breastfed and that's 46.2 percent. In the United States, by 2020, we want to see that 46.2 percent of infants are still being exclusively breastfed at three months. As in no water, no formula, no baby foods, nothing else is being added to their diet.

One of the primary goals is to exclusively breastfeed at six months. Historically, those numbers have been low, even worldwide. The goal is that 25.5 percent of infants, again born in the U.S., are still being exclusively breastfed at six months.

Some doctors, still to this day, recommend introducing complimentary foods such as a type of cereal sooner than six months even though the most common recommendation now is to wait until six months. We'd like to see that at least 60.6 of the infants are still receiving some breastmilk when they are six months old and 34.1 percent is still receiving breast milk at the age of one.

We've gone on to make some other recommendations as well. I just wanted to go ahead and cover those. They'd like to see a 38 percent proportion of employers with worksite support. There's been a big push with that. There's been, within the U.S., federal laws that have been added saying that there has to be some type of worksite accommodations and support. We're wanting to see an increase with that. We also want to reduce formula supplementation during that first two days of life and increase facilities that provide a lactation focus.

Overall, what we have is we have the American Academy of Pediatrics (AAP); we have the World Health Organization (WHO); we have UNICEF (the United Nations Children’s Fund);
and just a lot of other professional, medical, and nutritional organizations. They've all released their own breastfeeding recommendations and they all pretty much match -- exclusive breastfeeding for the first six months. Again, no water, no formula, no cereals -- nothing for six months except that human milk.

At six months, that's when we want to introduce complimentary foods, but that means, breastfeed the infant first and then provide that cereal or that other type of baby food that is going to be introduced.

Many organizations including WHO, UNICEF, and most international professional organizations encourage continued breastfeeding until the child is two. Within the United States, some of them are still holding back and saying one because it's been a harder push to try to get people to breastfeed until one. Remember, our goal is 25 percent, but they were afraid stepping up to saying, "We want you to breastfeed until your child is two", might be too big of a challenge at this point." In the future, it should eventually get there.

All of these organizations, including the ones here in the United States, even if they're only saying until one that we want breastfeeding to continue for whatever is mutually agreed upon between the mother and the child. This means if the child self-weans, then it's okay. We don't need to force that child to keep breastfeeding until age two.

Most children will not self-wean before age one. They may go on a nursing strike, but they do not self-wean. We want that to be a mutually exclusive relationship beyond that age one or age two, if we're looking at the international. As long as the mother is comfortable and willing, and the child is willing, we recommend for breastfeeding as long as comfortable for both.

In 1991, the Baby-Friendly Hospital Initiative (BFHI) was launched. This is administered by WHO and UNICEF. What they did is they put out these 10 steps to successful breastfeeding and also an International Code of Marketing Breast-Milk Substitutes. What they do is they work with hospitals to promote and encourage breastfeeding. Then they provide this designation. If you meet these specific 10 steps, then you can receive a designation and become a baby-friendly hospital. More and more women are choosing baby-friendly hospitals. They're looking for that. Currently, over 20,000 facilities in 150 countries are designated as a baby-friendly hospital. This is accredited by the Baby-Friendly USA (BFUSA). They have three main philosophies that you can get straight from their website, which you'll see is referenced at the bottom of this slide.
Their philosophies include that human milk is fed through direct breastfeeding, and that is the optimal way. That means, while in that hospital, what we're encouraging mothers to do is put the baby to the breast and breastfeed -- not provide it through a bottle.

Breastfeeding should be protected in the hospital without influence from commercial interests. Basically, this means formula companies. There should not be any commercial interest -- someone who is ultimately going to make money that would interfere with that breastfeeding relationship. It should be protected.

Their third main philosophy or goal is that all mothers should be provided with knowledge on the breastfeeding benefits and importance, and allowed to make an educated choice about infant feeding. Again, what this means is all mothers should be given education and knowledge so that they understand and know what choice that they make, and that they get to make their choice and then we respect that choice. Because not all mothers are going to choose breastfeeding, but we hope, if they understand all the benefits, that they might, but we do want to respect all women's choices on how to provide nutrition to her child.

I want to go over these 10 steps to successful breastfeeding. Again, I put the references at the top on this one, because it is coming straight from the website. These are, word for word, exactly what the 10 steps to successful breastfeeding are:

The first one is have a written breastfeeding policy that is routinely communicated to all healthcare staff. So, where you’re working, if you don’t know your breastfeeding policy at your workplace, ask. Find out. If it turns out there isn’t a written policy, find out what you can do to help make that happen.

Train all healthcare staff and the skills necessary to implement this policy. A lot of times, that may include a topic during one of the monthly training meetings, or something like that. I know that I have been invited at military hospitals as well as local hospitals at times to just give a really short, 20-minute to one-hour educational briefing on the benefits of breastfeeding and how to support new mothers who have chosen to breastfeed. Even if there is no one at the place where you work that feels like they want to be able to do that, there's usually someone nearby that's willing to come in and do that. Check into that if you haven't had the opportunity to have an in-person training at your facility.

Number three is to inform all pregnant women about the benefits and management of breastfeeding. Many places, especially larger hospitals, have started hiring specific lactation professionals such as the IBCLCs, the CLCs, or lactation specialists. There's a lot of different names. There's different lower-level certifications. That's usually a 40-hour course to get that certification. They'll hire them either by contract or as staff, and they'll come in and do that.
Others do rely on the nurses or other medical staff to come in and provide that, but a part of that 10 steps and part of being baby-friendly is that that education, the assistance, and being able to manage breastfeeding is being provided there at the hospital.

