

CELIAC DISEASE, 2008

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PREVALENCE OF CELIAC DISEASE

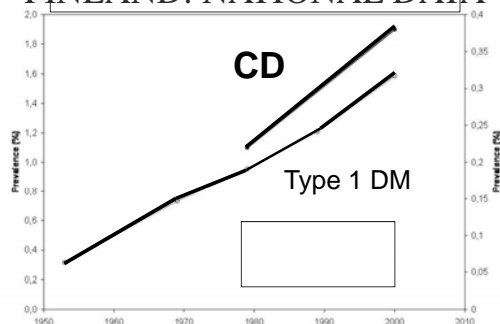
- Common, affects ~1% of the population
- Evidence from serologic screening studies

UK adults (<i>Gut</i> , 2003)	1/100
UK children (<i>BMJ</i> , 2004)	1/100
Finland children (<i>NEJM</i> , 2003)	1/99
Turkey children (<i>J Clin Gastroenterol</i> , 2005)	1/115
Turkey adults (<i>J Clin Gastroenterol</i> , 2005)	1/99
North Africa children (<i>Lancet</i> , 1999)	1/18
USA adults & children (<i>Arch Int Med</i> , 2003)	1/133

DIAGNOSIS OF CELIAC DISEASE

- Presence of consistent pathology and response to a gluten-free diet
- Serology and HLA supportive
- Celiac disease is a provisional diagnosis
- Classically a diarrheal illness of childhood

FINLAND: NATIONAL DATA



Lohi S et al., CDS 2006

MORBIDITY & MORTALITY IN CELIAC DISEASE

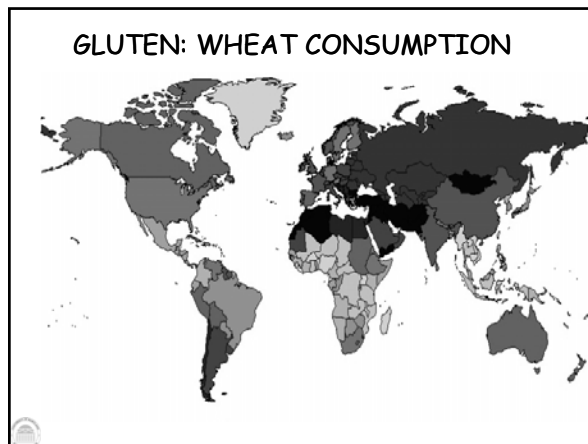
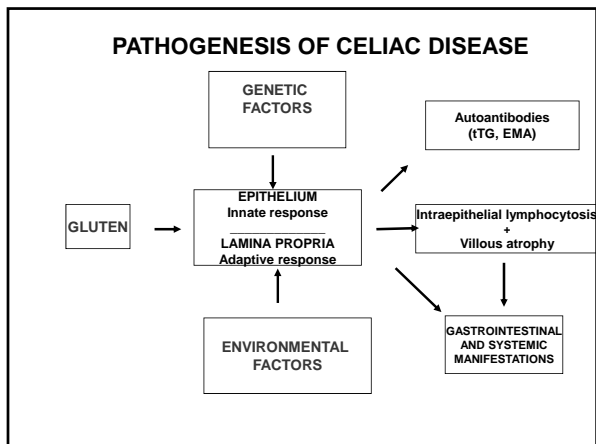
- **Morbidity** - classical presentation,
 - silent CD-anemia, bone
 - chronic liver disease
- **Mortality** increased 1.9-3.8 X
 - due to malignancy (lymphoma) in adults
 - childhood diagnosis associated with increased mortality in adulthood (accidents, suicide)

WHY IS CELIAC DISEASE UNDERDIAGNOSED?

