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**QUESTION – I am 43-year-old woman and have been increasing my exercise workout intensity greatly over the past year. At the same time, I started to experience diarrhea, and I often must find a bathroom fast. Could my exercise routine be causing this?**

**ANSWER –** The benefits of keeping up a regular exercise program are well-documented and include better sleep habits, stronger bones, weight loss with maintenance and/or gain of lean muscle mass, fewer heart problems, and tighter glucose control in diabetes. However, in addition to these benefits, there is evidence that exercise can contribute to gastrointestinal (GI) disorders which can cause unpleasant upper or lower abdominal symptoms. These symptoms include reflux/heartburn, belching, bloating, stomach pain/cramps, vomiting, nausea, side ache, flatulence, urgency, diarrhea, and intestinal bleeding. While the types of GI symptoms vary from person to person, some symptoms, such as diarrhea, can be severe enough to impact exercise performance.

Diarrhea and urgency (*needing a bathroom within minutes after feeling the urge to have a bowel movement*) are common symptoms in endurance athletes, especially long-distance runners. According to research, about 90% of long-distance runners experience some form of GI symptoms (including diarrhea) during exercise and accept their symptoms as a normal consequence of running and therefore do not consult a physician. Understanding why certain GI symptoms, such as diarrhea, occur during exercise can help to coordinate a healthcare plan that improves exercise performance.

**What causes unpleasant GI symptoms such as diarrhea during intense exercise?**

According to research, athletes experience GI symptoms for a variety of reasons, but there are generally three main triggers or causes:

- 1. Mechanical:** The movement of the body while running causes trauma and could result in damage to the intestinal lining. This repetitive motion may contribute to symptoms such as diarrhea and urgency, or even GI bleeding.
- 2. Ischemic** (restriction in blood supply to tissues, causing a shortage of oxygen that is needed to keep tissue alive): When exercise intensity increases, blood flow moves more towards the working muscles and away from the GI tract (up to 80%). The lack of blood flow to the GI tract can cause a problem called “ischemia”. Injury to the lining of the small intestine and large intestine (colon) may reduce its ability to function and increase leakiness of the GI tract (material passing from inside the GI tract through the cells lining the gut wall, into the rest of the body). The decreased blood flow can cause other issues like malabsorption of nutrients and water in the colon, or it could move through the GI tract more quickly causing looser stools/diarrhea.
- 3. Nutritional:** Specific nutrients including fiber, fat, protein, and highly concentrated carbohydrate solutions (>7% carbohydrate) have been associated with a greater risk of GI symptoms during exercise.

*Examples:*

- The excessive consumption of popular sports and electrolyte drinks may cause GI distress by drawing water to the gut. Any residual or excess carbohydrate remaining in the intestines can lead to incomplete absorption and increased GI problems.
- Dehydration due to inadequate fluid intake during exercise may also cause worsening of GI symptoms.

- Certain types of carbohydrates, including short-chain carbohydrates recently described as FODMAPs (**F**ermentable **O**ligosaccharides, **D**isaccharides, **M**onosaccharides **A**nd **P**olyols), are poorly absorbed in the small intestine. Under normal conditions these foods will increase fluid in the intestine and therefore increase gut motility and transit times. Because they are incompletely or not at all absorbed by the small intestine, FODMAPs travel to the colon where they are rapidly broken down. This alters the microenvironment, stimulates increased fluid secretion, and leads to distention which can trigger symptoms such as diarrhea.
- Fructose and lactose intolerance are two conditions that can worsen exercise-induced diarrhea. Eating or drinking anything with lactose or fructose before, during or immediately following an intense exercise may cause symptoms such as urgency and diarrhea. Sport drinks are often sweetened with fructose. You should carefully look at ingredients of these products to ensure that you are supplying your body with the fluids it needs without risk of side effects.

### **Preventing GI symptoms during intense exercise with nutrition**

In order to prevent GI symptoms such as diarrhea during exercise, some guidance can be provided.

- Avoid dehydration since it can cause unwanted GI symptoms. It is recommended to start any training session well hydrated.
- Avoid lactose and products containing them since lactose intolerance can cause problems during exercise.
- Avoid high-fructose foods, including drinks that are exclusively fructose.

Often, those in intense exercise training programs are preparing for a competition. To prevent GI symptoms such as diarrhea during the competition, the following guidance can be provided. It is important to remember that maintaining a healthy

well-balanced diet is essential for overall health and any long-term changes made to your diet or use of Over-the-Counter (OTC) medications should be discussed with your healthcare provider.

- Avoid high-fiber foods the day of competition and the days before competition. Since fiber is not digestible, any fiber consumed will pass through the digestive tract and cause increased bowel movements during exercise. This will accelerate fluid loss. Choose a low-fiber diet the day before or a few days before competition to train your gut. Foods such as regular pasta, white rice, and plain bagels are easier for the gut to tolerate in comparison to high-fiber alternatives.
- Avoid foods that are high in FODMAPs the day of competition and the days before competition, especially if you are diagnosed with another GI condition such as Irritable Bowel Syndrome (IBS).

### **Medical Treatment**

If you are experiencing diarrhea as an athlete, you should talk with your healthcare provider about your symptoms. They will discuss with you if further medical treatment should be taken. This will depend on several factors, including your age and severity of symptoms. Bleeding and persistent diarrhea may signal a severe condition and should always be brought to the attention of a doctor. Mild occasional symptoms should respond to altering the exercise routine, reducing the level of exertion, nutritionally training the gut for competition, or use of medication to decrease diarrhea. Loperamide, which is available over-the-counter to control diarrhea, has been shown to decrease stool frequency when taken prior to an intense exercise such as running in a race.

**Note:** As exercise levels become more rigorous, caution is advised for those who take, or are considering using either an antispasmodic or antimotility drugs. Antispasmodic drugs (such as atropine, hyoscyamine or dicyclomine) relieve, prevent, or lower the intensity of spasms in the smooth muscles of the body, such as those found in the bowel. They are often used to help control cramping in the abdominal area, urgency to have a bowel movement, and discomfort or pain that is often associated with diarrhea and are common symptoms in patients with IBS. Antimotility drugs (such as loperamide) slow down the movement of your gut by reducing the number of contractions. This will allow the fluid contents passing through the intestine more time to be absorbed, thus allowing less watery bowel movements. Talk to your doctor before taking with of these types of medication as they can lead to an inability to control core body temperature by inhibiting perspiration.

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