Number four is to help mothers initiate breastfeeding within one hour of birth. Research has shown there is this natural reflex that helps with suckling at the breast and that it may lessen or start to extinguish after the first hour. They don't forget how to suck or suckle. It's that suckling at the human breast is a little different than a pacifier or a bottle. What they found is that, when the infant can get with the mother during that first hour and they can start that breastfeeding, it goes much smoother all the way through. That mother is able to be more successful. Of course, if it's medically contraindicated, then no, you can't. Sometimes you have to do intervention with the mother or the child, and it's just not possible, but if there's nothing that contraindicates that first hour, ideally, we want to leave that mother and infant alone and let them establish that time.

There is a research study that found that infants who didn't have their hands washed...They cleaned off the infant a little bit, but they left the amniotic fluid on the hands, those infants went to the breast quicker and managed that suckling routine faster than the ones who had their hands washed off. Even cleaning the infant up and going and doing the weight, all of that can wait for that hour. Put that baby skin-to-skin with that mother and let them have that hour. It is a precious, crucial time to establish the breastfeeding relationship.

Number five is to show mothers how to breastfeed and how to maintain lactation even if they are separated from their infants. If the infant has to go to ICU or if the mother ends up having to go into surgery and there's a delay in her being able to start that stimulation of her breast, we need to be able to show...this may include hand expression. This may include using a breast pump, which is not just a simple, "Put it on. Turn it on." We'll go over that another day on some tips and tricks on how to get the most out of a pumping experience. If that child is in a neonatal ICU, providing those resources and support to a mother to establish and maintain her breast milk is really important.

Number six is to give infants no food or drink other than breastmilk unless medically indicated. Again, unless there is just a strong medical reason, the infant should not be introduced to formula. This can also include that sugar water that some places use during a male infant circumcision. We don't want to introduce anything other than that mother's milk, again, unless medically indicated.

Number seven is to practice rooming in and allow mothers and infants to remain together 24 hours a day. Again, unless there's a medical reason, the infant should be seen by
the medical team in the mother's room, not in the nursery. This may include looking at current hospital policies and deciding, "Is the policy that's currently in place? If it's all babies are seen in the nursery, is that really the best way to go?" Maybe, try it out or look at changing those policies so that that mother and infant are seen together by the medical staff.

Number eight is to encourage breastfeeding on demand. A newborn does not need to be on a schedule unless they are sleeping so long that they are not waking up to eat. For example, a blood sugar issue or jaundice issue. Those are some really sleepy infants and sometimes they don't want to wake up. So, yes, we have to put them on this schedule to wake them up, but we shouldn't hold them off. If that newborn is wanting to eat two hours later, it's okay. They need to eat two hours later. The newborn should be dictating when and how long to eat. That's the other thing. There used to be an old rule and I hope most people know we don't do 15 minutes one side and 15 minutes on the other side or 20 and 20 or whatever. We let the infant eat on one side until they are finished and then we offer the other side. We don't have to try to make sure there's a timeline on both. Our bodies can work differently -- one breast might let down more and one might hold back because it learns to meet the demands of the infant. In these first days after they're born, it's really important that they teach the mother's body the demand that they're going to have.

Letting that infant breastfeed on demand will actually establish that mother's milk supply and help her be more successful in the future to reach her own breastfeeding goals. Like I said, the only exception is if the infant is not waking up to eat, then yes, absolutely we stimulate the infant. We try to get them at the breast and we do more skin-to-skin to encourage them to eat when they're too sleepy.

Number nine is to give no pacifiers or artificial nipples to breastfeed the infants. We want to encourage parents not to introduce this because we can't look at a child and a newborn infant and go, "This one's going to become nipple confused." We don't know that. When we introduce an artificial teat that can change the way that they're learning to suck and that can impact how they go on the mother's breast. Ideally, we don't introduce anything that is artificial while that breastfeeding relationship is being established -- often six weeks. We'll encourage parents not to introduce; however, if they really want to introduce a pacifier, there's not a lot we can do about that. All we can do is encourage them to maybe hold off.

The last one is to foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital or birth center. This may include a support group offered at the hospital by a lactation professional. It might include being aware of some non-formal support groups that exist in your community. Give them that contact information whether it's a website, phone number, or there's also things like La Leche League, which is a
very well-known breastfeeding support program. Many towns have a leader and a group meeting in their communities. Be sure to refer those mothers or provide them with information of how to get a hold of those if they so choose.

Those are the 10 steps to successful breastfeeding as put forth by Baby-Friendly USA. Now, let's go over the next thing which is that International Code of Marketing of Breast-milk Substitutes.

Again, these are the 10 things that come straight from Baby-Friendly USA. I do not advertise breast milk substitutes to families. We're not to tell them about it, encourage them to use any other type of food. If they're asking, you're allowed to answer those questions. But we don't want to advertise and tell them or try to encourage them to use that instead of breastfeeding.

No free samples or supplies in the healthcare system. We don't go and we don't give cans of formula to parents anymore. We don't send them home with little diaper bags made by the formula companies with them advertising.

