

Diagnostic methods of gastroenterology

Dr. Noémi Csoszánszki



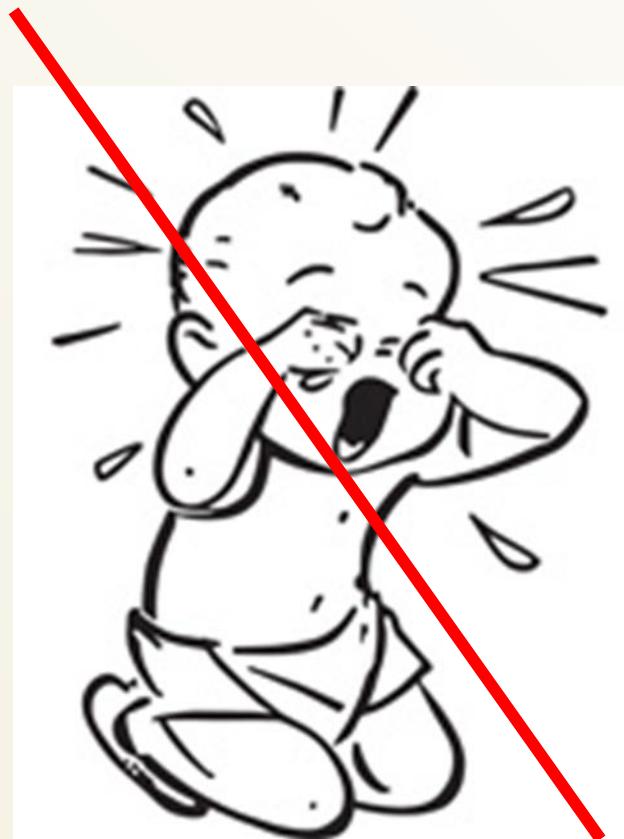
- Physical investigation
- Laboratory blood-,urine- ,stool tests
- Microbiological tests
- Ultrasound
- X –ray, isotope technic
- Endoscopic investigations
- 24 hour oesophagus pH metry
- Disaccharide provocation - H₂ exhalation test



- safe
- sensitiv
- specific
- cheap



- sensitiv
 - specific
 - safe
 - cheap
 - **painless**



”a good anamnesis is half a diagnosis”

about the complain....

- How long ?
- How often ?
- Exactly how?
- Does it show correlation with meals? /how??
- -"- foods?
- Is there any concomittant complain?
- Does it occur in the region?
- -"- in the family?
-





 **Localized pain**

 **Awakening pain**

 **Fever**

 **Bleeding manifest/occult**

 **Dysphagia**

 **Vomiting**

 **Diarrhoea during the night**

 **Perirectal disturbances**

 **Unintended loosing weight**

 **Delayed growing /Delayed sexual maturity**

 **IBD/coeliac disease/ peptic ulcer/ GI polyps in the family**

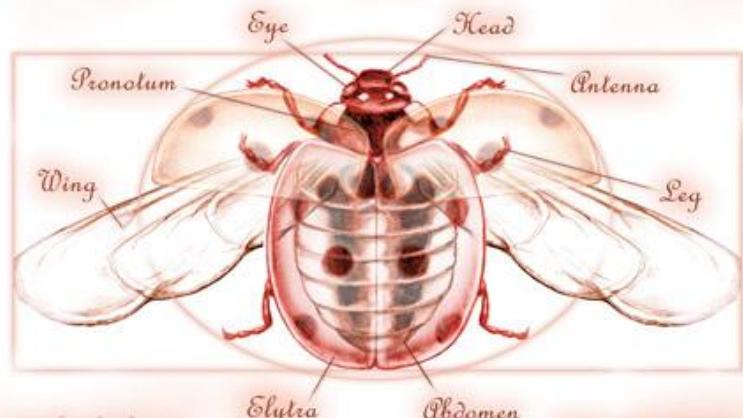


supposition



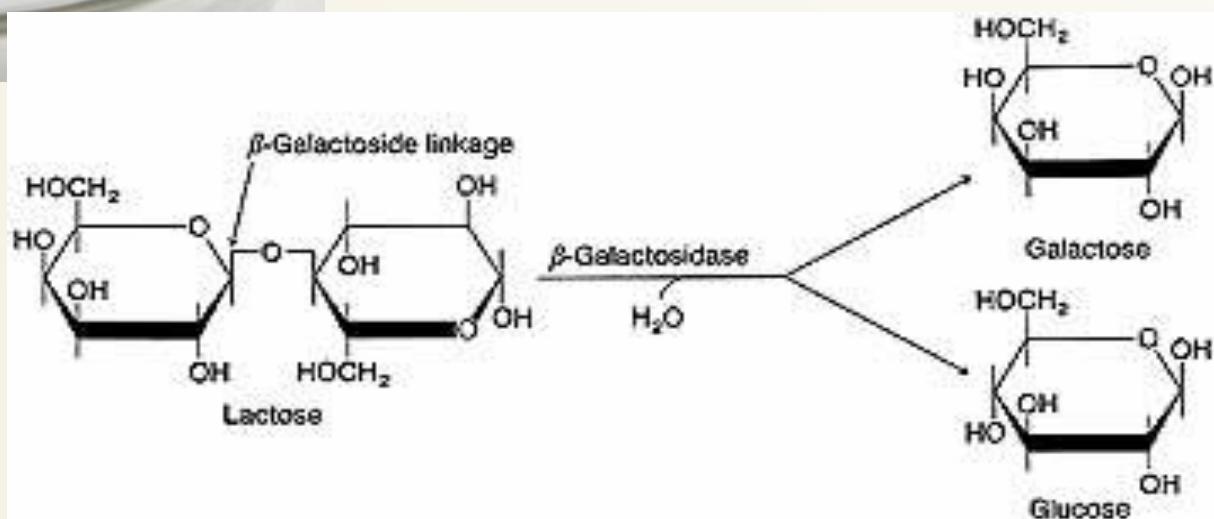


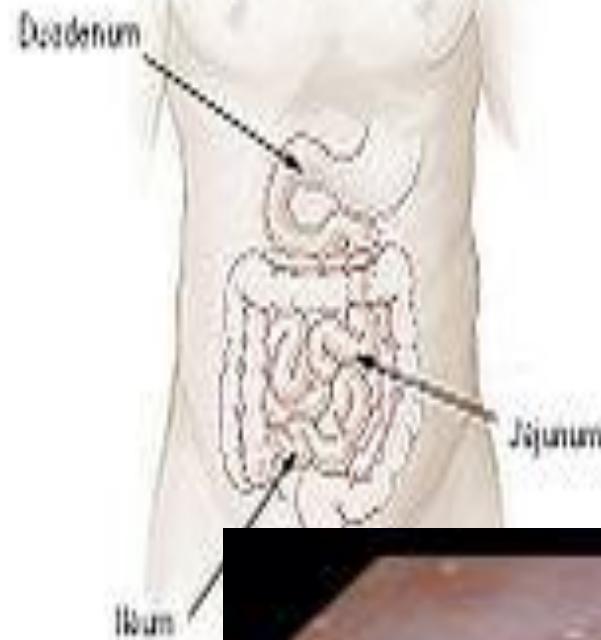
... Anatomy of Coccinellidae ...
(Ladybug)



