

## Inquiry into Fetal Development and Activity October 2018

Information about respondent

Name\*: Dr Gopi Menon

Email\*

Phone number:

Address:

Postcode

Are you responding on behalf of an organisation or as an individual?

Individual Organisation

Name of organisation (if applicable): British Association of Perinatal Medicine

Position in organisation (if applicable): President

Profession: Medical doctor

Please describe your interest in the questions raised by the inquiry: I am President of the main professional body for neonatal professionals who care for premature and sick babies and have a role with fetal medicine specialists in caring for complex pregnancies.

Do you wish for your evidence to be kept anonymous? (please select)

Yes No

## **1. Fetal development and activity - current state of evidence**

(Please note if you only have expertise in one area of fetal development, feel free to provide evidence only for that area. For all evidence provided please provide citations. Please give fetal age in weeks from conception.)

### **1.1 Please provide an outline of the current evidence regarding fetal development and what age of development each milestone is likely to begin to occur.**

Examples of areas that can be covered in this section: Fetal response to light, sound, taste/smell, touch, noxious stimuli and the response that is likely to occur eg limb movement, change in pulse rate, adrenaline level, facial expression; fetal awareness and learning.

Neonatal professionals care for babies born as early as 22 weeks gestation and babies born at this stage of fetal development certainly show predictable responses to light and sound and with noxious stimuli have reproducible limb withdrawal, change in facial expression and physiological responses including a change in heart rate and other changes caused by the release of stress hormones.

1.2 Please provide an outline of psychological, physical or behavioural examples of how life in utero might impact later life, whether childhood or adult.

I can only comment on physical examples of the impact of the fetal experience.

- a) Preterm delivery results in a baby not yet developmentally prepared for life outside the womb, and on a population basis results in children who are more likely to be smaller and to have learning difficulties and respiratory problems. Babies born at the earlier gestations (less than 30 weeks) are also more likely to have more severe neurodisability and sensory and behavioural disorders as well as more severe respiratory complications. The later adult implications are less clear.
- b) Babies who are born small for dates because of poor growth in utero (whether preterm or not) are more likely to have high blood pressure and cardiovascular complications, lung disease and diabetes as adults.
- c) Chorioamnionitis (infection of the placenta and amniotic membranes) is associated with brain injury in the baby who is more likely to have neurodevelopmental problems in later childhood.
- d) Maternal misuse of alcohol and some drugs is known to be associated with problems with growth and neurodevelopment.

## **2. Fetal pain and use of analgesia - current state of evidence**

I can only comment on pain responses in babies after birth at early gestations –see 1.1. The use of oral sucrose for routine procedures and an opiate for more major procedures is known to suppress pain responses in the most premature babies we care for.

**2.1 Please provide an outline of the current evidence regarding fetal pain.**

(Eg 4D ultrasound, EEG signals, fetal analgesia for surgery in utero, children with hydranencephaly, measurable physiological responses to needling, mesodiencephalon/CNS maturity, extremely premature babies (20 weeks) etc)

I do not have any expertise in this area.

**2.2 In your opinion, from what age would you consider that a fetus:**

**(i) Is very likely to feel pain (>90% certainty of pain)**

Physical and physiological response to pain (much of which can be at spinal level) is not the same as feeling pain which implies perception by the higher centres of the brain. It is not at all clear what is conveyed to the brain when a fetus or extremely preterm baby is exposed to a noxious stimulus, although there is some evidence that there are associated changes in blood flow to the brain. Thus, babies born as early as 22 weeks gestation do show physical and physiological responses to pain, and there is no reason to think that fetuses at this gestation are any different.

I am not qualified to comment on fetuses of earlier gestations.

**(ii) Probably feels pain (>50% certainty of pain)**

See above

**(iii) Possibly feels pain (>10% certainty of pain)**

See above

**(iv) Is unlikely to feel pain, but is theoretically possible to (>1% certainty of pain)**

See above

2.3 What reasons might a fetus have for experiencing more acute pain than an adult, and to what extent might this be experienced?

In fetuses of lower gestations, the higher functions of the brain are less well developed. This whilst they might show physical and physiological responses to noxious stimuli, this is not the same as “experiencing” pain in the way that we think about this as an adult. There is experimental evidence that premature babies after birth show physical limb withdrawal responses to lesser stimuli than full term babies.

2.4 As medical science advances and surgery in utero can be performed even earlier, in your opinion, what will be the earliest fetal age that consultants need not administer any fetal analgesia and give muscle relaxant only?

I am not qualified to answer this question.

2.5 In your view, what will a fetus potentially experience during these procedures performed under the current published guidelines in the UK:

I am not qualified to answer this question.

(i) Dilation & evacuation (used from around 15 weeks of pregnancy)

(ii) Feticide by potassium chloride (used from around 22 weeks of pregnancy)

### 3 Views on the law, guidance and practice

3.1 Giving reasons, in your opinion, are the current guidelines (eg RCOG Fetal Awareness 2010) relating to fetal development and activity effective:

Neonatal professionals do not play any direct role in looking after the woman or fetus during pregnancy, and thus I do not feel qualified to answer this question.

(i) For medical practitioners?

(ii) For women requesting an abortion?

(iii) For the fetus?

**3.2 Please make any recommendations for changes in the following areas that you think would reflect the current evidence regarding fetal development and activity:**

Not applicable.

a) Law

b) Guidance for:

(i) Medical practitioners

(ii) Women requesting an abortion

c) Education

3.3 Giving your reasons, do you think the current systems (eg RCOG/DH) in place that develop and review guidelines on issues such as fetal development and activity are effective, accountable and impartial to outside interest? Can you suggest ways in which the current systems can be made more effective, accountable and impartial?

As someone who does not work in maternity care but cares for the newborn, I can only say that the composition of the Working Party which produced the RCOG guidance appears to have been broad based and comprised the appropriate areas of expertise.

**3.4 In what ways can you suggest improvements in reassurance to mothers requesting a late term abortion that their fetus will not suffer in terms of:**

I do not have the professional expertise to comment on this.

(i) Fetal pain

(ii) Being born alive after abortion

**3.5 In what ways can you suggest to improve data collection and reporting on abortions (including, but not limited to, fetal pain and babies being born alive after abortion)**

I do not have the professional expertise to comment on this.

**3.6 In your view, are there any useful precedents for abortion legislation or professional guidance reflecting evidence on fetal pain, awareness and physiological responses from other jurisdictions?**

No Yes

I do not have the professional expertise to comment on this.

If yes, please specify:

**3.7 Do you have any personal examples or experiences relating to fetal development and activity that you would like to communicate to this Inquiry?**

No