

# How the diagnosis of non celiac gluten sensitivity should be confirmed: the Salerno experts' criteria

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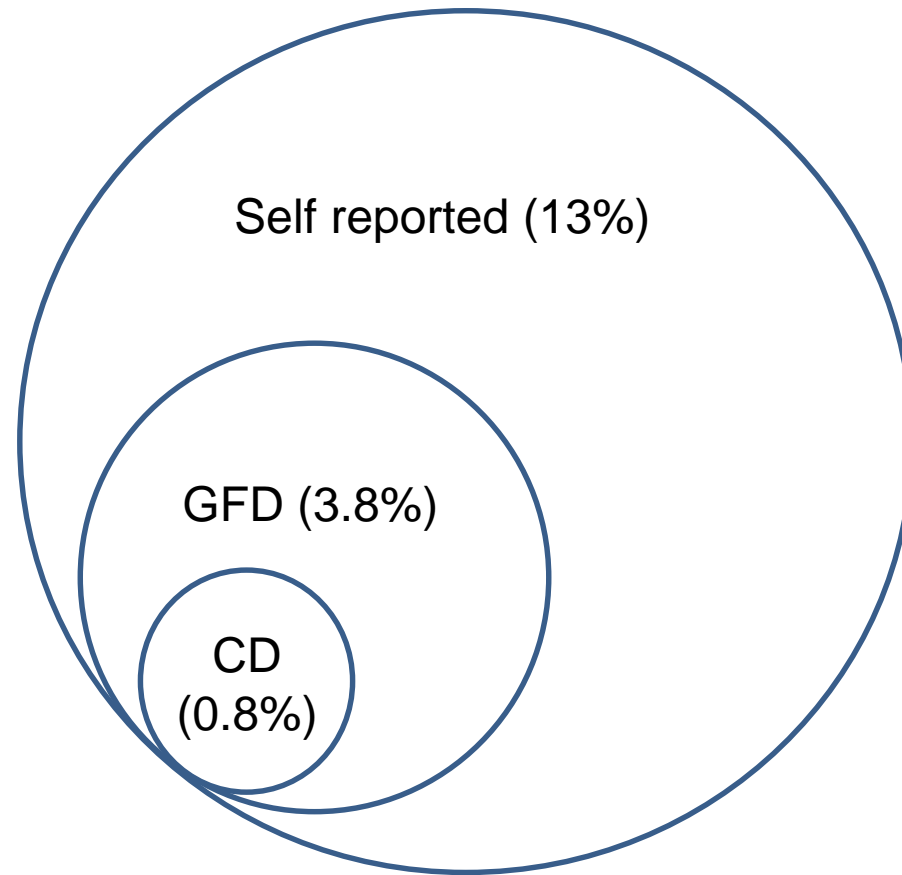
# Gluten Sensitivity, Non Celiac Gluten Sensitivity (NCGS), Non Celiac Wheat Sensitivity

**Syndrome characterized by intestinal and extra-intestinal symptoms related to the ingestion of gluten-containing food, in subjects that are not affected by either celiac disease or wheat allergy**

