



Nationwide Children's Hospital Department of Radiology is recognized as a pioneering center for research and innovation, and a renowned leader in diagnostic and interventional pediatric radiology. Our radiologists provide a full range of interventional radiology services for infants, children, adolescents and young adults, in addition to diagnostic imaging, including plain radiographic examinations, MRI, CT, ultrasound, fluoroscopy, nuclear medicine and bone densitometry.

Our state-of-the-art equipment provides high-quality and rapid examinations at the lowest possible radiation doses for children of any size, age and medical condition. Our team of experts specializes in getting the images needed as quickly and as easily as possible, and if sedation is required, highly trained pediatric-sedation specialists administer the smallest possible dose with the safest technique.

For more information on any of Nationwide Children's Radiology programs for your patients or practice, please call our Department of Radiology at (614) 722-2350 or the Nationwide Children's Physician Assistance Line at 1-800-927-PEDS (7337).

For a referral or consultation, please call Centralized Scheduling at (614) 722-6200.

Or, you can reach the following departments directly, weekdays from 8 a.m. to 5 p.m.

- CT: (614) 722-2395
- Digital Imaging Laboratory: (614) 722-2372
- Fluoroscopy: (614) 722-2351
- Interventional Radiology: (614) 722-2309
- MRI: (614) 722-2380
- Nuclear Medicine: (614) 722-2335
- Radiology Dictation System (reports): 1-866-516-6814
- Radiology Main Desk: (614) 722-2350
- Radiology Report Information: (614) 722-2361
- Sonography: (614) 722-2376



## INTERVENTIONAL RADIOLOGY SPOTLIGHT

Our team of radiologists provides an extensive range of interventional radiological procedures and demonstrates global leadership through innovative treatments provided uniquely at Nationwide Children's Hospital, including:

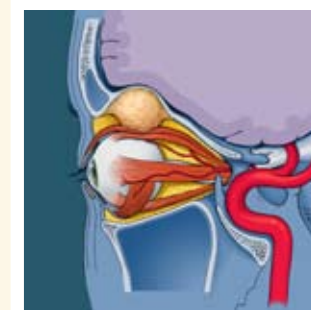
- Controlled ventilation CT of the chest and cardiovascular system
- Ultrasound-guided lumbar puncture in infants
- Dual drug sclerotherapy of lymphatic malformations
- Ultrasound-guided soft tissue foreign body removal
- Percutaneous ablation of dermoid and epidermoid cysts in the neck, face and orbit
- Percutaneous ablation of salivary gland ranulas
- Fibrinolysis and drainage of thoracic empyema

In addition to these leading procedures, our radiologists provide the following therapeutic procedures:

- Vascular embolization
- Radiofrequency ablation of bone, soft tissue and solid organ tumors
- Ablation of lymphatic malformations
- Venous malformations and arteriovenous malformations
- Percutaneous ablation of neck ranulas
- Cecostomy tube placement for colonic lavage
- Soft tissue foreign body removal
- Abscess drainage
- Rheumatoid joint and tendon sheath steroid injections
- Percutaneous ablation of aneurysmal bone cysts
- Thyroid gland ablation

The interventional radiology section also provides cures and treatments for patients diagnosed with congenital conditions presenting in adulthood.

To learn more about some of these procedures, and to see some of our success stories, go online to [www.NationwideChildrens.org/Radiology](http://www.NationwideChildrens.org/Radiology).



**PHYSICIAN TEAM**



**William E. Shiels II, DO, MS**

Chief of the Department of Radiology, Nationwide Children's Hospital; President, Children's Radiological Institute, Inc.; Clinical Professor, Radiology and Pediatrics and Category M on the graduate faculty in Biomedical Engineering, The Ohio State University College of Medicine; Adjunct Professor, Radiology, School of Medicine at the University of Toledo Medical Center; Visiting Scientist, Armed Forces Institute of Pathology, Washington, D.C.



