

## Normal Signs of Impending Parturition

- Swelling and reddening of the sow's vulva about 4 days before farrowing.
- Mammary glands become taut, more turbid and tense about 2 days before farrowing.
- Mammary secretions (whitish, watery fluid) occur about 48 hours before farrowing and become more "milky" within 12-24 hours of the first pig's birth. If milk is abundant and easily "milked out," sow is probably within 6 hours of farrowing.
- Restlessness – getting up, lying down, switching from side to side, nesting behavior (pawing, rooting) – and increased respiration rate begins about 16-24 hours before farrowing, then peaks 9-10 hours before farrowing.
- About an hour before farrowing begins, sow activity recedes and she will likely lie quietly on her side. Straining begins.
- Intermittent abdominal straining occurs before the birth of the first pig. Sow draws her legs up to her abdomen. Shivering and straining indicates the farrowing process has begun.
- Small amounts of blood-tinged fluid will pass from the vulva, often with pellets of meconium (piglet defecation). Within 15-20 minutes, the first pig should be born.
- Straining after the first-born piglet usually becomes milder, except for the moments just before expulsion. The best sign that a pig will be born is the rapid twitching of the sow's tail as a pig passes through the last few inches of the birth canal.

### Normal Farrowing Timeline

- Farrowing normally lasts about 2-3 hours (range: 30 minutes to more than 10 hours).
- Intervals between piglet births are normally 15-20 minutes (range: a few minutes up to several hours).
- The interval before a stillborn is normally longer – 35 minutes or more.
- Placental membranes (afterbirth) are normally expelled within 4 hours after the last pig is born (range: 20 minutes to over 12 hours). Retained placenta is rare in sows, so failure to pass the afterbirth may indicate a pig or pigs remaining in the birth canal.

### The Farrowing Process

**Normal presentation of a pig at birth:** Pigs may appear nose first with front legs folded backward (anterior presentation) or with the rear legs first with the front legs extended under the chin (posterior presentation).

**Signs of trouble:** Signs of dystocia or "farrowing difficulty" include anorexia, prolonged gestation, blood-tinged vulvar discharges; meconium without straining; prolonged labor; straining without delivery of piglets; sow exhaustion and cessation of labor; and, foul-smelling and/or discolored discharge from the vulva. The most common cause of dystocia is pigs positioned wrong in the birth canal.

### Abnormal Presentations of the Pig

**Breech presentation** – When the pig is presented backward, the rump may get caught at the brim of the pelvis and the hocks and legs carry forward. **Remedy:** Gently slide your hand through birth canal until you touch the pig. Often, the rear legs can be brought backward by hooking your finger around the pig's hock, then pulling gently toward you. This will put the pig in a normal, posterior presentation, making it easy to pull the pig gently out. (see diagram below)

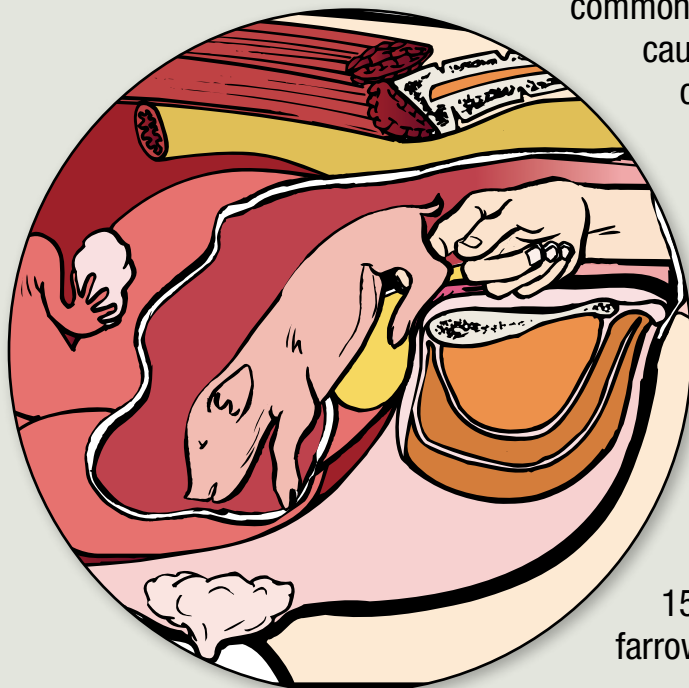
**Two pigs presented at once** – When two pigs are lodged in the birth canal, one may be coming backward, the other forward, or both may be facing the same direction.

