

## PRENATAL: NATURE AND NURTURE

Have you ever been told you have your father's eyes or your grandma's temperament or your mother's athletic ability? The physical make-up and, to a certain extent, the personality of a person are both determined at **conception**. At conception the father's and mother's gametes combine to form a new organism. Although this organism is a product of the mother and father's genes it is in many respects genetically unique from its parents because of the mixing and matching of **genes** that occurs at conception.

A child's physical and emotional make-up is largely determined by their family's genetic heritage, i.e. a child's eye and skin color, their height and body type, and even their basic intellectual abilities are all **hereditary**. However, because genetic information is arranged to form new combinations at conception (**mutations** add to the variability) the child's DNA is in many respects distinct from that of its parents. Genetic variability is absolutely necessary for a child to develop properly. If the parents are too closely related, the child can develop a genetic disorder.

For instance, the royal families of Europe intermarried with one another for centuries. Consequently, the ancestors of these royal families suffer disproportionately from a disorder called **hemophilia**. This is because relatives share a higher proportion of their genes than do unrelated people; and related parents are more likely to both carry and pass on the same gene to the child causing a genetic disorder. The risk is the greatest when the

**Conception** is the point in time when gametes ovum (female) and sperm (male) fuse to produce a new organism.

**Genes** are hereditary units found in a specific location on a chromosome containing specific characteristics in an organism. At conception these units called alleles are exchanged and mixed creating new combinations.

**Heredity** is the genetic transmission of traits and potentialities from parent to offspring.

**Mutations** are spontaneous and novel changes in the sequence of an organism's DNA. Mutations can be beneficial, neutral or harmful.

**Chromosomes** are threadlike strands of deoxyribonucleic acid (DNA) and protein that contain genes and hereditary information.

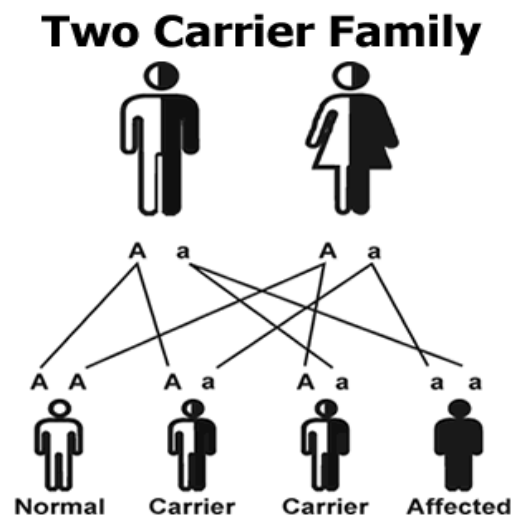
**Hemophilia** is a group of hereditary genetic disorders which impair the body's ability control blood clotting or coagulation used to stop bleeding when a blood vessel is broken.

parents are close relatives and lower for relationships between more distant relatives like second cousins. Yet, statistically speaking, the children of second cousins are more likely to have genetic problems compared to children produced by parents drawn from the general population.

The construction of a human requires an estimated 50,000 genes. Genes alone, however, do not completely determine human behavior. Both heredity and environment work together to shape a person's intelligence, temperament, height, weight, abilities, and so on.

#### Dominant versus Recessive Genes

Every person has a genotype (genetic information unique to them). Their genotype contains recessive and dominant genes. Genes tell your body what it should look like. There are all sorts of different genes. **Dominant** and **recessive** genes are "expressed" differently. Dominant genes are *always* expressed before recessive genes. For instance, blonde hair is a recessive genetic trait. Dark hair, however, is a dominant trait, i.e. the dominant trait is always expressed before the recessive. For example, if one parent has a "dark hair" gene and the other has a "blonde hair" one, their baby will inherit the dark hair trait. Likewise if both parents have "dark hair" genes then their child will also have dark hair. Moreover, if one parent contributes a "blonde" gene while the other contributes a "dark" gene, the child will have dark hair. Yet, if both parents have the recessive gene for hair color then the child will be blonde. Recessive traits are not bad; however, they do indicate a certain lack of genetic variability or that the parents share some bits of information in common. Recessive genes are capable of causing a genetic disorder though the "carrier" does not have or show symptoms of the disorder the mutation causes. Typically a genetic "carrier" has one "dominant" gene and one "recessive" gene. A genetic carrier may pass on the mutated gene to his or her biological children, though typically two recessive genes are necessary for the child to "acquire" and "express" the genetic disorder.



