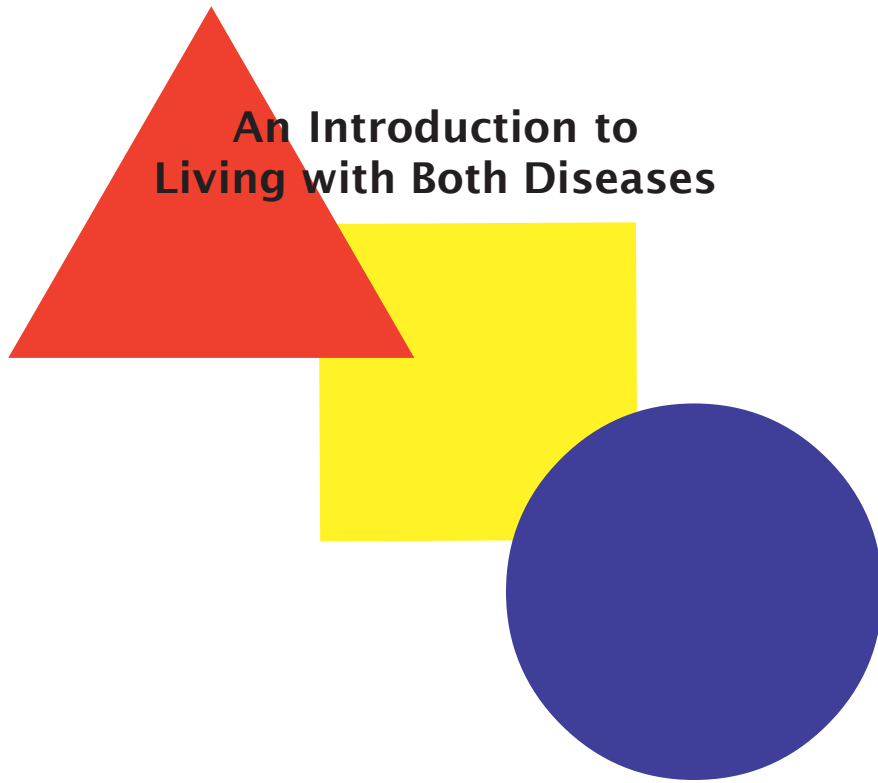


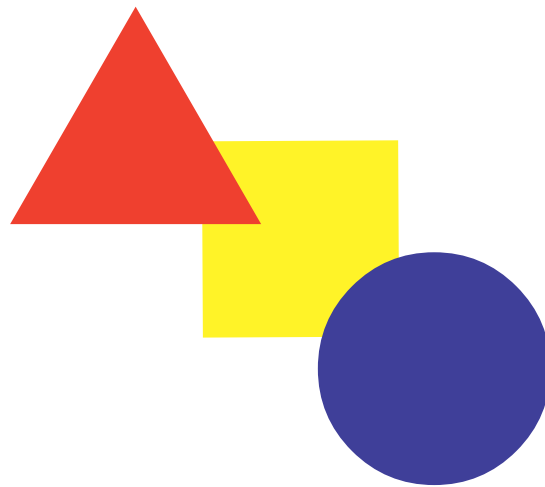
Diabetes, Celiac Disease, and Me!

**An Introduction to
Living with Both Diseases**



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An Introduction to
Living with Both Diseases



Produced through the cooperative efforts of:

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"Dedicated to Chipper, who was diabetic and probably celiac and whose health problems and short life inspired his sister Sara to pursue awareness of both diseases."

The authors thank the following people for their support for the production of this booklet. Their reviews, suggestions and encouragement have kept us going.

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Margie Sladek, RN, AADE

Mary Thronton, RN, AADE

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Introduction

Healthy Living with Celiac Disease and Type 1 Diabetes

Many publications on the dietary treatment of diabetes are in circulation and a growing number are becoming available for celiac disease. Now, four leaders in the celiac community have given us a good resource that addresses the special needs of both of these diseases. They have expanded their focus to provide this first practical management source, of which I am aware, in response to a growing need from celiacs with diabetes.

Recently the medical community has appreciated the high association of CD with a variety of autoimmune diseases including Type 1 Diabetes Mellitus (DM). The question has been raised whether the timely diagnosis and treatment of CD might prevent the onset of these autoimmune diseases. For example, some scientists speculate that CD allows formation of antibodies to the insulin-producing cells of the pancreas. It is hoped that timely diagnosis and early treatment of CD might prevent the formation of antibodies to our own cells and thereby avert the onset of autoimmune diseases such as Type 1 DM. Controlled celiacs without Type 1 diabetes mellitus will gain weight as their bowel heals, malnutrition resolves, and their metabolism returns to its baseline state. In those genetically predisposed, the celiac could become insulin resistant and develop Type 2 DM.

The monograph provides a clear straightforward explanation of celiac disease and of the types of diabetes and gives concrete recommendations for life-style changes. Particularly helpful were the suggestions for unrefined carbohydrates found in bean or corn based products, which are absorbed more slowly than the classic (GF) refined carbohydrates, such as rice. Unrefined carbohydrates give a more gradual rise in blood sugar as compared to the glucose spikes seen on a refined carbohydrate diet. The slow rise in blood sugar is more easily controlled with insulin or medications and helps diabetics avoid postprandial elevation of blood sugars. If high blood sugars are avoided, diabetic complications can be prevented. Sample meals are illustrated. The importance of exercise is stressed. The reader is encouraged and motivated to follow a clear and concise day-to-day care plan.

In conclusion, these lifestyle guidelines offer a healthy and

nutritionally sound guide to successful celiac and diabetes control. They should be used with the approval and concomitant guidance of a healthcare team. Hopefully we can all help ourselves avoid the complications that follow inadequate treatment of these diseases. These authors should be applauded for their efforts to meet the special needs of people with these two chronic diseases.

Thanks,
Emmy Bell, MD
Assistant Clinical Professor of Medicine at the University of Alabama at Birmingham, Certified in Internal Medicine 1989, and in Nephrology 1992.

Diabetes, Celiac Disease and Me

The incidence of Type 1 Diabetes and Celiac Disease occurring together is about 7 to 12% in persons with either Celiac Disease or Diabetes. Both diseases are found in the same region on a specific HLA gene. Many other autoimmune diseases can also be found at this location, giving rise to increased susceptibility to a number of “associated diseases.”

What is Diabetes?



