

# Review article: the psychosexual impact of inflammatory bowel disease in male patients

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## SUMMARY

### Background

Knowledge of the extent and the impact of sexual dysfunction and interpersonal relationships in men with inflammatory bowel disease is scarce.

### Aims

The aim of this review article was to summarise the current literature on sexual function in male patients with IBD and to provide a critical review of the IBD-related medical, surgical and psychological complications that can result in impaired quality of sexual health.

### Methods

To collect relevant articles, PubMed/Medline and Embase searches were performed using Boolean search phrases.

### Results

Reported rates of sexual dysfunction in male IBD patients range from 10% to 50%. Thirty-three to fifty per cent of patients report that sexual desire and satisfaction deteriorated after IBD diagnosis. Of those patients who were sexually inactive, half of these attributed lack of intercourse to underlying IBD. A striking finding reproduced in numerous studies is that disease activity relates strongly to impaired psychological function, and the most consistently reported risk factor for sexual problems in IBD patients is co-existing mood disorders. Hypogonadism is a complication of IBD and its therapies, the role of testosterone deficiency should be further explored as a potentially treatable and reversible factor in sexual dysfunction.

### Conclusions

By understanding what factors contribute to poor sexual functioning in our patients, we can strive to minimise adverse psychosocial events. Further insight into this complex relationship requires an IBD-specific measure of sexual function in male patients. We recommend screening for and treating co-morbid depression, testosterone deficiency and striving for clinical remission to prevent psychosexual dysfunction in male patients with inflammatory bowel disease.

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## INTRODUCTION

Psychosexual function in Inflammatory Bowel Disease is particularly relevant given that the peak incidence and prevalence of IBD is in young patients between the ages of 15–40. Crohn's disease and ulcerative colitis are chronic diseases often necessitating invasive abdominal and pelvic surgery and the use of potent immune modulating and biological therapies. The symptoms, disease complications and treatments influence body image, intimacy and sexual function.<sup>1</sup> Many studies have addressed female-specific issues including sexuality, pregnancy and fertility with less attention paid to male IBD patients.<sup>2</sup> Despite the clear significance of these issues, knowledge of the extent and the impact of sexual dysfunction and interpersonal relationships in men with IBD is scarce. Data are derived from case reports, small survey-based studies and few meta-analyses (Table 2). The American College of Gastroenterology makes no reference to management of psychosexual complications arising from IBD in the practice guidelines for ulcerative colitis (UC) and Crohn's disease (CD).<sup>3, 4</sup> The European Crohn's and Colitis Organisation evidence-based consensus for both UC and CD does not directly refer to sexual dysfunction but states that 'The psychosocial consequences and health related quality of life of patients should be taken into account in clinical practice at regular visits'.<sup>5, 6</sup>

### Assessment of sexual function

Determinants of psychosexual functioning include relationship status, body image perception, fertility concerns, erectile function, orgasmic function, sexual desire and sexual satisfaction. Self-reported event logs or validated questionnaires are best suited for research or clinical assessment of sexual function.<sup>7</sup>

There are no IBD-specific validated questionnaires addressing sexuality issues but recent studies and surveys have used generic validated questionnaires and applied them to the field of IBD. The Brief Illness Perceptions Questionnaire has been used to explore IBD illness perceptions, the Hospital Anxiety and Depression Scale has been used to explore anxiety and depression in IBD and the International index of erectile function (IIEF) has been used to measure erectile function in male IBD patients. As these questionnaires do not specifically address patients with IBD, issues specific to IBD patients are not covered. These include psychosexual concerns of patients with ostomies, perianal fistulae, abdominal pain, diarrhoea and fatigue, all of which are seen commonly in IBD. There are IBD-specific validated questionnaires

that have been used to measure quality of life and disease activity but these look at sexual function only peripherally. Both the short and long form of the Inflammatory Bowel Disease Quality of Life Questionnaire (IBDQ) measure quality of life in IBD and the Crohn's Disease Activity Index (CDAI), Clinical Activity Index and Colitis activity index<sup>8–10</sup> measure disease activity. However, the IBDQ contains only one question on sexual function (Table 1). Most of the current research on psychosexual impairment in men with IBD comes from individual cross-sectional surveys that are not validated in IBD and are administered by internet or mail.

