



The Gluten-Free Effect on Athletes: Improving Performance Through Diet

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Welcome!

Erin Elberson, PT

Nutrition, fitness and fun.

- *Master's in Physical Therapy*
- *Bachelor's in Health Sciences*
- *GREAT Allied Health Professional*
- *Diagnosed Celiac since 2004*

Blog:

www.GlutenFreeFitness.com

Tips:

Gluten Free and Fit 101



On Tonight's Plate...

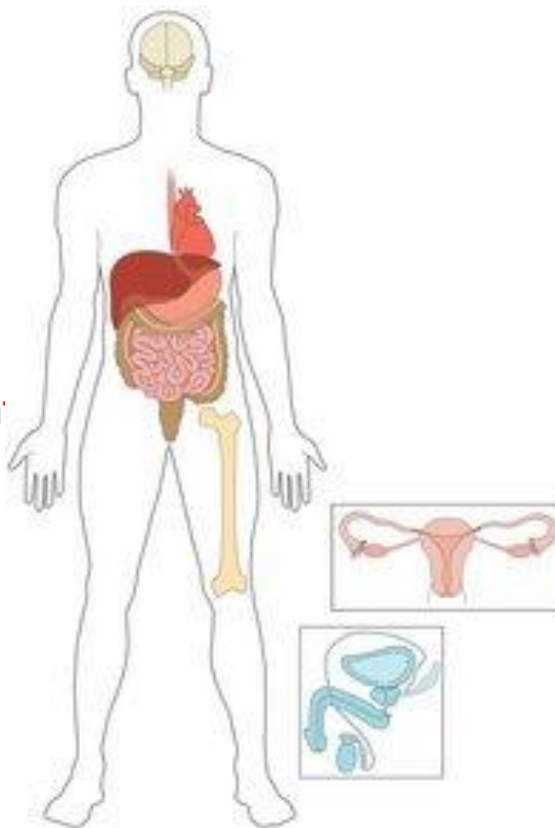
- *Are there any symptoms of undiagnosed celiac disease common among athletes?*
- *Why do you notice improvement after diagnosis and treatment?*
- *What can we learn from case studies and newsworthy performances?*
- *How can I stay gluten-free and keep training?*
- *What are some tips for smart and safe nutrition in and out of the sports arena?*
- *Answers to YOUR questions!*



Celiac Symptoms 101

GI Manifestations

- **Diarrhea**
- Abdominal pain/distention
- **Vomiting**
- Constipation
- Gas
- **Weight loss or weight gain**



Non-GI Manifestations

- Dermatitis Herpetiformis
- **Fatigue**
- **Osteoporosis**
- Dental enamel defects
- Developmental delays
- **Anxiety and depression**
- **Electrolyte imbalance**
- Infertility
- **Amenorrhea**
- Miscarriages
- **Tingling and numbness in extremities (peripheral neuropathy)**
- **Iron deficiency anemia (may notice bruising)**



Lack of correct diagnosis can cause:

- **Incorrect diagnoses of other conditions**
- **Complications of celiac**
- **Assumptions regarding symptoms**



Incorrect Diagnoses

- IBS
 - aka “I’m Bloody Stumped”
- “Nervous Stomach”
- “It’s all in your head”
- High strung athlete



Complications of Celiac

- Malabsorption of nutrients can lead to issues that are not generally associated with digestive problems such as:
 - Injuries that do not heal well or quickly
 - Impaired recovery from training
 - Electrolyte imbalance leading to cramping



Assumptions!

- Hard training athletes frequently are very goal oriented and continue training despite feeling poorly
- Symptoms may not be taken seriously
- Weight loss can be assumed to be part of training
- Eating disorders may be suspected due to weight loss, amenorrhea, bruising



Fortunately...

a (manageable) treatment exists!

Once a diagnosis of celiac disease or gluten intolerance has been established, **your food starts to go to good use!**



Proper Absorption of Nutrition...

Feeling Better = Performing Better

1. Moving to naturally gluten-free food can increase micro-nutrient and vitamin content of the diet by incorporating more whole foods.
 - *Fruits & Veggies*
 - *Nuts & legumes*
 - *Whole (naturally gluten-free!) grains such as quinoa, brown rice, amaranth*
2. Increased awareness of food intake can improve overall diet composition with less nutritionally dense processed food.



Proper Absorption of Nutrition...

Feeling Better = Performing Better

3. Injuries may heal faster due to improved nutritional absorption.
4. Fatigue can be decreased and/or eliminated with inclusion of rest and periodization principles along with diet.
 - *Cycling of seasonal training*
 - *Incorporation of active rest days and techniques*
 - *Importance of nutrition in recovery*



Case Studies:

What is there to know?

