The Mature Celiac: Successful Aging

Brought to you by Crunchmaster Crackers

www.CeliacCentral.org Restoring Health … Reclaiming Lives.

Welcome!

Ronni Alicea MBA, RD

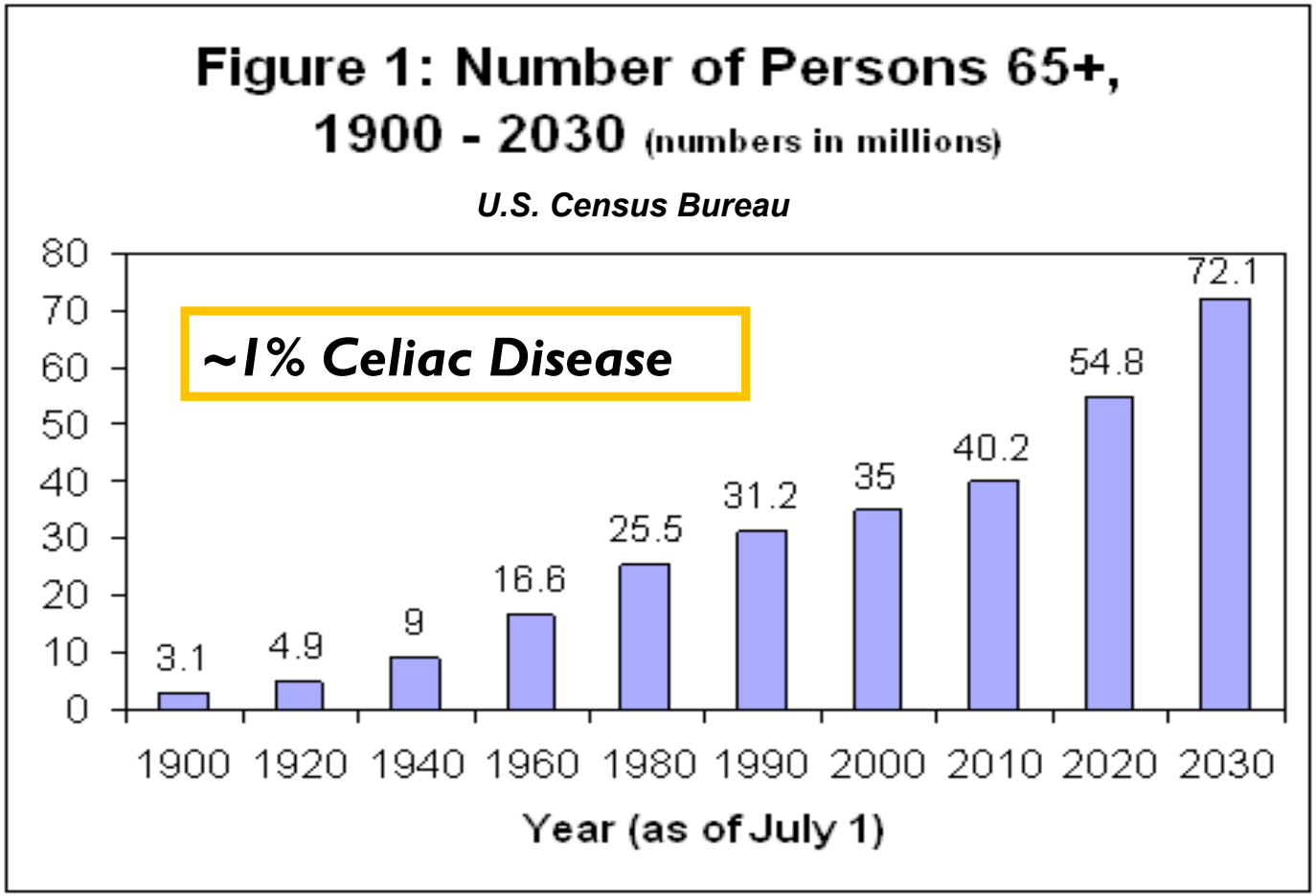
- *Manages a private nutrition practice*
- *Consultant dietitian for residential care facilities and several gluten-free and allergy-free companies*

Email: rdronni@optonline.net
Phone: 908-704-7017
Website: Matureceliac.blogspot.com
Twitter: glutenfreerd

On Today's Plate…

- *Aging U.S. population*
- *Current research on mature celiac healthcare*
- *Signs & symptoms of uncontrolled celiac disease vs. normal aging nutrition considerations*
- *Patient management with three case studies*
- *Implications for nutritional well-being*

Aging Population



What does the research say?

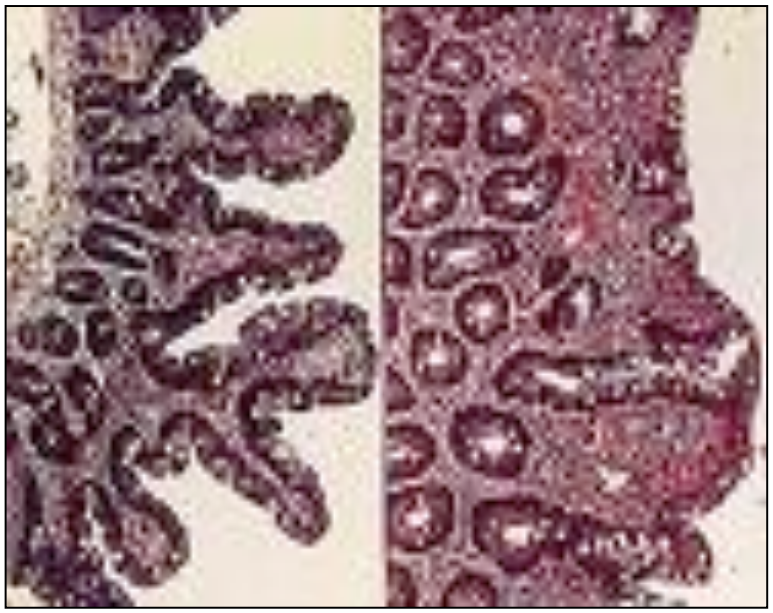
Advances in Celiac Disease and Gluten-Free Diet, Niewinski, M. J Am Diet Assoc. 2008;108: 661-672

ABSTRACT

Celiac disease is becoming ***an increasingly recognized autoimmune enteropathy*** caused by a permanent intolerance to gluten. Once thought to be a rare disease of childhood characterized by diarrhea, celiac disease is actually ***a multisystemic disorder*** that occurs as a result of an immune response to ingested gluten in genetically predisposed individuals. Screening studies have revealed that celiac disease is most common in asymptomatic adults in the United States. Although considerable scientific progress has been made in understanding celiac disease and in preventing or curing its manifestations, a strict gluten-free diet is the only treatment for celiac disease to date. ***Early diagnosis and treatment, together with regular follow-up visits with a dietitian, are necessary to ensure nutritional adequacy and to prevent malnutrition while adhering to the gluten-free diet for life***. The purpose of this review is to provide clinicians with current updated information about celiac disease, its diverse clinical presentation and increased prevalence, the complex pathophysiology and strong genetic predisposition to celiac disease, and its diagnosis. This review focuses in detail on the gluten-free diet and ***the importance of intense expert dietary counseling for all patients with celiac disease.*** Recent advances in the gluten-free diet include food allergen labeling as well as the US Food and Drug Administration's proposed definition of the food-labeling term gluten-free. ***The gluten-free diet is complex and patients need comprehensive nutrition education from a skilled dietitian.***

Classic Celiac Disease

- Diarrhea
- Weight Loss
- Bloating, gas
- Anemia



gluten-free diet!

Classic GI Presentation

HF: 86 YO WF admitted to sub-acute care unit for DX deconditioned post hospitalization for syncope and collapse.

- Persistent Diarrhea ċ c-dif negative, anemia of chronic disease
- Admit wt 112 # family stated UBW 125 5'3 Wt loss ~13# past quarter (90% UBW)
- Increased confusion, poor po of regular diet and supplements (2Cal product 120 mL QID)
- Decreased H/H, BUN 32, Cr .5, GFR WNL
- GI consult ordered, admitted to the hospital

HF: 86 YR WF

- *Readmit new dx: Celiac Disease*
- *DO: Regular*
- *Facility MD resistant to diet change due to age*
- *Family meeting: Changed to gluten-free diet order*

Today's dietitian April 2007 vol 9 no 4 Long term care concerns feature.

What does the research say?

Mucosal Recovery and Mortality in Adults With Celiac Disease After Treatment With a Gluten-Free Diet, Rubio-Tapia, et al. Am J Gastroenterol, 2010

