

Sudden Cardiac Arrest in Athletes

Vishal Arora, MD

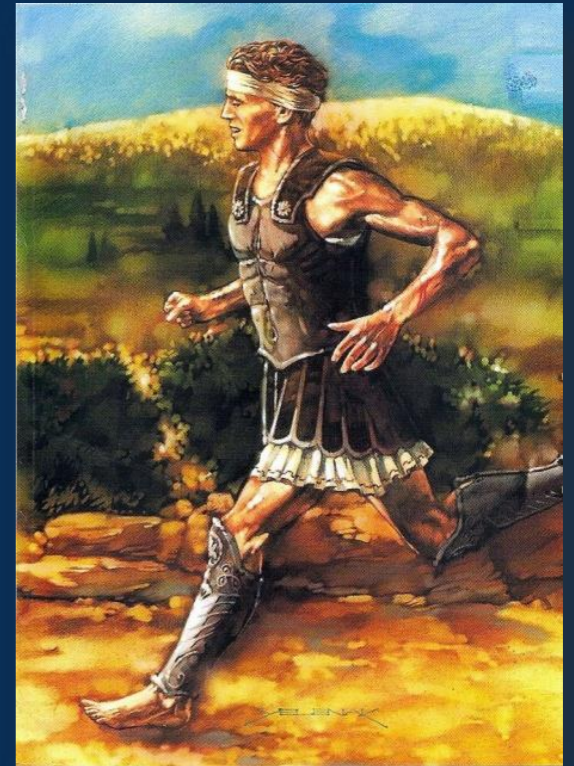


Jeremy Nelson and Nick Blakely Sudden Cardiac Arrest Prevention Act



History

- Pheidippides
 - Inspiration for marathon
- Ran from Marathon to Athens to deliver news of a Greek military victory against the Persians at the Battle of Marathon
- Suddenly collapsed and died