That's part of that number three. No promotion of products through healthcare facilities, including no free or low-cost formula, the no diaper bags, no posters or advertising on the walls of the hospital.

There should never be contact between the marketing personnel and the mother.

No gifts or personal samples to healthcare workers trying to get them to promote a product.

No words or pictures are idealizing the artificial feeding including pictures of infants on the labels or the product.

Information to health workers should be scientific and factual only. Not like, "Why this is better? What they can benefit from this? What is the scientific evidence about using this type of formula?"

All information on artificial feeding including labels should explain the benefits of breastfeeding and the cost of hazards associated with artificial feeding.

Unsuitable products should not be promoted for babies.

All products should be of high quality, and take account of the climate and storage conditions of the country where they are used. For example, many years ago, powdered formula was sent to some countries in Africa. They were countries where the water was very
contaminated. When they were making the formula using this contaminated water, it was poisoning the infants. Now, in those countries, they send the ready-made, the ones that are already made, so that they're not using that water. You've got to take into account where you're living, what country it is.

Let's jump into and look at some breast milk facts, and then I'm going to give you a lot of fun background information.

Human milk is made for the human baby. It has the ideal balance of nutrients and it is easily digestible. Cow milk is made for calves. Horse milk is made for horses. Human milk is made for the human baby. That's what we want to give that human baby. We don't want a cow-based or plant-based formula. We want human milk.

Human milk changes with the needs of the baby. As the baby grows, our milk changes. If the infant gets sick, like a cold or flu or whatever, the mother's body provides extra antibodies or antivirals into her breastmilk that goes to the baby to help protect it and help it get well faster.

There are growth factors in human milk that help mature the infant gut and this is really beneficial for a premature infant. The mother's own immunities and her antibodies are given to the infant. Formula and breast milk both contain water, protein, carbohydrates, DHA and RHA, fat, vitamins, and minerals. However, while formula contains all of these things, they don't necessarily bind to the proteins in the same way these same components bind in human milk. For example, formula that has DHA and RHA added, has a lot of DHA and RHA added, a lot more than what you'll actually find in human milk, but that's because it does not bind to the proteins, and transfer and get used by the infant child the same way it does when it's coming in the human milk.

What happens is a lot of that DHA and RHA that's in formula just goes right through their body. It does not really get absorbed and used. Some of it does, but that's why it has to be so much higher in that formula to try to counteract the fact that a lot of it's not even being used in the infant's body.

Now, breastmilk has other things that formula does not have. Formula doesn't have enzymes. Formula doesn't have growth factors. It doesn't have anti-parasites, anti-allergies, anti-viruses, hormones, antibodies. Breast milk contains all of this. In fact, there's still lots of research being done in the realm of looking at human milk. There are lots of undiscovered properties of breast milk that are still being researched. There's going to be so many more things that eventually we'll have figured out that we'll know that breast milk has that formula does not.
Next, I want to spend some time talking about the benefits of breastfeeding, also the risk of formula feeding. We're going to look at specific to the infant or the child really. We're going to look at immediate and long term. We'll look at the preterm infant. The mother, she'll have both immediate and long term benefits of breastfeeding. Then there are societal. There's health, financial, and environmental consequences on whether we have a society of breastfeeding or formula feeding.

Let's look at the benefit of breastfeeding/risk of formula feeding for children within the immediate. Most research evidence for the short-term health benefits, such as reduced infection, is strong. We have a lot of confidence and a lot of good statistical support for these immediate effects.

Breastfed infants have lower mortality rates. Those who are exclusively breastfed actually have lower than partial breastfeeding. What we know is that if that infant is being exclusively breastfed and they're not receiving any formula, their mortality rate is lower than those who are partially breastfeeding versus those that are receiving formula who have the highest rate.

Breastfed infants have a lower prevalence of lower respiratory tract infections in infants less than six months of age. Breastfed for at least three months, we see this reduction. This is what's called a dose-response. If the infant was just given colostrum, breastfed for 72 hours in the hospital, we don't really see this lower prevalence of lower respiratory tract infections. We see this in infants who have been breastfed for at least three months. Again, that's called dose-response. If you hear me later talking about dose-response, it means the time the infant has had with breastfeeding.

We also know that breastfeeding reduces the risk of hospitalization for respiratory issues by 72 percent when infants are breastfed for at least four months. The infants who have been breastfed for at least four months are less likely to be hospitalized for respiratory issues.

Breastfeeding decreases risk of acute otitis media, of atopic dermatitis, gastrointestinal infections, hospitalizations due to incidences of lower respiratory tract diseases and asthma, and the risk for Sudden Infant Death Syndrome, or SIDS. Infants who are breastfed, less likely to die of SIDS.

Breastfed infants have lower risk of meningitis. Breastfeeding has also been found to have analgesic effects. This was evidenced by reduced heart and metabolic rates, suggesting there was a reduced sensitivity to pain.
Gray, Miller, Philipp, and Blass found in their study that breastfeeding an infant while blood was being attained substantially reduced crying and grimacing, and prevented the tachycardia that can happen during infant blood collection. A breastfeeding mother who takes her child in for a blood draw or for the shots, if she can breastfeed through that, the infant tends to do much better and seems to have less pain and less crying.