The IIEF is the gold standard for measuring general male sexual function. It assesses erectile function, orgasmic function, sexual desire, intercourse satisfaction and overall satisfaction. It is psychometrically sound, has been validated many languages, is readily self-administered in research and clinical settings and demonstrates the sensitivity and specificity for detecting treatment-related changes in patients with erectile dysfunction. However, it is a generic instrument and therefore lacks IBD-specific domains. In addition, its development paralleled the advent of sildenafil and much of the evidence is derived from older patient populations, classically those with diabetes and vascular disease.<sup>11</sup> This patient population is very different from many young men affected by IBD during the peak years of dating, marriage, conception and child-rearing. Therefore, a novel tool is required to assess the specific psychosexual impact of IBD.

### Aims

The aim of this review article was to summarise the current literature on sexual function in male patients with IBD and to provide a critical review of the management of IBD-related medical, surgical and psychological complications that can result in impaired quality of sexual health.

### Literature search criteria

To collect relevant articles, PubMed/Medline and Embase searches were performed using the Boolean search phrases 'sexuality AND IBD', 'surgery AND male sexual function', 'corticosteroids AND male sexual function', 'meta-analysis on male sexual function in IPAA', 'abdominal surgery AND male sexual function', 'depression AND male sexual function', 'pouch function AND impotence', 'abdominal surgery AND impotence', 'depression AND IBD', 'anxiety AND IBD', 'quality of

**Table 1** | Validated questionnaires that measure quality of life, IBD activity and/or male sexual function

Questionnaire	Author	IBD specific	Sexual function specific	Mood specific	Health perception
International Index of erectile function (IIEF)	Rosen <i>et al.</i> <sup>56</sup>	No	Yes	No	No
Crohn's Disease Activity Index (CDAI)	Best <i>et al.</i> <sup>8</sup>	Yes	No	No	No
Clinical Activity Index	Sandler <i>et al.</i> <sup>9</sup>	Yes	No	No	No
Colitis Activity Index	Walmsley <i>et al.</i> <sup>10</sup>	Yes	No	No	No
Short Inflammatory Bowel Disease Questionnaire (S-IBDQ)	Irvine <i>et al.</i> <sup>57</sup>	Yes	No	No	No
Inflammatory Bowel Disease Questionnaire	Guyatt <i>et al.</i> <sup>58</sup>	Yes	No	No	No
The Short Form (36) Health Survey (SF-36)	Ware <i>et al.</i> <sup>59</sup>	No	No	No	Yes
The Brief Illness Perception Questionnaire	Broadbent <i>et al.</i> <sup>60</sup>	No	No	No	Yes
Hospital Anxiety and Depression Scale	Zigmond <i>et al.</i> <sup>61</sup>	No	No	Yes	No

life AND IBD', 'relationship status AND IBD', 'fertility AND IBD', 'sexual satisfaction AND questionnaire', 'sexual function AND questionnaire', 'quality of life AND questionnaire', 'depression AND questionnaire', 'influximab AND sexual dysfunction', 'corticosteroids AND body image', 'IBD AND body image', 'inheritance AND IBD' and 'genetic anticipation in IBD'. No language or date restrictions were placed on the search criteria. The references of review articles were examined for potentially eligible studies. Date of last search was 24<sup>th</sup> February 2014. Studies addressing psychosexual function were included in the review. Twelve papers specifically addressing issues related to male sexual function were identified and are outlined in Table 2.

## RESULTS

### Relationship status

Rates of partnership among IBD patients appear to be similar to the general population. Recent surveys addressing quality of life, body image, sexual function, fertility and pregnancy outcomes in IBD patients from tertiary hospital databases report 77–80% of IBD patients in a relationship<sup>12, 13</sup> ( $n = 334$  and  $217$ ). No differences in partnership status were observed when comparing disease type (CD vs. UC), gender or operative status.<sup>12</sup> Five and a half per cent had never had a sexual partner. These rates are comparable to the general population.<sup>14</sup> Half of the responders felt that IBD had an adverse affect on relationship status; this opinion was not significantly different between males and females but was significantly greater in those with previous IBD surgery compared to un-operated subjects. Fears and concerns related to relationships included the impact of disease, stigma and sexual intimacy. Sexual inactivity

was observed in 50% of post-operative IBD patients in a prospective cohort study of patients with IBD who underwent proctocolectomy.<sup>15</sup> In Spanish IBD patients, one-third of male patients considered that both sexual desire and satisfaction worsened after IBD diagnosis as measured by the IIEF in a postal survey of 153 IBD male patients.<sup>16</sup> Muller *et al.* report in their study of 74 males with IBD that men who had been operated upon and those with a longer duration of disease were more likely to report reduced libido.<sup>12</sup>

