Areas of Specialized Surgical Expertise

Niche Areas of Surgical Expertise at SickKids
More than 70 areas of specialized procedures are offered within the surgical areas of Perioperative Services, showing the depth of our unique skills here at SickKids.

Cardiovascular Surgery

SURGICAL CORRECTION
- Valve sparing surgical repair and RVOT stenting for tetralogy of Fallot
- Sutureless repair for pulmonary vein stenosis (PVS)
- Double-switch procedures for congenitally corrected transposition (ccTGA)
- Unifocalisation of MAPCA in complex pulmonary atresia
- Primary repair of multiple VSDs

MINIMALLY INVASIVE CARDIAC SURGERY
- Axillary approach for Atrial Septal Defects, Partial AVSD and Valve Repair
- Thorascopic sympathectomy for ventricular arrhythmia

MECHANICAL CIRCULATORY SUPPORT
- All intra-corporeal and para-corporeal systems

HYBRID PROCEDURES
- Norwood for borderline left ventricle (LV)
- Device closure of ventricular septal defects (VSDs)

We are especially well positioned to address Tetralogy of Fallot and Transposition of the Great Vessels. For more information, please visit the Cardiovascular Surgery program at https://www.sickkids.ca/en/care-services/clinical-departments/cardiovascular-surgery/

Dentistry

ORAL ANOMALIES
- Oral rehabilitation of congenital enamel or dentin anomalies
- Endosseous implant restoration for oral clefts and craniofacial conditions
- Craniofacial orthodontic correction
- Surgical management of jaw cysts and tumours
- Correction of acquired or developmental dentofacial deformities

DENTAL CARIES
- Comprehensive oral rehabilitation of severe early childhood dental caries
- Management of medically complex children with dental disease

DENTAL TRAUMA
- Acute surgical management of dental traumatic injuries

Our strength is providing expert planning and set up for orthognathic and craniofacial surgery as well as dental care for children with complex medical conditions. For more information, please visit the Dentistry program at https://www.sickkids.ca/en/care-services/clinical-departments/dentistry/
General and Thoracic Surgery

ESOPHAGUS
Surgical management of esophageal atresia
Surgical management of tracheo-esophageal fistulae

ANORECTAL ANOMALIES, HERNIA
Surgical management of anorectal anomalies including Hirschprung’s disease
Surgical management of congenital diaphragmatic hernias

GI AND HEPATOBILIARY DISORDERS
Surgical management of complex gastrointestinal disorders
Surgical management of complex hepatobiliary disorders

THORAX AND ABDOMINAL CONDITIONS
Surgical management of thoracic, pulmonary and abdominal anomalies and tumors
Correction of pectus anomalies and breast lesions
Minimally invasive surgery

We have world class expertise in esophageal atresia and tracheo-esophageal fistula repair.
For more information, please visit the General and Thoracic Surgery program at https://www.sickkids.ca/en/care-services/clinical-departments/general-thoracic-surgery/

Neurosurgery

BRAIN AND SPINAL TUMORS
Evaluation and surgical management of brain and spinal tumors
Evaluation and surgical management of rare malignant paediatric embryonal brain tumors

EPILEPSY, MOVEMENT AND NEUROPHYSIOLOGICAL DISORDERS
Surgical management of complex epilepsy, including lobectomy and hemispherectomy
Evaluation and surgical management of movement disorders, including dystonia and spasticity
Dorsal rhizotomy for complex neurophysiological disorders

VASCULAR CONDITIONS OF THE BRAIN AND SPINAL CORD
Surgical and endovascular management of arteriovenous malformations and pediatric cerebral aneurysms
Surgical revascularization for Moyamoya disease
Surgical management of Vein of Galen malformations

We provide state of the art and innovative care in managing paediatric embryonal brain tumours and complex epilepsy. For more information, please visit the Neurosurgery program at https://www.sickkids.ca/en/care-services/clinical-departments/neurosurgery/

Ophthalmology & Vision Sciences

CORNEAL REINNERVATION, STRABISMUS, EYELID, OCULPLASTIC
Surgical management of corneal reinnervation surgery
Surgical correction of strabismus
Oculoplastic surgery and reconstruction of the eyelids