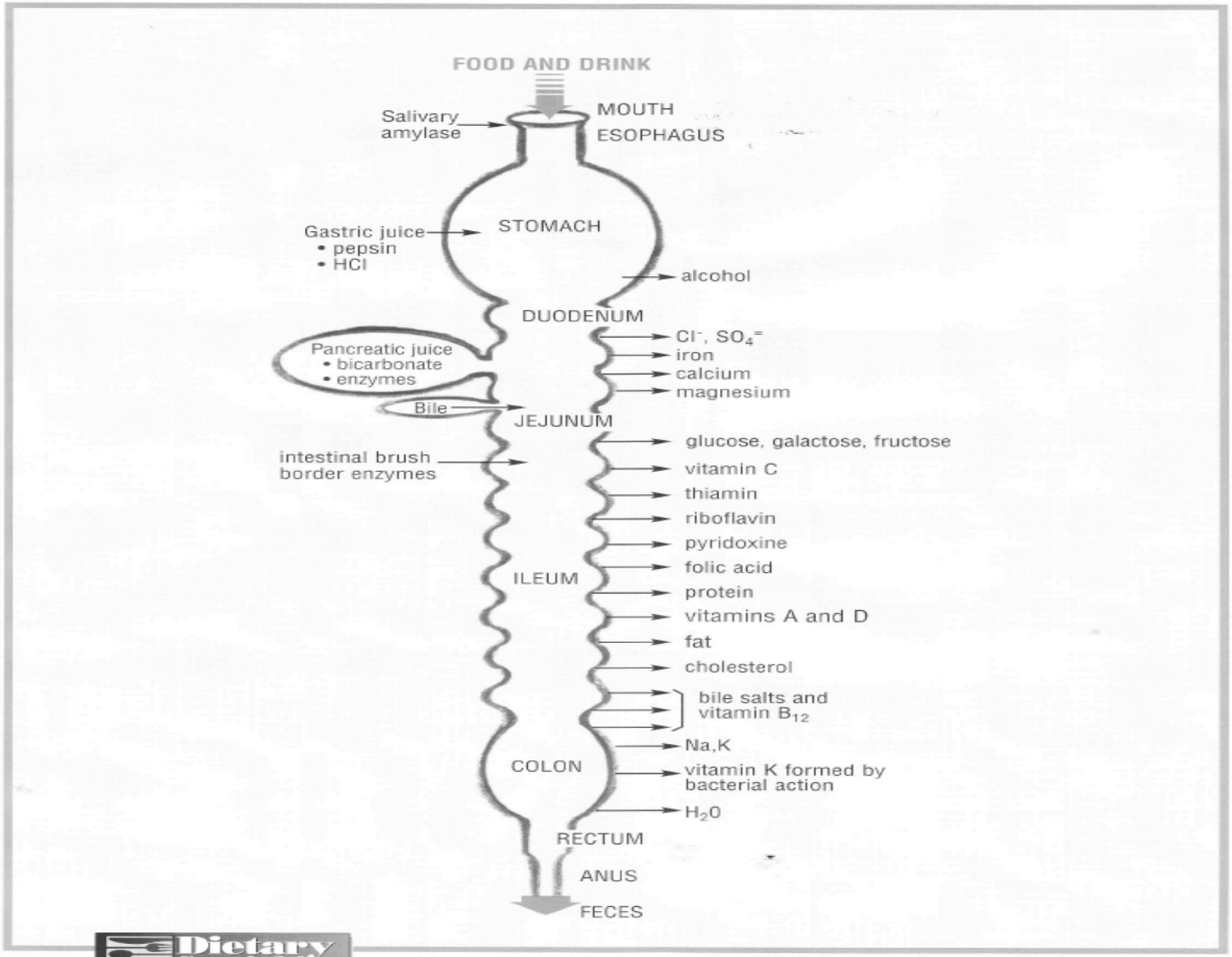
ABSTRACT

OBJECTIVES:
Clinical response is typically observed in most adults with celiac disease (CD) after treatment with a gluten-free diet (GFD). The rate of mucosal recovery is less certain. The aims of this study were (1) to estimate the rate of mucosal recovery after GFD in a cohort of adults with CD, and (2) to assess the clinical implications of persistent mucosal damage after GFD.

METHODS:
The study group included adults with biopsy-proven CD evaluated at the Mayo Clinic who had duodenal biopsies at diagnosis and at least one follow-up intestinal biopsy to assess mucosal recovery after starting a GFD. The primary outcomes of interest were mucosal recovery and all-cause mortality.

RESULTS:
Of 381 adults with biopsy-proven CD, 241 (73% women) had both a diagnostic and follow-up biopsy available for re-review. Among these 241, the Kaplan-Meier rate of confirmed mucosal recovery at 2 years following diagnosis was 34% (95% confidence interval (CI): 27-40%), and at 5 years was 66% (95% CI: 58-74%). Most patients (82%) had some clinical response to GFD, but it was not a reliable marker of mucosal recovery (P=0.7). Serological response was associated with confirmed mucosal recovery (P=0.01). Poor compliance to GFD (P<0.01), severe CD defined by diarrhea and weight loss (P<0.001), and total villous atrophy at diagnosis (P<0.001) were strongly associated with persistent mucosal damage. There was a trend toward an association between achievement of mucosal recovery and a reduced rate of all-cause mortality (hazard ratio=0.13, 95% CI: 0.02-1.06, P=0.06), adjusted for gender and age.

CONCLUSIONS:
Mucosal recovery was absent in a substantial portion of adults with CD after treatment with a GFD. There was a borderline significant association between confirmed mucosal recovery (vs. persistent damage) and reduced mortality independent of age and gender. Systematic follow-up with intestinal biopsies may be advisable in patients diagnosed with CD as adults.



Digestive Enzymes & Source

- Mouth: ∂ amylase
- Stomach: pepsins
- Pancreas: amylase, lipase and Proteases
- Gall Bladder: Bile
- Brush Border:
  - Lactase
  - ∂ glucosidase
  - β galactosidase
  - Sucrase-Isomaltase
  - Amino-ogliopeptidase

- Starch ∂ 1 →4 bonds
- Protein
- dextrin, triglycerides
- Peptides
- Fat michelle formation:
  - Lactose→glu + gal
  - ∂ 1 →4 bonds ∂ 1→6 bonds
  - Sucrose → glu & fru
  - maltose → glu & glu
  - Removal of N terminal aa's

HF: 86 YR WF

- *Therapeutic vitamin (strovite plus), Iron support*
- *Nutritional supplements (2-Cal/mL 120 mL QID)*
- *Weight gain, increased participation in activities and Physical therapy and resolved diarrhea*
- *Discharged back to the Assisted Living in 15 weeks at 120 pounds, PO 50-75%, 8 oz 1 cal/mL drink*

Aging : Lifecycle Nutrition : Food and Nutrition Information Center - Windows Internet Explorer

http://fnic.nal.usda.gov/nal_display/index.php?info_center=4&tax_level=2&tax_subject=257&topi

Google

Favorites | Yahoo! | Suggested Sites | Get More Add-ons | Home | iGoogle | My Optimum Voice - Log ...

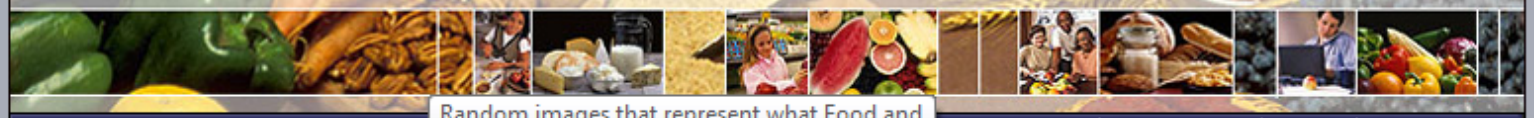
Aging : Lifecycle Nutrition : Food and Nutrition I...

Page | Safety | Tools

AVG | DRI vitamins and mineras | Search | Page Status | News

USDA United States Department of Agriculture
National Agricultural Library

FOOD AND NUTRITION INFORMATION CENTER



Random images that represent what Food and Nutrition Information Center offers

Home | ...source Lists | Databases | Help | Contact Us

Search FNIC

Go

- Search all USDA
- Advanced Search
- Search Tips

Browse by Audience

Information for...

Browse by Subject

- Dietary Guidance
- Lifecycle Nutrition
- Diet and Disease
- Food Composition
- Weight and Obesity
- Food Safety
- Food Labeling
- Dietary Supplements
- Nutrition Assistance Programs

You are here: Home / Lifecycle Nutrition / Aging

Printable Page

Lifecycle Nutrition

Aging

For and about seniors, find resources on healthy eating, nutritional challenges related to aging, food safety issues, Meals on Wheels and other assistance programs. Links to organizations focused on aging issues.

On this page...

General Information and Resources

Dietary Reference Intakes for Older Adults Table (PDF|170 KB)
Florida International University. National Resource Center on Nutrition, Physical Activity & Aging.

MedlinePlus: Nutrition for Seniors
DHHS. NIH. National Library of Medicine.

MedlinePlus: Seniors' Health Issues
DHHS. NIH. National Library of Medicine.

I Want To...

- Find a Local Meals on Wheels Program

Lifecycle Nutrition

- Infant Nutrition
- Child Nutrition and Health
- Adolescence
- Pregnancy
- Breastfeeding
- Aging
- Fitness and Sports Nutrition
- Vegetarian Nutrition

Microsoft PowerPoi... | Aging : Lifecycle Nu... | Yahoo! Search | 7:16 PM

Dietary Reference Intakes (DRIs): Recommended Dietary Allowances and Adequate Intakes, Vitamins

Food and Nutrition Board, Institute of Medicine, National Academies

Life Stage Group	Vitamin A (µg/d)[a]	Vitamin C (mg/d)	Vitamin D (µg/d)[b,c]	Vitamin E (mg/d)[d]	Vitamin K (µg/d)	Thiamin (mg/d)	Riboflavin (mg/d)	Niacin (mg/d)[e]	Vitamin B_6 (mg/d)	Folate (µg/d)[f]	Vitamin B_{12} (µg/d)	Pantothenic Acid (mg/d)	Biotin (µg/d)	Choline (mg/d)[g]
Infants														
0 to 6 mo	400*	40*	10	4*	2.0*	0.2*	0.3*	2*	0.1*	65*	0.4*	1.7*	5*	125*
6 to 12 mo	500*	50*	10	5*	2.5*	0.3*	0.4*	4*	0.3*	80*	0.5*	1.8*	6*	150*
Children														
1–3 y	300	15	15	6	30*	0.5	0.5	6	0.5	150	0.9	2*	8*	200*
4–8 y	400	25	15	7	55*	0.6	0.6	8	0.6	200	1.2	3*	12*	250*
Males														
9–13 y	600	45	15	11	60*	0.9	0.9	12	1.0	300	1.8	4*	20*	375*
14–18 y	900	75	15	15	75*	1.2	1.3	16	1.3	400	2.4	5*	25*	550*
19–30 y	900	90	15	15	120*	1.2	1.3	16	1.3	400	2.4	5*	30*	550*
31–50 y	900	90	15	15	120*	1.2	1.3	16	1.3	400	2.4	5*	30*	550*
51–70 y	900	90	15	15	120*	1.2	1.3	16	1.7	400	2.4[h]	5*	30*	550*
> 70 y	900	90	20	15	120*	1.2	1.3	16	1.7	400	2.4[h]	5*	30*	550*
Females														
9–13 y	600	45	15	11	60*	0.9	0.9	12	1.0	300	1.8	4*	20*	375*
14–18 y	700	65	15	15	75*	1.0	1.0	14	1.2	400[i]	2.4	5*	25*	400*
19–30 y	700	75	15	15	90*	1.1	1.1	14	1.3	400[i]	2.4	5*	30*	425*
31–50 y	700	75	15	15	90*	1.1	1.1	14	1.3	400[i]	2.4	5*	30*	425*
51–70 y	700	75	15	15	90*	1.1	1.1	14	1.5	400	2.4[h]	5*	30*	425*
> 70 y	700	75	20	15	90*	1.1	1.1	14	1.5	400	2.4[h]	5*	30*	425*
Pregnancy														
14–18 y	750	80	15	15	75*	1.4	1.4	18	1.9	600[i]	2.6	6*	30*	450*
19–30 y	770	85	15	15	90*	1.4	1.4	18	1.9	600[i]	2.6	6*	30*	450*
31–50 y	770	85	15	15	90*	1.4	1.4	18	1.9	600[i]	2.6	6*	30*	450*
Lactation														
14–18 y	1,200	115	15	19	75*	1.4	1.6	17	2.0	500	2.8	7*	35*	550*
19–30 y	1,300	120	15	19	90*	1.4	1.6	17	2.0	500	2.8	7*	35*	550*
31–50 y	1,300	120	15	19	90*	1.4	1.6	17	2.0	500	2.8	7*	35*	550*

NOTE: This table (taken from the DRI reports, see www.nap.edu) presents Recommended Dietary Allowances (RDAs) in **bold type** and Adequate Intakes (AIs) in ordinary type followed by an asterisk (*). An RDA is the average daily dietary intake level; sufficient to meet the nutrient requirements of nearly all (97-98 percent) healthy individuals in a group. It is calculated from an Estimated Average Requirement (EAR). If sufficient scientific evidence is not available to establish an EAR, and thus calculate an RDA, an AI is usually developed. For healthy breastfed infants, an AI is the mean intake. The AI for other life stage and gender groups is believed to cover the needs of all healthy individuals in the groups, but lack of data or uncertainty in the data prevent being able to specify with confidence the percentage of individuals covered by this intake.

