

## PRENATAL EDUCATION

### From the embryo to adulthood

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“Prenatal education” is an ancient concept that has existed from the East to the West since ancient times - particularly in China and Japan.

The saying that our ancestors often taught their children: “Educate the child from the age of 3, educate the wife from the moment she enters the home!” This means from before the child is born to the time when they are 3 years old - in modern terms, the first 1,000 days of life.

The origin of health that shape human beings reflects the reality of the environment surrounding us and shows the importance of nutritional programming during the period when the child is still in the womb. Moreover, the nutritional factor of the mother has a greater impact, accounting for more than 40%, compared to the genetic factor, which is only 25%.

#### **I. WHAT IS PRENATAL EDUCATION?**

It's the issue of educating a child while still in the womb. It's a relatively new concept, yet not entirely novel, as it has been practiced since ancient times, spanning from East to West, particularly in China and Japan.

To prepare for a joyful journey and to have an ideal fetus, let's explore a culture that possesses a secret for creating individuals with sharp minds and intelligence. This is conveyed through the words of Dr. Rony Chen, an obstetrician-gynecologist at the Rabin Medical Center (Rabin Medical Center, Israel-Beilinson).

She says: Before marriage, Jewish women must maintain extremely clean bodies and are only allowed to be intimate with their husbands (have sexual relations) 10-14 days after the end of their menstrual cycle. They believe that by adhering to this timeline, a woman's body will

recuperate and be ready to conceive, ensuring that the born child will have robust health and exceptional intelligence.

Israeli women believe in the deep connection between the two bodies in birthing a delicate life, considering it a sacred duty. They always pray fervently, deeply committed to the responsibility of sustaining their lineage, aspiring to create intellectually rich individuals for the future.

They also have the practice of “pre-marriage health checks.” This is a very modern and civilized tradition. Thanks to this practice, a region that previously suffered from a hereditary disease called “Mediterranean Anemia,” specifically Thalassemia, has been entirely eradicated.

How does pre-marriage testing benefit Israelis and why do they take it so seriously and mandatorily? They understand this as a scientific method to prevent hereditary diseases from spreading within their lineage and community. If both spouses carry disease-causing genes, they risk passing on inherited diseases like Thalassemia (hemoglobin deficiency) to their children, causing them to carry the disease throughout their lives until death.

*So, “prenatal education is a science aimed at educating a child while still in the womb.”*

In fact, our ancestors have practiced this approach since ancient times, focusing on health maintenance, diet, and customs. However, it wasn't considered a science.

It wasn't until the early 1970s that people began to pay attention to the unique development of the fetus, particularly in the 1960s and 1970s, when the field of perinatology emerged. With the advent of more advanced equipment like ultrasound machines, electroencephalograms, there became conditions to observe and understand the specific developmental processes of the fetus.

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In summary, this is a scientific discipline that gathers knowledge about childbirth and nurturing while the child is in the womb. It involves three key processes:

- 1- Conception under the best conditions of the health of parents.
- 2- Fostering the fetus in the best environment (the mother's diet and lifestyle).
- 3- Educating the fetus, stimulating optimal brain development and unleashing the potential of the fetus. It actively aids in the comprehensive development of the fetus physically, mentally, intellectually and in character.

Essentially, prenatal education is an educational process that begins when the mother becomes pregnant. It's a comprehensive method aimed at facilitating the holistic development of the fetus in terms of physical, mental, intellectual and character aspects.

Prenatal education establishes a biological clock for the fetus, regulates sleep patterns and diet, fostering a healthy body, which in turn provides the necessary conditions for intellectual development. Consequently, it yields numerous benefits for the child upon birth.

Someone asked: Why should prenatal education be applied?