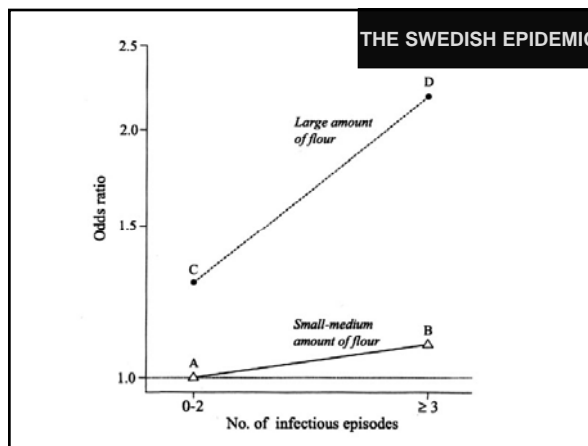
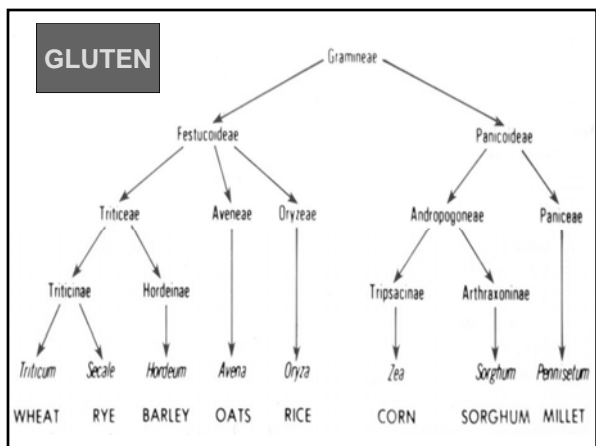
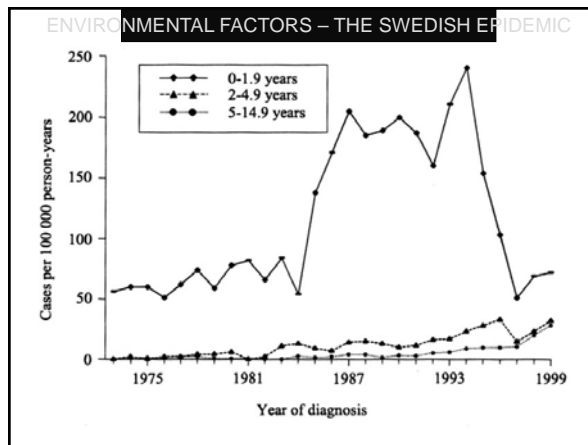
- Rate of diagnosis is low, varies country to country
- Finland 70%, Australia, Ireland, Italy 30%
- USA <5%

WHY

- Shift to silent form (due to breast feeding?)
- Failure of physician recognition
- Lack of pharmaceutical industry involvement
 - Medical research
 - Medical education



- ### GENETIC FACTORS
- GENETICALLY DETERMINED
 - Runs in families (10%)
 - Twin occurrence rates (70%)
 - What genes
 - HLA DQ2 92% DQ8 8%
 - These HLA genes are necessary
 - HLA accounts for <50% genetic influence
 - Other genes ?multiple



Evolution of Wheat

- 4,000,000,000 years BP → Origins of life
- 400,000,000 years BP → Complex organisms living in the seas invade the land (B cells and T cells already present in sharks)
- 200,000,000 years BP → Flowering plants begin to evolve
- 100,000,000 years BP → Grasses begin to evolve
- 20,000,000 years BP → Divergence of the common line that gives rise to wheat and barley
- 500,000 years BP → Early man (*Homo sapiens*)
- 10,000 years BP → Diploid wheat domesticated by man

