

## **Sports And Performance Nutrition**

**Prof: Geetha Ghaliyavar**

**Department of Sports Nutrition**

**IIT Madras**

**Week-07**

### **Lecture-35: Food intolerances in athletes**

A warm hello and in this lecture we are going to be discussing the common food intolerances in athletes. What is food intolerance? What can be gluten, lactose or protein intolerance? Caffeine sensitivity in athletes and irritable bowel syndrome and how you can address that. Food intolerance is the inability to digest certain foods and this can be due to the lack of the specific digestive enzymes which can make it challenging to digest that particular food. As you can imagine when there is an inability to digest a specific food it is but natural to develop symptoms. The common upper respiratory tract discomfort can be bloating, belching where food comes up, a feeling of vomiting sensation which is nausea, reflux or heartburn. Stomach aches and pain is also not uncommon.

The lower gastrointestinal tract symptoms can be flatus or flatulence which is the accumulation of gas due to the indigested food particles which can lead to abdominal cramping that can trigger an urge to use the toilet and sometimes even loose stool. These food intolerances can also lead to some other symptoms independent of the GI tract which can be tiredness and headache, lethargy. If these can be the common challenges even in a healthy individual you can imagine what that can mean for somebody who is physically active or is an athlete who trains a few several hours each day. This will reflect as poor performance.

So under the spectrum of food intolerance, irritable bowel syndrome is common and seen more sometimes in females. IBS requires a dietary intervention with restriction of specific food triggers. Since a varied diet is extremely important to improve the gut bacteria or the microbiome, chronic restriction of these food triggers can lead a change in the gut microbiome. Today we understand the relevance of the second brain being in the gut where the good bacteria directly impacts our brain function. Hence the change in the gut bacteria can influence a person's behaviour.

The way to tackle irritable bowel syndrome is by a specific dietary approach which can lower the symptoms of IBS. If an individual or an athlete suffers with constant bloating after meals, is suffering from flatus and may require a formal diagnosis of irritable bowel syndrome by a gastroenterologist, there is hope that this condition can be managed by dietary intervention. By avoiding trigger foods sometimes including gluten and lactose, the specific carbohydrate foods which we will just discuss in a few minutes and also high fat foods which are difficult to digest, IBS can be managed. A low FODMAP diet is the best approach to manage IBS. An individual is intolerant to FODMAPs.

FODMAP stands for fermentable oligosaccharide, disaccharide, monosaccharides and certain sugars called polyols. Individuals or athletes can become lactose intolerant overnight and even in IBS there can be a combination of intolerance to lactose. Lactose is the disaccharide found in milk. So individuals with lactose intolerance cannot digest milk and milk products. There is a lack of the enzyme lactase that digests milk.

So any dairy product be it curd, buttermilk, even the protein supplement as we concentrate which contains lactose can pose the challenge of digestion leading to bloating, flatus which is gas, cramping and urge to defecate or increase bowel movements. Unlike an allergy to the milk protein, lactose intolerance can allow an individual to consume small amount of lactose which means that they can occasionally consume milk and milk products in smaller quantities only and that can vary based on individual tolerable limits. Under the IBS spectrum, individuals will find it challenging to digest even honey and high fructose corn syrup due to the fructose content. Certain fermentable sugars called polyols are sugar alcohols. Typically they are swapped because they are low calorie options.

Similarly these sugar alcohols are used as substitutes because they are calorie free alternatives. Mannitol and sorbitol are commonly used in several foods and they can also have a laxative effect meaning that they can make you defecate. Individuals with food intolerances may not realize especially if you are an athlete and occasionally will use an energy or a sports bars which contain polyols as mannitol and sorbitol. If as an athlete you have consumed these sports bars either during travel or a tournament and wondering why you are facing loose stools. Please pay attention that sometimes overdoing these sports foods can be also the cause.

So these polyols not only can be challenging to digest, the symptoms can make a tournament or a competition more challenging. It is interesting to note that the FODMAPs are present across a wide variety of vegetables from onions, garlic, even the shallots, cauliflower, broccoli, cabbage, mushroom, even our peas can trigger symptoms and make IBS worse. Consuming fruits can make it very challenging because the fructose and sorbitol which is a type of FODMAP is present across varied fruits. So how can one ease these uncomfortable symptoms to manage IBS? The best way to address food intolerance is by choosing foods with low FODMAPs and there is a structure to approaching this. Working with an IBS certified dietician or a nutritionist can help you understand the process of a low FODMAP diet.

Excluding all the FODMAP rich foods can take up to 4 weeks where only the low FODMAP foods are consumed. So this is obviously a lengthy process requires a lot of patience. What is more intriguing is the re-introduction phase where FODMAP rich foods are introduced one by one across the next one and a half to two months. Thereafter you personalize the FODMAP list based on individual tolerance. Do keep in mind that the challenge phase in the re-introduction of FODMAP rich foods is a very slow process that requires patience.

Only a single food group is introduced in smaller quantities and across 3 days. So on day one if you are introducing a quarter serve which is a very small portion to see your tolerable limit and record your symptoms and if you handle the food well the second day you can increase the quantity and the amount of FODMAP food consumed to probably quarter to half. And on the third day you could use a full serve if you tolerate a quarter and a half serve or a quantity of the FODMAP rich foods. So you can imagine if the challenge phase of reintroducing takes at least 3 days for one ingredient or one food option observing and recording and journaling

your individual response to the food can be a slow process. Fort map foods are fermentable foods that improve the gut bacteria.

