Shoulder dystocia explained signs and causes

What shoulder dystocia means

Shoulder dystocia is a delivery complication in which the fetal head is born but the shoulders do not deliver with the next expected maternal effort and routine, gentle downward traction. Most commonly, the anterior shoulder becomes impacted behind the maternal pubic symphysis. Less often, the posterior shoulder may be obstructed at the sacral promontory or both shoulders may be malpositioned within the pelvis.

The word "dystocia" means difficult labor or difficult birth. In this context, it does not mean that labor has been long or that anyone did something wrong. It describes a mechanical problem at the final stage of vaginal delivery: the head has passed through, but the shoulder diameter is not rotating or descending in the usual way.

Clinically, shoulder dystocia is diagnosed in real time. It is not confirmed by an ultrasound or a blood test. The clinician recognizes it when, after delivery of the head, the shoulders fail to deliver with normal technique and additional obstetric maneuvers are required. Some descriptions also use a time-based definition, such as no delivery of the shoulders within about one minute after the head, but in practice the key feature is the need for specific maneuvers

beyond routine delivery assistance.

Signs during birth

Shoulder dystocia is typically apparent only at the moment of delivery. Before the fetal head emerges, labor may look similar to many other vaginal births. Contractions, pushing efforts, fetal heart rate monitoring, and descent may be reassuring or may show nonspecific concerns, but they do not reliably diagnose shoulder dystocia before it happens.

Important signs observed by the birth team include:

Failure of restitution and external rotation: after the head is born, it usually turns as the shoulders rotate internally. Limited or absent rotation may raise concern.
The turtle sign: the baby's head appears to retract back toward the perineum, as if the chin is pulled tightly against the maternal tissues.
Slow or difficult delivery of the chin: the head may seem tight at the perineum, and the chin may descend slowly.
No shoulder delivery with gentle traction: the shoulders do not follow despite routine assistance and maternal pushing.
Need for additional maneuvers: the team may call for help, reposition the birthing parent, and begin established techniques to release the shoulder.

For parents in the room, the event can feel sudden and frightening. The team may use direct, urgent language, ask the birthing person to stop pushing briefly, lower the head of the bed, or move legs into specific positions. These actions are part of an emergency response and do not necessarily mean a poor outcome is inevitable.

Why the shoulders can become stuck

Vaginal birth depends on coordinated movement between the fetus and the maternal pelvis. The fetal head, shoulders, and body normally flex, rotate, and descend through the birth canal. Shoulder dystocia occurs when the bisacromial diameter, the distance across the fetal shoulders, does not navigate the pelvic outlet smoothly after the head is born.

One common mechanism is impaction of the anterior shoulder behind the pubic bone. In this situation, continued pulling on the head does not solve the obstruction and may increase the risk of injury. Instead, maneuvers aim to change the relationship between the pelvis and fetal shoulders. For example, maternal thigh flexion can flatten the sacral curve and widen functional pelvic dimensions, while suprapubic pressure can help adduct or rotate the impacted shoulder.

Another mechanism involves a relatively large fetal trunk or shoulder circumference compared with the head. This can occur with fetal macrosomia, especially when fat distribution is increased around the shoulders and chest. Diabetes in pregnancy is relevant because it can be associated with disproportionate fetal growth, where the shoulders and abdomen are relatively large compared with the head.

Position also matters. If the shoulders enter the pelvis in a less favorable orientation or fail to rotate, the shoulder diameter may meet bony resistance. However, anatomy is dynamic, and even a pelvis considered clinically adequate can encounter an unexpected impaction. That is one reason shoulder dystocia is treated as an emergency requiring practiced response rather than as an event that can always be predicted.

Risk factors and causes

Shoulder dystocia is associated with several maternal, fetal, and intrapartum factors. These factors increase probability but do not determine the outcome. Many births with risk factors proceed normally, while many shoulder dystocia events occur in pregnancies without obvious warning signs.

