

# **Prenatal Memory and Learning: our Intelligent Fetuses**

By Soumy Ana. August 2003- Rajab 1424

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Twins have been seen developing certain gestures and habits at twenty weeks gestational age which persist into their postnatal years, such as games that they would typically play in the womb with a membrane separating the both of them.

Fetuses quickly learn kicking anywhere on cue.

The mother's voice rhythm is repeated by the baby or can be used to stimulate feeding. Babies are leaning their native language before birth from 16 weeks gestation on. The proof is that they prefer looking at people using this language.

Researchers discovered the presence of chemosensory receptors in utero. Many chemical compounds, including those from the mother's diet, pass through the placenta and reach the baby in utero while others flow in the capillaries of the nasal mucosa. By breathing and swallowing amniotic fluid, a baby becomes familiar with the mother's diet, including things like garlic. Even before post-nasal exposure to breast milk, babies already know and prefer their own mother's milk. They can smell it! Smell does not need air to spread!

Traumatic events can happen at birth and stay with the child its entire life like the fear of adhesive tape if it is linked to pain or fear at the time of the birth.

Unborn babies participate in their mother's emotional upset, especially when she is watching a movie. And babies whose mother experienced depression during pregnancy themselves display signs of depression at birth.

All of this proves that memory and learning are a normal behavior of the unborn child and the human being. Education begins in the womb and continues in life.

Being in the womb, the fetus is constantly stimulated by what is going on around it. The fetus is even more vulnerable because it grows billions of brain cells that are on their way to be programmed for future life outside the womb.

We have to think that this growing organism is an individual with its own personality and its own hearing and feeling apparatus.

## **Fetus and personality:**

After three months, babies show signs of personality; one fetus behaves differently from another in the womb, already showing if it will be active or not, how curious it is and how open to the world outside.

Prenates choose the way they are lying in the womb and they "decide" the time of labor by releasing protein in the mother's blood stream. Many babies presenting in the breach position just before labor have been convinced by their mothers to turn and shift in a way it would facilitate birth for both of them, showing there is a real communication going on between parents and fetuses.

There is evidence that babies share in their mothers' emotions via the hormones associated with them. For centuries many cultures have believed it, and for this reason were cautious to avoid the mother any unhappiness or discomfort as well as keeping her pure in body and mind.

Prenatal researchers believe that there is indeed some connection between what a mother thinks and how her baby feels.

Studies revealed a tendency for anxious mothers to produce anxious babies.

Mothers who resent being pregnant or feel detached from their babies are more likely to have children who will have emotional problems.

Some children whose mothers were depressed during pregnancy appear to be depressed themselves, rarely smiling, sobbing often or not feeding well.

Preborns register not only the mother's emotions but the lilt of her voice and the pattern of her language and of those talking to her.

Preborns may be learning their native language before birth from 16 weeks on, so that by 27 weeks of gestation, the fetus' voice already contains some of the speech characteristics of its mother. [1]

Preborns also use their memory actively.

A study by Donald Shelter, professor of education at the University of Rochester's Eastman School of Music, shows that fetuses can remember wordless tunes, no matter how complex. [2] Certain children can even reproduce the tune if given a musical instrument, without errors and without being taught it before.

Twins can be seen developing certain gestures and habits at twenty weeks gestational age which persist into their postnatal years, showing they are actively remembering. [1]

In one case "brother and sister were seen playing cheek-to-cheek on either side of the dividing membrane. At one year of age, their favorite game was to take positions on opposite sides of a curtain, and begin to laugh and giggle as they touched each other and played through the curtain." [3]

### **Fetus and feelings:**

The fetus has feelings and sense things around it, and several weeks before birth, it opens its eyes and sees the interior of the womb. It listens to its parents' voice and gets used to external sounds. Some babies might develop the love for noisy sounds if they have been growing as fetuses near an airport or a mechanic workshop. The sounds they hear in the womb continually will be those most likely to soothe them. At the same time, sounds that distress the mother will be passed on to the baby under the form of fear, preparing the future child to experiment irrational fears.

Preborns may show happiness or discontent and a whole panoply of emotions.

They can move at the beat of any music rhythm; they respond to touch or pressure on the abdomen by applying their hands at the exact spot they saw your fingers; they repeat patterns of music or pressure patterns that you may apply on the mother's belly.

On the other hand, they react violently to hard rock music, possibly injuring their mothers by their kicks. There have been many bruised or broken ribs after a rock concert! They appreciate classical music more.

