

Figure S1. Intensity of heartburn before surgery stratified by body mass index category (underweight, optimal, overweight and obese). Heartburn (A) when lying down, (B) when standing up, (C) after meals and (D) leading to sleep interruption. The intensity of heartburn was ranked from 0 (no symptoms) to 5 (highest intensity).

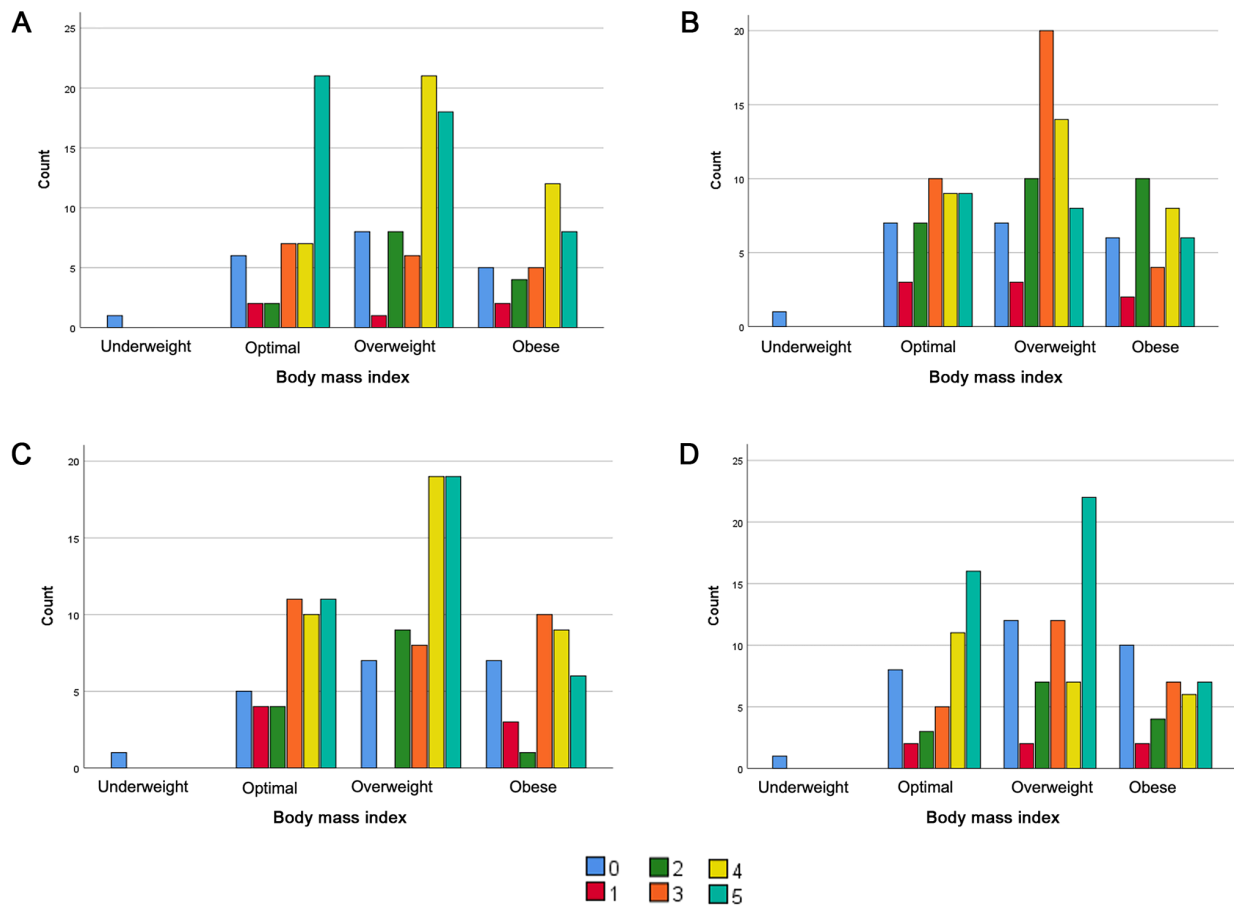


Figure S2. Intensity of pain at swallowing before surgery stratified by body mass index category (underweight, optimal, overweight and obese). The intensity of pain was ranked from 0 (no symptoms) to 5 (highest intensity).

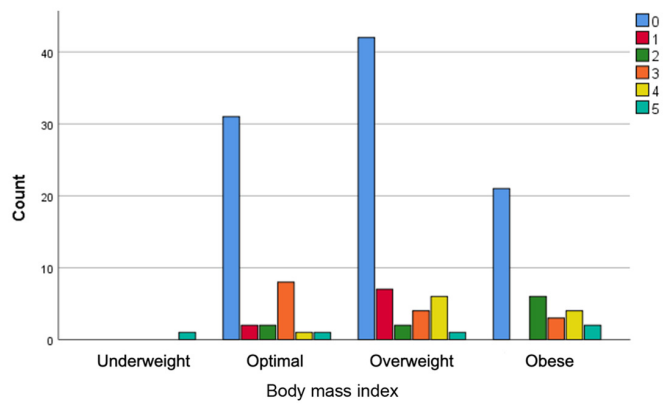


Figure S3. Intensity of reflux before surgery stratified by body mass index category (underweight, optimal, overweight and obese). Reflux (A) when lying down, (B) when standing up, (C) after meals and (D) leading to sleep interruption. The intensity of reflux was ranked from 0 (no symptoms) to 5 (highest intensity).