Now, there are also long term effects and that we can see into later childhood all the way up into adulthood. Longer-term effects must be taken with caution. There’s a lot of excellent research out there, but it is not possible when we’re dealing with humans to account for all confounding facts. What else is maybe influencing some of these?

At this time, what we currently know regarding benefits of breastfeeding, I’ve listed some of them below, know that this is not all-inclusive. There are so many more things out there. These are just some of the most common ones that we look at and talk about, have a lot of research to support these findings.

Breastfed infants have higher outcomes in IQ and in cognitive development. Again, this is a dose-response one, so breastfed for longer than six months, is where we often see this actual difference. In fact, Horta, Loret de Mola, and Victoria in 2015 did a meta-analysis where they looked at a lot of difference, breastfeeding studies on IQ and cognitive testing, and concluded with their research that breastfeeding does, in fact, cause -- they specifically said it is causal -- cause higher IQs and greater cognitive development. So, breastfeeding makes your kids smarter.

Breastfeeding reduces the risk of obesity into adulthood. In fact, formula-fed infants are 33 percent more likely to become obese children. You can find this type of information through the CDC, U.S. Surgeon General. All of that is just information right there -- easy to find.

Any introduction of formula changes the gut flora. Even we're talking that first day, we're panicking, and the baby's not waking up and they just need to eat because they've got blood sugar issues, or jaundice, and they decide to give some formula, they've changed the gut flora. That formula feeding could interfere with the establishment of the human microbiome, and that can change a lot of things for that infant as they continue to develop.

Breastfeeding may also decrease the child's risk of later developing certain types of leukemia Ip and colleagues found in their meta-analyses. Again, they looked at a bunch of different studies and plugged them into a program and they ran more analyses. They're taking a lot of information here and saying, "Yep, we found this."
Breastfeeding benefits to mothers and infants for greater than six months is associated with a reduced risk for both acute lymphocytic leukemia and acute myelogenous leukemia. That's two types of leukemia that can be reduced by breastfeeding for longer than six months. This finding indicates that there is a dose-response effect and that the longer one breastfeeds, the greater the reduction in the risk of developing these types of leukemia.

Breastfed infants have some protection against asthma. It doesn't mean if they're breastfed, they won't have asthma because there can be other risk factors for that child to have asthma. It just provides some protection, and so there is that benefit of it.

The formula-fed infants have an increased risk of both type 1 and type 2 diabetes. Specifically, they found that infants who are formula-fed had an increased risk that type 1 during both adolescence and adulthood; whereas, the type 2 was found in adulthood.

Formula-fed infants also have a slightly higher risk in elevated systolic blood pressure. Bottle-fed infants, especially those given formula also have a higher incidence rate of cavities and a need for braces. Part of the cavity issue comes from an infant who is bottle-fed. They're likely to fall asleep with that bottle and they end up having milk pool in their mouth as their teeth are coming in. That may be contributing to the higher incidence rate of cavities; whereas, the braces comes about, they think, with the way the jaw is working to suckle at the breast versus a bottle. When an infant is feeding from a bottle, it's pretty much just the front of the mouth. Then also, depending on their holding or the type of bottle, it may just be drip, drip, dripping, and they're just swallowing. They're not even having to suckle, so they're not working the mouth. Whereas, that breastfed infant, in order to pull milk from the breast, they're having to work their whole jaw and these muscles. That is believed to contribute to why breastfed infants don't need braces as much as those bottle-fed infants need.

There are also some specific health benefits for that preterm infant. We know that a preterm infant who is given breast milk has a significantly shorter hospital stay. What this does is it reduces hospital costs and also reduces costs on the parents.

We see accelerated brainstem maturation, which is really important, especially if we have an infant born so early that they're having trouble breathing on their own. Their brainstem is really important in regulating the heart and the breathing, and so accelerating that for a very early infant can be very important.

Breastfeeding also reduces the incidence of necrotizing enterocolitis, NEC in low birth weight infants in the NICU. That's part of that breast milk that helps promote the gut flora and other things like that. Those infants who are receiving breast milk have that lower incidence of NEC.
There are some benefits of breastfeeding for mothers—immediate: to lose weight quicker, having a reduced risk of postpartum bleeding and, therefore, a quicker recovery, and then it also delays the menstrual cycle. On average, they found that the menstrual cycle gets delayed for about four months, but it can be up to two years. It can be used as a method of birth control, but again, that's not 100 percent.

There are some specific rules if we're going to use it as birth control. Basically, the infant has to be exclusively breastfed. They are not using a pacifier even, and they go to their mother for both nutritive suckling as well as comfort suckling. When they're upset, instead of putting a pacifier, they're actually at the breast suckling even though they're not necessarily eating. If the infant is going to the mother for all of these reasons, there's no other foods being offered to the infant, this can be a highly effective birth control method until other foods or other forms of suckling is introduced. But generally not more than six months. After six months, this is not a good birth control method.

Some long term benefits for mothers include: reduced rates of ovarian and premenopausal breast cancers, uterine also falls in that, too, so any hormone-mediated female cancers we've seen reduced rates of. There was one cancer study that found women who had breastfed had a reduced risk of dying over a following decade as well. This is another one of those that tends to be dose-response. One study found that it takes two years to truly see that difference, and that was just one study, but what they did find is that it didn't have to be one child breastfed for two years. It could be a cumulative thing. A woman who had breastfed four children for six months each, she's hit that two-year mark. Other studies have found that it doesn't necessarily need to be two years. There's a lot of different research on that, and continuing research, in that area.

