

# First successful treatment of pediatric cerebral palsy with autologous cord blood

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Bochum's medics have succeeded in treating cerebral palsy with autologous cord blood. Following a cardiac arrest with severe brain damage, a 2.5 year old boy had been in a persistent vegetative state – with minimal chances of survival. Just two months after treatment with the cord blood containing stem cells, the symptoms improved significantly; over the following months, the child learned to speak simple sentences and to move.

"Our findings, along with those from a Korean study, dispel the long-held doubts about the effectiveness of the new therapy", says Dr. Arne Jensen of the Campus Clinic Gynaecology. Together with his colleague Prof. Dr. Eckard Hamelmann of the Department of [Paediatrics](#) at the Catholic Hospital Bochum (University Clinic of the RUB), he reports in the journal *Case Reports in Transplantation*.

## The parents searched the literature for treatment options

At the end of November 2008, the child suffered from [cardiac arrest](#) with severe [brain damage](#) and was subsequently in a [persistent vegetative state](#) with his body paralysed. Up to now, there has been no treatment for the cause of what is known as infantile [cerebral palsy](#). "In their desperate situation, the parents searched the literature for [alternative therapies](#)", Arne Jensen explains. "They contacted us and asked about the possibilities of using their son's cord blood, frozen at his birth."

## **"Threatening, if not hopeless prognosis"**

Nine weeks after the brain damage, on 27 January 2009, the doctors administered the prepared blood intravenously. They studied the progress of recovery at 2, 5, 12, 24, 30, and 40 months after the insult. Usually, the chances of survival after such a severe brain damage and more than 25 minutes duration of resuscitation are six per cent. Months after the severe brain damage, the surviving children usually only exhibit minimal signs of consciousness. "The prognosis for the little patient was threatening if not hopeless", the Bochum medics say.

## **Rapid recovery after cord blood therapy**

After the cord blood therapy, the patient, however, recovered relatively quickly. Within two months, the spasticity decreased significantly. He was able to see, sit, smile, and to speak simple words again. Forty months after treatment, the child was able to eat independently, walk with assistance, and form four-word sentences. "Of course, on the basis of these results, we cannot clearly say what the cause of the recovery is", Jensen says. "It is, however, very difficult to explain these remarkable effects by purely symptomatic treatment during active rehabilitation."

## **In animal studies, stem cells migrate to damaged brain tissue**

In animal studies, scientists have been researching the therapeutic potential of cord blood for some time. In a previous study with rats, RUB researchers revealed that cord blood cells migrate to the damaged area of the brain in large numbers within 24 hours of administration. In March 2013, in a controlled study of one hundred children, Korean doctors reported for the first time that they had successfully treated cerebral palsy with allogeneic cord blood.

**More information:** A. Jensen, E. Hamelmann (2013): First autologous cell therapy of cerebral palsy caused by hypoxic-ischemic brain damage in a child after cardiac arrest—individual treatment with cord blood, Case Reports in Transplantation, [DOI: 10.1155/2013/951827](https://doi.org/10.1155/2013/951827)

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