PRIMARY STUDIES – ANTERIOR VERSUS POSTERIOR

I Study ID	II Method	III Patient characteristics	IV Intervention(s)	V Results primary outcome	VI Results secondary and other outcome(s)	VII Critical appraisal of study quality
• Reference	• Design • Source of funding • Setting • Sample size • Duration	• Eligibility criteria • A priori patient characteristics • Group comparability	• Intervention(s) • Comparator(s)	• Effect size • Primary outcome	• Effect size • secondary outcome(s) • Effect size • all other outcomes	• Level of evidence • Dropouts • Results critical appraisal
• Jansson, Eur Spine J, 2006	• Consecutive prospective cohort • No conflict of interest stated • Single center (Sweden) • Laminectomy (47), Posterior stabilization (212), Anterior stabilization (23) • 2weeks, 3, 6, 9 months, 1, 2years	• January 1990 to December 2001 • spinal metastases surgery	• Posterior (decompression and stabilization, CD, Isola, USS) • Laminectomy (spinal cord or cauda equina was decompressed only) • anterior decompression (reconstruction of the vertebral body, Z-plates, synergy rods)	• Survival (3m, 1y, 2y): • Laminectomy: 0.57 0.28 0.20, • Posterior stabilization: 0.63 0.26 0.13, • Anterior stabilization: 0.78 0.48 0.30	• Not further specified for approach	• Prospective controlled • 2 lost • Unclear rationale for choice for surgical technique • Confounding by indication can be present
• Xu, J Neurosurg Spine, 2009	• Retrospective chart review • The authors report no conflict of interest • Single center (US) • Anterior (22), Posterior (45), combined (24). • Follow up unclear	• Past 7 years • patients who underwent thoracic vertebrectomies • metastatic tumors of the thoracic spine • Exclusie: vertebrectomies extending into the	• anterior approach: thoracotomy / thoracoplasty. Thoracic reconstruction (cage/plate/screws/ graft) • posterior approach: transpedicular corpectomies, costotransversectomi	• (no survival reported)	• An anterior approach to vertebrectomy was associated with significantly less blood loss (p = 0.02) compared with posterior (1172 ± 1984 vs 2486 ± 1645 ml, respectively; p = 0.03) and combined ap-proaches (1172 ±	• Retrospective controlled • Unclear rationale for choice for surgical technique • Confounding by indication can be present

		cervical or lumbar region, patients who underwent discectomies with only partial corpectomies at adjacent vertebral levels. • anterior approach group had fewer spinal levels fused ($p < 0.0001$) compared with posterior ($p < 0.0001$)or combined ($p < 0.0001$) • no difference in preoperative neurological scores, (Nurick ($p = 0.18$) and ASIA ($p = 0.06$)). no significant difference in ambulation ($p = 0.85$).	es, laminectomies, and/or facetectomies, lateral extracavitary approach. Anterior spinal column reconstruction (cages /PMMA/chest tube technique/ pedicle screws/ lateral mass or laminar screws/ allograft and demineralized bone matrix)		1984 vs 2826 ± 2703 ml, respectively; $p = 0.05$). • Both anterior (81.8%) and combined (79.2%) procedures had a significantly higher association of chest tube placement compared with posterior approaches (20.0%; $p < 0.0001$ for both). • combined approach has best ambulatory improvement. Twenty-four patients (100.0%) were able to walk, representing a 25% improvement compared with preoperative ambulation. Compared with the posterior cohort (6 [25.0%] vs 2 [4.4%] improved, respectively; $p = 0.02$) and the anterior cohort (6 [25.0%] vs −1 [−4.5%] improved; $p = 0.006$) as well.	

					• No differences in unintended intraoperative durotomies, perioperative pneumonia, wound dehiscence, pulmonary emboli, wound hematomas, increased duration of new chest tubes, or a higher incidence of instrumentation failure. In addition, no particular surgical approach was associated with higher reoperation rates or an increased length of hospitalization.	