Other long term benefits include reduced type 2 diabetes in women who have breastfed. Reduced heart disease, hypertension, and the cholesterol. Again, this is another one of those that dose relationships responses are found. The longer the breastfeeding, the greater the incidence of reduction.

Breastfeeding can reduce the woman's risk for long-term obesity. There's also emotional benefits. Women who breastfeed tend to report being more confident, less anxiety, a reduction in postnatal depression. There's definitely controversy over the depression. Some studies have found that for women who are already depressed and then being stressed about trying to successfully breastfeed, it can exacerbate her depression. Some studies say that this is dose-dependent. So, again, the longer you breastfeed, the more likely we are to see that reduction in depression. I encourage you to do more research in that area if this is an area of
interest, or that you will be working with women on. I will have a special topic more on this emotional to get into more of these studies later.

Then some studies have found reduced incidence of osteoporosis and other studies have said that they don't see that evidence. Again, it just depends on the study, what it was measuring, how it was measuring, and definitely need more research in these areas.

There are also benefits for society, specifically economic. We know right now that private and government insurance pay $3.6 billion a year to treat diseases that are preventable by breastfeeding. We're talking gastrointestinal issues, ear infections -- things like that. Medical facilities' costs range from hundreds in doctor visits for one child to billions in hospital stays for all non-breastfeeding children in the U.S. It can save a lot of money if we got more people to breastfeed.

We know that $2 million dollars is spent yearly on processing, packaging, and transporting formula. Our landfills, 550 million formula cans added yearly. That's 86,000 tons of metal, 800,000 pounds of paper packaging that are going into our landfills that we wouldn't need if more were breastfeeding.

Formula cost per year: If we look at an individual family, they're going to spend about $1,000-$2,300 if they're paying for it themselves. Infants who have allergies or who are sensitive, you're going to spend more. There are formulas that are based by prescription. Those costs a lot more as well.

U.S. families, about $2 billion a year, and the government providing for the WIC, Women, Infant, and Children Food Supplement program, $578 million. To be honest with you, those statistics are a little old. It's probably a little bit more today.

A couple of researchers as well as the United States Breastfeeding Committee in 2002 said if 90 percent of U.S. families would follow the Healthy People 2020 recommendations, $13 billion a year would be saved by all involved. The cost to individuals and society clearly go beyond the dollar amount and impact more than just physical health.

Let's talk a little bit about the demographics associated with breastfeeding rates. Because we know that there are certain characteristics that make some more likely to breastfeed and less likely to breastfeed. This includes both initiating the breastfeeding relationship, so beginning breastfeeding in the hospital, or the duration of the best breastfeeding relationship. When I say duration, I mean, did they breastfeed for six weeks, three months, six months. Not, did they sit down and breastfeed for an hour? When I use that term, "duration," I am talking about those long-term breastfeeding goals.
Within our socioeconomic status, we know that those who have lower socioeconomic are less likely to both initiate and maintain breastfeeding; whereas, those who have the higher socioeconomic status, or middle class to upper-middle class, they're more likely to both initiate and maintain that breastfeeding relationship.

Education level plays a role. Less than high school education have the lowest initiation rates; whereas, those with higher education levels have greater initiation rates. It's pretty much a stair step. Those with doctorate-level education are more likely to initiate breastfeeding than those with bachelor's level, than those with high school, and then those with less than high school. This is both initiating and maintaining.

Part of this may involve ideas about breastfeeding, as well as having that knowledge and understanding, who's going to be more likely to be exposed to information about breastfeeding and about research and read that research. Generally, people with higher education. Remember, nothing is 100 percent perfect. It doesn't mean there's not a high school student out there who is going to breastfeed for that full year. In fact, I've met one and she's now working to become a lactation professional. It's not to say that they won't. It's just to say that when we look at the numbers on average, when we go in and we look at what the research tells us, high school has the lowest initiation and maintaining breastfeeding relationship where those with higher advanced degrees are more likely to.

Another thing with high schoolers, there may be more difficulty in returning to school and continuing breastfeeding. If they live in a town where there is a school that's set up, that actually has childcare at the school, we're more likely to see that in larger towns, it's going to be easier for that teen mother to be able to continue breastfeeding as opposed to the one who has to return to their regular school and leave their infant at home with a caregiver or in a childcare center.

Maternal age: We know that older women are more likely to initiate and maintain breastfeeding. Dennis, in 2002, she did a review and she found that those older than 25 had the greater increase in initiation; whereas, those less than 20 were least likely. You can see, too, how that maternal age and education level may also be playing a role and related to each other.

Depression plays a role. Those who are suffering from depression prior to birth, we're not talking postnatal depression or postpartum depression but just depression, they're going to have a lower rate of initiating and being able to maintain that breastfeeding. Those who develop postpartum depression are going to be more likely to stop breastfeeding.
Ethnicity is an interesting one. When we look at the demographics and the statistics as to the percentage, breastfeeding, Asians have a higher likelihood of initiating breastfeeding. Immigrants are also more likely to initiate and continue breastfeeding for a longer duration. Two of the ethnicities that have the lowest are black women and Hispanic women who are U.S.-born Hispanic immigrant or who have still close ties. Maybe they're born here in the US, but their mother or grandmother was born in another country, they're more likely to breastfeed; whereas, the American-born Hispanics and blacks are less likely.

