



## John Welsh Cardiovascular Diagnostic Laboratory



The Section of Pediatric Cardiology at the [Heart Center at Texas Children's Hospital](#) and [Baylor College of Medicine](#) has a well-established reputation for excellence in patient care. The John Welsh Cardiovascular Diagnostic Laboratory was established as part of our commitment to providing the highest quality of service and cutting-edge medical and scientific technology to our patients and the cardiology/medical community.

### Viral PCR Analysis

Our laboratory offers state-of-the-art molecular diagnostic testing for cardiovascular diseases. In 1986, the identification of Coxsackievirus B in the hearts of patients with myocarditis or dilated cardiomyopathy was reported. Subsequently, adenovirus was identified as another virus that is commonly found in the hearts of patients with these diseases, as well as a cause of organ rejection in patients with lung and/or heart transplants. More recently, we have shown that the predominant virus causing myocarditis and heart transplant rejection has again changed with parvovirus B19 now being most common.



We offer rapid molecular testing of heart tissue, lung tissue, and other organ specimens and bodily fluids for viruses. These tests are focused specifically for viruses identified as causing heart disease in children and adults, as well as in the fetus. However, they have a wide range of other clinical applications. All testing is performed using PCR technology, thus providing optimal sensitivity and specificity.

### Genetic Testing

The John Welsh Cardiovascular Diagnostic Laboratory also offers genetic testing for DNA mutations associated with cardiac disease. In 2001, mutations were reported in the gene [G4.5 \(TAZ\)](#) in patients with [Barth syndrome](#) or left ventricular noncompaction. [G4.5](#) mutations have also been identified in patients with dilated



cardiomyopathy or endocardial fibroelastosis. These research studies were performed in the Phoebe Willingham Muzzy Pediatric Molecular Cardiology Laboratory, which is the research branch of our laboratory, and thus complements the John Welsh Cardiovascular Diagnostic Laboratory.

By combining the resources of these laboratories, we are able to provide our patients with the best of both the research and diagnostic worlds. This close relationship between the research and the diagnostic laboratories allows us to identify novel disease-associated genes and mutations in the research laboratory and transfer this knowledge directly to the patient through the diagnostic laboratory, allowing "bench-to-bedside" service. Thus, the range of genetic testing services offered by the John Welsh Cardiovascular Diagnostic Laboratory is constantly expanding.

### Consulting Services

The John Welsh Cardiovascular Diagnostic Laboratory also offers free medical consultation services via telephone or e-mail to any physician or genetic counselor. Our medical director, [Dr. Richard Friedman](#), is the interim chief of Pediatric Cardiology at Texas Children's, and our laboratory director, [Dr. Yuxin Fan](#), is certified by the American Board of Medical Genetics in Clinical Molecular Genetics. Thus, we are able to offer expert insight into the clinical and molecular aspects of the diseases for which we offer testing.

It is the goal of the John Welsh Cardiovascular Diagnostic Laboratory to not only offer the highest quality of molecular diagnostic testing possible but also to provide physicians and genetic counselors with the information that they need to provide their patients an optimal standard-of-care.

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