#### Traits Passed on from One Generation to the Next

Humans have exactly 23 pairs of chromosomes. In each pair, one chromosome comes from the mother and the other from the father. Twenty-two of the pairs are the same in both men and women. These are called **autosomes**. The twenty-third pair consists of the sex chromosomes. They are called this because these chromosomes are the primary factor in determining the sex of a child.

An **autosome** is any chromosome that is *not* a sex determining chromosome.

The sex **chromosomes** are known as the X and Y chromosomes. Females have two X chromosomes and males have one X and one Y chromosome. The sex of the child is determined

by reproductive cells. The reproductive cell of the male is called a sperm. The sperm carries *either* one X or one Y chromosome. The reproductive cell of the female is called an ovum. The ovum *always* only carries the X chromosome. When a sperm with an X chromosome unites with an egg, the result is a child with two X chromosomes—a female. When a sperm with a Y chromosome unites with an egg, the result is a child with one X and one Y chromosome—a male. In short, the male reproductive cell determines the sex of the child.

### Testing for Genetic Abnormalities

Common genetic conditions may include club foot, cleft palate/lip, cystic fibrosis, spina bifida, PKU, hemophilia, and muscular dystrophy. Scientists have developed a number of tests to determine whether the fetus is developing normally.

**Amniocentesis** is a medical procedure performed between weeks 12 and 16 of pregnancy. A sample of amniotic fluid is withdrawn by syringe and tested for any chromosomal or metabolic disorders. There are some risks associated with this procedure.

**Ultrasound Sonography** is a procedure in which high frequency sound waves are directed into the pregnant woman's abdomen. The echo from the sound is transformed into a visual representation of the fetus' inner structures.

The **chronic villus** test is a procedure in which a small sample of the placenta is removed during the 8<sup>th</sup> and 11<sup>th</sup> week of pregnancy.

The **maternal blood test** is a diagnostic technique used to assess neural tube defects (see *Spina Bifida* above). A blood sample is taken from the brain stem of the fetus. This test is given to

**Club Foot** is a condition where the foot is twisted so that the sole cannot be placed flat on the ground.

**Cleft Palate** is congenital deformity caused by abnormal facial development during gestation.

**Cystic Fibrosis** is a recessive genetic disorder affecting the lungs, pancreas, liver and intestine.

**Spina Bifida** is a developmental disorder caused by the incomplete closing of the embryonic neural tube. The tube remains un-fused and open allowing a portion of the spinal cord to stick out through the opening in the bones.

**PKU** (Phenylketonuria) is a recessive metabolic genetic disorder. A child with PKU is not able to properly metabolize (digest and convert to energy) certain amino acids. If left untreated, PKU can lead to mental retardation and seizures.

**Muscular Dystrophy** is a disorder of the musculoskeletal system. The affected person progressively loses more and more muscle mass as muscle cells and related tissue die.

women 14 to 20 weeks into the pregnancy only when they are at risk of bearing a child with brain or spinal cord defects.

### Genetic Engineering

Scientists can identify problem genes and sometimes do something about it through **genetic engineering**. Genetic engineering takes place when a scientist directly manipulates (changes) an organism's genome (DNA) using biotechnology. The scientist changes the genome by inserting new DNA into it. In humans, healthy functioning genes are added through either blood transfusions or bone marrow transplants. Transfusions and transplants replace ailing cells with healthy ones. This technique is currently being used to treat hemophilia, cystic fibrosis, rheumatoid arthritis, several types of cancer, and dozens of other rare diseases.