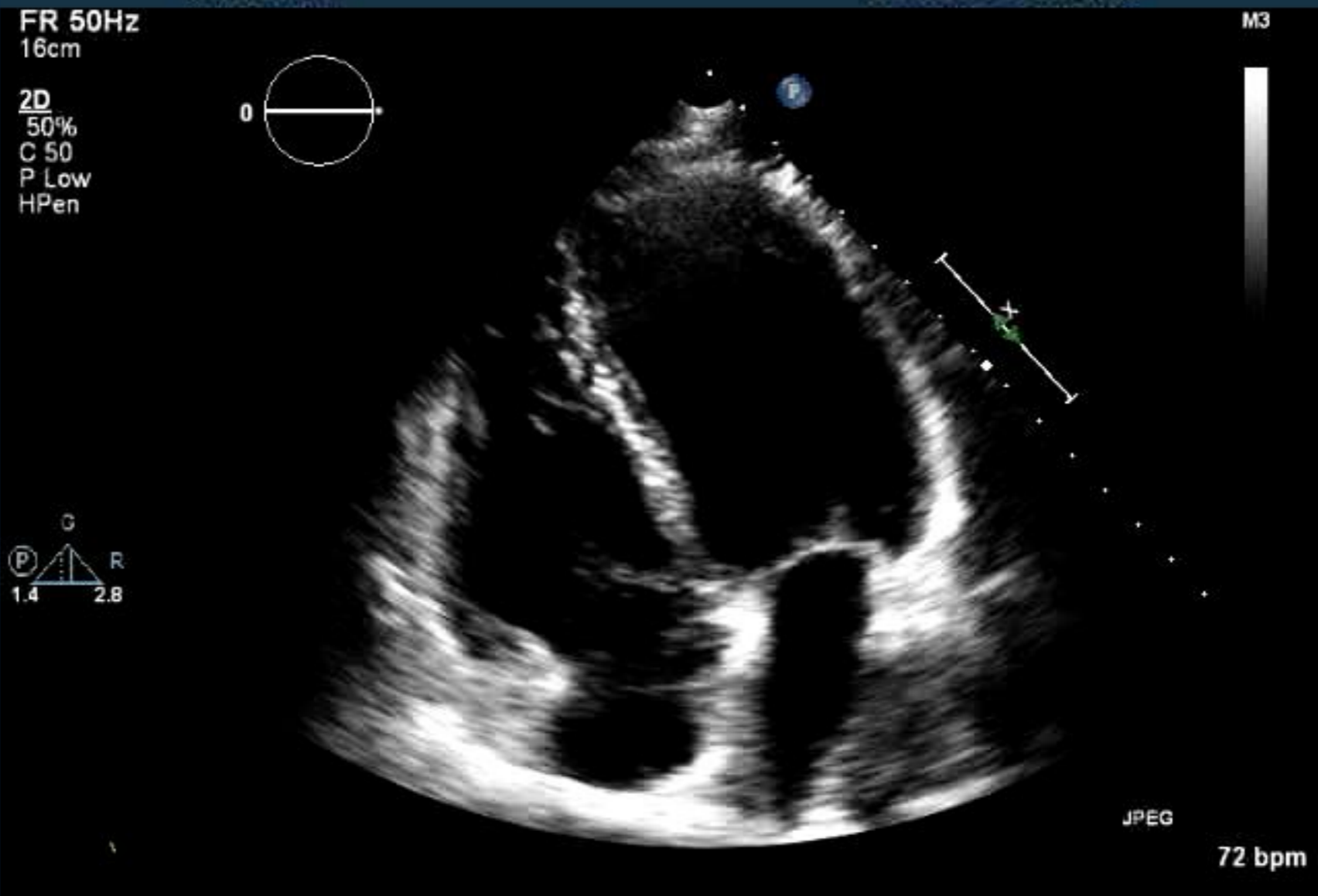


Hank Gathers

Lossy compression - not intended for diagnosis

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X5-1/MCG Chroma



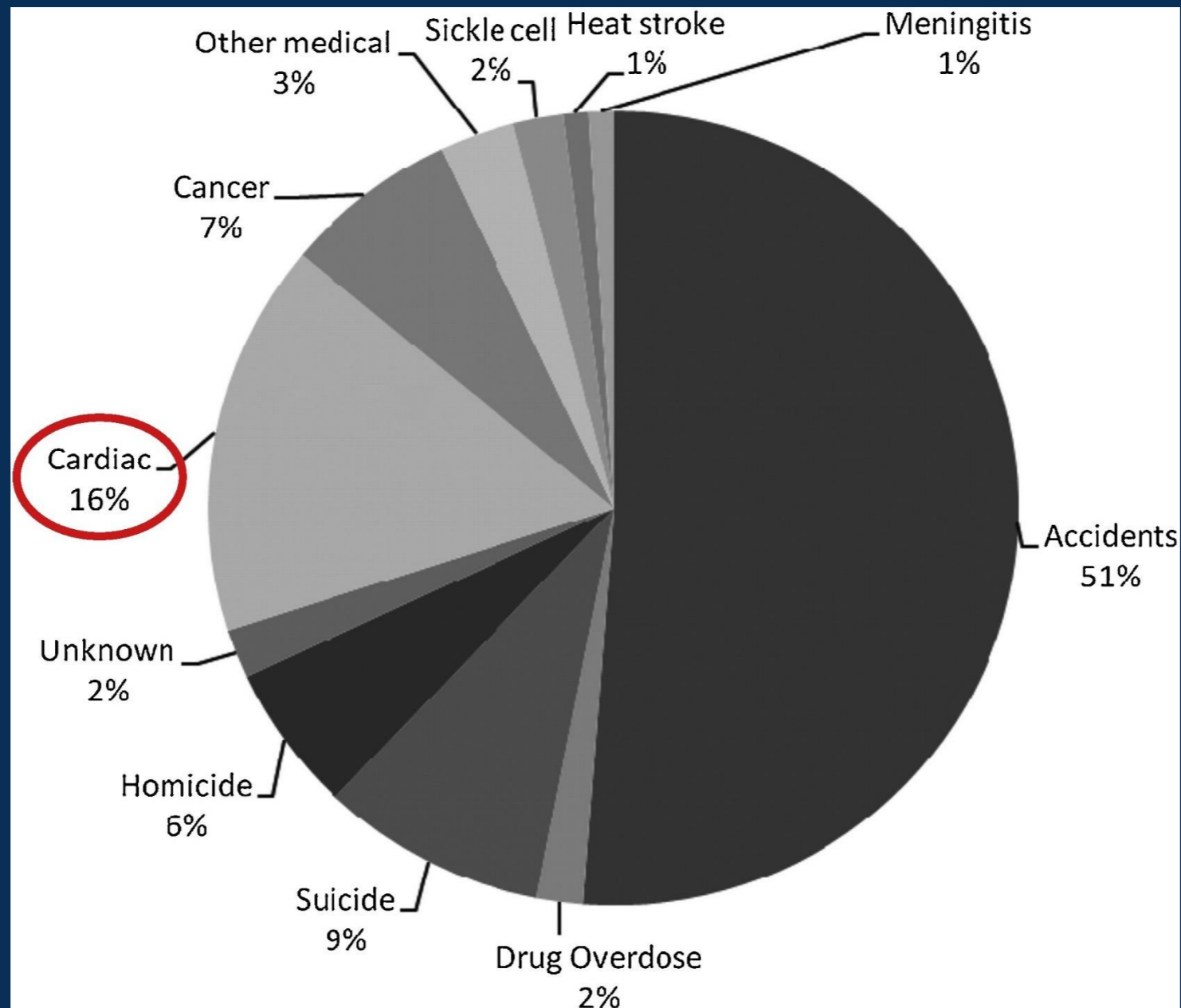
Sudden Cardiac Arrest

- Rare but devastating event
- Interruption in normal function of the heart leading to loss of pulse
- Loss of consciousness leading to death
- 360,000 events each year