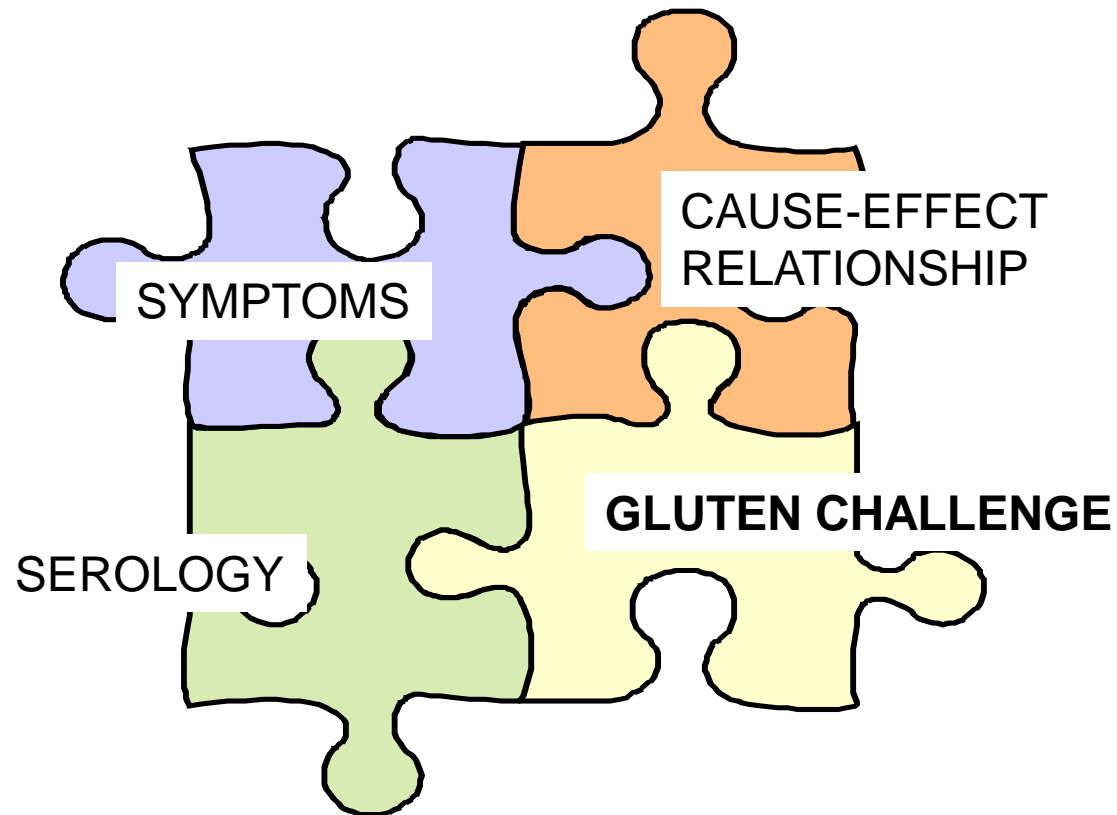
- Negative immuno-allergy tests to wheat;
- Negative CD serology (EMA and/or tTG) and in which IgA deficiency has been ruled out;
- Normal duodenal histopathology;
- Presence of biomarkers of gluten immune-reaction (AGA+);
- Presence of clinical symptoms that can overlap with CD or wheat allergy symptomatology;
- Quick symptoms resolution after starting treatment with the gluten-free diet

# A UK study assessing the population prevalence of self-reported gluten sensitivity and referral characteristics to secondary care

General population sample (n= 1002)



# NCGS: diagnosis is a puzzle



# Clinical manifestations of NCGS

Frequency	Intestinal	Extra-intestinal
<b>Very Common</b>	Bloating	Lack of wellbeing
	Abdominal pain	Tiredness
<b>Common</b>	Diarrhea	Headache
	Epigastric pain	Anxiety
	Nausea	Foggy mind
	Aerophagia	Numbness
	GER	Joint/muscle pain
	Aphtous stomatitis	Skin rash/dermatitis
	Alternating bowel habits	
<b>Undetermined</b>	Constipation	
	Hematochezia	Weight loss
	Anal fissures	Anemia
		Loss of balance
		Depression
		Rhinitis/asthma
		Weight increase
		Interstitial cystitis
		Ingrown hairs
		Oligo or polimenorrhea
		Sensory symptoms
		Disturbed sleep pattern
		Hallucinations
		Mood swings
		Autism
		Schizophrenia

*The Salerno NCGS diagnostic criteria (Nutrients, 2015)*

# How to make the diagnosis of NCGS

- (1) assessing the clinical response to the GFD
- (2) measuring the effect of reintroducing gluten after a period of treatment with the GFD

