Human Development

Part 1 : Weeks 1-8

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From the beginning of time, humans were made for LIFE.

Genesis 1 and 2 depict Adam and Eve as the pinnacle of God's creation. Not only were Adam and Eve created in God's image (Genesis 1:26-27), but they were also designed to live forever (Genesis 2:16-17).

God's creative work is good and orderly in Genesis just as it is today; His design for life brings joy and goodness to those He loves. Intricately woven together by God Himself, every human being is beautifully complex in body and soul (Psalm 139:13-16). Every human is a unique and valuable gift to the world.

The value of each human life does not depend on age or ability, race or class, gender or beauty. Rather, every life is inherently valuable because it is created and redeemed by God Himself.

Because God loves us, His creative work continues even today. Inside a mother's womb, God forms and provides for His littlest children; His Word affirms that every life is planned and loved. What does His creative work look like? How does God create and sustain life inside a mother's womb? In an ordered and loving way.

Y4 LIFE

Stages of Pregnancy

New life begins at fertilization. Fertilization happens when an egg from a mother and a sperm from a father unite to become a new human being. This happens, most often, two weeks after a women's menstrual cycle ends or two weeks after her last menstrual period (LMP).

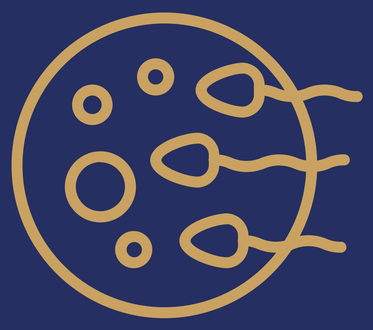
Every 28 days (approximately), one egg matures and is released from a woman's ovary; this is known as ovulation (around two weeks after LMP).

Though there may be thousands of sperm available to create a new life, the egg unites with a single sperm. When a sperm penetrates the egg, the outer protein coating of the cell changes to prevent other sperm from entering. A new life has begun!

Week 1

God designed women not only to carry children but also to provide half of the genetic code for a new life. Each woman is born with two ovaries; eggs develop in the follicles of each ovary. By the time her body is ready to bear children, each woman has about 300,000 eggs in her ovaries.

Once the egg is released, the open follicle develops into the corpus luteum, which releases progesterone and estrogen. Progesterone helps prepare the lining of the uterus by thickening it; the baby will implant in this safe, soft layer of tissue.



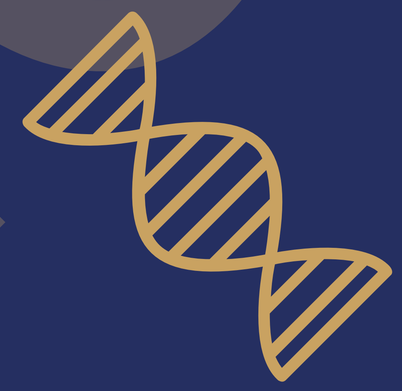
Y4 LIFE

Stages of Pregnancy

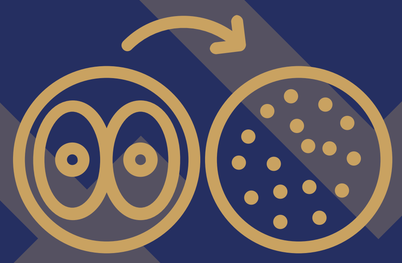
Week 1

Fertilization occurs in one of a woman's two fallopian tubes, the tube a new baby will travel in as he moves toward the uterus.

It is possible to have multiple zygotes if multiple eggs are released or if a single zygote divides completely into two or more human beings. When this happens, twins, triplets, or other groups of children will be born!



Sperm + egg = zygote. A zygote is the first developmental stage of a new baby.



Humans are designed to have 46 chromosomes—23 from dad and 23 from mom.

A baby's genetic code is complete at fertilization, including his or her sex. He or she is a complete human being from the moment of conception.

Stages of Pregnancy

Week 1

The baby is a separate human being from the mother, and he begins communicating with his mother right away, sending chemical signals into the mother's body so her body will help the baby grow rather than attack the baby as a foreign contaminant or germ.

As a baby moves through the fallopian tube, he grows rapidly! In fact, after only four cell divisions, the zygote enters a new stage of development and becomes a morula (a compact aggregate of cells). When the morula divides into 32 cells, there is extra space to incorporate fluid. This happens within the first five days of a baby's life.