[a] As retinol activity equivalents (RAEs). 1 RAE = 1 µg retinol, 12 µg β-carotene, 24 µg α-carotene, or 24 µg β-cryptoxanthin. The RAE for dietary provitamin A carotenoids is two-fold greater than retinol equivalents (RE), whereas the RAE for preformed vitamin A is the same as RE.

[b] As cholecalciferol. 1 µg cholecalciferol = 40 IU vitamin D.

[c] Under the assumption of minimal sunlight.

[d] As α-tocopherol. α-Tocopherol includes *RRR*-α-tocopherol, the only form of α-tocopherol that occurs naturally in foods, and the *2R*-stereoisomeric forms of α-tocopherol (*RRR*-, *RSR*-, *RRS*-, and *RSS*-α-tocopherol) that occur in fortified foods and supplements. It does not include the *2S*-stereoisomeric forms of α-tocopherol (*SRR*-, *SSR*-, *SRS*-, and *SSS*-α-tocopherol), also found in fortified foods and supplements.

[e] As niacin equivalents (NE). 1 mg of niacin = 60 mg of tryptophan; 0–6 months = preformed niacin (not NE).

[f] As dietary folate equivalents (DFE). 1 DFE = 1 µg food folate = 0.6 µg of folic acid from fortified food or as a supplement consumed with food = 0.5 µg of a supplement taken on an empty stomach.

[g] Although AIs have been set for choline, there are few data to assess whether a dietary supply of choline is needed at all stages of the life cycle, and it may be that the choline requirement can be met by endogenous synthesis at some of these stages.

[h] Because 10 to 30 percent of older people may malabsorb food-bound B_{12}, it is advisable for those older than 50 years to meet their RDA mainly by consuming foods fortified with B_{12} or a supplement containing B_{12}.

[i] In view of evidence linking folate intake with neural tube defects in the fetus, it is recommended that all women capable of becoming pregnant consume 400 µg from supplements or fortified foods in addition to intake of food folate from a varied diet.

Table 1: Dietary Reference Intakes for Older Adults

Vitamins and Elements										
	Vitamin A (ug)[b,c]	Vitamin C (mg)	Vitamin D (ug)[d,e]	Vitamin E (mg)[f,g,h]	Vitamin K (ug)	Thiamin (mg)	Riboflavin (mg)	Niacin (mg)[h,i]	Vitamin B_6 (mg)	Folate (ug)[h,j]
RDA or AI [1]										
Age 51-70 Male	**900**	**90**	10*	**15**	120*	**1.2**	**1.3**	**16**	**1.7**	**400**
Female	**700**	**75**	10*	**15**	90*	**1.1**	**1.1**	**14**	**1.5**	**400**
Age 70+ Male	**900**	**90**	15*	**15**	120*	**1.2**	**1.3**	**16**	**1.7**	**400**
Female	**700**	**75**	15*	**15**	90*	**1.1**	**1.1**	**14**	**1.5**	**400**
Tolerable Upper Intake Levels*										
Age 51-70 Male	3000	2000	50	1000	ND	ND	ND	35	100	1000
Female	3000	2000	50	1000	ND	ND	ND	35	100	1000
Age 70+ Male	3000	2000	50	1000	ND	ND	ND	35	100	1000
Female	3000	2000	50	1000	ND	ND	ND	35	100	1000

	Vitamin B_{12} (ug)[k]	Pantothenic Acid (mg)	Biotin (ug)	Choline (mg)[l]	Boron (mg)	Calcium (mg)	Chromium (ug)	Copper (ug)	Fluoride (mg)	Iodine (ug)
RDA or AI [1]										
Age 51-70 Male	**2.4**	5*	30*	550*	ND	1200*	30*	**900**	4*	**150**
Female	**2.4**	5*	30*	425*	ND	1200*	20*	**900**	3*	**150**
Age 70+ Male	**2.4**	5*	30*	550*	ND	1200*	30*	**900**	4*	**150**
Female	**2.4**	5*	30*	425*	ND	1200*	20*	**900**	3*	**150**
Tolerable Upper Intake Levels*										
Age 51-70 Male	ND	ND	ND	3500	20	2500	ND	10000	10	1100
Female	ND	ND	ND	3500	20	2500	ND	10000	10	1100
Age 70+ Male	ND	ND	ND	3500	20	2500	ND	10000	10	1100
Female	ND	ND	ND	3500	20	2500	ND	10000	10	1100

[1] Recommended Dietary Allowances (RDAs) are in **bold type** and Adequate Intakes (AIs) are in ordinary type followed by an asterisk (*).
ND - Indicates values not determined.

The values for this table were excerpted from the Institute of Medicine, *Dietary Reference Intakes: Applications in Dietary Assessment*, 2000 and *Dietary Reference Intakes for Energy, Carbohydrates, Fiber, Fat, Protein and Amino Acids (Macronutrients)* 2002.

Changing of Mature Vitamin Requirements

- Pyroxidine (B6) needs increase to 1.5 mg due to increased need from inefficiency for protein metabolism UL 100 mg
- **How do you get enough vitamin B6 from foods?**
  - *Good food sources of vitamin B6 include **brewer's yeast**, bananas, **cereal grains**, legumes, vegetables (especially carrots, spinach and peas), potatoes, milk, cheese, eggs, fish & sunflower seeds*
- Caution for Parkinson's! Can reduce the effectiveness of Levodopa therapy

Changing of Mature Vitamin Requirements

- Vit D needs increase to 800 IU at age 70
- **How do you get enough vitamin D from foods?**
  - *Very few foods in nature contain vitamin D*
  - *The flesh of fatty fish (such as salmon, tuna, and mackerel & fish liver oils are among the best sources*
  - *Small amounts of vitamin D are found in beef liver, cheese & egg yolks*
  - *Milk is fortified at 100 IU/cup*
  - *Sun Exposure!*

Changing of Mature Vitamin Requirements

- Calcium needs increase to 1200 mg for men at age 70

- Vit B12 needs are the same with 10-30% of people over 50 years old potentially malabsorbing food-bound B12

What does the research say?

Gluten-free diet survey: are Americans with coeliac disease consuming recommended amounts of fibre, iron, calcium and grain foods? Thompson, et al. J Hum Nutr Dietet, 18, pp. 163–169

ABSTRACT

OBJECTIVE:
This survey was conducted to assess nutrient intakes and food consumption patterns of adults with coeliac disease who adhere to a strict gluten-free diet.

DESIGN:
Three-day estimated self-reported food records were used to assess daily intakes of calories, percent daily calories from carbohydrates, dietary fibre, iron, calcium and grain food servings.

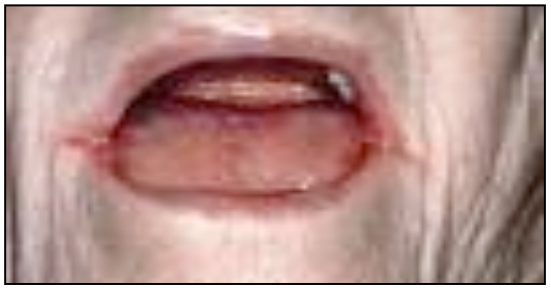
SUBJECTS:
Volunteers for this survey were recruited through notices placed in coeliac disease support group newsletters, as well as a national magazine for persons with coeliac disease. Forty-seven volunteers met all criteria for participation and returned useable food records.

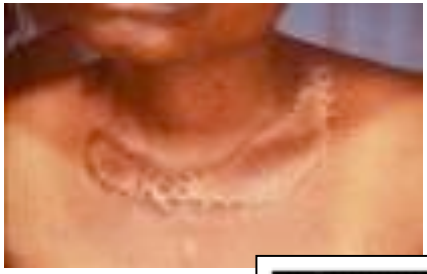
RESULTS:
Group mean daily intake of nutrients by gender: Males (n = 8): 2882 calories; 55% carbohydrate; 24.3 g dietary fibre; 14.7 mg iron; 1288.8 mg calcium; 6.6 grain food servings. Females (n = 39): 1900 calories; 52% carbohydrate; 20.2 g dietary fibre; 11.0 mg iron; 884.7 mg calcium; 4.6 grain food servings. ***Recommended amounts of fibre, iron and calcium were consumed by 46, 44 and 31% of women and 88, 100 and 63% of men, respectively.***

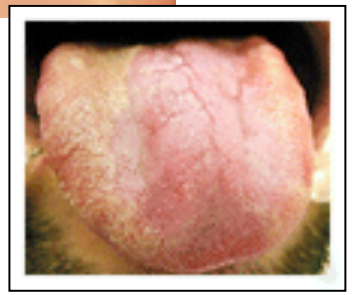
CONCLUSIONS:
Nutrition therapy for coeliac disease has centred around food allowed/not allowed on a gluten-free diet. ***Emphasis also should be placed on the nutritional quality of the gluten-free diet, particularly as it concerns the iron, calcium and fibre consumption of women.*** The use of the estimated food record as the dietary survey method may have resulted in the under-reporting of energy intake. Due to the small sample size and possible bias of survey participants, the findings of this survey may not be representative of the larger coeliac community.