White Hispanic immigrant, black immigrant have the longest breastfeeding durations; whereas, the Hispanic Americans and black Americans have the lower duration rates.

Job status can play a role. Having a professional-level occupation, you're more likely to have longer maternity leave. If you're working part-time, you're going to have more time to be able to be at home or being a stay at home mother. These are more likely to initiate and maintain the breastfeeding. Whereas, having to work full time, especially if you're working in a manufacturing occupation, they have lower initiation rates. The manual, the administrative workers have lower duration rates.

Another research study also found that just having to work during the pregnancy itself contributed to a lower duration of breastfeeding. In one of my own research studies, I found that just having plans to return to work or school, they had less plans to breastfeed. Basically, they said, "If I'm going to go back to work in four months, I plan on breastfeeding four months" even though there are ways to pump and maintain a breastfeeding relationship after returning to work. Just the idea of going back to work or school was influencing the intention to breastfeed.

Cultural barriers also exist both around the world, but even within the United States, we see cultural differences. You can go on to the CDC website and some of those and you can actually look at the maps and show where the highest versus lowest breastfeeding rates are. For example, women living in the Western region of the U.S., they have higher breastfeeding initiation rates; whereas, women living in the East, South, Central, U.S. have the lowest initiation rates. Women living in Pacific and mountain portions of the U.S., breastfeed longer than other parts of the U.S.

Another impact on breastfeeding rates is the past sexual abuse. That's a very specific topic for some women. That is not even necessarily something a lactation counselor works with. That's more of a mental health counselor's role to work with women dealing with their past sexual abuse. If they want to breastfeed, that's where the lactation specialist comes in to provide the breastfeeding support but not counseling support over a past sexual abuse.
There are some factors that increase breastfeeding initiation rates. We know that people who have social support, they have friends who breastfeed or they have a supportive partner, supportive family members, they're going to be more likely to choose to breastfeed. Being breastfed as an infant. Basically, the new mother's mother breastfed her, she's going to be more likely to breastfeed. An uncomplicated pregnancy. When a pregnancy is complicated, sometimes that makes establishing or initiating that breastfeeding relationship more challenging. Intention. Intention plays a huge role in health behaviors. If you intend to breastfeed, you're going to be more likely to breastfeed. If you intend to do other things, to work out, you're going to be more likely to do that. There's a whole theory on intention and looking at health behaviors. Married women are more likely to initiate breastfeeding. A study found that not being a WIC recipient. Part of that is WIC is able to provide formula. It makes it easy to say, "Oh, I'll just go this route." It's not necessarily WIC's fault, it actually shows that those who are on WIC are least likely to initiate breastfeeding. That's what that means there. Again, nothing bad about WIC.

Infant born at normal birth weight, full-term -- they're going to be more likely to initiate breastfeeding because everything's going smoothly. Being a non-smoker and not living with a smoker. Basically, if you're smoking or you're living with a smoker, you're not going to be likely to initiate that breastfeeding.

Prenatal education class, because they're learning about it. They're educated on breastfeeding benefits, and they have a little bit better idea of, "Oh, this is how I do that. It's not so scary." Of course, having previous breastfeeding experience. Someone who has previously breastfed a child is going to be more likely to breastfeed.

Now, there's also some factors that can decrease that breastfeeding initiation rate. Specifically, feeling embarrassed about breastfeeding, being self-conscious, that can actually decrease just being willing to. Especially if there's lots of visitors in the hospital and someone's always coming in and they're feeling embarrassed about it. Then they're going to just say, "Give that bottle." Actually, requiring time when family can't come in and visit can be helpful for that mother.

Experiencing the delay in holding the infant after birth. If there's a medical emergency, or if there's policies in place that just whisked the child off pretty quickly after birth, and not giving them that hour. Again, that smoking cigarettes. Having a physician instead of a midwife. That was just one study in 98. There's been other studies since then that show that the midwives tend to be more supportive of breastfeeding. It's a slightly different environment in the way they do things and more likely to initiate breastfeeding if you have a midwife.
Higher parity for previous non-breast feeder. If you've had other children before and you gave them a formula, you're more likely to give formula again. Receiving that free formula provided by formula companies, hospitals, WIC -- anything like that can interfere with that.

Infant is born at low birth weight, there's medical intervention. Again, being on WIC was the strongest deterrent to continued breastfeeding. Those on WIC were twice as likely to stop breastfeeding before six months.

The maternal perception that the father preferred to give formula or they feel pressure from their in-laws. The concern of amount of milk the infant would actually receive.

Other factors that increase breastfeeding duration rates. We're looking at that long term. Are they going to breastfeed for six weeks, six months, or a year? Having previously breastfed a child. Being confident in being able to breastfeed. Having positive behavioral beliefs, normative beliefs, social learning -- all of that has to do with the self-efficacy. That intention to exclusive breastfeed. Having a delayed introduction to formula, breastfeeding support groups. Having pumps available at the worksite, so a supportive worksite. All of those are going to be more likely to have those longer breastfeeding rates. Two-parent household, attending the prenatal classes, the social support -- all of that. You'll notice a lot of these, both initiation and duration is the same component there.

