Breakthrough in treating premature babies

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(PhysOrg.com) -- Adelaide researchers have made a world breakthrough in treating premature babies at risk of developmental disorders.

A six-year study led by Dr Maria Makrides from the Women's and Children's Health Research Institute and Professor Bob Gibson from the University of Adelaide has demonstrated that high doses of fatty acids administered to pre-term infants via their mother's breast milk or infant formula can help their mental development.

The findings were published today in the *Journal of the American Medical Association* (*JAMA*).

Researchers found that a major lipid in the brain - the omega-3 fatty acid known as Docosahexaenoic acid (DHA) - is not developed sufficiently in babies born before 33 weeks' gestation, leading to

possible impaired mental development.

To counter this, increased doses of DHA (1000mg per day) were administered to lactating mothers with pre-term infants, in the form of tuna oil capsules. If required, infants were given supplementary formula with matching DHA levels.

Of 657 premature babies tested in a trial involving five Australian hospitals, about 50% fewer infants on high-DHA diets had significantly delayed mental development compared with low DHA diets.

Premature girls in particular who were exposed to DHA-rich diets showed much better mental development than girls fed the low DHA diet.

Professor Gibson said his team was at a loss to explain why premature male babies - who are more susceptible to cognitive problems - did not respond to the same extent, with no obvious differences in mental development between the control group and those administered high doses of DHA.

"Boys may have a faster metabolic rate than girls and need higher doses of DHA to make a difference," he said. "We need to do a lot more work in this area to find out why."

Infants weighing less than 1250gm (about a third of a full-term baby's weight) who were fed a high-DHA diet also scored better on the mental development scale, with a 40% reduction in the incidence of mild mental delay.

Provided by University of Adelaide