All Wheat Flour is Enriched

- *Thiamin*
- *Riboflavin*
- *Niacin*
- *Iron*
- *Folate*
- ***Gluten-free products usually are not fortified!***







Atrophic Glossitis Leading to the Diagnosis of Celiac Disease, N Engl J Med 2007; 356:2547

LL Admitted 01/2008 72YR

Nutrition Plan of Care:

1. Review GF diet with kitchen
2. Review facility GF diet with resident and family
3. Give activities GF hosts for Pastor to bless
4. Meet nutrient needs as assessed and replete expected nutrients

Diet History:

- Gluten Free Diet 20 years
- Lived with niece due to mental deficit
- ***Rice Krispie's AM***
- ***Communion (regular)***

Diagnosis:

- Syncope and Collapse
- Pneumonia
- Anemia
- Celiac Disease

Labs:

- As expected

Celiac Disease Awareness Campaign

Subscribe to NIDDK
Email Enter email address Go

From the National Digestive Diseases Information Clearinghouse
A service of the National Institute of Diabetes and Digestive and Kidney Diseases, NIH

- Home
- Practice Guidelines and Tools
- Campaign News and Updates
- Educational Materials and Resources
- Campaign Newsletter
- Celiac Disease Research
- Celiac Disease Organizations
- About the Campaign
- Frequently Asked Questions

Welcome to the National Institutes of Health (NIH) Celiac Disease Awareness Campaign

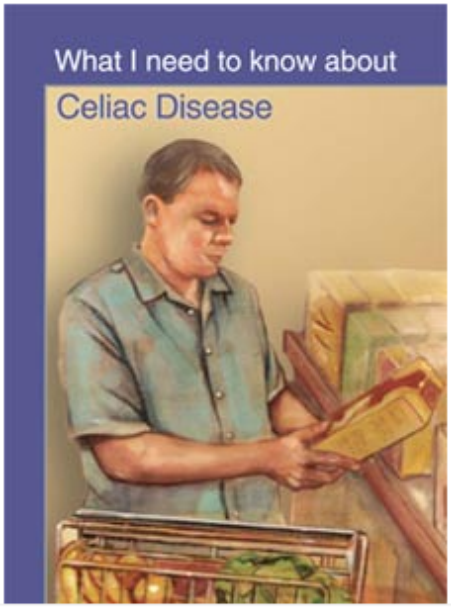
Celiac disease is an immune reaction to gluten, a protein found in wheat, rye, and barley. An estimated 1 percent of all Americans suffer from celiac disease, though many have never been diagnosed and are not receiving treatment.

The Awareness Campaign provides current, comprehensive, science-based information about the symptoms, diagnosis, and treatment of celiac disease, also known as celiac sprue, nontropical sprue, and gluten-sensitive enteropathy.

Through the Awareness Campaign, you can access

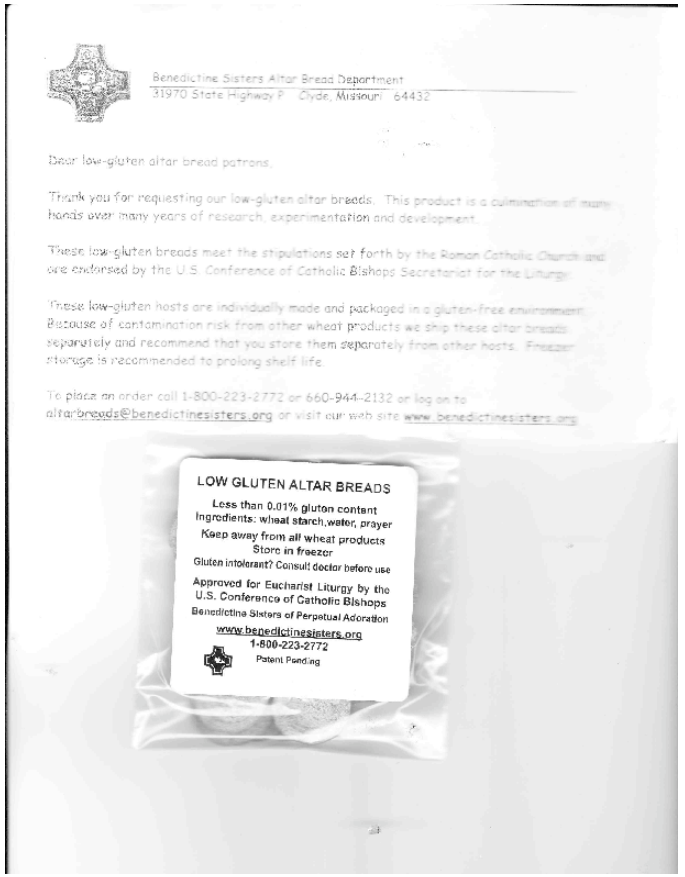
- news about celiac disease education and

See the NEWEST celiac disease publication—*Testing for Celiac Disease.*



Religious Needs

- ***Low-Gluten Hosts***
  - 1-800-223-2772
    www.benedictinesisters.org
- ***Matzo***
  - www.glutenfreematzo.com
  - Made from GF Oats



LL Admitted 01/2008
2 Weeks Later

Nutrition Plan of Care:

1. Review GF diet with Kitchen
2. MD to evaluate Pancreatic Mass for change
3. R/O C- Diff
4. Nurses to check medications with pharmacy

Diagnosis

- Add persistent diarrhea
- Benign pancreatic mass

Diet

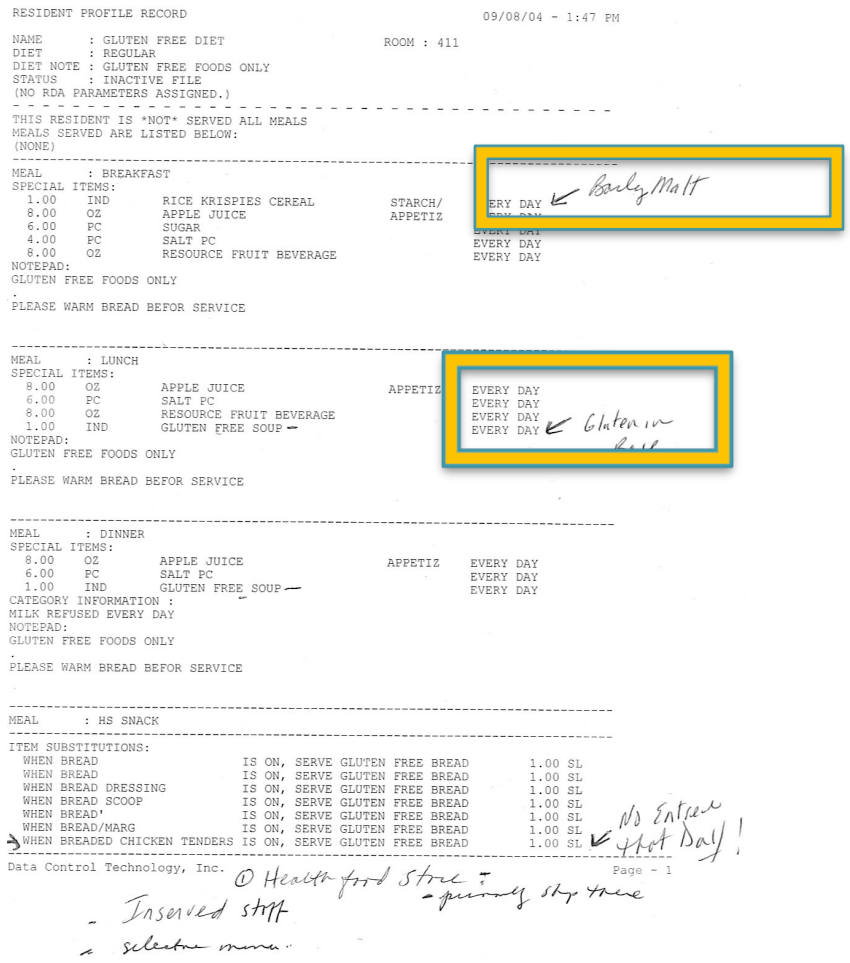
- Facility Gluten Free Diet
- No Outside snacks
- Communion (low-gluten)

Labs:

- IV for dehydration

Facility's Knowledge

- *FSD first GF resident was from the UK*
- *They requested Rice Krispies… on the UK list of 'allowed' prior to 2008*



RESIDENT PROFILE RECORD 09/08/04 - 1:47 PM

NAME : GLUTEN FREE DIET ROOM : 411
DIET : REGULAR
DIET NOTE : GLUTEN FREE FOODS ONLY
STATUS : INACTIVE FILE
(NO RDA PARAMETERS ASSIGNED.)

THIS RESIDENT IS *NOT* SERVED ALL MEALS
MEALS SERVED ARE LISTED BELOW:
(NONE)

MEAL : BREAKFAST
SPECIAL ITEMS:

1.00	IND	RICE KRISPIES CEREAL	STARCH/	
8.00	OZ	APPLE JUICE	APPETIZ	ERY DAY ← Barley Malt
6.00	PC	SUGAR		
4.00	PC	SALT PC		EVERY DAY
8.00	OZ	RESOURCE FRUIT BEVERAGE		EVERY DAY

NOTEPAD:
GLUTEN FREE FOODS ONLY
.
PLEASE WARM BREAD BEFOR SERVICE

MEAL : LUNCH
SPECIAL ITEMS:

8.00	OZ	APPLE JUICE	APPETIZ	EVERY DAY
6.00	PC	SALT PC		EVERY DAY
8.00	OZ	RESOURCE FRUIT BEVERAGE		EVERY DAY
1.00	IND	GLUTEN FREE SOUP —		EVERY DAY ← Gluten in Roll

NOTEPAD:
GLUTEN FREE FOODS ONLY
.
PLEASE WARM BREAD BEFOR SERVICE

MEAL : DINNER
SPECIAL ITEMS:

8.00	OZ	APPLE JUICE	APPETIZ	EVERY DAY
6.00	PC	SALT PC		EVERY DAY
1.00	IND	GLUTEN FREE SOUP —		EVERY DAY

CATEGORY INFORMATION :
MILK REFUSED EVERY DAY
NOTEPAD:
GLUTEN FREE FOODS ONLY
.
PLEASE WARM BREAD BEFOR SERVICE

MEAL : HS SNACK
ITEM SUBSTITUTIONS:

WHEN BREAD	IS ON, SERVE GLUTEN FREE BREAD	1.00 SL
WHEN BREAD	IS ON, SERVE GLUTEN FREE BREAD	1.00 SL
WHEN BREAD DRESSING	IS ON, SERVE GLUTEN FREE BREAD	1.00 SL
WHEN BREAD SCOOP	IS ON, SERVE GLUTEN FREE BREAD	1.00 SL
WHEN BREAD'	IS ON, SERVE GLUTEN FREE BREAD	1.00 SL
WHEN BREAD/MARG	IS ON, SERVE GLUTEN FREE BREAD	1.00 SL
WHEN BREADED CHICKEN TENDERS	IS ON, SERVE GLUTEN FREE BREAD	1.00 SL ← No Entree that Day!

