

Fetal viability

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Fetal viability or **foetal viability** is the ability of a fetus to survive outside the uterus.^[1]

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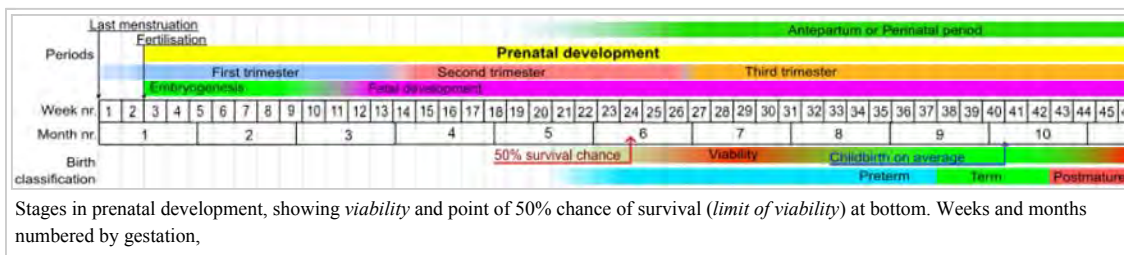
Definitions

As the word is used in United States constitutional law since *Roe v. Wade*, **viability** is the potential of the fetus to survive outside the uterus after birth, natural or induced, when supported by up-to-date medicine. Fetal viability depends largely on the fetal organ maturity, and environmental conditions.^[2] Another definition for **viability**, as used in the medical phrase **limit of viability**, is the expectation that a fetus has an equal chance of surviving and not surviving outside his or her mother's womb.

According to Websters Encyclopedic Unabridged Dictionary of the English Language, viability of a fetus means having reached such a stage of development as to be capable of living, under normal conditions, outside the uterus. Viability exists as a function of biomedical and technological capacities, which are different in different parts of the world. As a consequence, there is, at the present time, no worldwide, uniform gestational age that defines viability.^[3]

Medical viability

There is no sharp limit of development, age, or weight at which a human fetus automatically becomes viable.^[1] According to studies between 2003 and 2005, 20 to 35 percent of babies born at 23 weeks of gestation survive, while 50 to 70 percent of babies born at 24 to 25 weeks, and more than 90 percent born at 26 to 27 weeks, survive.^[4] It is rare for a baby weighing less than 500 g (17.6 ounces) to survive.^[1] A baby's chances for survival increases 3-4% per day between 23 and 24 weeks of gestation and about 2-3% per day between 24 and 26 weeks of gestation. After 26 weeks the rate of survival increases at a much slower rate because survival is high already.^[5]



Completed weeks of gestation at birth	21 and less	22	23	24	25	26	27	30	34
Chance of survival ^[5]	0%	0-10%	10-35%	40-70%	50-80%	80-90%	>90%	>95%	>98%

Legal definitions

United States Supreme Court

The United States Supreme Court stated in *Roe v. Wade* (1973) that viability (i.e., the "interim point at which the fetus becomes ... potentially able to live outside the mother's womb, albeit with artificial aid"^[6]) "is usually placed at about seven months (28 weeks) but may occur earlier, even at 24 weeks."^[6] The 28-week definition became part of the "trimester framework" marking the point at which the "compelling state interest" (under the

doctrine of strict scrutiny) in preserving potential life became possibly controlling, permitting states to freely regulate and even ban abortion after the 28th week.^[6] The subsequent *Planned Parenthood v. Casey* (1992) modified the "trimester framework," permitting the states to regulate abortion in ways not posing an "undue burden" on the right of the mother to an abortion at any point before viability; on account of technological developments between 1973 and 1992, viability itself was legally dissociated from the hard line of 28 weeks, leaving the point at which "undue burdens" were permissible variable depending on the technology of the time and the judgment of the state legislatures.

Born-Alive Infants Protection Act of 2002

In 2002, the U.S. Government enacted the Born-Alive Infants Protection Act. Whereas a fetus may be *viable* or not *viable* in utero, this law provides a legal definition for personal human life when not in utero. It defines "born alive" as "the complete expulsion or extraction from his or her mother of that member, at any stage of development, who after such expulsion or extraction breathes or has a beating heart, pulsation of the umbilical cord, or definite movement of voluntary muscles"^[7] and specifies that any of these is the action of a living human person. While the implications of this law for defining viability in medicine may not be fully explored,^[8] in practice doctors and nurses are advised not to resuscitate such persons with gestational age of 22 weeks or less, under 400 g weight, with anencephaly, or with a confirmed diagnosis of trisomy 13 or 18.^{[9][10]}

U.S. State Law

Forty-three states have laws restricting post-viability abortions. Some allow doctors to decide for themselves if the fetus is viable. Some require doctors to perform tests to prove a fetus is pre-viable and require multiple doctors to certify the findings. The procedure intact dilation and extraction (IDX) became a focal point in the abortion debate,^[11] based on the belief that it is used mainly post-viability.^[12] IDX was made illegal in most circumstances by the Partial-Birth Abortion Ban Act in 2003, which the U.S. Supreme Court upheld in the case of *Gonzales v. Carhart*.