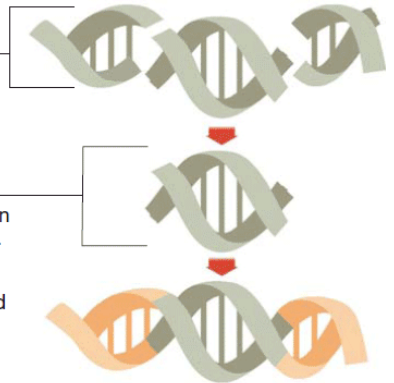
Both **genetic screening** and genetic engineering raise important questions. For example, if parents knew their baby was going to be born with a genetic disorder would they choose to end the pregnancy or would they bring the child to term? Would some parents want to overcome the random nature of genetic inheritance to create designer babies? Genetic screening has potentially positive applications. For example, a person could find out whether or not they were going to develop a disease in the future; and, more importantly, the affected person could begin treatment of the disease well before symptoms expressed themselves; however, a person might learn they had a completely untreatable disease and be forced to live with this fact. Also, what if employers in the future only

### Splicing Genes Together

Employing genetic engineering, researchers can take certain genes from a source organism and put them into another plant or animal.

#### An Example of Genetic Engineering:

- 1** Scientists take *Bacillus thuringiensis*, a commonly occurring soil bacteria...
- 2** ...and use enzymes to remove from it the Bt gene, which produces a protein that turns toxic in the digestive tract of caterpillars.
- 3** The Bt gene is then incorporated into the chromosomes of cotton and corn, killing caterpillars that feed upon these plants.



**Genetic Engineering** is the direct manipulation of an organism's genome through the use of biotechnology.

**Genetic Screening** is the process of analyzing DNA samples to detect the presence of a gene or genes associated with some form of inherited disorder.

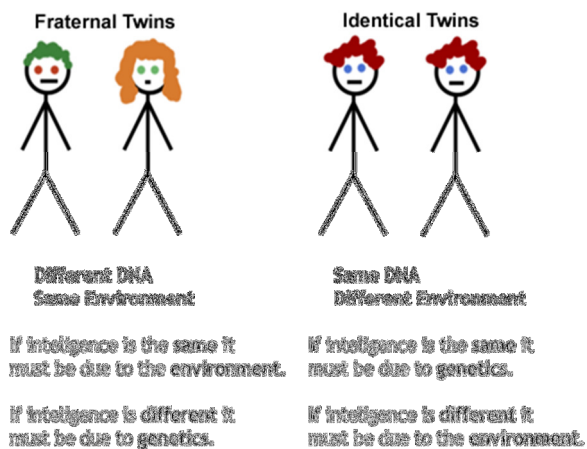
hired people of a certain genotype?

Scientists finished mapping out the entire human genome through the Human Genome Project (HGP) in 2003. As explained on the HGP website, the goals for the project are to:

- Identify all the approximately 20,000-25,000 genes in human DNA
- Determine the sequences of the 3 billion chemical base pairs that make up human DNA
- Store this information in databases, improve tools for data analysis, and transfer related technologies to the private sector
- Address the ethical, legal, and social issues (ELSI) that may arise from the fruits of this project

### Gaining Insights into Heredity Through Twins

Fraternal twins develop when two of the mother's eggs are fertilized at the same time. Fraternal twins usually grow in their own amniotic sac, have their own placentas, supporting structures, etc. Identical twins, however, may or may not share the same amniotic sac; it really depends on how early the single fertilized egg divides into two.



**Fraternal twins** develop when two of the mother's eggs are fertilized at the same time, e.g. boy/boy, girl/girl or boy/girl.

**Identical twins** develop when a single egg splits into two embryos after it has been fertilized. Identical twins are always the same sex.