Data Control Technology, Inc. Page - 1

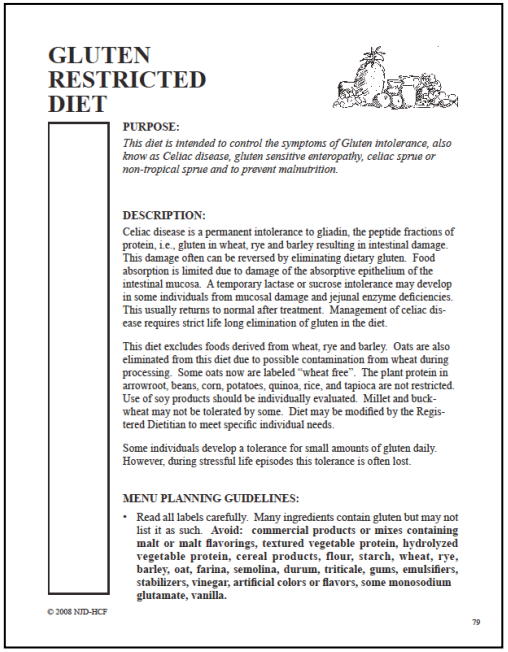
@ Health food Store ? - grocery shop there
- Inserved staff
- selective menu

Menu Planning Guidelines May be outdated!

- ***Read all labels carefully***
- ***Many ingredients contain gluten but may not list it as such***

Avoid:

- *commercial products or mixes containing malt or malt flavorings*
- *textured vegetable protein*
- *hydrolyzed vegetable protein*
- *cereal products*
- *flour & starch*
- *wheat, rye & barley*
- *oat, farina, semolina, durum & triticale*
- *gums & emulsifiers*
- *stabilizers, vinegar, artificial colors or flavors*
- *some monosodium glutamate*
- *vanilla*



GLUTEN RESTRICTED DIET

PURPOSE:

This diet is intended to control the symptoms of Gluten intolerance, also know as Celiac disease, gluten sensitive enteropathy, celiac sprue or non-tropical sprue and to prevent malnutrition.

DESCRIPTION:

Celiac disease is a permanent intolerance to gliadin, the peptide fractions of protein, i.e., gluten in wheat, rye and barley resulting in intestinal damage. This damage often can be reversed by eliminating dietary gluten. Food absorption is limited due to damage of the absorptive epithelium of the intestinal mucosa. A temporary lactase or sucrose intolerance may develop in some individuals from mucosal damage and jejunal enzyme deficiencies. This usually returns to normal after treatment. Management of celiac disease requires strict life long elimination of gluten in the diet.

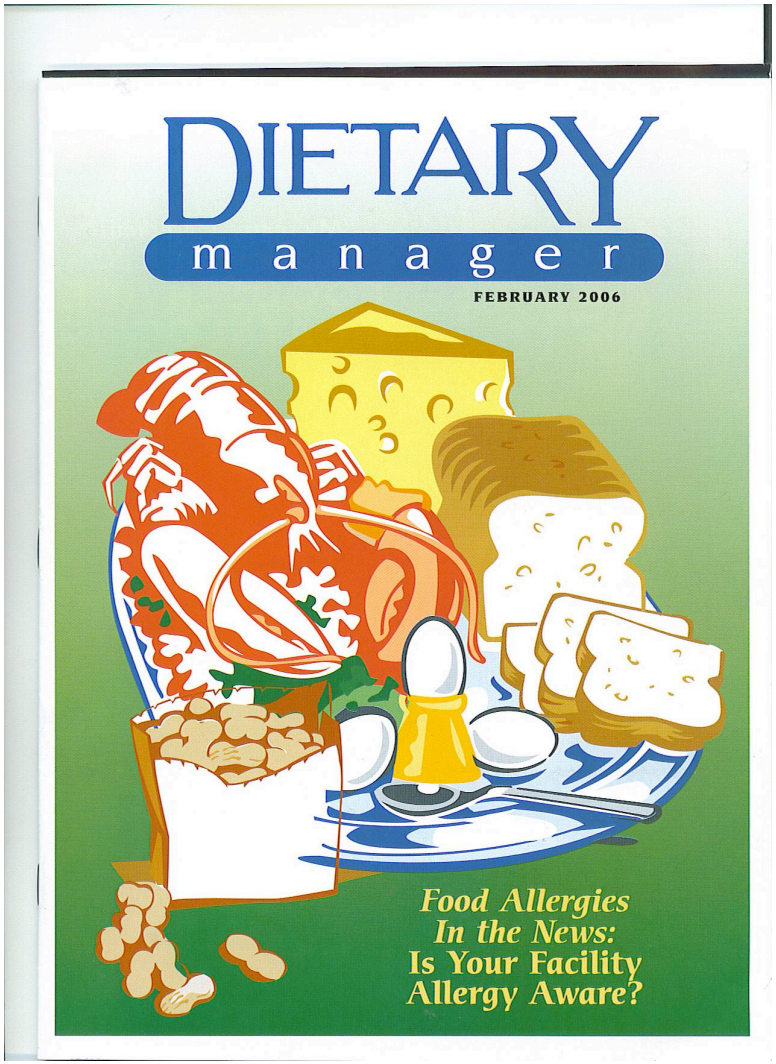
This diet excludes foods derived from wheat, rye and barley. Oats are also eliminated from this diet due to possible contamination from wheat during processing. Some oats now are labeled "wheat free". The plant protein in arrowroot, beans, corn, potatoes, quinoa, rice, and tapioca are not restricted. Use of soy products should be individually evaluated. Millet and buckwheat may not be tolerated by some. Diet may be modified by the Registered Dietitian to meet specific individual needs.

Some individuals develop a tolerance for small amounts of gluten daily. However, during stressful life episodes this tolerance is often lost.

MENU PLANNING GUIDELINES:

- Read all labels carefully. Many ingredients contain gluten but may not list it as such. **Avoid: commercial products or mixes containing malt or malt flavorings, textured vegetable protein, hydrolyzed vegetable protein, cereal products, flour, starch, wheat, rye, barley, oat, farina, semolina, durum, triticale, gums, emulsifiers, stabilizers, vinegar, artificial colors or flavors, some monosodium glutamate, vanilla.**

www.dmaonline.org



Questions?

What does the research say?

Increasing prevalence and high incidence of celiac disease in elderly people: A population-based study. Vilppula, et al. BMC Gastroenterology 2009, 9:49

ABSTRACT

Background: Celiac disease may emerge at any age, but little is known of its appearance in elderly people. We evaluated the prevalence of the condition in individuals over 55 years of age, and determined the incidence of biopsy-proven celiac disease (CDb) and celiac disease including seropositive subjects for anti-tissue transglutaminase antibodies (CDb+s).

Methods: The study based on prevalence figures in 2815 randomly selected subjects who had undergone a clinical examination and serologic screening for celiac disease in 2002. A second screening in the same population was carried out in 2005, comprising now 2216 individuals. Positive tissue transglutaminase antibodies were confirmed with small bowel biopsy.

Results: Within three years the prevalence of CDb increased from 2.13 to 2.34%, and that of CDb+s from 2.45 to 2.70%. ***Five new cases were found among patients previously seronegative;*** two had minor abdominal symptoms and three were asymptomatic. The incidence of celiac disease in 2002–2005 was 0.23%, giving an annual incidence of 0.08% in this population.

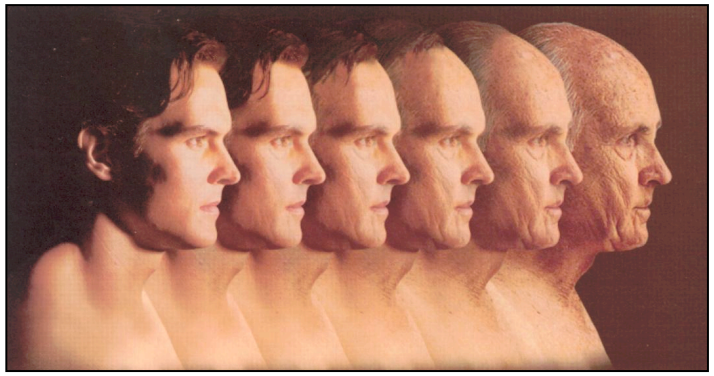
Conclusion: The prevalence of celiac disease was high in elderly people, but the symptoms were subtle. ***Repeated screening detected five biopsy-proven cases in three years, indicating that the disorder may develop even in the elderly. Increased alertness to the disorder is therefore warranted.***

Take Home Message

The prevalence of celiac disease was high in elderly people, but the symptoms were subtle….. Increased alertness to the disorder is therefore warranted.

Vilppula A et al. Undetected coeliac disease in the elderly: a biopsy-proven population-based study. Digestive and Liver Diseases 2008;40:809-13

Normal Aging Expectations



- *Metabolic changes*
- *Cardiovascular changes*
- *Renal function decline*
- *Sarcopenia*
- *Neurologic*
- *Immunocompetence*
- *Psychosocial*

Normal Aging Expectations: GI

- *Diminished senses (taste & smell)*
- *Ability to digest and absorb foods*
- *Dental*
- *Xerostomia*
- *Hypochlohydria*
- *Large intestine decreased motility*

What does the research say?

