**Table S1.** Bowel preparation adequacy and colonoscopy indications and outcomes in those with and without an appendix.

|  | **With**  **appendix**  **(n=45)** | **Without**  **appendix**  **(n=13)** |
| --- | --- | --- |
| **Sample collection, days** |  |  |
| One-weekpre-intervention, mean (SD) | 7.18 (8.11) | 4.92 (2.10) |
| One-month post-intervention, mean (SD) | 33.5 (6.94) | 33.1 (9.97) |
| **Bowel preparation adequacy †** |  |  |
| Excellent | 7 (15.6%) | 0 (0%) |
| Good | 27 (60.0%) | 9 (69.2%) |
| Fair | 11 (24.4%) | 4 (30.8%) |
| **Indication for colonoscopy** |  |  |
| Positive faecal occult blood test | 17 (37.8%) | 7 (53.8%) |
| Surveillance **‡** | 15 (33.3%) | 3 (23.1%) |
| Other symptom(s) **‡** | 14 (31.1%) | 3 (23.1%) |
| Change(s) in bowel habit(s) **‡** | 4 (8.9%) | 1 (7.7%) |
| Iron-deficiency anaemia | 4 (8.9%) | 1 (7.7%) |
| Clinically or radiologically detected lesions **‡** | 1 (2.2%) | 1 (7.7%) |
| **Colonoscopy outcome** § |  |  |
| Normal | 10 (22.2%) | 2 (15.4%) |
| Diverticular disease | 14 (31.1%) | 4 (30.8%) |
| Polyp(s) | 16 (35.6%) | 6 (46.2%) |
| *Notes:*  **†** *Based on the overall Boston Bowel Preparation Scale score (see Supplementary Methods).*  **‡***Surveillance includes for family history, previous polyps, previous gastric surgery; Other symptoms included abdominal pain, peri-rectal bleeding, haemorrhoids, anorectal pain, weight loss, vomiting, bloating, pain on defecation; Change(s) in bowel habit(s) include frequent stools, diarrhoea, faecal incontinence; Clinically or radiologically detected lesions included thickened area on scans and possible rectal mass detected; detected lesions were not associated with a cancer diagnosis.*  § *Some participants received more than one diagnosis after colonoscopy, therefore percentages exceed 100%.*  ¶*Other outcomes (not tabulated) included haemorrhoids, granular mucosa, and muscle hypertrophy.* | |  |

**Table S2**. Between-group differences in alpha-diversity metrics at baseline and follow up in those with (n=45) and without (n=13) an appendix.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Baseline** | | **Follow-up** | | |
| *Predictors* | *Estimate (95% CI)* | *p-value* | *Estimate (95% CI)* | | *p-value* |
| **Shannon index** | | | | | |
| Appendicectomy (Yes) | 0.04 (−0.29, 0.38) | 0.796 | | 0.11 (−0.15, 0.36) | 0.411 | |
| **Observed genera** | | | | | |
| Appendicectomy (Yes) | 65.0 (−19.9, 150) | 0.133 | | 37.9 (−26.2, 102) | 0.246 | |
| *Abbreviations: CI, Confidence interval.* | | | | | |

**Table S3**. Between-group differences in beta-diversity at baseline and follow up in those with (n=45) and without (n=13) an appendix.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Aitchison distance** | | | | |
| *Predictors* | *Df* | *Sum of squares* | *R2* | *F* | *p-value* |
| **Baseline** | | | | | |
| Appendicectomy | 1 | 5042 | 0.02 | 1.10 | **0.084** |
| Residual | 56 | 257036 | 0.98 |  |  |
| Total | 57 | 262078 | 1.00 |  |  |
| **Follow up** | | | | | |
| Appendicectomy | 1 | 4661 | 0.02 | 1.08 | **0.154** |
| Residual | 56 | 242601 | 0.98 |  |  |
| Total | 57 | 247262 | 1.00 |  |  |
| *Note: Age at time of recruitment; BMI calculated as weight (kilograms)/height(metres)2 at time of recruitment; Diet quality measured using a Simple Dietary Questionnaire based on previous studies(37); Depression self-reported at baseline.*  *Abbreviations: ASVs, amplicon sequencing variants; BMI, body mass index; CI, confidence interval; Df, degrees of freedom.* | | | | | |

**Table S4.** Within-group changes in alpha-diversity metrics after bowel preparation and colonoscopy in those with (n=45) and without (n=13) an appendix.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **With appendix (n=45)** | | | **Without appendix (n=13)** | | |
| *Predictors* | *Estimate (95% CI)* | *p-value* | *Estimate (95% CI)* | | *p-value* |
| **Shannon index** | | | | | |
| Time point | −0.11 (−0.26, 0.04) | 0.135 | −0.05 (−0.31, 0.21) | | 0.693 |
| **Observed ASVs** | | | | | |
| Time point | −128 (−166, −89.4) | <0.001 | −155 (−220, −89.7) | | <0.001 |
| *Abbreviations: ASV, amplicon sequencing variant; CI, Confidence interval.* | | | | | | |

