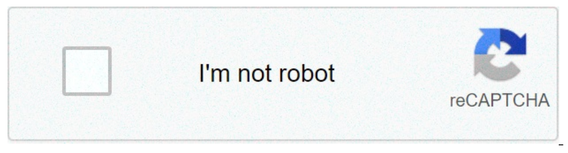

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Youngest baby born alive

1) What is the viability debate about?The discussion about fetal viability involves two quite separate issues. One is the increase in survival rates for babies born extremely prematurely: at the point described by the Royal College of Obstetricians and Gynaecologists (RCOG) as 'the threshold of viability (23+0 weeks to 24+6 weeks of gestation)'. These are babies who, in previous eras, would have been expected to die; now, with the right kind of care, they stand an increasingly better chance of surviving. The increase in survival rates for extremely preterm babies is a really good news story, speaking to the advances that have been made in neonatal care. Many parents who spontaneously deliver a wanted pregnancy at these early gestations will be hoping beyond hope that the baby survives. The second issue is abortion – which, in Britain, is available up to 24 weeks' gestation. The rationale for the 'time limit' being set at 24 weeks is that this is the point at which a fetus becomes 'viable': that is, capable of surviving outside of the womb. This means that discussions about the survival rates of babies born at around 24 weeks have tended to become conflated with debates about the morality of abortion in the second trimester of pregnancy. The conflation of these two discussions does nobody any good. Every year in England and Wales, a small proportion of women – one per cent of the total – has an abortion at over 20 weeks' gestation. Their reasons for doing so have nothing to do with the viability of their fetus and everything to do with the circumstances, always highly personal and often very distressing that mean that they feel they cannot carry their pregnancy to term. Pointing to the survival rates of babies born at 23 or 24 weeks' gestation fails to engage with anything that these women are going through. On the other hand, women who want to carry their pregnancies to term and who then give birth very prematurely are also in very distressing circumstances, and need accurate information about the prognosis their babies might have. Viability does not just mean survival: it also means the capacity of very premature babies to thrive once they have left the neonatal unit. As we discuss below, despite improvements in survival rates and outcomes for babies born at over 24 weeks' gestation, the prognosis for those born at earlier stages of gestation makes for sobering reading. A more sensible and compassionate discussion of viability would appreciate the advances that have been made in neonatal care without implying that babies born barely halfway through pregnancy all go on to lead healthy lives. A woman-centred approach to decisions about abortion and birth at 20-24 weeks would recognise that some women will want to end pregnancies and others will want every intervention possible to save their baby. These women should not be played off against each other, as though their personal heartbreak is merely a slogan about the rights or wrongs of late abortion. 2) What is 'extreme prematurity'?A premature, or pre-term, baby is born before 37 weeks of gestation. Thirty-seven weeks is the point at which a baby's development is assumed to be complete; most women go into labour at between 38 and 42 weeks, after which point labour will be induced, because of the risks associated with 'postmaturity'.But it is prematurity that is the biggest risk factor. Even 'late preterm' babies (born between 35 and 37 weeks) may have problems such as breathing, feeding, and body temperature regulation; and the more premature the baby is, the greater the problems are likely to be. Extremely premature babies are those born between 22 and 26 weeks' gestation. These babies have been the subject of the EPICure studies, which have been running in Britain since 1995 to monitor survival and morbidity rates at birth, and outcomes for the surviving babies as they grow older. We look at some of the findings from EPICure below. Within this category of extreme prematurity, there are babies born at the 'threshold of viability', defined by the RCOG as 23+0 weeks to 24+6 weeks of gestation. In a Scientific Impact Paper published in February 2014, the College notes that: '[t]here is international consensus that at 22 weeks of gestation there is no hope of survival, and that up to 22+6 weeks is considered to be the cut-off of human viability.' On the other hand, from week 25+0 onwards there is 'a general agreement' that babies can survive; therefore that 'active management should be offered'. This means, states the RCOG, that 'delivery between these two gestational age limits' – 23 to 25 weeks – is 'the most challenging'. Recent discussions about improvements in survival rates for very premature infants have tended to focus on this threshold of viability. 