According to the explanation by author Tran Truc Anh in the handbook "Methods of educating children while still in the womb": Well-educated children tend to have the following characteristics:

- 1- Inheriting the genetic advantages of their parents. They often combine the beauty and traits of both parents, appearing more attractive than their parents.
- 2- Rapid development such as growing quickly, speaking early, being agile and active and tending to sit, stand, walk and run earlier than other children.
- 3- Well-behaved, good sleeper, less fussy and easier to care for.
- 4- Higher IQ and EQ than other children.
- 5- Good moral qualities, being enthusiastic, sincere and living with a positive attitude.
- 6- Rich imagination and creativity.

- 7- Living optimistically and embracing life, even in the face of challenges.

According to a study by Stanford University in the United States, children who receive positive affirmations and wishes from their mothers while in the womb are markedly different from other children by the time they reach one year old. When expectant mothers experience positive emotions, optimism, and happiness, their babies in the womb tend to be healthier and develop well. Conversely, if pregnant mothers frequently experience negative emotions and pessimism, it can adversely affect the fetus.

## II. DEVELOPMENT HISTORY OF PRENATAL EDUCATION

The concept of prenatal education dates back to ancient times and was practiced in various Eastern and Western countries. However, in ancient times, the focus was primarily on the health and psychology of the mother, emphasizing prenatal care rather than the education of the fetus.

It wasn't until the 1960s and 1970s of the 20th century, with the advent of advanced machinery and equipment such as ultrasound machines and electroencephalograms that allowed measurement and study of fetal activities in the womb, that prenatal education began to develop. Many countries then became aware of the importance of caring for, nurturing, and educating the fetus, leading to the introduction of prenatal education programs. These programs facilitated educating babies while still in the womb. Numerous maternity hospitals and centers worldwide organized prenatal education classes for expectant mothers.

From its initial rudimentary concept, supported by modern equipment, prenatal education has evolved into an advanced scientific field recognized and implemented globally. Several prominent international organizations are active in the field of prenatal education, such as the OMAEP organization, the Association for Prenatal and Perinatal Psychology and Health (APPPAH) and the American Health and Psychology Care Association. These associations operate in many countries, pooling and sharing knowledge and prenatal psychological experiences to aid

expectant mothers in fostering the development and growth of their fetuses.

There have been schools established in prenatal education. In the United States, renowned psychologists like Thomas Verry and Rene Van de Carr developed methods and programs for prenatal education aimed at engaging the general public. They were lecturers at various prestigious universities in the United States such as Harvard University, the University of Toronto, and York University. They frequently conducted courses on prenatal psychological therapy in numerous locations worldwide, including Canada, the United States, Europe, South America, and Southeast Asia.

In the school in the United States, Thomas Verry and Rene Van de Carr emerged as prominent figures.

Thomas, along with his colleagues, dedicated over 30 years to research and was considered the pioneer in studying the earliest development of humans from within the womb. His research spanned areas such as genetics and psychophysiology. He believed that everything an expectant mother experiences—be it in diet, breathing, moments of joy, or stress—affects the fetus in the womb.

His perspective was that: Experiences during critical human phases, particularly the prenatal and postnatal periods, significantly determine the entire structure of the brain, from birth through the entirety of life into adulthood.

***The prenatal and neonatal stages greatly influence the formation of an individual's psychological and physiological aspects in adulthood. Various ailments like cardiovascular issues, diabetes, and immune deficiencies could potentially stem from stress during these initial life stages. Abilities to engage, communicate, and connect with others, as well as the capacity for giving and receiving love, are also shaped during the prenatal and early years. If this stage fosters a secure connection with the mother, the child's emotional and cognitive capacities will be optimized.***

Conversely, an unsafe or incomplete connection during this crucial period may

lead to negative impacts on the child's future development.

Thomas also argued that an expectant mother is not merely an incubator for the child but an active participant in shaping their beloved offspring. Hence, the role of the mother is paramount. Historically, the mental and emotional development of the fetus has been underestimated. However, in the latter part of the second trimester, fetuses are highly sensitive, emotional, perceptive and even possess memory.