Diabetes is a metabolic disorder. In Diabetes, the process where digested foods (primarily sugars and starches) are changed to glucose (sugar) is disrupted. Glucose is the main source of fuel needed by the body to function. In people with Diabetes, the body is unable to metabolize food normally because insulin is ineffective or lacking. Insulin is a hormone produced by the beta cells in the pancreas. High blood glucose levels characterize diabetes. The three most common categories of Diabetes are Type 1, Type 2, and Gestational Diabetes.

Type 1 Diabetes (sometimes called Juvenile-Onset or Insulin-Dependant Mellitus) usually develops before the age of 30, but can occur at any age. Type 1 Diabetes is an “autoimmune” disease. An autoimmune disease requires at least two factors to be present: 1) a genetic predisposition to carry the gene and 2) a stressor to activate the process. The body’s immune system, which normally protects a person from foreign substances, mistakenly attacks and destroys its own beta cells. When the cells are destroyed, the pancreas can no longer produce insulin. People who have Type 1 Diabetes must take insulin to stay alive.

Currently, Type 1 Diabetes is the most common form of Diabetes seen occurring with CD. As persons with CD age and more people are diagnosed with atypical symptoms, we can expect to see more Type 2 Diabetes. Type 2 Diabetes, unlike Type 1, is not an autoimmune disease.

Type 2 Diabetes, (also known as Non-Insulin-Dependent Diabetes Mellitus or Adult-Onset Diabetes) usually develops after the age of 40, but

may develop in younger people, especially among minorities and overweight persons. There are many factors that may contribute to having Type 2 Diabetes – including being overweight, poor dietary habits, decreased activity, age, and excess body fat. Any one or more factors may contribute to developing this disease. Most people who develop Type 2 Diabetes are insulin resistant. However, some simply cannot produce enough insulin to meet their body’s needs, and others have a combination of these problems. Many people with Type 2 Diabetes can control the disease through diet and exercise. Some must take oral medications or insulin to control blood sugar levels.

Gestational Diabetes develops during pregnancy. The mother’s blood sugars rise because of hormones secreted during pregnancy. The mother cannot produce enough insulin to handle the higher blood sugar levels, making the pregnancy “high risk.” Gestation Diabetes usually requires the mother to control her diet, exercise, and blood sugars during the pregnancy. Sometimes insulin is required. Pregnant women are never given oral diabetes medications. Gestational Diabetes usually goes away after pregnancy; however, each additional pregnancy may lead to developing gestational diabetes again. About 60 percent of women who have had Gestational Diabetes eventually develop Type 2 Diabetes.

Blood sugars that are not well controlled can lead to a number of other problems. The damage done as a result of poorly controlled blood sugars can damage any organ or body system causing a number of complications, including poor circulation, heart and kidney disease, and loss of vision.

Gastroparesis is another complication. This condition disrupts the normal movement and digestion of food. It may cause rapid swings in blood sugars, medications not respond as expected, or changes in the diet to be necessary. Common symptoms may include diarrhea, bloating, and vomiting. It is possible for symptoms of Gastroparesis and Celiac Disease to be confused.

Medications for Diabetes

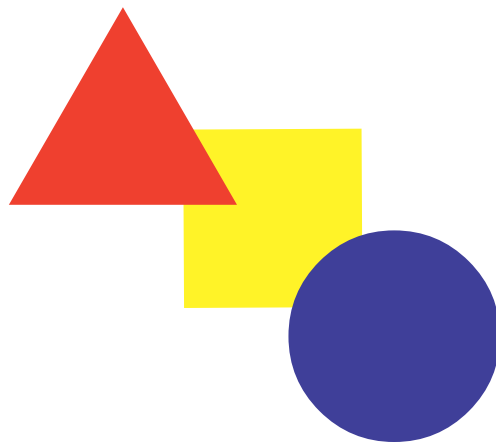
Two types of medications used for Diabetes are oral agents (pills) and insulin. Insulin is used for Type 1 Diabetes. There are a number of types of insulin available. The main difference in insulins is how fast they take effect and how long they last before needing more. Insulin is given by injection or

with an insulin pump. Working with a Diabetes Team is very important in fine-tuning insulin schedules. Persons with diabetes should routinely have a blood test called Hemoglobin A1C. This test helps you to evaluate your diabetes control over a 3-month period.

What is Celiac Disease?

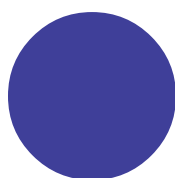
Celiac Disease (CD) is an autoimmune disease. A person with CD is unable to digest certain proteins found in wheat, rye, barley, and possibly oats (WROB) grains. A person has a genetic predisposition to have the disease and a stressor activates the disease. The stressor may be a long term illness, viral infection, emotional stress, pregnancy or major illness and/or surgery.

CD (more correctly called Gluten Sensitive Enteropathy - GSE) can take two forms: CD and Dermatitis Herpetiformis (DH). Persons with CD may or may not have symptoms. Common symptoms include diarrhea, weight loss, abdominal pain, gas and bloating. Other persons may only have chronic anemia, fatigue, no weight loss, constipation, and early bone disease. Persons with DH have symptoms mostly on the skin, in the form of watery, itchy blister patches. In both forms, the small intestinal villi (thousands of small hair-like fibers that aid in the absorption of nutrients) are damaged by any ingestion of gluten proteins found in the WROB grains. This damage, if left untreated or undiagnosed, can lead to malnutrition and other health problems. The only effective long-term treatment for CD and DH is a gluten-free diet. Persons with DH may also need to take a medication, such as Dapsone. This drug is only effective in relieving the irritation to the skin. It does not prevent the damage to the small intestine.



Signs of a Malabsorption Problem

	Diabetes	Celiac Disease
Weight Loss	✓	✓
GI Symptoms (Abdominal pain, Bloating, Cramping, Diarrhea, or Constipation)	✓	✓
Ketones in urine (from protein wasting)	✓	
Less insulin needs, despite large food intake	✓	✓
Abnormal labs	✓	✓



Role of Exercise

Exercise is one of the most important factors in your total health care plan. It need not bring up unpleasant images of dread. Exercise can be a sociable fun activity or one where you are finally alone with yourself, able to remove the stressful thoughts and situations of your everyday life.

Something as simple as walking 30-45 minutes three times per week will add up to positive healthful benefits. Adding together small segments is acceptable.