### Fear of infertility

Fears surrounding fertility are common. Concerns include infertility, potential medication side effects, congenital malformations and conferring the genetic IBD risk to offspring. Mountifield *et al.* report that 13/40 male patients responding to a postal survey reported a fear of infertility.<sup>14</sup> Fear of infertility was significantly higher in patients with CD compared to UC and in patients who previously underwent resection and female patients were significantly more fearful 54% vs 32.5%  $P = 0.035$ .

### Discussion with physician

Many IBD patients don't consider sexual dysfunction a medical problem nor do they see the need to discuss it with their physician.<sup>13, 17</sup> Timmer *et al.* report that only 25% of patients would like to discuss sexuality with a doctor and only 40% of patients had done so. There is an additional reluctance in both male and female patients to discuss these topics where there is physician-patient gender mismatch. Forty-six per cent of the Spanish men in Marin *et al.*'s study agreed that information about the impact of IBD on intimacy and sexuality should be addressed at diagnosis.<sup>16</sup>

**Table 2 | Evidence table studies reporting male sexual function**

Author	Study Objective	Design/ participants	Intervention and outcome measure	Results	Limitations
Bokemeyera <i>et al.</i> 2013 <sup>22</sup>	To establish an online IBD registry	Survey Male N = 191 CD, 253 UC Female N = 320 CD, 266 UC	Questionnaire CAI CDAI	Severe depressive symptoms (14.9%) and sexual problems (20%) were associated with active disease	Registry cohort potentially overestimates the burden of disease
De Zeeuw <i>et al.</i> 2012 <sup>62</sup>	To provide a comprehensive update of the outcome of IPAA	Meta-analysis of 96 observational studies in 6131 patients	Study characteristics, functional outcome, and complications were extracted	Sexual dysfunction was addressed in 13 of the 96 studies Pooled incidence of sexual dysfunction post-IPAA since 2000 was 3%	Lack of individual patient data limits the analyses that could be performed
Drossman <i>et al.</i> 1999 <sup>20</sup>	To measure health status by rating IBD patient concerns	Survey Male N = 396 Female N = 595	Rating Form of IBD Patient Concerns	Concerns about sexual intimacy reported in 30% and were related to poorer psychological function and disease activity	No control group Nonvalidated questionnaire
Farouk <i>et al.</i> 2000 <sup>39</sup>	To assess long-term outcomes after IPAA for men with chronic UC	Survey Male N = 762	Prospective Detailed questionnaire before surgery and annually after surgery	Ten years after IPAA, retrograde or no ejaculation was reported by 3% of men	Nonvalidated questionnaire
Marin <i>et al.</i> 2013 <sup>16</sup>	To evaluate the prevalence and predisposing factors of sexual dysfunction among IBD patients	Male N = 153 63 CD 90 UC Female N = 202 89 CD 113 UC 27% response rate	Postal survey IIEF	Main risk factors for abnormal IIEF were depression and diabetes	Low response rate No validated depression screening tool
Mountifield <i>et al.</i> 2009 <sup>14</sup>	To describe specific perceptions and concerns related to infertility and pregnancy	Male N = 40 CD 33 UC Female N = 88 CD 55 UC Response Rate 70%	Postal questionnaire, Questions related to fertility and pregnancy outcomes	13/40 32.5% CD and 7/33 (21.2%) UC male patients had a fear of infertility	Nonvalidated tool
Muller <i>et al.</i> 2010 <sup>12</sup>	Explore patients' perspectives on the impact of IBD on forming relationships, body image and sexuality	Survey Male N = 74 Female N = 143	Postal Questionnaire Relationships, quality of life (QoL), body image and sexual function	51.4% males reported impaired body image due to IBD	Nonvalidated questionnaire No control group
Timmer <i>et al.</i> 2007 <sup>18</sup>	To identify disease-related factors associated with	Survey/cross-sectional analysis comparing clinical group to	IIEF S-IBDQ	Diabetes strongest risk factor for impaired erectile function	Confounding issues between study groups Study group

