



TOP TEN THINGS TO KNOW

Cardiovascular Monitoring of Children and Adolescents with Heart Disease Receiving Stimulant Drugs

1. Attention deficit hyperactivity disorder (ADHD) is the most common neurobehavioral disorder of childhood, with over 2.5 million children taking medications yearly. .
2. Stimulant medications are known to increase heart rate and blood pressure in children, although these cardiac side effects have not generally been thought to be clinically significant. However, there may be a potential for severe adverse events in some children with ADHD and certain forms of congenital heart disease or arrhythmias with a predisposition for sudden cardiac arrest.
3. Sudden cardiac death has been reported to the FDA in children and adolescents taking stimulant medications, although no studies have proven a causal association.
4. Since February 2007, the FDA has required all manufacturers of drug products approved for ADHD treatment to develop patient *Medication Guidelines* to alert patients to possible cardiovascular risks.
5. This AHA scientific statement provides the practitioner with tools to answer the following questions in patients who have ADHD.
 - How to know if the child has heart disease or a heart problem or heart defect.
 - What to do if you know the child has heart disease or a heart problem or heart defect.
 - What to do if the child has heart disease or a heart problem or a heart defect known to be associated with sudden cardiac death.
6. Conditions that are associated with sudden cardiac arrest/death in children are often subtle and may not be diagnosed at the time that an ADHD drug is being considered.
7. Recommendations for assessment of these children include:
 - Patient and Family History (Class I, Level of Evidence [LOE] C)
 - Physical Exam (Class I, LOE C)
 - Electrocardiogram (Class IIa, LOE C) [**NOTE:** In 2007 the AHA issued recommendations for preparticipation screening for cardiovascular conditions in competitive athletes. Their conclusion was that mass ECG screening of competitive athletes was not feasible. The current paper makes recommendations for screening for cardiac conditions in children and adolescents who have been diagnosed with ADHD **only** for the subset of for whom ADHD medication is prescribed. Not all children/adolescents who are diagnosed with ADHD are treated with medication.]
 - Pediatric cardiology consult if concerns are raised by history, physical exam or ECG. (Class I, LOE C)
8. Continuing assessment of the patients on stimulant medication is indicated periodically by the patient's physician regarding new potential cardiac symptoms, new family history and new physical findings. (Class I, LOE C)
9. It is reasonable to use stimulants with caution in patients with known congenital heart disease and/or arrhythmias, if these patients are stable and under the care of a pediatric cardiologist.
10. Future studies are needed to assess the true risk of SCA in association with stimulant drugs in children and adolescents with and without heart disease.
 - Studies on the efficacy of ECG screening in children are needed.
 - A Sudden Cardiac Death/Arrest registry in children is needed.