Variety is the spice of life. The main types of exercise you can include in your plan are: Aerobic, also called cardiovascular , which can be accomplished using cardio equipment or activities such as walking or swimming; Anaerobic, an intense workout using 80-100% maximum heart rate as well as weight training, also called weight bearing exercises. Some of the benefits of an exercise program include reduction of: weight, cholesterol, blood pressure and blood sugar; decreased risk of getting osteoporosis; increased energy, flexibility, balance, and muscle tone. Finally, it can also contribute to a general

feeling of well-being, relaxation, positive mental attitude, and better quality of sleep.

Schedule activity into your day. Use the stairs rather than the elevator. Park a distance away from your destination. Plan your exercise activities with a friend, using the buddy system. You can mall-walk or play sports. Some folks will enjoy a fitness center where personal trainers can address your specific goals. Something as simple as playing with a ball is good for you. Equipment available such as a Resist-A Ball can help you stretch, gain balance and flexibility. Remember to warm up, stretch and cool down before your set is complete. Drink plenty of water before, during and after exercise!

Get in touch with YOUR body. Learn to relax and listen to what your own body tells you. Activities like Yoga, Tai Chi, Quigong and Meditation are becoming popular and add to a healthful atmosphere. One of the greatest benefits of ALL these activities comes from the serotonin released from your brain that leaves you with an enhanced mood and a positive mental outlook.

Exercise is very important to good health, whether you have Diabetes, Celiac Disease, or no health problems. Exercise in general, helps give people a better outlook on life, provides a means of weight control, reduces risk of heart disease and osteoporosis, and keeps our body in good shape as we age.

Exercise in Diabetes helps to control blood sugars and weight. If you lost weight before your diagnosis of Celiac Disease, exercise can help make sure the weight you may gain back is more likely to be muscle than fat. Most people benefit from 30 to 60 minutes of moderate exercise 3 to 4 times a week. More can be better. Discuss what type of an exercise program is best for you with your Health Care Team.

Nutrition – Diabetes and Celiac Disease



Both diseases require dietary modifications for proper management. The control or elimination of certain foods will keep the person with either disease healthy. Even with the dietary changes required, each diet is very healthy and provides adequate nutrition. Good dietary practices apply to any diet. They include: getting a variety of foods, including fiber-rich foods; moderation

in eating fats, sweets and concentrated sugar sources, alcohol, and salt; and eating the proper amount of foods to match calorie intake to energy needs, in order to maintain reasonable weight.

What is a Diet for Diabetes?

The diet for persons with Diabetes has changed a lot in the last 50 years. At one time, measuring all foods very closely controlled the diet. The diabetic exchange system is slowly being replaced with other dietary management plans. One of the most exciting plans is **Carbohydrate Counting**. Blood sugar monitoring is a must, no matter what dietary management plan is chosen, to know how well the diabetes is being controlled. This should include periodical Hemoglobin A1C testing. A diet for diabetes, which uses Carbohydrate Counting or a similar system, will work very well for a person with diabetes and celiac disease.

Types of Diets for Diabetes

Although diet plans for diabetes have changed a lot in recent years, a number of diet methods can control blood sugars. Just as there are medication options, there are also diet options. A diet plan for diabetes is most successful when it takes into account your life-style, eating habits, and calorie needs. Sometimes making simple changes to your current diet, to make it healthier, is all that is needed. Other times, reducing fat intake or total calories, by changing serving sizes is enough. Some people find an Exchange Diet and planned menus more helpful.

A newer method, giving a greater amount of personal choice in foods is carbohydrate counting. Carbohydrate counting involves developing meal plans based on a total number of carbohydrates you will eat for that meal. It is used in conjunction with medicines to control blood sugars. This plan requires you to be willing to read labels and keep track of the food you eat at each meal based on the carbohydrates allowed for that meal. It could be designed to look like a meal plan that all of us should eat, including protein source, starches, fruits, vegetables, dairy and fats. It also could look like a “special treat” meal that we know is not a healthy way to eat. Carbohydrate counting allows more flexibility in meal sizes, and number of meals in order to meet personal eating styles. This system requires a highly motivated person.

Example: If you are allowed 65 grams of carbohydrates for lunch, this could be:

A “healthy” meal:	
Whole sandwich with lean meat and Mayo	30 gms
Carrot Sticks – ½ cup	5 gms
Med. to large apple	30 gms
Diet Cola	0 gms
TOTAL CARBS	65 gms

A “special treat” Meal:	
1 c. Chocolate milk	26 gms
2 slices vegetable pizza, thin crust	40 gms
TOTALCARBS	66 gms

A basic to any diet plan for Diabetes is learning a system and understanding serving sizes.

It is strongly recommended you work with a Diabetes Educator and Diabetes-qualified dietitian/nutritionist to develop the best eating and medication plan for you.

What is the Diet for Celiac Disease?

The diet for CD can seem overwhelming to many people newly diagnosed with this disease. The diet modification for CD requires a person to avoid all foods and by-products made from wheat, rye, barley, and possibly oats. Contamination is also a concern, because any ingestion of the gluten-proteins found in these grains will cause damage to the small intestine. The damage is reversible; however, complete healing may take as long as 6 months or more. The more damage done, the greater the chances of malabsorption of other nutrients and resulting malnutrition to occur. This diet does require you to omit some foods from your diet, but there are substitutions allowed. Today the recipes are excellent for this diet. Often people not aware they are eating gluten-free foods will comment on how tasty the food is. This diet does challenge a person to learn to do at least some cooking and baking.



Celiac Diet

The gluten-free diet for Celiac Disease at first sight seems very restrictive and difficult, although no one would argue that it is more challenging. Many people rave about the taste and quality of the foods on a gluten-free diet. Just as you work to gain control over your Diabetes, you must also work to gain control over the gluten-free diet. If done in step-by-step increments, it is not so overwhelming. Detailed gluten-free diet information is available from the American Dietetic Association or the support groups listed in Appendix A-3. Again working with a nutritionist/dietitian knowledgeable with Celiac Disease is very helpful in making the transition to this diet.



You will more than likely find that initially when combining diabetes therapy (medication, exercise, and diet) with a gluten-free diet, blood sugars may have high and low swings, sometimes at unpredictable times. Swings may be partly due to the change in the foods themselves. Often the flours and starches used are lower in fiber and can cause blood sugars to rise faster. The gluten-free diet may also be slightly higher in fats. Learning way to reduce the fats used in baking can be an easy way to reduce the total fat in your diet.