If twins are a boy and a girl, clearly they are fraternal twins, as they do not

have the same DNA. A boy has XY chromosomes and a girl has XX chromosomes.

Girl-boy twins occur when one X egg is fertilized with an X sperm, and a Y sperm fertilizes the other X egg.

The best way to determine if twins are in fact identical or fraternal is by examining each child's DNA. However, such examinations are costly. Thus, people frequently opt for using the less

expensive, and less accurate, placental test. Sometimes mistakes are made through this test and parents are told their twins are fraternal whereas they are in fact identical. Sometimes parents are told their twins are identical; however, over time they begin to recognize the emergence of minor physical differences between their children making them conclude they are in fact fraternal.

Identical twins have the same DNA; however, they may not look exactly identical to one another because of environmental factors such as womb position and life experiences after being born. In addition to life's bumps, bruises, and differing hairstyles, a child's DNA is constantly adapting to that child's experiences. Regulatory genes can turn on or off in response to environmental stimulation. Thus, over time identical twins' DNA actually becomes more and more distinct.

## SYSTEM OF SUPPORTS

### Microsystems

The primary support system is called the *microsystem*. Those people who have a *direct* influence on the development of a child, e.g. mom, dad, siblings, etc. all belong to this system. This system helps us identify the role that the people closest to us have on our emotional and cognitive development. We express our attachment to these people through loyalty, nurturing, and empathy.

Both parents play an important role in promoting the healthy development of the unborn child. Research suggests the following proactive steps should be taken:

- 1). Before becoming pregnant mothers are encouraged to quit consuming alcohol, drugs or tobacco. In so doing, the mother minimizes the **teratogenic** or poisonous effects these substances can have on the proper development of the child's brain.

2). **Prenatal care** promotes healthy brain development in the fetus. The last trimester (months 7, 8, 9) is especially critical. Each toxin free day throughout the pregnancy means leads to a reduction in the potential damage caused to the developing child.

3). Social support for the mother is important. Maternal stress, psychological problems, poor nutrition, loneliness, and inadequate housing can affect the biological environment of the fetus.

4). **Postnatal** (after the birth) care involves nurturing both mother and child.

### The Exosystem

The **exosystem** is a secondary support system composed of those institutions, agencies, factors or agents/actors, etc. whose job is to provide support for people. New laws, government reform, environmental regulation, social unrest, etc. are examples of contexts that can dramatically affect a child's life experiences even though the child may have no knowledge about them. The effects on a child can be short-term, e.g. like a temporary change in work hours for a parent, etc. or they can be long-term, e.g. growing up during the Great Depression.

Consider how the exosystem affects an as yet unborn boy named Sam. Sam's dad acquired a new client at work. This means Sam's dad will make more money this year and there'll be less financial stress on the family. Yet, it also means dad won't be available as much to help his wife around the house. Also, a new factory was just built in Sam's town. This will bring new jobs to the community; moreover, improved economic conditions mean Sam's house will increase in value. However, when the wind blows, some of the fumes

A **teratogen** is an agent or substance, such as a virus or drug that causes malformations of an embryo or fetus.

**Prenatal Care** refers to the regular medical and nursing care recommended for women during pregnancy. The goal of regular check-ups is to allow doctors to treat/prevent potential health problems and promote healthy lifestyles benefiting both mother and child.

An **embryo** is the term given to a human organism from conception through to the eighth week of development.

The unborn child from its eighth week of conception to the time of its birth is referred to as the **fetus**.

Pregnancy is divided into three terms of **trimesters** consisting of three months each. Months 1, 2, and 3 are in the first trimester; months 4, 5, 6 are in the second trimester, and the last three months are referred to as the third or last trimester.

from the new factory waft in to his house. His mother breathes the fumes in and since he is tied to his mother through the placenta he gets exposed to toxins.