**Brent H. Adler, MD**

Section Chief, Musculoskeletal Radiology, Department of Radiology, Nationwide Children's Hospital; Clinical Assistant Professor, Radiology and Pediatrics, The Ohio State University College of Medicine; Adjunct Assistant Professor, Radiology, School of Medicine at the University of Toledo Medical Center



**David Gregory Bates, MD**

Section Chief, Fluoroscopy, Gastrointestinal and Genitourinary Radiology, Nationwide Children's Hospital; Clinical Assistant Professor, Radiology and Pediatrics, The Ohio State University College of Medicine; Adjunct Assistant Professor, Radiology, School of Medicine at the University of Toledo Medical Center



**Larry A. Binkovitz, MD**

Section Chief, Nuclear Medicine, Nationwide Children's Hospital; Clinical Assistant Professor, Radiology and Pediatrics, The Ohio State University College of Medicine; Adjunct Assistant Professor, Radiology, School of Medicine at the University of Toledo Medical Center



**Brian D. Coley, MD**

Assistant Chief, Department of Radiology, Nationwide Children's Hospital; Section Chief, Sonography, Nationwide Children's Hospital; Director, Nationwide Children's Hospital Radiology Research Program; Chairman, Radiology Research Advisory Committee, Nationwide Children's Hospital; Clinical Associate Professor, Radiology, and Associate Professor, Pediatrics, The Ohio State University College of Medicine; Clinical Assistant Professor, Radiology, School of Medicine at the University of Toledo Medical Center



**Stephen M. Druhan, MD**

Pediatric Radiologist and Resident Education Coordinator, Department of Radiology, Nationwide Children's Hospital



**Andrea L. Franklin, DO**

Assistant Section Chief, Nuclear Medicine, Department of Radiology, Nationwide Children's Hospital; Clinical Assistant Professor, Radiology and Pediatrics, The Ohio State University College of Medicine; Adjunct Assistant Professor, Radiology, School of Medicine at the University of Toledo Medical Center



**Elizabeth A. Hingsbergen, MD**

Section Chief, General Radiography, Radiology Department, Nationwide Children's Hospital; Clinical Assistant Professor, Radiology and Pediatrics, The Ohio State University College of Medicine; Adjunct Assistant Professor, Radiology, School of Medicine at the University of Toledo Medical Center



**Mark J. Hogan, MD**

Chief, Section of Vascular and Interventional Radiology, Department of Radiology, Nationwide Children's Hospital; Clinical Associate Professor, Radiology, and Clinical Assistant Professor, Pediatrics, The Ohio State University College of Medicine; Adjunct Assistant Professor, Radiology, School of Medicine at the University of Toledo Medical Center



**Frederick R. Long, MD**

Section Chief, Body MRI and CT, Radiology Department, Nationwide Children's Hospital; Clinical Associate Professor, Radiology and Pediatrics, The Ohio State University College of Medicine; Clinical Assistant Professor, Radiology, School of Medicine at the University of Toledo Medical Center



**Lisa Copenhaver Martin, MD**

Section Chief, Emergency Radiology, Radiology Department, Nationwide Children's Hospital; Clinical Assistant Professor, Radiology and Pediatrics, The Ohio State University College of Medicine; Adjunct Assistant Professor, Radiology, School of Medicine at the University of Toledo Medical Center

**James W. Murakami, MD, MS**

Pediatric Radiologist, Radiology Department, Nationwide Children's Hospital; Clinical Assistant Professor, Radiology and Pediatrics, The Ohio State University College of Medicine; Adjunct Assistant Professor, Radiology, School of Medicine at the University of Toledo Medical Center

**Julie C. O'Donovan, MD**

Pediatric Radiologist, Radiology Department, Nationwide Children's Hospital; Clinical Assistant Professor, Radiology and Pediatrics, The Ohio State University College of Medicine; Adjunct Clinical Assistant Professor, Radiology, School of Medicine at the University of Toledo Medical Center

**Jerome A. Rusin, MD**

Section Chief, Neuroradiology, Department of Radiology, Nationwide Children's Hospital; Clinical Assistant Professor, Radiology and Pediatrics, The Ohio State University College of Medicine; Adjunct Assistant Professor, Radiology, School of Medicine at the University of Toledo Medical Center

