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**Question & Answer with Brendan Brazier**

*Brendan Brazier is a professional Ironman triathlete, bestselling author on performance nutrition, and the creator of whole-food nutritional products called Vega. He is also a two-time Canadian 50km Ultra Marathon Champion.*

**Karina Gordin (KG)**: I would like to thank you for taking time out of your schedule and joining us today. I'm such a fan of your products, especially the Vega protein powder, so it's a privilege to have a chance to interview you about that and much, much more. To begin the questions: *Nature* journal recently published an article examining the advantages of running barefoot vs. shod. The study considered factors such as foot strikes, plantarflexed vs. dorsiflexed ankle placement, impact forces, gait, potential injury, etc. So my question is: Since running is such a dominating component of your professional athletic career, do you have an opinion on the ongoing argument about the benefits of running in sneakers vs. minimal shoes or even barefoot?

**Brendan Brazier (BB)**: I never actually had any injury issues. I've never looked for alternatives. I know one of the arguments for running barefoot is that it encourages more of a forefoot plant or midfoot plant, whereas running with shoes can sometimes encourage certain types of running styles and landing on the heel even more so, which is not an efficient way of running. I've never run that way, although a lot of people do. A lot of people will land on their heels and kind of roll forward. That's what you're taught in school: land on your heel and roll forward and push off, but that just takes so much extra work and energy. If you run and land more on your forefoot or your midfoot, you actually use less muscle, you don't have to push yourself, and you don't have that breaking effect of landing on your heel and rolling forward. Therefore, I think there's a lot to be gained by running as though you're barefoot, but I don't think you necessarily need to run barefoot. I think that just knowing how to run properly and efficiently is the most important thing, and whether you're barefoot or not, I think, is of less importance, but that is one aspect. What's good about barefoot running is that it encourages you to land on the right part of your foot and run more efficiently.

**KG**: Very well said! Shoes or not, have you noticed a difference in posture, joint health, and energy when running on varying terrains, such as treadmills, concrete, or soft surfaces like dirt and grass?

**BB**: I definitely try to avoid concrete whenever I can. I like hard packed trails, whether they're dirt or chip trails like bark mulch, or fire roads. Anything like that has a little more give, but pavement is pretty tough over time on all of your joints and everything. So for a good 70% of my running mileage, I'm off the pavement, and I really think that helps. Some pavement running is good though, especially when you're going to be racing on pavement. You want to get a feel for what it's like and not be surprised by it physically or mentally when you're actually running in a race. I think including some pavement running if you're going to be pavement racing makes sense.

**KG**: Studies show that exercising improves not only physical health, but also mental health through the stimulation of specific neurotransmitters and subsequent reduction of stress, depression, and even attention deficit disorder. Through your own research and first-hand experience, could you attest to that, and have you observed in your own life improved physical and notably mental fitness?

**BB**: Absolutely. My most recent book is called *Thrive Fitness: Mental and Physical Strength for Life*, so it's definitely a large part of what I wrote. In that book are the non-physical benefits of exercise, too, such as creative thoughts. When you run, for example, it stimulates the right side of your brain, and that's the creative side. It allows you to be more creative more quickly and have some control over creativity. Often, creativity may be fleeting, and people can't seem to get it back, but exercise is a great way to tap back into it. Stimulating the right side of the brain also makes your subconscious work more efficiently and more quickly. You'll be able to solve problems you didn't even consciously try to solve. The solutions just pop into your brain; so there are definitely a lot of benefits. Also, the endorphins on a chemical level in the brain make you feel better because of the chemical reaction. In some cases, clinical depression could be related, and exercise could help people feel good enough to actually address the cause of their depression, so it's a good way to help people feel better and address some other issues in life.

**KG**: How intriguing. Now, along with exercise, how much does food factor into physical and mental fitness?

**BB**: I think it's very important. I think that since your body does use what it eats to re-fabricate itself after exercise, you really are in a constant state of regeneration. You break down your body tissue more recently if you exercise on a regular basis, and then when you eat well, your body uses good, high-quality foods to re-fabricate cells. If you eat low-quality food, your body has no choice but to re-fabricate lower-quality cells and that's degeneration; that's premature aging basically. However, if you exercise regularly and eat well, then your body will be in a younger state biologically. It will be younger because it fabricated more recently, and it's definitely something noticeable. You've seen people who exercise on a regular basis. They eat well and look younger biologically. They are younger because their cells were re-fabricated more recently.

**KG**: Food is fuel and could help you reach peak performance, speed recovery time, burn fat, and feed muscle; however, not all food geared toward athletes is created equal. Protein powders are just one important example of how quality varies. How does whey protein, for instance, compare to hemp protein?

**BB**: Any kind of isolated protein, such as whey protein isolate or soy protein isolate, are isolated, and being isolated is exactly what it sounds like; it's been isolated from the carbohydrate and the fat, so it's no longer a whole food. This means it's going to be harder to digest and harder to assimilate .It takes more energy to assimilate, so you'll inherently be a little more tired because you'll be spending more energy just digesting. It's going to be more acid forming too, which is harder on your bones and slows recovery, so I definitely like to avoid any kind of isolated protein. I eat plant-based foods, so I don't eat whey anyway, and its highly acid forming. When whey comes out of the cow for the calf, it's actually neutral pH, but when it's pasteurized and isolated, it becomes acid forming, and that's the form that humans drink. It's not a very good option immediately after a workout.

