

# School Presentation – Cardiac Example Slides

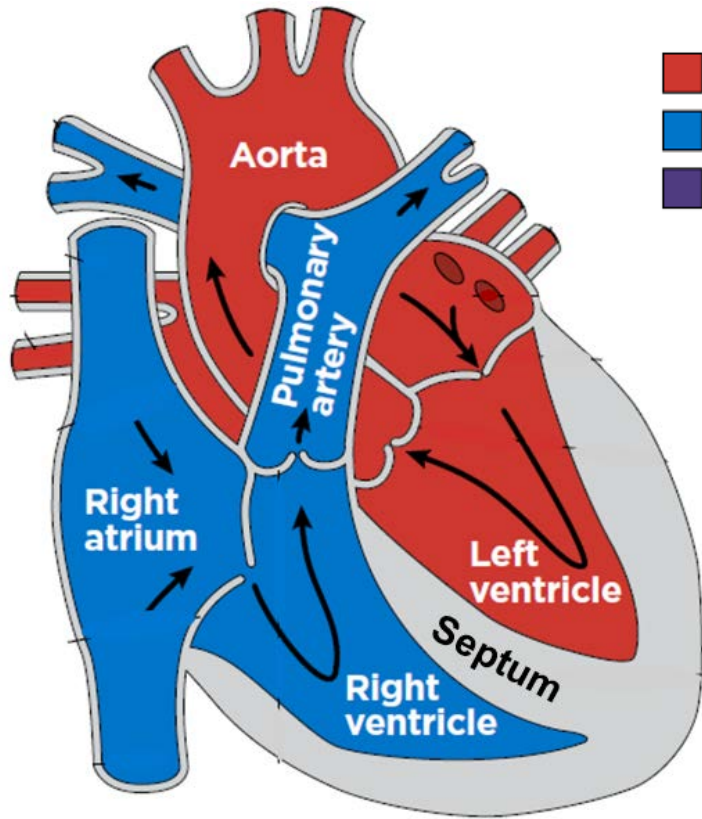


---

Herma Heart Institute

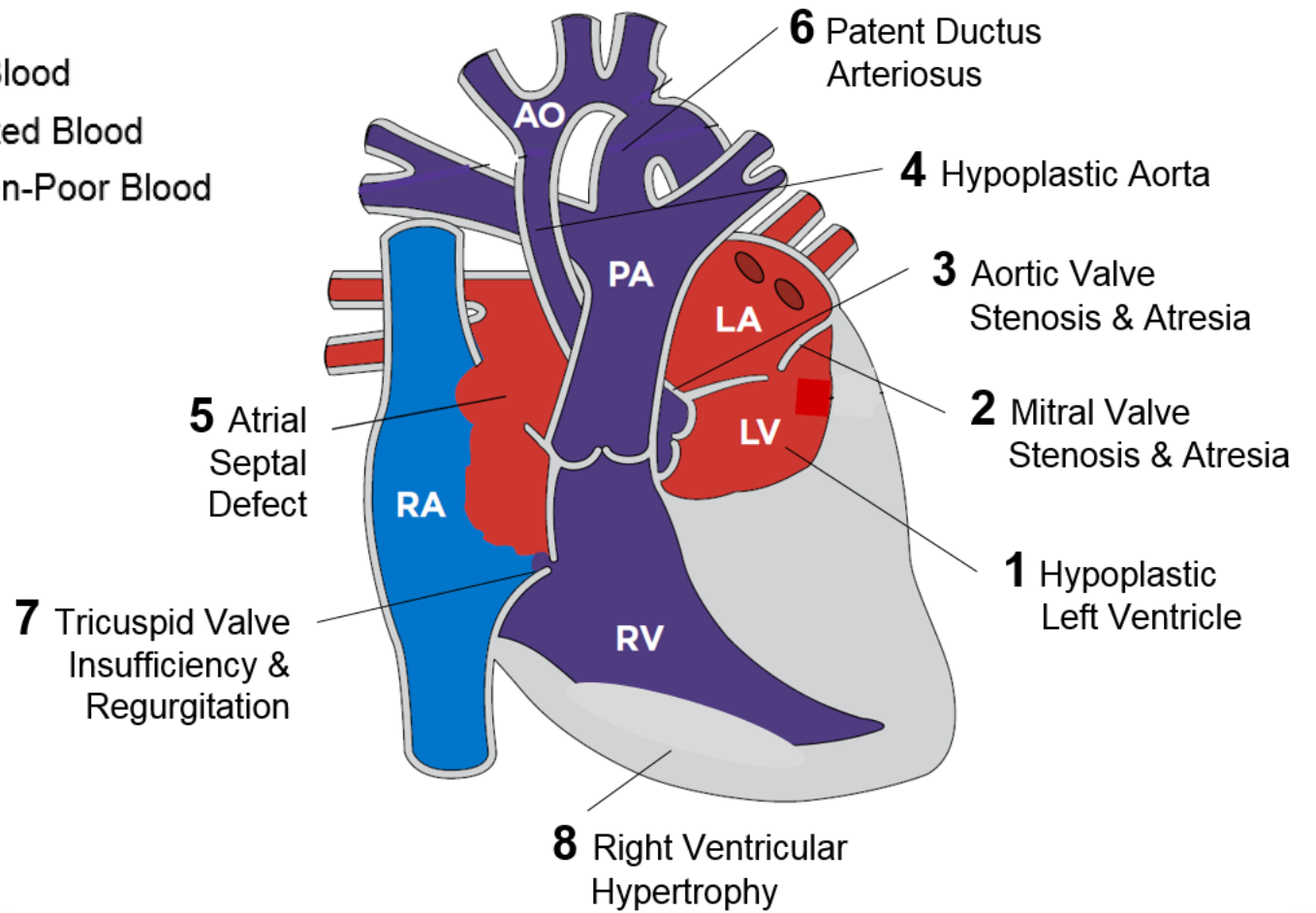
# Pediatric Heart Disease

## Normal Heart



- Oxygen-Rich Blood
- Oxygen-Depleted Blood
- Mixed – Oxygen-Poor Blood

## Hypoplastic Left Heart Syndrome (HLHS)

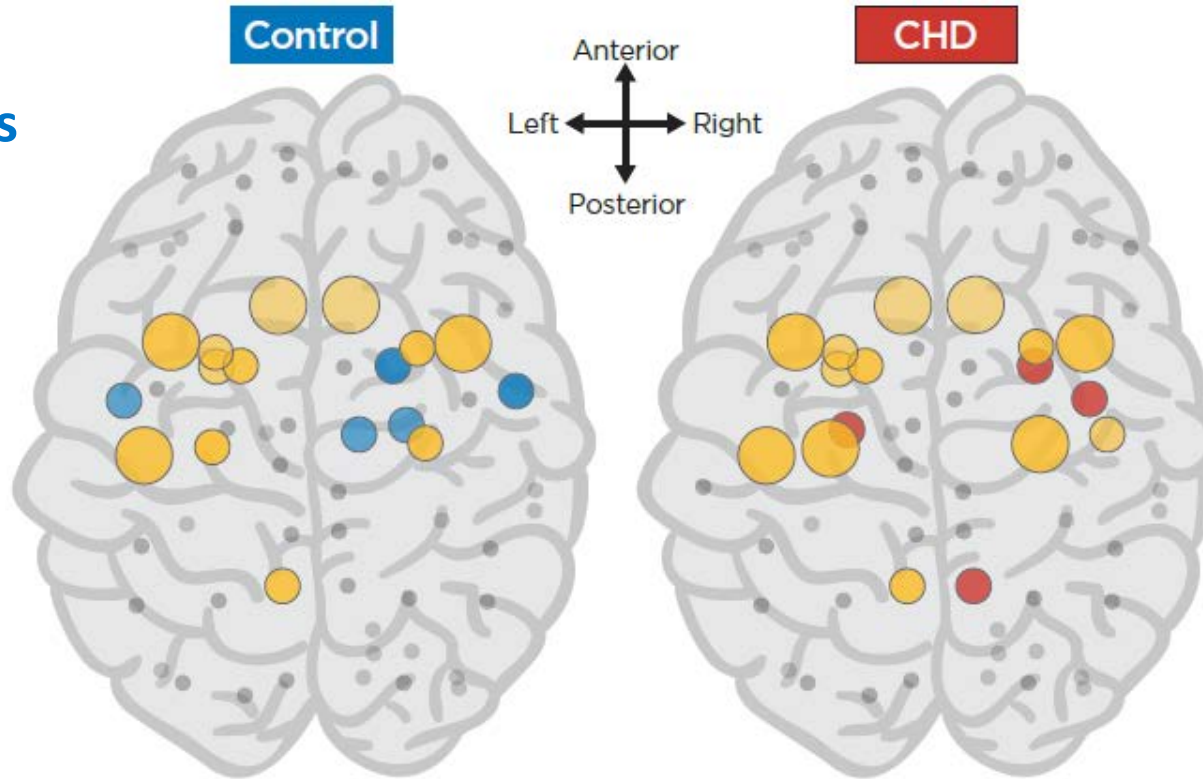