Detection of Celiac Disease in Primary Care: A Multicenter Case-Finding Study in North America
Catassi, et al. American Journal of Gastroenterology, 2007

RESULTS

- Celiac was diagnosed in 22 out of 976 investigated patients

- Most frequent reasons for celiac screening:
  - Bloating (12/22)
  - Thyroid disease(11/22)
  - IBS (7/22)
  - Unexplained chronic diarrhea (6/22)
  - Chronic fatigue (5/22)
  - Constipation(4/22)

- The small bowel biopsy was available in 15 out of 22

- GFD was implemented in 17 out of 22 cases

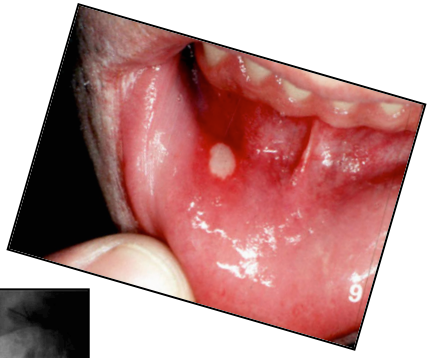
Celiac Disease

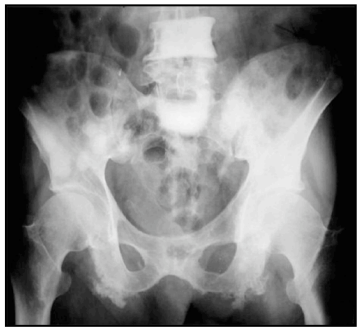
On this page:

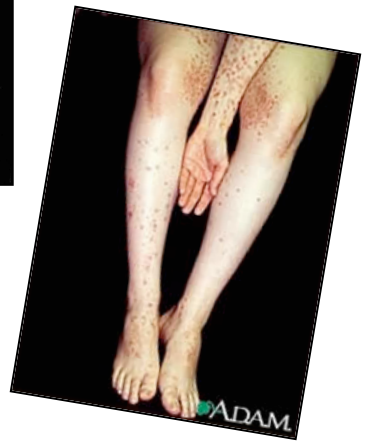
Celiac Symptoms in Adults

Less likely to have digestive symptoms and may instead have one or more of the following:

- *Unexplained iron-deficiency anemia*
- *Fatigue*
- *Bone or joint pain*
- *Arthritis*
- *Bone loss or osteoporosis*
- *Depression or anxiety*
- *Tingling numbness in the hands and feet*
- *Seizures*
- *Missed menstrual periods*
- *Infertility or recurrent miscarriage*
- *Canker sores inside the mouth*
- *An itchy skin rash called dermatitis herpetiformis*







Celiac.nih.gov

Long-Term Complications

People with celiac disease may have no symptoms but can still develop complications of the disease over time

- Malnutrition →
  - Anemia
  - Osteoporosis
  - Miscarriage
  - Liver diseases
  - Intestinal cancers

Celiac.nih.gov

WGO Practice Guidelines: *Celiac Disease*

Associated conditions

- *Malignant disease*
- *Osteoporosis*
- *Autoimmune disorders, such as:*
  - *Insulin-dependent type I diabetes*
  - *Thyroid disease*
  - *Sjögren's syndrome*
  - *Addison's disease*
  - *Autoimmune liver disease*
  - *Cardiomyopathy*
  - *Neurological disorders*

Nutrition Checklist for Aging Adults

Possible Problem	"DETERMINE" Mnemonic	*Score for "Yes" Answer (Circle if "yes")*
Disease	Do you have an illness or condition that makes you change the kind and/or amount of food you eat?	2
Eating Poorly	Do you eat fewer than 2 meals per day?	3
	Do you eat few fruits, vegetables or milk products?	2
	Do you have 3 or more drinks of beer, liquor or wine almost every day?	2
Tooth Loss/ Mouth Pain	Do you have tooth or mouth problems that make it hard for you to eat?	2
Economic Hardship	Do you sometimes have trouble affording the food you need?	4
Reduced Social Contact	Do you eat alone most of the time?	1
Multiple Medications	Do you take 3 or more prescribed or over-the-counter drugs a day?	1
Involuntary Weight Loss/ Gain	Have you lost or gained 10 pounds in the last 6 months without trying?	2
Needs Assistance In Self Care	Are you sometimes physically not able to shop, cook or feed yourself?	1
Elder Years > Age 80	Are you over 80 years old?	1
	TOTAL (6 or more at risk)	_____

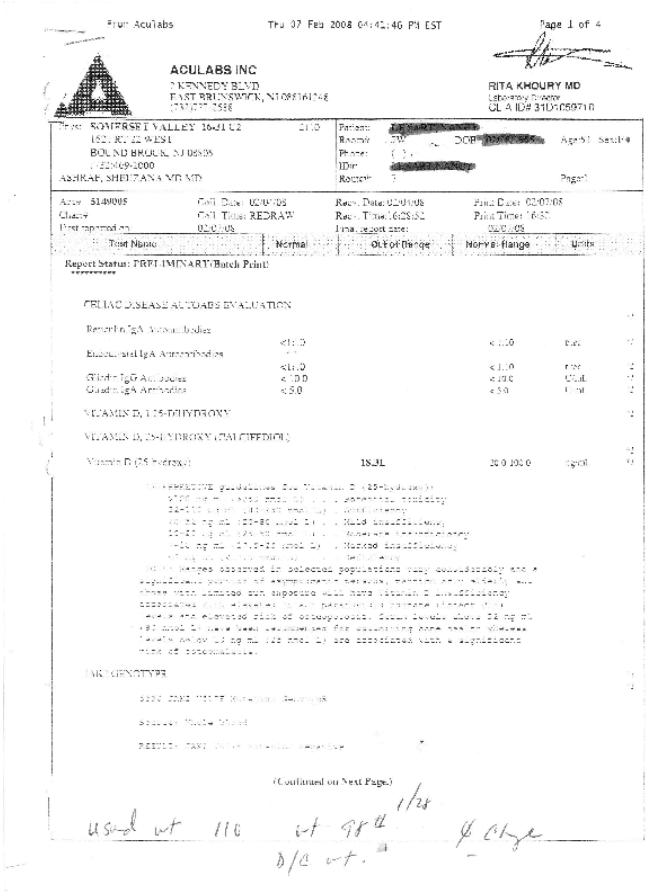
LN Admitted Sub Acute 02/2008

- ***Diagnosis:***
  - MS
  - Multiple stage III & IV
  - Anemia
  - Weight Loss
    - 30# in 3 years
    - 5'3 admitted 97#

- ***Diet History:***
  - 2000 cal daily
  - (45cal/kg)

- ***Labs:***
  - Hydration normal
  - Alb 2.7
  - Ca++ 8.3
  - H/H 8.3/2.7

LN Case Study Continued



From: AcuLabs Thu 07 Feb 2008 04:42:46 PM EST Page 1 of 4

ACULABS INC
2 KENNEDY BLVD
EAST BRUNSWICK, NJ 08816-1748
(732) 777-7458

RITA KHOURY MD
Laboratory Director
CLIA ID# 31D0659710

From: SOMERSET VALLEY 16-21 C2 2110
1621 RT 22 WEST
BOUND BROOK, NJ 08805
(732)469-2000
ASHRAF, SHEHZANA MD MD

Patient: [redacted] DOB: [redacted] Age/Sex: [redacted]
Room: [redacted]
Phone: [redacted]
ID#: [redacted]
Recieved: [redacted] Page#

Accn: 8140005 Coll. Date: 02/07/08 Recv. Date: 02/07/08 Print Date: 02/07/08
Client: Coll. Time: REDRAW Recv. Time: 16:28:52 Print Time: 16:52
Dist reported on: 02/07/08 Time report sent: 02/07/08

Test Name	Normal	Out of Range	Normal Range	Units

Report Status: PRELIMINARY/Batch Print!

CELIAC DISEASE AUTOABS EVALUATION

Reticulin IgA Autoantibodies <1:10 <1:10 Titer
Endomysial IgA Autoantibodies <1:10 <1:10 Titer
Gliadin IgG Antibodies <20.0 <20.0 U/mL
Gliadin IgA Antibodies <5.0 <5.0 U/mL

VITAMIN D, 1,25-DIHYDROXY

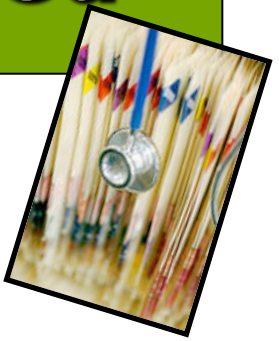
VITAMIN D, 25-OH,D3+D2 (CHOLECIFEROL)

Vitamin D (25 hydroxy) 18.3L 30.0-100.0 ng/ml

(Continued on Next Page)

used wt 110 wt 98# 1/24 ∅ Chyle
D/C wt.

- Cal count results:
  - 45kcal /kg
  - 1.8 g protein/kg
- WT 98#



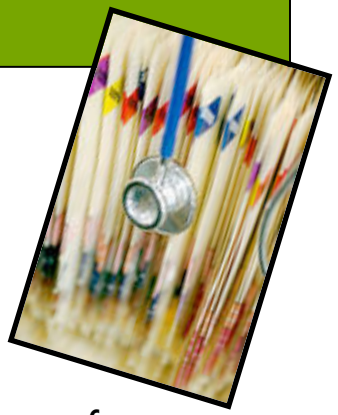
- Requested Celiac panel, total IGA & Vit D
- Lab results:
  - Reticulin IgA WNL
  - EMA WNL
  - Gliadin IgA WNL
  - Gliadin IgG WNL

MD concluded negative for celiac

LN Continued

- *Went home and was readmitted to the hospital with respiratory distress*
- *Was to return to the sub-acute*
- *53 YO with weight loss despite a hearty appetite died of respiratory failure*
- *Celiac panel inconclusive: no total IgA*

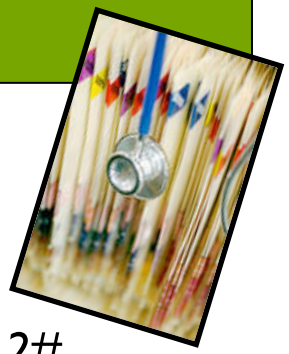
LB CCRC DNR DNH Resident in Skilled Nursing



- ***Diagnosis:***
  - Alzheimer's Disease
  - Osteoporosis
  - Depression
  - Hypercholestermia
- ***DO:***
  - Gluten-Free POS
  - Allergy: wheat
  - 4/2009 WT 122 BMI 19.5
  - 2-cal product
  - < 50% meals losing weight ~ 1 pound weekly and argumentative to encouragement
- ***RD:***
  - Called the pharmacy for a vitamin, was told no guarantee of GF status so decided not to order
  - Selected GF options from facility menu

- *Frequently a gluten-free diet is one of exclusion*
- *Meal can be dry & missing at least 240 calories*