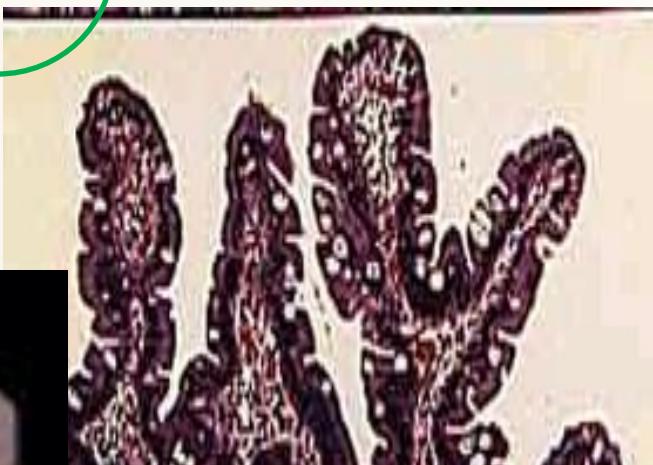
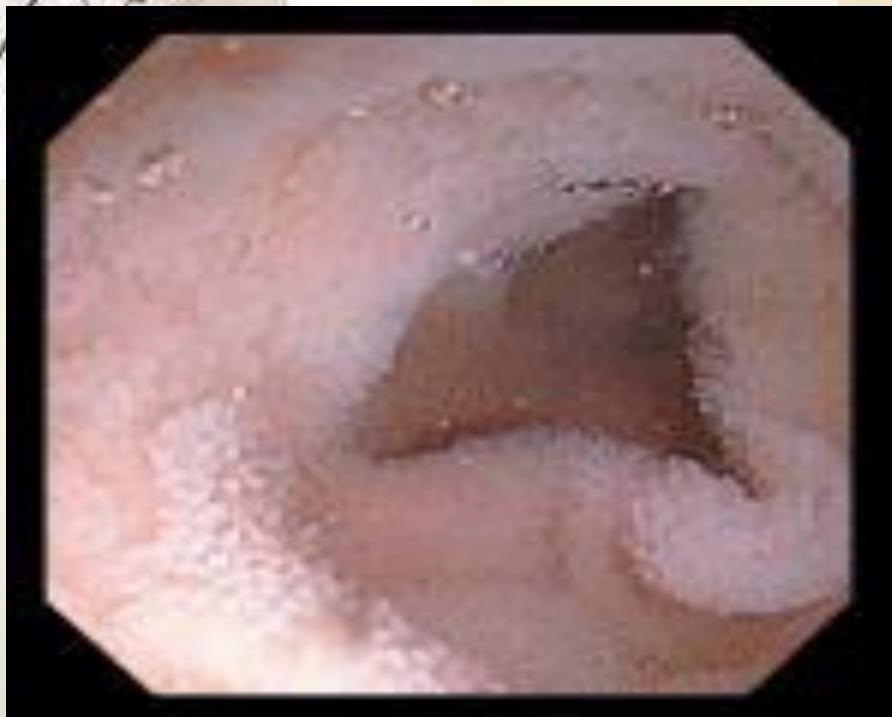
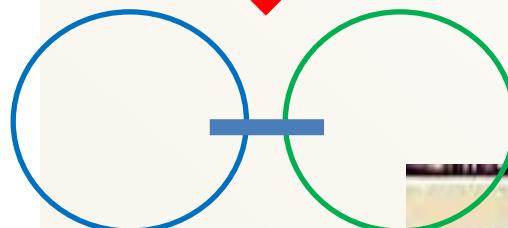




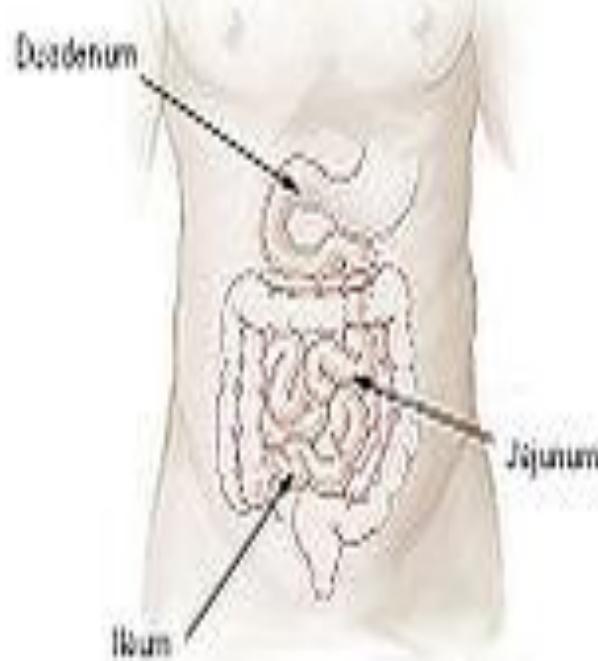




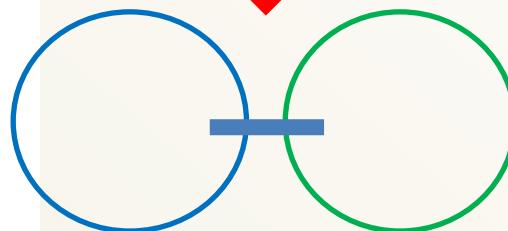
Lactase



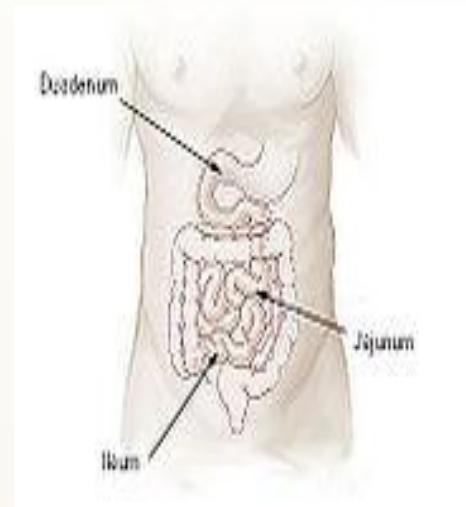
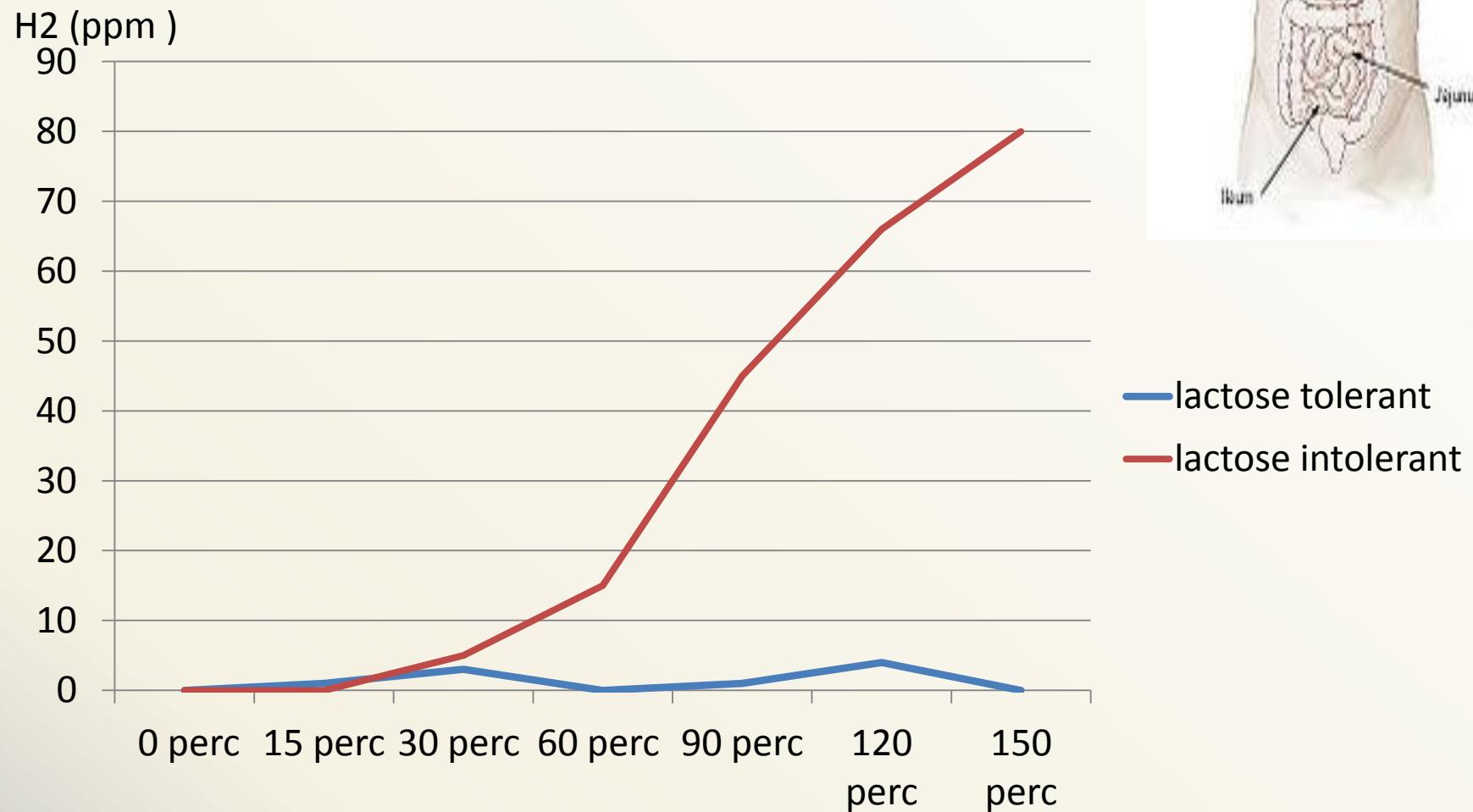




