Twins begin with one pregnancy, but they do not all begin through the same biological process. The familiar labels “identical” and “fraternal” describe how the pregnancy started genetically. Doctors also need to know whether the babies share a placenta or an amniotic sac because those details often matter more for medical care than whether the twins look alike.

Ordinarily, an ovary releases one egg during a menstrual cycle. A sperm fertilizes that egg, creating a single cell called a zygote. That cell carries genetic information from both biological parents. It begins dividing, eventually producing an embryo, a placenta, an amniotic sac, an umbilical cord, and all the tissues needed to form a baby. With twins, either two eggs are fertilized or one fertilized egg develops into two embryos.

Fraternal twins form when two separate eggs are released during the same cycle and each egg is fertilized by a different sperm. The scientific term is dizygotic twins. “Di” means two, and “zygotic” refers to the fertilized eggs, so the name literally tells us that two zygotes were created. Each twin begins as a separate combination of genetic material.

Fraternal twins are no more genetically alike than brothers and sisters born during separate pregnancies. On average, they share about half of the genetic differences inherited from their parents, although the exact percentage is not perfectly fixed. They may look strongly alike, slightly alike, or almost nothing alike. They can have different eye colors, hair textures, body types, skin tones, personalities, health conditions, and talents. They can be two boys, two girls, or one boy and one girl.

Having fraternal twins begins with hyperovulation, which means releasing more than one egg during the same cycle. A tendency toward hyperovulation can run in families. This is where the statement “twins run in our family” can have real biological meaning. It applies more strongly to fraternal twins than identical twins.

People often say twinning travels only through the mother’s side, but the truth needs more care. The person becoming pregnant must release the eggs, so genes affecting hyperovulation have to operate in that person’s body. However, a man can still carry genetic variants connected with hyperovulation and pass them to a daughter. Those variants will not cause his partner to release two eggs, but they could affect his daughter’s chances when she becomes an adult. This can make fraternal twinning appear to “skip” a generation.

Age can also influence fraternal twinning. As the ovaries approach the later reproductive years, changes in reproductive hormones can make the release of multiple eggs more likely during some cycles. Previous pregnancies, ancestry, body characteristics, and fertility treatments can also affect the probability. Medications that stimulate ovulation may cause several eggs to mature, while in vitro fertilization can produce twins if more than one embryo is transferred. MedlinePlus Genetics explains that fraternal twinning is

affected by several genetic and environmental factors rather than one simple “twin gene.”

Identical twins begin differently. One egg is fertilized by one sperm, producing one zygote. Very early in development, that zygote separates into two developing embryos. The scientific term is monozygotic twins. “Mono” means one because both twins came from one original zygote.

Identical twins receive nearly the same starting genome. That is why they usually have the same biological sex, blood type, eye color, hair color, and many physical features. “Nearly the same” is more accurate than saying they are perfect genetic copies. Mutations can occur after the embryo divides, leaving one twin with genetic changes that the other does not have. Differences can also develop through gene regulation, prenatal conditions, illness, nutrition, stress, and life experiences.

DNA provides instructions, but the body does not use every instruction at full strength in every cell. Chemical markers can influence whether particular genes become more or less active. This is called epigenetics. Identical twins may begin with extremely similar DNA sequences, but their patterns of gene activity can become increasingly different. If one twin smokes, exercises, experiences chronic stress, develops an illness, eats differently, or lives in another environment, the body may regulate certain genes differently.

Identical twins also have different fingerprints. Genes influence the general formation of fingerprints, but the exact ridges are affected by tiny differences in pressure, movement, fluid, position, and growth inside the uterus. Police can therefore distinguish identical twins through fingerprints even when ordinary DNA testing has difficulty separating them. Their teeth, birthmarks, voices, handedness, immune systems, and facial details may also differ.

This explains how one identical twin can develop a medical condition while the other does not. Sharing a starting genome does not mean every disease will appear in both twins. A condition may require a mixture of genetic susceptibility, environment, random cell changes, infection, hormone exposure, or behavior. If one identical twin develops diabetes, cancer, schizophrenia, multiple sclerosis, or another complex condition, the other twin’s risk may be increased without the outcome being guaranteed.

The word “identical” can also cause families to treat twins as if they are one person divided between two bodies. They are not. Their brains develop separately. Each twin experiences the world from a different physical position, forms separate memories, and builds an individual personality. One may be more patient, anxious, athletic, musical, outspoken, private, or adventurous. Similar DNA can influence tendencies, but it cannot create one shared mind.

