

# FUNCTIONAL VERSUS CROSS-REACTIVE ANTIBODY-ANTIGEN RESPONSES

FUNCTIONAL IMMUNE RESPONSE

**Reactive**

**GLIADIN  
ANTIBODY**



**GLIADIN  
ANTIGEN**

**Complete binding  
of antigen to  
antibody**

**Non-Reactive**

**GLIADIN  
ANTIBODY**



**SWEET POTATO  
ANTIGEN**

**Insufficient binding  
of antigenic  
determinants**

**Cross-Reactive**

**GLIADIN  
ANTIBODY**



**CASEIN  
ANTIGEN**

**Partial binding  
of antigenic  
determinants**

DYSFUNCTIONAL IMMUNE RESPONSE



# ARRAY

## 4

# GLUTEN-ASSOCIATED CROSS-REACTIVE FOODS & FOODS SENSITIVITY™



2 mL serum

- Rye, Barley, Spelt, Polish Wheat IgG + IgA Combined
- Cow's Milk IgG + IgA Combined
- Alpha-Casein & Beta-Casein IgG + IgA Combined
- Casomorphin IgG + IgA Combined
- Milk Butyrophilin IgG + IgA Combined
- Whey Protein IgG + IgA Combined
- Chocolate (Milk) IgG + IgA Combined
- Oats IgG + IgA Combined
- Yeast IgG + IgA Combined
- Coffee IgG + IgA Combined
- Sesame IgG + IgA Combined
- Buckwheat IgG + IgA Combined
- Sorghum IgG + IgA Combined
- Millet IgG + IgA Combined
- Hemp IgG + IgA Combined
- Amaranth IgG + IgA Combined
- Quinoa IgG + IgA Combined
- Tapioca IgG + IgA Combined
- Teff IgG + IgA Combined
- Soy IgG + IgA Combined
- Egg IgG + IgA Combined
- Corn IgG + IgA Combined
- Rice IgG + IgA Combined
- Potato IgG + IgA Combined

### CLINICAL USE:

- Identify additional dietary proteins to which the Non-Celiac Gluten Sensitive (NCGS) or Celiac disease (CD) patient is sensitized
- Detect cross-reactions in the patient non-responsive on a gluten-free diet
- Categorize the 1-in-2 NCGS or CD patient who is also sensitive to dairy products

### RECOMMENDED FOR PATIENTS WHO:

- Have Non-Celiac Gluten Sensitivity or Celiac disease
- Are experiencing limited improvements or are non-responsive on a gluten-free diet
- Have gut dysbiosis, which appears to be resistant to standard therapy