Table 2   (Continued)					
Author	Study Objective	Design/ participants	Intervention and outcome measure	Results	Limitations
	low sexual function in men	a group from patient organisation Total 280 Clinical Group N = 33 UC, 61 CD 84% response rate Patient Group N = 77 UC, 109 CD 37% response rate		44% clinical group felt severely compromised sexually due to their IBD	younger with more severe disease
Timmer <i>et al.</i> 2007 <sup>13</sup>	To evaluate sexual function in men and women with IBD relative to healthy controls	Postal survey Survey with matched controls Male N = 109 CD, 77 UC, 153 controls Female N = 129 CD, 93 UC, 181 Controls 43% response rate	Questionnaire IIEF Hospital anxiety and depression score CDAI CAI	Depression most important determinant of low sexual function Men with IBD in remission or mild activity had similar IIEF as controls	Small sample size
Van Balkom <i>et al.</i> 2012 <sup>38</sup>	Investigate long-term functional with IPAA in young patients	10 males aged 10–24 at time of surgery 88% response rate	Postal survey IIEF SF36 Body image questionnaire	Men did not report impotence or retrograde ejaculation	Small sample size
Wang <i>et al.</i> 2011 <sup>15</sup>	To examine sexual function and quality of life in men and women with IBD before and after proctectomy	Prospective Cohort Male N = 41 male Female N = 25 female	IIEF SF36	Men reported improved IIEF scores after surgery	Small sample size

### Active disease/flares

Disease activity appears to have a significant impact on libido, sexual attractiveness, level of sexual activity and enjoyment of sex.<sup>18</sup> In the cross-sectional study of 280 male IBD patients, 67% of males with active IBD reported severe sexual compromise compared to 21% of male patients in remission. Erectile and ejaculatory difficulties were correlated with active disease.<sup>13, 18</sup> Conversely, men with IBD in remission or mild activity had similar IIEF scores to controls.<sup>13</sup> Active IBD is associated with erratic and unpredictable bowel movements, flatus, urgency and incontinence as well as fatigue.<sup>19</sup> Insecurity about faecal incontinence during sexual intercourse can strongly inhibit sexual motivation. Disease severity accounts for impaired sexual intimacy and was associ-

ated with decreased sexual function in a questionnaire studying concerns of IBD patients and health status.<sup>20</sup> In addition, patients with active disease significantly more often reported severe depression than patients in remission as well as lower social support, poorer disease specific quality of life and well-being.<sup>21, 22</sup>

### Psychological factors

Data from large trials are lacking but a robust finding from many studies is widespread sexual dysfunction in IBD which closely mirrors depressive symptoms<sup>13, 23, 16, 18</sup> Depression itself is a major risk factor for decreased sexual function.<sup>24</sup> Mood disorders are common in IBD and relate to consequences of IBD, treatment side effects, cancer risks and concerns

regarding surgery and stoma formation.<sup>25–27</sup> Topics about which IBD patients requiring counselling are concerned include being a burden, being alone, impaired sexual performance and feeling dirty or smelly.<sup>28</sup> Results from an online survey of 73 IBD patients (13 male) report that illness perception influences depression, anxiety and family function, with subsequent impairment of sexual function and satisfaction, poor body image and self-consciousness during intimacy.<sup>29</sup>

A recent European Crohn's and Colitis Organisation statement declares that attention to the psychosocial factors associated with CD may have consequences not only on psychosocial well-being and quality of life, but also on the activity of the disease itself.<sup>5</sup> Smoking was found to correlate with depression and reporting impairments in sexuality in the German online registry.<sup>22</sup>

### Surgery

Sexual function, body image and overall quality of life (QOL) are key outcome measures in IBD patients undergoing surgery. Pelvic nerve damage and structural pelvic changes are potential post-operative risks.<sup>30, 31</sup> There are conflicting data regarding post-operative sexual issues. Post-operative improved general health has been attributed to enhanced sexual functioning, but many studies report post-operative sexual dysfunction. Fear of a stoma is a common concern of IBD patients.<sup>20, 32</sup> A prospective evaluation of disease-related concerns in IBD patients rated having an ostomy as the biggest fear, followed by concern regarding medication side effects, undergoing surgery and uncertainty of disease.<sup>32</sup> Quality of life was assessed in 35 patients with a pouch and compared to 24 patients with stomas. Both groups had comparable generic quality of life scores measured by the Cleveland Global Quality of Life Scale, however using the Stoma Quality of Life Scale those with a stoma had significantly lower sexuality and body image scores.<sup>33</sup>