### **The Macrosystem**

The **macrosystem** is the third level of support. The influences at this level are persistent ones. They are also inherited by the child, e.g. laws, culture, government, history, etc. These influences shape the worldview of the child and its parents.

### **The Macrosystem's Influence on Prenatal Development**

Pregnant women who do not receive care in early pregnancy, who experience poor nutrition, and live in inadequate or overcrowded conditions are more at risk of becoming ill and/or stressed which, in turn, affects the growing fetus. Women who have access to health care facilities, family planning services, and supportive families are better equipped to make healthy decisions about parenting and pregnancy.

#### **An Analogy: Understanding the Macrosystem**

Picture the macrosystem as a giant spiral staircase. During the prenatal stage the child is at the bottom step. Every step taken upward shapes the child's worldview. Likewise every step previously taken by the child influences the way they confront social expectations in the present. The child is also shaped by their parents' educational status and income. For instance, children whose parents are professionals tend to become professionals themselves because of expectations placed upon them. Ultimately, each step up the spiral staircase affects how the child sees themselves and how they react to the world.

### **Conclusion**

Potential parents should acquaint themselves with the systems of support available to them. The first issue to consider before becoming a parent may be the physical health and emotional well-being of the mother and the father (as well as a proper consideration of their family histories). Moreover, the type of living space and how the child will be nurtured are also major considerations. Will the extended family and the community help support the child's growth and maturity? Are schools and the availability of health services concerns? Are finances and long-range plans for the family an issue?



## THE FOUR DOMAINS

### The Physical Domain

When referring to the prenatal period of the developing child, there are three stages. Each stage is marked by specific physical changes in the developing child. The first stage in the prenatal period is the **germinal stage**.

The **zygote** is the fertilized egg or the cell that forms at conception. Approximately one week after conception, the zygote becomes attached to the uterine wall. It is about the size of a poppy seed and is composed of approximately 100-150 cells. Eventually, the inner layers of the zygote become the embryo and the outer layer becomes the support and nutritional layer.

The second stage in the prenatal period is the **embryonic stage**. The inner layers of cells within the embryo become the internal body parts, such as the respiratory and digestive systems. Other cells become the circulatory system, bones, muscle, excretory system, and reproductive system. Cells also become the nervous system, the sensory receptors (nose, eyes, ears) and skin. The placenta, umbilical cord, and the fluid-filled sac continue to support and nurture the embryo.

The **fetal stage** begins after two months of growth in the prenatal period. Many changes occur and the most noticeable to the mother are movements of the fetus. Beginning at about nine weeks, the fetus moves its body in response to shifts in the mother's position. The auditory systems function before birth. Researchers have shown that the fetus perceives in-utero vibration and sound. The fetus is aware of when its parents touch the mother's moving belly and talk to him/her.

The **germinal stage** is the first two weeks of prenatal development when rapid cell development and cell differentiation take place within the **zygote**.

The **embryonic stage** is the period of prenatal development that occurs from two to eight weeks after conception.

The **fetal stage** is the period of prenatal development that begins two months after conception and lasts for seven months (on average).

<b>Development After Conception</b>			
<b>3 Months</b>	<b>5 Months</b>	<b>6 Months</b>	<b>8-9 Months</b>
<ul style="list-style-type: none"> <li>• 10 cm long</li> <li>• Legs and arms move</li> <li>• Mouth opens and closes</li> <li>• Head moves</li> <li>• Face, forehead, eyelids, nose, and chin are all distinguishable</li> <li>• Arms, legs, and hands are visible</li> </ul>	<ul style="list-style-type: none"> <li>• Toenails and fingernails are formed</li> <li>• Active movement</li> </ul>	<ul style="list-style-type: none"> <li>• Grasping reflex</li> <li>• Irregular breathing</li> </ul>	<ul style="list-style-type: none"> <li>• Tissues become fatty</li> <li>• Organs, such as heart and kidneys, become functional</li> </ul>

## The Cognitive Domain

Cognitive development involves the functioning of the human nervous system and blood circulation which are the first to function in the embryo. The heartbeat commences three weeks after conception. By the second month, fetal reactions to such outside **stimulus** as loud sounds show that **synaptic connections** are complete and that brain activity is taking place. Fetal brain cells are generated at about 250,000 per minute. It is most likely that infants will have all the neurons they are going to ever have in their life at the time of birth.