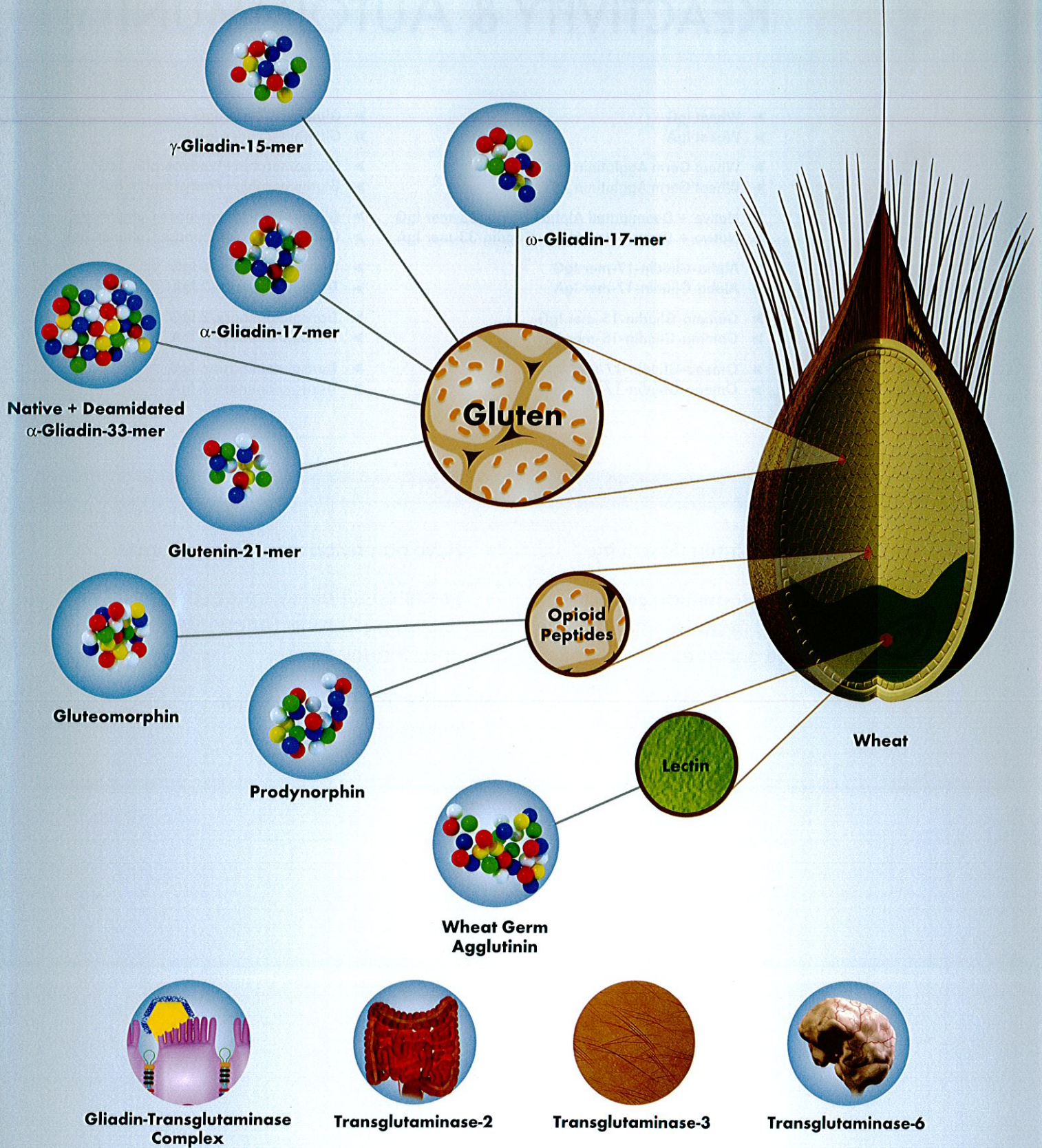
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# WHEAT

## PROTEINS • ENZYMES • PEPTIDES





# ARRAY

## 3

# WHEAT/GLUTEN PROTEOME REACTIVITY & AUTOIMMUNITY™



2 mL serum

- Wheat IgG
- Wheat IgA
- Wheat Germ Agglutinin IgG
- Wheat Germ Agglutinin IgA
- Native + Deamidated Alpha-Gliadin-33-mer IgG
- Native + Deamidated Alpha-Gliadin-33-mer IgA
- Alpha-Gliadin-17-mer IgG
- Alpha-Gliadin-17-mer IgA
- Gamma-Gliadin-15-mer IgG
- Gamma-Gliadin-15-mer IgA
- Omega-Gliadin-17-mer IgG
- Omega-Gliadin-17-mer IgA
- Glutenin-21-mer IgG
- Glutenin-21-mer IgA
- Gluteomorphin+Prodynorphin IgG
- Gluteomorphin+Prodynorphin IgA
- Gliadin-Transglutaminase Complex IgG
- Gliadin-Transglutaminase Complex IgA
- Transglutaminase-2 IgG
- Transglutaminase-2 IgA
- Transglutaminase-3 IgG
- Transglutaminase-3 IgA
- Transglutaminase-6 IgG
- Transglutaminase-6 IgA

### CLINICAL USE:

- Accurately identify Gluten Reactivity
- Measure antibody production against 9 wheat proteins and peptides and 3 essential structure enzymes

### RECOMMENDED FOR PATIENTS WHO:

- Have non-responsive GI symptoms
- Present multiple-symptom complaints (including Chronic Fatigue Syndrome and Fibromyalgia)
- Suffer from depression or neuro-autoimmunity