Lactase



H₂ exhalation test

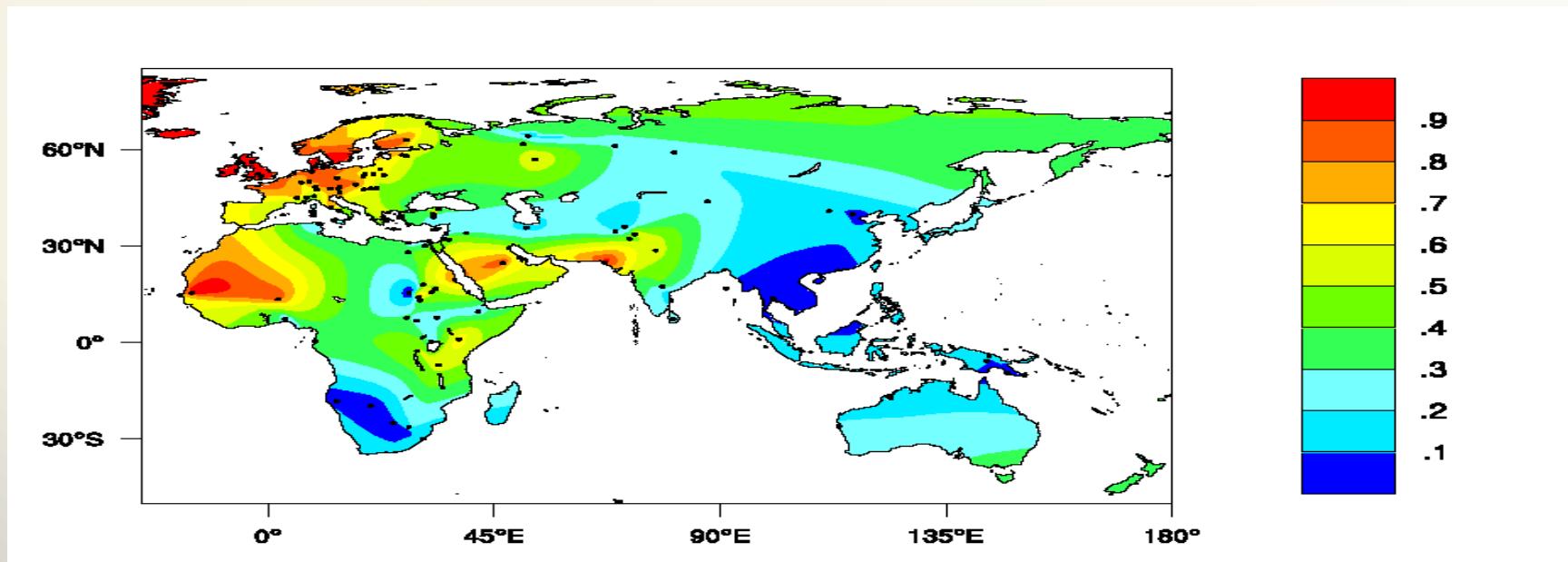


Lactose intolerance

- (Congenital L.I. (alactasia))
- Primaer adult type L.I. (in Hungary about 36%)
- Secundaer L.I. (caused by a damage of the mucosa ...)

Lactase persistance - cultural/historical investigation

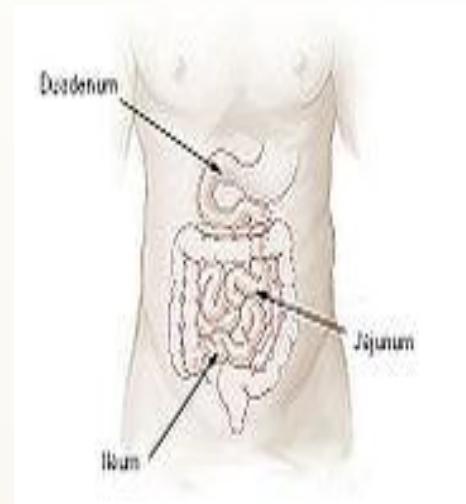
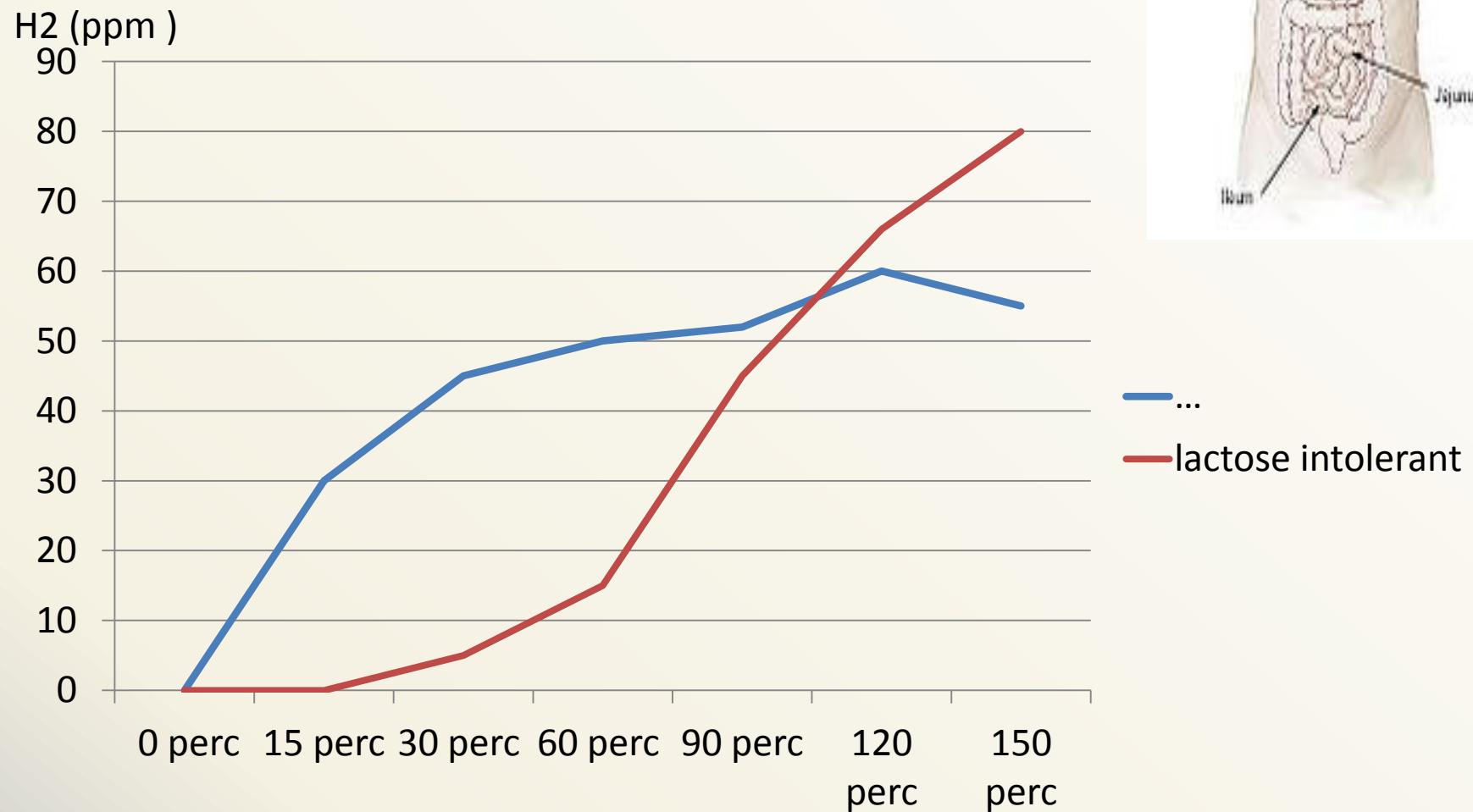
- North European (swede, danish)
- Northwest Indian 85%
- Caucasians 70-80%
- Mediterrans 50 %
- Afroamericans 25%
- Asian 10%



Therapy for Lactose intolerance

- decreased intake of lactose
and/or
- **Enzime substitution**

H₂ exhalation test



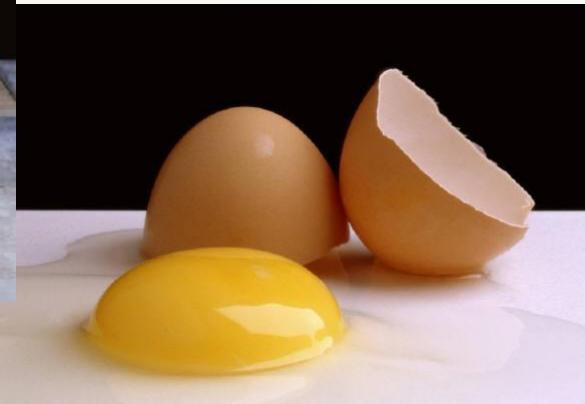
”Tej érzékenység” milk sensitivity

???