Decreasing breastfeeding duration rates. The most common reasons for quitting during the first six weeks postpartum was not enough milk. What research has told us is it's not that the mom didn't have enough milk, it's that she thought she didn't have enough milk. Either not enough milk or thinking they don't have enough milk is the most common reason for quitting -- just that stress, that anxiety, that worry. Because whereas when we're given a bottle, we can measure, "Oh, they had this many ounces," whereas when they're at the breast, we don't know how many ounces they actually swallowed. For some, that can be very anxiety-provoking. Then if that child is fussy for whatever reason, and then they worry the child is still hungry. It doesn't help if there's other relatives there going, "Oh, this baby's hungry. Let's give it a bottle." These are the most common reasons that really interfere with those long term breastfeeding goals.

Latch-on or suckling problems is another big issue that we see that lactation professionals work with. A lot of them are easily fixed. Some of them are a little bit more difficult.

Medical reasons. Mastitis and breast pain, having cracked nipples. Those are painful. It doesn't make you want to breastfeed. That is a reason that can decrease or make women be more likely to quit.
Planned and actual returning to work. Extended postpartum hospital stay, so having to stay in the hospital longer. They found that those women have shorter duration.

Smoking cigarettes, living with a smoker. Oral contraceptives, because that can actually interfere with that milk supply. There are certain contraceptives that are better than others when we're looking at breastfeeding. I'll go more into that in another series on this. You can also get Thomas Hale's book on "Mother's Milk & Medications." There's a lot of very useful information in there.

With WIC, the free formula. Having more children. Having high anxiety, high levels of depression -- all of that can decrease those breastfeeding duration rates.

The most common issues for a lactation professional is what we see. We see poor latch. It's one of the most common. A lot of them are really simple and easy. The infant's not opening wide enough. We help them open a little bit wider. We teach the mom how to put the infant to the breast so that they open wide. Sometimes they latch on, they open wide, but then they suck in their lip, their bottom lip or their top lip. We can easily see that. We can teach Mom, Dad, or other support person to recognize that. It's actually really easy. We don't even have to unlatch them. We can just pop the lip out. There's also poor positioning. Again, poor positioning is pretty easy to fix. We can go in and we just provide some education with some support. We help them readjust and they're good to go.

Sometimes it's weak suck. You hear people using that term more often than it is true, because it's actually not that common that an infant truly has a weak suck. If we're talking a preterm infant or a low-birth weight infant, we might be looking at a weak suck or getting tired really quickly. They may have a good amount of suck, but then they can't maintain it over a period of time. There's all things that we can do to help with that.

There can also be nipple or breast problems. Someone who's had breast surgery augmentation, depending on how that augmentation was done, some can interfere and some don't. Reduction, because removing breast tissue, that can definitely have an impact. The nipple shape. For example, if she is inverted, where her nipples are actually pointed in towards her breast, or flat, there is no protrusion. It's harder for the infant to realize that it is there and to get that natural response to latch on and to suckle. We have to work with that a little bit. If the infant can learn this is what it's supposed to feel like, they can actually successfully pull that nipple out. If they can't, there's things like nipple shields that we can use. Nipple shields are not our first go to, but they can be useful.

The mother's nipple size. Some women have very large nipples, and depending on the size of the baby's mouth, it may be overwhelming. Small nipples, again, maybe harder for the
baby to realize and feel and be able to latch on and start suckling. Sore nipples, she's cracked. If the mom is cracked or bleeding, it's painful. Again, there's things that we do to help with those issues. That is a nipple shield. You can see it's a very light silicone. We put it over the nipple. This can be used if she's flat or inverted. This can also be used if she's cracked, bleeding, has something like that because it can help protect it.

We leave the cut out more at the top pointed towards the baby's nose. If the baby's doing another position, we can turn that, so the baby's nose is up against the mother's breast and not against that silicone, which can flip back over.

Other common issues, they're not as common, multiple babies. That's just different positioning or different management techniques for how to deal with multiple babies, especially if we have more than two.

Returning to work. We're looking at pumping, time management, things like that. We're looking at policies at their work, policies in their state or country.

Then low milk supply. First and foremost, milk supply is based on supply and demand. If the baby is going to the breast, often enough and long enough, the supply should be there.

If the feeding is being cut short because the baby's on a timer or they think, "Oh, the baby shouldn't be hungry again so soon" that can actually hurt that supply. If that goes down, we have to work harder to re-establish it.

Some infants hit what's called a growth spurt. Every so often, all of a sudden, they're just insatiable. They're hungry, they're eating every hour, and if the mother doesn't know that their child is in a growth spurt, they think, "Oh, no, I don't have enough milk." If they give a bottle at that point, they didn't tell their body to make more milk. Now, we've started this cycle of we didn't make enough milk. Growth spurts are generally over within 24 hours. They have eaten a lot. They've told the woman's body to make more milk. The body has already adjusted and things go back to normal; whereas, if they interfere with that, they can end up with that low milk supply and there's other reasons of course for low milk supply. Supply and demand is the most common and one of the easiest to work with.