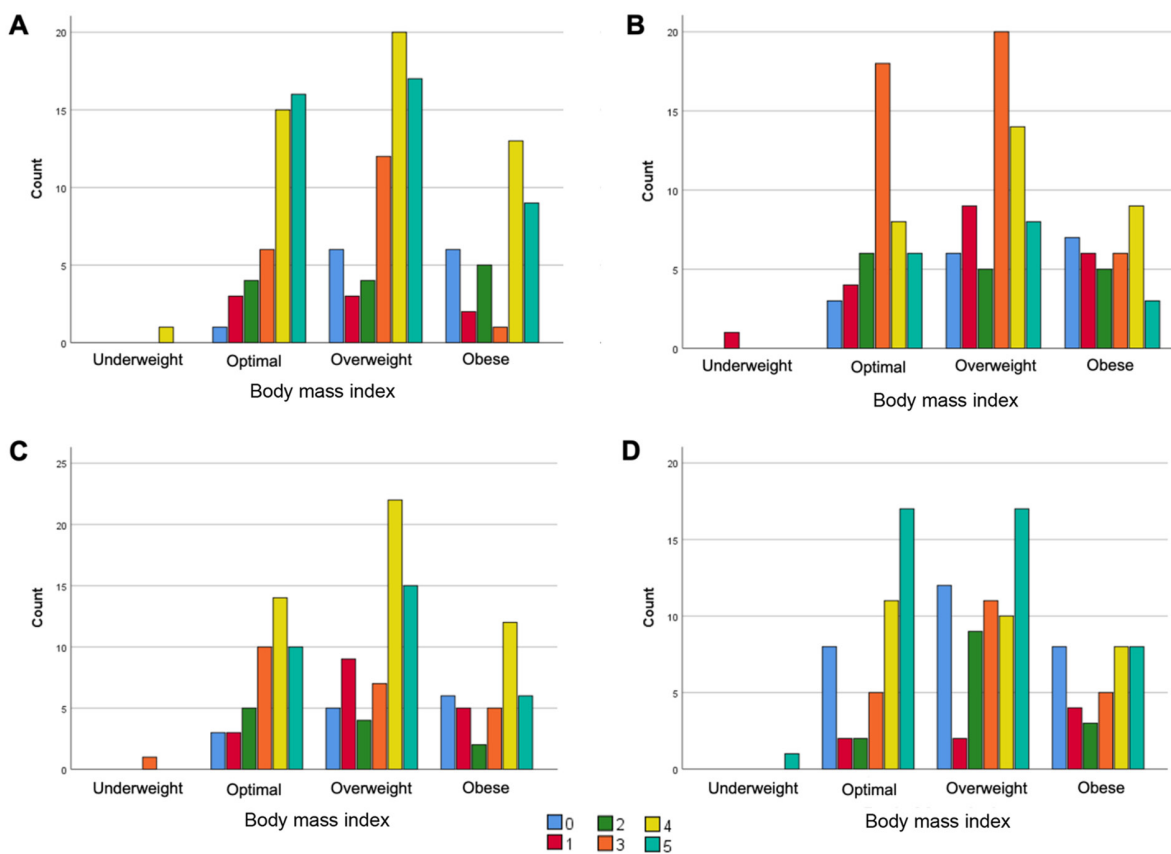


Figure S4. Intensity of heartburn before surgery stratified by age group (under 55 years or above 55 years). Heartburn (A) when lying down, (B) when standing up, (C) after meals and (D) leading to sleep interruption. The intensity of reflux was ranked from 0 (no symptoms) to 5 (highest intensity).