The point at which an identical-twin embryo divides can affect how the pregnancy is arranged. A traditional medical explanation connects an earlier division with more separate structures and a later division with more sharing. The timing categories are useful, although human development is more complicated than a perfect clock and not every pregnancy follows the textbook exactly.

If separation happens very early, each identical twin may develop a separate placenta, outer membrane, and amniotic sac. This is called a dichorionic diamniotic pregnancy, commonly shortened to DCDA. "Di" means two, "chorionic" refers to the outer membranes associated with the placentas, and "diamniotic" means two amniotic sacs. Fraternal twins are normally DCDA, but identical twins can also be DCDA if the original embryo separates early.

The two placentas may grow close together and fuse, making them look like one large placenta after delivery. They are still biologically separate placental units. This is why simply looking at the placenta after birth does not always prove whether twins are identical or fraternal. If same-sex twins have separate placentas, they could belong to either group. A DNA test after birth gives a more dependable answer.

If an identical embryo divides after the placenta has begun developing but before the amniotic sac has fully formed, the twins may share one placenta while living in two separate sacs. This is called monochorionic diamniotic, or MCDA. "Mono" means one placenta, while "di" means two amniotic sacs. A thin dividing membrane separates the babies, so they are not floating directly against one another.

If separation happens later, the twins may share both the placenta and amniotic sac. This is called monochorionic monoamniotic, or MCMA. These twins develop in the same fluid-filled space without a separating membrane. Their umbilical cords can become entangled or compressed, which is why this type of pregnancy requires particularly close medical supervision. The NHS explanation of twin pregnancy types distinguishes DCDA twins, MCDA twins, and the rarer MCMA arrangement.

An amniotic sac should not be confused with a placenta. The amniotic sac is the thin, fluid-filled enclosure surrounding a developing baby. The fluid cushions the fetus, permits movement, helps the lungs develop, and protects against some physical pressure. The placenta attaches to the uterus and acts as the exchange station between the pregnant person's circulation and the fetus. Oxygen and nutrients move toward the fetus, while carbon dioxide and waste move away. The mother's and baby's blood ordinarily do not simply pour together; substances cross through specialized placental structures.

Each twin normally has an umbilical cord, even when they share a placenta. The cord connects that individual fetus to the placenta. Therefore, twins who share one placenta are not sharing one umbilical cord. The problem is that blood vessels from their separate placental territories may connect inside the shared placenta.

Those connections can produce twin-to-twin transfusion syndrome, known as TTTS. Blood flows unevenly from one twin, called the donor, toward the other, called the recipient. The donor may receive too little circulating blood, produce less urine, develop less amniotic fluid, and grow poorly. The recipient may receive too much blood, produce excessive urine and fluid, and experience dangerous strain on the heart.

The recipient twin is not deliberately taking blood from the donor. One baby is not stronger, greedier, or attacking the other. TTTS is a plumbing problem inside a shared placenta. The blood-vessel connections create an imbalance neither twin controls. The condition occurs only in twins sharing a placenta and affects roughly ten to fifteen percent of monochorionic twin pregnancies. It can become life-threatening, but ultrasound surveillance can identify warning signs. Treatment may include using a small laser through a fetoscope to seal the abnormal connecting vessels.

Other shared-placenta complications can happen. Twin anemia-polycythemia sequence involves slower blood transfer through very small placental connections. One twin becomes anemic, meaning there are too few healthy red blood cells, while the other develops unusually thick, red-cell-rich blood. Selective fetal growth restriction can occur when one twin receives a smaller or less effective portion of the placenta. These conditions help explain why identifying the placental arrangement early is so important.

Families naturally focus on whether twins are identical, but obstetric teams focus heavily on chorionicity—the number of placentas. Two identical twins with separate placentas generally do not face TTTS, while two twins sharing a placenta require extra monitoring. Zygosity explains genetic origin; chorionicity helps doctors understand pregnancy risk.

A twin pregnancy also places greater demands on the pregnant body. The uterus must hold two fetuses, additional fluid, and one or two placentas. Blood volume and cardiac workload increase. The body needs to deliver enough oxygen and nutrients while also supporting the mother’s organs. Fatigue, shortness of breath, nausea, anemia, back pain, reflux, sleep difficulty, and physical pressure may become stronger, although symptoms alone cannot prove that someone is carrying twins.