The second figure in the field of prenatal education is Rene Van de Carr, a pioneer in this domain. In 1977, he established a unique institution dedicated to prenatal education, known as the Prenatal University, in California, USA. This university specialized in systematically guiding methods for prenatal education. The curriculum covered exercises in fetal language, music, and movement.

Van de Carr, alongside co-author Marc Lehrer, gathered data from over 3,000 prenatally educated children through his Prenatal Education University program. The results showed as follows:

- The crucial period for brain development in children spans from the fifth month in the womb until the child reaches the age of 2 years.
- Prenatally educated children exhibited better interaction with the external world.
- These children tended to grow faster, articulate speech earlier, show early cognition, and develop controlled movements sooner.
- They were less likely to cry, displayed a calm and lively demeanor and were generally happier.
- For parent-child pairs, there was an enhanced emotional bond, and breastfeeding rates were higher among these mothers.

### III. OTHER SCHOOLS OF PRENATAL EDUCATION AROUND THE WORLD

Prenatal education is not limited to the United States; it is also practiced in countries like China and Japan.

For over 30 years, China has extensively embraced prenatal education. Essentially, Chinese prenatal education combines traditional practices with influences from both the American

and Japanese prenatal education systems. This approach has led to the development of many outstanding and talented children.

Japan is another country emphasizing prenatal education strongly. They have even introduced a program to cultivate prodigies for the nation, led by scientist Junichi Abe. According to Junichi Abe's research findings, the intelligence of the next generation is evidently influenced by factors during the prenatal period. He believes that every fetus is a prodigy, and prodigies lie in the right brain. Since the left brain is not fully developed in the fetus, it is easy for them to use the right brain.

In Vietnam, there are also some cases of successful prenatal education. For instance, Professor Tran Van Khe, influenced by the musical instruments played by his grandfather, father, and older brother, learned the monochord at the age of 6, the lute at 8, the zither at 12, and drumming at 14. Similarly, Do Nhat Nam practiced prenatal education while his parents were living in Japan.

#### **IV. FETAL DEVELOPMENT AND LEARNING CAPABILITIES OF THE FETUS**

In reality, some believe that at this stage, the fetus is just a mass, questioning if it can receive our teachings.

Therefore, let's track physical developments and sensory organs of the child, which will provide explanations.

##### **4.1. Fetal development stages:**

*The developmental process of the fetus can be divided into three stages:*

The fetal development process can be divided into 3 stages:

- The first stage of the gestation period from 0-3 months.
- The second stage of the gestation period from 4-6 months.
- The third stage of the gestation period from 7-9 months.

*Development in the first 3 months:*

In the 6th to 7th week of the fetus, we will start to hear fetal heartbeat and start to see its hands and feet, the head occupies most of the body.

In the 12th week, the head's features become distinct, and gender becomes distinguishable. At this point, the fetus measures around 6.5 cm in length and weighs approximately 18g.

*Development in the middle 3 months:*

At 16 weeks, the fetus measures approximately 16cm in length, weighs about 135g, the head occupies 1/3 of the body.

Internal organs start functioning, the skin turns reddish, and hair and nails begin to grow. The fetus begins to move hands and feet, the heart is also stronger.

At 20 weeks, it measures about 25cm in length and weighs 340g.

Eyebrows and eyelashes develop, and the skeletal structure becomes firmer. The fetus starts moving and turning in the amniotic fluid.

At 24 weeks, the fetus measures approximately 33 cm in length, weighs 370 g. The brain develops rapidly

*Development in the final stage:*

At 28 weeks, the fetus measures approximately 37cm in length and weighs around 900g-1kg.

At 32 weeks, the fetus measures approximately 40.5cm in length and weighs roughly 1.6kg. The organs are active, and the nervous system is developing.

At 36 weeks, the fetus measures approximately 46cm in length and weighs around 2.5kg, exhibiting facial wrinkles resembling an elderly person.

