Cross reactivity

Cross reactivity refers to the reaction of your body to foods that are similar to another protein and the case of Celiac Disease, your body reacts to anything that mimics the protein in gluten.

In what way are they similar?

Some foods have a **similar protein structure** to the gluten protein and when ingested, the body reacts in the same way as if it were gluten.

If you have Celiac Disease, your body produces antibodies against gluten. It's these same antibodies that recognize similar proteins in foods. This triggers a state of **heightened immunological reactivity** in gluten-sensitive individuals. In other words, other foods they’re eating can cause a similar gluten-induced reaction.

Cross reactivity also refers to foods that aren't necessarily similar in protein structure **but your body reacts in a similar way** to the food as it would to gluten.

Let's first look at some foods that are common cross reactors.

Oats and Corn

The protein in oats is called avenin. It is part of the prolamin family which includes wheat, barley and rye.

Oats have a **similar amino-acid structure** as gluten.

Oats are often contaminated with gluten because they may be processed in the same facilities as gluten-containing grains like wheat, rye, and barley.They are also often grown alongside other crops. This is called cross contamination and is discussed in this course.

A number of companies have begun to process oats with clean equipment and grow them in fields designated gluten-free. These oats can be marketed as gluten-free and must contain less than 20 ppm of gluten.

Some with Celiac Disease react in the same way to oats as they do to Gluten, although this only a small fraction of those with Celiac Disease. [1] [2]

The protein in corn is called zein. It is also naturally gluten-free but again the protein structure is similar to gluten and so the body reacts in the same way.

IgA antibodies from some with Celiac disease can recognize zeins. So while oats and corn have a similar protein structure, there are some things that also cause reactions. [3] [4]