RETINA
Surgical management of Retinoblastoma
Surgical management of complex retinal and vitreo-retinal conditions

KERATOCONUS, CORNEA, GLAUCOMA
Surgical management of Keratoconus
Surgical management of corneal reconstruction including corneal cross-linking and corneal transplant Surgical management of Glaucoma

We have developed new innovative approaches to corneal anaesthesia and to the management of retinoblastoma. For more information, please visit the Ophthalmology program at https://www.sickkids.ca/en/care-services/clinical-departments/ophthalmology-vision-sciences/

Orthopaedic Surgery

SCOLIOSIS AND SPINAL DEFORMITIES
Re-alignment of spinal deformities

LOWER EXTREMITY AND CEREBRAL PALSY
Surgical correction of lower extremity deformities including hip, alignment, leg length discrepancy, foot & ankle
Surgical treatment of cerebral palsy and neuromuscular disease

BONE CANCERS AND METABOLIC CONDITIONS
Excision of pediatric bone and soft tissue cancers and surgical reconstruction
Treatment of congenital, genetic / metabolic skeletal conditions, including skeletal dysplasia & osteogenesis imperfecta

Our world class expertise is in the management of complex spine deformities and in the management of boney and soft tissue sarcomas.
For more information, please visit the Orthopaedic Surgery program at https://www.sickkids.ca/en/care-services/clinical-departments/orthopaedic-surgery/

Otolaryngology - Head and Neck Surgery

COCHLEAR IMPLANT, HEARING AID
Cochlear implant and bone anchored hearing aid surgery

OTOLOGIC SURGERY, AIRWAY
Endoscopic otologic surgery including cholesteatoma surgery
Evaluation & surgical management of complex airway disorders including laryngotracheal birth defects & injuries

VOICE DISORDERS, SINUS AND CENTRAL SKULL
Evaluation and surgical management of voice disorders including recurrent respiratory papillomatosis
Endoscopic sinus and central skull base surgery

HEAD AND NECK
Surgical excision of tumors of the head and neck

Our strengths include cochlear implant surgery and endoscopic otologic and sinus surgery.
For more information, please visit the Otolaryngology program at https://www.sickkids.ca/en/care-services/clinical-departments/otolaryngology/

Plastic & Reconstructive Surgery

FACIAL PARALYSIS, CORNEAL REINNERVATION
Facial paralysis reconstruction
Corneal reinnervation surgery

INJURIES OF THE BRACHIAL PLEXUS, SPINAL CORD
Surgical reconstruction of obstetrical brachial plexus injuries
Nerve transfer surgery for spinal cord injuries
CRANIOFACIAL CONDITIONS, FACIAL CLEFTS, EAR INJURIES AND ANOMALIES
Surgical management of complex craniofacial conditions including encephalocoele
Surgical correction of congenital facial clefts
Surgical reconstruction of ear anomalies (Microtia) and traumatic ear injuries

HAND, LIMB AND BURN INJURIES
Reconstructive surgery following burn injuries
Reconstructive surgery for complex anomalies and injuries of the hand and extremities

We have world class programs in facial paralysis reconstruction and obstetrical brachial plexus reconstruction. For more information, please visit the Plastic & Reconstructive Surgery program at https://www.sickkids.ca/en/care-services/clinical-departments/plastic-reconstructive-surgery/

Urology

HYPOSPADIAS, BLADDER
Primary and revisionary surgery for hypospadias
Surgical correction of renal and bladder anomalies, including bladder exstrophy

INCONTINENCE, KIDNEY AND URINARY TRACT
Surgical management of neuro incontinence with restoration of bowel and bladder control
Surgical management of tumors of the kidney and urinary tract
Surgical management of complex kidney stones

KIDNEY TRANSPLANT
Living related kidney transplantation

Our team has particular expertise in both primary and revisionary hypospadias surgery, bladder exstrophy and the correction of neuro incontinence. For more information, please visit the Urology program at https://www.sickkids.ca/en/care-services/clinical-departments/urology/