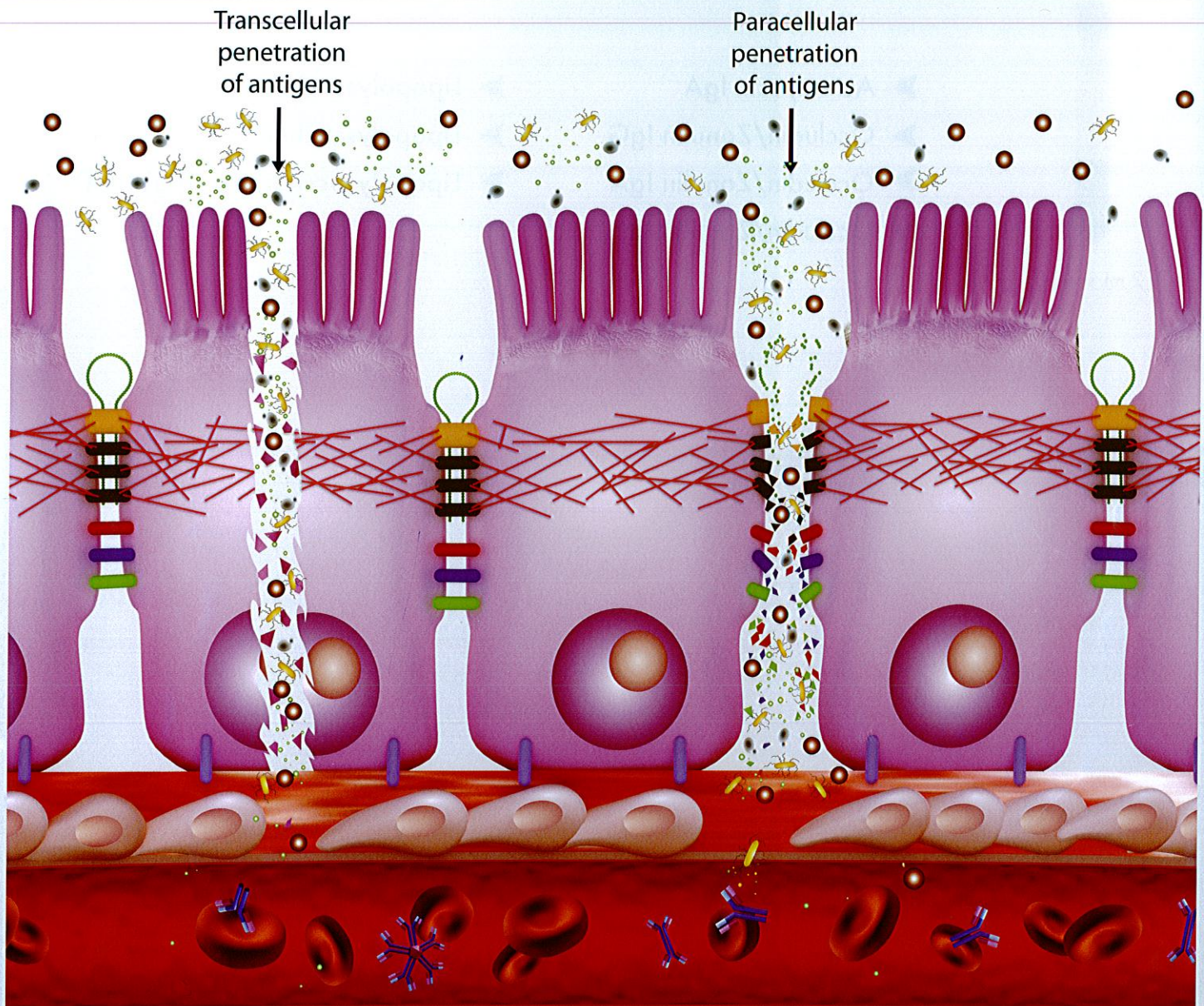








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# TRANSCELLULAR & PARACELLULAR ROUTES OF INTESTINAL BARRIER PENETRATION



Antigens Measured		Triggers of Barrier Breakdown	
	Actomyosin Proteins		Parasites
	Occludin/Zonulin Proteins		Viruses
	Lipopolysaccharides		Yeast



ARRAY

2

# INTESTINAL ANTIGENIC PERMEABILITY SCREEN™



2 mL serum

- ▶ Actomyosin IgA
- ▶ Occludin/Zonulin IgG
- ▶ Occludin/Zonulin IgA
- ▶ Occludin/Zonulin IgM
- ▶ Lipopolysaccharides (LPS) IgG
- ▶ Lipopolysaccharides (LPS) IgA
- ▶ Lipopolysaccharides (LPS) IgM

## CLINICAL USE:

- Measure intestinal permeability to large molecule which inflame the immune system
- Identify the damaging route through the intestinal barrier

## RECOMMENDED FOR PATIENTS WHO:

- Present multiple symptom complaints (including Chronic Fatigue Syndrome)
- Suffer from abnormal immune cell count and function (including autoimmune diseases)
- Complain of food allergy and intolerance



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# BARRIERS TO MACROMOLECULAR ABSORPTION