Limit of viability

The **limit of viability** is the gestational age at which a prematurely born fetus/infant has a 50% chance of long-term survival outside its mother's womb. With the support of neonatal intensive care units, the limit of viability in the developed world has declined since 50 years ago, but has remained unchanged in the last 12 years.^{[13][14]} Currently the limit of viability is considered to be around 24 weeks although the incidence of major disabilities remains high at this point.^{[15][16]} Neo-natologists generally would not provide intensive care at 23 weeks, but would from 26 weeks.^{[17][18][19]}

As of 2006, the two youngest children to survive premature birth are thought to be James Elgin Gill (born on 20 May 1987 in Ottawa, Ontario, Canada, at 21 weeks and 5 days gestational age),^{[20][21]} and Amillia Taylor (born on 24 October 2006 in Miami, Florida, at 21 weeks and 6 days gestational age).^{[22][23]} She was born on 24 October 2006 in Miami, Florida, at 21 weeks and 6 days gestation, as an IVF pregnancy. Both children were born just under 20 weeks from fertilization (or 22 weeks gestation). At birth, Taylor was 9 inches (22.86 cm) long and weighed 10 ounces (283 grams).^[22] She suffered digestive and respiratory problems, together with a brain hemorrhage. She was discharged from the Baptist Children's Hospital on 20 February 2007.^[22] As of 2013, Taylor was in kindergarten and at the small end of the normal growth curve with some developmental delays.^[24]

Factors that influence the chance of survival

There are several factors that affect the chance of survival of the baby. Two notable factors are age and weight. The baby's gestational age (number of completed weeks of pregnancy) at the time of birth and the baby's weight (also a measure of growth) influence whether the baby will survive. Other major factors include race and gender. For a given weight, Black babies have a slightly better chance of survival than White, while most other races have a rate between the two. Male infants are slightly less mature and have a slightly higher risk of dying than female infants.

Several types of health problems also influence fetal viability. For example, breathing problems, congenital abnormalities or malformations, and the presence of other severe diseases, especially infection, threaten the survival of the neonate.

Other factors may influence survival by altering the rate of organ maturation or by changing the supply of oxygen to the developing fetus.

The mother's health plays a significant role in the child's viability. Diabetes in the mother, if not well controlled, slows organ maturation; infants of such mothers have a higher mortality. Severe high blood pressure before the 8th month of pregnancy may cause changes in the placenta, decreasing the delivery of nutrients and/or oxygen to the developing fetus and leading to problems before and after delivery.

Rupture of the fetal membranes before 24 weeks of gestation with loss of amniotic fluid markedly decreases the baby's chances of survival, even if the baby is delivered much later.^[5]

See also

- Beginning of human personhood
- Futile medical care
- Office for Human Research Protections#Additional protection for pregnant women, human fetuses, and neonates

