Week 5 of pregnancy: embryo growth neural tube and early ultrasound signs

What is happening in week 5?

Week 5 is part of the nic period, a time of foundational organ formation. Although pregnancy is counted as five s the]], typically occurred around three s earlier in a 28-day cycle. This distinction matters because appearances and blood hormone levels can differ substantially if ovulation or happened earlier or later than average.

The is often described as very small, roughly the size of a sesame seed or a tiny grain, depending on the exact day and dating method. The body plan is beginning to take shape. Cells are differentiating into specialized tissues, and the is folding a flatter disc-like structure into a three-dimensional form. These changes are microscopic but biologically significant.

Around this time, the placenta is also developing. It is not yet fully mature, but the placental tissue is producing human chorionic gonadotropin, or hCG, the hormone detected by pregnancy s. hCG supports the corpus luteum in the ovary so it continues producing progesterone, which helps maintain the uterine lining.

Embryo growth and early body organization

The fifth week is marked by rapid cellular growth and structural patterning. The develops along a head-to-tail axis, and segments begin to organize tissues that will contribute to muscles, bones, nerves, and connective structures. The head region grows prominently because the developing nervous system is advancing quickly.

Several essential systems begin forming in parallel:

Nervous system: The neural plate folds into the neural tube, the precursor to the and spinal cord.
Cardiovascular system: Early heart tissue begins to organize and may start rhythmic activity around this general stage.
Digestive and respiratory precursors: Primitive internal structures are beginning to outline future .
Placental support: Early placental tissue and the yolk sac support nutrient exchange before the placenta becomes more established.

These changes do not mean the]] is fully formed; rather, the templates are being laid down. This is why the is especially sensitive to certain exposures, including some medications, alcohol, high-dose radiation, and uncontrolled conditions. If you take prescribed medicines, do not stop them abruptly without advice. Instead, contact your healthcare professional promptly to review safety in pregnancy.

The neural tube: why this week is important

The neural tube is one of the most important structures developing at this stage. It forms when a specialized sheet of cells folds and closes, eventually becoming the central nervous system: the brain, spinal cord, and related structures. Closure of the neural tube occurs very early in pregnancy, often before many have their first prenatal appointment.

This is the reason folic acid is emphasized before conception and during early pregnancy. Adequate folate status reduces the risk of neural tube defects. Many guidelines recommend that who may become pregnant take folic acid before conception and in the , although the exact dose can vary depending on personal risk factors, medical history, medications, and prior pregnancies. A clinician can advise on the appropriate amount for your situation.

It is understandable to anxious if you did not know you were pregnant and were not taking prenatal vitamins. Many pregnancies are unplanned, and many start supplementation only after a positive test. The most helpful next step is to begin a pregnancy-appropriate prenatal vitamin, discuss your circumstances a healthcare professional, and avoid self-blame. Early pregnancy is a time for support, not judgment.

Early heart activity: what "heartbeat" means at 5 weeks

Sources often describe the heart as beginning to beat around week 5. More precisely, early cells may begin coordinated rhythmic contractions as the primitive heart tube develops. This is not the same as a fully formed four-chambered heart; it is an early functional stage of cardiovascular development.

On , visible cardiac may not yet be detectable at exactly 5 weeks. Detection depends on gestational age, image quality, equipment, the route of , uterine position, body habitus, and the skill of the examiner. Transvaginal is generally more sensitive than abdominal this early.

If no heartbeat is seen at 5 weeks, that can be completely expected. Clinicians typically interpret early in relation to structures seen, mean sac diameter, crown-rump length if an is visible, symptoms, and sometimes serial hCG results. A repeat scan in 7 to 14 days may provide much clearer information than a single very early scan.

What an ultrasound may show at 5 weeks

An early at 5 weeks is often performed after fertility treatment, uncertain dating, pain or , prior ectopic pregnancy, recurrent loss, or for reassurance. However, it can also create uncertainty because normal pregnancies may look different from one day to the next at this stage.

Possible ultrasound findings include:

Gestational sac: Often the sign of an intrauterine pregnancy. It appears as a small fluid-filled structure within the uterus.

Yolk sac: This may become visible around this time or shortly afterward. It helps support the early on and is an important reassuring structure when seen in the correct context.
nic pole: The tiny may be seen later in week 5 or closer to week 6, depending on dating.
Cardiac activity: Sometimes visible near the end of week 5 or in week 6, but not reliably present on a very early scan.

One key goal of early ultrasound is confirming the location of the pregnancy. Seeing a gestational sac inside the uterus is reassuring, but interpretation can be nuanced. In some cases, clinicians may use repeat imaging and hCG trends to distinguish a very early intrauterine pregnancy from other possibilities. This is especially important if there is significant pain, bleeding, or a history of ectopic pregnancy.

Symptoms you may notice this week

Pregnancy symptoms at 5 weeks are driven largely by hormonal]], especially rising hCG and progesterone. Some people feel very pregnant; others feel almost nothing. Both experiences can occur in healthy pregnancies.

Common symptoms may include bre tenderness, fatigue, mild cramping, bloating, nausea, food aversions, heightened sense of smell, more frequent urination, mood]], and light spotting. Mild uterine cramping can occur as the uterus and supporting tissues respond to pregnancy, but pain that is severe, one-sided, worsening, or associated with heavy bleeding deserves prompt medical assessment.

Nausea may begin now or in the coming weeks. Eating small, frequent meals, staying hydrated, and avoiding strong triggers may help some people, but persistent vomiting, inability to keep fluids down, dizziness, or signs of dehydration should be discussed with a healthcare professional.

Practical steps for week 5

This week is a good time to establish care and review health basics. If you have not already done so, contact a midwife, obstetrician, family doctor, or pregnancy clinic to ask when your appointment should be scheduled. Timing varies by country, risk factors, symptoms, and prior history.

Helpful steps include:

Start or continue a prenatal vitamin containing folic acid, unless your clinician has advised a specific alternative.
Review prescription and over-the-counter medicines with a healthcare professional or pharmacist.
Avoid alcohol, smoking, vaping, and non-prescribed recreational drugs.
Limit exposure to foods with higher infection risk, and follow local food safety guidance for pregnancy.
Seek individualized advice if you have diabetes, epilepsy, thyroid disease, hypertension, autoimmune disease, kidney disease, or a history of pregnancy complications.

If you are feeling anxious, especially after a previous loss or fertility treatment, that anxiety is valid. Early pregnancy can involve waiting, uncertainty, and repeated tests. Ask your care team what findings they are looking for, when follow-up is appropriate, and which symptoms should prompt urgent review.