promoter SNPs affect potential binding of transcription factors to DNA.
**Conclusion:** Genetic variation in the TRPM8 gene impacts IBS risk in the Swedish population, potentially through alteration of promoter function leading to alteration of expression levels of the channel. TRPM8 is expressed in visceral sensory fibers and its involvement in visceral afferent function might be of relevance in IBS. If confirmed, regulation of TRPM8 expression level and function may provide a novel treatment paradigm in IBS.

**Prevalence of gastroesophageal reflux disease in Bolu: a population- based study**

*U. DAGL*[*], *R. ERGÜL*[†], *E. YURTSEVEN*[†], *S. KARAÇAY*[†] *and S. ALKOY*[‡]
*[*]Department for Gastroenterology, Baskent University, Bahçelievler/Ankara, Turkey, [†]Abant Izzet Baysal University, Gölköy/Bolu, Tuorrkey and [‡]Abant Izzet Baysal University, Gölköy/Ankara, Turkey*

**Objective:** There have been few population-based studies on the prevalances of gastroesophageal reflux disease (GERD) in Turkey. The aim of this study was to determine the prevalences of symptoms consistent with gastroesophageal reflux disease in Bolu.
**Methods:** This population-based cross-sectional study was done by door to door interview of randomly selected 328 persons in Bolu, a North Western city of Turkey by using a validated questionnaire. The subjects who changed their addresses, those who deceased, false addresses, subjects with mental and psychiatric problems to fulfill the forms and those refused to take part were extracted from the study. The survey included (i) GERD associated symptoms (heartburn, regurgitation, dyspepsia, odynophagia, chest pain), (ii) sociodemographic characteristics, (iii) triggering factors of GERD symptoms, (iv) dietary habits and (v) the symptoms of irritable bowel syndrome. GERD was defined as troublesome heartburn and/or regurgitation occurring at least once a week. For the statistical analysis chi-squared and Student's *t*-tests were used. Multivariate logistic regression was used to calculate odds ratios (ORs) with 95% confidence intervals (CIs).
**Results:** A total of 328 persons with an age range of 20–70 years were interviewed. The mean age was 41.5 ± 13.7 years. Among the study subjects 155 were male (47.3%) and 173 were female (52.7%). By using the height and the body weight the mean body mass index (BMI) was found as 26.28 ± 4.09 kg/m$^2$. The prevalence of GERD in Bolu was found 12.5% (41/328). The prevalence of heartburn and regurgitation was 6.7% and 9.8% respectively. No significant association of GERD was found with BMI, age, gender, cigarette smoking and alcohol consumption. GERD symptoms were significantly associated with dyspepsia (OR: 8.19; 95% CI 3.88–17.28), irritable bowel syndrome (OR: 3.109; 95% CI 1.132–8.535) and asthma (OR: 4.072; 95% CI 1.18–13.99).
**Conclusion:** The prevalence of GERD symptoms in Bolu was much lower than that reported in Turkey.

**Impaired 'gastroesophageal flap valve': is it a correct diagnosis for gastroesophageal reflux disease?**

*U. DAGL*[*], *Y. ÖZIN*[†], *S. OZDAL KURAN*[‡] *and B. SAHIN*[†]
*[*]Department of Gastroenterology, Baskent University, Bahçelievler/Ankara, Turkey, [†]Yüksek Ihtisas Hospital, Ankara, Turkey and [‡]Çukurova University, Ankara, Turkey*

**Objective:** In endoscopy 'Loose Lower Esophageal Sphincter' is used to define cases without hiatal hernia, that does not surround the endoscope completely in retroflexion. Our aim in this study was to investigate the compatibility of gastroesophageal reflux disease with the impaired gastroesophageal flap valve (GEFV) (i) by using manometry (ii) and its relation with proximal and distal reflux.
**Methods:** Sixty nine 'impaired GEFV' cases diagnosed by endoscopy and 76 cases without any 'loose LES, hiatal hernia or esophagitis' is included in this study. Esophageal manometry and 24 h pH monitorization is performed in each case. Cases with esophageal motor disease and those undergone to surgery were excluded.
**Results:** Mean lower LES pressure in 69 cases with impaired GEFV was 20 + 11.7, whereas the mean lower LES pressure in 76 cases with normal LES was 20 + 10.6. The difference between the two groups was statistically insignificant ($p > 0.05$). Hypotensive LES (<10 mmHg) by manometry was found in 16 of 69 cases (26%) with impaired GEFV and 17 of the 76 normal cases (22%), the difference was insignificant. No relation was found between endoscopic diagnosis of impaired GEFV and proximal ($p = 0.52$) and distal ($p = 0.58$) reflux with 24 h pH monitorization. Impaired GEFV diagnosis had 48% sensitivity and 53% specifity in the definition of hypotensive LES. Positive predictive value was 23%.
**Conclusion:** Endoscopic definition 'loose LES' is not reliable and has no relation with gastroesophageal reflux disease.