They also hide away from ultra-sounds or they may sometimes punch needles or strange objects injected into the womb. Sometimes, they react shocked also by keeping still and displaying a flat heartbeat only present in sick children when a needles traverses the amniotic fluids.[4]

All of this proves that the preborn is not a non-feeling organism that wakes up at birth, but a full individual we should take care of as soon as conception occurs. This is why Muslims make Duas for the preborn and even before it is conceived.

### **From preborn to birth:**

Preborns that had their parents attention in the womb, who have been in contact with them by games, lullabies, stroking of the belly, dance movements, show more intelligence and balance later on in life.

We like massages because the amniotic fluids massaged us when we were in the womb, then the walls of the uterus massaged us as well. Babies like to be tucked in blankets to sleep for the reason that it reminds them of the uterine conditions before birth. Rocking movements soothe us for the same reason that in the womb the fetus is rocked this way or that each time the mother moves, walks, exercises, etc. Being hugged in the womb by strong muscles surrounding it, especially during the last months of pregnancy and during the mild contractions that occur at this time (as early as the twentieth week of gestation), it is not surprising that we like being hugged and cuddled tightly against the people we love.

Crying babies immediately calm down while rolled into a cover or strapped on its mother's back as it is commonly done in Africa.

At birth, the child is much more alert to its environment than later on, so everything that happens at this time leaves a profound mark on it.

Breastfeeding contributes after birth to reassure the baby that it is secure and loved.

It is as if their mental perceptions, when challenged in the womb have already begun developing. Thus, babies can imitate people smiling or making faces; they identify themselves with those around them.

Words repeated to the fetus in the womb are most likely to be the first words the child will say.

Preborns develop sexual feelings and pleasure while sucking their thumbs, showing that all the apparatus of the adult person is already in place and functioning. Fetuses 26 weeks old have been seen having erections. This should not be regarded as shocking but as a sign of the fetus well-being in the womb.

Dreaming is a creative act of the mind showing that the brain is actively moving and living. The active brain of the preborn is really visible as soon as the baby is born. Newborns may laugh while dreaming or grimace or whimper or express perplexity, skepticism, etc.

Fetuses dream a lot and babies dream almost 16 hours a day during all the time they are asleep during the first two weeks of their lives outside the womb.

Babies and fetuses dream as soon as they fall asleep, contrary to adults. Children dream 50% less, and after puberty, more than 80% less than fetuses.

Breathing irregularities, bodily expressions during sleep and eyes movements are clear signs a person is dreaming.

Some newborns, while put underwater smile blissfully. Smiling in a baby is a good sign and when it happens at birth after you choose gentle birth choices, it can be gratifying for both of you. The parents have a lot to do with encouraging or discouraging their babies to smile. It is up to you to make your baby feel happy or not.

Babies that are not touched or proved to they are tenderly loved show slower signs of development later on. On the contrary, babies carried on the body of the mother while she picks crops, sings songs or socializes, walk earlier and are stronger and sharper than other children.

This is maybe why the youngest in large families often show more vivacity of mind than their brothers and sisters. They are often learning faster, more things in less time and in a more variety of ways.

If babies and children see people praying often, they will learn how to pray earlier and will most probably be eager to imitate.

Preborns that are taught Qur'an or listen to nasheeds in the womb will learn quickly or remember the melodies after their birth and will be able to recognize and reproduce them as soon as they can talk (around 2 or 3 years of age).

Teaching your preborn Dhikr, words of praises, Duas, etc., will also contribute to root Islamic manners and good habits in your child.

This is why we recite the Adhan in the newborn's hear, because the baby is ten times more alert at its birth than later on. We can easily imagine that the baby is as alert as this in the womb, and loses it a bit after the first week of birth due to the extraordinary volume of stimulations around it. Also, Muslims soothe the baby by offering it the taste of a mashed date, a proof that its taste buds are already receptive and active.

Waking up at Fajr and waking up your child at Fajr along with you since birth as you did when it was in the womb is a logic way to teach it to love praying and early morning worship as well as building good habits.

The joy of being alive and serving Allaah, you can transmit it to your preborn by listening to soft *nasheeds* or smiling often, relaxing, exercising since exercising releases and hormone that triggers pleasure, as well as walking in a place where birds sing or people speak softly and nicely. You can also teach it about what awaits it outside. When the rain falls, go out and say "rain" or let the sun reach your belly and teach it "sun" as it will perceive the warmth of the sun as well as the light although filtered through your belly.