At 40 weeks, the fetus measures approximately 51cm and weighs about 3.4kg, the nails and hair are fully developed, signifying that the baby is ready for birth.

##### **4.2. Fetal sensory capacities**

Similar to a child, a fetus receives information from the external world through its five senses:

- 1- Vision: Upon birth, a fetus can see within a range of 15-25cm, the distance it perceives while in the womb. From the 2nd month, the fetus starts forming its eyes, and by the 4th month, it can sense light.
- 2- Hearing: The auditory system starts developing at 4 weeks, and by 16 weeks, the fetus reacts to sounds. If we interact using

language or music at this time, the baby responds by kicking or moving in the womb.

3- Taste and smell:

Around the 2nd month, the fetus's mouth and nose start forming, and by the 4th month, the sense of taste develops. By the 7th month, the nasal cavity senses taste and smell. Consequently, the mother's diet influences the child's future taste preferences. Babies recognize and seek their mother's breast due to the amniotic fluid resembling the taste of breast milk.

4- Touch:

The touch sense of the fetus begins to form at 8 weeks.

Therefore, by the 4th month, mothers can start applying prenatal education methods, like walking, considered a form of whole-body massage for the baby.

Beyond perceiving through the five senses, according to Dr. Jan Ehrenwald from the United States, fetuses also possess extrasensory perception in communication between mother and child.

**V. NEW DISCOVERIES ABOUT THE BRAIN**

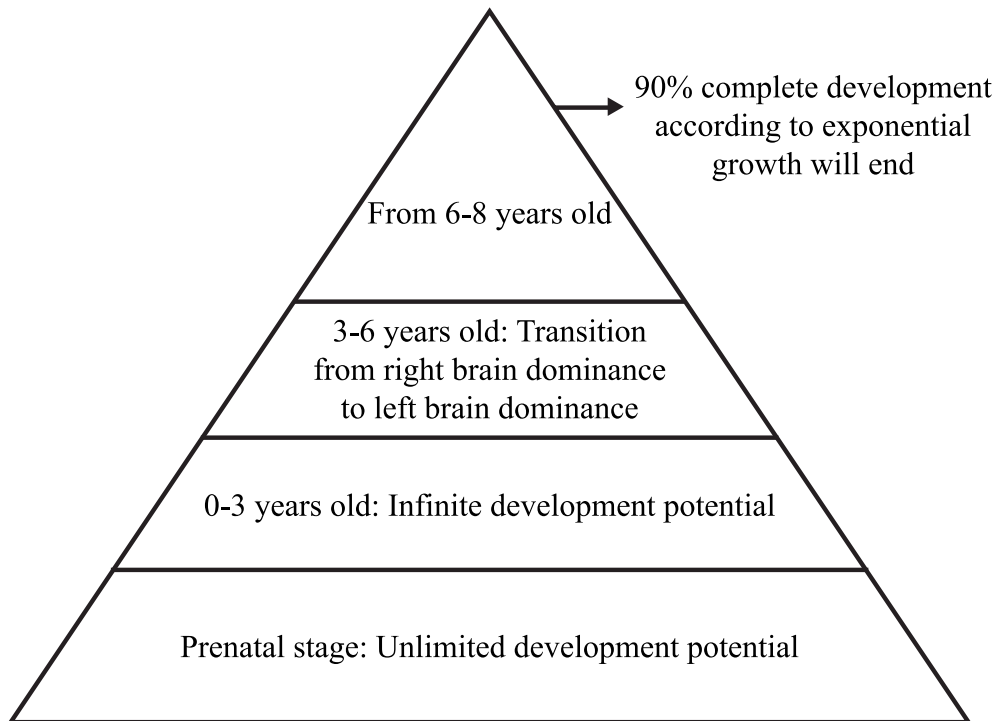
According to Thomas Verry, he believes that from the moment of conception, the fetus begins to form brain structures, laying the foundation for an individual's personality, character, and future cognitive abilities.