**Effects of chlorpyrifos exposure during development on the contractility of longitudinal smooth muscle of the ileum**

*W. DARWICHE*[*], *S. DELANAUD*[†], *W. RAMADAN*[‡], *W. JOUMAA*[§], *V. BACH*[†] *and J. GAY-QUÉHEILLARD*[†]
*[*]Université de Picardie Jules V, PériTox CURS CHU Sud, Amiens, France, [†]Université de Picardie Jules V, Amiens, France, [‡]Lebanese International Univers, Beyrouth, Lebanon and [§]Université Libanaise, Nabatieh, Lebanon*

**Objective:** Chlorpyrifos (CPF) is a commonly used insecticide which exhibits its toxicity through inhibition of acetylcholinesterase (AChE), the enzyme responsible of degrading the acetylcholine. In addition, acetylcholine is a neurotransmitter involved in the intestinal motility. The aim of our study is to investigate the impact of chronic exposure to CPF during development on the longitudinal smooth muscle of the ileum.
**Methods:** Female rats were exposed to CPF by daily gavage from gestational day 1 until weaning of the pups which were individually gavaged with the same dose thereafter. Dosages were 0 (control), 1 or 5 mg/kg/day. At postnatal day (PND) 21 and 60, rats were sacrificed and the ileum was sampled. Responsiveness of ileal strips to electrical field stimulation was measured *in vitro*. The thickness of smooth muscle and the activity of AChE were also measured.
**Results:** Functional studies of the ileal longitudinal muscle showed an increase in the amplitude of contraction at PND21. However, at PND60, the amplitude of contraction decreased with no significant difference in AChE activity between control and exposed groups at both ages. Furthermore, this exposure reduces the thickness of longitudinal smooth muscles of the ileum.
**Conclusion:** In conclusion, our data show that prenatal and postnatal exposure to CPF reduces the thickness of the muscle layers and alters the contractility of longitudinal smooth muscle of the ileum independently of AChE inhibition. We could suspect an alteration of the intestinal development of the CPF exposed animals.

**Study of the mechanisms contributing to visceral hypersensitivity in a rat model of acute and postinflammatory colitis: focus on splanchnic afferent nerve signaling**

*A. DEITEREN*[*], *J. DE MAN*[*], *C. KEATING*[†], *W. JIANG*[†], *S. NULLENS*[*], *S. FRANCQUE*[‡], *D. GRUNDY*[†] *and B. DE WINTER*[*]
*[*]University of Antwerp, Antwerp, Belgium, [†]University of Sheffield, Sheffield, United Kingdom and [‡]Antwerp University Hospital, Antwerp, Belgium*

**Objective:** Visceral hypersensitivity is considered a hallmark feature of irritable bowel syndrome. In this study, we assessed the contribution of different populations of splanchnic afferents to visceral hypersensitivity in an acute and postinflammatory rat model.
**Methods:** TNBS-colitis was monitored individually by colonoscopy to follow-up convalescence and determine the exact timepoint of endoscopic healing in each rat. Experiments were performed in controls, in rats with acute colitis and in post-colitis rats. Colonic sensitivity was assessed in vivo by quantifying visceromotor responses (VMRs) and *ex vivo* by recording splanchnic afferent discharge. Single units were identified as low threshold (LT), wide dynamic range (WDR), high threshold (HT) and mechanically insensitive afferents (MIA).
**Results:** During acute TNBS-colitis, *in vivo* VMRs to colorectal distension were increased (5074 ± 725 *vs* 1725±175 $\mu$V for control; $n = 5$/group; $p < 0.01$). *Ex vivo* splanchnic nerve recordings showed proportionally less MIA and more WDR and HT in rats with acute colitis ($p < 0.05$). Acute colitis also resulted in enhanced spontaneous activity of both LT (1.2 ± 0.3 *vs* 0.3 ± 0.1 imp/s for control; $n = 11$/group; $p < 0.05$) and MIA (1.1 ± 0.1 *vs* 0.4 ± 0.1 imp/s for control; $n = 8$–17/group; $p < 0.01$). Afferent firing in response to colorectal distension was significantly increased in LT, WDR and HT of rats with acute colitis (Table 1). After resolution of colitis, in vivo VMRs to colorectal distension remained increased (4874 ± 841 *vs* 2181 ± 307 $\mu$V for control; $n = 5$/group; $p < 0.01$). *Ex vivo* splanchnic nerve recordings showed that the proportion of LT, WDR, HT and MIA was no longer different from controls ($p = 0.2$). However spontaneous activity was still increased in LT (0.8 ± 0.3 *vs* 0.3 ± 0.1 imp/s for control; $n = 10$–11/group; $p < 0.05$) and MIA (1.0 ± 0.2 *vs* 0.4 ± 0.1 imp/s for control; $n = 11$–17/group; $p < 0.05$). In addition, responses of WDR and HT remained sensitized to colorectal distension (Table 1).
**Conclusion:** Sensitization of splanchnic afferents potently contributes to visceral hypersensitivity both during acute colitis and in the post-inflammatory phase, affecting the different afferent subpopulations differentially in these two phases.