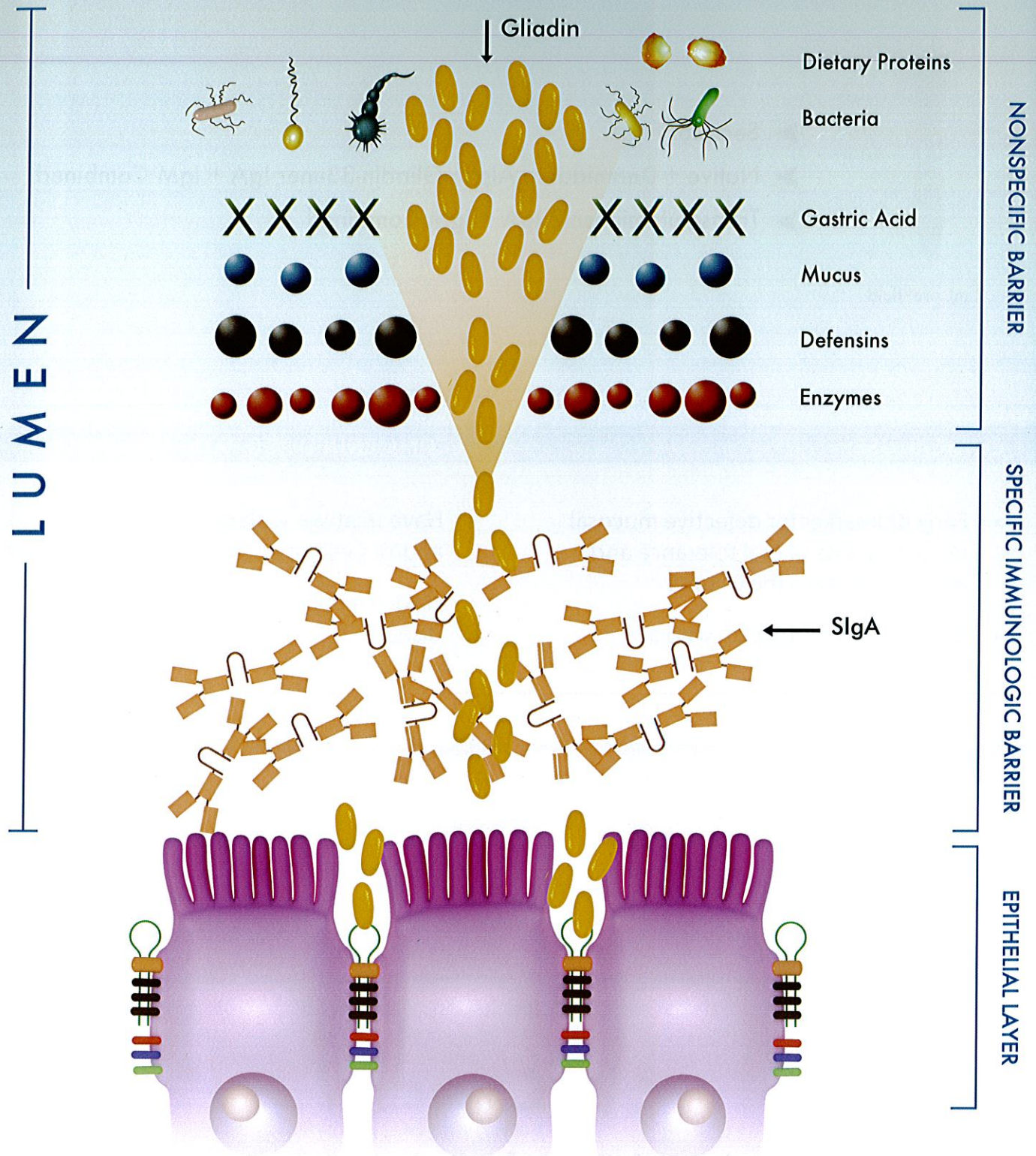


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ARRAY

1

# MUCOSAL GLUTEN REACTIVITY SCREEN™



2 mL oral fluid

- Secretory IgA
- Native + Deamidated Alpha-Gliadin-33-mer IgA + IgM Combined
- Transglutaminase-2 IgA + IgM Combined

## CLINICAL USE:

- Early biomarker for defective mucosal immunity, loss of oral tolerance and autoimmunity in the GI tract
- Monitoring compliance with a gluten-free diet

## RECOMMENDED FOR PATIENTS WHO:

- Have relatives with gluten reactivity and/or Celiac disease—especially children
- Have a family history of autoimmune disease



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