**Remedy:** If the uterus is large enough to pass a hand through, deliver the first pig you reach, then return for the second.

**Heavy uterus (downward deviation of the uterus)** – With large litters (14 pigs or more), the weight of the pigs drags the uterus down along the abdominal wall causing the birth canal to form an "S" curve. The uterus cannot contract enough to push the pigs up and over the pelvic rim. **Remedy:** Assisted delivery of the first pig will allow the S-curve to straighten out and the rest of the pigs are delivered normally.

**Oversized fetus** – A large pig (over 4 lb.) in an under-developed or swollen birth canal may become lodged or exhaust the sow. **Remedy:** A difficult problem to correct; lubrication, a small hand/arm or an instrument may help deliver the pig.

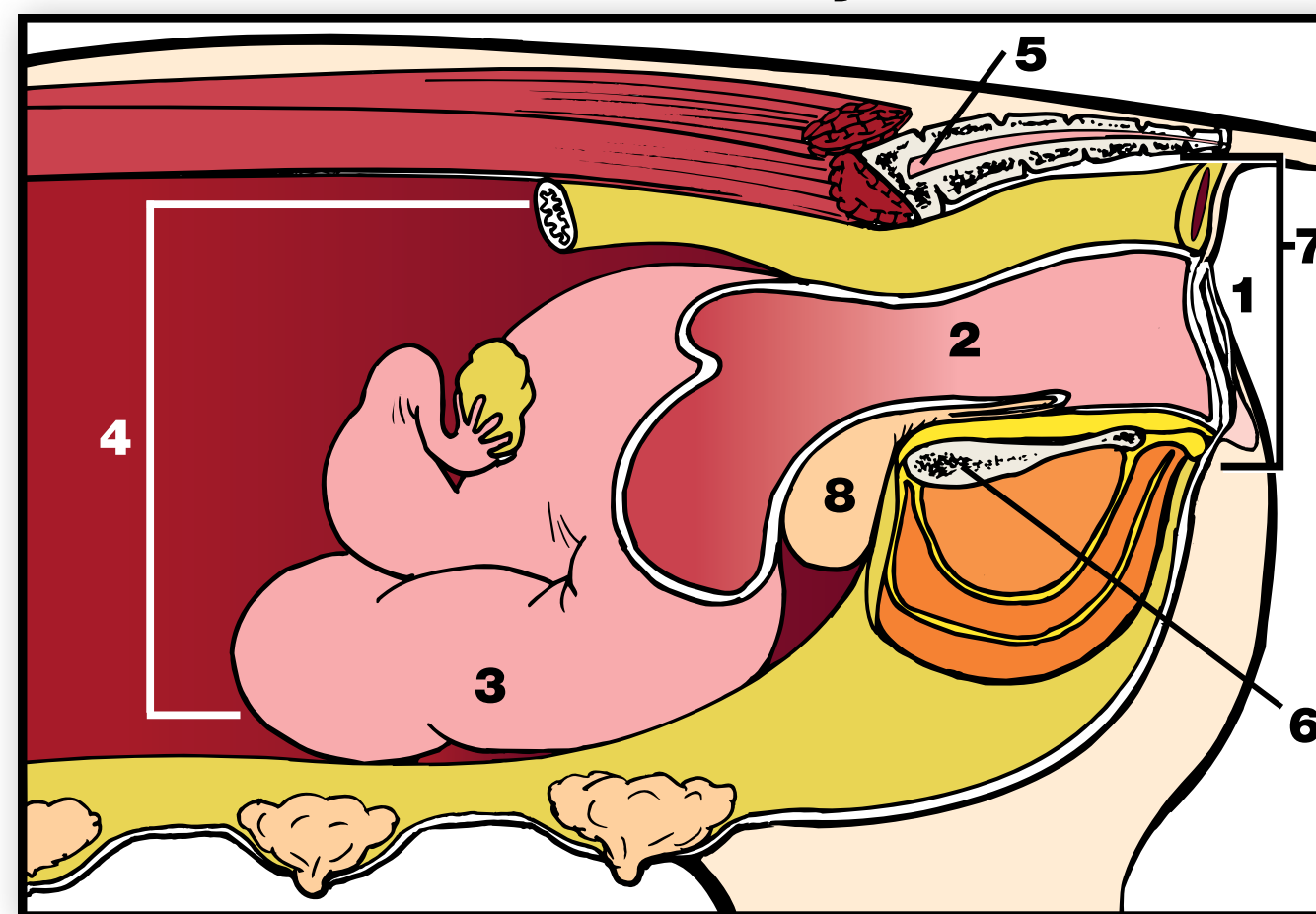
**Uterine inertia** – Uterine sluggishness or a lack of contractions are the most common complications at farrowing; may be caused by many factors, including the use of prostaglandins to induce farrowing or the use or over-use of oxytocin to induce uterine contractions. Hypocalcemia is another fairly prevalent disorder in older sows (Parity 3 or older). If you "sleeve" a sow and there is no uterine tone, administer oxytocin and check her again. If there is still no tone, an intramuscular dose of calcium, as recommended by your veterinarian, may return normal uterine tone within 15-20 minutes and she will continue farrowing normally.



