Almost two-thirds of them were also currently smoking cigarette and one-third of them were former smokers. It is possible that most of the e-cigarette users are still in the process of transitioning from cigarette smoking and thus using both types. We lack information on effects of using e-cigarette or both e-cigarette and cigarette in IBD treatment outcomes, as well as how e-cigarette use will complicate other health risks in IBD patients (e.g., lung injuries). We need further research on these effects to properly guide IBD patients who are in need of smoking cessation.

### Table. E-cigarette and cigarette use among IBD patients, NHS 2015-2016

<table>
<thead>
<tr>
<th>Current E-cigarette smoker</th>
<th>Population Estimate</th>
<th>Weighted % (95%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>152,028</td>
<td>7,076,608</td>
</tr>
<tr>
<td>Every-day use</td>
<td>71,780</td>
<td>3,536,002</td>
</tr>
<tr>
<td>Some-day use</td>
<td>80,257</td>
<td>3,536,002</td>
</tr>
<tr>
<td>Current Cigarette smoker</td>
<td>557,367</td>
<td>3,114,942</td>
</tr>
<tr>
<td>Total</td>
<td>475,695</td>
<td>2,743,942</td>
</tr>
<tr>
<td>Every-day use</td>
<td>51,778</td>
<td>2,743,942</td>
</tr>
<tr>
<td>Some-day use</td>
<td>52,918</td>
<td>2,743,942</td>
</tr>
</tbody>
</table>

**SMOKING CHARACTERISTICS**

| Only E-cigarette          | 55,336              | 3,055,538        |
| Only Cigarette            | 453,366             | 2,019,538        |
| Both                      | 96,018              | 2,019,538        |
| Neither                   | 3,430,152           | 2,019,538        |

**TOTAL** 63,698

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**Clinical and Behavioral Assessments**

- **Symptoms**
  - Fatigue
  - Sleep disturbances
  - Pain
- **Clinical Disease Activity**
  - Clinical Disease Activity Index (CDAI)
  - Simple Clinical Colitis Activity Index (SCCAI)
- **Laboratory Measures**
  - CRP
  - ESR
  - Albumin
- **Endoscopic Inflammation**
  - Simple Endoscopic Score for Crohn’s Disease (SES-CD)
  - Simple Endoscopic Score for Ulcerative Colitis (SES-UC)

**Aims:** To investigate the relationship between endoscopic inflammation and fatigue.

**Methods:** A retrospective chart review was conducted of adult patients at an academic medical center. Participants were included in the review if they had a diagnosis of ulcerative colitis or Crohn’s disease, a clinic visit between 2018-2019 with completed Short Inflammatory Bowel Disease Questionnaire and clinical disease activity measures (Harvey Bradshaw Index (HBI) or Simple Clinical Colitis Activity Index (SCCAI)).

**Results:** Individuals (N=43) had a mean age of 37.4 (SD=12.3) and 54% were female. Disease location was 9% ileal, 53% ileocolonic, and 37% colonic; 54% were in endoscopic remission. The mean fatigue score was 4.2 (SD=1.7). There was no difference in fatigue between individuals in endoscopic remission (M=4.2, SD=1.6) compared to individuals with active endoscopic disease (M=4.2, SD=1.9; p=0.97).

**Conclusions:** Fatigue was correlated with clinical disease activity measures including the HBI (r=0.61) and the SCCAI (r=0.58). Increased levels of fatigue were associated with abnormal C-reactive protein (p<0.01), erythrocyte sedimentation rate (p<0.01), and albumin (p=0.04) but not hematocrit (p=0.71) or hemoglobin (p=0.60).

**Discussion:** The majority of the sample reported fatigue; however, fatigue did not correlate with endoscopic disease activity despite previous research suggesting that clinical disease activity correlates with fatigue. Further confounding our understanding of disease activity’s association with fatigue is the fact that clinical disease activity does not necessarily correlate with endoscopic inflammation. Therefore, there is a need to examine the relationship between endoscopic inflammation and fatigue.

**Summary:**

- Fatigue is a prevalent symptom in IBD, affecting approximately 50% of patients.
- Fatigue is associated with increased disease activity, as measured by clinical and laboratory parameters.
- Further research is needed to understand the complex interplay between endoscopic inflammation and fatigue in IBD.

**References:**

1. **HBI**
2. **SCCAI**
3. **CRP**
4. **ESR**
5. **Albumin**

**Acknowledgments:** This research was supported by the Crohn’s & Colitis Foundation of America and the AGA Institute.