

Does the Brain Need Carbohydrates – Answers to Common Questions

Dr. Andreas Eenfeldt: The brain needs carbohydrates, otherwise it's not going to work. Is it true?

Dr. Hallberg: Well, if you're eating carbohydrates, the brain needs carbohydrates. But if you're not eating carbohydrates, the brain is happy. And I think a lot of evidence would actually support "happier" to be using ketones as fuel.

And I think that one of the best examples is just the anecdotal comments that we get from our patients all the time. "Gosh, I feel clearer." I think that's the word people use more than anything. "I have more clarity. I feel like I'm concentrating better, I'm sleeping better."

And I really think that what that is, is the brain using ketones and relying on those for energy source. So, again, that old idea that our brain has to have glucose, is only true in the context of a high carbohydrate diet. In the context of a low carbohydrate diet, we function fantastically on ketones.

Dr. Andreas Eenfeldt: The brain needs carbohydrates?

Dr. Chatterjee: Look, I think if you just look back at evolution, we've had periods of fast and famine. Okay? Yeah, I think the literature is quite clear, we can use both carbohydrates and ketones for our brain function.

Now, you can argue about what's optimal, but, saying that you need carbohydrates for that, I don't think necessarily is strictly true.

Dr. Andreas Eenfeldt: People say that the brain needs carbohydrates. What do you think?

Dr. Fung: Yeah, that's another one that's completely false. Not completely false. You see, the best lies really have a grain of truth. And what they mean, is that the brain requires some glucose to function, but it doesn't require you to eat glucose to function and that's the distinction.

So, if you fast, for example... Because fasting experimentally is the cleanest condition, because there is no calories coming in. What happens is that your body normally runs on sugar and so does your brain.

When you don't eat, there's no sugar coming in, your body can use fats directly and that's great, but the brain can't. These fatty acids can go through the blood brain barrier and get into the brain.

So your body produces ketones.

And those ketones are able to go through the brain, go through the blood brain barrier, I should say, get into the brain and feed it, but not 100% of it. That is about 75% of the brain will be powered with ketone, but the rest requires glucose.

And so do certain things, such as the red blood cells in the interior part of the kidney. They all require glucose, but the body can actually manufacture glucose and this is a process called gluconeogenesis. So your body has the ability to take fat and produce glucose and that's how it works.

So, yes, your brain and certain parts of your body do require some glucose to work, but it doesn't require you to eat glucose. Your body can produce it. It's not an essential carbohydrate in those certain foods, such as essential amino acids.

They have to be eaten because our body has no capability to produce them. So, essential amino acids, essential fatty acids, both have that, if you don't eat them, you will get sick. But carbohydrates are not essential, our bodies can produce as much as we need to.

So, yes, it's true your body does need glucose, but you could survive easily on a zero glucose diet. You don't require any carbohydrates whatsoever.

Dr. Andreas Eenfeldt: Does the brain need carbs?

Dr. Brukner: That's what everyone tells us, that "No, you can't go low-carb, because the brain can't survive without glucose." Well, for start, the brain doesn't need a huge amount of glucose, You can resist largely on ketones, on ketone bodies, and that's been clearly shown.

It does need some carbs, but you... You know, we're not talking about a zero carb diet, you can't have a zero carb diet, really, and the small amount of carbs that we get from vegetables, green vegetables and so on, are enough for the brain and the body also produces glucose.

It produces glucose through gluconeogenesis, through the breakdown to glycerol. So, the body would produce enough glucose for the brain and the rest of the brain can work on ketones.

Dr. Andreas Eenfeldt: The brain needs carbohydrates?

Dr. Westman: I think if you are running on carbohydrate, if you choose to eat carbohydrates or if you don't choose, but you are doing it, then the brain probably needs carbohydrates. But if you're not eating carbohydrates, the brain can do well with fat burning, the ketones.

So, ketones can fuel the brain just fine. And the most dramatic example of that, is the childhood

epilepsy reversing totally. Because in some children, the brain can't take glucose into the cells and these children have bad epilepsy, by feeding the brain ketones, or, you know, basically it goes around that abnormality and the children don't have epilepsy anymore.