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New Study Links Normal Birth Weight to IQ

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It has long been known that low birth weight babies tend to score lower on intelligence tests when they reach school age than normal weight babies. Studies indicate that this is related to brain development and the impact of premature birth. Babies born at less than 2.2 pounds (known as extremely low birth weight babies) have been shown to have behavioral problems such as difficulty making friends, immature behavior, acting impulsively, and difficulty in concentration. Most of these findings have long been related to prenatal complications, central nervous system problems and low socio-economic status of the mothers, as well as birth weight.

A new study now indicates that IQ and birth weight may be directly related even in normal weight babies, and suggests that the two have an independent relationship that has not been discovered until this point. The study, conducted by Dr. Thomas Matte, senior epidemiologist at the Center for Urban Epidemiologic Studies at the New York Academy of Medicine in New York City, appeared in the August 11 *British Medical Journal*. In conducting the study, Dr. Matte examined the relation of birth weight to IQ by studying siblings. In doing so, the study was able to rule out socio-economic status of the mother as a contributing factor since the siblings compared shared the same mother and would have been affected similarly.

The study revealed that for every 2.2-pound increase in birth weight among babies in the normal birth weight range (defined in the study as babies born weighing 5.5 pounds or more), IQ scores rose 4.6 points for boys and 2.8 points for girls. In other words, the relationship between birth weight and IQ was stronger for boys than for girls.

Yet, Dr. Matte is quick to point out, "As a practical matter for individuals, the effect is so small that birth weight (in the normal range) shouldn't be used as a predictor of a child's potential or the need for services." However, Dr. Matte believes the study does indicate that there should be greater attention paid to birth weight among normal birth weight children to ensure that each child can reach the optimum birth weight.

According to obstetrician Dr. David Fields, director of the Center for the Prevention of Premature Birth in New York City, the study does not address the length of gestation — whether the babies were born early, on time or late, and any change in IQ related to that. He believes this may be an important factor. "We need to concentrate on nutritionally deprived babies versus the absolute numbers found in this study," Dr. Fields says.

Regarding the 2.2-pound disparity in IQ increases between boys and girls Dr. Matte speculates, "We don't know why this was seen, but one possible explanation is that boys are larger than girls at birth and grow faster in the later part of pregnancy. They might, as a result, be more sensitive to any factors that impair fetal growth."

Dr. Fields further notes that of the four weight groups of babies considered in the study, two groups should not have been included — a group of overweight babies who may have had an overly long gestation, and a group that he refers to as nutritionally deprived (under 6.5 pounds). Of the two remaining groups, there was only a three-point difference in IQ among the babies, to which Dr. Fields points out, "I don't know a single psychologist who would find a three-point difference in IQ significant."

So, what does this mean for parents? "The basic messages do not need to change," says Dr. Matte. "If you are pregnant or planning to be, don't smoke or drink; get good, early prenatal care; be sure to take a folate supplement. This applies regardless of the birth weight of the children."

More work is likely to be done in this area. "The study should correlate size and gestation period versus IQ" in order for any significant conclusions to be drawn from it, Dr. Fields suggests. ◆