

MYTH 05

"A FETUS DOES NOT FEEL PAIN IN AN ABORTION."



MYTH #5: "A FETUS DOES NOT FEEL PAIN IN AN ABORTION."

There is compelling evidence that fetuses in the late second trimester and third trimester do feel pain when they are aborted. The International Association for the Study of Pain defines **pain** as an "**unpleasant sensory and emotional experience associated with actual or potential tissue damage**."[57] During a dilation and evacuation (D&E) abortion, there is immense tissue damage as a result of the dismemberment of the unborn human being.[58] A D&E abortion is the most common method of abortion (95 percent) once the fetus has become fully formed, when the tissue cannot be completely removed solely with suction (starting in the beginning of the second trimester, around 14 weeks).

Generally, a hygroscopic (water absorbing) or prostaglandin (hormonal) cervical dilating agent is placed for one to three days prior to the abortion. When the cervix is sufficiently dilated, the abortionist introduces a suction catheter to remove the amniotic fluid and softer tissue such as the placenta. The size of the fetus and his calcified bones necessitate his extraction manually. This can be done in one of two ways. His legs can be grasped and pulled through the cervix. Usually his body can be delivered this way, but his skull will be too large to deliver through the partially dilated cervix. The abortionist will then introduce an instrument such as scissors into the base of the skull creating an opening. The brain can then be suctioned out, and the skull can be crushed with clamps and extracted. This is called an **intact D&E**, or in layman's terms, a "**partial birth abortion**." An alternative method is to progressively dismember the fetus by pulling off his legs and arms and sections of his torso, prior to crushing and removing his skull. This is a **non-intact D&E**, or "**dismemberment abortion**."[59]

Many state legislatures, including my home state of Texas, have passed legislation limiting this procedure because it is felt to be inhumane, causing an extremely painful death to the fetus, who is an immature living member of the human species. Sadly, the Texas legislation was overturned by a judge who feels that any type of obstacle (**undue burden**) in the path of a woman seeking an abortion is unconstitutional.[60] Hopefully, the U.S. Supreme Court will someday consider this case, because a strong argument can be made that this legislation is indeed supported by the

Constitution's respect for life, as we discussed earlier.

Opponents of such legislation argue that fetal pain does not occur at the gestational ages between 14 weeks (when the fetal bones are calcified and cannot be removed by suction alone, necessitating a D&E procedure) and the third trimester. However, there is undeniable evidence that the sensory pathways that allow the fetal body to detect and respond to physical pain are functional at these gestational ages.

These opponents argue that this does not qualify as pain because the fetus cannot experience an **emotional response** to the pain. They believe this because they have not found histologic evidence that the neural tracts connecting the thalamus to the cerebrum are fully formed this early (they believe the tracts are not completed until 26-30 weeks), and they assume these tracts are necessary to have an emotional experience in response to pain. This argument is based upon an **extreme interpretation** of what constitutes pain.

They support their position with an oft quoted study which states: "Pain is an emotional and psychological experience that **requires conscious recognition** of noxious stimulus." This **study lacks credibility** because author Susan Lee previously practiced as a National Abortion Rights Action League attorney, and author Eleanor Drey, M.D. was the medical director of an abortion clinic at the University of California, San Francisco. Thus, they had a clear bias. The intent of the study is readily apparent from the first paragraph, where the authors discuss legislative limitations on mid-trimester abortions and discount any concern for the fetus, as they attempt to systematically dismantle all of the observed fetal physiologic responses and attempt to explain how that does not actually represent pain as we know it.

Others have taken this extreme definition a step further, asserting that it does not count as pain unless the fetus has the ability to look back on the experience and feel traumatized. Since he is destined for death, he cannot do this. The logical extension of such a thought process would extend to offering physician assisted suicide, but not pain control or palliative treatment, to terminally ill people, because they also are destined for death.

The first requirement for fetal pain perception is the presence of **cutaneous sensory receptors** (nociceptors), which begin to develop in the peri-oral area at seven weeks, spread to the palms and soles by 11 weeks, to trunk and proximal limbs by 15 weeks, and are present throughout the fetus's entire body by 20 weeks.[63] As these sensory neurons develop, the unborn child begins to react to touch.[64] Early in the process, the pain system is relatively primitive and consists of a **spinal reflex** from a peripheral sensory neuron which detects the noxious stimuli, transmitted to a dorsal horn neuron in the spinal cord, which is then transmitted to a ventral horn motor neuron, which initiates a motor response transmitted to the muscles that causes the fetus to withdraw **from the tissue damage**.[65]