Learning to live with either diet may increase the time spent shopping for food. Plan ahead. Allow yourself extra time to read labels. Take a grocery list. Go shopping either alone or with a supportive person. The first few times can seem to take forever.

Combining the Diet for Diabetes and Celiac Disease

Although it appears that combining these two diets would be very difficult, it need not be. Thinking about these diets as one, instead of two is helpful. Think about it as if you would if you were on a weight-controlled diet with food allergies. People combine these two diets easily. You can combine the Diabetic diet and gluten-free diet just as easily. Following are suggestions on doing this.

- 1. Learn what a healthy diet is for everyone.** If you have a basic understanding of what a healthy diet includes, you can better make

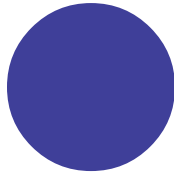
decisions on what items are most important to your general health and what you need to focus your attention on. Guidelines for a healthy diet include: eating a variety of foods, eating calories to meet your energy needs, maintaining a reasonable weight, eating plenty of fiber, and limiting your intake of concentrated sweets and fats.



As an example: It is strongly recommended that people limit sweets and desserts. Sweets and desserts are generally high calorie and generally high fat. Limiting these foods make it easier to control weight. The plus side of this for a person with Diabetes is that it also helps to make blood sugars easier to control. For the person with Celiac Disease, the focus on desserts may be less.



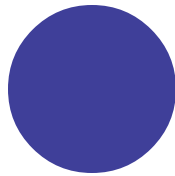
As an example: Fiber is very important in the diet. The best sources are fruits, vegetables, legumes, and whole grains. Knowing this, you may choose to concentrate on having lots of fresh fruits, vegetables, and legumes in your diet. The plus side of this is the fiber is good for fighting heart disease, cancers, and controls weight. It may also help to regulate blood sugar swings, by slowing digestion and absorption. High fiber foods, except whole grains, are allowed on both diets.



2. Learn to read labels. Learning to read labels will educate you about calories, but more importantly, what the manufacturer considers a serving. You will learn the amounts of fat, carbohydrate, and other nutrients. This information will help you be aware of how your serving size compares to what the manufacturer thinks a serving size is. Being aware of the fat in products helps to make smart food choices for reducing your intake of fat. This bit of information may be all it takes to reduce body fat weight. Learning carbohydrate information helps to be aware of foods with similar carbohydrate counts. It can help to make healthier choices. Some people use carbohydrate counting to help control blood sugars. This system allows many flexibility and personal choices.



Example: 1 can of regular cola has 39 grams of carbohydrates, while a can of diet cola has no carbohydrates in it. You can choose to have a diet cola and a whole sandwich for the same amount of carbohydrates found in the regular cola. This choice is acceptable in the diabetic



diet and the gluten-free diet (when the bread and filling are known to be gluten free). It is moderate in concentrated sweets and well balanced.

Example: A serving of your favorite gluten free cereal may only have 2 grams of fiber, while a serving of baked beans may have 8 grams of fiber. You may choose to have both in one day. Knowing that you will get about the same nutritional value from each, you may want to have a large serving of the beans instead of the cereal. Add raisins to the cereal for added fiber.



- 3. Consider Small Frequent Meals.** Small frequent meals often are helpful in controlling hunger, total calorie consumption, and blood sugar levels. Rather than eat 3 meals a day, most persons with Diabetes are encouraged to have 4 to 6 meals or snacks each day. When a person has been in a malnourished state, they often eat large amounts frequently to help provide the body with the calories it needs. As healing and the return of normal digestion and absorption occur, it can be difficult to break this habit. One way to become aware of what and the amount you are eating is to keep a record or log of what you are eating. Just seeing it on paper can be a very effective weight control tool.

Keeping these suggestions in mind helps to make making changes in your diet a bit easier. It becomes a way of life rather than a diet.

Sample Combination Diet Plans

Here you can compare two diet plans. First, the diabetic meal plan. Then the same plan modified to make it meet guidelines for both gluten free and diabetes. Specific product names are not used here. Products used in the gluten free diet must periodically be checked to be sure that they are gluten free and/or have remained safe for a gluten free diet. Remember that calories needed are individual for each person. Your caloric needs are based on several factors: height, weight, age, gender, activity level, weight change needs and health issues. Consult with a Dietitian/ Nutritionist to determine your calorie needs. This person can also help you figure your fat, carbohydrate, and other nutritional needs. See Appendix A-1 for additional menu ideas.

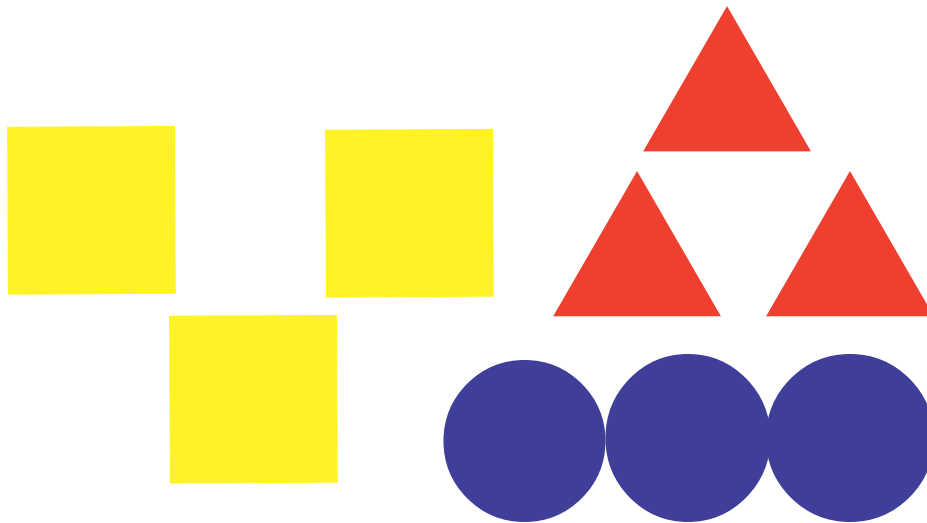
	Diabetic Diet*	Celiac Diet
Breakfast	Corn cereal, hot Milk Banana Muffin	Corn cereal, hot Milk Banana GF muffin
Lunch	Grilled chicken Bun French fries Diet drink	Grilled chicken GF Bun GF French fries GF diet drink
Afternoon Snack	Fresh orange	Fresh orange
Dinner	Steak Baked potato Corn Green salad with dressing Iced tea	Steak Baked potato Corn Green salad with GF dressing Iced tea
Evening Snack	Bagel Peanut butter	GF bagel Peanut butter

This booklet is offered as an introduction to coping with the dual dietary restrictions of diabetes and celiac disease. Those of us who worked on the project understand the complexities of your challenge. Cynthia and Janet have celiac disease. Cynthia, as a registered dietitian, has training in diabetes education. Sara and Lynn are celiac diabetics themselves. Sara began the project with the Houston chapter and her diabetologist in terms of offering a questionnaire to share coping strategies. Working with Cynthia Kupper, R.D., Executive Director of the Gluten Intolerance Group, combined all our ideas to give you specific information. This project has been a labor of great interest and love for all of us.