The baby's signals produce hormonal changes in the mother, causing her uterine lining to thicken. This plush lining will help keep the baby safe and nourished during nine months of pregnancy.

Stages of Pregnancy

Between six and eight days after God brings together an egg and sperm to create a new human being, this new little child enters his third developmental stage. He becomes a blastocyst and implants in his mother's womb!

The blastocyst is made up of two layers: the outer trophoblast (which eventually becomes the placenta and ectoderm) and the inner embryoblast (which eventually forms the mesoderm and the endoderm).

Week 2

Once the baby has implanted, he begins to form a placenta. The placenta is a circular, flat organ that provides the baby with food and oxygen through an umbilical cord during pregnancy. The placenta also removes waste from the baby.

Stages of Pregnancy

Week 2

From the very beginning, this new life is hard at work! Not only do the baby's cells divide on their own, but he also directs implantation and the formation of the placenta.

The ectoderm will become the baby's skin, nervous system, eyes, and inner ears.

The endoderm will become the baby's lungs and intestines.

The mesoderm will become the baby's heart, circulatory system, bones, ligaments, kidneys, and reproductive system.

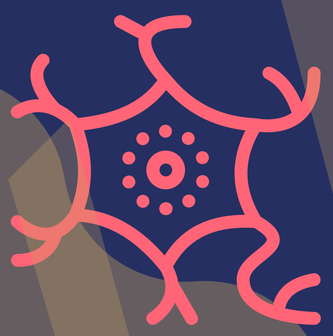
Stages of Pregnancy

Weeks

3 & 4

The first nerve cells of the baby have formed within three weeks; at this point he can begin to feel sensations.

At the end of week four, the baby is about 1/4 inch long, smaller than a grain of rice.



The baby's tiny heart tube will beat about 65 times per minute by the end of the fourth week of pregnancy.

Stages of Pregnancy

The neural tube begins forming; this becomes the baby's brain, spinal cord, and backbone.

Week 5

As the baby continues to grow, he becomes an embryo. During the fifth week, the pregnancy hormone—HCG—produced by the embryo quickly increases. This causes the mother to have increased estrogen and progesterone production. The increased hormones stop the menstrual cycle and fuel the growth of the placenta.

The baby's arm and leg buds begin forming, and his heart and lungs begin to develop, too. Every part of the baby grows together. Babies develop as whole beings rather than in parts.

Stages of Pregnancy

Week 6

The baby's neural tube closes.

The baby's nose, mouth, fingers, toes, and ears are forming.