LB CCRC DNR DNH Resident in Skilled Nursing



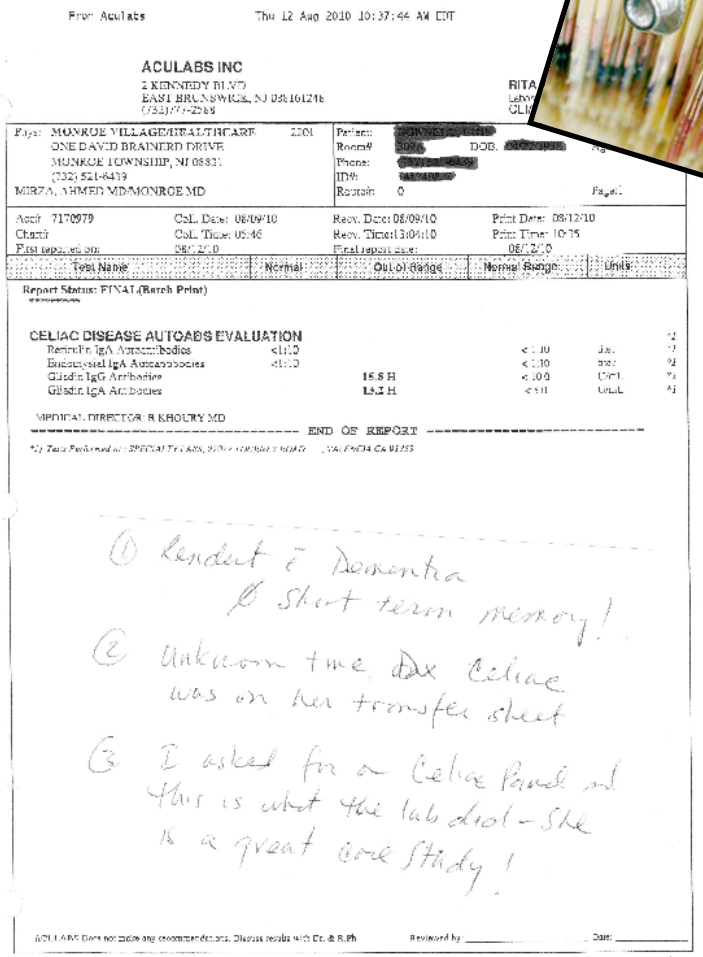
- *5/2010 wt. 120# strovite plus vitamins*
- *8/2010 WT 136 (+ 16#'s in three months) Goal wt 136 +/- 2#*
- *RD/RN charting on overt intake of gluten containing food between meals. (husbands PB&J HS snack). PO improved, seeking food items. No GI distress*
- *9/2010 134*
- *10/2010 135*
- *11/2010 supplement d/c'd*
- *DO continued Gluten-Free, documented to monitor GI symptoms due to behaviors. Family aware.*
- *www.glutenfreedrugs.com to review medications as needed*

LB CCRC DNR DNH Resident in Skilled Nursing

- *Reticulin IgA WNL*
- *Endomysial IgA WNL*

- *Gliadin IgG 15.8 H*
- *Gliadin IgA 13.2 H*

- *Labs inconclusive would need an EGD to confirm celiac disease at this time*



From: Aculabs Thu 12 Aug 2010 10:37:44 AM EDT

ACULABS INC
2 KENNEDY BLVD
EAST BRUNSWICK, NJ 08816[illegible]
(732)777-2588

RITA
Lab
CLI

Page: MONROE VILLAGE/RIVAL/TRICARE 2201
ONE DAVID BRAINERD DRIVE
MONROE TOWNSHIP, NJ 08831
(732) 521-8439
MIRZA, AHMED MD/MONROE MD

Patient: [redacted]
Room#: [redacted] DOB: [redacted]
Phone: [redacted]
ID#: [redacted]
Room#: 0

Acct# 7170979 Coll. Date: 08/09/10 Recv. Date: 08/09/10 Print Date: 08/12/10
Chart# Coll. Time: 05:46 Recv. Time: 13:04:10 Print Time: 10:35
First reported on: 08/12/10 Final report date: 08/12/10

Test Name	Result	Out of Range	Normal Range	Units
Report Status: FINAL(Batch Print)				
CELIAC DISEASE AUTOABS EVALUATION				
Reticulin IgA Autoantibodies	<1:10		< 1:10	
Endomysial IgA Autoantibodies	<1:10		< 1:10	
Gliadin IgG Antibodies	15.8 H		< 10.0	U/mL
Gliadin IgA Antibodies	13.2 H		< 5.0	U/mL

MEDICAL DIRECTOR: R KHOURY MD

END OF REPORT

*) Tests Performed at: SPECIALTY Labs, [illegible]

① Resident is Samantha
Ø Short term memory!

② Unknown time Dx Celiac was on her transfer sheet

③ I asked for a Celiac Panel and this is what the lab did - She is a great case Study!

ACULABS does not make any recommendations. Discuss results with Dr. & R.Ph. Reviewed by: _____ Date: _____

What does the research say?

Small-Intestinal Histopathology and Mortality Risk in Celiac Disease

Ludvigsson, et al. JAMA, September 16, 2009—Vol 302, No. 11

ABSTRACT

Context Studies of mortality in celiac disease have not taken small-intestinal pathology into account.

Objective To examine mortality in celiac disease according to small-intestinal histopathology.

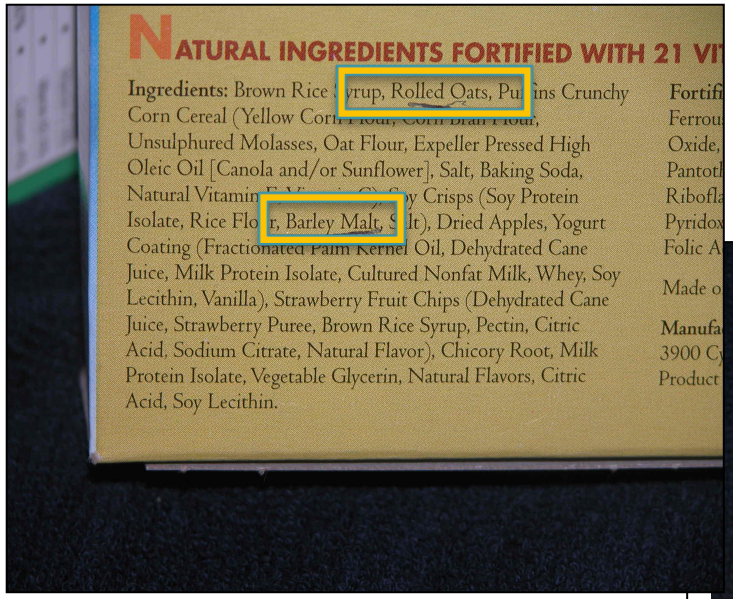
Design, Setting, and Patients Retrospective cohort study. We collected data from duodenal/jejunal biopsies taken between July 1969 and February 2008 on celiac disease (Marsh stage 3: villous atrophy; n=29 096 individuals) and inflammation (Marsh stage 1-2; n=13 306) from all 28 pathology departments in Sweden. A third cohort consisted of individuals with latent celiac disease from 8 university hospitals (n=3719). Latent celiac disease was defined as positive celiac disease serology in individuals with normal mucosa (Marsh stage 0). Through linkage with the Swedish Total Population Register, we estimated the risk of death through August 31, 2008, compared with age- and sex-matched controls from the general population.

Main Outcome Measure All-cause mortality.

Results There were 3049 deaths among patients with celiac disease, 2967 with inflammation, and 183 with latent celiac disease. We found an increased hazard ratio (HR) for death in celiac disease (HR, 1.39; 95% confidence interval [CI], 1.33-1.45; median follow-up, 8.8 years), inflammation (HR, 1.72; 95% CI, 1.64-1.79; median follow-up, 7.2 years), and latent celiac disease (HR, 1.35; 95% CI, 1.14-1.58; median follow-up, 6.7 years). The absolute mortality rate was 10.4 (95% CI, 10.0-10.8) per 1000 person-years in celiac disease, 25.9 (95% CI, 25.0-26.8) in inflammation, and 6.7 (95% CI, 5.7-7.6) in latent celiac disease. ***Excess mortality was 2.9 per 1000 person-years in celiac disease, 10.8 in inflammation, and 1.7 in latent celiac disease.*** This risk increase was also seen in children. ***Excluding the first year of follow-up, HRs decreased somewhat.***

Conclusion Risk of death among patients with celiac disease, inflammation, or latent celiac disease is modestly increased.

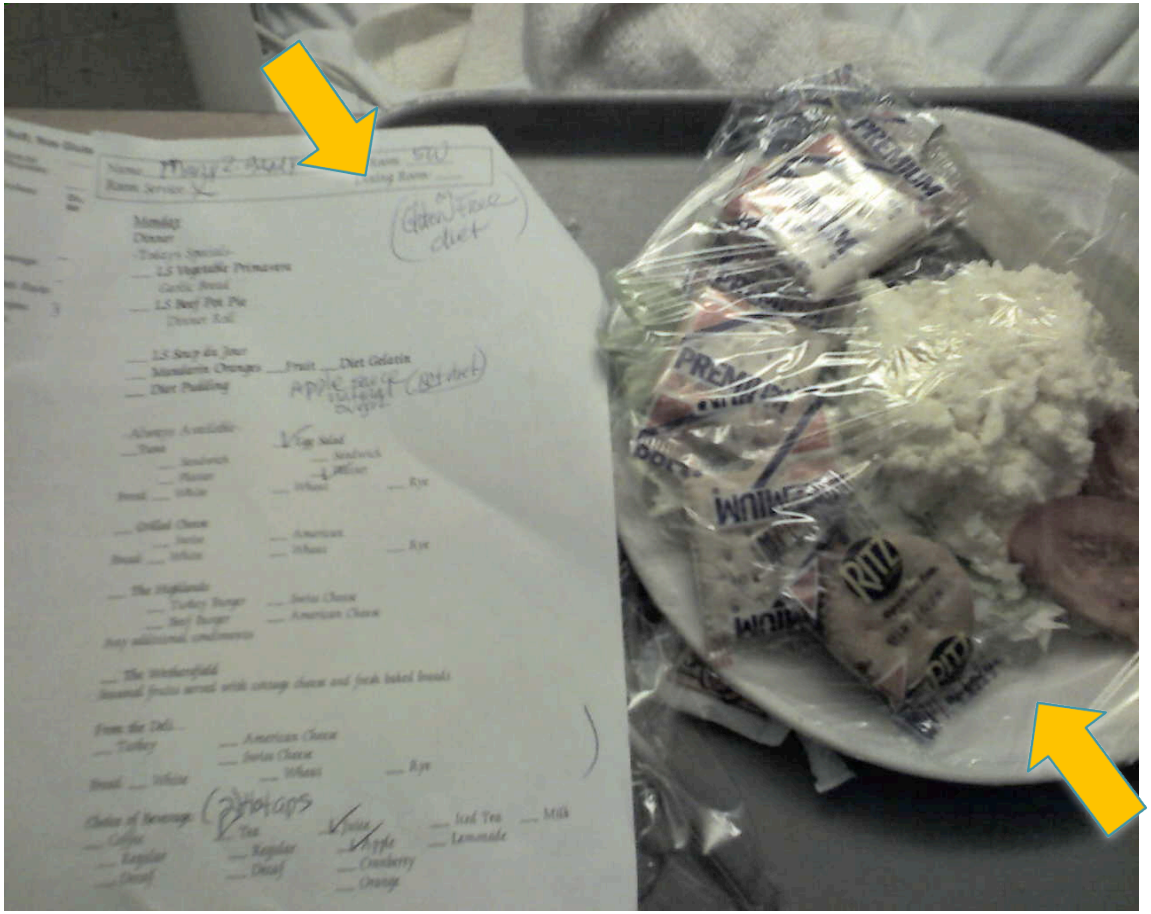
Wheat-Free ≠ Gluten-Free



Wheat-Free ≠ Gluten-Free

- *AL resident purchased for her gluten-free diet butcomplained facility was not providing appropriate foods due to continued GI symptoms*

Is It Really Gluten-Free?