- Educated sports medicine staff have ability to:

1. Identify symptoms

2. Manage athlete effectively

- *Adjust to gluten-free diet*

- *Perform at best*

- *Maintain high quality of life*



Education = Solution

- GREAT Program for Allied Health Professionals
- Occupational Therapists & Physical Therapists



#1: Collegiate Tennis Player

Journal of Athletic Training, Leone et al., 2005

- Female 20 year old
- Complaints of back pain, fatigue, muscle aches and diarrhea
- Fully participated in National Collegiate Athletic Association Division I **despite** undiagnosed celiac disease
- Positive blood test but unable to undergo intestinal biopsy due to physician disagreement
- Implemented gluten-free diet
 - Marked decrease in fatigue and back and muscle pain



#2: Collegiate Volleyball Player

Journal of Athletic Training, Eberman & Cleary, 2005

- Female in National Collegiate Athletics Association Division 1
- Complaints of diarrhea and fatigue
- Weight loss of ~18 lbs in first 20 days of training
- Initial assumption of eating disorder
 - Severe fatigue affecting athletics, academics and everyday activity
 - After diagnosis required some time to correct nutritional deficiencies before return to sport
 - Athletic performance improved and exceeded pre-illness status



In The News...



- Gluten-free portrayed as a “trend” or “fad diet”
- Claims to:
 - Ease GI upset leading up to or during event
 - Minimize hypoglycemic effect that intense exercise can cause
 - Sustain blood-sugar levels



Why are the Radio Shack and Garmin-Transitions Cycling Teams GF?

- “Anti-inflammatory diet”
- Teams reported improved performance
- Prevalence of non-celiac gluten intolerance?



Anti-inflammatory Diet

- Dr. Allen Lim in the cycling world
- Chronic inflammation is thought to be the cornerstone for many common disease processes
- Reducing the irritation to the gut is beneficial for athletes who already are causing microtrauma to the body through training

USATriathlon.org, 2009

VeloNews, The Journal of Competitive Cycling, September 10, 2010

TheZoneDiet.com with Dr. Allen Lim, Garmin's Head Physiologist, April 2009



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Why are we seeing improved performance?

- *Science says:*
 1. The athletes were undiagnosed, but had celiac disease (95% of celiacs are undiagnosed)
 2. Eliminating gluten may be beneficial for everyone!
Wheat can be difficult to absorb



“Practicality” Says...

- Eliminating gluten means eliminating a large number of processed foods.
- Eating gluten-free results in greater attention paid in making quality food choices.



Spectrum of Celiac Disease is Growing...

- ***Gluten Intolerance:***

- Symptoms related to gluten exposure, which occur in the absence of celiac disease (e.g. normal IgA tTG/EMA and small intestinal biopsy).
- Poorly understood but appears not to be immune mediated or have significant nutritional or inflammatory consequences.

***Prevalence is unknown
and reports vary greatly.***

Celiac CME Central: Defining, Diagnosing, and Managing Celiac Disease, 2010, Leffler, Pietzak, & Murray



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Spectrum of Celiac Disease is Growing...

- **Gluten Sensitivity:**

- An umbrella term covering a variety of conditions that respond to gluten exclusion.
- May include persistently positive specific serology for celiac disease, in the absence of pathological changes in the intestine exposed to gluten.
- In contrast, celiac disease, or gluten sensitive enteropathy, is only one aspect of a range of possible manifestations of gluten sensitivity.

Celiac CME Central: Defining, Diagnosing, and Managing Celiac Disease, 2010, Leffler, Pietzak, & Murray



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“Athletes for Awareness”

Active, healthy lifestyles **are** possible on the gluten-free diet!

Sarah-Jane Smith

- Member of LPGA Tour
- Sits 66th on LPGA Tour money list
- Snacks on fruits, veggies, & rice cakes

The bottom line she says, “people in Australia truly understand the disease and in turn there are an abundance of delicious gluten-free food options, I hope I can help the NFCA get American caught up!”

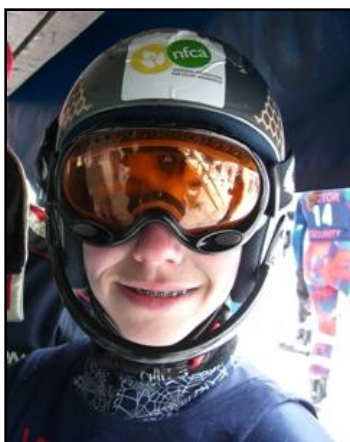


“Athletes for Awareness”

Active, healthy lifestyles **are** possible on the gluten-free diet!

Peter Bronski, “No Gluten, No Problem”

- Raising awareness and funds for celiac disease through participation in the Virgil Crest Ultra race, an ultra-distance endurance trail running event taking place this September 25th, 2010 in New York.
- Donate today at NFCA!