If the mother is on some types of medications that are affecting her milk supply, that's a different story. There's also medications and herbals that can help increase milk supply, but again, those are to be used with caution. Again, I refer you back to Thomas Hale's book and to read up more on that. Latch and positioning, of course, can help with that milk supply. Very rarely are there not enough milk glands, but that is something that can happen. We would only know that if we do an ultrasound of the breast and look to see if she had enough milk glands.
I worked with a woman once that she thought she didn't have enough milk glands, but her mother didn't have enough milk glands and they actually had the ultrasound to show that. It's very possible she didn't either, but we could not say for sure without her being willing to go get that ultrasound.

How can we improve breastfeeding? Besides having lactation support, one thing is policies. You need to know what your federal policies are. If you're in the United States, what are your state policies? Then what are your workplace policies? For example, in the United States, we do have policies. We have policies saying that women are allowed to legally breastfeed in public. We have policies for the workplace requiring break time for nursing mothers and that workplaces must meet certain standards. States can have their own policies that enhance, add to, or go beyond federal policies. Then of course, workplace is mandated both by federal and state to have their own policies in place. Of course, they can always go above and beyond those policies as well.

Other ways to improve breastfeeding have to do with specific practices. Getting professional lactation help whether it's an IBCLC, a CLC, a nurse who has training and understanding in lactation. That's one way to improve breastfeeding. Utilizing support groups. Again, whether it's something done there at a hospital, through La Leche League, or a more non-formal one. Having that support can help improve breastfeeding.

Feeding often enough. Helping mothers understand that it doesn't have to be every two to three hours, especially if that child hits a growth spurt. It may be every hour. Not every child hits a growth spurt, though. If she's sitting there looking for it waiting, it's like, "Oh, they're four weeks. We should have a growth spurt." Not every child goes to that some have just sort of this steady growth, while others have that growth spurt. Not to put that baby on a three- to four-hour, we have to wait to feed again because sometimes, they need to eat sooner.

Some babies cluster feed, which means they're going to eat every hour and a half to two hours, but then, they go to sleep at night for six to eight hours. That's okay, too, because that's really nice to get that sleep, right.

Feed long enough. Again, we're not putting that infant on a timer and saying, "Okay, 20 minutes on this side; 20 minutes on that side. We've got foremilk. We've got hindmilk. Women let down at different rates. Women have different amounts of foremilk and hindmilk. Letting that infant lead that breastfeeding relationship is really important here. Again, there's medications and herbal supplements that can help improve breastfeeding or increase breastfeeding.
Being able to use a hospital-grade breast pump can help increase milk supply. The pumps that we can buy in stores may maintain milk supply, but to actually increase milk supply, we have to be using a hospital-grade breast pump. I'll have a whole series just over that at some point, because there's a lot about products.

The SNS is that Supplemental Nursing System. At the beginning of this, I talked about taking that capillary tube and putting it, taping it to the woman's breasts, and having it sticking out past her nipple a little bit. That would actually be supplementing at the breast. That while the infant is, say getting, whether it's bottled human milk or formula, they're also stimulating the breast and sending those signals to the brain to make more milk that can help improve the breastfeeding and the milk supply.

Another one is co-sleeping or bed-sharing. This is a very controversial issue among experts. We know that by using co-sleeping or bed-sharing it can promote breastfeeding, it promotes a quicker response to the infant's cries, it allows the mother to detect potentially dangerous breathing pauses in the baby. Bed-sharing with infants and children is one of the most common ways to sleep worldwide. However, bed-sharing absolutely increases the risk that an infant could be suffocated by a person sleeping or the bedding materials. The only way to avoid that risk is to not co-sleep. Most adults will not modify the bed to sleep safely. A common way for suffocating isn't necessarily that someone rolled over on the infant and squished them or suffocated them, but they got caught in a comforter or a pillow, they were not strong enough to move their head away, and then they suffocated through that.

Anyone who plans to co-sleep, the bed should be firm, there should be no pillows, and it should be a light sheet or blanket, no comforters. The adult cannot be a smoker or live with a smoker. They can't be drinking alcohol, they can't be doing any drugs, and they can't be taking anything that makes them sleepy, such as Benadryl®, or messes with the sleep cycle. If they have a sleep disorder, they should never co-sleep.

The most dangerous places to sleep with an infant include couches and recliners. I've talked to so many parents who are like, "Oh, I'm not sleeping with the baby in my bed," but they fall asleep in the recliner or on the couch with a baby all the time. That is absolutely the most dangerous place to sleep with an infant.

Currently, the American Academy of Pediatrics recommends against bed-sharing -- do not bed-share. There is a study completed by Helen Kendall-Tackett, several years ago, and they surveyed mothers worldwide. This is not just the United States but around the world. They found that, even though the mothers would report that co-sleeping was not recommended, or considered safe, they did it anyway. A lot of them reported that they ended up doing it in a
chair, "Well, I'm not going to fall asleep in the bed. So, I'll sleep in this chair." Actually educating parents on, if they're going to co-sleep, these are the things that you need to have in place and even if you choose to do that, it's still not the safest option. Infants really do need to be in their own bed on their back. Knowing that a wide majority of parents do choose to co-sleep, teaching them how to do it safely, may be a choice that you as a professional want to make, because it does help with breastfeeding. As a lactation consultant, I try to be supportive of a parent's choice. If they want to co-sleep, I work with them on getting their bed in a way that would be safer because we cannot get safest.

For questions or to request any further lactation topics, you can contact me at shera.jackson@ttu.edu. I would like to thank you for watching this video and I look forward to hearing from you.

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