- Lactose intolerance / enzim disturbance
- Cow's milk allergy / allergy- immunological hypersensitivity



- **Food allergy** - in about 3-5% of the children



watersoluble glycoproteins
10-70kDa

Diagnostical tests for food allergy

E

C

/

D

/

-

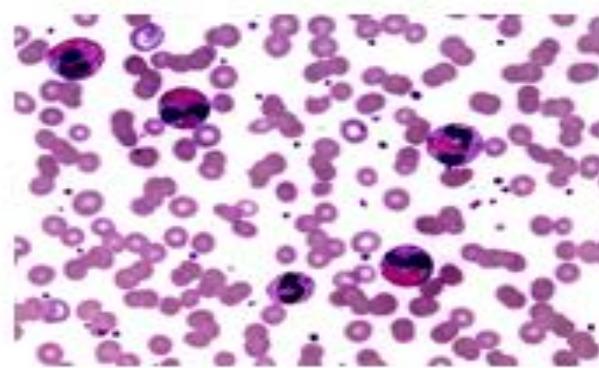
F

N

--

P

N



Diagnostical tests for food allergy

Elimination/Provocation test

GOLD STANDARD

OFC / Oral Food Challenge

DBPCFC

/ Double-Blind-Placebo-Controlled-Food-Challenge

—more than 3 years old patients

--**Prick test** (IgE mediated)
PPV(positive predictive value) <50%
NPV(negative predictive value) 95%<



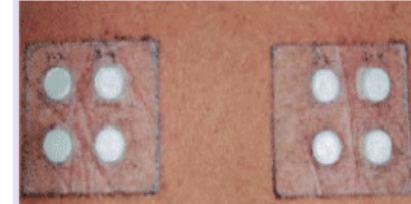
--specific IgE detection

PPV(positive predictive value) <50%
NPV(negative predictive value) 95%<

--Patch test (cell mediated allergy)

Figure 2. Epicutaneous Patch Testing in PREDICT-1

Post-application



48h reading



Therapy for cows milk allergy



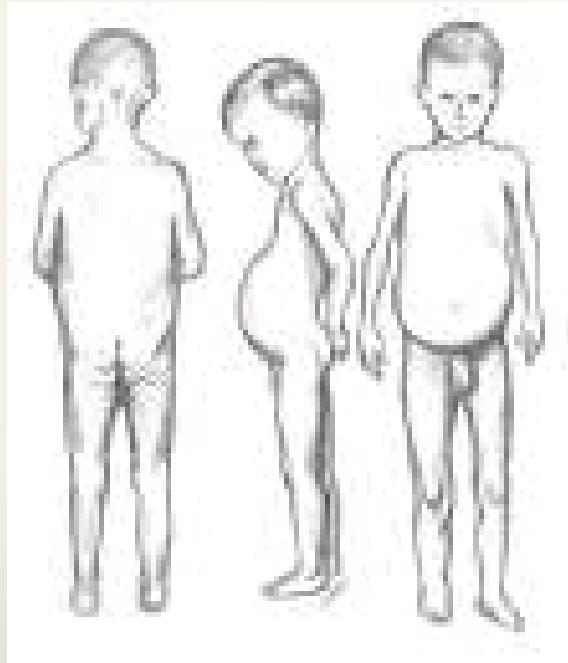
antigen elimination

substitution





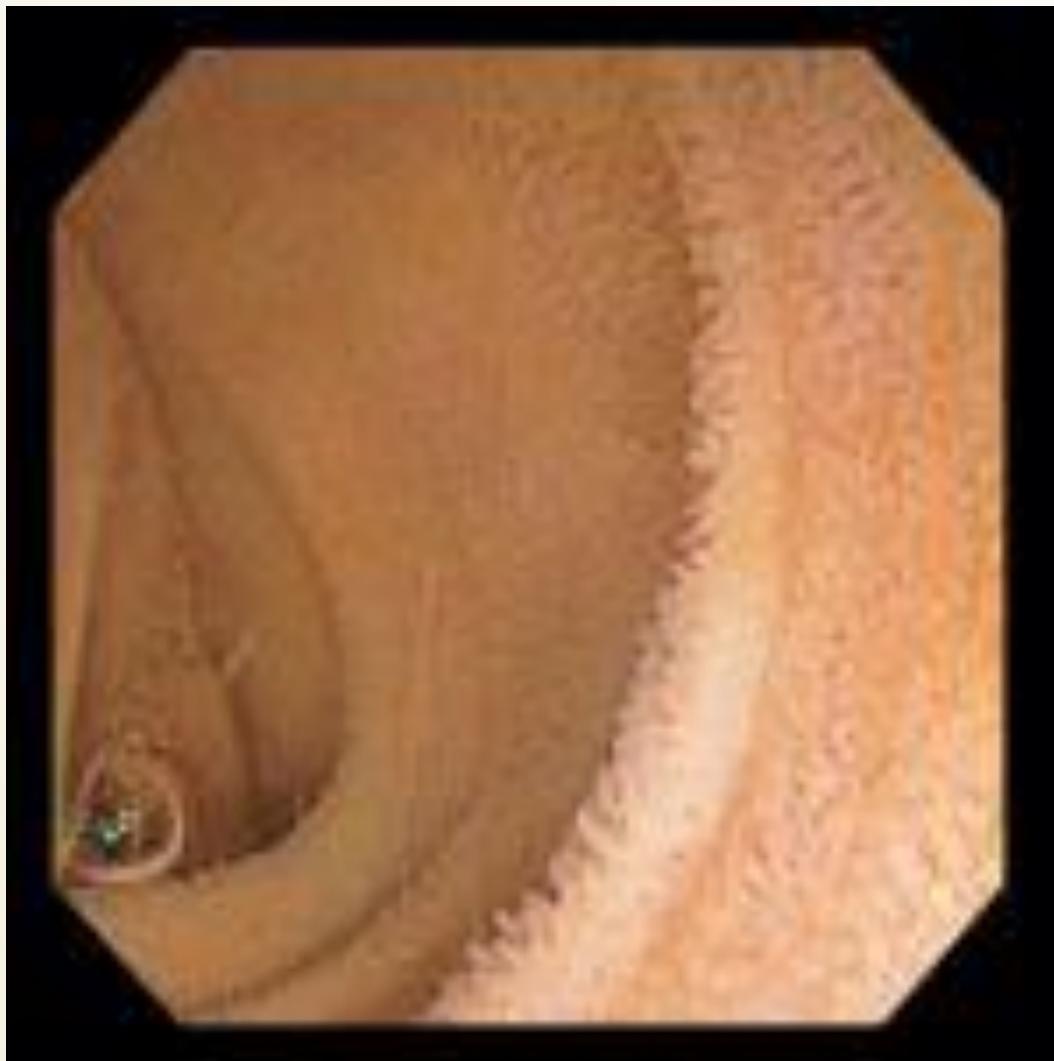
Glutensensitive enteropathy / Coeliac disease -- CD

