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**Clinical Focus:** Congenital Cardiac Surgery

**Research Interests:**

- Congenital cardiac surgery
- Mechanical circulatory support
- Myocardial protection in neonatal cardiac surgery

**Publications:**

1. **Takahashi K, Mackie AS, Thompson R, Al-Naami G, Inage A, Rebeyka IM, Ross DB, Khoo NS, Colen T, Smallhorn JF.** Quantitative real-time three-dimensional echocardiography provides new insight into the mechanics of mitral valve regurgitation post-repair of atrioventricular septal defect. *J Am Soc Echocardiogr* 2012; 25:1231-1244.
2. **Ugaki S, Khoo NS, Ross DB, Rebeyka IM, Adatia I.** Tricuspid valve repair improves early right ventricular and tricuspid valve remodeling in patients with hypoplastic left heart syndrome. *J Thorac Cardiovasc Surg* 2013 Feb;145(2):446-450.
3. **Hansen G, Conradi A, Lequier L, Garcia Guerra G, Quinonez L, Ross DB, Rebeyka IM, Buchholz H.**

Safety of Berlin Heart EXCOR pump changes in the PICU. *Pediatr Crit Care Med* 2013;14(1):50-54.

4. **Zhou Z, Malhotra SP, Yu X, Rutledge J, Rebeyka IM, Ross DB, Rausch C, Gu H, McGrindle B, Lacour-Gayet F, Ivy D, Li J.** Moderate altitude is not associated with adverse postoperative outcomes for patients undergoing bidirectional cavopulmonary anastomosis and Fontan operation: A comparative study among Denver, Edmonton, and Toronto. *J Thorac Cardiovasc Surg* 2013 Nov;146(5):1165-1171.
5. **Vanderpluym CJ, Khoo NS, Rebeyka IM, Buchholz H.** Unique case of total artificial cardiac support in failed Fontan circulation after cardiectomy: Is continuous flow better than pulsatile flow? *J Thorac Cardiovasc Surg* 2013 June;145(6):e62-63.
6. **Ugaki S, Khoo NS, Ross DB, Rebeyka IM, Adatia I.** Right ventricular and tricuspid valve remodeling after bidirectional cavopulmonary anastomosis. *Circ J* 2013;77(10):2514-2518.
7. **Al Senaidi KS, Ross DB, Rebeyka IM, Harder J, Kakadekar AP, Garros D, Mackie AS, Smallhorn J.** Comparison of two surgical techniques for complete atrioventricular septal defect repair using two- and three-dimensional echocardiography. *Pediatr Cardiol* 2014 Mar;35(3):393-398.
8. **Garcia Guerra G, Robertson CMT, Alton GY, Joffe AR, Cave DA, Yasmin F, Dinu IA, Creighton DE, Ross DB, Rebeyka IM & Western Canadian Complex Pediatric Therapies Follow-up Group.** Neurotoxicity of sedative and analgesia drugs in young infants with congenital heart disease: 4-year follow-up. *Pediatr Anesth* 2014 Mar;24(3):257-265.
9. **Garcia Guerra G, Joffe AR, Robertson CMT, Atallah J, Alton G, Sauve RS, Dinu IA, Ross DB, Rebeyka IM & Western Canadian Complex Pediatric Therapies Follow-up Group.** Health-related quality of life experienced by children with chromosomal abnormalities and congenital heart defects. *Pediatr Cardiol* 2014 Mar;35(3):536-541.
10. **Ugaki S, Khoo NS, Ross DB, Rebeyka IM, Adatia I.** Modified single-patch compared with two-patch repair of complete atrioventricular septal defect. *Ann Thorac Surg* 2014 Feb;97(2):666-671.
11. **Karimova A, Pockett CR, Lasuen N, Dedieu N, Rutledge J, Fenton M, Vanderpluym C, Rebeyka IM, Dominguez TE, Buchholz H.** Right ventricular dysfunction in children supported with pulsatile ventricular assist devices. *J Thorac Cardiovasc Surg* 2014 May;147(5):1691-1697.
12. **Seitz S, Buchholz H, Rebeyka IM, Ross DB, West L, Urschel S.** Mechanical ventricular assist device as a bridge to recovery post ABO incompatible heart transplantation for failed Fontan-circulation. *Transpl Int* 2014 Jul;27(7):e54-57.
13. **Zhang L, Yu X, Cheyesh A, Rebeyka IM, Granoski D, Lopaschuk GD, Li J.** Plasma fatty acid levels in children during extracorporeal membrane oxygenation support – a pilot study. *J Extra Corpor Technol* 2013 Dec;45(4):242-247.
14. **Urschel S, Ryan LA, Larsen IM, Derkatz K, Rebeyka IM, Ross DB, West LJ.** C3d plasma levels and CD21 expressing B-cells in children after ABO-incompatible heart transplantation: Alterations associated with blood group tolerance. *J Heart Lung Transplant* 2014 May;33:1149-1156.
15. **Ryerson LM, Mackie AS, Atallah J, Joffe AR, Rebeyka IM, Ross DB, Adatia I.** Prophylactic peritoneal dialysis catheter does not decrease time to achieve a negative fluid balance after the Norwood procedure: A randomized controlled trial. *J Thorac Cardiovasc Surg* 2015 ;149:222-228.
16. **Vjarnsorn C, Khoo NS, Tham EB, Colen T, Rebeyka IM, Smallhorn JF.** Increased common

atrioventricular valve tenting is a risk factor for progression to severe regurgitation in patients with a single ventricle with unbalance atrioventricular septal defect. *J Thorac Cardiovasc Surg* 2014 148(6):2580-2588.

