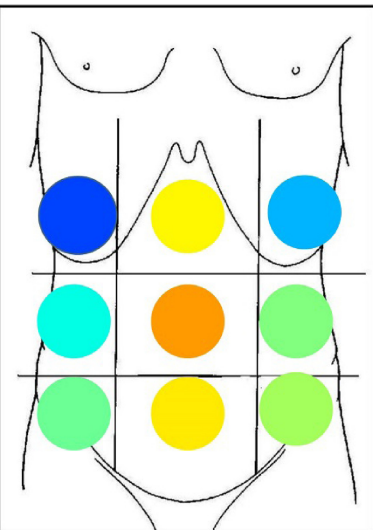
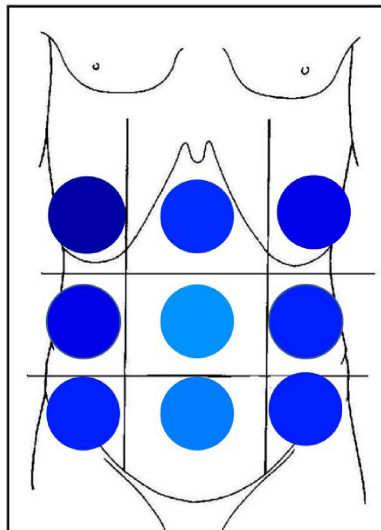
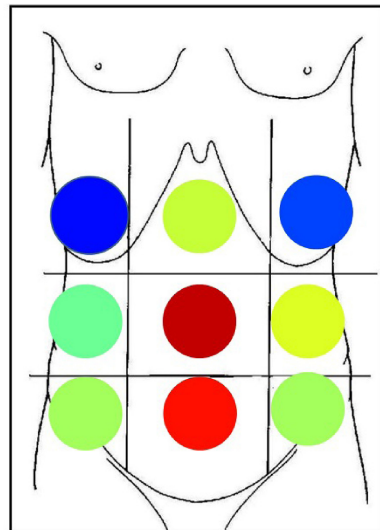
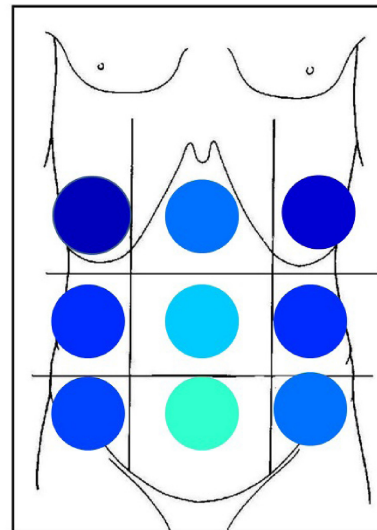
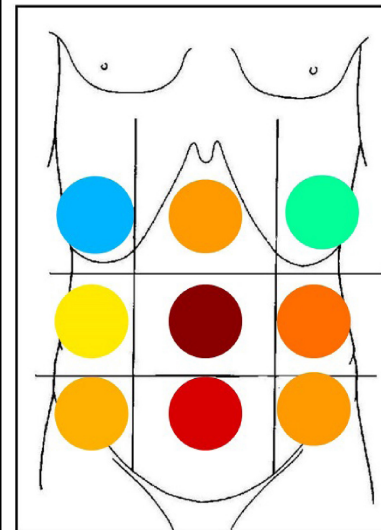
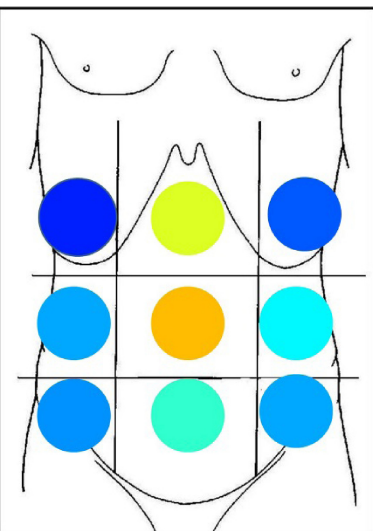