3) How is viability defined?There is no clear bright line denoting the point at which an extremely premature baby can be deemed to have reached the point of viability. As the RCOG explains, the legal limits of viability vary in different countries, and have also been lowered in recent years 'along with advancements in perinatal and neonatal medicine': 'The viability limit defined in the Japanese Motherhood Protection Act was amended from 24 to 22 completed weeks of gestation in 1991 based on the survival rate of extremely preterm infants. In contrast in the UK, this has legally remained at 24 weeks due to the poor survival at gestations below this threshold, while in certain European countries it is defined as 26 weeks due to the significant risk of handicap.' It is important to note that the legal limits of viability are not the same as the clinical issues that affect whether a baby will survive or not. In the context of pre-term birth, it relates to the gestational age at which a clinical team is required to resuscitate a baby: and when they are discouraged from doing so.For example, guidelines produced by the Nuffield Council on Bioethics state that intensive care should be given to babies born at 25 weeks and above unless the baby is affected by 'some severe abnormality incompatible with any significant period of survival'. However, for babies born at below 22 weeks, '[a]ny intervention is experimental' and attempts to resuscitate should only take place within the context of a clinical research study and with parental consent. Between 22 and 25 weeks, clinicians are encouraged to base their decisions about whether to resuscitate the baby on 'the condition of the baby', the wishes of the parents, and their own clinical judgement. At 22-23 weeks, 'standard practice should be not to resuscitate the baby'; by 24-25 weeks, 'normal practice' should be to offer 'full invasive intensive care and support' unless the baby is in a very bad way. At 23-24 weeks, 'it is very difficult to predict the future outcome for an individual baby', and precedence should be given to the wishes of the parents, unless the clinician feels that treatment is futile.These guidelines show just how fragile and uncertain viability is to ascertain at gestations of 22-25 weeks, and how wrong it is to generalise from one-off cases. The legal limit of viability has also become an important component of laws regulating abortion: this is discussed below. However, as the RCOG has stated: 'There is no link between viability with the calls for a lowering of the time limit, other than a very tenuous association. The issue of viability looks at the ability of babies to survive outside of the maternal womb. It examines the survival rate of premature babies. Medically, the longer the baby stays inside its mother (usually up to 40 weeks before birth), the better will be its outcomes. If a baby is born premature, doctors will do what they can to ensure its survival provided it is deemed to have a good chance. 'The time limit on the other hand, is the cut-off point for abortions to take place. These are pregnancies which are unplanned and/or unwanted.' 4) What determines viability?Gestational age, explains the RCOG, is 'the primary determinant of almost all perinatal outcomes'; and '[a]t the threshold of viability as few as 5 extra days in utero can double the chance of survival and greatly increase neurologically intact survival.' This means that any attempt to measure survival rates of extremely premature infants must rely on very accurate gestational age estimation. Beyond gestational age, other factors can play a part on whether an extremely premature infant survives or not. 'Birthweight and female sex are independently positively associated with survival after extremely preterm birth, with greatest survival in those infants born weighing between the 50th and 85th centile,' notes the RCOG. The level of care that extremely premature babies are given also makes an enormous difference to their chances of survival. A 2014 article by Marlow et al. reported on the findings of the EPICure 2 study of 2006, which showed stark differences in the survival rates of babies born between 22 and 26 weeks' gestation, depending on whether they were born in a hospital with the most intensive neonatal care facilities (level 3); level 2 maternity units, which would generally expect to transfer out women due to give birth before 27 weeks; or level 1 settings with no ongoing intensive care facilities at all.The authors found that 'Despite national policy, only 56% of births between 22 and 26 weeks of gestation occurred in maternity services with a level 3 neonatal facility.' In these cases, the baby's chance of survival was 'significantly enhanced' compared to level 2 or 1 services. The real lesson of improvements in the survival and outcomes of extremely premature babies is that 'viability' depends, to a large extent, on the level of technology and clinical care that is available. A premature baby is not viable in the sense of being able to survive simply with everyday food and care: he or she can only survive and thrive with access to specialised services. To put it bluntly: where a baby born at 23 weeks in London might be viable, a baby born at the same gestation in rural India would not be. And for babies born at the threshold of viability, even in hospitals with the best