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### Weight Determines Future Cognitive Development Of Children Born Very Premature, Study Suggests

*ScienceDaily* (July 26, 2009) — Researchers of the Department of Neuroscience and Health Sciences of the University of Almería and Hospital Torrecárdenas are carrying out an assessment of the physical neuropsychological characteristics of children born before 32 weeks' gestation or whose weight is lower than 1500 grams (3 lbs. 5 oz.) -- very premature.

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- Premature birth
- Brain damage
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The main aim of this project, coordinated by M<sup>a</sup> Dolores Roldán Tapia, from the UAL, is to accurately define the origin of brain damage, so as to stimulate the affected area early thus causing the adequate cognitive and motric development of the individual.

The most common differences between premature babies and those born after a nine-month pregnancy are mainly related to visoperceptive skills, memory and movement which eventually translate into learning and spatial orientation difficulties. That is why the difficulties that these children have in their cognitive performance and the development of perceptual

and executive functions are being studied.

A population sample of 35 very premature children is being taken for this project, together with the same number of healthy children, all of them born between 2000 and 2001, with their parents' authorisation. Special attention has been paid to the fact that both the children and their parents have similar educational and social levels, as the stimulation they get in the early stages of their lives has a decisive influence in their later development.

The results obtained so far reveal that the decisive variable for the existence of a reversible or irreversible brain damage is the baby's weight at birth, rather than the time of gestation. According to experts, an early stimulation of the individual's central nerve system, from birth until his complete cognitive development at 16 years of age, in foetuses whose weight at birth is over 1,500 gr. or who are very premature, will eventually reach ideal cognitive levels. However, this stimulation must be continued throughout the whole development of babies whose weight is lower than 1,500 gr. so that they can get a proper brain maturity.

As a complement to this project, Almería-based researchers are developing an epidemiological study so as to set the percentage of very premature children who have brain damage against the total number of children born under the same characteristics between 2000 and 2001.

This study is funded by Fundación para la Investigación Biosanitaria de Andalucía Oriental-Alejandro Otero (FIBAO, Alejandro Otero foundation for bio-health research in eastern Andalusia). Moreover, in collaboration with the University of Granada, experts are developing another line of research whose aim is to determine the existing relationship between visoperceptive skill deficit and the level of reasoning in very premature children.

In the near future, the team of researchers of the University of Almería will be expanding their research and including new variables that may make a determining brain difference in very premature babies, like for example, the brain difference between babies born in natural multiple births and those with artificial techniques, or the interaction between pre-maturity and bad nutrition.

Adapted from materials provided by *Andalucía Innova*, via *AlphaGalileo*.

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Tests carried out on a premature girl. (Credit: Image courtesy of Andalucía Innova)

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