This must be continued at the birth of your child.

Children are very open to acts of generosity and good will. They are very sensitive to their environments and are very open to any way they can change it for the best, so Muslims should strive to introduce them to nature and its wonders preferably over plastic toys because plastic imitate natural shapes without replacing them, materials and smell without being the real thing. Planting trees or herbs, creating a botanical garden will probably be more educative and stimulating to a child than tons of noisy toys.

To develop love for the earth is also the role of the Muslim parents who have the responsibility to teach their children how it all works and how to get along with it. Since children and babies are developing their lungs until eight years old, it is very important to bring them in the forest or the seaside and engage in long walks near trees and plants.

Part of being human is to learn how to enjoy being alive.

The newborn is a discriminating listener to various kinds of sounds, and this until the end of the first year of age. Newborns respond to other babies cries but not to their own that scientists may have recorded. They recognize stories you told them in the womb. Newborns are more sensitive to their father's voice at birth because it was the voice they could hear better and because it is a low tone sound. The father should play as much his role as the mother of whom the preborn has the exclusivity. The father is the one whose voice will be first heard at birth since he will recite the Adhan on its right ear and the Iqamah in its left ear.

Also, as Muslims, it is important that they hear Arabic from people speaking it well. Going regularly to the local mosque is a good idea as well as going to the Halaqas. Also, it is a good idea to habituate the preborn and the newborn to two or even three different languages. Even if they may confuse both languages when they will start speaking, it does not matter. Children usually mix different languages when they do not know how to say some words in one language

and they know you will understand a word in another language. The message they convey becomes more important. And they make the distinction between the different languages.

By 14 weeks, the fetus may begin sucking its thumb and hold the umbilical cord. It needs to feel reassured by holding and touching. Body talk is understood universally. Newborns express feelings with their hands: closed fists indicate a distress or a discomfort; open hands indicate passivity. Preborns also express their feelings by kicking and the like. You should try to understand your babies' language before its birth as it tries to understand yours.

The way the child is cuddled and showed acts of love will determine its future development, happiness and its ability to show love and bound with other human beings.

The Qur'an mostly talks about people, and Allaah forgives everything to us except the wrong we do to others. How we treat others is therefore very important in Islam and is taught early in life.

Showing love and compassion to others is definitely registered by your baby since the womb.

And it will adopt your manners later on in life. This is why in Islam it is recommended to have your child breastfed by a woman with good manners and good morals because some of the mother's or wet-nurse's traits pass on to your child!

Finally, it is not surprising to say that babies can remember birth. Birth and pre-birth have a critical impact on personality. Asthma, eye inflammation and sinusitis have been found related to experiences at birth. Early hurts in life have been proved to be foundation of most mental problems. Hypnosis has shown to be an effective way to treat them by recuperating or making come to the surface these early experiences. Some children, two or three years old talk about what they saw around them at the time of birth in a very convincing way.

To wait one week for circumcision is recommended in Islam as well as in Judaism, for two good reasons. The first one is that the preborn has to develop vitamin K before it can be safely circumcised and avoid bleeding (occurring during the first week of birth); the second one is that the baby will suffer less because it will be less unusually alert psychologically and emotionally after a week on earth.

### **Preborns and health:**

There is a prenatal programming of health and bodily features in the preborn. Women who try to keep their weight down by eating less tend to have overweight children. [5] To understand this phenomena, let's take an example. The Ethiopians Jews called Falasha were undernourished in their homeland. Transported to Israel where food was in plenty, they became obese. As a result to poor nutrition in the womb, their body was programmed to make most of each calorie. When given an opportunity to eat a lot, their body transformed each extra calorie into fat.

It is the same for babies.

So mothers can condition their babies eating habits since the womb.

Not only that, but when stress deprives the fetus of nutrients, the body grows asymmetrical while certain tissues get less, the head growing more quickly.

Fingerprints are formed in whorl patterns if more swelling of the fingers occur; in loop or arch patterns with less swelling.

In a challenging environment blood oxygen and nutrients tend to go to the brain first, then the finger pads. If the fetus around the tenth week lacks of oxygen, it will develop more whorl patterns.