# Impact on Brain Connectivity

Pediatric heart disease reduces brain functional connectivity

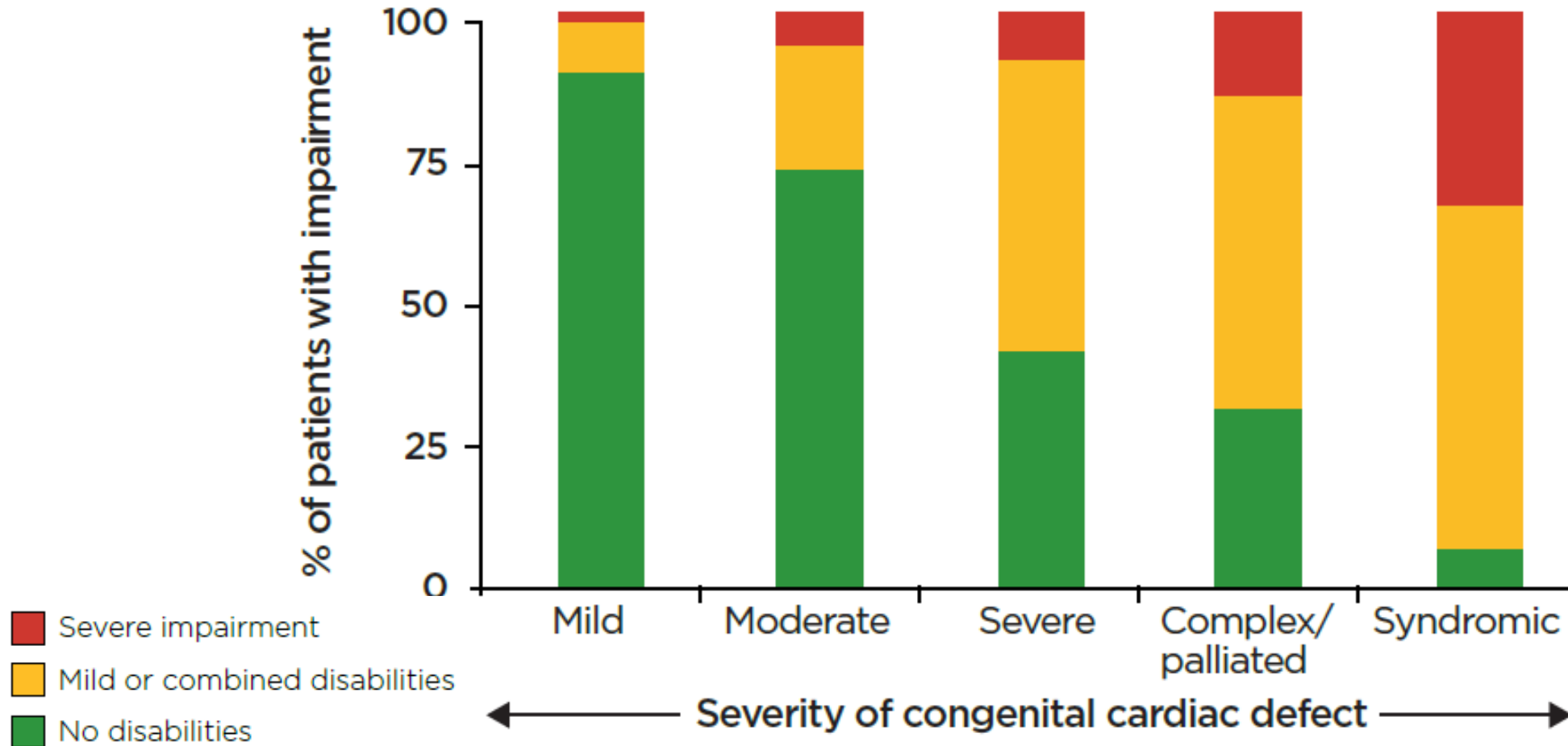
## Brain Connectivity Hubs

- CHD and controls
- Controls only
- CHD only



*Adapted from De Asis-Cruz, J., Donofrio, M. T., Vezina, G., & Limperopoulos, C. (2018). Aberrant brain functional connectivity in newborns with congenital heart disease before cardiac surgery. *NeuroImage: Clinical*, 17, 31-42.*

# Risk of Neuropsychological Deficits



*Adapted from Wernovsky, G. (2006). Current insights regarding neurological and developmental abnormalities in children and young adults with complex congenital cardiac disease. Cardiology in the Young, 16(S1), 92-104.*