17. **Ugaki S, Rutledge J, Al Aklabi M, Ross DB, Adatia I, Rebeyka IM.** An increased incident of conduit endocarditis in patients receiving bovine jugular vein grafts compared to cryopreserved homograft for right ventricular outflow obstruction. *Ann Thorac Surg* 2015;99:140-147.
18. **Ryerson IM, Garcia Guerra G, Joffe AR, Robertson CM, Alton GY, Dinu IA, Granoski D, Rebeyka IM, Ross DB, Lequier L; for the Western Canadian Complex Pediatric Therapies Program Follow-up Group.** Survival and neurocognitive outcomes after cardiac extracorporeal life support in children less than five years of age: A ten year cohort. *Circ Heart Fail.* 2015 8:312-321.
19. **Wong JY, Buchholz H, Ryerson L, Conradi A, Adatia I, Dyck, J, Rebeyka I, Lien D, Mullen J.** Successful semi-ambulatory veno-arterial extracorporeal membrane oxygenation bridge to heart-lung transplantation in a very small child. *Am J Transplant* 2015 Aug;15(8):2256-2260.
20. **Mackie AS, Vatanpour S, Alton GY, Dinu IA, Ryerson L, Moddemann DM, Thomas Petrie J, Western Canadian Complex Pediatric Therapies Program Follow-up Group.** Clinical outcome score predicts adverse neurodevelopmental outcome after infant heart surgery. *Ann Thorac Surg* 2015 Jun;99(6):2124-2132.
21. **Gaynor JVV, Stopp C, Wypj D, Andropoulos DB, Atallah J, Atz AM, Beca J, Donofrio MT, Duncan K, Ghanayam NS, Goldberg CS, Hovels-Gurich H, Ichida F, Jacobs JP, Justo R, Latal B, Li JS, Mahle WT, McQuillen PS, Menon SC, Pemberton VL, Pike NA, Pizarro C, Shekerdemian LS, Synnes A, Williams I, Bellinger DC, Newburger JW; International Cardiac Collaborative on Neurodevelopmental (ICCON) Investigators.** Neurodevelopmental outcomes after cardiac surgery in infancy. *Pediatrics* 2015 May 13(5):616-625.
22. **Horne D, Conway J, Rebeyka IM, Buchholz H.** Mechanical circulatory support in univentricular hearts: current management. *Semin Thorac Cardiovasc Surg Pediatr Card Surg Annu* 2015;18(1):17-24.
23. **Lam VH, Zhang L, Huqi A, Fukushima A, Tanner BA, Onay-Besikci A, Keung W, Kantor PF, Jaswall JS, Rebeyka IM, Lopaschuk. GD.** Activating PPAR $\alpha$  prevents post-ischemic contractile dysfunction in hypertrophied neonatal hearts. *Circ Res* 2015 Jun 19;117(1):41-51.
24. **Garcia Guerra G, Zorzela L, Robertson CM, Alton GY, Joffe AR, Moez EK, Dinu IA, Ross DB, Rebeyka IM, Lequier L; Western Canadian Complex Pediatric Therapies Follow-up Group.** Survival and neurocognitive outcomes in pediatric extracorporeal cardiopulmonary resuscitation. *Resuscitation* 2015 Aug 22;96:208-213.
25. **Jonker V, Atallah J, Horne D, Rebeyka IM.** A novel surgical technique for repair of congenitally corrected transposition of the great arteries with atrioventricular septal defect: Avoiding damage to the conduction system. *Ann Thorac Surg* 2015 Sep;100(3):1121-1123.
26. **Ricci MF, Andersen JC, Joffe AR, Watt MJ, Moez EK, Dinu IA, Garcia Guerra G, Ross DB, Rebeyka IM, Robertson CM.** Chronic neuromotor disability after complex cardiac surgery in early life. *Pediatrics* 2015 Oct;136(4):e922-933.
27. **Dijke IE, Hoeppli RE, Ellis T, Pearcey J, Huang Q, McMurchy AN, Boer K, Peeters AM, Aubert G, Larsen I, Ross DB, Rebeyka I, Campbell A, Baan CC, Levings MK, West LJ.** Discarded human thymus is a novel source of stable and long-lived therapeutic regulatory T cells. *Am J Transplant*

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28. **Anand V, Cave D, McCrady H, Al-Aklabi M, Ross DB, Rebeyka IM, Adatia I.** The development of a congenital heart programme quality dashboard to promote transparent reporting of outcomes. *Cardiol Young* 2015 Dec;25(8);1579-1583.
29. **Miera O, Kirk R, Buchholz H, Schmitt KR, VanderPluym C, Rebeyka IM, Wrightson N, Berger F, Griselli M, Conway J.** A multicenter study of the HeartWare ventricular assist device in small children. *J Heart Lung Transplant* 2016 Jan 18 (epub ahead of press)
30. **Martin BJ, Ross DB, Alton GY, Joffe AR, Robertson CM, Rebeyka IM, Atallah J.** Clinical and functional developmental outcomes in neonates undergoing truncus arteriosus repair: A cohort study. *Ann Thorac Surg* 2016;101:1827-1833.
31. **Conway J, Al-Aklabi M, Granoski D, Islam S, Ryerson L, Anand V, Guerra G, Mackie A, Rebeyka I, Buchholz H.** Supporting pediatric patients with short-term continuous-flow devices. *J Heart Lung Transplant*. 2016 Feb 8 (epub ahead of print)
32. **Horne D, Noga M, Anand V, Rebeyka IM.** Suprasternal approach aortopexy relieves tracheal compression after Nikaidoh procedure. *World J Pediatric Congenital Surgery; WJPCHS* 2016 April (epub ahead of print)