Babies adopt the organic patterns of their mothers. Stressed mothers secrete hormones (adrenaline) that travel through the bloodstream, inducing the same stress state in their fetus. Stressed mothers are more likely to have premature, hyperactive, irritable, colicky and underweight babies. [6]

Furthermore, Barker found out that babies with large placentas were more likely to have high blood pressure later on in life. The presence of cholesterol correlate with people's small abdominal girth at birth. [6]

This is how it works: If deprived, the fetus' blood will be redirected to the most essential organs, making priorities in such a way the liver will grow smaller, diminishing abdominal girth. And since the liver regulates the cholesterol of the body, it is easy to see that a smaller liver will not process cholesterol as well at a later age.

The DNA has shortened ends called telomeres, which act as genetic timers. They get shorter with each cell division until they stop dividing with old age, leaving the body falling apart.

Being exposed to a low-protein diet, telomeres grow smaller therefore being smaller at birth, and the babies' body lives less and less healthy.

This way, women can pass problems from one generation to the other.

To conclude, the development of the emotions, intelligence and health of your child begins in the womb. You have a role to play in your child's education and well-being that is not negligible. Refusing to hold your child or depriving it of means of developing its personality can be disastrous and you will be accountable before Allaah for that.

To have a child is a great responsibility, it is indeed a trial. Your duty is to encourage it to become a good Muslim and a better Muslim than you are. This is why having children, like going to *Hajj* or marrying should change your life forever and help you to get closer to Allaah and get closer to every Muslim's goal: Jannah Firdaus. All of this is a trial, a *fitnah*.

However, if you do your best, you will not be accountable for what you were not capable of doing and Allaah promised to help you for the rest. Remember the story of the man Musa (AS) was asked to follow. This man was sent by Allah to kill a child that was causing trouble to his parents who were pious and did their best for him. The child made its own choices but only brought misery to his parents. This is why Allaah ordered its release from earth.

A major source of guilt in parents is the belief that parents are in control of everything in a child's life. This is not really true. If you think your role as an influence and not as control, you will know that most of what will happen in your child's life depends on Allah's will. A Muslim parent should be careful to be the best Muslim he or she can be for his or her own sake first, then for the sake of his or her children.

Allaah gives help to the *Mu'meneen*, to those who are sincere in faith and try to improve in their behavior and choices in life.

The major point is to be open to the idea that your child will teach you what it needs. It will make its own decisions with you as a role model. It is a partnership as marriage is a partnership. Your baby watches over you and takes notes of your happiness, discouragement, etc. as you child will to. So the best gift you can offer it is to open to the possibility that your child will help you becoming a better Muslim, that it will increase you in Taqwa, and this from the womb on.

“A baby needs to be born securely into a safe net of committed relationships. It seemed as if we, as a culture, were cutting those strands, one after the other, and leaving babies with an emotional lifeline made of very few threads - or none at all. The possessiveness of the woman who appropriated her ex-husband's paternity against his will, the parents who refused a baby because

the father was Latino; the mother who was implanted in vitro and had to decide to kill one of the three embryos in order to give a chance to the twins to live.

What is lost in a market economy of “best” and “seconds”, in a society where babies are a form of currency, is the central paradox of true parenthood, which should be defined as our absolute commitment to a creature of whom we can claim no rights of possession.” [7]

We have to love not for ourselves or for the return of our investment, but for love’s own sake

### **Golden rules to communicate with your preborn:**

Up to six weeks before birth, fetuses actively use their sense of taste, touch, sight, hearing and movement. Babies can construct complete sentences before eighteen months if given the proper educational background. [8] Any stimulation during the first twelve months after birth has more impact than at any other time in the babies’ future life. By six months, 50% of its brain has grown; 70% by one year of age. [9]

One should communicate with the fetus when it is fully awake, usually between 8:00 PM and midnight, or 20 minutes after eating something sweet.

Use simple or consistent stimulation for only 15 minutes at a time.

Repeat things often like reading prophets’ stories twice daily to make sure these stories will be the ones it will prefer after birth.

Do not over-stimulate the fetus. Be alert to its reactions to determine if it is receptive or not. How it kicks, how often and how, should give you enough indications of the way it reacts to your stimulus.

Fetuses might kick, caress your belly from the inside, turn over, change position in the womb, punch, grab your navel, show a change in heartbeat (audible after 20 weeks of pregnancy through the uterine wall).

Offer it a variety of foods because late in pregnancy its taste buds are completely developed and it takes the eating habits of its mother.

Remember that the soul is only breathed into the body after 4 months of gestation (120 days), so teaching and caring should really take place from four months on.

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