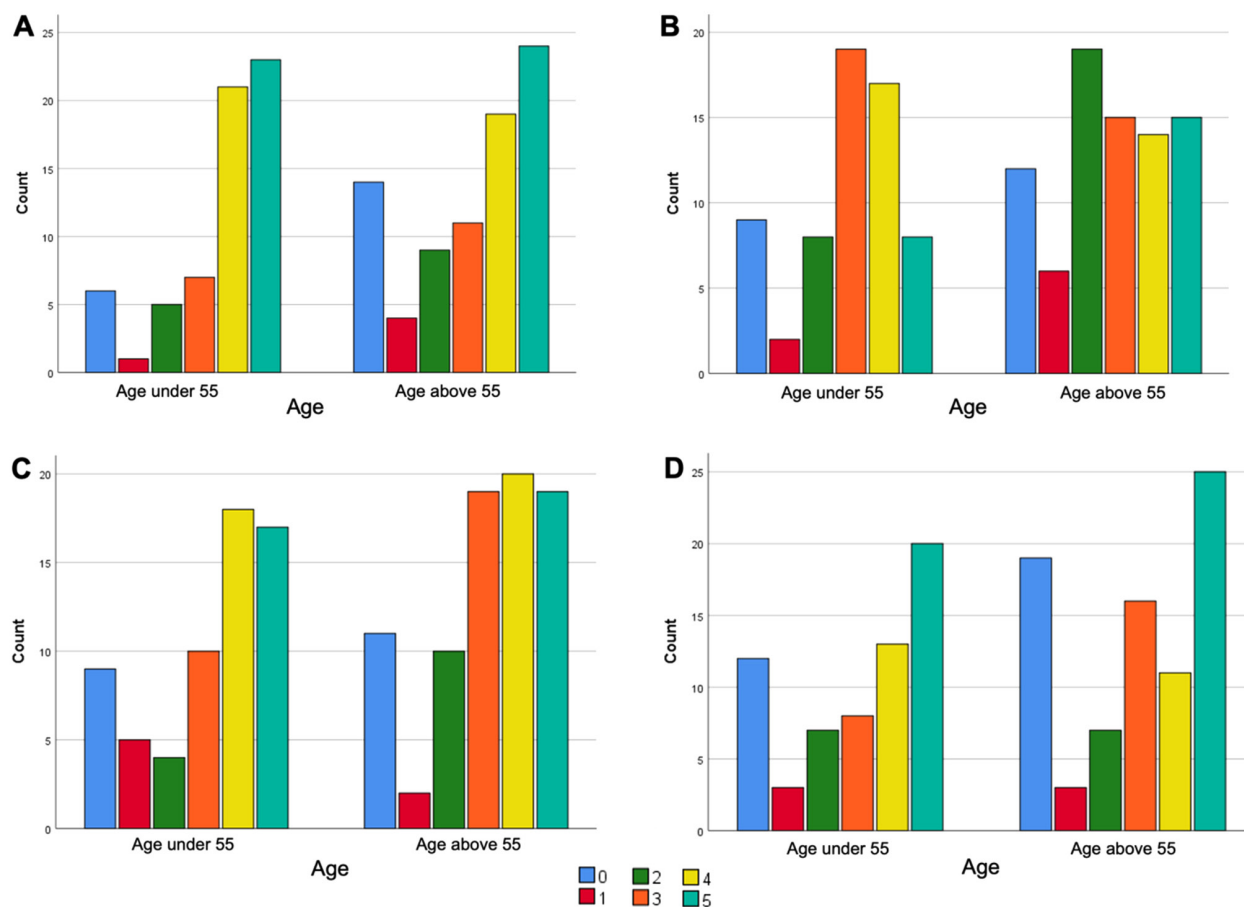


Figure S5. Intensity of pain at swallowing before surgery stratified by age group (under 55 years or above 55 years). The intensity of pain was ranked from 0 (no symptoms) to 5 (highest intensity).

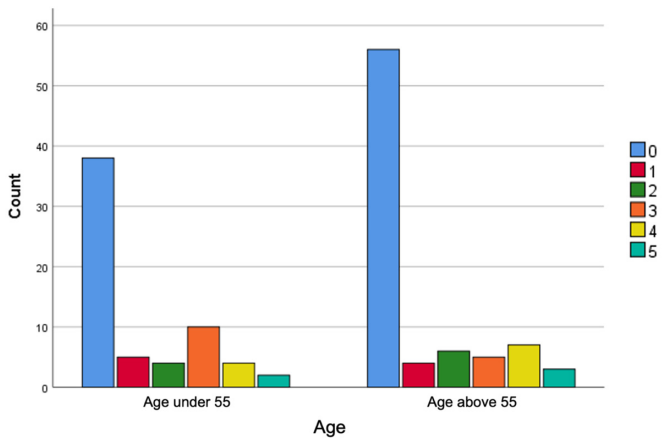


Figure S6. Intensity of reflux before surgery stratified by age group (under 55 years or above 55 years). Reflux (A) when lying down, (B) when standing up, (C) after meals and (D) leading to sleep interruption. The intensity of reflux was ranked from 0 (no symptoms) to 5 (highest intensity).