**KG**: Is concentrated protein the other variety as opposed to isolate?

**BB**: Yes, concentrate is better, but even whole protein sources like hemp seed in its whole form has good quality fat that is good for brain development, skin health, eye health, and a whole bunch of other things as well.

**KG**: What macro and micronutrients should people look for to boost energy, strengthen muscles and bones, and reduce body fat and inflammation?

**BB**: Well as far as macronutrients, generally speaking, you want carbohydrates primarily before a workout because they are used as fuel, whereas protein is more for rebuilding. So carbs before a workout and protein afterward is a good rule of thumb. As far as micronutrients go, it's really about trying to get as micronutrient-dense food as you can. Plant-based whole foods and lots of leafy greens are very high in micronutrients. A variety of seaweed is great. Fruit is a great energy source and is nutrient dense; so they have a lot of micronutrients.

**KG**: So that'd be before and after exercise?

**BB**: Yes, as far as micronutrients are concerned, eat them whenever you can.

**KG**: Now, more about diet. Bison, rhinos, and elephants, which weigh up to 2,000-8,000 pounds, respectively, thrive on a strictly raw, vegetarian diet. Seemingly, a 200-pound man would then be able to thrive as well.

Albeit humans do not have four-chamber stomachs that specialize in digesting high-cellulose plant material, but aren't we, nevertheless, equipped to thrive on a well-balanced, complex vegetarian diet?

**BB**: I think so. When I started researching this in 1990, I was 15 and getting into triathlons and running, and I just really enjoyed it. My goal was to race professionally in triathlons, and it didn't matter to me what I ate. I ate anything if I thought it would make me a better athlete, but I realized that eating a plant-based, properly-put-together, nutrient-dense diet was a big advantage. I could speed recovery, which meant I could fit more training into less time, which meant I improved quicker. I became vegan because I wanted to train at a higher level, and I did it wrong at first. I was eating a lot of starchy, refined carbohydrates and wasn't getting the nutrient-dense foods that I needed, and I didn't feel good, but once I got it right, it really worked well. It took a while to get right; it took a good year and a half or so before I felt really good, but when it did start to work, it was a big advantage, for sure.

**KG**: Food cravings arise in all dietary practices, suddenly and intensely seizing even the staunchest raw vegan. What is the source of cravings, and how could they be controlled and overcome without succumbing?

**BB**: A lot of the time, cravings are due to other things like sugar. People crave starchy types of food when they're tired because those are stimulating foods, and a lot of the time when people think they're hungry, they're not; they're actually tired. They know subconsciously that when they have sugary foods, it will give them energy, and it does, but it's short-term energy; it's not sustainable. That's one thing to look for next time you think you're hungry or you're craving something; maybe you're just tired. Sometimes, too, it can be a lack of carbohydrates in general. I know some people who get really hungry and eat a lot in the evening and go to bed with a full stomach, which tends to cause them to gain weight. It's usually an indication that they should have eaten more throughout the day and balanced it better, had a little more in the morning and afternoon, and not be as hungry in the night. So spacing it out sometimes could be an issue. Also, I know some raw food people who crave certain cooked foods. Personally, I don't eat completely raw, and that works well for me. I don't crave certain things because I get a good level of variety and complementary foods, which keep cravings away.

**KG**: Carnegie Mellon researchers Christopher L. Weber and H. Scott Matthews have reported in the journal *Environmental Science & Technology* that shifting from an average American diet to a mainly local, vegetarian one could reduce emissions analogous to 8,000 miles driven per year.

My question is: how is our current food system unsustainable both to our bodies and the environment, and what steps could all of us take to increase productivity and ensure that all nutritional needs are met without compromising our ecosystem?

**BB**: The main thing is eating foods that you use your resources to produce, those resources being arable land, water, fossil fuel. If we can use less of those things to produce our food, then obviously, that will create fewer emissions, which would not be such a strain environmentally. Eating food that uses less energy is obviously plant-based food. If you grow food and then feed it to an animal, there's a large loss of energy. For example, you'd have to feed a cow 16 pounds of grain to get one pound of meat. So obviously, it's not a very efficient way to farm. I believe a study found that only 11% of the energy that goes into food production and transportation is used for transportation, and around 83% goes into the production of food. Eating local is helpful but is far less important than what you eat. Eating plant-based food is definitely the biggest thing we can all do to help reduce strain on resources and the environment.

**KG**: As far as organic is concerned, should that be a factor?

**BB:** I think foods grown without herbicides and pesticides are definitely important. Some small farms can't afford organic certification. I shop at a farmers' market, and a lot of the vendors from whom I buy aren't certified organic, but the food is grown without herbicides or pesticides and grown about 30 miles away. Buying from the small farms means they get more money, so eventually they'll be able to certify organic, which means they'll create more competition for the bigger farms, which in turn keeps the prices lower and maintains diversity. I'm not a stickler for certified organic, but I definitely value foods grown without chemicals.