**Table S5.** Within-group change in beta-diversity after bowel preparation and colonoscopy in those with (n=45) and without (n=13) an appendix.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Aitchison distance** | | | | |
| *Predictors* | *Df* | *Sum of squares* | *R2* | *F* | *p-value* |
| **With appendix (n=45)** | | | | | |
| Time point | 1 | 1739 | 0.004 | 0.391 | **0.047** |
| Residual | 88 | 391187 | 0.996 |  |  |
| Total | 89 | 392926 | 1.000 |  |  |
| **Without appendix (n=13)** | | | | | |
| Time point | 1 | 1418 | 0.013 | 0.314 | **0.019** |
| Residual | 24 | 108450 | 0.987 |  |  |
| Total | 25 | 109869 | 1.000 |  |  |
| *Abbreviations: Df, degrees of freedom.* | | | | | |

**Table S6.** Within-group changes in genera after bowel preparation and colonoscopy in those with an appendix (n=45), after adjustment for multiple comparisons using Benjamini-Hochberg.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| *Family* | *Genus* | *Coefficient (SE)* | *p-value* | *q-value* |
| **Lower** | | |  | |
| Lachnospiraceae | Unidentified | −0.37 (0.10) | 0.001 | 0.029 |
| **Higher** | | |  | |
| Uncultured bacterium | Unidentified | 0.21 (0.03) | <0.001 | <0.001 |
| Propionibacteriaceae | Cutibacterium | 0.31 (0.05) | <0.001 | <0.001 |
| Veillonellaceae | Megamonas | 0.21 (0.04) | <0.001 | <0.001 |
| Flavobacteriaceae | Uncultured | 0.20 (0.04) | <0.001 | 0.001 |
| Coriobacteriales Incertae Sedis | Uncultured | 1.12 (0.25) | <0.001 | 0.002 |
| Christensenellaceae | Unidentified | 0.18 (0.04) | <0.001 | 0.004 |
| Ruminococcaceae | Ruminococcaceae UCG-009 | 0.23 (0.05) | <0.001 | 0.005 |
| Eggerthellaceae | Gordonibacter | 0.22 (0.05) | <0.001 | 0.005 |
| Unidentified | Unidentified | 0.21 (0.05) | <0.001 | 0.005 |
| Veillonellaceae | Megasphaera | 0.18 (0.04) | <0.001 | 0.007 |
| Acinetobacter sp. CAG-196 | Unidentified | 0.19 (0.05) | <0.001 | 0.007 |
| Eggerthellaceae | Uncultured | 0.18 (0.05) | 0.001 | 0.029 |
| Ruminococcaceae | DTU-089 | 0.74 (0.21) | 0.001 | 0.029 |
| Lachnospiraceae | Lachnospiraceae UCG-010 | 0.17 (0.05) | 0.001 | 0.030 |
| Burkholderiaceae | Oxalobacter | 0.22 (0.06) | 0.001 | 0.032 |
| *Abbreviations: SE, standard error.* | | | | |

**Table S7**. Within-group changes in genera after bowel preparation and colonoscopy in those without an appendix (n=13), after adjustment for multiple comparisons using Benjamini-Hochberg.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| *Family* | *Genus* | *Coefficient (SE)* | *p-value* | *q-value* |
| **Higher** | | |  | |
| Ruminococcaceae | CAG-352 | 0.68 (0.10) | <0.001 | 0.004 |
| Flavobacteriaceae | Uncultured | 0.62 (0.11) | <0.001 | 0.008 |
| Lachnospiraceae | NK4B4 group | 0.71 (0.13) | <0.001 | 0.008 |
| Veillonellaceae | Megamonas | 0.63 (0.12) | <0.001 | 0.008 |
| Lachnospiraceae | Tyzzerella | 0.48 (0.09) | <0.001 | 0.009 |
| Uncultured bacterium | Unidentified | 0.52 (0.11) | <0.001 | 0.010 |
| Erysipelotrichaceae | Holdemanella | 0.59 (0.14) | 0.001 | 0.028 |
| Family XIII | Mogibacterium | 0.58 (0.15) | 0.002 | 0.038 |
| Burkholderiaceae | Oxalobacter | 0.48 (0.13) | 0.003 | 0.043 |
| Erysipelotrichaceae | Unidentified | 0.57 (0.15) | 0.003 | 0.043 |
| Pasteurellaceae | Unidentified | 0.74 (0.20) | 0.003 | 0.043 |
| *Abbreviations: SE, standard error.* | | | | |

**Table S8**. Within-group changes in genera after bowel preparation and colonoscopy in those without an appendix (n=13), after adjustment for multiple comparisons using Benjamini-Hochberg.

|  |  |  |  |
| --- | --- | --- | --- |
| *Family* | *Genus* | *Coefficient (SE)* | *p-value* |
| **Higher** | | |  |
| Coriobacteriaceae | Collinsella | 0.34 (0.13) | 0.013 |
| Lachnospiraceae | Ruminococcus gauvreauii group | 0.38 (0.16) | 0.024 |
| Burkholderiaceae | Unidentified | -0.20 (0.09) | 0.032 |
| Lachnospiraceae | Lachnospiraceae NK4B4 group | 0.22 (0.10) | 0.036 |
| Lachnospiraceae | Lactonifactor | 0.18 (0.09) | 0.043 |
| *Abbreviations: SE, standard error.* | | | |