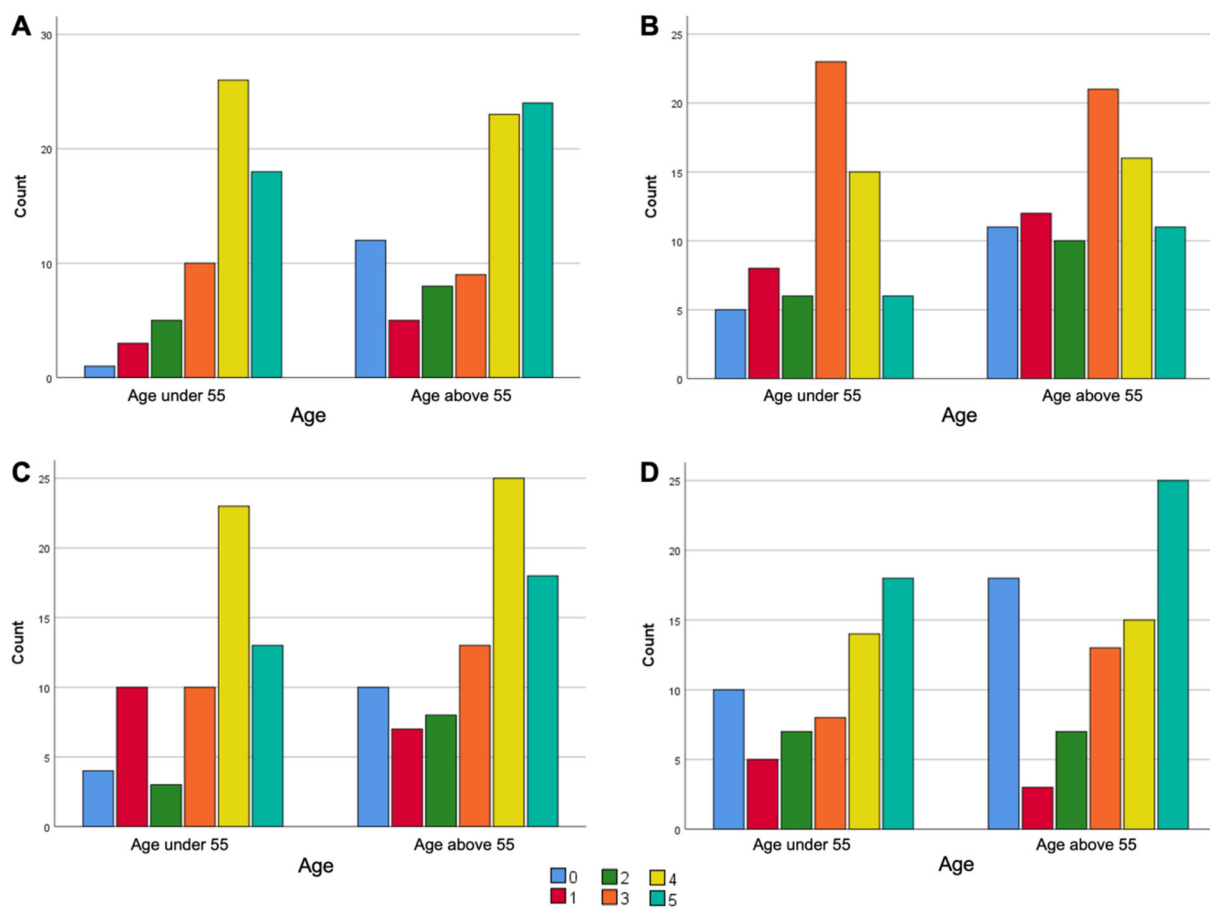


Figure S7. Intensity of heartburn before surgery stratified by sex. (A) when lying down, (B) when standing up, (C) after meals and (D) leading to sleep interruption. The intensity of reflux was ranked from 0 (no symptoms) to 5 (highest intensity).