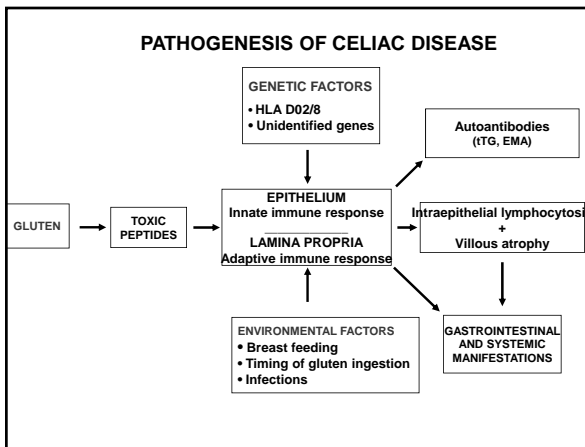
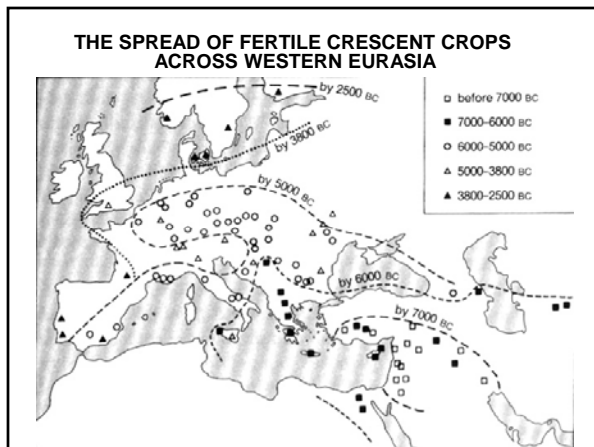
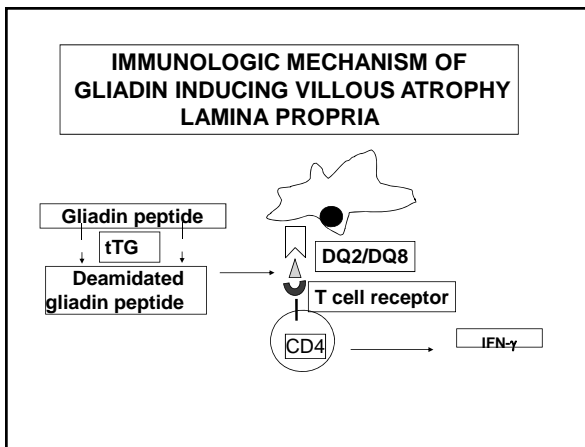
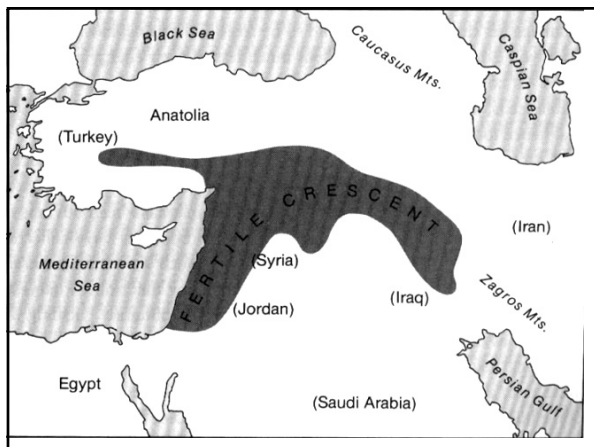
*BP = Before Present

PATHOPHYSIOLOGY OF CELIAC DISEASE

Gluten has toxic epitopes

Gluten is poorly digested by gastric, duodenal and pancreatic secretions leaving toxic epitopes, especially a 33 mer

Gliadin (somehow) enters the mucosa



CELIAC DISEASE

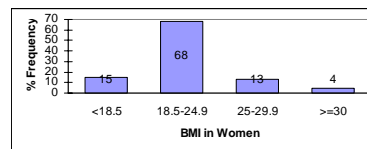
Traditionally a pediatric disease

Originally Dickie described the association with wheat ingestion after WW II

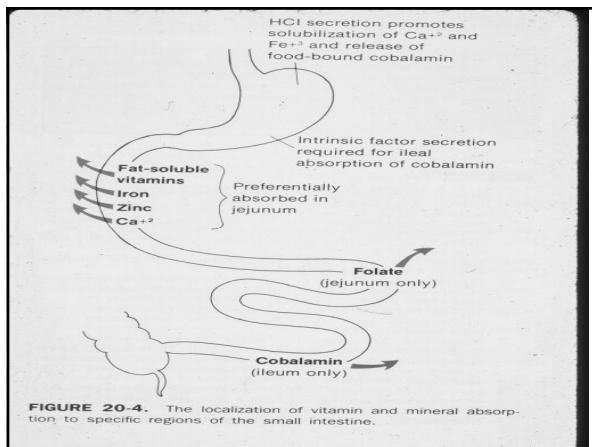
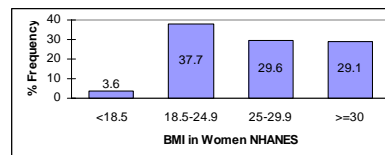
Classical presentation is with steatorrhea, malabsorption and weight loss

