

Deferred clamping of umbilical cord reduces risk of death in premature babies by at least a third, suggest two studies

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Waiting for two minutes or longer to clamp the umbilical cord of a premature baby likely reduces the risk of death soon after birth,

compared with immediately clamping the cord or waiting a shorter time, according to two companion systematic reviews and meta-analyses published in *The Lancet*.

Deferring clamping of the [umbilical cord](#) allows blood to flow from the placenta to the baby while the baby's lungs fill with air and is thought to potentially ease the transition into breathing and to potentially reduce the risk of iron deficiency in the infant.

It is now recommended routine practice for babies born at full term to have their cords clamped after waiting for a minute or two. However, previous research has been unclear on whether this practice is also beneficial for babies born prematurely, leading to varying recommendations in national and international guidelines. The two new studies provide the most comprehensive analysis of all available evidence.

"Worldwide, almost 13 million babies are born prematurely each year, and sadly, close to 1 million die shortly after birth. Our new findings are the best evidence to date that waiting to clamp the umbilical cord can save the lives of some premature babies. We are already working with international guideline developers to make sure these results are reflected in updated guidelines and [clinical practice](#) in the near future," says first author Dr. Anna Lene Seidler at the NHMRC Clinical Trials Centre, University of Sydney, Australia.

The researchers conducted a systematic review to identify studies on umbilical cord management in premature babies. Investigators from over 60 studies including more than 10,000 babies shared their complete raw datasets with the research team in an [international collaboration](#) (the iCOMP collaboration), forming one of the largest combined databases in this research field. The authors used these large, combined datasets to firstly conduct a [meta-analysis](#) comparing the impact of different cord

clamping strategies on premature baby mortality, and a second meta-analysis to compare different timings of cord clamping.

The first meta-analysis included data from 21 randomized controlled trials from high-income and middle-income countries that compared deferred versus immediate umbilical cord clamping in 3,292 babies altogether. In the deferred clamping groups, the delay ranged from 30 seconds to more than 180 seconds (with some trials encouraging delays of up to five minutes where feasible). For the immediate clamping groups, most trials specified clamping within 10 seconds. Of all infants, 61% (1,950/3,292) were born by cesarean section.

In total, 6.0% (98/1,622) of the babies who received deferred cord clamping died before leaving the hospital compared to 8.2% (134/1,641) whose cords were cut immediately. After analysis, this equates to the deferred clamping of the umbilical cord likely reducing the risk of death in premature babies by a third (an odds ratio of 0.68) compared to immediate clamping.

In a subgroup of premature babies where infants were born before 32 weeks of pregnancy, 44.9% (449/1,001) of the babies with immediate cord clamping experienced hypothermia after birth, compared to 51.2% (509/994) of those with deferred clamping. The average difference in temperature between the deferred clamping group and the immediate clamping group was -0.13°C .

"Our findings highlight that particular care should be taken to keep premature babies warm when deferring umbilical cord clamping. This could be done by drying and wrapping the baby with the cord intact, and then by placing the dry baby directly on the mother's bare chest under a blanket, or using bedside warming trolleys," says Prof Lisa Askie, senior author of the study at the NHMRC Clinical Trials Centre, University of Sydney.

The second network meta-analysis included 47 trials with a total of 6,094 infants. For this analysis, deferred clamping was split into three groups: "short deferral" (15–45 seconds), "medium deferral" (45–120 seconds), and "long deferral" (120 seconds or more).

Compared with immediate clamping, waiting at least two minutes before clamping the cord reduced the risk of death in premature babies by two-thirds (odds ratio of 0.31). Statistical analysis found that waiting two or more minutes to clamp the cord had a 91% probability of being the best treatment to prevent death shortly after birth in premature babies out of the different timings compared in the study. Immediate clamping had a very low (

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