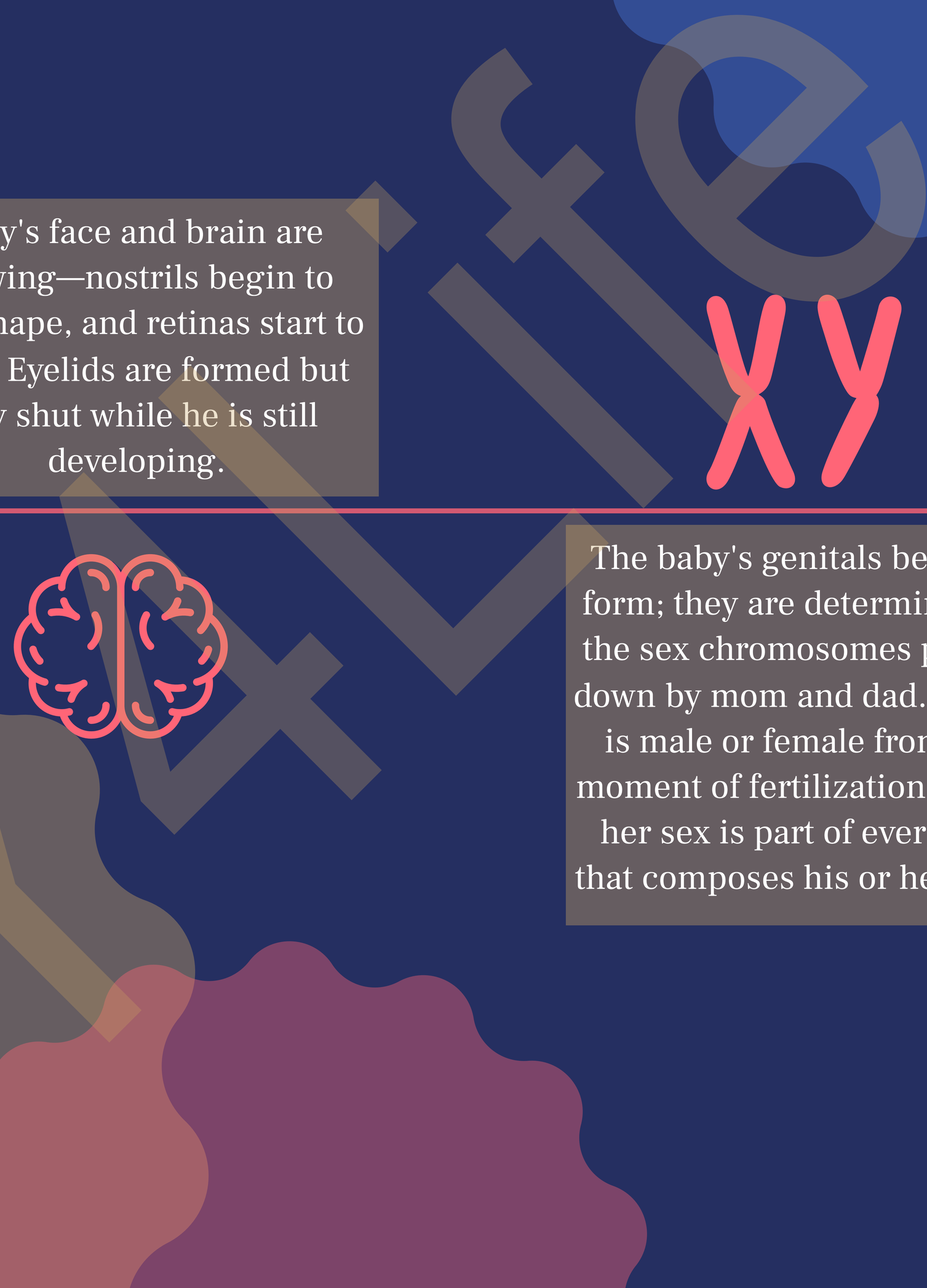
The heart and other organs continue to develop. At this point, the baby's heart beats about 105 times each minute!

Bones begin to replace cartilage, and the baby's teeth begin developing, even though they will not break through the gums until after the baby is born.

Y4 LIFE

Stages of Pregnancy

Baby's face and brain are growing—nostrils begin to take shape, and retinas start to form. Eyelids are formed but stay shut while he is still developing.



Week 7

The baby's genitals begin to form; they are determined by the sex chromosomes passed down by mom and dad. A baby is male or female from the moment of fertilization; his or her sex is part of every cell that composes his or her body.

Y4 LIFE

Stages of Pregnancy

At eight weeks, doctors begin to refer to a baby as a fetus rather than an embryo. The baby will remain in this fetal stage of development for the remainder of the pregnancy.

All of the baby's major organs have begun developing and will continue to grow and develop during the remaining seven months of pregnancy.

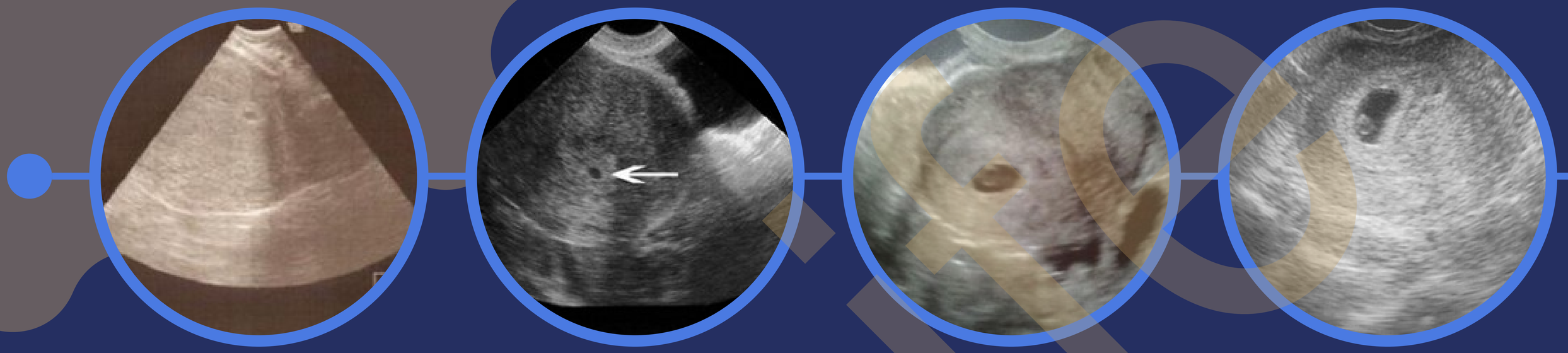
Week 8

At this stage, a baby's body and neck begin to straighten, and his arms and legs look like small paddles.