BMI (WOMEN) CELIAC DISEASE Vs US NATIONAL DATA

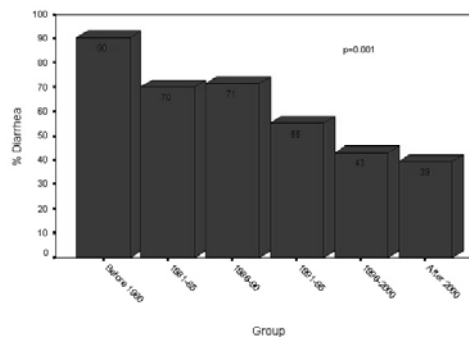
N=232



NHANES



Diarrhea as a Presenting Symptom of CD from 1952-2002

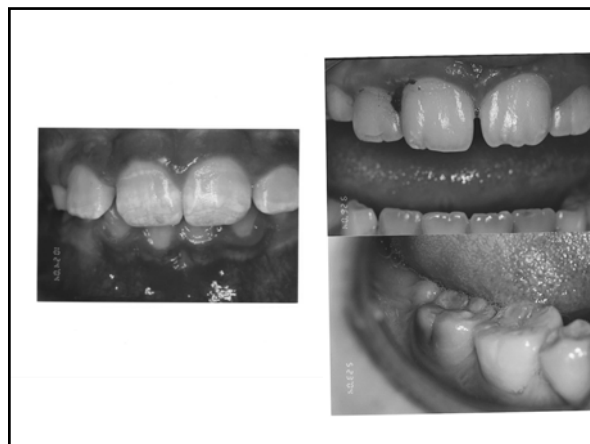


CLINICAL PRESENTATION OF CELIAC DISEASE

- **CLASSICAL** diarrhea predominant +/- malabsorption may be severe
- **SILENT** atypical complications associated diseases asymptomatic

SILENT CELIAC DISEASE NON-DIARRHEAL PRESENTATIONS

- Incidental at endoscopy
 - Iron deficiency anemia
 - Osteoporosis
 - Screening
 1. relatives
 2. other groups (TI DM, Down syndrome, PBC)
- NOT ALL ARE ASYMPTOMATIC
- Others - neurological presentations



LESS COMMON PRESENTATIONS OF SILENT CELIAC DISEASE

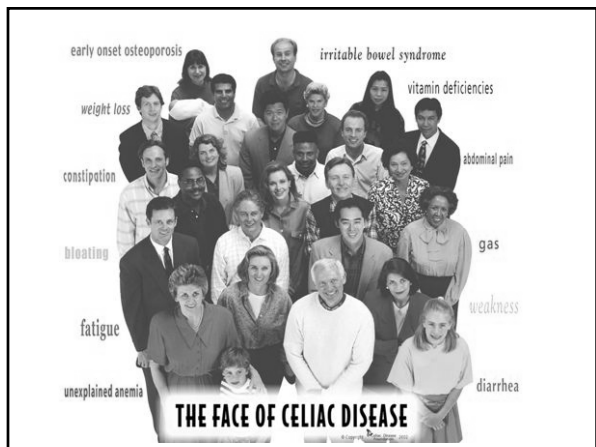
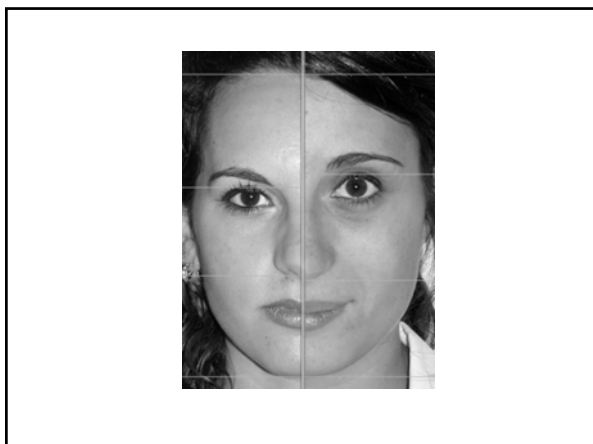
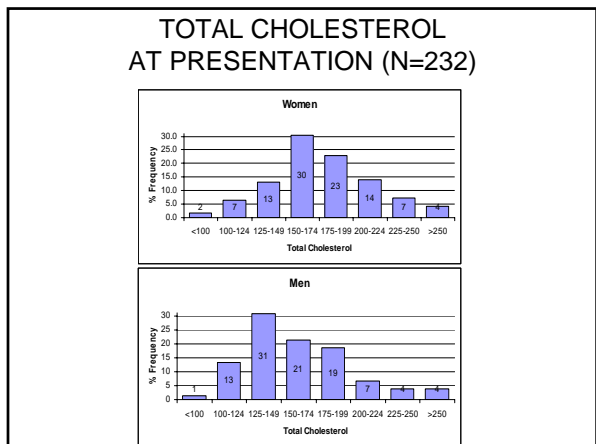
- Oral presentations
 - Dental enamel defects
 - Apthous ulceration