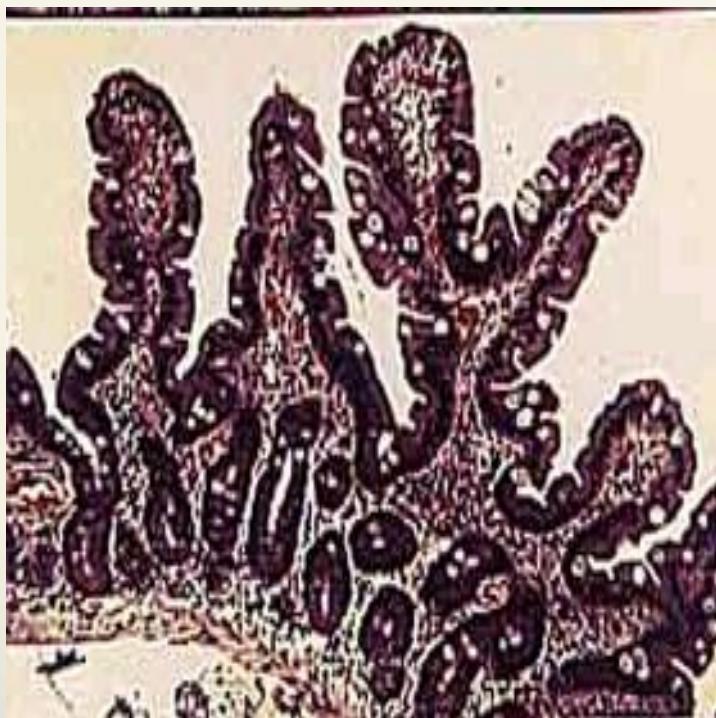


manifest

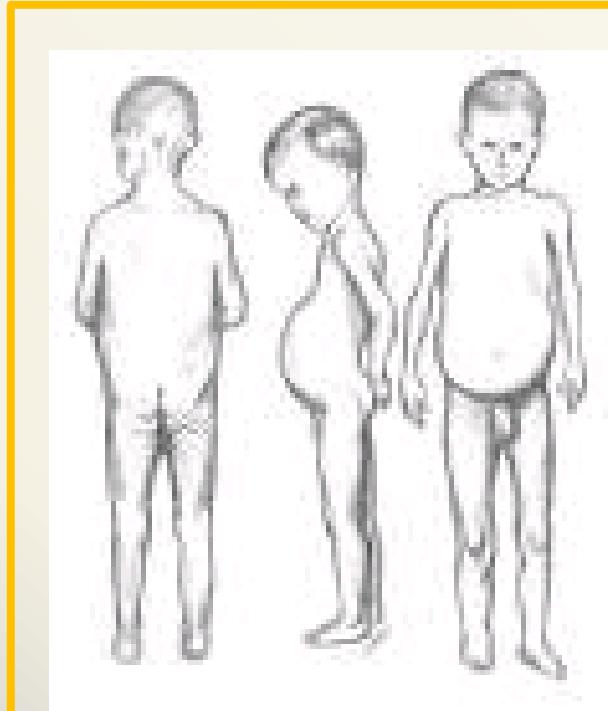
silent

latent





Glutensensitive enteropathy / Coeliac disease -- CD



manifest

silent

latent

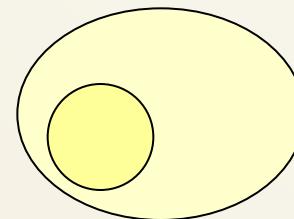


Fishing Whalesong Collection

CD specific antibodies

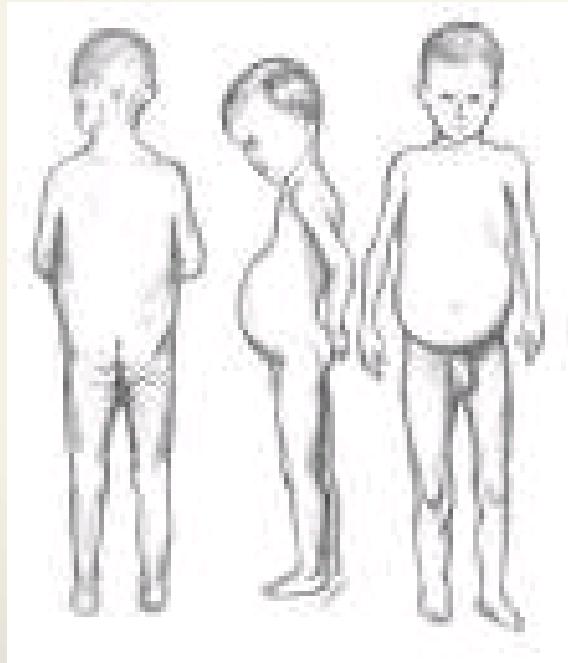
- ARA (1971)
- AJA
- AGA (2 éves kor alatt) / egészségesek 5-20%-ban pozitív/
- **EMA** immunfl. **sens.75-80% spec.95-100%**
- **tTG** (1997) ELISA **sens.85-95% spec.95- 98%**
- Rapid tTG sens.80-95% spec.95- 100%
- **Deamidált gliadin peptid antibody**

- !! IgA deficiency
- ! CD patients - 6-10% seronegativity



1:400/ 1:50

Glutensensitive enteropathy / Coeliac disease -- CD



manifest



silent

latent

Diagnosis of CD

- 3x small bowel biopsy – histology
(0 point/ on diet/ after provocation)
- Specific antibody positivity and
- 1x small bowel biopsy

/ESPGHAN 2012

- Clinical signs
- 2 x highly elevated serological positivity (10x)
- HLA DQ2/DQ8 positivity

Therapy for coeliac disease



- Additives !



Coeliac disease

- Multifactorial etiology
 - genetics
 - immunology
 - environmental effects

In the first degree of relatives ~ 10x

Heterozygote twins 30%

Monozygote twins 75%

Common concomitant diseases in CD

- IgA deficiency
- Type I. diabetes mellitus
- Autoimmun thyroiditis
- rheumatoid arthritis
- alopecia areata
- psoriasis
- epilepsy
- ataxia
- hepatopathy
- cardiomyopathy
- Sjögren syndrom
- Down syndrom, Turner syndrom, Williams syndrom