AJ Clemens

- 18 years old!
- March 2011: Competed in U.S. Ski and Snowboard Association Eastern Finals



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4 Gluten-Free Tips *for* Athletes & Coaches



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4 Tips...

...all gluten-free athletes & their coaches should know!

- I. Always prepare ahead and overestimate how much food you will need.



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4 Tips...

...all gluten-free athletes & their coaches should know!

2. Become familiar with common labeling lingo. Potential gluten ingredients include but are not limited to:

- *Oats and/or oat fiber*
- *Barley malt or syrup*
- *Cookie pieces*
- *Pretzel pieces*

**Many times products do not contain gluten ingredients, but are processed on shared equipment. Use at your own discretion!*



4 Tips...

...all gluten-free athletes & their coaches should know!

3. Do not eat community food at events.



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4 Tips...

...all gluten-free athletes & their coaches should know!

4. Keep in mind that other food intolerances can be very common.



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Smart Snacking & Nutrition

Always on the lookout for carbohydrates!

Great non-gluten containing sources include:

- Potato
- Sweet potato
- Quinoa
- Amaranth
- Teff
- Buckwheat
- Millet
- Sorghum
- Certified Gluten-Free Oats*
- Rice, especially brown, black & wild



Embrace the idea of making your own food. You can control:

1. Safety
2. Quality
3. Ingredient and nutritional profile



Recipes! Recipes! Recipes!

My Blog:



- *Trail Mix Protein Bars*
- *Portable Protein Pancake*
- *Chocolate Banana Protein Brownies*
- *Pumpkin Protein Bars*



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Trail Mix Protein Bars

The Wet Ingredients:

- 2 medium mashed ripe bananas
- 4 oz unsweetened applesauce
- 80 grams of diced dried fruit
- 1 tsp vanilla
- Half cup egg whites
- 1 TBSP coconut oil

The Dry Ingredients:

- 100 grams Blue Diamond Almonds, such as Dark Chocolate or Cinnamon Sugar
- Half tsp spoonable stevia, or sweetener of your preference
- 3 scoops of protein powder (approximately 1 cup)
- 2 tsp cinnamon
- 2 TBSP cocoa powder

Preparation:

- Preheat oven to 350 degrees and use non-stick spray on a 8x8 baking pan.
- Separately, combine well all of the wet ingredients, and the dry ingredients.
- Then add the two mixtures, mixing well.
- Bake for 15 minutes.



More Great Gluten-Free Resources

- *Gluten Free Girl's Granola Bars*
- *Jules' Gluten Free Granola Bars*
 - (Check out www.GlutenFreeHotProducts.com for a review soon!)
- *Elana's Power Bars*
- *Chocolate Coconut Protein Bar from Tropical Traditions*



Q & A

We asked and you answered!

What are your Top 3 Concerns regarding athletics, celiac disease and the gluten-free diet?



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What are your top 3 concerns?

- *Can you give some recommendations for children as well as adults?*
- *What is the best way to try and help my son gain weight (he's playing rugby) without loading him with too many carbs and sweets?*
- *How much protein should I be getting in my normal diet (female, 32 years old) for a pescetarian who exercises regularly?*
- *I exercise to lose weight and even though the gluten-free diet is healthier for me, there is, more often than not, more calories in gluten free products. However, if I skip having some sort of carbohydrate (gluten-free bread, gluten- free pasta, etc.) then I am left feeling hungry and shaky. Is this a common occurrence for gluten-free dieters?*
- *What is a good nutritional protein bar that is gluten free that isn't full of calories and sugar but a lot of protein?*



Coming Soon...

- NFCA & Erin Elberson, PT have teamed up and created a printable guide for athletes & the gluten-free diet!
- Check Athletes for Awareness blog for the posting:
 - Visit www.CeliacCentral.org
 - Click on “News” tab



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Ever wonder what energy products are GF?

Visit: www.CeliacCentral.org

Check Webinar Archives for:

Gluten-Free Status of Energy/Fitness Products

- *Easy to read listing*
- *Current as of August & September 2010*
- *Reviewed by Nancy Dickens, BS, RD, LDN*
- *Of course, please be sure always to check labels for latest ingredients!*



Thank You!!

Thank you!

Questions? Comments? Feedback?

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Upcoming Webinars!

*Veggies & Beyond:
Why Celiacs Need a Nutritionally Dense Diet*

with Melissa Marek, RD, Axxya Systems
Thursday, October 7, 2010 at 1 pm Eastern/10 am Pacific

*It's Not Just In Your Head:
The Psychological Impacts of Celiac Disease*

with Marie-Nathalie Beaudoin, PhD, BAFTTA Training Director
Sunday, October 17, 2010 at 8pm Eastern/5pm Pacific



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