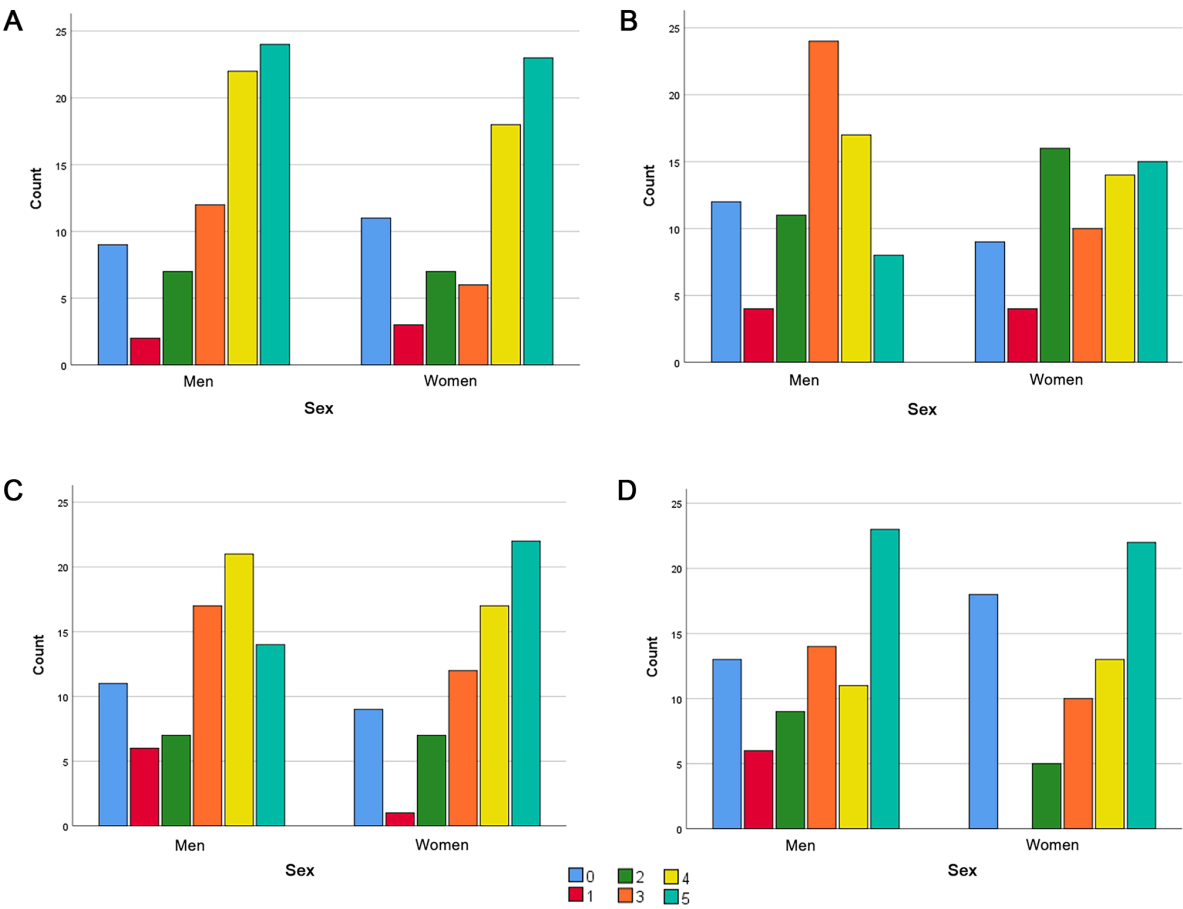


Figure S8. Intensity of pain at swallowing before surgery stratified by sex. The intensity of pain was ranked from 0 (no symptoms) to 5 (highest intensity).

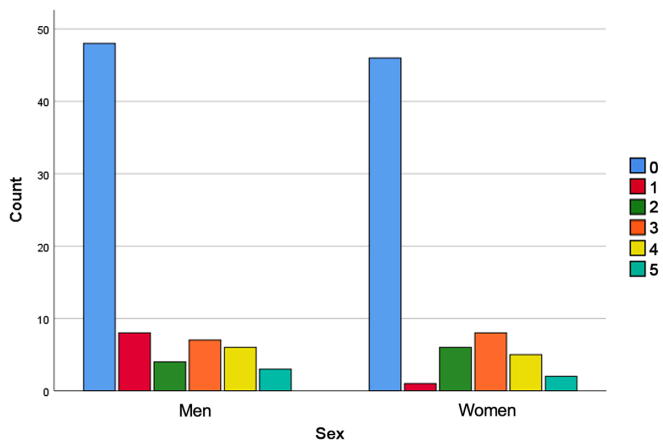


Figure S9. Intensity of reflux before surgery stratified by sex. Reflux (A) when lying down, (B) when standing up, (C) after meals and (D) leading to sleep interruption. The intensity of reflux was ranked from 0 (no symptoms) to 5 (highest intensity).