The nervous system forms as a hollow tube on the back of the embryo. The brain forms into a large mass of neurons and this tube-shape changes when the brain begins to form.

There are three major divisions in the brain.

**Hindbrain:** located at the lowest portion of the brain and controls motor development.

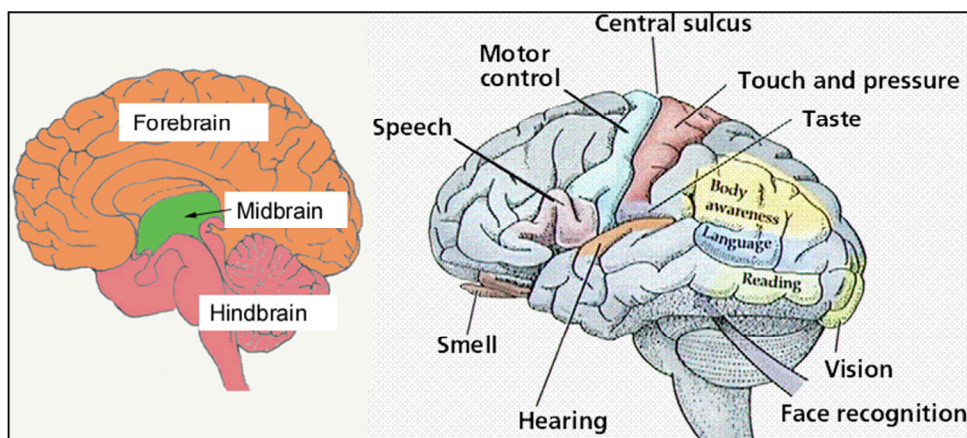
**Midbrain:** located between the hind and forebrain and it relays information to eyes and ears.

**Forebrain:** large part of the brain that plays the most critical role in thinking and language.

**Stimulus** is a thing or action which gains the attention of someone or something.

**Synaptic connections** are created through a network of neurons. **Neurons** are connected to one another through special projections called **dendrites** and **axons**. Dendrites bring information to the cell body and axons take information away. Information from one neuron flows to another neuron across a **synapse**. The synapse contains a small gap separating neurons from one another.

A **neuron** is a specialized cell transmitting nerve impulses across a network.



Cognitive functioning, the development of the organs, and the forming of the nervous system are affected by teratogens or harmful substances. Poor nutrition, high levels of stress, and environmental hazards also impact the development of the fetus. The development of the cognitive system continues throughout the prenatal period and in to adult life.

### **Social/Emotional Domain**

Every child is born with a unique genetically-based set of psychological tendencies or a particular disposition. These tendencies are called **temperament** and they affect the individual's developing **personality**.

Temperament and personality are shaped by a multitude of genetic instructions guiding the development of the brain. They are also affected by the prenatal environment.

What is the difference between temperament and personality?

Personality includes character, behavior, temperament, emotions, and mental traits. A mother may describe her child's temperament as sensitive in the way he reacts to his environment. His personality overall may be seen as outgoing and thoughtful.

**Temperament** refers to the manner of thinking, behaving, or reacting typical of a specific person.

**Personality** refers to the pattern of qualities and traits related to character or behavior, peculiar to a specific person.

Research suggests that, at least in some ways, fetuses develop more than just their reflexes and organ systems during the prenatal period. They begin to be aware of the social world that they will soon join. The fetus and mother interact and communicate in many ways even before birth, especially during the last trimester. Family members talk to and address their long-awaited child when it is still in the womb.

