



BICUSPID AORTIC VALVE (BAV) & SPORTS PARTICIPATION

GUIDANCE FOR CHILDREN & ADOLESCENTS WITH DILATED AORTA

BICUSPID AORTIC VALVE

WHAT IS BICUSPID AORTIC VALVE (BAV)?

BAV is a congenital heart condition in which the aortic valve has two leaflets instead of three. Some children and adolescents with BAV may also develop enlargement (dilation) of the aorta, requiring regular monitoring and individualized exercise recommendations.



BEFORE SPORTS CLEARANCE – COMPREHENSIVE EVALUATION



DETAILED MEDICAL & FAMILY HISTORY

Includes aortic aneurysm, dissection, sudden cardiac death, and connective tissue disorders.



BLOOD PRESSURE ASSESSMENT

Routine blood pressure evaluation is essential.



REVIEW OF SYMPTOMS

- Chest pain
- Shortness of breath
- Dizziness or fainting
- Palpitations
- Exercise intolerance



ECHOCARDIOGRAM TO ASSESS

- Valve function
- Aortic root size
- Ascending aorta size



CARDIAC MRI OR CT

When echo windows are inadequate or dilation is significant.

AORTIC DILATION SEVERITY (USING Z-SCORES)



MILD DILATION Z-SCORE 2 – 3

- Recreational sports allowed
- Most competitive sports allowed
- Aerobic exercise encouraged
- Annual cardiology follow-up



MODERATE DILATION Z-SCORE 3 – 4

- Most aerobic and dynamic sports permitted
- Avoid heavy weightlifting
- Avoid maximal isometric exercise
- Follow-up every 6–12 months
- Individualized sports clearance recommended



SEVERE DILATION Z-SCORE > 4

- Restrict high-intensity competitive sports
- Avoid heavy resistance training
- Avoid collision/contact sports
- Continue low-to-moderate intensity aerobic exercise
- Close follow-up with Pediatric Cardiology



GENERALLY ENCOURAGED



Walking



Cycling



Swimming



Jogging



Hiking



Aerobic Fitness Activities

ACTIVITIES REQUIRING INDIVIDUAL ASSESSMENT



Soccer



Basketball



Tennis



Cross-Country Running



Competitive Swimming

USUALLY RESTRICTED WITH SIGNIFICANT AORTIC DILATION



Heavy Weightlifting



Olympic Lifting



Wrestling



Rugby



Football Line Positions



Strongman Competitions

WHEN SHOULD RESTRICTIONS INCREASE?



Rapid increase in aortic dimensions



Significant aortic stenosis or regurgitation



Family history of aortic dissection



Development of symptoms



FOLLOW-UP RECOMMENDATIONS



Mild Dilation

Echocardiogram every 12 months



Moderate to Severe Dilation

Echocardiogram every 6–12 months



Earlier Evaluation Needed If:

- New symptoms develop
- Competitive training intensity increases
- Rapid growth of the aorta is suspected



Key take-away: Most asymptomatic children and adolescents with BAV and mild-to-moderate stable aortic dilation can safely participate in aerobic and many competitive sports. Heavy resistance training and activities causing marked blood pressure surges should be avoided when significant aortic dilation is present. Regular follow-up imaging is essential.



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