

For Debate

Do fetuses feel pain?

The past decade has seen a profound change in anaesthetists' attitudes and practice regarding the question of whether neonates and infants feel pain (p 787). Until recently, however, whether fetuses felt pain has attracted little attention. In the context of late abortions and fetal surgery it becomes a question worth answering. We therefore asked a range of specialists for their opinions.

"Fetal pain" is a misnomer

Stuart W G Derbyshire, Ann Furedi

A report on the effects of intrauterine needling of fetuses at 23 or more weeks of gestation¹ has given rise to discussion about whether fetuses feel pain.^{1,2} This has important implications for professionals who provide abortion. Firstly, women considering having an abortion often seek reassurance that the fetus will not "suffer pain." Secondly, several parliamentarians who oppose abortion have demanded that the abortion law should be amended to take account of fetal perceptions of pain.

We suggest that fetal responses to invasive procedures do not indicate a conscious appreciation of pain. Scientific evidence suggests that women considering abortion can be assured that fetuses do not experience pain in the way that those who oppose abortion claim. Parliamentary claims that a fetus may feel pain should be viewed as a tactic in the effort to undermine public confidence in the current abortion legislation.

Reflex responses, not consciousness

In 1995 at the request of the Department of Health Fitzgerald submitted a paper on fetal pain which reviewed the biological development of the fetus and ruled out the possibility of a fetus experiencing pain before 26 weeks of gestation.³ Recorded responses to stimulation before 26 weeks were described as reflex, not dependent on conscious appreciation. This is important as it eliminates much of the concern regarding abortion. In 1994 only 94 abortions out of over 160 000 in the United Kingdom were later than 24 weeks.⁴ Nevertheless, the issue of fetal pain during late termination warrants attention, especially as almost all late abortions are of wanted pregnancies in circumstances in which the parents are often emotionally vulnerable—for example, in cases of fetal abnormality. Fitzgerald was more equivocal about fetuses after 26 weeks. This is because the thalamocortical fibres penetrate the cortical plate at 26–34 weeks.⁵

Fitzgerald believes that responses to noxious stimuli before 26 weeks cannot be interpreted as pain because the "cortex is not a functional unit."³ After 26 weeks, however, we are left to consider whether the biological development of the fetus is so advanced that it may begin to experience pain. Whether the fetus feels pain, however, hinges not on its biological development but on its conscious develop-

ment. Unless it can be shown that the fetus has a conscious appreciation of pain after 26 weeks, then the responses to noxious stimulation must still essentially be reflex, exactly as before 26 weeks.

Despite the importance of evidence for the conscious appreciation of publications on fetal pain largely ignore this issue. This is surprising given that the question of conscious experience of pain is vexed for most researchers. Though far from resolved, it is widely acknowledged that pain is a multidimensional experience incorporating sensory, emotional, and cognitive factors.⁶ If this multidimensionality is the basis of conscious pain experience, then we cannot attribute this to a fetus, which is naive for all sensory experiences and all the cognitive, affective, and evaluative associations.

Though the fetal brain can organise and elaborate stimulus information, encoding in memory the activation of innate reflex responses, there is no evidence that these "memories" are or become conscious.⁶ Instead, evidence suggests that conscious abstract rules about emotional episodes and associated voluntary responses arise only after birth as a consequence of self observation and efforts to articulate and cope with emotion provoking situations.⁶ Only pressure to make sensations commonly understandable forces the conscious appreciation of reflexive instinct. Children and adults come to a conscious appreciation of pain through a developmental process which the fetus has yet to experience. Though biological development is plainly necessary for the conscious appreciation of pain to occur, the mistake is to say that biological development is enough. "Fetal pain" is therefore a misnomer at any stage of fetal development.

- 1 Giannakouloupoulos X, Sepulveda W, Kouritis P, Glover V, Fisk NM. Fetal plasma cortisol and β -endorphin response to intrauterine needling. *Lancet* 1994;344:77–81.
- 2 Fitzgerald M. Neurobiology of fetal and neonatal pain. In: Wall P, Melzack R, eds. *Textbook of pain*. Edinburgh: Churchill Livingstone, 1994:153–63.
- 3 Fitzgerald M, for the Department of Health. *Foetal pain: an update of current scientific knowledge*. London: DoH, 1995.
- 4 Office for National Statistics. *Abortion statistics*. London: HMSO, 1995:19. (Series AB, No 21.)
- 5 Mrzljak L, Uylings HBM, Kostovic I, van Eden CG. Prenatal development of neurons in prefrontal cortex: a qualitative Golgi study. *J Comp Neurol* 1988;271:355–86.
- 6 Leventhal H. A perceptual-motor theory of emotion. *Adv Exp Psychol* 1984;17:117–75.

University of Manchester
Rheumatic Diseases
Centre, Clinical Sciences
Building, Hope Hospital,
Salford M6 8HD
Stuart W G Derbyshire,
research fellow

Birth Control Trust,
London W1N 7RD
Ann Furedi, director

Correspondence to:
Dr S W G Derbyshire,
Department of Radiology,
University of Pittsburgh
Medical Center, 200
Lothrop Street, Pittsburgh,
PA 15213 2582, USA.

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