PRESENTATIONS OF SILENT CELIAC DISEASE

BLOOD TEST ABNORMALITIES

- Abnormal LFTs, low ferritin
- Hypocholesterolemia, Hyperamylasemia
- Hypoalbuminemia
- Hyposplenism
- Elevated ESR, prolonged PT, vitamin deficiency
- Hypocalcemia, secondary hyperparathyroidism

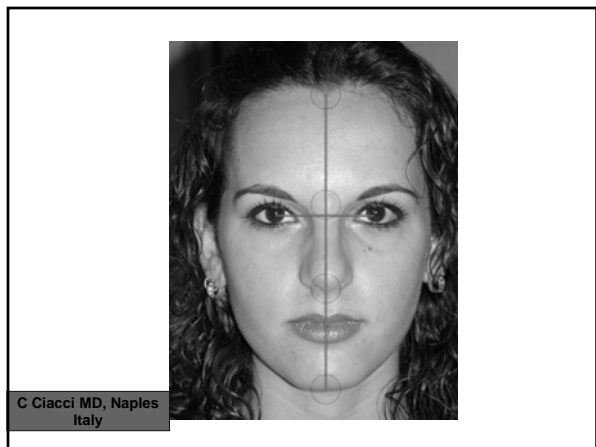


CLINICAL SPECTRUM OF CELIAC DISEASE

Asymptomatic with low cholesterol and large forehead and spots on teeth

IBS ↓ Diarrhea

Severe autoimmune disease
Life threatening illness
Critically ill with RS, EATL



WHAT IS RESPONSIBLE FOR THE VARIED CLINICAL SPECTRUM IN CELIAC DISEASE?