### **What are the basic temperaments of newborn babies?**

Many researchers have tried to describe and measure temperament. According to their findings, in the first days and months of life, babies differ in nine essential ways.

**Activity Level:** some babies are active and kick a lot in the uterus before they are born. They also move around a great deal in their bassinets, and as toddlers they are nearly always running.

**Rhythmicity:** some babies have regular cycles of activity. They appear to have a schedule for needing food and sleep.

**Approach-Withdrawal:** some babies delight in everything new; others withdraw from every new situation.

**Adaptability:** some babies adjust quickly to change. Others are very sensitive and become unhappy at every disruption to their normal routine.

**Threshold of Responsiveness:** some babies seem to sense every sight, sound, and touch. For instance, they awaken at the slightest noise or turn away from a distant light. Others seem blissfully unaware, even of bright lights, loud street noises, or wet diapers.

**Quality of Mood:** some babies seem constantly happy, smiling at almost everything. Others seem chronically unhappy; they are ready to protest at any moment.

**Distractibility:** all babies fuss when they are hungry but some will stop if they are given a pacifier or someone sings them a song. Others will keep fussing. Similarly, some babies can easily be distracted from a fascinating but dangerous object and diverted to a safer plaything. Others are more single-minded, refusing to be distracted.

**Attention Span:** some babies play happily with one toy for a long time. Others quickly drop one activity for another.

According to research, most young infants can be described as being one of four types: easy-going, slow to warm up to others, sensitive or difficult, or a combination of these types.

## CRITICAL PERIODS OF DEVELOPMENT

The chart below outlines the especially sensitive time when certain body systems develop in the prenatal period.

Body System	Especially Sensitive	Development up to...
Central nervous system/brain	4 <sup>th</sup> to 8 <sup>th</sup> weeks	Postnatal, through to adulthood
Heart	5 <sup>th</sup> to 9 <sup>th</sup> weeks	12 <sup>th</sup> week
Upper Limbs	6 <sup>th</sup> to 10 <sup>th</sup> weeks	12 <sup>th</sup> week
Eyes	6 <sup>th</sup> to 10 <sup>th</sup> weeks	Term
Lower Limbs	6 <sup>th</sup> to 10 <sup>th</sup> weeks	12 <sup>th</sup> week
Teeth	9 <sup>th</sup> to 11 <sup>th</sup> weeks	Term
Palate	9 <sup>th</sup> to 11 <sup>th</sup> weeks	16 <sup>th</sup> week
External genitalia	9 <sup>th</sup> to 11 <sup>th</sup> weeks	Term
Ears	6 <sup>th</sup> to 11 <sup>th</sup> weeks	13 <sup>th</sup> week

Harm can occur during prenatal development especially during these critical times. By the end of the fourth month the fetus is sleeping and waking regularly. The fetus exhibits sound and light sensitivity by their movements. The seventh month is a critical month because if the fetus is born prematurely at this point, it has a fair chance of surviving. Fetuses mature at different rates; however, a newborn at this age would definitely require assistance breathing.

Identified below are the stages of human prenatal development over a period of 38 weeks. You may wish to consult an Internet site to see images of fetal development through the stages.

Embryonic Period (1-7 weeks)	Fetal Period (8-16 weeks)	Fetal Period (16-36 weeks)	Full Term (38-40 weeks)
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In the last two months of prenatal development, the fetus gains weight at a rapid rate. On average, the fetus is about 30 cm long and weighs about 3.5 kg and is ready to be born.

