

Supplementary Table 9. Summary of evidence for effects of CO₂ gas

Study	Year	Country	Study period	Study design	No. of participants	Comparison	Main outcome
Allen et al. ⁹⁹	2017	Georgia	2015–2016	Retrospective	257	Desufflation vs. No desufflation	PNP rate on POD1 in CXR: desufflation group, 14.8%; no desufflation group, 7.9%; $p>0.05$
Murphy et al. ¹⁰³	2016	USA	2012–2014	Prospective, double-blind, Randomized trial	35	CO ₂ vs. air	PNP 2/14 (14.3%) using CO ₂ and 8/15 (53.3%) using ambient air ($p=0.05$). No significant difference in abdominal distention, VAS scores for pain or bloating between CO ₂ and ambient air.
Nishiwaki et al. ¹⁰⁴	2012	Japan	2009–2011	Comparative study Randomized controlled trial	60	CO ₂ vs. air	PNP was observed only in the air group but not in the CO ₂ group ($p=0.003$). The evaluation of bowel distension on abdominal X ray revealed a significant decrease of small bowel distension in the CO ₂ group compared to the air group ($p<0.001$) at 10 min and 24 hours after PEG, whereas there was no significant difference in large bowel distension between the two groups.
Gottfried et al. ⁹⁸	1986	USA	1982–1983	Observational	24	N/A	Nine patients (38%) developed radiologic PNP. Five patients (21%) had gross evidence of PNP, three patients had more subtle findings of small amounts of free air, and one patient had free air found by CT scan. No patient developed signs or symptoms of peritoneal inflammation.

PNP, pneumoperitoneum; POD, post-operative day; CXR, chest X-ray; VAS, visual analog scale; PEG, percutaneous endoscopic gastrostomy; CT, computed tomography; N/A, not applicable.