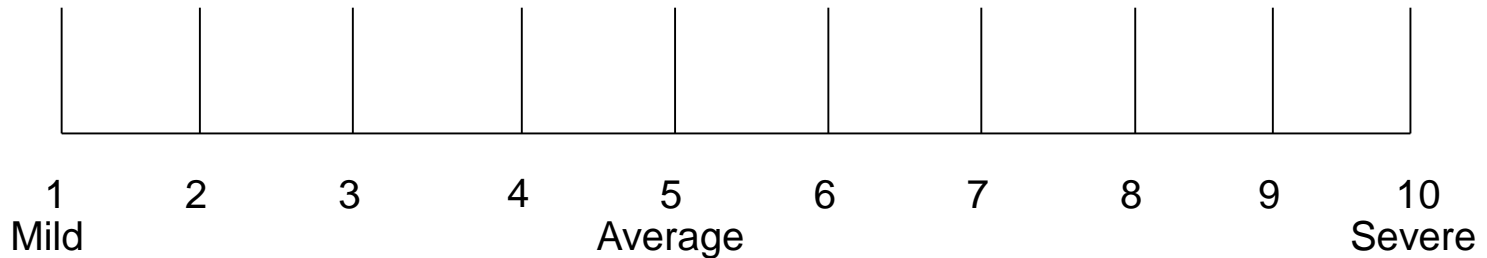
*It follows that a full diagnostic evaluation, including Phase 1 and 2 (see below), can only be started in the patient who is on a normal, gluten-containing diet. However a simplified/shortened diagnostic procedure (Step 2) may be adopted in patients who are already on a GFD.*

# Evaluation of the response to the GFD

INTESTINAL SYMPTOMS	<u>BASELINE</u>	<u>1 WEEK</u>	<u>2 WEEK</u>	<u>3 WEEK</u>	<u>4 WEEK</u>	<u>5 WEEK</u>	<u>6 WEEK</u>
Abdominal pain or discomfort							
Heartburn							
Acid regurgitation							
Bloating							
Nausea and vomiting							
Borborygmus							
Abdominal distension							
Eructation							
Increased flatus							
Decreased passage of stools							
Increased passage of stools							
Loose stools							
Hard stools							
Urgent need for defecation							
Feeling of incomplete evacuation							
<b>EXTRA-INTESTINAL SYMPTOMS</b>							
Eczema/rush							
Headache							
Foggy mind							
Fatigue							
Numbness of the limbs							
Joint/muscle pains							
Fainting							
Oral/tongue lesions							
Other (specify)							

# the Numerical Rating Scale for symptom quantification

How severe was your symptom in the last week?



*The Salerno NCGS diagnostic criteria  
(Nutrients, 2015)*



# patient responsive to the GFD (patient initially on a regular diet)

- at baseline the patient has to be on a normal gluten containing diet for at least 6 weeks. The patient is assessed by the diagnostic questionnaire week -2, -1 and 0 to establish baseline symptoms;
- at time 0 the GFD is started after detailed explanation (preferably by a dietitian);
- timeline: at least 6 weeks of verified GFD. Although the amelioration of symptoms is expected shortly after starting the GFD, a prolonged observation is needed to properly investigate the causal relationship, particularly for fluctuating symptoms (e.g. headache);
- data recording: weekly completion of the questionnaire from week 0 to 6. The patient will identify 1-3 main symptoms. The response parameters are those with an initial score of at least 3 on the numerical rating scale (NRS).