Professor Makoto Shichida also divides a child's first six years into four stages:

- 1- Prenatal stage: Infinite developmental potential
- 2- 0-3 years: Developmental potential
- 3- 3-6 years: Transition from right brain dominance to left brain dominance
- 4- 6-8 years: About 90% of development is complete.

Thus, the earlier it starts from when it is still in the mother's womb, the greater the child's talent development potential. Once this golden period is missed, the child's brain cannot return to its original state. He sees this as a period or stage of "infinite ability development".

He illustrated the talent tower in the following descending order:



**Figure 1.** The descending talent tower



## VI. CONCLUSION

Prenatal education is a modern scientific field. Thanks to the advent of sophisticated machinery in the 1960s-70s, along with the field of perinatology emerging in the 1970s, today we can understand human beings even when they are just fetuses in the mother's womb.

Starting as a tiny living being, the "fetus" gradually grows and matures into a human being.

In the womb, this tiny fetus is influenced by everything the carrier does from eating, breathing to working, emotions, thoughts, and interactions with the surroundings, all absorbed, especially when the right brain has formed, allowing for memory retention.

The fetus also has the ability to absorb what the mother educates. This gives hope that when the beloved child is born, they will be a strong, tall, handsome boy or a remarkably beautiful girl, but above all, intelligent and talented individuals, exceptional in intelligence.

Prenatal education can be seen as a modern field of educating fetuses while they are still in the mother's womb, shaping individuals from their very beginning.

## REFERENCES

1. **Makoto Shichida**. The mystery of the right brain. The Gioi Publishers, 2018.
2. **Han Truc**. The 280-day Journey of Prenatal Education. Women Publishing House, 2018.
3. **Nguyen Thanh Thuy**. Prenatal Education from the Heart. Dan Tri Publishing House.
4. **Vuong Nguy**. The 1000-day Journey of Love between Mother and Baby. Women Publishing House, 2016.
5. **Nguyen Cong Khanh**. Fetal programming with origin of health. Journal of Pediatrics, Volume 15, Issue 4, September 2022.
6. **Nguyen Thu Nhan, Nguyen Cong Khanh, Le Nam Tra**. Sub-project 11-13 "Research on the current situation and models of diseases in children, proposing measures to improve health for children". Ministry of Science and Technology - Ministry of Health Publishing House.
7. **Trach Que Vinh**. Prenatal education according to experts for 280 Days. Women Publishing House, 2017.
8. **Masato Takeuchi**. First Time being a mother. Labor Publishing House, 2018.
9. **Makoto Shichida**. Love, Praise and Recognition. The Gioi Publishers, 2018.
10. Nutrition in the First 1000 Days of Life. Vietnam Pediatric Association.
11. **Hiroshi Shinys**. Enzyme Factor. The Gioi Publishers.
12. **Tran Han**. Education Method of Jewish People. Women Publishing House.
13. **Pham Thi Thuy**. Prenatal Education - Scientific Method of Teaching Children from the Womb. Women Publishing House.
14. **Susan Magee**. Countdown to the Day I Meet My Dear. The Gioi Publishers.
15. **Mordecai Nadav, Pham Thi Kim Hoa**. The Jewish Secret of Enriching Children. Hong Duc Publishing House.
16. **Kam Nhung**. The Child is a Precious Guest. The Gioi Publishers.
17. **Nguyen Thanh Nhan**. Raising Children in Modern Times. Hong Duc Publishing House.
18. **Foster Cline, Jim Fay**. Parenting with Love, Teaching with Reason. The Gioi Publishers.
19. **Makoto Shichida, Ko Shichida**. Miraculous Prenatal Education. Women Publishing House.
20. **Luu Minh Huong**. Prenatal Education and Some Prenatal Education Philosophies in Various Countries. Institute for Early Intelligence Child Education Research (VSK).