Striving to follow one diet with both sets of restrictions will result in balancing blood sugar levels and thus ensure improved overall health. We urge you to contact your local medical facility with good diabetes educators and your local celiac support group. National support groups can give you referrals in your own area. The Internet ListServ for Celiac Disease and Diabetes offers a wonderful opportunity for ongoing support, answers to your questions, and receiving recipes acceptable to both diets.

We believe the key to coping successfully with both Diabetes and Celiac Disease is education about the disorders and diet issues. We hope we have succeeded in assisting you with the first part of your education.

The bottom line is: YOU ARE NOT ALONE!



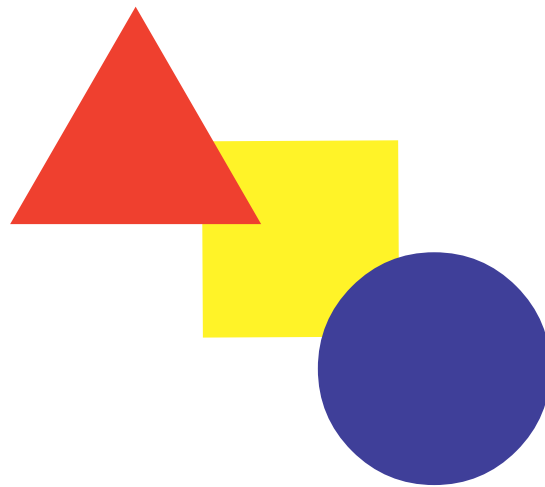
Appendices

A-1 Menus

**A-2 Carbohydrate Information on Selected Gluten Free
Foods and Ingredients**

A-3 Resources

A-4 Gluten Free Product Manufacturers



A-1 Menus



*These menus are samples of those used in a carbohydrate counting instructional book for persons with diabetes. They illustrate that menus can be easily converted to be gluten free. Carbohydrate and serving amounts are not included, as each person's diet should be individualized for their needs.

	Diabetic menu	Gluten free menu
Day 1		
Breakfast	Oatmeal Milk Orange juice Toast	Rice cereal, hot Milk Orange juice GF toast
Lunch	Sandwich Potato chips Milk Apple	Sandwich (with GF bread, meat, and condiments) Potato chips (plain) Milk Apple
Afternoon Snack	Blueberry muffin	GF Blueberry muffin
Dinner	Spaghetti Marinara sauce Garlic bread	GF Spaghetti GF Marinara sauce GF Garlic bread
Evening Snack	Graham crackers	GF Mock Graham crackers

	Diabetic menu	Gluten free menu
Day 2		
Breakfast	Toaster waffles Butter Coffee	GF toaster waffles Butter Coffee
Lunch	Macaroni and cheese Green salad with dressing Apple juice	GF Macaroni and cheese Green salad with GF dressing Apple juice
Afternoon Snack	Diet cola Cookies	GF Diet cola GF Cookies
Dinner	Baked chicken Steamed rice Butter Bread Iced Tea	Baked chicken Steamed rice Butter GF Bread Iced Tea
Evening Snack	Popcorn Diet soda	Popcorn GF Diet soda

	Diabetic menu	Gluten free menu
Day 3		
Breakfast	Corn Flakes Skim Milk Orange and Grapefruit Sections Coffee	GF Corn Flakes Skim Milk Orange and Grapefruit Sections Coffee
Lunch	Soft Taco Green Salad with Dressing Low Calorie cola Apple	GF Soft Taco on Corn Tortilla Green Salad with GF Dressing Low Calorie Cola Apple
Afternoon Snack	Graham Crackers Peanut Butter Iced Tea	GF Rice Bran Cookies Peanut Butter Iced Tea
Dinner	Broiled Fish Steak Baked Sweet Potato Cole Slaw Iced Water Watermelon	Broiled Fish Steak Baked Sweet Potato GF Cole Slaw Iced Water Watermelon
Evening Snack	Pretzels Diet soda	GF Pretzels GF Diet soda

A-2 Carbohydrate Information on Selected Gluten Free Foods and Ingredients



This information is provided as a basic guide to carbohydrate information to gluten-free foods. Every product is different. **Reading labels is essential.** Consult a dietitian/nutritionist for carbohydrate information on other gluten free products.

Food	Measurement/Serving	Carbohydrates (grams)
Gluten Free Ingredients		
Rice Flour - White	1 cup	70
Rice Flour - Brown*	1 cup	110
Rice Bran*	1 ounce	141
Potato Flour	1 cup	80
Potato Starch	1 cup	128
Tapioca Flour	1 cup	99
Corn Flour (masa)	1 cup	123
Cornmeal*	1 cup	181
Corn Starch	1 Tablespoon	8
Amaranth**	1 cup	129
Sorghum	1/2 cup	70
Soy Flour**	1 cup	28 - 33
Arrowroot flour	1 cup	113
Sweet Rice flour	1 cup	91

Food	Measurement/Serving	Carbohydrates (grams)
Quinoa**	1/2 cup	59
Garfava Flour (combination bean flour)**		
Egg Replacer (Ener-G Foods)	1-1/2 teaspoon	94
Xanthan Gum	2 Tablespoons	85
Yeast Breads		
Pizza Crust	2 slices of 12"	30
Sandwich bread	1 slice	16
Bread Sticks	1 ea 6" stick	18
Hamburger Buns	1 bun	29
Bagels	1 3"	52
English Muffins	1	54
Raisin Bread	1 slice	35
French Bread	1 slice	13
Quick Breads		
Yeast free Hamburger Buns	1 bun	40
Yeast free Sandwich Bread	1 slice	20
Irish Soda Bread	1 slice of 7" round	40

