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HEALTH

Researchers find infant brain health link to creatine supplements

Two baby-science researchers have used their own pregnancies to trial a groundbreaking supplement that promises to reduce cerebral palsy, deafness and blindness in infants.

By JAMES DOWLING

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13 Comments

Two baby-science researchers have used their own pregnancies to trial a groundbreaking supplement that promises to reduce cerebral palsy, deafness and blindness in infants.

New research from the Hudson Institute in Melbourne has shown creatine can also reduce learning or behavioural difficulties by helping fight the effects of oxygen deprivation in the womb.

Creatine is an amino acid found in foods derived from animal protein, mainly meat, fish and dairy, and used by many cells in the body to help produce energy. It is generally taken as an exercise supplement but is increasingly being used during pregnancy.

Neonatal physiologist Nhi Tran led a preclinical trial on sheep to test the efficacy of creatine during pregnancy, showing infants that endured complicated births recovered faster and healthier.

“We looked at how brain activity functions,” Dr Tran said. “When there was oxygen deprivation, there was, of course, reduced and suppressed brain injury. But then with those that had creatine … they actually recovered a lot faster. They were able to get to normal brain activity.”

Confident in her findings, Dr Tran took the research to a whole other level. She opted to add more fish, meat and dairy to her primarily vegetarian diet during her pregnancy with her daughter Kelsi.

“Obviously I knew that my metabolic needs were different now that I was carrying a growing foetus,” she said. “Understanding when that dynamic and those shifts in metabolic needs happen is another part of the research.”

When the brain is deprived of oxygen in utero, the foetus goes into a state of hypoxic-ischaemic encephalopathy, a danger zone for brain damage.

Dr Tran's study, aided by fellow Hudson Institute researcher Stacey Ellery and published in Annals of Neurology, indicated creatine was not only able to restore brain function, but could also minimise damage as it happened. Foetal physiologist Rob Galinksy is also a senior author on the paper.

Dr Ellery has led creatine studies for years. She did not take creatine during her second pregnancy, though it was not for lack of confidence.

Dr Tran and Dr Ellery with their babies Kelsi (three weeks) and Edie (eight months). Picture: Aaron Francis.

"I did it for my first child. He's now three. I actually didn't, in full honesty, take creatine for my most recent pregnancy purely because I was saving myself for a - potential clinical trial if I was eligible," she said.

"It's really challenging to get pregnant participants in trials and so we tend to try and help each other out a little bit when we're having babies ourselves."

While Dr Tran led animal studies, Dr Ellery has paved the way for eventual human trials and finding when supplements can be best deployed.

"I have been a little bit more interested in looking more broadly; not just about creatine as a supplemental treatment for hypoxic babies, but even just looking at whether creatine becomes a conditionally essential nutrient during pregnancy," she said.

"We're seeing if a specific group of women might be served best by this supplement, whether that's women on a vegetarian or vegan diet, (or) women with other complications such as asthma that can sometimes change the way their bodies manage oxygen delivery. There's obviously always economics associated with it as well.

"We're also very conscious of the fact that a lot of the pregnancy complications that we study, while devastating no matter where they occur, are a lot more prevalent in low- to middle-income countries than they are here in Australia."

She praised the partnership she and Dr Tran shared, saying their life experiences had become an integral part of their efforts.

“We found ourselves just from a life perspective in a similar place at the same time,” Dr Ellery said. “It’s a true blend of the personal and the professional.

“It’s certainly not a nine-to-five job that we have most of the time, but then when you really step into the shoes of the women that you’re trying to ultimately help it certainly provides a new perspective.”

Future trials will have to determine how much creatine makes its way from mother to child in order to optimise supplementing.

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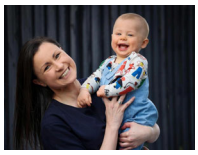

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