You Think What You…Eat?

After much inquiry, work, and research throughout the history of humans, the role that our food plays is decidedly a large one. Without a variety and balance of all macro and micronutrients, the health and integrity of the human body begins to decline. Organ function abates, muscles recede, senses become impaired and each little cell of the living body is stressed. The overall state of the human frame undoubtedly worsens. However, the effect that food has on intelligence, memory, and learning skills has had little to no air time comparatively. What we know about the complexities of the human mind is obviously incomplete and ever-changing; nonetheless, with growing research, a better picture on how our diet can influence the potential of our brains, can be formed. More and more information on postnatal cognitive ability related to nutrition are coming to light, and if brainpower is high on your list of priorities, you may have to throw diet up there too for the whole of your lifespan.

Many studies have shown the consequences on brain development of improper nourishment during pregnancy. While the child is growing in the womb, the brain is undergoing major changes. These major changes are obviously susceptible to damage or incomplete growth if faced with inadequate nutrient intake by the mother. However, nutrition as the child ages is much easier to overlook. One study conducted by the International Online Journal of Educational Sciences (IOJES) proceeded to investigate such concepts by observing the effects of supplying
seventh graders with specific nutrients and comparing them to a control group of seventh graders that were not supplied with said nutrients. The researchers were studying a variety of micronutrients, as well as foods that were thought to stimulate the brain such as cumin or peppermint. The seventh graders were first tested on intelligence via the Cortell Intelligence Test; half were then put on a strict regimen of a daily intake of specific nutrient dense foods such as molasses, raisins, or date fruits; and the other half acted as the control lacking these foods. The students were then retested for intelligence. After the experimental time had passed there was a significant difference in test results; the students that did take specific nutrient dense foods resulted in having much higher test scores and the control group showed little to know difference before and after the exact same time period. The study did not aim to research the effects of individual micronutrients (as all micronutrients share vast and complicated functions) but on the general impact that proper nourishment has on education and learning.

Another such study targeted the significance that quality of breakfast had on the cognitive performance of healthy children in Japan. Scientists at Tohoku University examined the gray matter volume and IQ of 290 children during a diet study of two main breakfast choices: rice vs. bread. The researches utilized various methods of testing intelligence such as MRIs, GMRs, IQ tests, etc, differentiating between a younger group and an older group. The most significant finding they came to was that the children who had the major staple of rice for breakfast showed much larger regional gray matter volume and better IQ test scores than that of the children who had bread as their breakfast staple. This was expected as rice contains more vitamins and minerals than bread. Nevertheless, I don’t think the moral of the story is that you should feed you
or your children only a bowl of rice every morning. Rather, the study provides implications that
the choices you make for your daily fuel have repercussions.

IOJES and Tohoku University aren’t the only ones to come up with similar results. The
National Nutrition Institute in Cairo Governorate evaluated 100 boys and girls in search of issues
that can develop due to prolonged zinc deficiency. After gathering anthropometric
measurements, dietary assessment, Wechsler Intelligence testing, and Verbal/Performance
subtests it was found that zinc deficiency disrupted bodily growth stunting height, which was
predicted, but also impeded intellectual function showing less gray matter in the brain like that of
the rice vs. bread study, as well as lower IQ test scores.

The reality of cuisine selection being a powerful factor in brain growth and development
is basically unquestionable. However, all of the studies mentioned only involved children who
were still growing and developing. It only makes sense that where there is growth there should
be proper nourishment. The greater question lies in whether food choice has this kind of effect
on mature adults. Once you’re done growing, do you really need to pay that much attention
anymore? The Tufts University Health and Nutrition Letter published an article in February of
2003 regarding these kinds of cause and effect results related to diet. Dr. Russell, a
gastroenterologist, recalls a specific patient who was in her 70s experiencing symptoms most
commonly associated with Alzheimer's. The woman was barely able to remember anything from
one instance to the next. After further inspection it was revealed that her severe memory
problems actually originated from an inefficiency in adequate vitamin B12 absorption. As an
older adult, her stomach acid was lacking in the ability to break down vitamin B12 from the
protein it comes attached with. After supplying the woman with supplements, her bizarre
memory troubles went away. While this kind of incapability is rather extreme, it does provide some insight on the brain-diet relationship. Nutrition certainly has a profound impact on the needs and capabilities of cognitive function into old age.

Researchers at the Journal of Alternative and Complementary Medicine sought to take a deeper look into dietary intellectual response with a focus on adults with attention-deficit/hyperactivity disorder (ADHD) and severe mood dysregulation. The scientists studied 28 individuals, 14 of which they gave a micronutrient formula of 36 various micronutrient ingredients that have been related to neurocognitive functioning, and the other 14 acted as a gender and age-matched control group. The participants were tested on varying degrees of intelligence such as visual memory, design memory, attention/inhibition, verbal fluency, reaction time and many others. After an 8 week period of supplementation of the micronutrient formula they were retested on those same degrees of intelligence. While certain tests had no notable outcomes, there was a drastic improvement in verbal memory, verbal inhibition, and verbal cognitive flexibility within the group of ADHD participants that had received the micronutrient formula. These verbal abilities are often deficient in people with ADHD or SMD. This study opens a door into the tremendous significance nutrition has on our brains that we still know so little about. It is amazing to think of what we may be able to alleviate seeing what food can do for the brain regarding not only intelligence but mental health as well.

In our pursuit of health, we have determined some of the primary connections between what we eat and how our body functions. We have been able to break down important biological processes - processes like that of glycolysis, the krebs cycle, enzyme function, and countless others - that attribute to our bodies intense capabilities. While still having much to learn, science
has brought us to a place of awesome understanding of how we can help our bodies via food. Despite these incredible points of progress, the particulars of how food affects the mind are yet to be finalized, though many have paved the way. It is obvious so far that there is a critical link between nutrition and brain function. Scientific research has shown the major difference in cognitive ability in those that maintain legitimate dietary nourishment vs. those that do not. The implications of these studies may change the way that our culture and others address cultural diet, education, learning, medicine, mental health, and much much more. The human mind is a fascinating and elaborate apparatus; while it may take years to discover the details and the bigger picture, I suppose we might as well be sure to get all our nutrients in in the meantime.
Works Cited

Coban, Emine, Birol Alver, and Ali Aslan. "The Effect Of Certain Types Of Nourishment On The Intelligence Performance Of 7Th Class Students Of Primary School Students."


