

*"Long before it's in the papers"*

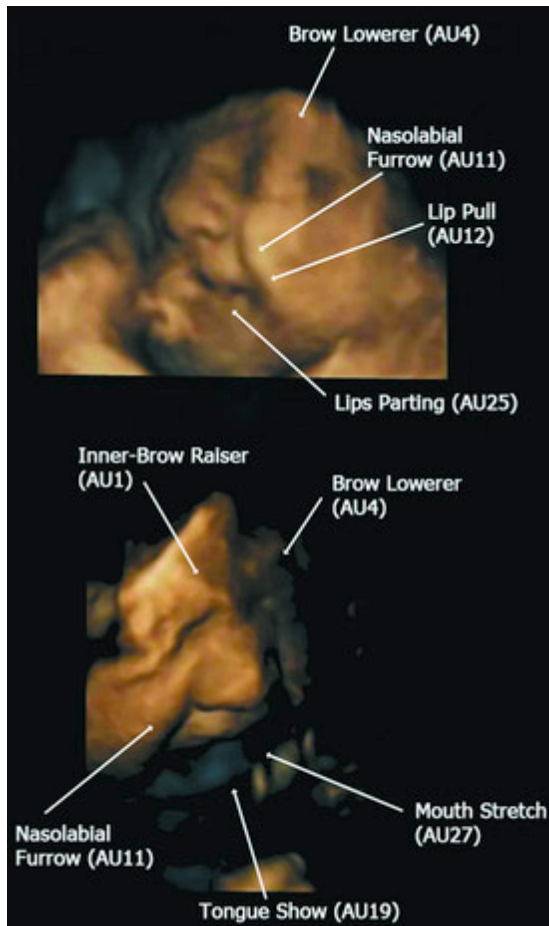
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## Facial expressions reported to develop before birth

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Courtesy of Lancaster University  
and World Science staff

**Babies in the womb develop a range of facial movements in which one can identify facial expressions such as laughter and crying, researchers say.**

“This is a new and fascinating insight into the remarkable process of fetal development. This research has for the first time demonstrated that in healthy fetuses there is a developmental progression from simple to complex facial movements, preparing the fetus for life post-birth,” said Brian Francis of Lancaster University, U.K., one of the researchers.



4D ultrasound images of fetal facial movements reported to be linked to smiling (above) and crying (below). The labels refer to codes used by the researchers to classify different "expressions." (Courtesy PLoS One)

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**They claim the movements develop before the baby feels emotion, just as a baby practises breathing movements in the uterus even before it has drawn a breath.**

**In a new report, the scientists present images of what they call facial expressions developing between 24 to 36 weeks gestation. They examined videotapes of developing fetuses using so-called 4D ultrasound machines.**

**Fetuses at 24 weeks could move one facial muscle at a time, such as stretching the lips or opening the mouth, the researchers said. By 35 weeks, fetuses combined different facial muscle movements, combining for example lip stretch and eyebrow-lowering. Thus by birth the baby has already developed the facial movements to accompany crying and laughing, the investigators said.**

**"We have found so much more than we expected. We knew that the baby blinks before birth and that some research has identified scowling before birth. However in this study for the first time we have developed a method of coding and analysis which allows us to objectively trace the increasing complexity of movements over time which results in recognizable facial expressions," said Nadja Reissland from Durham University, U.K., another of the scientists.**

**The discovery could help potentially identify health problems in fetuses, since their behavior patterns are linked to brain development, they added. The researchers next plan to look at whether fetal facial movement might help differentiate between fetuses of mothers who smoke during pregnancy and non-smokers, and to examine the development of facial expressions relating to anger, smiling and sadness.**

**The new findings are [published](#) in the research journal *PLoS One*.**