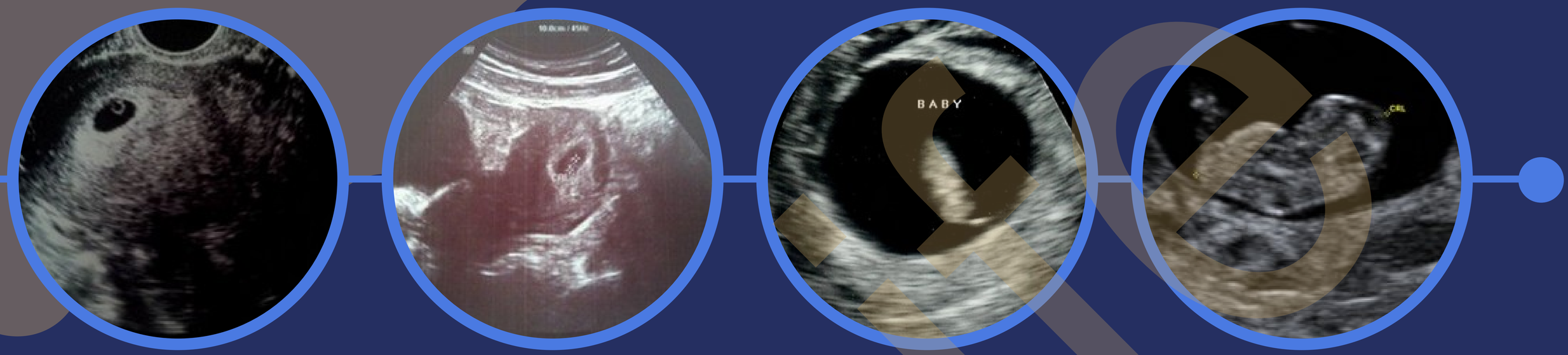
At eight weeks, the baby is about one inch long and weighs about 1/30 of an ounce.

The baby will continue to grow and develop throughout his remaining 32 weeks of gestation. Explore the rest of prenatal human development in the Human Development Part 2 and Part 3 infographics!

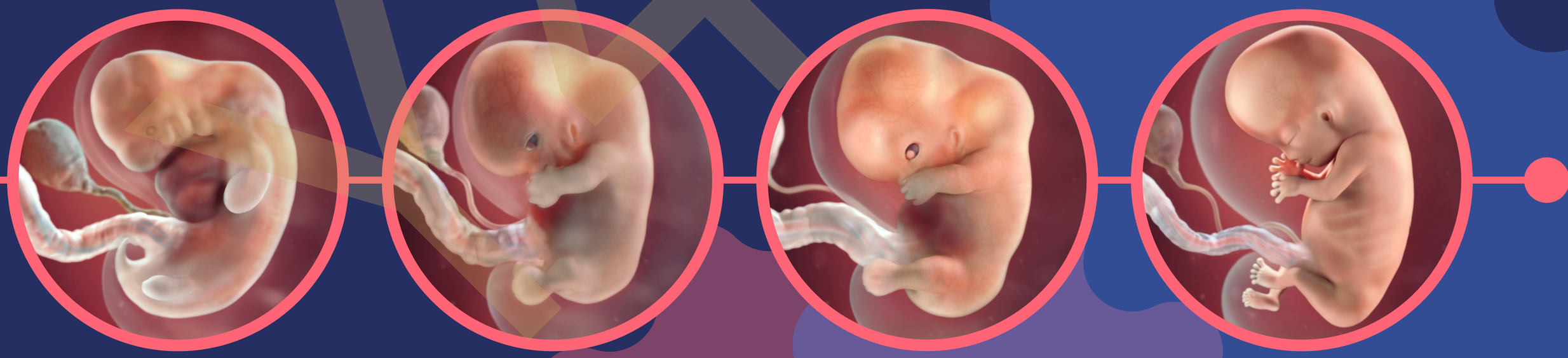
Ultrasounds & Digital Renderings



Week 1 Week 2 Week 3 Week 4



Week 5 Week 6 Week 7 Week 8



Images from babycenter.com and infobaby.org

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