Celiac Disease: Negative Impact on Quality of Life

44% report adhering to GFD moderate or very difficult!

- Ability to travel (82%)
- Ability to eat out (86%)
- Family life (67%)
- Work/Career (41%)
- Hard to follow GFD (44%)

J Am Diet Assoc 2003, Lee and Newman

Dietary lapses are common!

- Restaurants (26%)
- Parties/Social functions (21%)

Am J Gastroenterology 2001, Green, et al.

What does the research say?

Systematic review: Adherence to a gluten-free diet in adult patients with coeliac disease.
Hall, et al. Aliment Pharmacol Ther. 2009 Aug 15;30(4):315-30.

ABSTRACT

Methods: A literature search of multiple electronic databases using a pre-determined search string for literature between 1980 and November 2007 identified a possible 611 hits. After checking for relevance 38 studies were included in this review.

Results: Rates for strict adherence range from 42-91% depending on definition and method of assessment, and are lowest among ethnic minorities and those diagnosed in childhood. ***Adherence is most strongly associated with cognitive, emotional and socio-cultural influences, membership of an advocacy group and regular dietetic follow-up.*** Screen and symptom-detected coeliac patients do not differ in their adherence to a GFD.

Gluten Free Registry™ - Resources for finding Gluten-Free Restaurants, Gluten-Free Dining, Glut - Windows Internet Explorer

http://www.glutenfreeregistry.com/

Favorites | Yahoo! | Suggested Sites | Get More Add-ons | Home | iGoogle | My Optimum Voice - Log ...

Gluten Free Registry™ - Resources for finding Glu...

Page | Safety | Tools

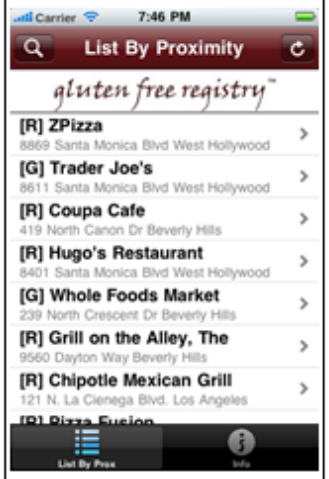
AVG | Type your search here! | Search | Page Status | News

gluten free registry™

putting people and gluten-free friendly businesses together!™

Home/Search | GF Map | iPhone/iPod | iPad | Android | Mobile | Brands | Add A Business | Store | Support | Events | Blog | About Us

Gluten Free Registry™ App for iPhone!



Buy Now

Ratings/Reviews

most recent
most talked about
most popular

Our Mission

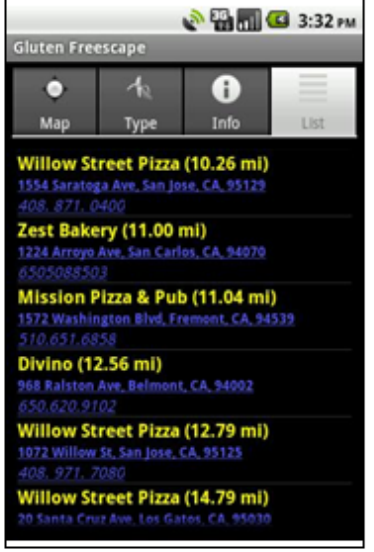
Our mission at the Gluten Free Registry™ is to put people and gluten-free friendly restaurants, bakeries, caterers, grocers and more together. Utilize our free, searchable, moderated database of over 18,000+ gluten-free friendly business locations to find one near you or your travel destination. Also available to search on your iPhone® or iPod Touch®, iPad®, Android® device, other smart phone, and as GPS POI files.

Gluten-Free Quick Search

Click on a state below to find gluten-free friendly restaurants, bakeries, caterers and grocers in your area! Or try our interactive GF World Map.

Twitter | Facebook

Get the Andoid app powered by our database!



Find gluten-free foods at any grocery store

Slide 49 of 73 | Ripple | English (U.S.)

10:33 PM

GREAT Kitchens

CeliacCentral.org

- **List of trained restaurants, food service & other kitchens**

When Is It Not Gluten?

- ***Norwalk virus:*** A virus cause of acute nonbacterial gastroenteritis
- ***Listeria monocytogenes:***
  - ~ 2,500 people in the United States become ill each year with listeriosis with 500 deaths
  - Listeria is usually killed by cooking and pasteurization but can be present in certain ready-to-eat foods such as hot dogs and deli meats
- ***Campylobacter*:** One of the most common bacterial causes of diarrheal illness with more than 1 million people in the U.S. every year
- ***Salmonella:*** ~ 600 people die each year after being infected
- ***E. coli 0157:***
  - Can result in bloody diarrhea
  - 73,000 infections and 61 deaths are attributable to E. coli 0157 annually
  - **www.fightbac.org**

Nutrition Checklist for Aging Adults

Possible Problem	"DETERMINE" Mnemonic	*Score for "Yes" Answer (Circle if "yes")*
Disease	Do you have an illness or condition that makes you change the kind and/or amount of food you eat?	2
Eating Poorly	Do you eat fewer than 2 meals per day?	3
	Do you eat few fruits, vegetables or milk products?	2
	Do you have 3 or more drinks of beer, liquor or wine almost every day?	2
Tooth Loss/ Mouth Pain	Do you have tooth or mouth problems that make it hard for you to eat?	2
Economic Hardship	Do you sometimes have trouble affording the food you need?	4
Reduced Social Contact	Do you eat alone most of the time?	1
Multiple Medications	Do you take 3 or more prescribed or over-the-counter drugs a day?	1
Involuntary Weight Loss/ Gain	Have you lost or gained 10 pounds in the last 6 months without trying?	2
Needs Assistance In Self Care	Are you sometimes physically not able to shop, cook or feed yourself?	1
Elder Years > Age 80	Are you over 80 years old?	1
	TOTAL (6 or more at risk)	_____

Administration on Aging (AOA)
www.aoa.gov

- Reduce hunger and food insecurity
- Promote socialization of older individuals
- Promote the health and well-being of older individuals and delay adverse health conditions through access to nutrition and other disease prevention and health promotion services
  - *Congregate Nutrition Services*
  - *Home-Delivered Nutrition Services*

Assessment

1. ***Dietary Status***
   - Calcium/Vit D, Fiber, Iron and B vitamin intake

2. ***Nutritional Status***
   - PCM, Bone Density, Vit D status, Iron & B12

3. ***Compliance Issues***
   - Socio-economic & emotional

Nutrition Diagnosis

- ***Altered GI function as evidenced by:***
  - Weight loss with excessive caloric intake
  - Nutrient Deficiency with adequate dietary intake
  - Persistent Diarrhea

- ***Food related knowledge deficit AEB by:***
  - Persistent elevated tTG of unknown origin

- ***Limited adherence to nutrition related recommendations:***
  - Diet history reveals overt gluten intake

Guidance for Industry: Questions and Answers Regarding Food Allergens, including the Food Allergen Labeling and Consumer Protection Act of 2004 (Edition 4); Final Guidance

October 2006

Comments and suggestions regarding this document may be submitted at any time. Submit comments to Division of Dockets Management (HFA-305), Food and Drug Administration, 5630 Fishers Lane, rm. 1061, Rockville, MD 20852.

For questions regarding this document, contact Rhonda R. Kane at the Center for Food Safety and Applied Nutrition (CFSAN) at 301-436-2371 or rhonda.kane@fda.hhs.gov.

Additional copies are available from:
Office of Nutritional Products, Labeling, and Dietary Supplements, HFS-800
Center for Food Safety and Applied Nutrition
Food and Drug Administration
5100 Paint Branch Parkway
College Park, MD 20740
http://www.cfsan.fda.gov/guidance.html

U.S. Department of Health and Human Services
Food and Drug Administration
Center for Food Safety and Applied Nutrition
October 2006

Guidance for Industry
Questions and Answers Regarding Food Allergens, including the Food

Resources & Web Sites

National Foundation for Celiac Awareness (NFCA)

- www.CeliacCentral.org

Evidence Based Standards of Practice

- celiac.nih.gov
- www.digestive.niddk.gov
- www.eatright.org
- AGA Institute Medical Position Statement on the DX and Mngt of Celiac Disease: Gastroenterology 2006;131:1977-1980

Center for Celiac Research

- www.celiaccenter.org

Gluten-Free Medications

- www.glutenfreedrugs.com

CE for Pharmacists

- www.CeliacLearning.com

Support Groups

- Celiac Sprue Association, Gluten Intolerance Group of North America & Celiac Disease Foundation

Religious Resources

- altarbreads@benedictinesisters.org
- glutenfreematzo.com

Allergen Food for Institutions (mail order)

- www.celinalfoods.com
- www.med-diet.com

Ronni Alicea

- rdronni@optonline.net

Celiac Disease & the Aged: Limited Clinical Studies

- Murray JA et al. Morbidity and mortality among older individuals with undiagnosed celiac disease. *Gastroenterology, 2010*. Sep;139(3):763-9.
- Collin P et al. Increasing Prevalence and high incidence of celiac disease in elderly people: A population-based study. BMC Gastroenterology, 2009; 9:49.
- Vilppula A et al. Undetected coeliac disease in the elderly: a biopsy-proven population-based study. *Digestive and Liver Diseases 2008,*40:809-13.
- Lurie Y et al. Celiac disease diagnosed in the elderly. *Journal of Clinical Gastroenterology, 2008*;42:59-61.
- Hu WT et al. Cognitive impairment and celiac disease. *Archives of Neurology, 2006*;63:1440-46.
- Hankey GL, Holmes GK. Coeliac disease in the elderly. *Gut, 1994*;35:65-67.
- Freeman H Lymphoproliferative and Intestinal Malignancies in 214 Patients With Biopsy-defined Celiac Disease *J Clin Gastroenterology* Volume 38, Number 5, May/June 2004.

Free Coupons!

This webinar was proudly sponsored by Crunchmaster Crackers! Please visit their website to obtain coupons for your next purchase:

www.crunchmaster.com

One More Resource…

- *Educational brochure for mature celiacs and their caregivers*
- *Joint initiative of NFCA & Gluten Intolerance Group of North America (GIG)*
- *Free download at CeliacCentral.org in the Resources tab*

Thank You!!

Thank you!

Questions? Comments? Feedback?

kvoorhees@CeliacCentral.org