Recognized risk factors include:

Previous shoulder dystocia: a prior event is one of the strongest predictors of recurrence, although recurrence is not guaranteed.
Fetal macrosomia: higher estimated or actual birth weight increases risk, particularly at very high birth weights.
Diabetes mellitus or gestational diabetes: diabetes can contribute to fetal overgrowth and larger shoulder or trunk dimensions.
Maternal obesity: this is associated with higher rates of macrosomia and labor

interventions, though it is not a direct diagnosis of dystocia.
Post-term pregnancy: longer gestation may increase fetal size.
Operative vaginal delivery: vacuum or forceps assistance may be associated with shoulder dystocia, especially when used for difficult descent.
Prolonged second stage or abnormal labor progress: delayed descent can reflect fetal-pelvic fit or malposition.
Precipitous birth: rapid labor may limit gradual rotation and controlled delivery, although evidence varies by situation.

It is helpful to distinguish risk factors from causes. A risk factor makes shoulder dystocia more likely in a population, but the immediate cause is the mechanical impaction or failure of the shoulders to rotate and descend after the head. This distinction matters emotionally: having diabetes, a larger baby, or an induction does not mean the parent caused the emergency.

Can shoulder dystocia be predicted or prevented

Prediction is limited. Estimated fetal weight by ultrasound or clinical examination has a margin of error, especially near term. A suspected large baby may be born without difficulty, and a baby of average weight can still experience shoulder dystocia. For that reason, universal cesarean birth to prevent shoulder dystocia is not appropriate for most pregnancies.

Healthcare professionals may discuss individualized planning when risk is higher, such as prior severe shoulder dystocia, suspected very high birth weight, or diabetes with fetal overgrowth. Options may include closer growth assessment, delivery timing discussions, or consideration of cesarean birth in selected circumstances. These decisions depend on the full clinical context, including gestational age, estimated fetal size, pelvic history, prior births, diabetes control, fetal wellbeing, and the parent’s preferences.

Prevention during the actual birth is also imperfect. Skilled management of the second stage, avoiding excessive traction, and careful decision-making around operative vaginal birth can reduce avoidable harm, but they cannot eliminate shoulder dystocia. Birth teams train for this emergency because rapid recognition and organized maneuvers are often more realistic than reliable prediction.

If someone has a known risk factor, the most useful step is a transparent conversation with the obstetric or midwifery team before labor when possible. Ask how the team assesses fetal size, what circumstances would change the delivery plan, and how shoulder dystocia is managed in that birth setting. A plan can provide reassurance, while still allowing flexibility if labor unfolds differently than expected.

What the care team does when it happens

When shoulder dystocia is recognized, the team's priority is to deliver the baby while reducing traction on the head and neck. The room may become very active. Additional clinicians may be called, time may be announced, and neonatal support may prepare for assessment after birth. This coordinated urgency is standard emergency care.

Common first-line actions may include the McRoberts maneuver, in which the birthing parent's thighs are flexed tightly toward the abdomen, and suprapubic pressure, applied above the pubic bone to help dislodge or rotate the anterior shoulder. The clinician may then use internal rotational maneuvers, attempt delivery of the posterior arm, or reposition the birthing parent, depending on the situation and local protocol. Fundal pressure, pushing down on the top of the uterus, is generally avoided because it can worsen impaction.

Communication is important. The birthing parent may be asked not to push during certain maneuvers and then to push again when instructed. Support people may feel alarmed by the speed of events, but the language and movement in the room reflect a practiced response. If an episiotomy is performed, it is usually to create room for the clinician's hand rather than to release the bony shoulder obstruction itself.

Possible complications and recovery considerations

Most babies affected by shoulder dystocia are born without long-term injury, especially when the event is recognized promptly and managed effectively. Still, it carries potential risks that require careful assessment. Neonatal concerns include brachial plexus injury, clavicle or humerus fracture, low oxygen levels if delivery is delayed, and, rarely, more serious neurologic injury. Brachial plexus injury can cause weakness or reduced movement in the

affected arm; many cases improve, but follow-up is essential.

Maternal complications may include postpartum hemorrhage risk, perineal tears, cervical or vaginal lacerations, uterine atony, and emotional trauma. Even when physical recovery is straightforward, the experience can feel frightening or disorienting. A postpartum debrief with the delivering clinician can help clarify what happened, what maneuvers were used, how long the event lasted, and whether it changes future pregnancy planning.

After birth, the baby should be examined for arm movement, reflexes, fractures, breathing concerns, and signs of hypoxic stress when indicated. The birthing parent should be monitored for bleeding, pain, laceration repair needs, and psychological distress. If there is persistent arm weakness, feeding difficulty, unusual lethargy, severe pain, heavy bleeding, or worsening emotional symptoms, prompt medical evaluation is important.