Food	Measurement/Serving	Carbohydrates (grams)
Corn bread	1 1-1/2x1" pc	25
Drop Biscuits/Spoon Bread	1 slice of 9" round	18
Zucchini Bread	1 slice	53
Pizza Crust (Yeast Free)	2 slices of 12"	30
Basic Muffin	1 std. Muffin cup	36
Pancakes (with or without eggs)	2 - 4"	24
Waffles (with or without eggs)	1	48
Baked donuts w/ frosting	1	64
Baked donuts w/o frosting	1	47
Banana Bread (w/ or w/o eggs)	1 slice	52
Biscuits	1	18
Basic Quick Bread	1 slice	35
Basic Scone	1 slice of 8" pie	44
Flavored Scones (meat or cheese)	1 slice of 8" pie	38
Pretzels	25 each	70
Misc. Starches		
Crackers - handmade	1 1-1/2" cracker	6
Crackers - manufactured	6 each	60

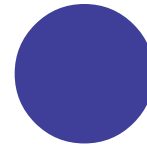
Food	Measurement/Serving	Carbohydrates (grams)
Spaghetti - rice	1/2 cup	37
Macaroni - rice	1/2 cup	38
Cookies		
Basic Cookie	1 small cookie	22
Chocolate Chip Cookies	1 small cookie	20
Brownie	1" square	33
Graham Crackers	1 of 24	11
Gingersnap/vanilla wafers	1 small cookie	20

*Extra fiber may slow absorption and aid glucose control.

** Higher protein may slow absorption and aid glucose control.

A-3 Resources

For Information about Celiac Disease Contact:



Gluten Intolerance Group
15110 10 Ave SW, Suite A
Seattle WA 98166-1820
206-246-6652, Fax: 206-246-6531
Email: gig@accessone.com
www.gluten.net

Celiac Sprue Association/USA, Inc.
PO Box 31700
Omaha NE 68131-0700
402-558-0600, Fax: 402-558-1347
Email: celiacs@csaceliacs.org
www.csaceliacs.org

Celiac Disease Foundation
13251 Ventura Blvd Suite 1
Studio City CA 91604-1838
818-990-2354, Fax: 818-990-2379
Email: cdf@celiac.org
www.celiac.org/index.html

American Celiac Society Dietary Support Coalition
P.O. Box 23455
New Orleans, LA 70183
AmerCeliacSoc@netscape.net

For Information about Diabetes Contact:

American Dietetic Association
P.O. Box 97215
Chicago, IL 60678-7215
www.eatright.org
800-366-1655
Dietitians in Gluten Intolerance Diseases (DIGID)
Dietitians in General Clinical Practice – DPG
American Dietetic Association
www.eatright.org

American Diabetes Association
1701 North Beauregard Street
Alexandria, VA 22311
1-800-DIABETES (1-800/342-2383)
www.diabetes.org

American Association of Diabetes Educators
100 West Monroe Street
Fourth Floor
Chicago, IL 60603-1901
312- 424-2426

Other Valuable Resources

The Food Allergy Network
4744 Holly Avenue
Fairfax VA 22030-5647
703-691-3179; fax 703-691-2713
Covers wheat ‘allergies.’

Celiac Sprue, A Guide Through the Medicine Cabinet
c/o Marcia Milazzo
P.O. Box 1306
Medford, NJ 08055.
This is an excellent resource for GF medications, both over-the-counter and prescription.

Against the Grain – The Slightly Eccentric Guide to Living Well without Gluten or Wheat. By Jax Peters Lowell. Henry Holt and Company

Gluten Free Living Newsletter, PO Box 105, Hastings-on-Hudson, NY 10706; Edited by Ann Whelan

Sully’s Living Without, a magazine for people with allergies, intolerances and chemical sensitivities.
1202N 75 Street, Suite 294
Downers Grove IL 60516

Celiac Diabetes Internet Support Group. Subscription information.
To Join List mail to:
LISTSERVE@MAELSTROM.STJOHNS.EDU Subject: Celiac-
Diabetes, your first and last name.
“Living Healthy With Celiac Disease” by Wendy L. Wark
ANAFECT MARKETING
115 Andover Drive, Exton, PA 19341.

Countdown magazine
Juvenile Diabetes Association
1-800-223-1138.

Diabetes Interview
P.O. Box 469050, Escondido, CA 92046
800-488-8468.

What? No Wheat? by LynnRae Ries
800-777-1242
www.whatnowheat.com

Gluten Free Cookbooks - (this is not all inclusive)

The Gluten Free Gourmet Series – a series of 5 books written by Bette Hagman. The Gluten Free Gourmet; More from the Gluten Free Gourmet; The Gluten Free Gourmet Cooks Fast and Healthy; The Gluten Free Gourmet Bakes Bread; The Gluten-Free Gourmet Makes Dessert. Henry Holt and Company. New and revised books contain nutritional information

Wheat-Free Recipes and Menus; Special Diet Solutions: Healthy Cooking Without Wheat, Gluten, Dairy, Eggs, Yeast or Refined Sugar; Special Diet Celebrations by Carol Fenster; and “Food Allergy Field Guide, a Lifestyle Manual for Families” by Theresa Willingham, published by Savory Palate, Inc. (www.savorypalate.com). Recipe books by Carol Fenster contain nutritional information. Savory Palate, 8174 S. Holly, Suite 404, Centennial CO 80122-4004. 800/741/5418 or 303/741/5408.

Gluten-Free Diet, A Comprehensive Resource Guide by Shelley Case, BSc, RD. Canadian and American diet and ingredient information. www.glutenfreediet.ca ; E-mail: info@glutenfreediet.ca

Kids with Celiac Disease (Woodbine House)

Wheat-Free, Worry-Free: The Art of Happy, Healthy Gluten-Free Living (Hay House) Books by Danna Korn

The Gluten-Free Dessert Cookbook” (no nutritional values) “Wheat-Free, Gluten-Free Reduced Calorie Cookbook (no nutritional info) “Wheat-Free, Gluten-Free Cookbook for Kids and Working Adults” (with nutritional values)

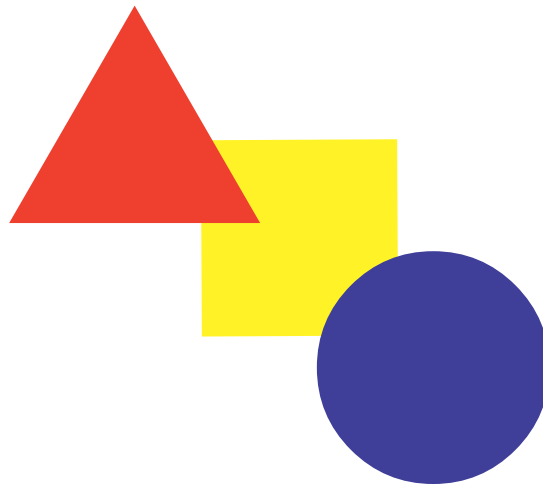
www.glutenfree.homestead.com/homepage.html

E-mail: gfcookbook@hotmail.com

Sherri Sanderson “Incredible Edible Gluten-Free Food for Kids” (Woodbine House) www.woodbinehouse.com (No nutritional values)

CSA/USA Pantry Collection – a series of cookbooks produced by CSA/USA, Inc. PO Box 31700, Omaha NE 68131.