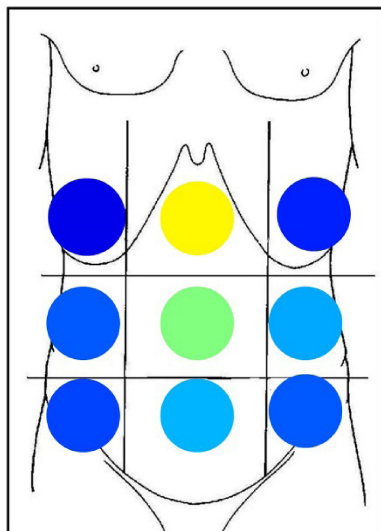
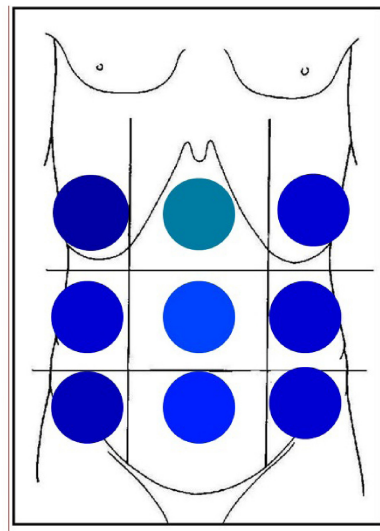
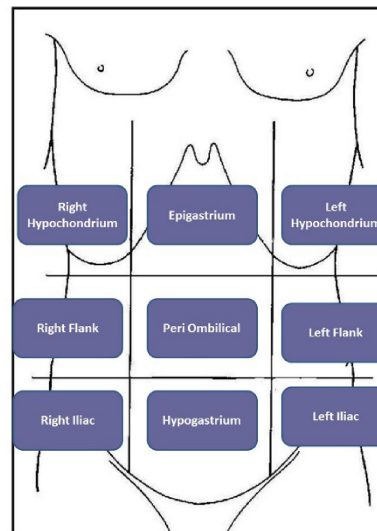
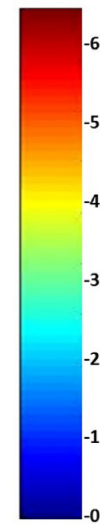
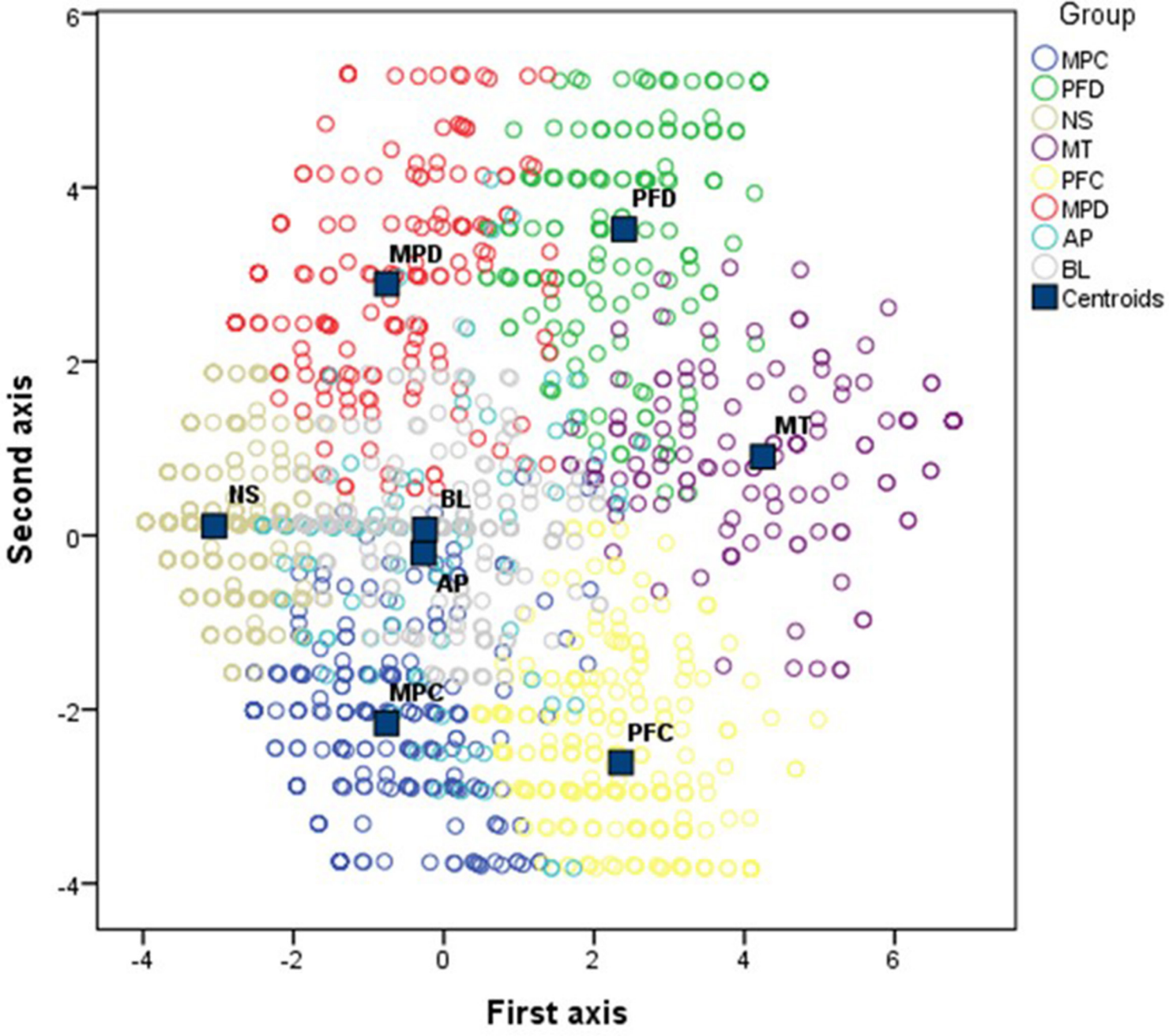


