CELIAC DISEASE

DEFINITIVE DIAGNOSES AND SIGNIFICANT COST REDUCTION WITH CASCADING TEST APPROACHES
A CHALLENGING DIAGNOSIS

Celiac disease is a chronic inflammatory condition that primarily affects the small intestine. It is caused by an inflammatory response mounted by the patient’s own immune system against dietary gluten, which ultimately results in damage and atrophy of the villae within the small intestine.

While the diagnostic criteria of celiac disease are well-defined, symptoms are generally nonspecific. This fact, combined with the variety of available tests—each with a specific utility and interpretation—can make a diagnosis quite challenging.

PRESumptive diagnostic criteria
- Positive serology
- Intestinal biopsy that demonstrates villous atrophy

DEFinitive diagnostic criteria
- Resolution of clinical symptoms after initiation of a gluten-free diet
- Generally accompanied by:
  - Conversion to a negative serology
  - Reconstitution of the villae in the small intestine

CASCADING APPROACHES: A SIMPLIFIED SOLUTION

Working closely with our clinical GI colleagues, we have established several cascading algorithms to aid in the diagnosis of celiac disease. These algorithms, each with a specific utility, use automatic reflexing to perform the necessary tests and are available as orderable clinical tests.

Knowledge about the patient’s clinical presentation, past treatment, and previous laboratory testing is critical to selecting the most appropriate algorithm.

WHICH CASCADE SHOULD I ORDER?
- Celiac Disease Serology Cascade (Mayo Test ID: CDSP)

BENEFITS OF THIS CASCADE
- Available when HLA DQ typing is not desired or has been performed previously
- Interpretive report includes recommendations on the need for confirmatory biopsy

Note: If HLA DQ typing is desired, order Mayo ID: CDCOM.

ADDITIONAL CELIAC CASCADES
- Celiac Disease Comprehensive Cascade (Mayo Test ID: CDCOM)
  - Includes both serologic and genetic testing (HLA DQ typing)
  - Can completely rule out CD in about 50% of patients based on HLA typing
  - Includes individual test results, clinical interpretation, and recommendations on whether to proceed to biopsy or pursue another diagnosis

- Celiac Disease Gluten-Free Cascade (Mayo Test ID: CDGF)
  - Developed to assist in evaluating patients who have already reduced gluten in their diets
  - Includes HLA DQ typing as the initial test

CELIAC DISEASE BY THE NUMBERS

- 2.2M
  Approximate number of people in the U.S. estimated to have celiac disease.¹

- 83
  Estimated percentage of Americans who have celiac disease who are undiagnosed or misdiagnosed with other conditions.²

- 6–10
  Average number of years until a correct diagnosis is achieved.²

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### Celiac Disease Serology Cascade: A Detailed View

#### Celiac Disease Serology Cascade (Mayo Test ID: CDSP)

Testing begins with Immunoglobulin A (IgA), Serum

- **Normal or Elevated IgA**
  - Tissue Transglutaminase (tTG) Antibody, IgA, Serum
  - Gliadin (Deamidated) Antibody, IgA, Serum
  - Interpretive report includes:
    - Serum IgA
    - Tissue Transglutaminase Antibody, IgA
    - Endomysial Antibodies (IgA), Serum
    - Gliadin (Deamidated) Antibody, IgA
    - Interpretive comments

- **Deficient IgA (<1 mg/dL)**
  - Tissue Transglutaminase (tTG) Antibodies, IgA and IgG Profile, Serum
  - Gliadin (Deamidated) Antibodies Evaluation, IgG and IgA, Serum
  - Interpretive report includes:
    - Serum IgA
    - Tissue Transglutaminase Antibody, IgA and IgG
    - Endomysial Antibodies (IgA)
    - Gliadin (Deamidated) Antibody, IgA
    - Interpretive comments

- **Low IgA (>1 mg/dL but below the age-matched reference values)**
  - Tissue Transglutaminase (tTG) Antibodies, IgA and IgG Profile, Serum
  - Gliadin (Deamidated) Antibodies Evaluation, IgG and IgA, Serum
  - Interpretive report includes:
    - Serum IgA
    - Tissue Transglutaminase Antibody, IgA
    - Endomysial Antibody, IgA
    - Gliadin (Deamidated) Antibody, IgA
    - Interpretive comments

#### Significant Reducing Costs: A Case Study

87% of patients diagnosed with only two tests instead of the standard five.

- **100** Hospital beds
- **150** Serology cascades performed
- **25** Comprehensive cascades performed

- **$39,527**
  Total Cost Savings over 12 months using cascade versus standard panel
When you partner with Mayo Clinic Laboratories, you extend your network to include some of the world’s leading gastroenterology experts. Mayo Clinic clinicians, laboratorians, and genetic counselors are available to discuss testing options, interpret results, or help with case review and coordination.

FOR MORE INFORMATION ABOUT CELIAC DISEASE, VISIT US AT:

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