ESM 7. Nonrandomized Controlled Evidence Synthesized Without Meta-analysis

Article title: Multimodal Digital Health Interventions versus Standard Perioperative Management in Lung Cancer Surgery: A Systematic Review, Meta-Analysis, and Evidence Gap Map

Journal: Supportive Care in Cancer

Authors: [replace with author names]

Table Sx. Nonrandomized Controlled Evidence for SWiM/Narrative Synthesis

These studies are part of the final unified included evidence base identified across the initial and supplementary gap-fill searches. They meet the controlled-study criterion but should not be pooled with RCTs. Use ROBINS-I style risk-of-bias assessment when discussing these studies.

Study	Design	Intervention	Comparator	PDF-confirmed outcomes	Main signal	Why not pooled with RCTs
Lee 2024 JAMA Network Open	Nonrandomized clinical trial with historical control, n=74/120	Wearable-monitored personalized perioperative exercise plus web-based data and remote counseling	Historical usual-care cohort	6MWD, daily steps, MVPA, EORTC QLQ-C30, dyspnea, pain	Higher daily steps and vigorous activity at 6 months; less dyspnea at 6 months	Historical control design; likely confounding by time/cohort and care-context differences
Tang/Wang 2026 Medicine	Retrospective matched controlled study, n=250/250 enrolled	Dignio remote care platform plus connected spirometer, oximeter, BP monitor, thermometer, ECG and rehab guidance	Matched standard instructions	FEV1, FVC, FEV1/FVC; emergent complication detection	Pulmonary function follow-up tables favor intervention at selected points, but denominators are very sparse	Severe variable follow-up denominators, e.g. 6-month FEV1 n=5 vs n=4; high missing-data risk

Study	Design	Intervention	Comparator	PDF-confirmed outcomes	Main signal	Why not pooled with RCTs
Chen 2024 Alternative Therapies	Retrospective comparative study, n=51/49	Wearable pedometer-based pulmonary rehabilitation with personalized nurse guidance and monitoring	Routine nursing	FEV1, FVC, FEV1/FVC, QLQ-C30, hospitalization, chest tube duration	Better post-intervention lung function and shorter post-operative hospitalization	Borderline digital multimodality, single-center retrospective design, irregular table extraction for QLQ-C30 and possible inconsistency in oxygen therapy direction

Recommended reporting: describe these studies after the RCT quantitative results as supportive but lower-certainty evidence. Do not merge them into the RCT meta-analysis.