### Labor and Delivery

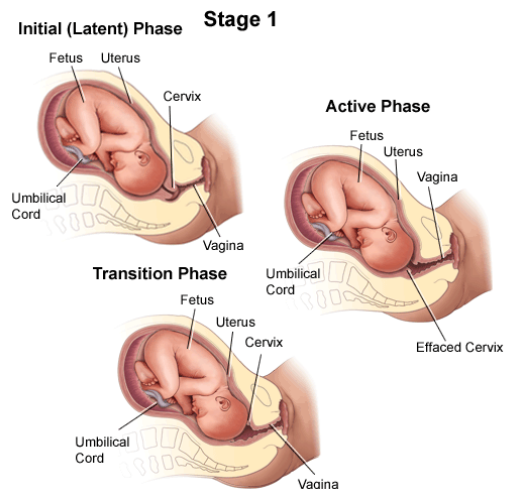
Developmental psychologists examine human development from conception through adulthood

into old age and death. Each of us is a unique human being due to our genetic make-up and through environmental influences. You have seen how changes can affect development throughout the prenatal period. The labor and delivery experience may also impact on the development of the baby.

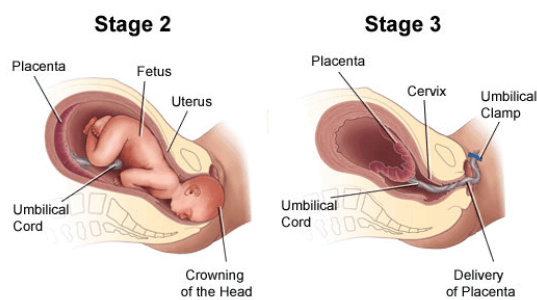
### What are the stages of birth?

The birth process begins in three stages.

The first stage is usually the longest and lasts an average of 12-24 hours. Contractions in the uterus are spaced apart in the beginning and, as the baby is ready to be delivered, they are closer together. These contractions cause the woman's cervix to stretch and open. The birth canal continues to open allowing the baby to move into the birth position.



The second stage occurs when the baby's head starts to move through the birth canal. The usual position of the baby is head down. With each contraction the mother bears down. Eventually the baby completely emerges from the mother's body.



Afterbirth is the final stage of delivery at which time the placenta, the umbilical cord, and other membranes are expelled and detached. This stage lasts only a few minutes.

### What are the strategies used in childbirth?

In the standard childbirth procedure, the expectant mother is taken to the hospital where her doctor is responsible for the delivery of her baby. This course is not intended to outline all of the variety of birthing methods or cultural practices involved in labor and delivery. There are many.

Sometimes complications arise that affect the later development of the child. If delivery takes place too quickly, the pressure on the baby's head can disturb the natural flow of blood. On the other hand, if the delivery takes too long, the baby can be deprived of oxygen. This is called anoxia and can cause brain damage.

During a normal delivery, the crown of the baby's head comes first; however, the baby can be in many positions before birth. The baby can present itself buttocks first or sideways. The umbilical cord may be wrapped around the baby causing complications during the delivery. If the baby experiences trauma in some way, it may need medical assistance once it is delivered. Medical staff is knowledgeable and are able to cope with all types of delivery circumstances.

### **What is the father's role in the labor and delivery process?**

Fathers play an important role throughout pregnancy. They give support, provide care, and are equally invested in creating a healthy prenatal environment. Fathers, too, await the birth of their child and dream of spending time with their child as he/she grows up. Both parents may prepare for the labor and delivery by attending prenatal classes. Together, they also learn how to care for their newborn. Cultural roles and the relationship between the mother and the father determine the involvement of the father during labor and delivery as well as in the care of the infant.

In Western countries like Canada, Britain and the United States, fathers have increasingly participated directly in the childbirth experience. They might be coaches that assist the mother with breathing, relaxation, and pain control. On the other hand, they may be team mates that follow directions from medical staff or support requests made by the mother in labor. In other cases, the father may be a witness to the birth with very little participation in the actual delivery. The couple may decide that the father's role is to care for the other children or spend time with extended family that maybe in the waiting room rather than participating directly in the delivery. The important thing is that parents plan for and feel comfortable with the roles they have selected to play. They need to feel involved and part of a very special event that will change their lives.