facilities and the top neonatologists, the odds aren't good. 5) What are the actual chances of survival for babies born at the threshold of viability?The Marlow study indicates the importance of ensuring that, where possible, women at risk of very premature birth are transferred to a level 3 service, where all the technological and clinical advances that have been made in the care of extremely premature babies are available. However, it also shows that despite these advances, survival for a baby born at the threshold of viability remains an outcome that can be hoped for, rather than expected. Overall, a high proportion of the babies born at between 22 and 26 weeks' gestation died. In level 3 services, 53% died; this increased in level 2 services to 63% and in level 1 services to 72%. When the survival figures are broken down by gestational age, stark differences are revealed here too. At 23 weeks, the vast majority of babies died antenatally or in the delivery room. Less than 20% of babies born in a level 2 service survived to term, compared with less than 30% of those born in a level 3 service. At 24 weeks, about 40% survived to term, with little difference between level 2 and level 3 services. This rose to about 60% and 70% respectively for babies born at 25 weeks, and around 80% at 26 weeks. There remains, therefore, a disparity between improved survival at the later end of extreme prematurity (24 weeks and more), and the prognosis for babies born at the threshold of viability, where not much has changed. Thus Costeloe et al., writing in 2012 about the findings of the EPICure 2 study, concluded that 'Overall survival in 2006 has increased since 1995, although not significantly for births before 24 weeks' gestation.' EPICure 2 found that in 2006, the number of admissions for neonatal care increased, and 'adherence to evidence based practice associated with improved outcome had significantly increased'. Survival increased from 40% to 53% overall and at each week of gestation: by 9.5% at 23 weeks, 12% at 24 weeks, and 16% at 25 weeks. Yet while the relative increase in survival, particularly for later gestations, is something to celebrate, the figures still make grim reading: in 2006, only 2% of those born at 22 weeks' gestation, and 19% at 23 weeks, survived. A study by Swamy et al., published in Archives of Disease in Childhood in 2010, found that babies born before 24 weeks are spending longer periods in intensive care but their overall survival rates have not improved. Over the course of the 15 years, increasing numbers of babies born at less than 24 weeks received active resuscitation. This did not affect the overall survival rate; however, it did mean that the average survival time of those babies who ultimately died rose from 11 hours in 1993 to nearly four days by 2007. The BBC report on the study noted that '[g]uidelines have been drawn up which recommend no resuscitation be carried out at 22 weeks, and only at the parents' request at 23 weeks following a full discussion about the possible outcomes'. Dr Nicholas Embleton, a neonatologist at Newcastle's Royal Victoria Infirmary, who led the research, said: 'We know anecdotally that more parents are asking for resuscitation and more doctors are offering it. We are not making a value judgement about this, and for many this may be the right thing to do – even if it only brings an extra three days of life. Cost should not be an issue when making these decisions, but we do need to think about what these babies may go through, the increasing interventions, in the hope that they may survive.' 6) What are the outcomes for extremely premature babies who survive?'We can all come up with an example of a miracle child who has defied the odds and survived intact despite extreme prematurity. But this should not be the basis for the counselling we give to those women at risk of such a pre-term birth. Eighty per cent chance of survival may sound great but not when taken together with 50-75 per cent chance of long term serious handicap.' This was Ed Dorman, a consultant obstetrician and gynaecologist at Homerton University Hospital and a specialist in fetal care, quoted in the Telegraph on 3 September. His comments address the issue that tends to be glossed over in discussions about the survival of very premature babies: the degree of morbidity (illness or disability) these babies may face, when they are born and also as they grow older.The 2012 article by Costeloe et al. mentioned above drew on the EPICure studies to show the neonatal morbidity of babies born between 22 and 26 weeks' gestation in England during 2006, and to evaluate changes in outcome since 1995. At discharge from hospital, 68% of survivors had bronchopulmonary dysplasia (chronic lung disease) and were receiving supplemental oxygen; 13% had evidence of serious abnormality on brain scans; and 16% had laser treatment for retinopathy of prematurity, a disease of the eye that can result in blindness. The authors concluded that: 'The proportions of babies surviving in 2006 with bronchopulmonary dysplasia, major cerebral scan abnormality, or weight and/or head circumference