Having an ostomy seems to impact sexual function in multiple areas, in particular erectile function and sexual satisfaction.<sup>18</sup> Carlsson *et al.* studied fears in 21 IBD patients with an ileostomy using the rating form of IBD concerns. In patients with a stoma, the biggest fears are related to intimacy, and other aspects of sexuality and body image (loss of sexual drive, ostomy-related odours, inability to perform sexually, feeling unattractive, feeling dirty or smelly and losing control of bowel movements).<sup>34</sup> Patients who had a stoma unanimously perceive a negative impact on body image. The authors conclude that sexuality should be considered an activity of daily living and that these issues ought to be

addressed in the pre- and post-operative setting and adequate counselling provided.

Wang *et al.* report improvement in IBD-specific quality of life after proctocolectomy and proctectomy in both males and females but only men demonstrated several areas of improved sexual function.<sup>15</sup> When comparing open and minimally invasive surgical techniques for pouch formation, overall quality of life (QOL) as measured by the SF36 and IBDQ was excellent and equal between open and minimally invasive patients. These findings illustrate that the quality of life benefits after laparoscopic surgery are short term and that long-term outcomes likely reflect the elimination of disease, not the surgical technique used.<sup>35</sup>

Sexual function can be affected by the pelvic dissection and potential damage to autonomic nerves is a major concern to patients. Male sexual dysfunction following pelvic surgery for IBD is reported to range from 0% to 25%<sup>36</sup>. For patients unfortunate enough to be affected by erectile dysfunction following rectal excision, a randomised controlled trial of sildenafil (Viagra) vs. placebo achieved improved erectile function scores in 79% of patients (11/14 cases) vs. 17% (3/18 cases) respectively.<sup>37</sup>

The risk of impotence post-ileal pouch-anal anastomosis (IPAA) appears to be age-related. A small retrospective study of 26 patients who underwent IPAA for colitis or familial adenomatous polyposis at a young age (10–24) revealed no male sexual dysfunction as measured by the IIEF; conversely sexual dysfunction was seen in 50% of the female patients as measured by the female sexual function index.<sup>38</sup> However, these studies did not measure scores pre-operatively, therefore no direct comparison between pre- and post-operative functional status have been made. A large Mayo clinic study assessed pre- and post-IPAA surgery sexual function in 762 men prospectively using a nonvalidated questionnaire assessing quality of sex life, erectile and ejaculatory. Ten years after IPAA, retrograde or no ejaculation was reported by 3% of men.<sup>39</sup> Twenty-five per cent of patients reported an improvement, 19% a deterioration and 56% no change post-operatively compared to their pre-operative scores. Linsey *et al.*<sup>40</sup> described impotence at a rate of 3.8% (6/156) in those over 50 and a small incidence of retrograde ejaculation and diminutive erections. Age was the most important risk factor for post-operative impotence, with no impotence occurring in men under fifty. Overall, the literature suggests that males are at least moderately satisfied with sex after IPAA. When comparing IPAA to ileostomy formation, informed patients with ulcerative

colitis choosing an ileostomy have a health-related global quality of life very similar to patients with a pelvic pouch. Better outcomes in patients with an ileal pouch were most evident in the areas of sexuality/body image and work/social function in the observational study comparing 35 patients with a pouch to 24 with ostomies.<sup>33</sup>

### Medications

Medications are thought to be responsible for approximately 25% of erectile dysfunction.<sup>41</sup> In Marin's study of Spanish men with IBD, the use of biological agents was an independent predictor of sexual dysfunction,<sup>16</sup> which may be a surrogate marker for disease activity and severity. Furthermore, Muller *et al.* report approximately 10% of the IBD patients commonly omit regular medication use because of a perceived detrimental impact on libido and sexual activity.<sup>12</sup> Among the medications commonly used to treat IBD, methotrexate has been associated with impotence in the rheumatoid arthritis population<sup>42, 43</sup> but not in male IBD patients. Erectile dysfunction has not been reported with the use of other commonly prescribed IBD agents including azathioprine 6-MP, infliximab (Janssen Biotech, Horsham, PA, USA), adalimumab (Abbvie, Chicago, IL, USA) and prednisone.