# Sow & Pig Care – Birth to Weaning

## Sow Anatomy

- 1. Vulva** – opening of the birth canal.
- 2. Vagina** – extends from just inside the vulva to the cervix; you will not feel a difference in the vagina and the cervix in a sow that is dilated and ready to farrow.
- 3. Uterus** – the diagram shows a shortened version of the uterus, which is normally 5-6 ft. long and divided into two parts (horns); both contain pigs.
- 4. Abdominal cavity** – contains the colon and small intestine; the colon (partially shown) runs above the birth canal and extends to the rectum.



The illustration shows the normal position of the uterus, extending forward as you might examine a sow over the brim of the pelvis, downward and forward.

- 5. Sacrum** – the end of the spinal column, which is connected to the lower pelvis.
- 6. Pelvis** – the area surrounding the pelvic bones forms the bony area of the birth canal.
- 7. Pelvic Cavity** – the area occupied by the rectum, vagina and a portion of the bladder. It extends forward to the brim of the pelvis.
- 8. Bladder** – extends over the brim of the pelvis, just below the vagina.

### Assisting Sows During Farrowing

Sow parity, litter size, interval between pigs and sow's history should be considered before providing assistance. Manual examination of the vagina and cervix to remove an obstruction or malpresentation of the piglet requires strict sanitation, the use of obstetrical gloves and lubricants. Intervals between pigs are commonly 15 to 40 minutes. Allow at least 30 minutes between pigs before assisting the sow.

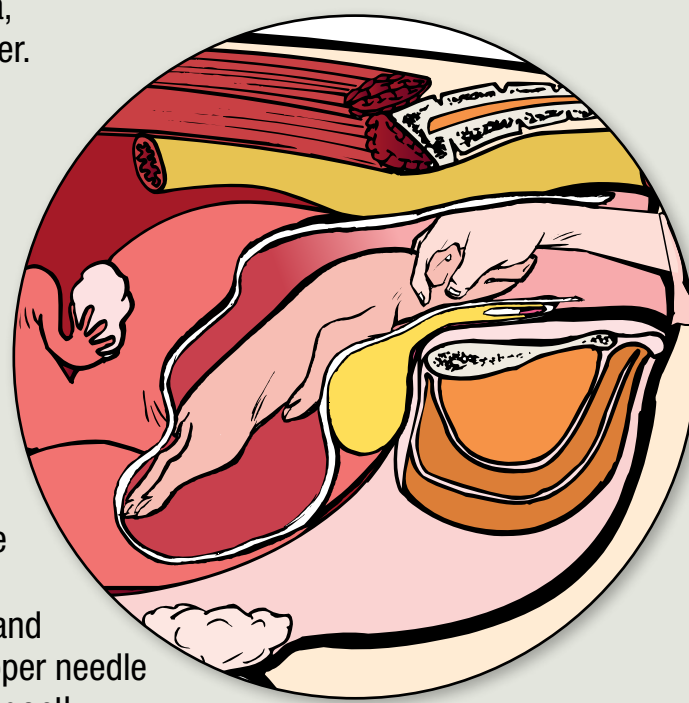
**Be very gentle.**

**Be very sanitary.** Wash your hands and the sow's vulva thoroughly with warm, soapy water. Clip fingernails short to avoid damage to the sow's delicate tissues.

**Lubricate well.** Use a disposable plastic sleeve (wash it, too). Apply lubricant liberally to hand and arm to avoid friction in vaginal passage. A plastic squeeze bottle can help lubricate the first few inches of the vagina.