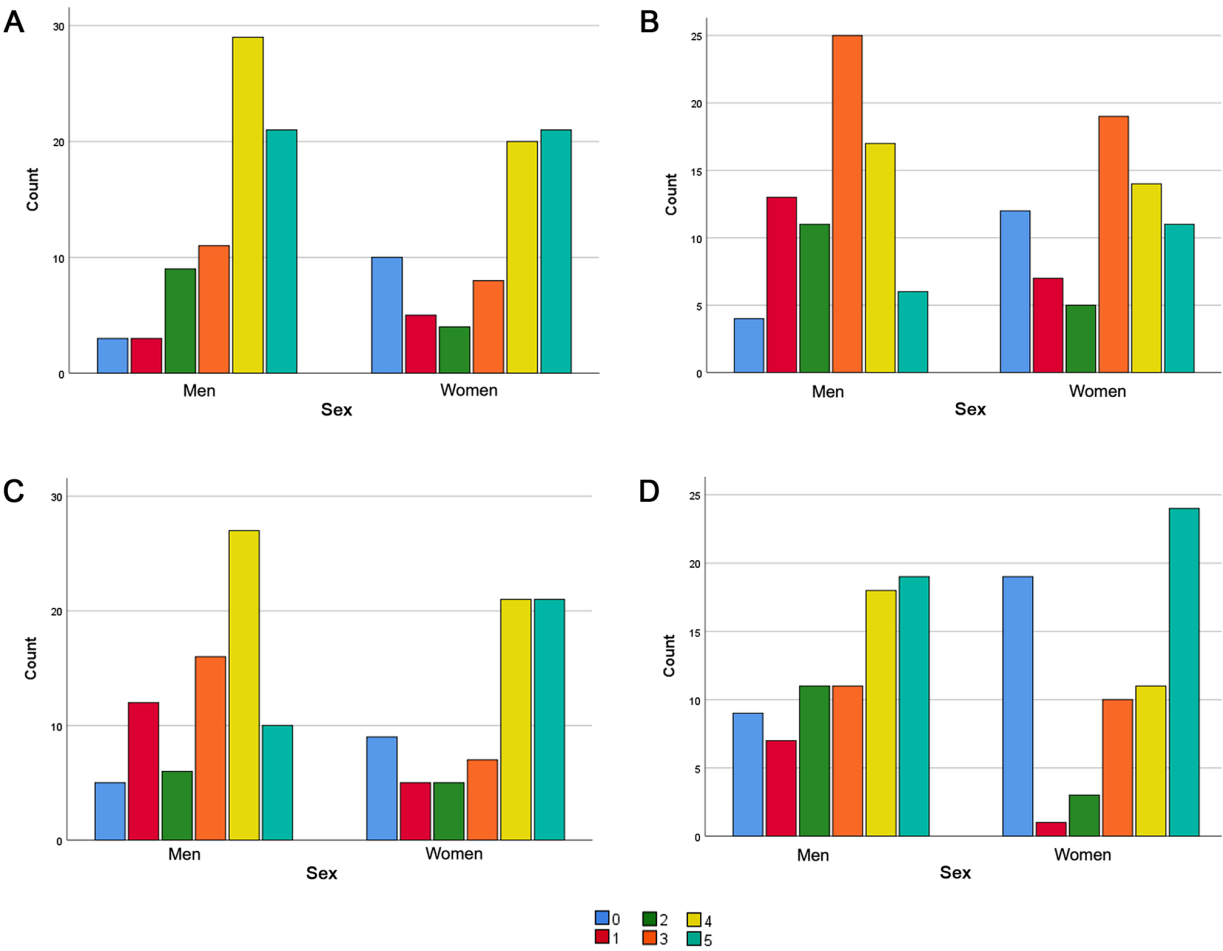


Figure S10. Difference in the intensity of GERD symptoms before and after surgery, stratified by body mass index category (underweight, optimal, overweight, obese). GERD symptoms refer to (A) heartburn, (B) difficulty swallowing and (C) reflux. The difference in the intensity of symptoms is defined as intensity of symptom after surgery minus intensity of symptom before surgery. Negative values indicate improvement, whereas positive values exhibit worsening. Zero refers to no change in symptom intensity; -5 refers to the highest degree of improvement. GERD, gastroesophageal reflux disease.