Painful Constipation**Mild pain Constipation****Painful Diarrhea****Mild pain Diarrhea****Mixed transit****Bloating****Abdominal pain****Non specific****Topology****Intensity of segmental abdominal pain**



Supplementary Table S1: Frequency of non-bowel functional disorders in the different groups of patients deduced from the clustering of the CDBP profile.

			New items								
		Total	Painful Constipation	Mild pain Constipation	Painful Diarrhea	Mild pain Diarrhea	Mixed Transit	Abdominal pain	Bloating	Non specific	P
Esophageal	Globus	367 (21)	90 (32)	35 (15)	42 (25)	25 (14)	34 (27)	20 (22)	64 (25)	57 (14)	<0.001
	Chest pain	530 (31)	124 (44)	47 (20)	58 (35)	29 (16)	54 (43)	33 (37)	107 (42)	78 (20)	<0.001
	Heartburn	643 (37)	141 (49)	67 (28)	68 (41)	37 (21)	62 (49)	43 (48)	127 (50)	98 (25)	<0.001
	Dysphagia	408 (24)	90 (32)	43 (18)	46 (28)	20 (11)	42 (33)	30 (34)	64 (25)	73 (19)	<0.001
Gastroduodenal	Epigastric pain	158 (9)	28 (10)	11 (5)	19 (11)	10 (6)	16 (13)	15 (17)	30 (12)	29 (7)	0.003
	Postprandial fullness	292 (17)	87 (31)	19 (8)	42 (25)	20 (11)	28 (22)	14 (16)	47 (18)	35 (9)	<0.001
	Overlap	499 (29)	111 (39)	44 (19)	68 (41)	35 (20)	53 (42)	38 (43)	100 (39)	50 (13)	<0.001
	Aerophagia	516 (30)	121 (42)	52 (22)	82 (49)	27 (15)	62 (49)	19 (21)	115 (45)	38 (10)	<0.001
Anorectal	Fecal incontinence	126 (7)	8 (3)	11 (5)	27 (16)	36 (20)	14 (11)	4 (4)	6 (2)	20 (5)	<0.001
	Levator ani syndrome	103 (6)	29 (10)	8 (3)	21 (13)	10 (6)	15 (12)	1 (1)	14 (5)	5 (1)	<0.001
	Proctalgia fugax	128 (7)	33 (12)	14 (6)	16 (10)	15 (8)	18 (14)	5 (6)	14 (5)	13 (3)	<0.001
	Nonspecific	100 (6)	23 (8)	10 (4)	12 (7)	10 (6)	14 (11)	4 (4)	15 (6)	12 (3)	0.019
	Difficult defecation	678 (39)	215 (75)	147 (62)	41 (25)	32 (18)	73 (58)	33 (37)	62 (24)	75 (19)	<0.001

