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Functional Bowel Symptoms in Older Adults: Geriatric Confounders

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ABSTRACT:- Functional bowel symptoms in older adults are often interpreted through the language of disorders of gut–brain interaction (DGBI). Rome IV criteria remain useful for standardising symptom-based diagnosis, but in later life the same bowel phenotype may be shaped by geriatric syndromes, medication burden, malnutrition, and psychosocial ageing. Constipation, bloating, abdominal discomfort, diarrhoea, faecal incontinence, urgency, and incomplete evacuation may therefore represent primary DGBI, secondary bowel dysfunction related to geriatric factors, or a mixed phenotype. The term pseudo-DGBI is used here only as a clinical heuristic, not as a new diagnosis: it signals the risk of assigning a functional bowel label before geriatric confounders have been assessed.

This review synthesises evidence on age-related shifts in DGBI epidemiology and on frailty, sarcopenia, polypharmacy, and psychosocial burden as sources of diagnostic confounding in older adults with functional bowel symptoms. We propose a geriatric-oriented framework that combines Rome IV symptom assessment with red-flag exclusion, frailty and functional status evaluation, sarcopenia and nutrition screening, medication review, and psychosocial assessment. This approach does not replace Rome IV; it makes Rome IV safer to apply in later life by identifying treatable geriatric drivers before treatment escalation.

I. INTRODUCTION

In older adults, a Rome IV-compatible bowel symptom pattern may describe what the patient reports, but not necessarily why the symptoms occur. Rome IV shifted the field from a diagnosis-of-exclusion model to a positive symptom-based model, and factor-analytic work supports the broad coherence of Rome IV groupings across regions, sex, and age groups [1-3]. In geriatric practice, however, a symptom pattern may meet Rome criteria while the main contributor is not primary gut–brain dysregulation.

Older adults commonly accumulate the exact conditions that blur functional bowel diagnosis. Constipation may be related to primary constipation, opioid exposure, anticholinergic burden, reduced mobility, pelvic floor dysfunction, Parkinsonian dysautonomia, dehydration, or poor intake. Diarrhoea may be labelled irritable bowel syndrome with diarrhoea, but it can also follow metformin, antibiotics, proton pump inhibitors (PPIs), bile acid malabsorption, microscopic colitis, overflow diarrhoea, or laxative overuse. Drug-induced

gastrointestinal disorders are well recognised mimics of irritable bowel syndrome and inflammatory bowel disease, and drug toxicity is harder to interpret in older patients with multimorbidity [4,5]. A functional bowel diagnosis in later life should therefore carry two linked statements: which symptom criteria are met, and which geriatric factors could explain or modify those symptoms.

This review focuses on functional bowel symptoms, not the full DGBI spectrum. Dysphagia, early satiety, and functional dyspepsia are mentioned only when they plausibly affect nutrition, hydration, muscle loss, and downstream bowel function; they are not treated as primary outcomes here [2]. The clinical question is therefore narrow: when an older adult has DGBI-like bowel symptoms, how much of the presentation reflects primary DGBI, and how much reflects frailty, sarcopenia, polypharmacy, or psychosocial ageing?

II. AGE-RELATED SHIFT IN FUNCTIONAL BOWEL SYMPTOMS

Large population studies do not support the assumption that DGBI simply accumulate with age. In the Rome Foundation Global Epidemiology Study, 40.3% of adult internet-survey respondents met criteria for at least one functional gastrointestinal disorder, and affected respondents reported worse quality of life and greater healthcare use [6]. In age-focused analyses, symptoms compatible with at least one DGBI were less common in adults aged 65 years or older than in younger adults in community samples from the United States, United Kingdom, and Canada, and a later global analysis of 54,127 respondents found lower rates of any DGBI in the older group [7,8].

The exceptions matter clinically. Functional constipation and faecal incontinence are more prominent in later life than many pain-dominant DGBI. A global meta-analysis confirms that functional constipation is common across Rome criteria, and the Rome Foundation ageing analysis reported that faecal incontinence was the main Rome IV diagnosis not more prevalent in younger adults [8,9]. A 2026 global population-based analysis also found that accidental stool leakage was more frequent in older adults and was associated with urgency, loose stools, abdominal pain, and rectal pain [10].