The part of the central nervous system leading from the peripheral nerves to the brain starts developing in the dorsal horn of the spinal cord at 13 weeks.[66] Connection is made to the brain's **thalamus (midbrain)** between 14-20 weeks.[67] Early in the second trimester, the fetus reacts to stimuli that would be recognized as painful if applied to an adult human, in much the same

ways as an adult, for example, by **recoiling**.[68] Fetuses can be seen reacting to intra-hepatic vein needling with **vigorous body and breathing movements, increased heart rate, and increased blood flow to the brain** (these responses do not occur during placental cord insertion needling, where there are no pain receptors).[69] Increases in levels of **circulating stress hormones and endogenous opioids** (which are independent from maternal levels) can also be measured.[70] Although the neurons of the cerebral cortex begin development at 8 weeks, and are complete by 20 weeks, it appears that neural connections between the thalamus and the **cerebral cortex** are made starting at 17 weeks, and are fully functional by 26-30 weeks.[71] Electroencephalographic bursts (measuring cerebral activity) are noted in the cerebrum starting at 20 weeks, and have a mature pattern by 30 weeks.[72]

It is well established in fetal and neonatal anesthesia literature that subjection to a painful stimulus can be associated with **long-term harmful neurodevelopment effects**, such as altered pain sensitivity and possibly emotional, behavioral, and learning disabilities later in life.[73] Thus, it is the standard of care to provide **anesthesia for intrauterine surgery** at these gestational ages, and **analgesia for prematurely born neonates** undergoing potentially painful procedures, even if they occur at gestational ages earlier than full thalamocortical functioning is anticipated. In fact, the mortality rate from fetal surgery was noted to drop from 25 percent to 10 percent after routine fetal anesthesia was initiated.[75] It should be noted that extremely preterm neonates born at the edge of viability (currently around 22 weeks) can be noted to have **cries and facial expressions** that we recognize as resulting from pain (even though they are far younger than we expect for complete thalamocortical connectivity).[76]

Contrary to the assertion that a **fully functioning cerebral cortex** is needed to emotionally process pain, some literature indicates that **only a functioning thalamus** is needed to cause **emotional processing of pain**.[77] It has been observed that children with hydranencephaly (absence of almost all of the cerebral cortex) exhibit all the responses to painful stimuli we expect of normal children. In fact, sometimes if the diagnosis has not been made antenatally, it may be several months before the condition is diagnosed, because initially the baby exhibits the characteristics we expect of a baby with normal cerebral function. They seem awake and alert, show responsiveness to their surroundings, express pleasure by smiling and laughing and aversion by fussing and crying. They respond differently to the faces of those familiar to them, compared to strangers.[78] Clearly there is much that science does not understand about how the brain processes emotions.

Neurosurgical clinical data also causes us to question the assumption that the cerebral cortex is primarily responsible for pain perception, because it has been shown that ablation or stimulation of the primary somatosensory cortex (in the cerebrum) does not alter pain perception in adults, whereas **thalamic ablation or stimulation does**.[79] Interestingly, a 4-D ultrasound study of twin fetuses between 14 and 18 weeks gestation showed movements that appeared to be **intentionally directed** toward the co-twin, showing that social interaction may begin far earlier than previously thought.[80] We should also consider the possibility that pain perception in the fetus may not use the same pathways as in the human adult, just as it may not in other species, such as the octopus.[81] Many fetal structures are different from those in the adult, and may function in a different way. One example is the fetal mesonephros, which functions to filter blood before the

fetal kidneys develop. Some researchers theorize that at 18-22 weeks, the fetus may experience a **more severe sensation** of pain than older neonates because the **pain modulation system** (which sends inhibitory signals to decrease the body's response to pain) has not yet developed.[82]

Some advance the theory that "the fetus never experiences a state of true wakefulness in utero, and is kept, by the presence of its chemical environment, in a **continuous sleep-like unconsciousness or sedation**" due to elevated levels of neuroinhibitors.[83] This hypothesis is wishful thinking and remains untested. It also fails to explain the "vigorous body and breathing movements" that require paralytics in fetal surgery. They are clearly not a part of the natural sleep state. It is also common sense to understand that having your arm pulled off while you sleep would surely wake you up!

There are many instances in our society in which we take extra precautions to prevent pain even though we do not know whether the recipient is capable of fully experiencing pain. When organs are harvested from a person who has experienced brain death, we administer anesthesia. Prior to undergoing a painful procedure, a person in a persistent vegetative state is given anesthesia. When a convicted murderer is given the death penalty, there is a long list of safeguards to make sure that this individual dies as quickly and painlessly as possible. We have many laws that monitor how animals raised to provide meat should be treated when they are butchered, and many more laws to tell us how we should interact with pets so that they do not experience pain. A conference on pain in laboratory animals noted that "it is imperative to acknowledge that unless it is established to the contrary, we should assume that those procedures that produce pain in us might also produce pain in animals," and proposes preemptive analgesia in those situations.[84]

Maureen Condit, a neurobiology researcher, has explained that pain and consciousness are complex, and cortical involvement should not be the only consideration. She summarizes the controversy succinctly: "This is not so much a medical ambiguity, as it is an opportunity for us to **consider the kind of society we want to be**. And I think there is sufficient uncertainty to warrant **giving the fetus the benefit of the doubt**."[85]

NOTES

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