

Low Apgar score at birth linked to cerebral palsy

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A low Apgar score at birth is strongly associated with cerebral palsy in childhood, concludes a study from researchers in Norway published in the *British Medical Journal* today.

The Apgar score is a quick and simple way to assess a baby's condition at birth. The baby is assessed on five simple criteria (complexion, pulse rate, reaction when stimulated, muscle tone, and breathing) on a scale from zero to two. The five values are then summed up to obtain a score from zero to 10.

Scores of 3 and below are generally regarded as critically low, 4 to 6 fairly low, and 7 to 10 generally normal.

[Cerebral palsy](#) is a rare disease, affecting two to three infants in every 1000 live born children in Western countries. Recent studies have found a strong link between low Apgar score and cerebral palsy in children born to term or with normal birth weight, whereas studies in children with a low birth weight or born preterm have shown conflicting results.

Using linked data from the Medical Birth Registry of Norway and the Norwegian Registry of Cerebral Palsy in Children, the researchers assessed the association of Apgar score five minutes after birth with cerebral palsy in 543,064 children born between 1986 and 1995.

A total of 988 children included in the study (1.8 in 1000) were diagnosed with cerebral palsy before the age of five years.

Low Apgar score was strongly associated with later diagnosis of cerebral palsy. The prevalence of cerebral palsy in children with Apgar score of less than 3 was more than 100-fold higher than in children with a score of 10.

This association was high in children with normal birth weight and modest in children with [low birth weight](#).

Low Apgar score was also associated with all subgroups of spastic cerebral palsy, but the association was strongest for quadriplegia.

"Despite the strong association of low Apgar score with cerebral palsy, it is encouraging that almost 90% of [children](#) with an Apgar score of less than 4 at birth did not develop cerebral palsy," say the authors.

Given that Apgar score is a measure of vitality shortly after birth, our findings suggest that the causes of cerebral palsy are closely linked to factors that reduce infant vitality, they conclude. In fact, low Apgar score might be interpreted as an indicator of brain impairment that has occurred during pregnancy or delivery.

In an accompanying editorial, Professor Nigel Paneth from Michigan State University in the US says that a low Apgar score in a baby of normal weight "is an important clue that the baby has an increased risk of death and disability, even though most infants with such scores recover quickly and do well."

He advises that such babies should be watched closely for the persistence or development of signs of brain damage, especially in the light of robust evidence that babies with brain injury may benefit from head or body cooling.

Provided by British Medical Journal

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