Supplementary Table S2: Comparison of the Rome III clustering and the CDBP clustering

This table shows the results of the chi square tests between the clustering of the population of functional bowel disorders performed using the Rome III criteria and the clustering performed using the CDBP profile

(+) : observed population greater than the theoretical, (-) : observed population less than the theoretical number

Chi² test per cell NS : not significant at alpha = 0.010, * : significant at the alpha threshold =0.01

		New classification (CDBP clustering)							
		Painful Constipation	Mild pain Constipation	Painful Diarrhea	Mild pain Diarrhea	Mixed Transit	Abdominal pain	Bloating	Non specific
Demographics	N	285	236	166	178	126	89	255	394
	Female gender (%)	(+) *	NS	NS	(-) *	(+) *	NS	(-) *	NS
Bowel	IBS	(+) *	(-) *	(+) *	(-) *	(+) *	NS	NS	(-) *
	IBS-C	(+) *	NS	(-) *	(-) *	NS	NS	NS	(-) *
	IBSD	(-) *	(-) *	(+) *	(+) *	NS	NS	NS	(-) *
	IBSM	NS	(-) *	NS	NS	(+) *	NS	NS	(-) *
	IBSU	NS	NS	NS	NS	NS	NS	(+) *	(-) *
	Constipation	(+) *	(+) *	(-) *	(-) *	(-) *	NS	(-) *	NS
	Diarrhea	(-) *	(-) *	NS	(+) *	(-) *	NS	(-) *	(+) *
	Bloating	NS	NS	NS	NS	NS	NS	(+) *	(+) *
	Nonspecific bowel disorders	(-) *	NS	(-) *	NS	(-) *	NS	NS	(+) *
Abdominal pain		(-) *	(-) *	NS	(-) *	NS	(+) *	(+) *	NS

Supplementary legends;

Supplementary figure SF1

Title: Intensity of segmental abdominal pain.

Legend: The abdomen was divided in nine segments (Right hypochondrium, Epigastrium, Left hypochondrium, Right flank, Periumbilical, Left flank, Right iliac, Hypogastrium, Left iliac). In the upper panel the five phenotypes with transit abnormalities (constipation, diarrhea, mixed transit) are shown, while the lower panel shows the 3 phenotypes without transit abnormalities (bloating, abdominal pain and nonspecific). For each clinical phenotype, the mean segmental abdominal pain intensity is shown using a color scale. Each painful clinical phenotype (painful constipation or diarrhea, mixed transit, bloating, abdominal pain) is associated with a specific repartition of segmental abdominal pain, whereas non-painful phenotypes (mild pain constipation or diarrhea, nonspecific) have low segmental abdominal pain score.

Supplementary figure SF2

Title: Results of the principal component analysis performed on the CDBP profile of patients with functional bowel disorders.

Legend: The population of functional bowel disorders is shown on the two main axis defined by the discriminant analysis performed on the four parameters associated in the CDBP profile (Constipation, Diarrhea, Bloating, and abdominal Pain). The first axis represents 47.6% of the variance and is defined by the intensity of pain. The opposition between diarrhea and constipation defines the second axis that represents 36.5% of the variance of the population.

Abbreviations used for the groups names: "Painful constipation": PFC, "Mild pain constipation" : MPC, "Painful diarrhea" : PFD, Mild pain diarrhea" : MPD, "Mixed transit" : MT, "Bloating" : BL; "Abdominal pain" : AP; "Nonspecific" : NS.