



Preoperative Screening and Risk Assessment.

Level of Evidence	Moderate
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Consensus Statement

Multifaceted patient screening and risk assessment improves the informed consent process and allows for advanced perioperative planning.

Main Points

- Comprehensive screening should include global surgical risk, frailty, delirium risk, glycemic control, nutrition, kidney risk, sleep apnea, and opioid tolerance where relevant.
- Structured assessment improves informed consent and allows teams to anticipate perioperative complications and plan mitigation strategies.
- Tools such as STS risk models, EuroSCORE II, frailty instruments, HbA1c, albumin, urine albumin, and STOP-BANG are highlighted as useful components.

Key References

1. Biancari F, Giordano S. Glycated hemoglobin and the risk of sternal wound infection after adult cardiac surgery: a systematic review and metaanalysis. *Semin Thorac Cardiovasc Surg.* 2019;31:465-467.
2. Currie A, Burch J, Jenkins JT, et al. The impact of enhanced recovery protocol compliance on elective colorectal cancer resection: results from an international registry. *Ann Surg.* 2015;261:1153-1159.
3. Engelman DT, Adams DH, Byrne JG, et al. Impact of body mass index and albumin on morbidity and mortality after cardiac surgery. *J Thorac Cardiovasc Surg.* 1999;118:866-873.

4. Fernandez FG, Shahian DM, Kormos R, et al. The Society of Thoracic Surgeons National Database 2019 annual report. *Ann Thorac Surg.* 2019;108:1625-1632.
5. George LK, Molnar MZ, Lu JL, Kalantar-Zadeh K, Koshy SK, Kovesdy CP. Association of pre-operative albuminuria with post-operative outcomes after coronary artery bypass grafting. *Sci Rep.* 2015;5:164-58.
6. Gustafsson UO, Hausel J, Thorell A, Ljungqvist O, Soop M, Nygren J. Adherence to the enhanced recovery after surgery protocol and outcomes after colorectal cancer surgery. *Arch Surg.* 2011;146:571-577.
7. Jacobs JP, Shahian DM, Grau-Sepulveda M, et al. Current penetration, completeness, and representativeness of The Society of Thoracic Surgeons Adult Cardiac Surgery Database. *Ann Thorac Surg.* 2022;113:1461-1468.
8. Jacobs JP, Shahian DM, Prager RL, et al. Introduction to the STS National Database Series: outcomes analysis, quality improvement, and patient safety. *Ann Thorac Surg.* 2015;100:1992-2000.
9. Jayakumar S, Khojenezhad A, Jahangiri M. Surgical site infections in cardiac surgery. *Crit Care Clin.* 2020;36:581-592.
10. Karas PL, Goh SL, Dhital K. Is low serum albumin associated with postoperative complications in patients undergoing cardiac surgery? *Interact Cardiovasc Thorac Surg.* 2015;21:777-786.
11. Kaye AD, Kandregula S, Kosty J, et al. Chronic pain and substance abuse disorders: preoperative assessment and optimization strategies. *Best Pract Res Clin Anaesthesiol.* 2020;34:255-267.
12. Kotfis K, Szylińska A, Listewnik M, Brykczynski M, Ely EW, Rotter I. Diabetes and elevated preoperative HbA1c level as risk factors for postoperative delirium after cardiac surgery: an observational cohort study. *Neuropsychiatr Dis Treat.* 2019;15:511-521.
13. Lee JA, Yanagawa B, An KR, Arora RC, Verma S, Friedrich JO. Canadian Cardiovascular Surgery Meta-Analysis Working Group. Frailty and prefrailty in cardiac surgery: a systematic review and meta-analysis of 66,448 patients. *J Cardiothorac Surg.* 2021;16:184.

14. Li N, Qiao H, Guo JF, et al. Preoperative hypoalbuminemia was associated with acute kidney injury in high-risk patients following non-cardiac surgery: a retrospective cohort study. *BMC Anesthesiol.* 2019;19:171.
15. McCann M, Stamp N, Ngui A, Litton E. Cardiac prehabilitation. *J Cardiothorac Vasc Anesth.* 2019;33:2255-2265.
16. Nagappa M, Patra J, Wong J, et al. Association of STOP-Bang questionnaire as a screening tool for sleep apnea and postoperative complications: a systematic review and Bayesian meta-analysis of prospective and retrospective cohort studies. *Anesth Analg.* 2017;125:1301-1308.
17. Pittams AP, Iddawela S, Zaidi S, Tyson N, Harky A. Scoring systems for risk stratification in patients undergoing cardiac surgery. *J Cardiothorac Vasc Anesth.* 2022;36:1148-1156.
18. Pivetta B, Chen L, Nagappa M, et al. Use and performance of the STOPBang questionnaire for obstructive sleep apnea screening across geographic regions: a systematic review and meta-analysis. *JAMA Netw Open.* 2021;4:e211009.
19. Ripolles-Melchor J, Ramírez-Rodríguez JM, Casans-Frances R, et al. Association between use of Enhanced Recovery After Surgery protocol and postoperative complications in colorectal surgery: the Postoperative Outcomes Within Enhanced Recovery After Surgery Protocol (POWER) Study. *JAMA Surg.* 2019;154:725-736.
20. Ripolles-Melchor J, Sanchez-Santos R, Abad-Motos A, et al. Higher adherence to ERAS Society recommendations is associated with shorter hospital stay without an increase in postoperative complications or readmissions in bariatric surgery: the association between use of Enhanced Recovery After Surgery Protocols and Postoperative Complications after Bariatric Surgery (POWER 3) multicenter observational study. *Obes Surg.* 2022;32:1289-1299.
21. Saxena A, Dhurandhar V, Bannon PG, Newcomb AE. The benefits and pitfalls of the use of risk stratification tools in cardiac surgery. *Heart Lung Circ.* 2016;25:314-318.

22. Shapira OM, Blumenfeld O, Bolotin G, Grover FL, Shahian DM. International participation in The Society of Thoracic Surgeons Adult Cardiac Surgery Database: from institutional to national. *Ann Thorac Surg.* 2017;103:1683-1686.
23. Simpson JC, Moonesinghe SR, Grocott MPW, et al. Enhanced recovery from surgery in the UK: an audit of the enhanced recovery partnership programme 2009-2012. *Br J Anaesth.* 2015;115:560-568.
24. Writing Committee Members, Lawton JS, Tamis-Holland JE, Bangalore S, et al. 2021 ACC/AHA/SCAI Guideline for Coronary Artery Revascularization: a report of the American College of Cardiology/American Heart Association Joint Committee on Clinical Practice Guidelines. *J Am Coll Cardiol.* 2022;79:e21-e129.
25. Yanagawa B, Graham MM, Afilalo J, Hassan A, Arora RC. Frailty as a risk predictor in cardiac surgery: beyond the eyeball test. *J Thorac Cardiovasc Surg.* 2019;157:1905-1909.
26. Zheng J, Cheng J, Wang T, Zhang Q, Xiao X. Does HbA1c level have clinical implications in diabetic patients undergoing coronary artery bypass grafting? A systematic review and meta-analysis. *Int J Endocrinol.* 2017;2017:15372-13.

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