Endoscopy

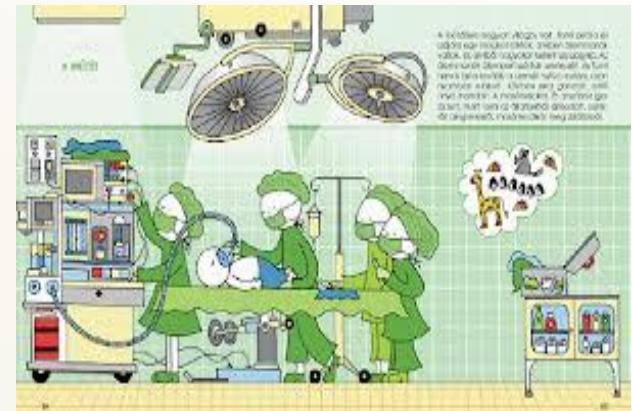




Endoscopy

Real time technic

Invasive - general anaesthesia



Diagnostical method

- to detect visuable disturbances
- to get biopsy for histological investigation

Therapeutical method

- polypectomy
- varix ligation / sclerotherapy
- foregin bodies removement



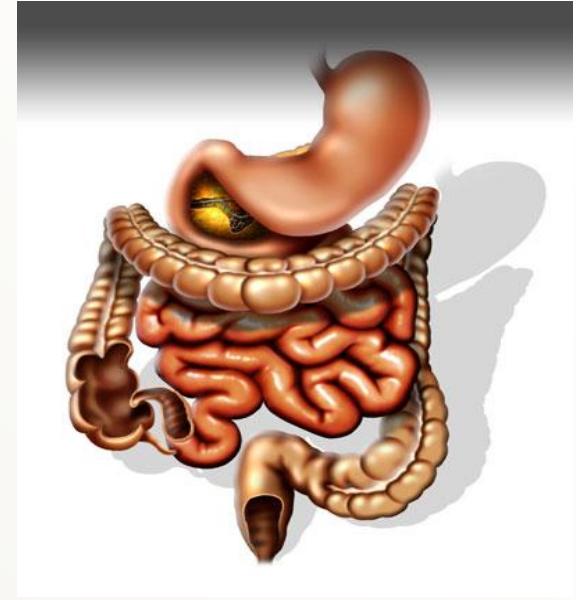
Endoscopy

Upper tract

Oesophago Gastro Duodenoscopy

Lower tract

Colonoscopy – with terminal ileum intubation





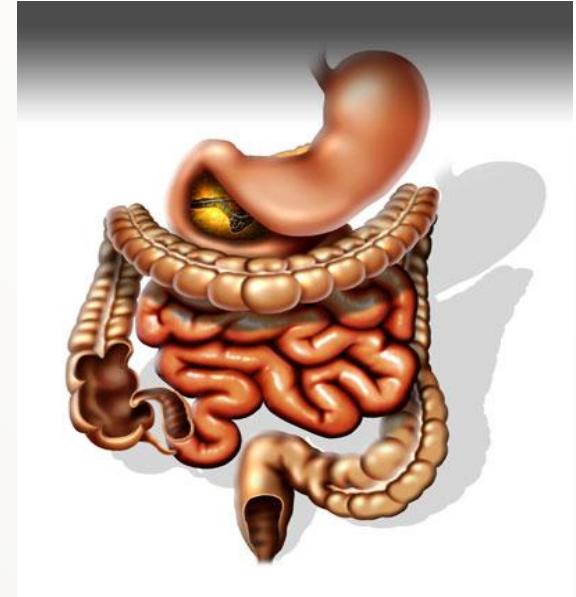
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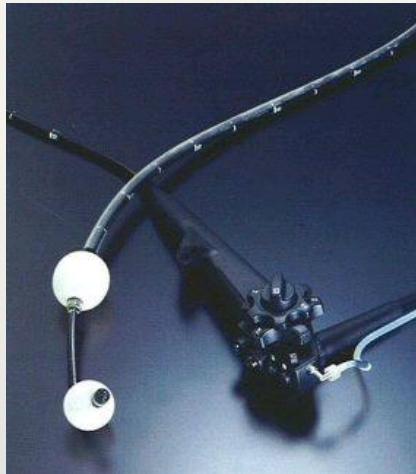
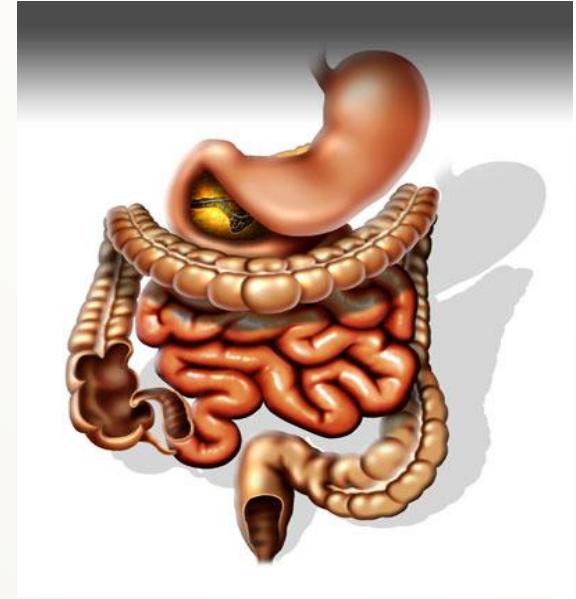
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Oesophago Gastro Duodenoscopy

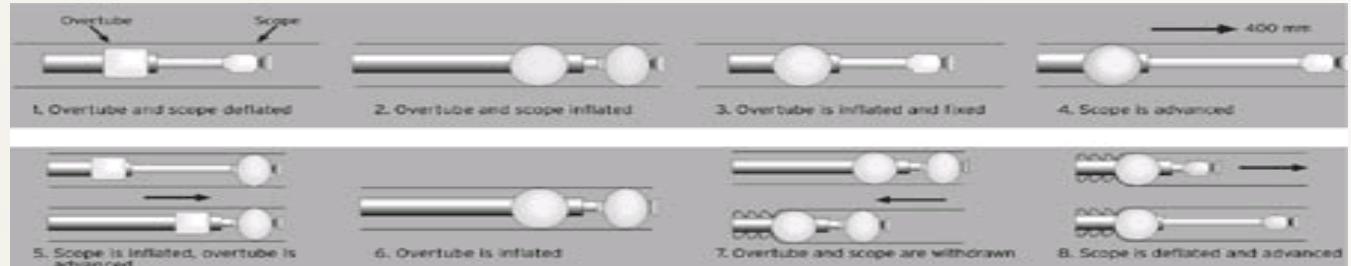
Lower tract

Colonoscopy – with terminal ileum intubation



Double Balloon Endoscopy / DBE
Push-and-pull enteroscopy

2001- Hironori Yamamoto







2009-SEP-25
09:03

LIGHT 0
FILM 00
PEAK

COLONOSC.
CS. N.

I

MALE

2010-MAY-31
10:35

LIGHT O
FILM OO
AVE

ALSO END.
DR. CS. N.
2. GYERMEKKLINKA

I

17
MALE

Crohn ulcer - Bauhin valve

2010-MAY-03
11:32

LIGHT 0
FILM 00
AVE

I
2. GYERMEKKLINKA

2012-JAN-09
10:55

LIGHT O
FILM OO
PEAK

ALSO/FELSO
DR. CS. N.
2. GYERMEKKLINKA

I

8
FEMALE
2000 07 05

ID. No. :

Name :

Sex: Age:

D. O. Birth:

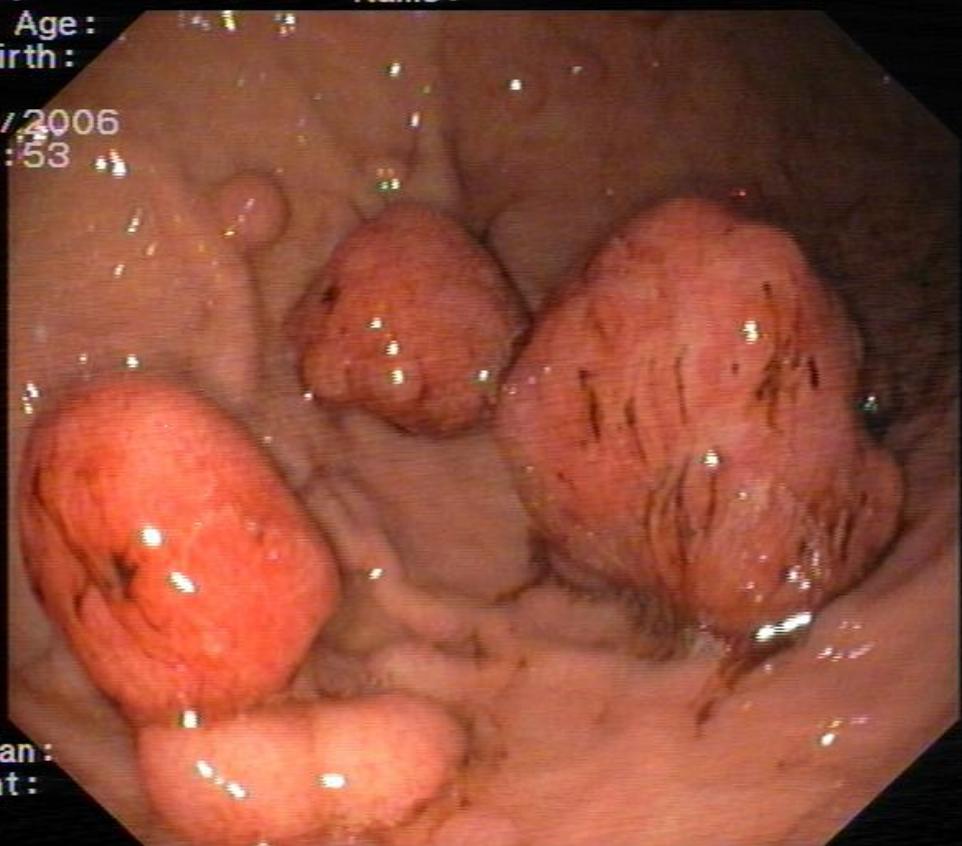
03/11/2006

08:11:53

CVP:

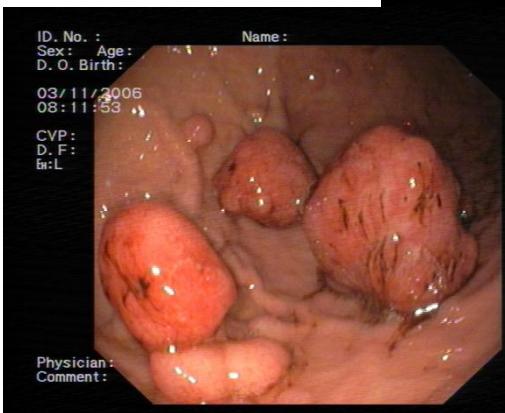
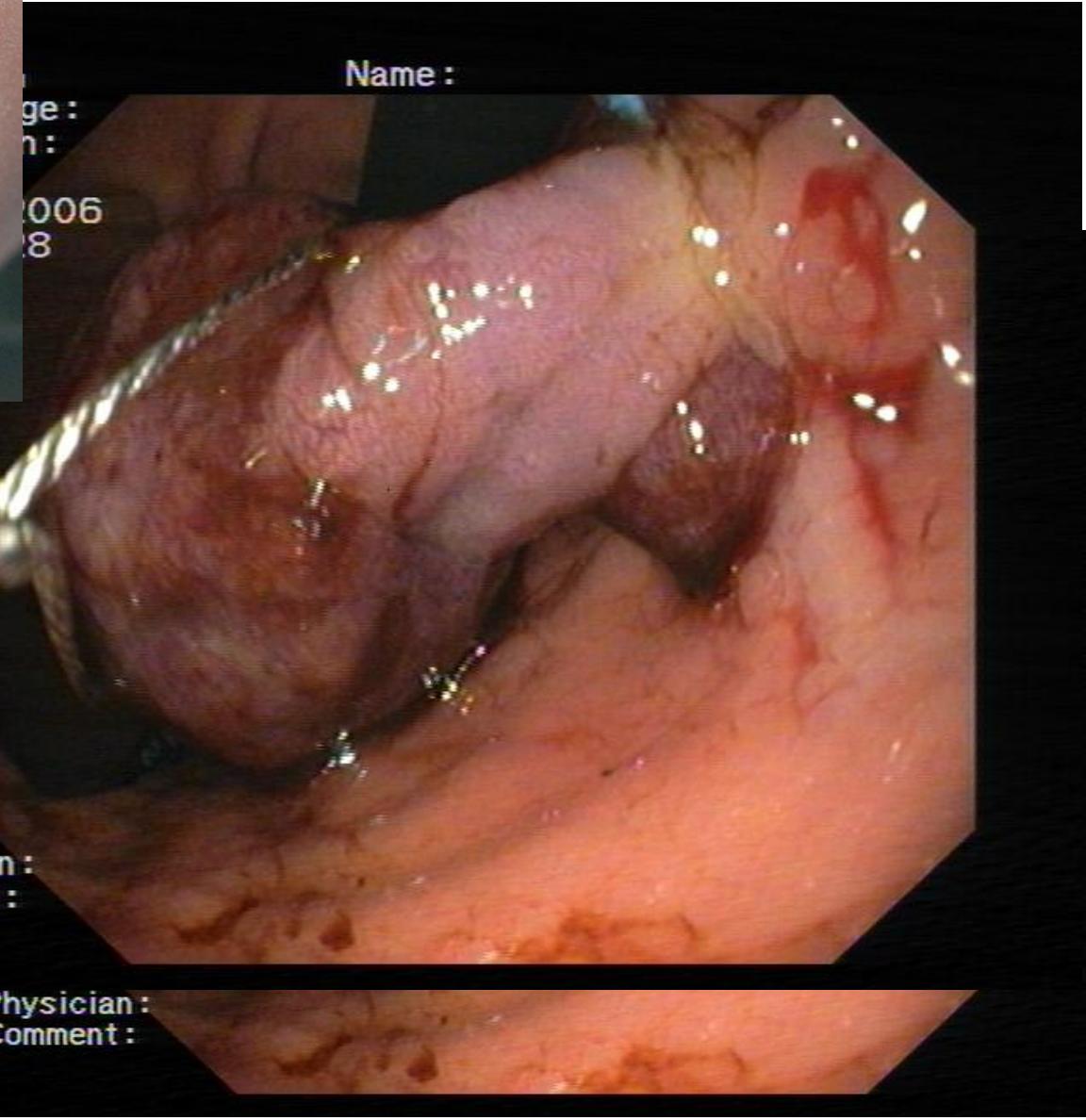
D. F:

E:L



Physician:

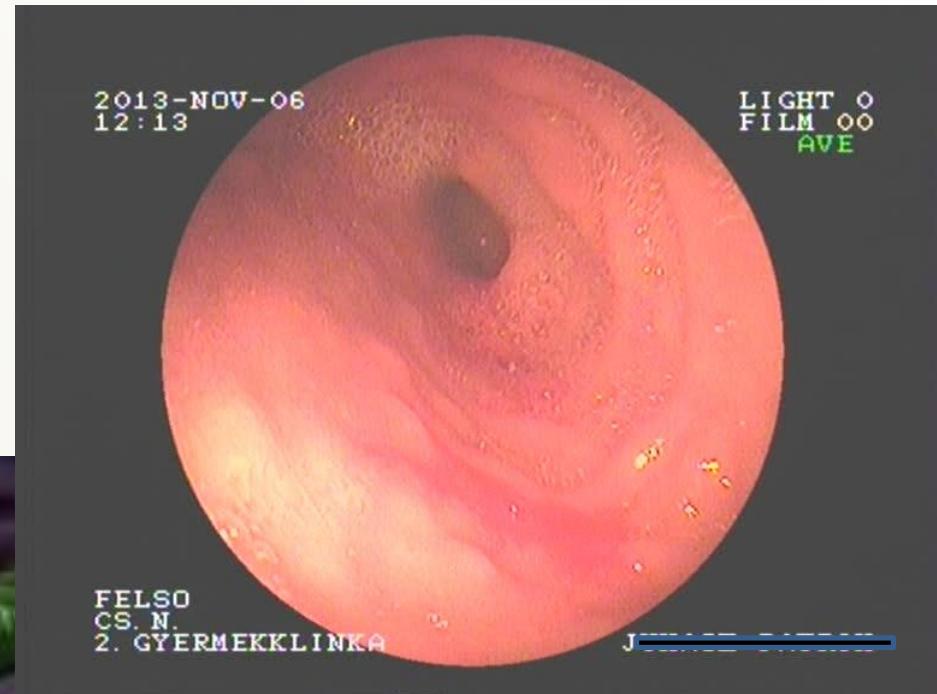
Comment:



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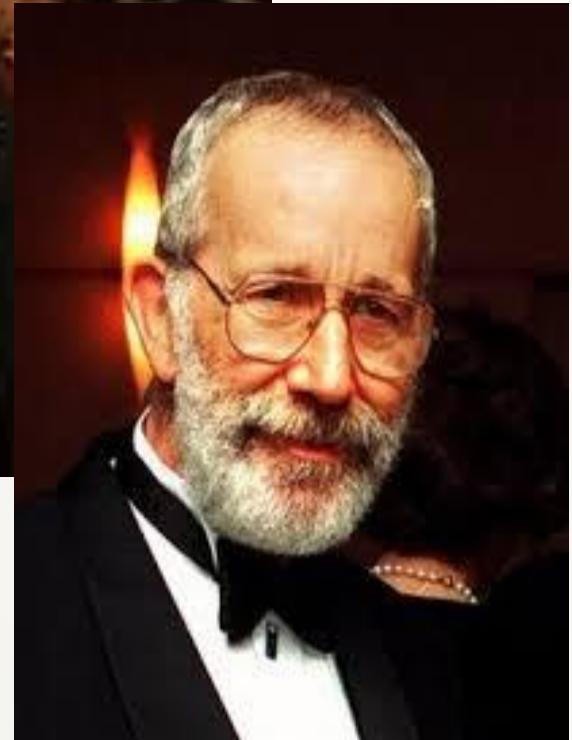
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FILM 00
AVE