# Neuropsychological Risk Domains

- Physical Development
- Language Development
- Social-Emotional Functioning
- Attention & Behavior
- Executive Functioning
- Cognition



# Onset of Deficits & Academic Concerns



**Risk for Neuropsychological Deficit Onset**

**Appearance of Academic Concerns**

**Opportunity to Improve School Performance**

**Early intervention and ongoing school supports may reduce or prevent long-term academic problems**

# Education Plan Eligibility

## *Other Health Impairment*

### Health Problem

- **Pediatric Heart Disease** – is a chronic condition that affects **heart function** and the resultant **circulation** of blood and oxygen throughout the brain and body
  - **Chronic** – requires lifelong medical care, even after surgeries
  - **Acute** – many heart diseases are also acute, life threatening health problems

### Symptoms & Limitations

- **Symptoms** – irregular heart rate, breathing disturbances, activity intolerance, low energy, fatigue, weakness, and cyanosis
- **Limitations** – depressed cardiac output and lower blood-oxygen saturation may impact **strength, vitality, and alertness**

### Academic Deficits

- **Brain Differences** – pediatric heart disease can impact brain development, causing neuropsychological deficits
- **Educational Performance** – potentially impacting all areas of educational performance

### Education Needs

- **Med-Ed Referral letter** – describes recommendations for special education services and/or classroom accommodations

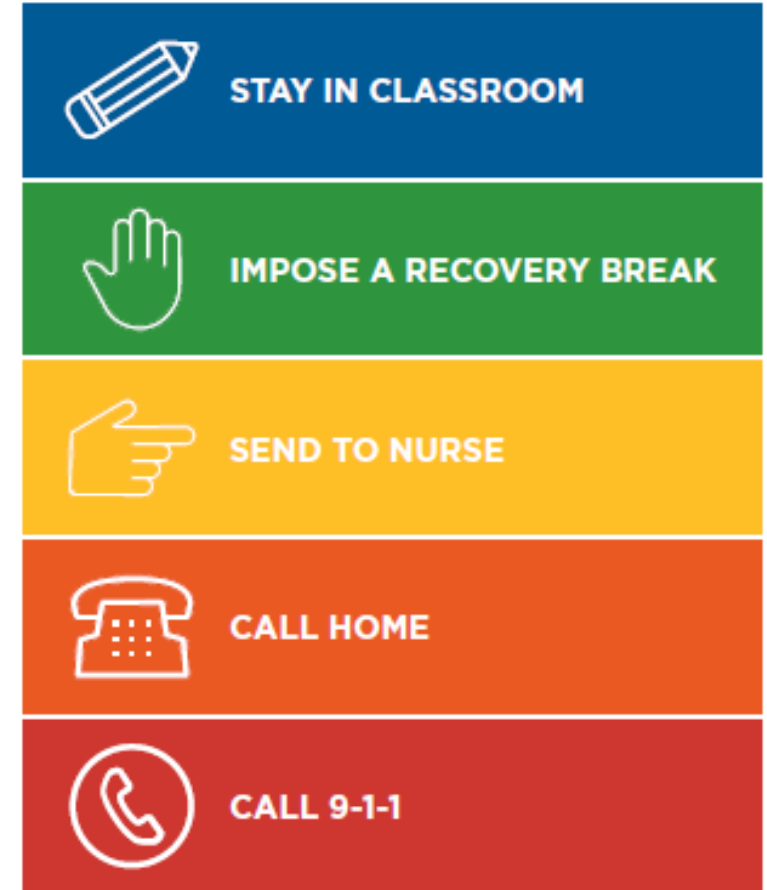


# School Health Plans – Symptom Management

*For each range of symptoms, the medical team recommends a specific response step at onset and action steps if the symptoms continue or resolve:*

- **Mild Symptoms** – anxiety, fatigue, dizziness, headache, abdominal pain, or nausea
- **Moderate Symptoms** – excessive sweating, chest pain, blue/gray coloring (lips, fingers, or feet), shortness of breath, or racing heart
- **Elevated Symptoms** – vomiting, diarrhea, fever >100.4°F, elevated or irregular heart rate, labored breathing, wheezing, seizure activity, or an unusual decline in energy, attention, or mood
- **Emergency Symptoms** – not breathing, irregular breathing, gasping/gurgling, lack of movement, unconsciousness, unresponsiveness, convulsion-like activity, or cardiac arrest