This age-related pattern has a practical implication for case definition. A younger patient with recurrent abdominal pain, stool-form change, and food-related bloating is often evaluated through an IBS-centred pathway. An older patient may present with fewer pain descriptors and more bowel-control outcomes: straining, incomplete evacuation, digital manoeuvres, urgency, leakage, pad use, fear of leaving home, or dependence on carers for toileting. These outcomes are easily lost when the consultation is organised only around abdominal pain frequency or stool form. They are also closer to the outcomes that affect independence, falls risk, skin integrity, caregiver workload, and institutionalisation.

Bloating shows how the same symptom can have different clinical meaning by age. Rome Foundation data found that weekly bloating was common, overlapped with other DGBI symptoms, and decreased with age [11]. Overlap still matters because multiple Rome IV diagnoses are associated with greater disease severity and poorer quality of life, but in older adults it may also reflect accumulated vulnerability rather than a single gut–brain mechanism [12]. Bloating may reflect a DGBI process, retained stool, slow transit, incomplete evacuation, medication-related dysbiosis, or reduced abdominal wall and pelvic floor function. Such interpretations fit evidence that ageing is associated with enteric neuromuscular changes, constipation, faecal incontinence, reduced compliance, and impaired accommodation [13].

III. GERIATRIC CONFOUNDERS: FRAILTY, SARCOPENIA, AND POLYPHARMACY

Frailty is a state of reduced physiological reserve and vulnerability to stressors. It is commonly operationalised through phenotypic criteria such as unintentional weight loss, exhaustion, weakness, slow walking speed, and low activity, or through deficit-accumulation approaches [14,15]. In functional bowel assessment, frailty should not be treated as background noise. A robust older adult with new constipation after a diet change and a frail older adult with the same stool frequency, low intake, slow gait, and dependence for toileting do not have the same clinical problem, even if both meet symptom criteria.

The link between constipation and frailty is supported by several older-adult datasets, but the evidence is mainly associative. In older Spanish adults, functional constipation was common, especially among women, and was associated with frailty burden and poorer quality of life [16]. A Korean community cohort found that older adults with chronic constipation had higher frailty burden, while a National Health and Nutrition Examination Survey analysis linked frailty with both chronic constipation and chronic diarrhoea in Americans aged 60 years or older [17,18]. Constipation is therefore increasingly discussed as a geriatric syndrome rather than only as a local colonic disorder [19].

Frailty also changes the risk-benefit calculation of standard bowel treatments. Reduced mobility can turn mild constipation into severe stool retention because toileting access is difficult. Functional dependence may delay help-seeking until faecal impaction, overflow diarrhoea, or incontinence appears. High-fibre advice may worsen bloating if fluid intake is poor; restrictive diets may worsen malnutrition; sedating neuromodulators can increase falls; and aggressive laxative escalation can produce urgency, diarrhoea, and electrolyte disturbance. These are not reasons to avoid DGBI treatment, but they make frailty assessment part of diagnosis

rather than an optional add-on [15,19]. In practice, a brief frailty screen, medication review, nutrition history, and toileting assessment may explain why a standard constipation plan has failed.

Sarcopenia is defined by loss of skeletal muscle strength, muscle quantity or quality, and physical performance, with consensus increasingly placing muscle strength at the centre of diagnosis [20,21]. For bowel symptoms, the relevant issue is not only appendicular muscle mass. Swallowing muscles, abdominal wall muscles, the diaphragm, pelvic floor, puborectalis, and anal sphincters all contribute to intake, stool propulsion, evacuation, and continence. Sarcopenic dysphagia illustrates the principle: systemic and swallowing-muscle loss can impair intake, worsen dehydration or malnutrition, and thereby indirectly worsen constipation [22-24].

Lower gastrointestinal evidence is more directly relevant to this review. In a Korean population-based cohort of 1,278 community-dwelling older adults, Rome IV-defined constipation was associated with sarcopenia and slow gait speed; after adjustment, slow gait speed remained the more robust association [25]. A Japanese prospective cohort of adults aged 75 years or older found that SARC-F-defined sarcopenia was associated with new-onset constipation over follow-up [26]. These studies do not prove a single causal pathway, but they support the idea that slow gait, poor muscle performance, and impaired evacuation can confound a diagnosis of refractory functional constipation. Pelvic floor weakness and impaired abdominal straining may also shift the clinical presentation from infrequent stool to incomplete evacuation, excessive straining, or faecal incontinence.
Polypharmacy is the most modifiable confounder in this framework. Systematic evidence shows that multimorbidity and polypharmacy are common in older adults, and narrative reviews link polypharmacy to adverse drug events, functional decline, falls, cognitive impairment, and prescribing cascades [27,28]. The 2023 American Geriatrics Society Beers Criteria give clinicians a structured way to identify potentially inappropriate medications in adults aged 65 years or older, including drugs that can worsen cognition, falls risk, constipation, or diarrhoea [29].

