Beyond survival: a review of recent evidence on quality of life after total gastrectomy for gastric cancer

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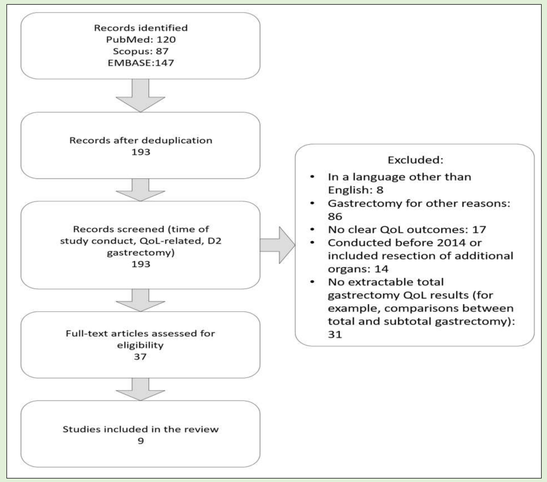
Background& Rationale

Total gastrectomy, although curative for gastric cancer, is often followed by long-term nutritional, functional, and psychosocial challenges (1,2). Major guideline updates in 2013 (West) and 2016 (East) redefined the standard approach by excluding routine splenectomy from curative total gastrectomy(3,4). This review examines recent evidence on QoL after total gastrectomy, reflecting outcomes in the modern, spleen-preserving era of gastric cancer surgery.

Source &Data synthesis

A comprehensive search of PubMed, Scopus, and EMBASE was performed to identify studies assessing quality of life after total gastrectomy for gastric cancer. Only studies from 2020–2025 were included, representing practice after the 2013–2016 guideline updates (**Figure**)(5-13). The included studies employed various QoL instruments. Overlapping domains were grouped conceptually using the EORTC framework as the reference, allowing consistent alignment across studies **(Table)**.



Domain	EORTC QLQ-C30[a]	EORTC STO22	EQD5	PGSAS-37[b]
Functioning scales	Physical function	-	Mobility, Self-care	-
	Role function	-	Usual activities	-
	Emotional function	Anxiety/body image	Anxiety/depression	-
	Cognitive function	-	-	-
	Social function	Trouble eating with others (item 46)	-	Meals (living status)
Symptom scales	Fatigue	-	-	-
	Nausea and vomiting	-	-	-
	Pain	Abdominal pain	Pain/discomfort	Abdominal pain
	Dyspnoea	-	-	-
	Insomnia	-	-	-
	Constipation/diarrhoea	-	-	Constipation/diarrhoea
	-	Reflux	-	Oesophageal reflux/indigestion
	-	Dysphagia	-	-
	-	Eating restrictions	-	Meal-related distress/Meals (ingestion)
	-	Taste	-	-
	-	Dry mouth	-	-
	-	Hair loss	-	-
	-	-	-	Dumping subscale
Single items	Global health/QoL	-	-	Dissatisfaction
	Financial impact	-	-	-

[a]Domains from the EORTC QLQ-C30 were used as the reference framework, and corresponding scales or items from the EORTC QLQ-STO22, EQ-5D, and PGSAS-37 were aligned accordingly. [b]For the PGSAS-37, questions relating to meals were split; those referring to food ingestion were grouped under "eating restrictions," while those reflecting the social context of meals were placed under "social functioning." As shown, several domains overlap across instruments, while others are not represented, reflecting variations in the aspects of QoL that each tool assesses. EORTC, European Organisation for Research and Treatment of Cancer Quality of Life Questionnaire; EQ-5D, EuroQol-5; PGSAS-37, Postgastrectomy Syndrome Assessment Scale-37.