Glutenfreeda (an online cooking magazine). www.glutenfreeda.com



A-4 Gluten Free Product Manufacturers

Amazing Grains
PO Box 10098
Bozeman MT 59717
406-676-3536
www.montina.com

Authentic Foods
1850 W. 169th St. Suite B
Gardena CA 90247
310-366-7612
ww.authenticfoods.com

Bob's Red Mill Natural Foods
5209 SE International Way
Milwaukie, OR 97222
(800) 349-2173
www.BobsRedMill.com

Dietary Specialties
888-640-2800
www.dietspec.com

'Cause You're Special' Gourmet
Gluten Free Foods
P.O. Box 316,
Phillips, WI 54555
866-NO WHEAT
www.causeyourespecial.com

El Peto Products
(519)748-5211
www.elpeto.com

Ener-G Foods Inc.
5960 First Avenue South
P.O. Box 84487
Seattle, WA 98124-5787
(206) 767-6660 or 800-331-5222
www.ener-g.com

Enjoy Life Foods
888-50-ENJOY
www.enjoylifefoods.com

Gluten-Free Delights, Inc.
P.O. Box 284
316 State St.
Cedar Falls, IA 50613
888-403-1806
www.glutenfreedelights.com

Gluten-Free Mall
www.glutenfreemall.com

Gluten-Free Pantry
P.O. Box 840
Glastonbury, CT 06033
(800) 291-8386
www.glutenfree.com

Gluten Solutions, Inc.
3810 Riviera Drive, Suite 1
San Diego, CA 92109
888 845-8836
www.glutensolutions.com

Glutino
www.glutino.com

Kingsmill Foods
(416) 755-1124
www.kingsmillfoods.com

Kinnikinnick Foods Inc.
10306-112 Street
Edmonton, Alberta,
Canada T5K 1N1
780-424-2900 or
Toll Free 877-503-4466
www.kinnikinnick.com

Lang Naturals/Mr. Spice Sauces
850 Aquidneck Avenue
Newport, RI 02842
(800) SAUCE-IT
(401) 848-7700
www.mrspice.com

Laurel's Sweet Treats, Inc.
16004 SW Tualatin-Sherwood Rd,
#123
Sherwood, Oregon 97140
(503) 625-3432 or (888) 225-3432
www.glutenfreemixes.com

Miss Robens
91 Western Maryland Parkway,
Suite 7
Hagerstown, MD 21740
800-891-0083
www.missroben.com

Nana's Kitchen
www.cookingwithnana.com

Nu-World Amaranth Inc.
630-369-6819
www.nuworldfoods.com

Pamela's Products
335 Allerton Ave.
South San Francisco, CA 94080
650-952-4546
www.pamelasproducts.com

Panne Rizo Rice Breads
1939 Cornwall Avenue,
Vancouver, BC,
Canada, V6J 1C8
Phone:(604)736-0885
www.pannerizo.com

Prima Provisions Co.
Chebe Bread Mix
www.chebe.com

Rice Innovations
8175 Winston Churchill
BoulevardNorval, Ontario
Canada,
905-451, -RICE (7423)
www.riceinnovations.com

Van's International Foods
www.vansintl.com

A STEP-BY-STEP GUIDE TO THE GLUTEN-FREE LIFESTYLE

Step 1 – JUST BEGIN

A proper diagnosis of Celiac Disease (by screening blood tests followed by endoscopic biopsies) and/or Dermatitis Herpetiformis (skin biopsy) means a lifetime commitment to a gluten-free diet. The gluten-free diet is a major change from a normal American diet, but if you take it step-by-step, you will find yourself living the gluten-free lifestyle in no time.

The following tips make getting started easier:

1. Take full advantage of local and national support groups. Local groups have experience with the gluten-free diet, know where to shop and dine out in your area. They can offer you help to acclimate to the changes in your lifestyle. National celiac support groups offer up-to-date information about research, products and national activities. They also have valuable resources and tools to simplify the change to a gluten-free lifestyle.
2. Keep a Food Diary with notes about foods you have investigated - “good” brands and those foods that do not seem to agree with you. Write down every thing you put into your mouth - food, liquids, and medications. Make note of questionable ingredients and those you are unsure of. Record your body’s reactions – how do you feel? If you have a reaction, how long after you last ate? You may see a pattern indicating other food sensitivities.
3. Not all adverse reactions are due to gluten. Some people with newly diagnosed gluten intolerance also have other sensitivities - lactose intolerance, food sensitivities or allergies are common and can cause symptoms similar to your gluten reaction. Some people with celiac disease may have trouble digesting fatty or rich foods, until the small intestine has healed. Keeping a food diary and listening to your body can help you determine if you have temporary or permanent food intolerances.

4. Sort out your Pantry and refrigerator. Give away or label non-gluten-free items — like baked goods, pasta, soups, etc. Put them in a separate section for family members who are not gluten intolerant. You may want to mark or use special stickers to differentiate gluten-free items. Now restock your pantry and refrigerator with gluten-free goods to replace those you just eliminated.
5. Realize that you may make mistakes as you are learning this new lifestyle. Mistakes may cause some symptoms to reoccur. Unfortunately, that's part of the learning process. Don't kick yourself over your mistakes, just start again at the beginning and do the best you can. Gluten is hidden in many products.

Step 2 – KNOW WHAT IS GLUTEN-FREE

The following starches are gluten-free: Rice, corn, soy, potato, tapioca, beans, sorghum, quinoa, millet, buckwheat, arrowroot, amaranth, tef and nut flours.