So it is best that when you can come to an understanding of what is the amounts that you tolerate in the personalization phase it is best to maintain a balance of even in the Fort map rich foods as these prebiotic fibers are very important for well-being, gut health and helping your microbiota. In the vegetables beans, carrot, capsicum, squash or pumpkin, bindi can be well tolerated in a low Fort map diet. The green list or the low Fort map fruits which are safe to consume for IBS is muskmelon, grapes, kiwi, oranges, pineapples, strawberries. Lactose free milk can help those individuals who have the desire to consume dairy but cannot digest regular milk. The ready-made lactose free milk or curd which is store bought contains added lactic acid enzymes which can prevent the symptoms in those suffering from IBS.

Do keep in mind that coconut milk is also a high Fort map option and is not a substitute for dairy. People with IBS do not handle legumes and pulses well. Thankfully tofu, fermenting, sprouts or pulses and the process of soaking, rinsing, changing the water, thoroughly cooking can help lower the symptoms and for those who consume non-vegetarian meals, fish, poultry such as chicken and eggs can be a good option which do not trigger symptoms. Gluten intolerance is genuinely a medical condition where individuals cannot handle the wheat protein called gluten. So in gluten encephalopathy or gluten intolerance all wheat and wheat products must be avoided.

Including oats sometimes that can trigger symptoms, rice, rice braised products, quinoa, rajgira, millets or sometimes even gluten free oats is well tolerated. Do keep in mind for those who are gluten intolerant and suffer from IBS. It is very very important for you to read the food labels which have wheat derived products. So from all the bakery goods, the biscuits and the ready to eat options one has to steer clear and be very careful to avoid symptoms. Individuals with gluten intolerance may also not handle barley and in Indian cuisine barley can be used.

Gluten free products can be very expensive and can also become very unhealthy where they add a lot of sugars and other ingredients to make it tasty. Individuals with IBS can choose other sweeteners such as maple syrup or palm jaggery even our Indian jaggery which can be a substitute for the fructose rich honey. Unfortunately cashews and pistas are very high in for maps and can trigger bloating symptom. Almond seeds are a part of Indian diet for those individuals watermelon, pumpkin seeds, sunflower seeds, walnuts even peanuts can be well tolerated. Almonds up to 10 numbers are a green serve in the low FODMAP option.

One important thing to keep in mind is also to be aware that when you include the low FODMAP options sometimes overdoing the same ingredient in larger portions or simultaneously enjoying different food groups can lead to FODMAP stacking and this can aggravate the symptoms again. Interestingly there are several blood tests that are available to detect food intolerance. Please be cognizant that these are not fully understood and they are very very costly and besides the food intolerance test will only red flag if you have consumed the trigger food during the test duration. So in case you have not consumed that particular FODMAP rich dish your blood test may still be negative. Some individuals also find it very challenging to digest the protein in eggs and sometimes we do hear this from athletes where on consuming eggs they have discomfort and the classical abdominal or GI distress which is seen in IBS which includes pain, bloating, cramps or the urge to use the toilet.

So it is best for those athletes to look at alternative options for protein other than eggs. Here is an interesting slide on caffeine sensitivity in athletes. I also somebody who suffers from discomfort after enjoying an occasional coffee then this may be very intriguing for you. Caffeine intolerance can be determined by your genetic endowment. So there are metabolizers and then there are poor responders to caffeine.

In athletes when they are already a ball of nerves and suffer from sports performance anxiety caffeine can trigger symptoms and make them more jittery and not to forget that overdoing the caffeine dose can lead to sleep disturbances and also in endurance athletes I commonly see challenges of bowel movement which is triggered by caffeine use. So the slow metabolizers are the ones who have exaggerated response to caffeine consumption. In caffeine responders and fast metabolizers thankfully there is no challenge and rather they get the maximum benefit of using caffeine as an ergogenic aid that enhances their performance. To summarize food intolerances can be challenging and requires the exclusion of trigger foods. Tailoring and swapping the food options can ease and lower the symptoms of food intolerances and IBS.

Working with a qualified dietitian or nutritionist can help you tailor your diet by practicing the elimination diet of the exclusion phase reintroduction and adjusting the FODMAP list and the portions to suit your tolerable limits. We know that the FODMAP rich food options are fibers and prebiotics that support the gut bacteria or support a varied microbiome can support gut bacteria which is extremely important for one's wellness and well-being. So incorporating a varied diet is always the best way forward to be healthy and also take care of your performance needs. So not only taking care to follow a low FODMAP diet but by carefully journaling the reintroduction of the FODMAP rich foods and tracking the symptoms to adjust the tolerable limits can help incorporate a varied diet which can improve the prebiotic fibers to support gut health. I hope this lecture was insightful for some of you and for those with food challenges and please do share this with someone who can benefit from this lecture.

Thank you for listening. Thank you.

You know, hats off to Geeta for finding the right combination for me which worked wonderfully in my case and helped me retain the nutrition that I know that my body required and in turn improve the energy levels which encouraged me to go back to leading an active life again. The third thing that really helped me was food journaling and scrutinizing my everyday food pattern, food consumption patterns. It made a huge difference to me in understanding how my body overall and my gut specifically reacted to the food that I was consuming. Every meal that I had had a different impact on my gut.

So with the help of elimination diet and food journaling, both together helped me understand my gut in a very nuanced way. For example, I understood that I had to time my meals within 3 hour difference. Anything within 2 hours would give me bloating. The fourth thing that really helped me was travel. I struggled during travel because it becomes all the more difficult to fetch food which is actually favorable.

And so basic things like having only cooked food, having food which is hygienic can be pivotal. It reduces the risk of gut infections. Gita gave me such a holistic plan that kind of helped me deal with IBS. Of course, it's a work in progress and there are days that I do struggle. But today, I have partially returned to an active life by following all these points. So thanks for listening to me.