Anticholinergic exposure is a common route to DGBI-like bowel symptoms. Anticholinergic burden is cumulative and may arise from antidepressants, sedating antihistamines, bladder antimuscarinics, antiparkinsonian drugs, and other agents whose anticholinergic properties are easy to miss [30]. In a population database study of patients with constipation, 41% received drugs with cholinergic antagonist activity, suggesting that potentially inappropriate anticholinergic prescribing is common in constipation care [31]. In this setting, the medication list is part of the bowel examination.

Opioids provide another clear model. Opioid receptors in the gut can contribute to delayed emptying, ileus, opioid-induced constipation, and narcotic bowel syndrome [32]. Systematic reviews and clinical overviews support targeted therapies for opioid-induced constipation, but the first diagnostic step remains reconstructing the medication timeline [33-35]. NSAIDs can injure the gastrointestinal tract through permeability changes, erosions, ulcers, bleeding, and inflammation, while drug-induced colitis and enteropathy add further causes of abdominal pain or diarrhoea that may be mistaken for DGBI [36-38]. PPIs, metformin, and laxatives are among the most common additional contributors to bowel disturbance in older patients [4,5,37,38].

The practical consequence is a prescribing cascade. A calcium channel blocker or anticholinergic drug worsens constipation; a laxative causes urgency or bloating; an antispasmodic or tricyclic antidepressant is added; anticholinergic burden then worsens constipation and cognition. At each step the patient may look as if they have refractory DGBI, when part of the phenotype is iatrogenic. Medication review should therefore occur before escalation of DGBI-directed therapy, especially when symptoms started after a drug change or worsened with treatment [28,29,37].

IV. PSYCHOSOCIAL AGEING AS A SYMPTOM AMPLIFIER

Psychosocial factors matter in DGBI at every age, but the later-life pattern is not simply the work stress or academic stress phenotype seen in younger adults. In a nationally representative Health and Retirement Study analysis, older adults with digestive disease reported more loneliness and depressive symptoms than those without digestive disease, and these factors were associated with lower perceived health [39]. Loneliness is also linked to neuroendocrine stress regulation, inflammation, sleep, health behaviours, and mortality risk, which makes it a plausible amplifier of digestive symptom burden rather than a minor contextual factor [40].

Psychosocial ageing can distort bowel symptom assessment in both directions. Depression and sleep disturbance may increase pain sensitivity and reduce activity, worsening constipation or urgency. Social isolation can worsen diet, hydration, medication adherence, and access to toilets or care. At the same time, embarrassment about faecal incontinence or dependence can suppress symptom reporting. Recent population work also suggests that loneliness may partly mediate associations between chronic gastrointestinal disease and frailty, reinforcing the need to assess social context alongside bowel habits, frailty, sarcopenia, and medication burden [39-41].

In this framework, psychosocial ageing is better understood as a calibrating factor than as a standalone causal model. A lonely or depressed older adult with constipation may have stronger symptom vigilance, lower activity, poorer sleep, less regular food intake, and fewer opportunities to obtain timely help. Another patient with the same symptoms may under-report leakage because of shame or cognitive impairment. In both cases,

psychosocial assessment helps interpret symptom burden, adherence, and treatment goals without reducing bowel symptoms to psychological symptoms [39,40].

V. A GERIATRIC-ORIENTED DIAGNOSTIC FRAMEWORK AND TREATMENT IMPLICATIONS

The proposed framework does not replace Rome IV. It places Rome IV within a geriatric diagnostic sequence. Rome IV remains the entry point for describing symptom patterns and communicating DGBI diagnoses, but older adults with new-onset or progressive symptoms in later life, particularly after age 60 to 65 years, rapid change, weight loss, anaemia, bleeding, nocturnal diarrhoea, functional decline, cognitive impairment, faecal incontinence, high anticholinergic or opioid exposure, or repeated treatment failure need additional assessment before the label is treated as sufficient [1,7,8,42,43]. The same sequence also protects against underdiagnosis: an older adult can have genuine DGBI and still need medication review, nutrition support, and pelvic floor assessment.