FELSO
CS. N.
2. GYERMEKKLINKA



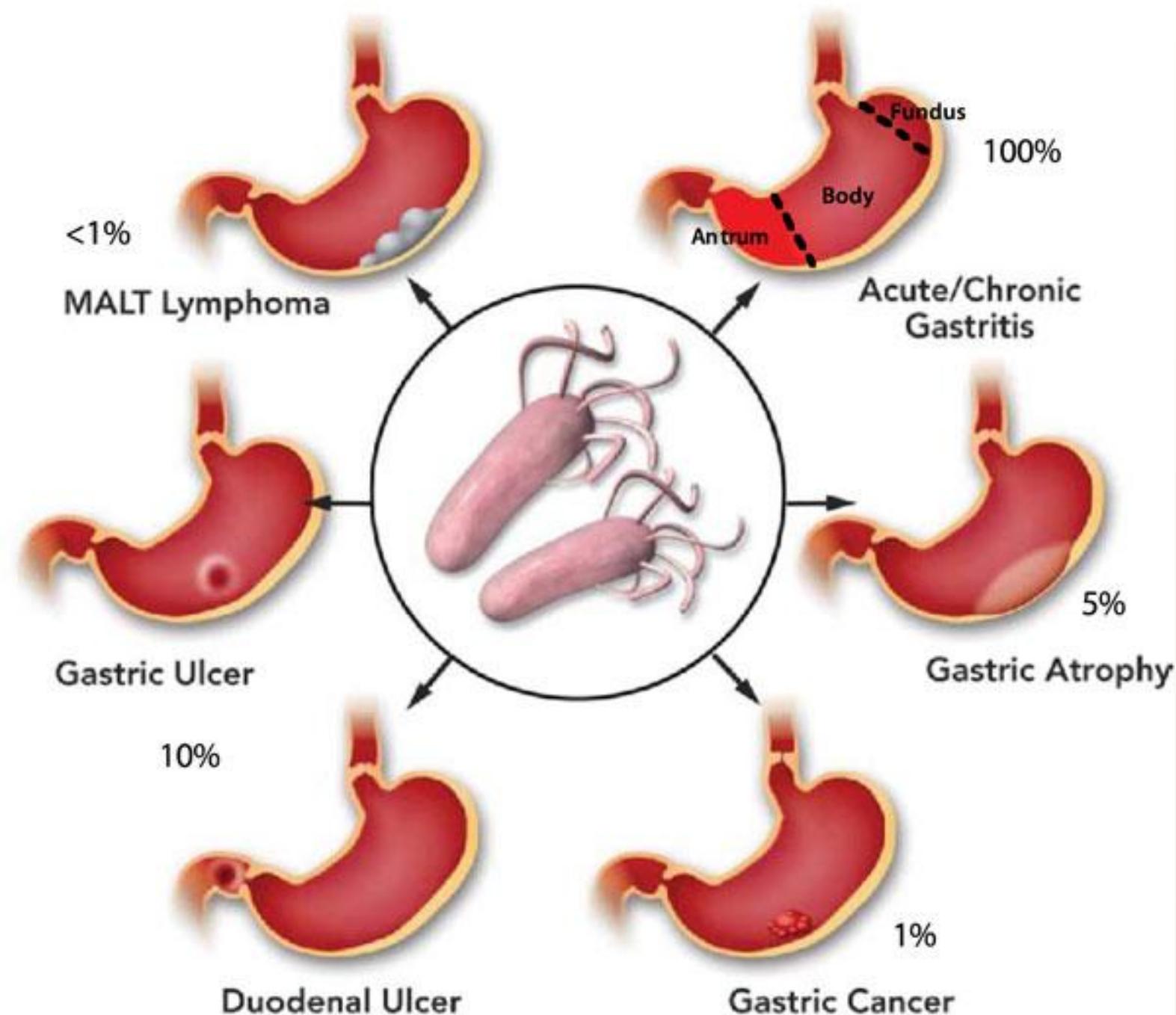


Barry Marshall és Robin Warren



2005

Medical- physiological Nobel prize





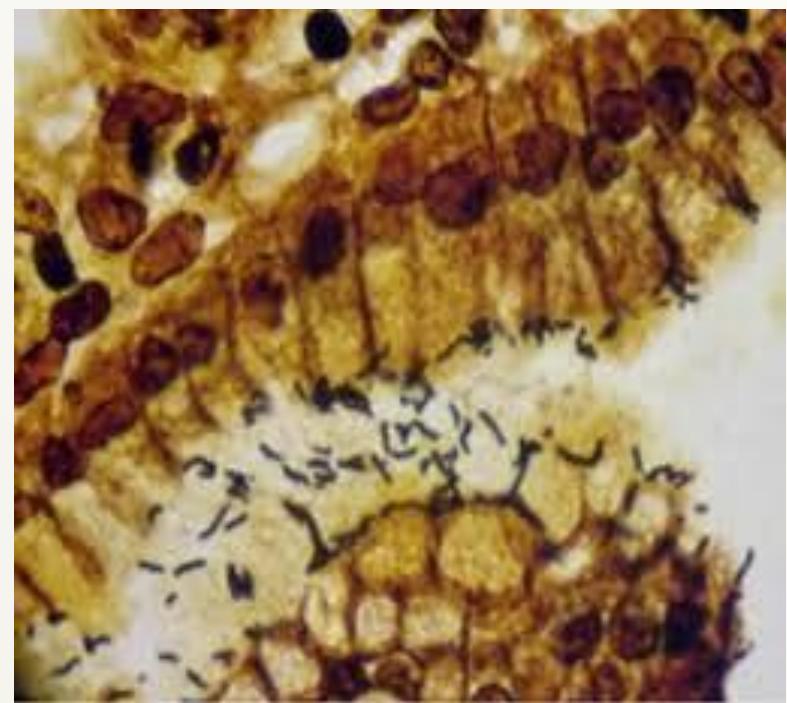
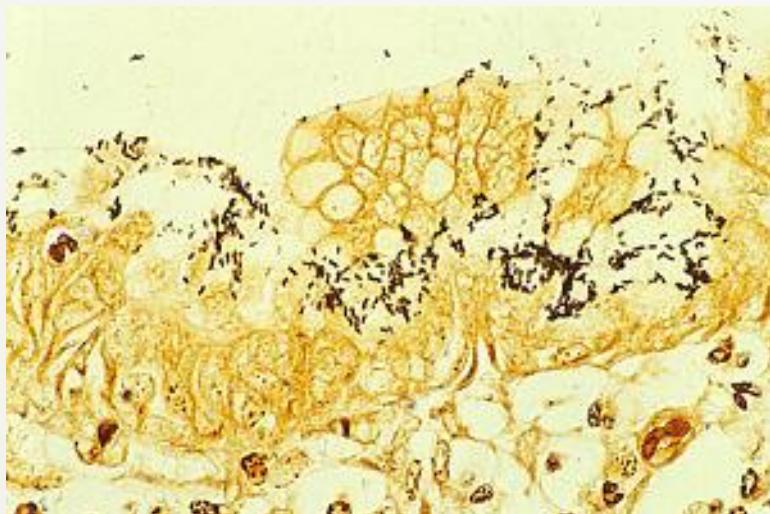
Helicobacter pylori

Diagnosis

- **Endoscopy**
 - macroscopically – LNH
 - RUT / rapid urease test
- **Histology**
 - PCR
- **C13/C14 UBT**
 - szerológia
- **stool Helicobacter pylori Ag detection**



Warthin –Starry painting



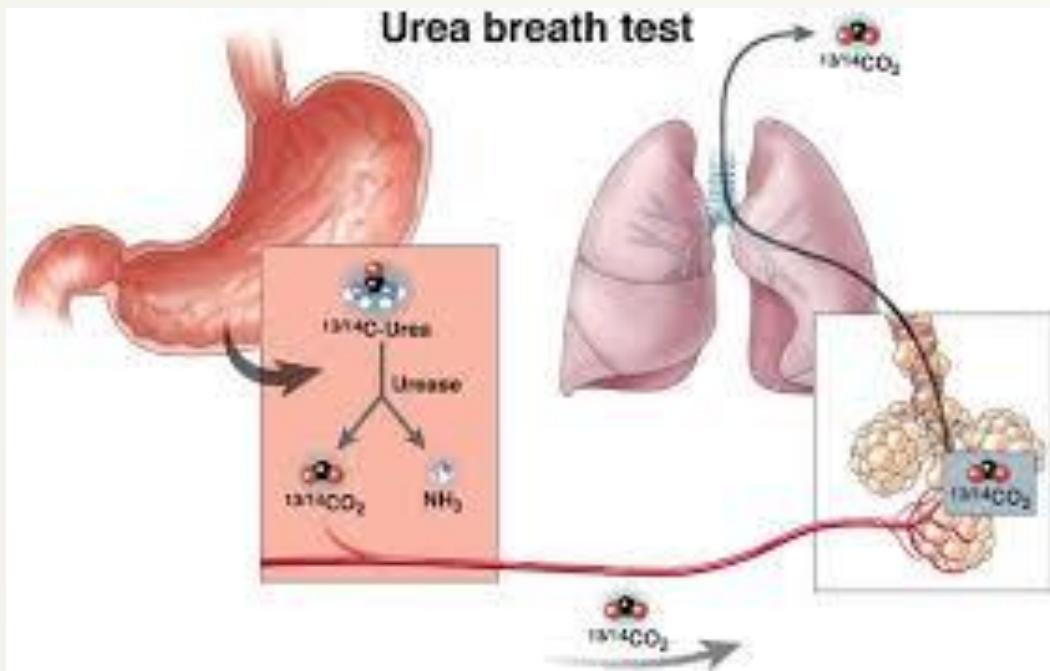
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C13 UBT



C13 UBT



- Specificity : 95 %
- Sensitivity : 95 %



Helicobacter pylori

Diagnosis

- **Endoscopy**
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 - *szerológia*
- **stool Helicobacter pylori Ag detection**



ELISA based stool H.p. Ag detecting method

- Specificity : 96 %
- Sensitivity : 95-96%

Immuncromatographic stool H.p. Ag detecting method

- Specificity : 79 %
- Senzitivity : 92%

IBD in childhood

- *The disease incidence among patients with 10-19 years*

UC – 2-3/100 000

CD – 3-4/100 000

HUPIR/ Hungarian Pediatric IBD Register/ 2007 january-2011

UC – 2,2/100 000 --- **2,4**

CD – 3,8/100 000 --- **4,9**

The first problem starts under 20 years

ulcerative colitis - in 20%

***Crohn disease* - in 25-30%**

diagnosis

- **Ileocolonoscopy + EGD/histological examination**
- */ UH, MR, CT, Rtg, Fvs scintigraphia*
- **Laboratory tests**
- **Stool tests**



Stool calprotectin determination

- a rapid, non invasive test
- S-100-protein determination
- It's produced in the white blood cells of the intestinal mucosae
- 7day stable
- Its **well correlating with the histological inflammatory activity**

Stool calprotectin determination

- Positive predictive value: 79 %
- Negative predictive value: 94 %