Ultrasound usually reveals a twin pregnancy. An early scan can show two embryos, two heartbeats, the number of sacs, and clues about the placentas. Establishing chorionicity early is easier because separating membranes and placental structures can become harder to interpret later. The ultrasound also allows clinicians to follow each baby’s growth instead of assuming both are developing equally.

Twin pregnancy increases the risk of iron-deficiency anemia, high blood pressure, preeclampsia, gestational diabetes, blood clots, cesarean delivery, and heavy bleeding after birth. These are increased risks, not guaranteed outcomes. Many twin pregnancies result in healthy mothers and healthy babies, but they require closer observation because problems can develop more quickly.

Premature birth is one of the largest concerns. A full-term singleton pregnancy lasts around forty weeks, but twins are more likely to arrive before thirty-seven weeks. The uterus can become stretched earlier, the cervix may begin opening, the membranes may break, or a medical complication may make early delivery safer than continuing the pregnancy. The NHS reports that about six in ten twins are born before thirty-seven weeks.

Prematurity matters because the final weeks of pregnancy support major development in the lungs, brain, liver, digestive system, temperature control, and body fat. A premature twin may need help breathing, feeding, maintaining body temperature, fighting infection, or keeping blood sugar stable. Some spend time in a neonatal intensive care unit. Being smaller does not automatically mean permanent disability, but the risk of complications rises as gestational age and birth weight fall.

Twins are not always born by cesarean section. Vaginal delivery may be possible when the first twin is head-down, the pregnancy is otherwise stable, and the medical team believes labor can be handled safely. Positions matter because the second twin may lie sideways or bottom-first after the first baby is delivered. In some cases, both twins are born vaginally. In others, both are delivered by cesarean. Rarely, the first is delivered vaginally and an emergency requires the second to be delivered surgically.

The twin born first is sometimes called the older twin, but the difference is birth order, not biological age. Both began the pregnancy at essentially the same time. One may leave the uterus several minutes before the other, but that does not make the first twin developmentally older. Rare cases have involved longer intervals between deliveries, but both twins still belong to the same pregnancy.

Twins can have different birthdays if one is born before midnight and the other afterward. They can even have birth dates in different months or years when delivery crosses those boundaries. Time-zone changes and daylight-saving clock changes can create records in which the second-born twin appears to have an earlier clock time. None of this changes the order in which their bodies were delivered.

A vanishing twin occurs when an early scan shows more than one developing embryo but a later scan shows that one has stopped developing. The remaining tissue may be absorbed by the surviving twin, placenta, or pregnant person’s body. Sometimes it happens so early that nobody ever knows there were originally two embryos. Chromosomal, placental, or implantation problems may be involved, but the exact cause is often unknown. It is not usually caused by ordinary movement, stress, exercise, or something the pregnant person did.

The term “vanishing” can sound as if nothing serious happened, but parents may experience real grief. They can feel happiness for the continuing pregnancy and grief for the lost embryo at the same time. Those emotions do not cancel one another. Medical

language describes what happened physically; it does not decide how much the loss is allowed to mean emotionally.

Conjoined twins represent an extremely rare form of identical twinning. The standard explanation is that one early embryo begins separating but does not fully complete the process. The twins remain physically connected, most often around the chest, abdomen, or pelvis, and may share organs. The specific anatomy determines whether surgical separation is possible. Mayo Clinic explains that success depends on where the twins are joined and which organs they share.

Conjoined twins should not be treated as a medical spectacle. When two developed brains and separate consciousnesses are present, there are two human beings, even if some organs or body structures are shared. Separation is not automatically the correct answer. Surgery may save both lives, save one while endangering the other, harm both, or be impossible. Older conjoined twins may also have their own opinions about whether they want to be separated. Their dignity does not depend on having bodies that match what other people consider normal.

“Mirror-image twins” are not a separate genetic category. The term describes some identical pairs with opposite-sided features, such as one being right-handed and the other left-handed, hair whorls turning in opposite directions, or matching birthmarks appearing on opposite sides. The idea is that a later embryonic division may affect the body’s developing left-right pattern. It does not mean one twin is literally a reversed human being, and it does not automatically mean the heart or other internal organs are located on the opposite side.