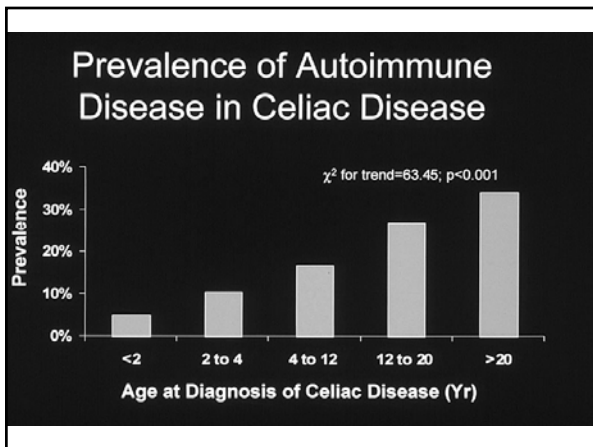
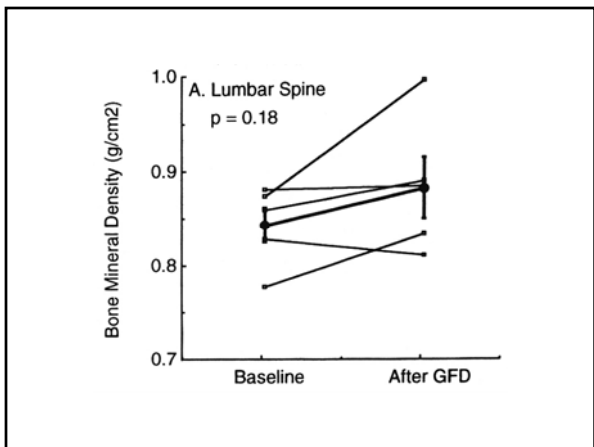
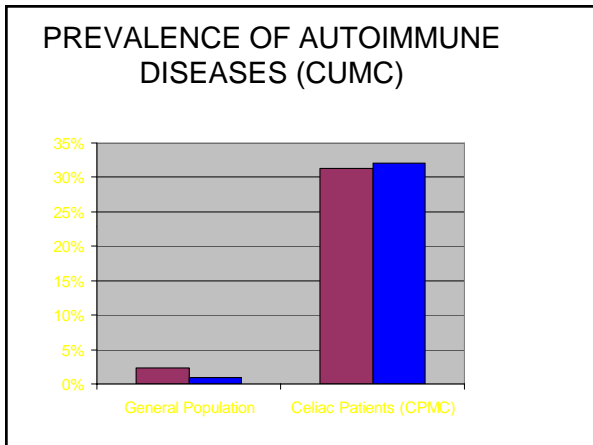
AUTO-IMMUNE DISEASES
 LIVER DISEASE
 MALIGNANCIES
 REDUCED BONE DENSITY
 INFERTILITY
 NEUROLOGICAL DISEASES
 CARDIOMYOPATHY

AUTOIMMUNE DISEASES

IDDM, Sjogren's syndrome
 Liver disease (PBC, CAH,)
 Thyroid disease
 Neurologic (neuropathy, epilepsy, ataxia)
 IgA nephropathy, Macroamylasemia
 Cardiomyopathy, Addison's disease
 Alopecia, viteligo
 Chronic autoimmune urticaria

MECANISM OF BONE DISEASE

- Malabsorption of calcium and vitamin D
- Secondary hyperparathyroidism
- Failure to obtain maximum bone density
- Magnesium deficiency
- Circulating cytokines
- Auto-immune
- Premature menopause
- Reduced gonadal function in men
- Primary hyperparathyroidism



BURDEN OF DISEASE IN CELIAC DISEASE

- Autoimmune diseases
10X the general population
- Malignancy

small intestinal carcinoma	33X
esophageal carcinoma	11.6X
non-Hodgkin's lymphoma	9.1X
melanoma	5X

Green, Am J Med. 2003;115:191.

Papillary thyroid cancer	23X
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Desserts

Baked cheesecake with raspberry coulis	€6.00
Chocolate truffle cake	€6.00
Mixed berry crumble	€6.00
Skelligs handmade Irish chocolates	€4.00

Our beef, lamb and pork are all organic reared on our family farm in the Burren, Co.Clare. Our cheeses, oysters, seafood and handmade chocolates are all sourced locally from suppliers who share our hands on approach.

There is no service charge, except on parties of six or more, where 12.5% service will be applied.
*suitable for coeliacs. *
Some dishes may contain traces of nuts.

MANAGEMENT

GLUTEN-FREE DIET

- Sources Local support groups
National support groups
- Dietitian
- Internet
- Pitfalls restaurant foods, preprepared foods,
fast foods, communion wafers,
medications

DON'T ABANDON THE PATIENT!

FUTURE

- More diagnosed
- Greater awareness
- Increased services
- NON-DIETARY THERAPIES
 - permeability blocker
 - enzymes
 - DQ2 blockers
 - tTG blockers

A screenshot of a menu listing several dulce de leche products. The items are: dulce de leche, dulce de leche granizado, dulce de leche con nuez, dulce de leche munchiis, dulce de leche marmolado, super dulce de leche, sambayón, and sambayón con almendras. The items 'dulce de leche munchiis' and 'sambayón' have a crossed-out circle icon next to them, indicating they are not suitable for coeliacs.