- If the sow is lying on her left side, use your left hand to explore the birth canal; if she is lying on her right side, use your right hand.
- Begin by placing two fingers very gently inside the vulva, checking for pigs. Finding none, shape your hand and fingers like a cone and very gently push your hand into the vagina.
- In a large, well-dilated sow, the vagina, cervix and uterus tend to blend together. Generally, it is not necessary to reach past your elbow. Do not reach any further than necessary.
- When you have reached a pig, if it is coming head first, wrap your thumb and forefingers around its ears and jaw and pull gently. (shown at right).
- If the birth canal is too tight, grasp the lower jaw with your thumb under the tongue and your index finger in the V-shaped bones of the lower jaw. Or, place your thumb over the pig's nose and your index finger snugly behind the upper needle teeth for a firm grip. Squeeze and pull gently.
- If the pig is presented backwards, place your index finger between the legs, place your thumb on the outside of one leg and your middle finger on the outside of the other leg, squeeze together and pull gently.
- When the pig is out, do not break the umbilical cord so the blood supply continues until it breaks naturally. Remove placental tissues from around pig's nose and body.

Do not make extraordinary efforts to deliver more pigs right away, particularly if you have relieved an obstruction. Usually, the sow will deliver the remaining pigs without assistance.



### Use Oxytocin with Care

Every farm should establish standard operating procedures for obstetrical assistance and to avoid excessive or early administration of oxytocin, which can have a negative impact on the sow and the unborn piglets. If a pig has been extracted from the birth canal, sow should be reexamined before oxytocin is administered.

### Rules for Effective Use of Injectable Oxytocin

- Oxytocin requires a veterinarian's prescription.
- Before injection, try to stimulate natural oxytocin release by vaginal palpation, udder massage and keeping at least four pigs nursing at a time.
- Administer oxytocin only after the uterus is fully dilated.
- Never use oxytocin before checking the birth canal for an obstruction. Oxytocin is not a substitute for obstetrical assistance.
- Recommended dose of oxytocin is ½ to 1 cc. (10-20 IU), intramuscular injection (IM) using a 16- or 18-gauge, 1-inch needle. The sow's neck and vulva are the preferred sites.
- Limit oxytocin use to first litter gilts, older parity sows with a history of farrowing difficulty.
- If sow is farrowing normally, do not use oxytocin until after the 6th pig is born.
- Use oxytocin only if 40 minutes or more have passed between births.
- Limit use to two doses per sow.
- Caution: Improper use of oxytocin may cause umbilical cord to rupture, leading to higher stillbirth rates. High doses of oxytocin (over 20 IU) may create a refractory period in the sow lasting up to 3 hours in which her natural oxytocin or injectable oxytocin fails to stimulate uterine contractions.

### Use Obstetrical Instruments with Care

Manual extraction is usually the safest technique to extract piglets. The use of forceps, cable snares or blunt hooks risk trauma to the sow's reproductive tract and to the unborn piglets. If contamination of the uterus is suspected, injectable antibiotics may be warranted. Consult your veterinarian.



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Translation provided by Angela DeMirjyn.

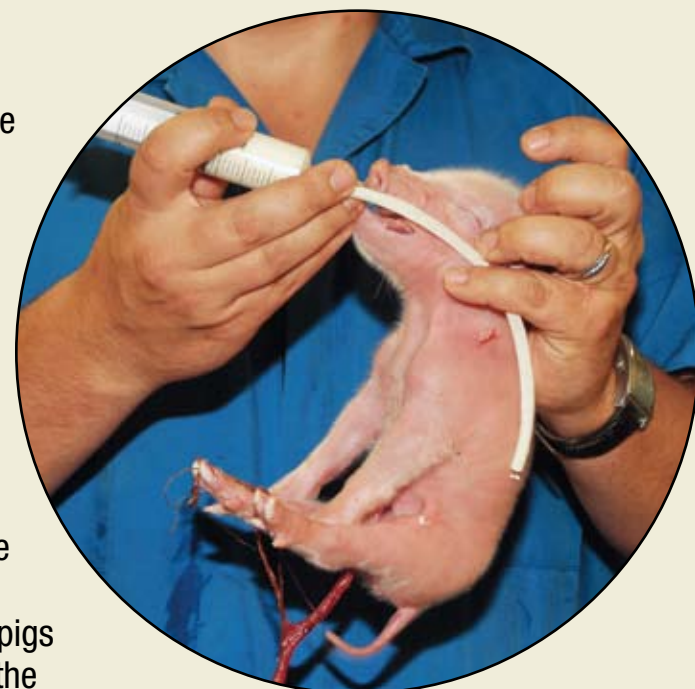
## Managing & Processing Newborn Piglets