**A symptomatic response is a decrease of at least 30% of the baseline score.**

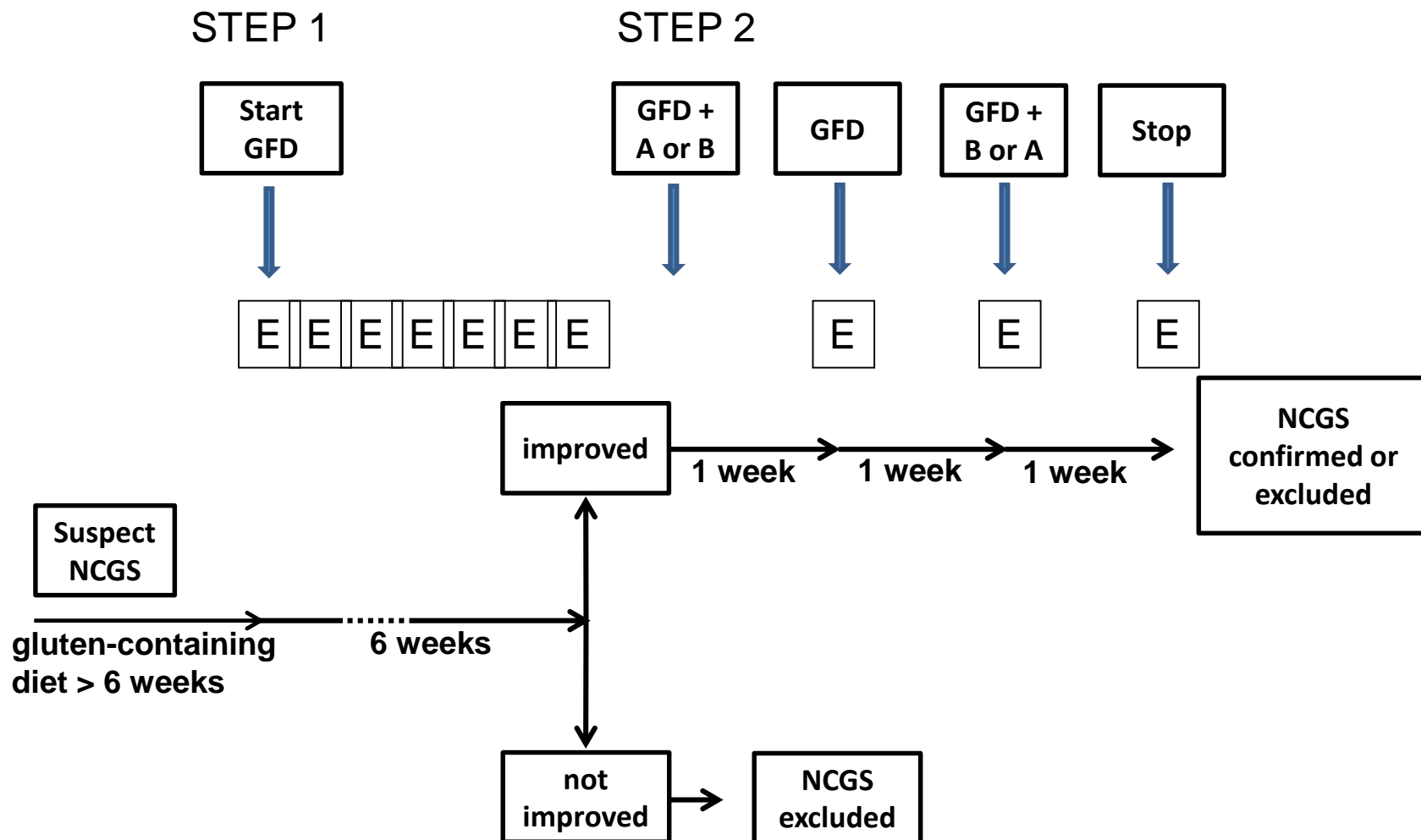
# The double-blind, placebo-controlled crossover challenge

- Following at least 4 weeks of GFD
- GFD + one-week treatment A(B), then 1 week wash-out, then one-week treatment B(A)
- 8 g of gluten/day (at least 0.3 g ATIs/8 g gluten)
- Identification of 1-3 main symptoms to be reported daily on the questionnaire
- At least 30% increase of the score with gluten compared to placebo

# Gluten challenge: which vehicle?



# NCGS diagnosis: the flow diagram



*The Salerno NCGS diagnostic criteria (Nutrients, 2015)*

# the diagnosis of NCGS

~~Self-diagnosis~~

~~Elimination  
diagnosis~~

Positive diagnosis  
(clinical and DBPC  
test)

# The Salerno experts' working group





*Article*

## Diagnosis of Non-Celiac Gluten Sensitivity (NCGS): The Salerno Experts' Criteria

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