## Response Steps





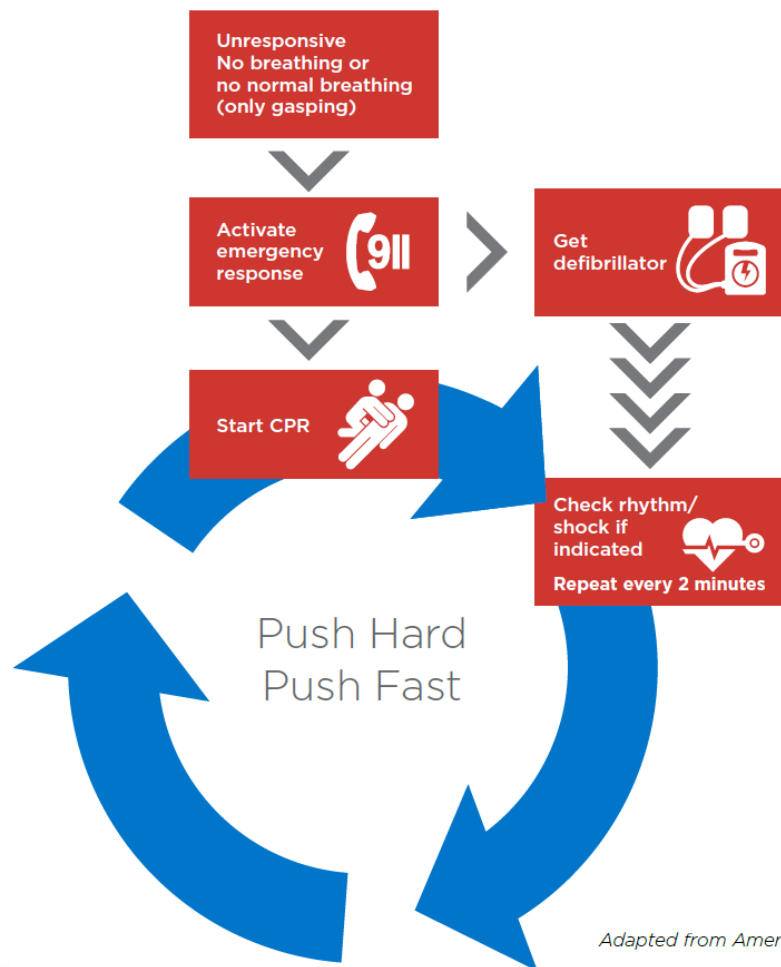
# School Healthcare Accommodations



- **Health & Safety** – hand washing, sanitizing objects, food/drinks, illness in the school, peer vaccination rates, etc.
- **Physical Activities** – self-limit activity without grade penalty, activity restrictions, and reminding the child to take breaks if symptoms arise
- **Water & Bathroom** – water bottle, encouragement to drink, and bathroom use as needed
- **School Absences** – excuse absences with appropriate medical documentation and plan for how to handle missed school work
- **COVID-19** – face masks, social distancing, hygiene, and COVID-19 exposure guidelines



## Cardiac Emergency Response Team Protocol



*Adapted from American Heart Association, 2010*

[www.ProjectADAM.com](http://www.ProjectADAM.com)  
[ProjectADAMWI@chw.org](mailto:ProjectADAMWI@chw.org)  
(414) 266-1666

## Heart Safe School Checklist

1. **Automated External Defibrillator (AED)** – accessible, clear signage, first responder kit, and routine maintenance
2. **Cardiac Emergency Response Team** – designate a team of 5-10 staff with a site coordinator
3. **Cardiac Emergency Response Plan (CERP)** – create CERP, review annually, emergency communication code, coordinate with local emergency medical services, and disseminate CERP to all school & extracurricular groups
4. **Cardiopulmonary Resuscitation (CPR) & AED** – biannual CPR retraining; annual training on sudden cardiac arrest, AED location, & CERP
5. **CERP Drill Checklist** – annual drills and review

# Hospital-School Partnerships

Hospital and school teams both work hard to achieve the **best outcomes** for children.

We have **different** areas of expertise.

Let's **collaborate** to promote the health- and school-related quality of life for our shared patient-student.

## Contact the Hospital Team – School Intervention Program **(414) 266-4494**

- **Health Concerns** – report health concerns or significant changes in energy, attention, mood, behavior, or concentration to Johnny's medical team
- **School Absences** – inquire about excessive or unexcused absences
- **Medical Documentation** – request cardiac, neuropsychological, or other medical documentation
- **Health & Safety** – ask questions about school health and safety
- **Heart Safe Schools** – get connect with our Project ADAM team for cardiac emergency response guidance
- **School Planning** – ask questions about neuropsychological risks and diagnoses
- **School Meetings** – invite us to attend school health and educational planning meetings