The following starches contain gluten and are not allowed in the gluten-free diet: Wheat (durum, semolina, kamut, spelt), rye, barley and triticale.

Oats are not recommended because of concerns about unacceptable levels of contamination.

Foods that often contain gluten: These ingredients should be carefully checked to be sure they are gluten-free before using.

Breading

Pastas

Broth or Bouillon

Processed meats

Coating mixes

Roux and thickening agents in sauces and gravies

Communion Wafers

Self-basting poultry

Croutons
Imitation bacon
Soup bases
Imitation seafood
Soy Sauce
Stuffing/dressing
Marinades
Some Meat 'rub' seasoning mixes
Some Salad Dressings

Step 3 - READ LABELS

– this is not easy task, but it is the key to being gluten-free.

- Clear Labels Are Safest - A clear label has no gluten-containing or questionable ingredients. If it has questionable ingredients, avoid it and find a comparable product that is GF.
- Labels need to be read every time you buy food. Ingredients can change at any time. Some products will remain GF for years while others may change some ingredients based on availability. Verify ingredients by calling or writing a food manufacturer. Be specific about the ingredients in question. Asking if a product is gluten-free is not enough. State your needs clearly – be patient, persistent and polite.
- If you are unable to verify ingredients or the ingredient list is unavailable – avoid the product.
- Don't be confused by words that have names with 'glut' in the name, such as monosodium glutamate. This does not necessarily indicate it has gluten in it. Other sound-alike names can also be confusing - Maltodextrin is a gluten-free product, however dextrin can be made from wheat.
- Read labels carefully on your vitamins and medications, both active and inactive ingredients. Call manufacturers if sources of ingredients are unclear. The single word "starch" on medications can mean any starch.
- Gluten may be present in glue on envelopes and stamps; it would be best to moisten these with a sponge, rather than lick them.

Here are ingredients that can be potential problems and the information you need to ask when checking labels. Questionable ingredients are those that do not give enough information to determine if they are gluten-free.

- Brown rice syrup (may be made from barley)
- Caramel color (generally made from burnt sugar, but could be made from barley)
- Dextrin (usually made from corn, but may come from wheat)
- Flour or cereal products (white flour, all-purpose flour, wheat and whole wheat flour are all wheat products)
- Malt or malt flavoring (usually made from barley, but could be made from corn.)
- Malt vinegar. All other vinegars are gluten-free
- Modified food starch, modified starch or gelatinized starch (found in medications) (knowing the source of the starch is important. Although not likely, it could be made from wheat.) The single word “starch” is cornstarch in the USA.
- Mono- & di-glycerides (in dry products only)
- Flavorings in meat products
- Soy sauce or soy sauce solids (many soy sauces contain wheat)
- HVP (hydrolyzed vegetable protein), HPP (hydrolyzed plant protein), and TVP (texturized vegetable protein) (May contain wheat or other grains that need to be avoided.)
- Veined cheeses, such as Roquefort or Bleu cheeses (may be contaminated from bread used as a starting material.)

Step 4 – MEAL PLANNING MADE EASIER

- Plan meals before you go to the grocery store. Reading labels takes time. Allow extra time to shop. Special gluten-free products are more expensive. It is possible to eat gluten-free without buying specialty products. Take your food diary, with the list of products you have investigated with you. It will save you time and frustration.
- Save meal preparation time by making as much of the family meal gluten free as possible.
- Start with simple meals, rather than combination dishes. Find gluten-free substitutes for family favorites.

- Use gluten-free brand names products resource guides. Then write up a brand-name grocery list based on the recipes you plan to use. Working on a weekly basis will help eliminate extra trips to the grocery store, cut down on the frustration of reading labels again, and may save money.
- Be sure to plan for the family's snacks and comfort foods, both gluten free and non-GF. When you have GF items handy (like nuts, popcorn, fruit, raw cut-up vegetables, etc.), you will be less tempted to "cheat" when you want a snack.
- Try at least one new gluten-free recipe a week. Mark your cookbooks with comments, or develop a list of your favorites with the cookbook page noted. Experiment until you find gluten-free substitutes you and your family like.
- Make good use of your freezer. Freeze single portions of dinner dishes to use as lunch items another time. Freeze dessert items for snacks.

Step 5 – REFINING YOUR GLUTEN-FREE LIFESTYLE

As you are comfortable with each step you make, refine your lifestyle more. Being strict with your gluten-free diet is important to your health. Here are some points to consider as you refine your diet.

- Not all gluten-free products are well tolerated by everyone. Guar Gum and flax or flax seed may have a laxative effect. Sorbitol and mannitol, used in sugar-free products can also cause excess gas, stomach pains, and loose stools for some people. If these reactions make you uncomfortable, you may want to reduce the amount of these products you use or avoid them.
- Cross contamination is a real problem in terms of manufacturing, conveyor belts, and shipping; at restaurants and at home with products everyone shares – such as margarine, jams, and mayonnaise. Even shared appliances and cooking utensils can be problematic if care is not used to reduce cross-contamination. Use either a 'one-dip rule' or one implement for dipping and another for spreading when products are shared. Toasters, cooking surfaces, using the same cooking utensils, picking croutons

off instead of adding none to start with, etc., are all items to consider as sources of contamination. Deep fried foods cooked in oil used to cook breaded products should be avoided. Be aware and vigilant.

- Wheat flour can stay airborne for many hours and contaminate exposed cooking and baking surfaces and utensils or uncovered gluten-free products. Foods produced in an area that also produces gluten-containing products has the potential to be contaminated with gluten. All food manufacturers abide by the FDA's Code of Good Manufacturing Practices. Good cleaning practices in your home can also minimize potential cross-contamination. Use common sense, if you are uncomfortable about cooking practices used, don't eat the food.
- Low-fat and fat-free products may be problematic. Manufacturers may replace fat in some no-fat or low-fat products with starch of indeterminate source. Read labels on all reduced-fat products.
- Wheat free is not the same as gluten-free. Wheat-free products may contain rye, barley or other ingredients that are not GF.

Attitude is Everything - Like anything new, it takes time to adjust to the GF diet. It is natural to mourn old food habits for a short time. Stay focused on all the foods you can eat. Fresh fruits and vegetables are delicious and healthy. Fresh poultry, fish, meat and legumes provide protein and are naturally GF. Most dairy foods can also still be enjoyed (providing you are not lactose intolerant). GF substitutes for foods commonly made with wheat are available at health food stores and from GF food manufacturers.