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

## PRIMARY STUDIES – ANTERIOR VERSUS POSTERIOR

cervical or lumbar       es, laminectomies,       1984 vs 2826 ± 2703         region, patients       and/or facetechomies,       ml, respectively; p =         who underwent       lateral extracavitary       0.05).         discectomies with       approach. Anterior       Both anterior         only partial       spinal column       (81.8%) and         corpectomies at       reconstruction (cages       combined (79.2%)         adjacent vertebral       /PMMA/chest tube       procedures had a         levels.       technique/ pedicle       significantly higher         anterior approach       screws/ lateral mass       association of chest         group had fewer       or laminar screws/       tube placement         spinal levels fused       allograft and       compared with         (p < 0.0001)       demineralized bone       posterior approach         combined (p <       0.0001)       for both).         0.0001)       or both       has best ambulatory         0.0001)       improvement.       towalk, representing         ocombined (p <       0.0001)       improvement.         no difference in       preoperative       (100.0%) were able         no difference in       preoperative       compared with         neurol
who underwent discectomies with only partiallateral extracavitary0.05).only partial corpectomies at adjacent vertebralspinal column(81.8%) and combined (79.2%)adjacent vertebral levels./PMMA/chest tubeprocedures had a levels.events.technique/pediclesignificantly higheranterior approach group had fewer spinal levels fusedor laminar screws/tube placement compared with posterior approaches (20.0%; p < 0.0001)
discectomies with only partialapproach. Anterior spinal column• Both anterior (81.8%) and competomies at adjacent vertebral levels.• Anterior approach group had fewerreconstruction (cages technique/ pediclecombined (79.2%) procedures had a significantly higher• Anterior approach group had fewertechnique/ pediclesignificantly higher association of chest tube placement• Output group had feweror laminar screws/ allograft andtube placement compared with posterior approaches (20.0%; p < 0.0001)
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Levels.technique/ pediclesignificantly higher• anterior approach group had fewer spinal levels fusedscrews/ lateral mass or laminar screws/association of chest tube placement compared with(p < 0.0001)
<ul> <li>anterior approach group had fewer spinal levels fused (p &lt; 0.0001)</li> <li>demineralized bone compared with posterior (p &lt;</li> <li>0.0001)or</li> <li>combined (p &lt;</li> <li>0.0001)</li> <li>combined (p &lt;</li> <li>0.0001)</li> <li>no difference in preoperative neurological scores, (Nurick (p = 0.18) and ASIA</li> <li>anterior approach screws/ lateral mass or laminar screws/ allograft and compared with matrix)</li> <li>association of chest tube placement compared with posterior approaches (20.0%; p &lt; 0.0001</li> <li>posterior approaches (20.0%; p &lt; 0.0001</li> <li>for both).</li> <li>combined approach has best ambulatory improvement.</li> <li>Twenty-four patients (100.0%) were able to walk, representing a 25% improvement</li> </ul>
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spinal levels fused (p < 0.0001)allograft and demineralized bone matrix)compared with posterior approaches (20.0%; p < 0.0001) for both).posterior (p < 0.0001)or combined (p < 0.0001)0.0001)or combined (p < 0.0001)on odifference in preoperative neurological scores, (Nurick (p = 0.18) and ASIAallograft and demineralized bone matrix)compared with posterior (p < to ombined approach has best ambulatory improvement
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0.0001)or combined (p < 0.0001)• combined approach has best ambulatory improvement.• no difference in preoperative neurological scores, (Nurick (p = 0.18) and ASIA• combined approach has best ambulatory improvement.• 10.0001)• no difference in preoperative neurological scores, (Nurick (p = 0.18) and ASIA• combined approach has best ambulatory improvement.
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0.0001)improvement.• no difference in preoperative neurological scores, (Nurick (p = 0.18) and ASIAimprovement.0.0001)Twenty-four patients (100.0%) were able to walk, representing a 25% improvement compared with
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scores, (Nurick (pa 25% improvement= 0.18) and ASIAcompared with
= 0.18) and ASIA compared with
= 0.18) and ASIA compared with
(p = 0.06)). no preoperative
significant ambulation.
difference in Compared with the
ambulation (p = posterior cohort (6
0.85). [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.