A useful clinical sequence is to separate four questions that are often compressed into one visit. First, does the symptom pattern meet a recognised bowel DGBI category? Second, are there red flags or late-life changes that require targeted evaluation for organic disease? Third, are there geriatric traits that could produce or amplify the symptom pattern, such as frailty, slow gait, poor grip strength, low intake, cognitive impairment, or high-risk medications? Fourth, which trait is most treatable now? This sequence keeps Rome IV in the assessment while preventing a symptom label from becoming the whole explanation [1,15,29].

This assessment can be operationalised as a compact five-step clinical sequence: (1) define the Rome IV-compatible bowel phenotype; (2) exclude red flags and late-onset organic disease; (3) assess frailty, mobility, cognition, toileting ability, and functional reserve; (4) screen for sarcopenia, malnutrition, dehydration, and pelvic floor dysfunction; and (5) review medication burden and psychosocial context before escalating DGBI therapy [1,15,16,25,29,39].

This framework also clarifies the limited role of pseudo-DGBI terminology. A patient can meet Rome IV criteria for functional constipation and still have a dominant driver that is sarcopenic, frailty-related, drug-induced, psychosocially amplified, or mixed. The term is useful only if it prompts a search for treatable traits: medication-induced constipation should prompt deprescribing or substitution where feasible; a sarcopenia-predominant phenotype should prompt nutrition, resistance exercise, hydration, and pelvic floor assessment; a frailty-predominant phenotype should prompt realistic goals, caregiver input, and avoidance of interventions that worsen falls, dehydration, or malnutrition [16,19,25,31].

Treatment implications should be framed cautiously. These recommendations are best viewed as treatable-trait-based clinical principles rather than evidence from trials specifically designed for older adults with DGBI. For primary DGBI with prominent pain, bloating, and psychosocial amplification, dietetic support, gut–brain behavioural therapies, neuromodulators, and microbiota-directed strategies may still be appropriate, but dosing and adverse effects require geriatric adjustment [2,29]. For polypharmacy-related DGBI mimics, deprescribing is a therapeutic intervention. For frailty- or sarcopenia-associated constipation, symptom control may need to be paired with support for toileting, hydration, nutrition, mobility, and pelvic floor function.

Multidisciplinary care is attractive because older bowel presentations often cross specialty boundaries. In the MANTRA trial, integrated multidisciplinary care improved global symptoms and quality of life compared with standard gastroenterologist-only care for functional gastrointestinal disorders, with sustained benefit in longer follow-up [44,45]. These data were not designed specifically for frail older adults, so they should not be overgeneralised. Even so, the model is relevant: older patients may need coordinated input on diagnosis, frailty, medication burden, nutrition, mobility, continence, and psychosocial barriers to care.

VI. FUTURE DIRECTIONS AND CONCLUSION

Future research should make geriatric variables part of DGBI phenotyping rather than treating them as exclusions or comorbidities. Machine-learning studies have begun to identify DGBI subtypes from biopsychosocial questionnaires and physiological variables, and similar approaches could be extended by adding gait speed, falls, activities of daily living, grip strength, nutritional markers, anticholinergic burden, opioid exposure, social isolation, and caregiver dependence [46,47]. Natural language processing may help extract under-coded functional status from clinical notes, but it is best viewed as a supporting method rather than the conceptual centre of this field [48]. Prospective studies should test whether geriatric-oriented phenotyping reduces unnecessary investigations after appropriate red-flag exclusion, prevents prescribing cascades, and improves outcomes that matter to older adults, including continence, independence, falls, nutrition, and quality of life.

Functional bowel symptoms in older adults should not be managed as a simple extension of DGBI in younger adults. Rome IV criteria remain valuable, but they are incomplete when symptoms are shaped by frailty, sarcopenia, polypharmacy, mobility limitation, malnutrition, and psychosocial ageing. A geriatric-

oriented assessment makes the evidence chain more transparent: first define the bowel phenotype, then exclude red flags, then ask whether frailty, muscle loss, medication burden, nutrition, or social context explains why this older patient has these symptoms now. In older adults, a Rome IV-compatible symptom pattern should be considered the beginning of diagnosis, not the end of diagnosis [7,8,16,25,29].

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