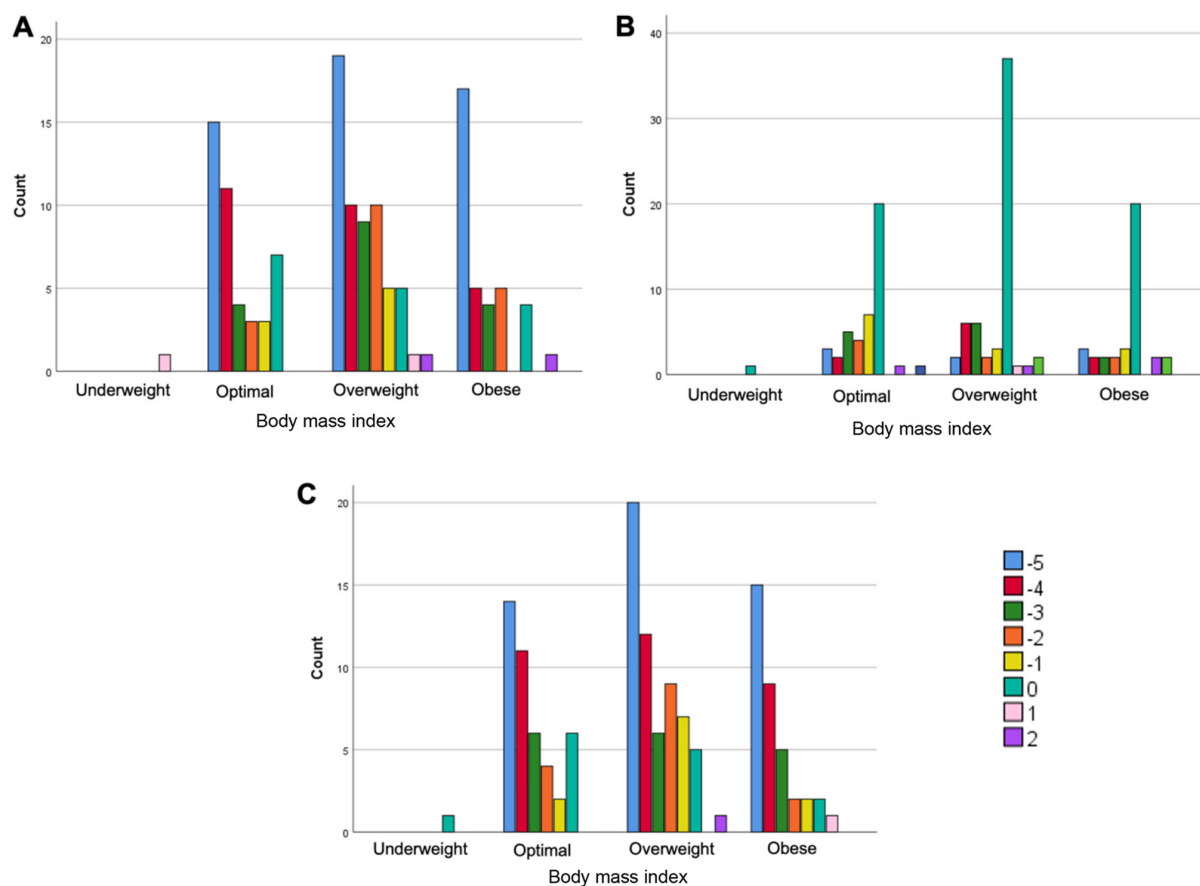


Figure S11. Difference in the intensity of GERD symptoms before and after surgery, stratified by age group (under 55 years or above 55 years). GERD symptoms refer to (A) heartburn, (B) difficulty swallowing and (C) reflux. The difference in the intensity of symptoms is defined as intensity of symptom after surgery minus intensity of symptom before surgery. Negative values indicate improvement, whereas positive values exhibit worsening. Zero refers to no change in symptom intensity; -5 refers to the highest degree of improvement. GERD, gastroesophageal reflux disease.

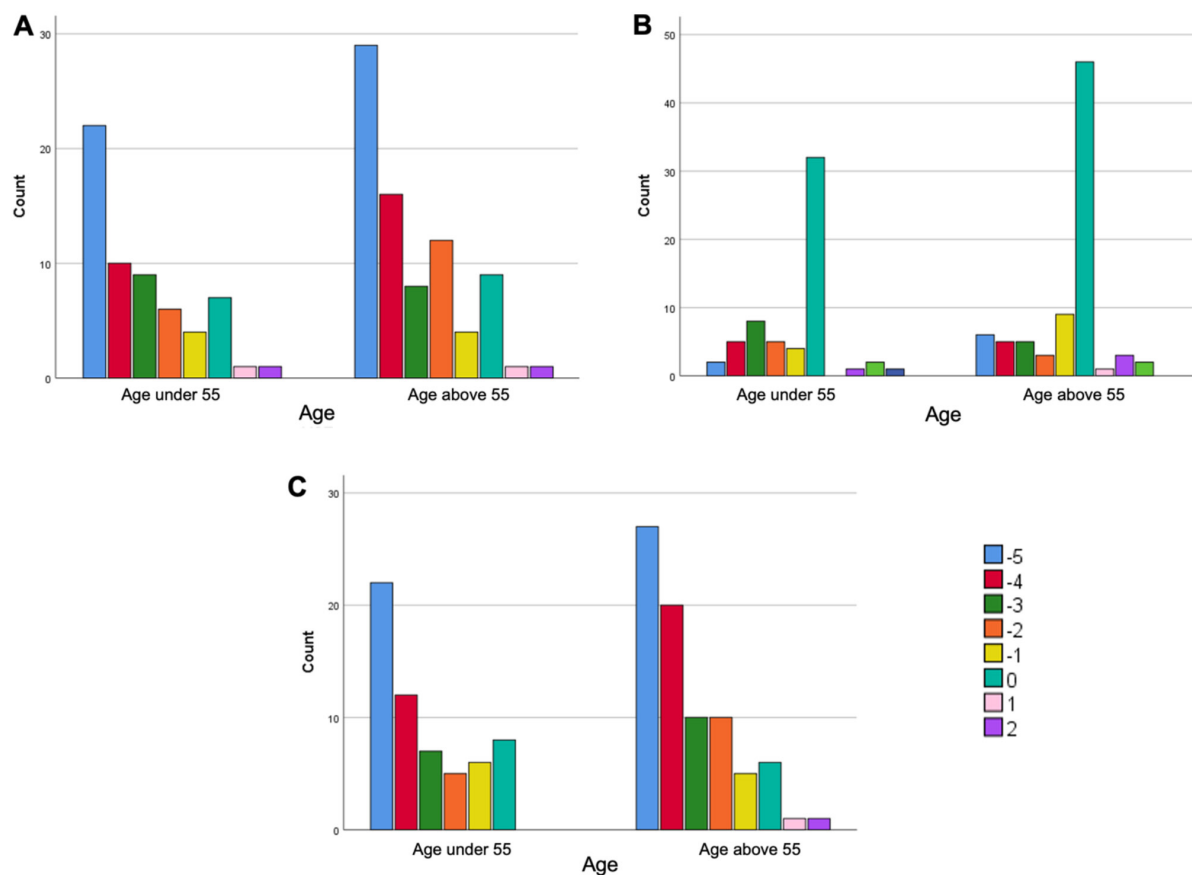


Figure S12. Difference in the intensity of GERD symptoms before and after surgery, stratified by sex. GERD symptoms refer to (A) heartburn, (B) difficulty swallowing and (C) reflux. The difference in the intensity of symptoms is defined as intensity of symptom after surgery minus intensity of symptom before surgery. Negative values indicate improvement, whereas positive values exhibit worsening. Zero refers to no change in symptom intensity; -5 refers to the highest degree of improvement. GERD, gastroesophageal reflux disease.