Table: Unified domains of QoL questionnaires after total gastrectomy

Domain-specific findings

- **Physical performance** declined after surgery but recovered within 6–12 months. Recovery beyond a year stayed below baseline in adjuvant-treated MIS cohorts, while early and neoadjuvant groups returned to baseline.; technique-related differences were not significant.
- **Role functioning** declined after surgery but recovered within 12 months in early-stage and neoadjuvant cohorts. Mixed-stage MIS with adjuvant therapy improved yet remained below baseline, while advanced-stage patients declined persistently. TLTG showed faster return to work than LATG; open surgery scored lower, not significantly.
- **Emotional recovery** differed among cohorts. Advanced-stage MIS with adjuvant therapy improved early then declined; early-stage patients recovered after a brief drop. Mixed-stage MIS remained stable. PPRY improved anxiety versus RY; other techniques and stapling methods showed no consistent effect. MIS scored slightly higher than open surgery at 6 months, not significantly. Body image was comparable across reconstructions and approaches.

Early decline in physical, role, and emotional domains reflects surgical recovery, post-gastrectomy symptoms, and the added burden of adjuvant therapy. Stage and systemic treatment remained major determinants of QoL trajectories.

- **Social functioning** varied by cohort: OTG exceeded baseline, MITG remained lower, and MIS peaked then declined. Open surgery scored higher overall; TLTG showed slight, non-significant benefit over LATG.

Comparable findings across gastrectomy types highlight the multifactorial nature of this domain, where physical, nutritional, and emotional factors complicate isolating surgical impact (14).

- **Cognitive function** declined during the first postoperative year in advanced-stage MIS patients receiving adjuvant therapy but remained stable in early- and mixed-stage cohorts without systemic treatment. Stage and adjuvant therapy influenced outcomes more than surgical approach.

The variability may reflect early postoperative assessments capturing transient cognitive dysfunction, which typically resolves within three months. Moreover, the cognitive domain of most QoL tools is limited to two items, reducing sensitivity to subtle or short-term changes(15).

- **Global health** outcomes differed by cohort and technique: OTG reached baseline, MITG remained lower, and TLTG recovered fastest. MIS and PPRY showed modest advantages, though differences were small

Continuously improving QoL despite ongoing symptoms suggests well-being reflects adaptation and resilience, consistent with findings in other gastrectomy types.

- **Financial outcomes** were mostly stable. Advanced-stage MIS with adjuvant therapy showed temporary strain, resolving by year three. LS outperformed CS, while open surgery showed higher burden than MIS, not significant.

Similar patterns are reported in other surgical oncology studies, where treatment and related costs add significant financial pressure(16).

- **Postgastrectomy symptoms** worsened early but improved within a year; reflux often persisted. Advanced-stage and adjuvant-treated patients had greater symptom burden, while early-stage groups recovered faster. MIS slowed pain recovery, but TLTG improved reflux earlier than LATG. PPRY improved appetite and pain versus RY.

Stage and perioperative therapy influenced outcomes more than technique, with reporting variability limiting comparison.

Abbreviations:
CS – Circular stapling
GC – Gastric cancer
LATG – Laparoscopic-assisted total gastrectomy
LS – Linear stapling
MIS – Minimally invasive surgery
MITG – Minimally invasive total gastrectomy
OTG – Open total gastrectomy
PPRY – Pouch Roux-en-Y
QoL – Quality of life
RY – Roux-en-Y
TLTG – Totally laparoscopic total gastrectomy

Discussion

- QoL rarely assessed as a primary outcome: limited insight into long-term recovery.
- Clinical factors (therapy, complications) not analysed with QoL; influence remains uncertain
- Limited Western data, variable study design and focus : reduced generalisability of QoL findings.
- Inconsistent timing of QoL assessment ; early postoperative phase underrepresented despite potential value for recovery insights.
- QoL tools vary in scope and scoring; overlapping and missing domains hinder comparability—standardised, frameworks are needed for consistent assessment.
- Clinical factors, especially postoperative chemotherapy, seldom analysed; future studies should standardise timelines and account for pre- and postoperative variables influencing QoL.

References