Over half of preweaning death losses occurs in the first 72 hours after birth. Piglets are born with a body temperature of 102-104°F., but they lose body heat rapidly. It is very important that newborns are dry, warm and free from drafts. Drying agents help speed drying. Newborns normally get to their feet within 1-2 minutes and suckle within 15 minutes.

### Colostrum is Critical

A good dose of colostrum is the single most important factor related to pig health and survival. This "first milk" is rich in disease-preventing immunoglobulins. Most pigs consume twice the amount of colostrum needed within their first 12 hours of life, so farrowing room attendants should focus on helping the smaller, at-risk pigs. Some methods to ensure pigs receive adequate colostrums include:

- **Split Suckling** – After the largest pigs have nursed, remove them from the litter and place in heated box for 1-2 hours. Give the sow ½ to 1 cc. of oxytocin and allow small pigs to nurse. Repeat this procedure in the morning and afternoon of the first 24-hour period after farrowing.
- Wipe small pigs dry and warm them for 5-10 minutes before allowing them to suckle.
- To collect colostrum, remove piglets from the sow for 1 hour, give her ½ to 1 cc. of oxytocin, wait 1-2 minutes, then strip teats to obtain colostrum. Store and freeze colostrum in ice cube trays. Do not thaw cubes in microwave.
- **Stomach tubing** – Give 10-15 cc. dose of milk to disadvantaged pigs via syringe with stomach tube; apply lubricant to tube before inserting 6-7 inches into pig's stomach. (shown above)



### Crossfostering Guidelines

Consult with your veterinarian to establish farm-specific, crossfostering guidelines. Some general guidelines include:

- Allow pigs to nurse for at least 4-6 hours before crossfostering.
- Focus on smaller, weaker pigs that have not established teat fidelity.
- Match pigs for size, weight and number according to nurse sow's capacity to milk.
- Chose small, docile nurse sows with small, slender nipples of medium length.
- Transfer male pigs only if female pigs may be retained for breeding.
- Do not crossfoster healthy pigs into sick litters.
- Limit crossfostering activities to the first 24 hours after birth.

### Identifying Disadvantaged Pigs

Comfortable piglets should lie in a prone position, gently touching each other. Disadvantaged pigs include:

- **Lightweight pigs** – Less than 2½ lb. at birth
- **Chilled pigs** – Piling, fluffy hair coats and shivering are signs of chilling. Chilled pigs can be warmed quickly by submerging them to the neck in 90°F water for 5-10 minutes; dry completely; provide supplemental heat (85-95°F).
- **Slow-to-nurse pigs** – Late-born pigs receive less colostrum and may be oxygen-deprived.
- **Splay-legged pigs** – Tape legs about 1-inch apart to stabilize the legs or tape legs up under the belly so pigs can still get to the sow's udder. Within 24-48 hours, they usually gain the stability needed to compete and nurse better.
- **Anemic pigs** – grayish-white appearance; these pigs are oxygen-deprived.
- **Physical trauma** – bitten, stepped on, laid on by the sow.

### Pig Processing

Perform as soon as the litter has stabilized – usually within the first three days after birth.

- **Navel care** – Disinfecting newly severed navels may be beneficial; if navel is collapsed or dry, don't bother.
- **Identification** – Ear notch or tattoo (necessary for accurate recordkeeping).
- **Iron shots** – Pigs are born with limited iron reserves and sow's milk is a poor iron source. Normal iron dextran contains 100 mg. of iron/cc. At 3-4 days of age, inject 200 mg. in pig's neck using a 20-gauge, ½-inch needle (above).
- **Castration** – Allow ample time for male pigs to recover from the birthing process and establish a good nursing pattern (3 to 7 days of age).
- **Clip tails** – Leave at least ½ inch.
- **Clip needle teeth (optional)** – the canine or "eye" teeth are very sharp; use a sharp side cutter to clip tips of teeth only; do not clip too close to the gum.



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