Opiates, anxiolytics and anti-depressants are commonly used in the IBD population and have a significant sexual side effect profile. Selective reuptake inhibitors (SSRI) contribute to erectile and ejaculatory difficulties as well as orgasmic and arousal disorders.<sup>44</sup> A meta-analysis reported sexual dysfunction in 25–80% of patients associated with SSRI use.<sup>45</sup> Citalopram and fluoxetine use have been associated with delayed ejaculation and lower IIEF scores.<sup>46</sup> Antalgics and opioid agonists have adverse effects on erections and can cause premature ejaculation.<sup>47, 48</sup> In men who misused opiates, prevalence of premature ejaculation was almost 3 times greater than reported in the general population.<sup>47</sup> A further study identified sexual dysfunction in 83% of men taking buprenorphine and 90% taking naltrexone. Abnormal symptoms included premature ejaculation (83% in buprenorphine and 87% in naltrexone), erectile difficulty (43% in buprenorphine and 67% in naltrexone) and impaired sexual desire (33% in buprenorphine and 47% in naltrexone).<sup>49</sup> When assessing sexual dysfunction in male IBD patients, a detailed medication history is crucial to the evaluation.

### Testosterone

Testosterone is central to male sexual performance and directly influences erection, arousal and ejaculatory func-

tion.<sup>50</sup> Steroid and opiate use, as well as chronic inflammation contribute to depression of circulating testosterone levels.<sup>51</sup> Hypogonadism has been reported in up to 40% of male IBD patients and contributes to metabolic bone disease.<sup>52</sup> Furthermore, testosterone replacement has been shown to improve bone mineral density in male IBD patients.<sup>53</sup> Testosterone replacement therapy has been successfully used to treat erectile and arousal disorders<sup>54</sup> but the role of testosterone in sexual dysfunction in men with IBD remains unknown. We recommend screening for hypogonadism by measuring total and free testosterone levels in patients who present with sexual dysfunction.

### DISCUSSION

Sexuality is important when assessing quality of life (QoL), which is often disturbed in inflammatory bowel disease (IBD). However, sexuality is not addressed in most quality of life questionnaires; the IBDQ has only one question related to sexual activity limitations. Response bias where those who complete the surveys may not necessarily be statistically representative of the actual population may significantly impact the results of patient surveys and jeopardise the validity of interpretations.<sup>55</sup> Higher response rates potentially could be seen among those with or without sexual dysfunction. Nonetheless, the high completion rates of these questionnaires (Table 2) in many of the studies addressing QoL and sexuality reflect the importance of these issues for IBD patients and highlight the need to incorporate appropriate discussion and education into the patient consultation.

The existing gold standard questionnaire, the IIEF is a generic tool therefore is not ideal in the assessment of the many complexities surrounding sexual function in IBD. To accurately measure sexual function in IBD, we need validated survey instruments that are intended specifically for the IBD patient. Once a gold standard measure of sexual function in IBD is developed, it can then be used in intervention studies in this patient population. By understanding what factors contribute to poor sexual functioning in our patients, we can strive to minimise adverse psychosocial events in this relatively young population of patients living with chronic gastrointestinal inflammation.

A striking finding reproduced in numerous studies is that disease activity relates strongly to impaired psychological function, and the most consistently reported risk factor for sexual problems in IBD patients is co-existing mood disorders. Therefore, physicians should strive to

achieve clinical remission to minimise the risk of sexual impairment. We advocate screening for depression in men who report sexual dysfunction using a validated tool and treating any detected psychiatric morbidity.

Hypogonadism can occur as a consequence of chronic inflammation or as a side effect of steroid and opiate medications. We hypothesise that is a considerable risk factor for sexual dysfunction in male IBD patients.

Specific interventions including sex therapy and couples counselling have not been assessed in IBD and future studies should focus on the benefit of these targeted interactions.

In summary, disease activity and depression have consistently been shown to impair sexual function in men with IBD. Pelvic surgery is a risk factor for impotence and ostomies universally affect body image; however, enhanced sexual function after IBD surgery has been attributed to improved general health. IBD medications themselves appear to have no adverse sexual sequelae;

however, anti-depressants and analgesics do. We believe that further insight into this complex relationship requires an IBD-specific measure of sexual function in male patients. Furthermore, the role of testosterone deficiency should be explored as a potentially treatable and reversible factor in sexual dysfunction.

## AUTHORSHIP

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