“Semi-identical” twins are real but extraordinarily rare. The scientific name is sesquizygotic twins. Researchers reported a case in which one egg appeared to have been fertilized by two sperm. The resulting genetic material divided in an unusual way, producing twins who shared all their maternal genetic material but only part of their paternal material. They were genetically more alike than ordinary siblings but less alike than typical identical twins. A documented case showed the twins sharing about seventy-eight percent of their paternal genome. This is not a common third category hiding among ordinary twins; it is a rare biological event.

Fraternal twins can, in extremely unusual circumstances, have different biological fathers. If two eggs are released and sexual intercourse occurs with two different men during the fertile period, each egg could be fertilized by sperm from a different man. This is called heteropaternal superfecundation. The twins still share the same mother and pregnancy, but their paternal genetic material comes from different people. Proven cases exist, although the situation is rare and usually discovered through paternity testing.

Superfecundation is different from superfetation. Superfecundation means two eggs from the same ovulatory period are fertilized through separate acts of intercourse. Superfetation would mean a person became pregnant and then ovulated, conceived, and

implanted another embryo later during the established pregnancy. Human pregnancy hormones normally stop further ovulation and change the uterus in ways that make a second implantation extremely unlikely. Cases are sometimes reported, but proving genuine human superfetation is difficult because twins can naturally grow at different rates.

Twins can also exchange cells before birth. If placentas touch or blood vessels connect, blood-forming cells may pass from one twin to the other. A person can carry a small population of cells with the co-twin's DNA. In rarer forms of chimerism, one body contains two genetically different cell lines because early embryos or tissues combined. This can create confusing blood tests or DNA results. It does not mean the person has two personalities. Chimerism concerns cells, not separate minds living inside one body.

Identical twins are especially valuable to scientific research because they allow researchers to examine how similar starting genetics can produce different outcomes. If identical twins show a trait more often together than fraternal twins, genetics may contribute to that trait. If genetically identical twins develop major differences, environment, development, random biological events, or personal behavior may have stronger roles.

Twin studies must still be interpreted carefully. Identical twins are often dressed alike, treated alike, placed in the same classes, given the same food, and expected to share activities. That means they may experience more similar environments than fraternal twins. Even inside the uterus, one may have a better placental connection or receive more nutrients. Researchers cannot simply call every similarity genetic and every difference environmental.

A heritability result also does not mean a trait is fixed. If height is strongly heritable, poor nutrition can still limit growth. If anxiety has a genetic component, experience and treatment still matter. Twin research helps estimate influences across a population; it cannot completely predict one person's future.

The belief that twins possess telepathy has not been supported by dependable scientific evidence. Twins may correctly sense what the other is thinking because they have spent years studying the same face, routines, gestures, humor, family members, and surroundings. One may notice a tiny change that strangers miss. They may also remember the surprising moments when they called each other simultaneously while forgetting the many ordinary times nothing happened.

Some twins create shared words or pronunciations during early childhood. People sometimes call this a secret twin language, but it is usually a form of immature speech strengthened because both children repeatedly model it for each other. Twins may receive less one-on-one adult conversation because attention is divided between two children. Prematurity and low birth weight can also affect early language development.

Most twins develop ordinary language, especially when adults speak directly to each child, read with them, and respond to their individual communication.

The greatest nonmedical mistake adults make is assigning twins fixed roles. One becomes “the smart twin,” the other “the athletic twin.” One becomes “the good one,” while the other becomes “the troublemaker.” Children hear those descriptions and may build themselves around them. The supposedly smart twin may become terrified of failure, while the other may stop trying academically because intelligence has already been assigned to the sibling.

Comparisons are difficult to avoid because the children reach milestones beside each other. One may walk, speak, read, grow, or mature earlier. That does not automatically mean one is superior. Even identical twins have separate nervous systems and developmental paths. A difference of weeks or months can look dramatic during early childhood and become meaningless later.

Dressing twins alike is not automatically harmful, especially while they are babies or if they enjoy it. The problem begins when sameness is treated as an obligation. Twins need separate names, possessions, interests, friendships, private experiences, and opportunities to make individual choices. Their closeness should be protected without turning it into a prison.

The deepest truth about twins is that biology can create remarkable similarity without creating duplicate human beings. Fraternal twins are two siblings who happen to share a pregnancy. Identical twins begin from one fertilized egg, but the moment development separates them, each body begins collecting its own experiences. They may arrive together, resemble each other, and remain close for life, yet each one still builds an individual mind, history, and identity.