References

- Moore, Keith and Persaud, T. *The Developing Human: Clinically Oriented Embryology* (<https://books.google.com/books?id=dbRpAAAAMAAJ&q=%22Prematurity+is+one+of+the+most+common+causes+of+morbidity%22&dq=%22Prematurity+is+one+of+the+most+common+causes+of+morbidity%22&ei=IPzISYHyK4mqMqTGzOwN&pgis=1>), p. 103 (Saunders 2003).
- (2012). Fetal Viability. [ONLINE] Available at: <http://www.reference.md/files/D005/mD005328.html>. [Last Accessed 15 November 2012].
- Breborowicz, G. H. (2001). "Limits of fetal viability and its enhancement". *Early pregnancy (Online)*. **5** (1): 49–50. PMID 11753511.
- March of Dimes --> Neonatal Death (<http://www.marchofdimes.org/loss/neonatal-death.aspx>) Retrieved on November 10, 2014. In turn citing:
 - Tyson JE, Parikh NA, Langer J, Green C, Higgins RD (April 2008). "Intensive care for extreme prematurity--moving beyond gestational age". *N. Engl. J. Med.* **358** (16): 1672–81. doi:10.1056/NEJMoa073059. PMC 2597069. PMID 18420500.
 - Luke B, Brown MB (December 2006). "The changing risk of infant mortality by gestation, plurality, and race: 1989-1991 versus 1999-2001". *Pediatrics*. **118** (6): 2488–97. doi:10.1542/peds.2006-1824. PMID 17142535.
 - The American College of Obstetricians and Gynecologists (September 2002). "ACOG Practice Bulletin: Clinical Management Guidelines for Obstetrician-Gynecologists: Number 38, September 2002. Perinatal care at the threshold of viability". *Obstet Gynecol.* **100** (3): 617–24. PMID 12220792.
- (). What are the chances that my baby will survive?. [ONLINE] Available at: http://www.spensershope.org/chances_for_survival.htm. [Last Accessed 14 November 2012].
- Roe v. Wade, 410 U.S. 113, 160, 93 S.Ct. 705, 730 (1973).
- http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=107_cong_reports&docid=f:hr186.107
- Sayed, SA (October 2005). "Baby doe redux? The Department of Health and Human Services and the Born-Alive Infants Protection Act of 2002: a cautionary note on normative neonatal practice.". *Pediatrics*. **116** (4): e576–85. doi:10.1542/peds.2005-1590. PMID 16199687.
- Powell, Traci (2012). "Decisions and Dilemmas Related to Resuscitation of Infants Born on the Verge of Viability". *NAINR*. **12** (1): 27–32. doi:10.1053/j.nainr.2011.12.004. Retrieved 8 October 2015.
- Kattwinkel, J (2010). "Neonatal resuscitation: 2010 American Heart Association guidelines for cardiopulmonary resuscitation and emergency cardiovascular care.". *Pediatrics*. **126** (400): e1400–e1413. doi:10.1542/peds.2010-2972E. Retrieved 8 October 2015.
- Guttmacher.org Abortion Incidence and Services in the United States in 2000 (<http://www.guttmacher.org/pubs/journals/3500603.html>)
- Franklin Foer (1997). Fetal Viability. [ONLINE] Available at: http://www.slate.com/articles/news_and_politics/the_gist/1997/05/fetal_viability.html. [Last Accessed 14 November 2012].
- Fergus Walsh (11 April 2008). "Prem baby survival rates revealed". BBC News. Retrieved 2008-05-11.
- "Early baby survival 'unchanged'". BBC News. 9 May 2008. Retrieved 2008-05-11.
- Kaempf JW, Tomlinson M, Arduza C, et al. (2006). "Medical staff guidelines for periviability pregnancy counseling and medical treatment of extremely premature infants". *Pediatrics*. **117** (1): 22–9. doi:10.1542/peds.2004-2547. PMID 16396856. - in particular see TABLE 1 Survival and Neurologic Disability Rates Among Extremely Premature Infants (<http://pediatrics.aappublications.org/cgi/content-nw/full/117/1/22/T1>)
- Morgan MA, Goldenberg RL, Schulkin J (2008). "Obstetrician-gynecologists' practices regarding preterm birth at the limit of viability". *J. Matern. Fetal. Neonatal. Med.* **21** (2): 115–21. doi:10.1080/14767050701866971. PMID 18240080.
- Vavasseur C, Foran A, Murphy JF (2007). "Consensus statements on the borderlands of neonatal viability: from uncertainty to grey areas". *Ir Med J.* **100** (8): 561–4. PMID 17955714. "All would provide intensive care at 26 weeks and most would not at 23 weeks. The grey area is 24 and 25 weeks gestation. This group of infants constitute 2 per 1000 births."
- Kaempf et al. (2006) Table of neo-natologists resuscitation advice (<http://pediatrics.aappublications.org/cgi/content-nw/full/117/1/22/F2>) showing gestation ages at which they have neutral positions whether they would or would not recommend resuscitation.
- Roe v. Wade*, 410 U.S. 113 (<http://caselaw.lp.findlaw.com/scripts/getcase.pl?navby=CASE&court=US&vol=410&page=113>) (1973) ("viability is usually placed at about seven months (28 weeks) but may occur earlier, even at 24 weeks.") Retrieved 2007-03-04.
- "Powell's Books - Guinness World Records 2004 (Guinness Book of Records) by". Retrieved 2007-11-28.
- "Miracle child". Archived from the original on 2007-12-09. Retrieved 2007-11-28.
- "Most-premature baby allowed home". BBC News. 2007-02-21. Retrieved 2007-05-05.
- Baptist Hospital of Miami, Fact Sheet (http://www.baptisthealth.net/vgn/images/portal/cit_449/59/45/73662064fa) (2006).
- Kirkey, Sharon (29 March 2013). "Fate of the fetus: As politicians debate, science reveals more and more about what happens during pregnancy". Postmedia News. Retrieved 5 June 2013.
- United States. National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research (2006-05-23). FETAL VIABILITY AND DEATH. [ONLINE] Available at: https://scholarworks.iupui.edu/bitstream/handle/1805/583/OS76-127_VII.pdf?sequence=1. [Last Accessed 17 November 2012].

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