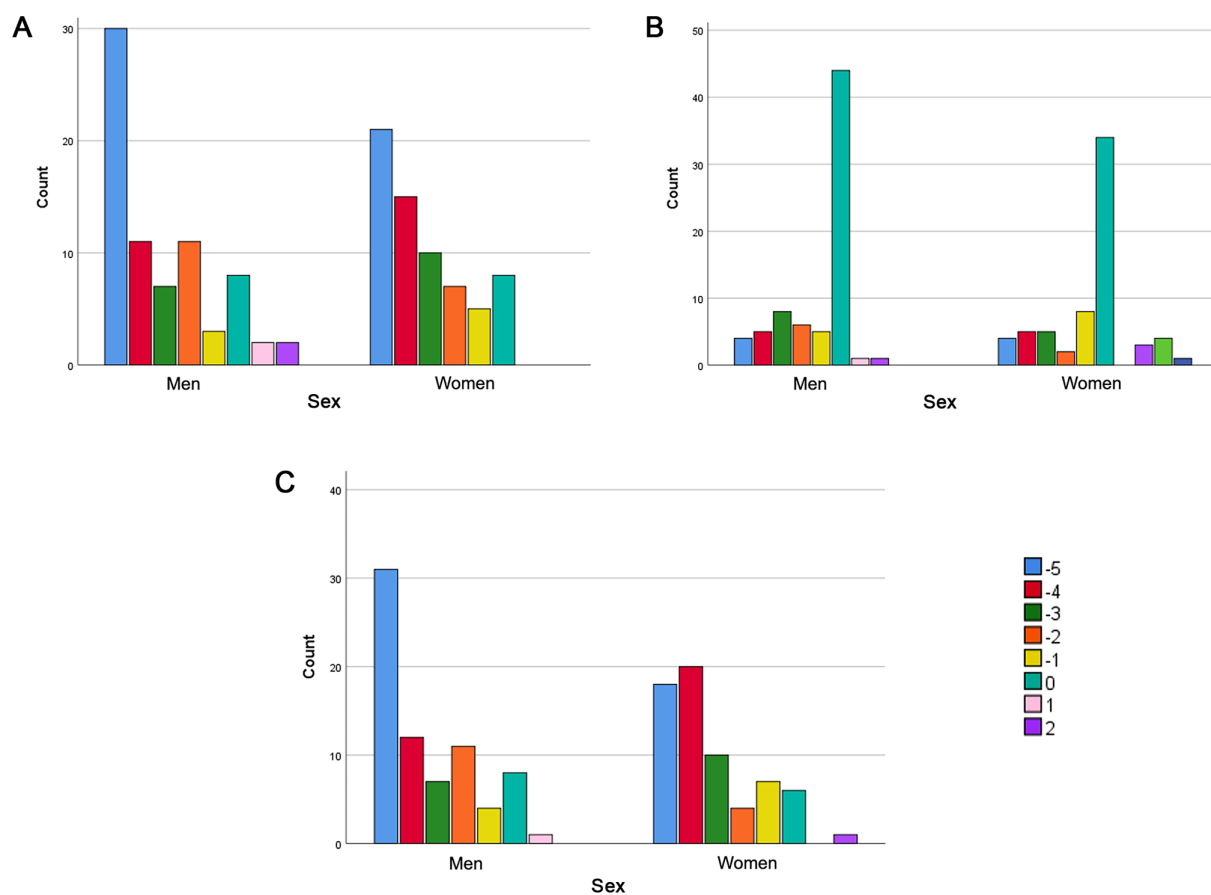


Table SI. Results of Wilcoxon test comparing the symptoms before and after surgery.

Symptoms	P-value
Heartburn before surgery vs. heartburn after surgery	<0.0001
Heartburn when standing up before surgery vs. heartburn when standing up after surgery	<0.0001
Heartburn when lying down before surgery vs. heartburn when lying down after surgery	<0.0001
Heartburn after meals before surgery vs. heartburn after meals after surgery	<0.0001
Heartburn and diet change before surgery vs. heartburn and diet change after surgery	<0.0001
Heartburn and waking up from sleep before surgery vs. heartburn and waking up from sleep after surgery	<0.0001
Difficulty swallowing before surgery vs. difficulty swallowing after surgery	<0.0001
Pain at swallowing before surgery vs. pain at swallowing after surgery	<0.0001
Medicine and impact on life before surgery vs. medicine and impact on life after surgery	<0.0001
Gastroesophageal reflux before surgery vs. gastroesophageal reflux after surgery	<0.0001
Gastroesophageal reflux when standing up before surgery vs. gastroesophageal reflux when standing up after surgery	<0.0001
Gastroesophageal reflux when lying down before surgery vs. gastroesophageal reflux when lying down after surgery	<0.0001
Gastroesophageal reflux after meals before surgery vs. gastroesophageal reflux after meals after surgery	<0.0001
Gastroesophageal reflux and diet change before surgery vs. gastroesophageal reflux and diet change after surgery	<0.0001
Gastroesophageal reflux and waking up from sleep before surgery vs. gastroesophageal reflux and waking up from sleep after surgery	<0.0001
Satisfied with current situation before surgery vs. satisfied with current situation after surgery	<0.0001
Total score before surgery vs. total score after surgery	<0.0001
Total heartburn score before surgery vs. total heartburn score after surgery	<0.0001
Total gastroesophageal reflux score before surgery vs. total gastroesophageal reflux score after surgery	<0.0001