**Sally S. Wildman, DO**

Pediatric Radiologist, Department of Radiology, Nationwide Children's Hospital

**Nicholas A. Zumberge, MD**

Pediatric Radiologist, Department of Radiology, Nationwide Children's Hospital

**PEDIATRIC NECK MASSES****Differential Diagnosis of Neck Masses in Children (most common)**

- Cervical adenitis
- Neck abscess
- Retropharyngeal abscess
- Lymphatic malformation (previously known as lymphangioma)
- Venous malformation (previously known as cavernous hemangioma)
- Hemangioma
- Salivary gland ranula
- Branchial cleft cyst
- Dermoid cyst
- Thyroglossal duct cyst
- Fibromatosis colli
- Other (includes bronchogenic cyst, cervical thymic cyst and soft tissue malignancies)

**Diagnostic Imaging Methods for Neck Masses**

Most palpable neck masses are best imaged with neck ultrasound. If questions exist about a neck mass extending into deep neck spaces, the retropharynx, mediastinum, or parapharyngeal spaces, neck MRI is the diagnostic study of choice.

**Clinical Presentation—Signs and Treatment**

**Cervical adenitis:** *Fever, pain, and firm cervical adenopathy* **Treatment:** Antibiotic therapy, if bacterial.

**Neck abscess (with possible extension into the mediastinum):** *Progression from adenitis with persistent pain, fever, neck mass and erythema.* **Treatment:** Percutaneous abscess drainage or surgical drainage.

**Lymphatic malformation:** *Present at birth or rapid development of new painful large neck or facial mass (in less than 24 hours); most often with lack of fever. New neck mass may be firm (due to intracystic hemorrhage), with or without erythema.* **Treatment:** Percutaneous treatment is most often first-line therapy. Surgical therapy in selected massive cases with severe hemorrhage.

**Venous malformation:** *Most often present at birth. Soft, compressible neck or facial mass, no fever, intermittent pain due to blood clots, often with overlying blue discoloration of the skin.* **Treatment:** Interventional radiology percutaneous treatment is the most appropriate first-line therapy. Plastic surgery follows interventional radiological reduction in severe cases.

**Hemangioma:** *Present at birth, often reddish discoloration of the skin with underlying firm solid vascular mass. Growth of the mass in the first year of life.* **Treatment:** Vascular malformation team is the most appropriate first-line consultation. Interventional radiology percutaneous therapy as needed.

**Salivary gland ranula:** *Unilateral intraoral bulging mass under the tongue. If a simple ranula persists, it can progress to a large submandibular soft neck mass, with or without infection.* **Treatment:** Interventional radiology or ENT consult. (Especially if diagnosis is in question.)

**Branchial cleft cyst:** *Slowly enlarging submandibular or anterior triangle firm neck mass, most often without pain, redness or infection.* **Treatment:** ENT or Pediatric Surgery is most often the first line assessment. Referral to interventional radiology as requested.

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**Dermoid cyst:** *Slowly enlarging mass in the paramedian or lateral submandibular region (when not periorbital); no fever, pain or erythema.* **Treatment:** Surgical consultation or primary interventional radiology treatment consultation.

**Thyroglossal duct cyst:** *Midline slowly enlarging neck mass above the thyroid gland that moves with tongue motion; usually no fever, pain or erythema.* **Treatment:** ENT or Pediatric Surgery is most appropriate for first-line consultation. Interventional radiology if recurrent.

**Fibromatosis colli:** *Neonatal, torticollis, firm fusiform ipsilateral neck mass in the sternocleidomastoid muscle; no fever or erythema.* **Treatment:** Primary care therapy adequate during spontaneous resolution.

## REFERRAL FOR TREATMENT

Treatment consultation referrals for neck masses are most often sent to Otolaryngology (614) 722-3150, or Pediatric Surgery 1-800-825-6695 or (614) 722-3900. Referrals for treatment consultation of vascular malformations may be sent to the Nationwide Children's Hospital Vascular Malformation Clinic (614) 722-6299 or respective surgical specialty clinics.

Referrals specifically for interventional radiological treatment of cystic neck masses may be sent to the radiology clinical coordinator at (614) 722-2375, or via fax at (614) 722-2332.