Sudden Cardiac Arrest

- Basketball and football
- Males:females 9:1
- African Americans

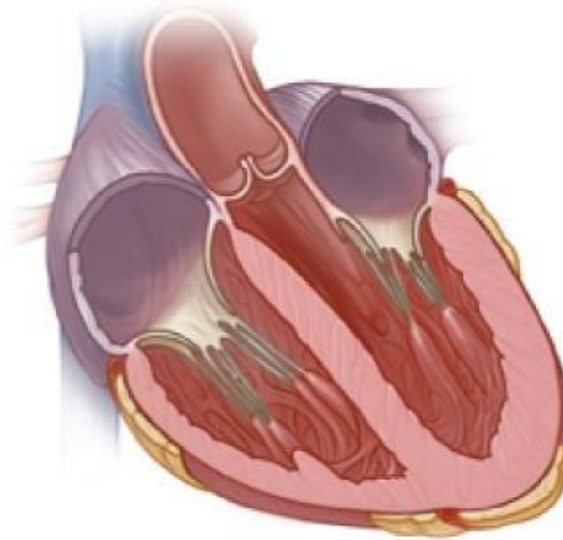
Causes of Sudden Death in Athletes



Causes of Sudden Cardiac Arrest in Athletes

Cardiomyopathy
HCM, DCM, RCM,
ARVC, LVNC

Arrhythmia
e.g. LQTS, CPVT,
Brugada, SQT

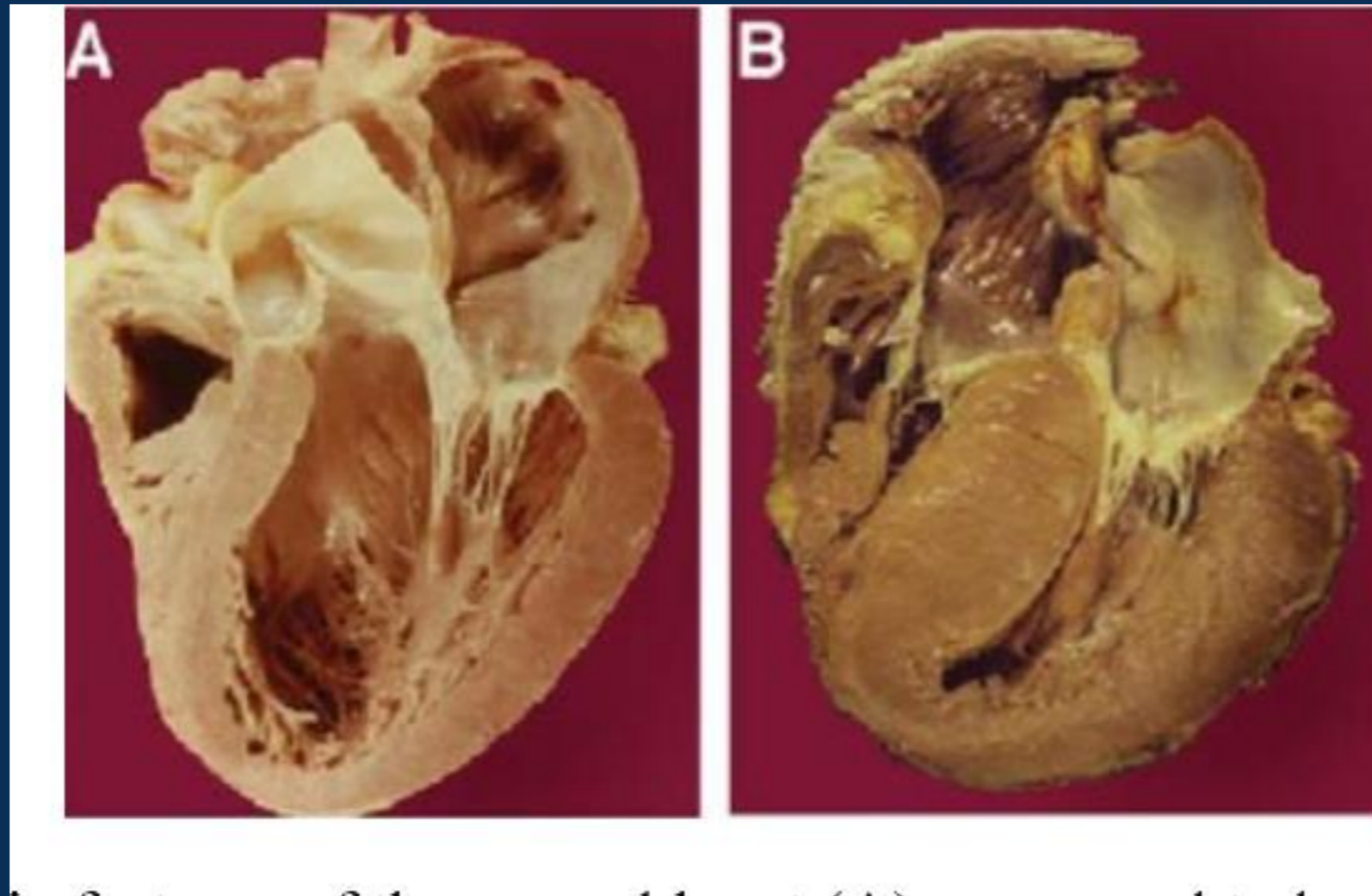


Vascular
e.g. Marfan,
Ehler-Danlos IV

Metabolic
e.g. FH,
homocystinuria

Congenital
e.g. coronary
anomalies

Hypertrophic Cardiomyopathy



Screening History and Physical

Personal history

1. Exertional chest pain/discomfort
2. Unexplained syncope/near-syncope
3. Excessive exertional and unexplained dyspnea/fatigue, associated with exercise
4. Prior recognition of a heart murmur
5. Elevated systemic blood pressure
6. Prior sport restriction
7. Prior cardiac testing

Family history

- 8. Premature death before age 50 years due to heart disease in ≥ 1 relative**
9. Disability from heart disease in a close relative <50 years of age
10. Specific knowledge of certain cardiac conditions in family members: hypertrophic or dilated cardiomyopathy, long-QT syndrome or other ion channelopathies, Marfan syndrome, or clinically important arrhythmias

Physical examination

- 11. Heart murmur**
12. Femoral pulses to exclude aortic coarctation
13. Physical stigmata of Marfan syndrome
14. Brachial artery blood pressure (sitting position)



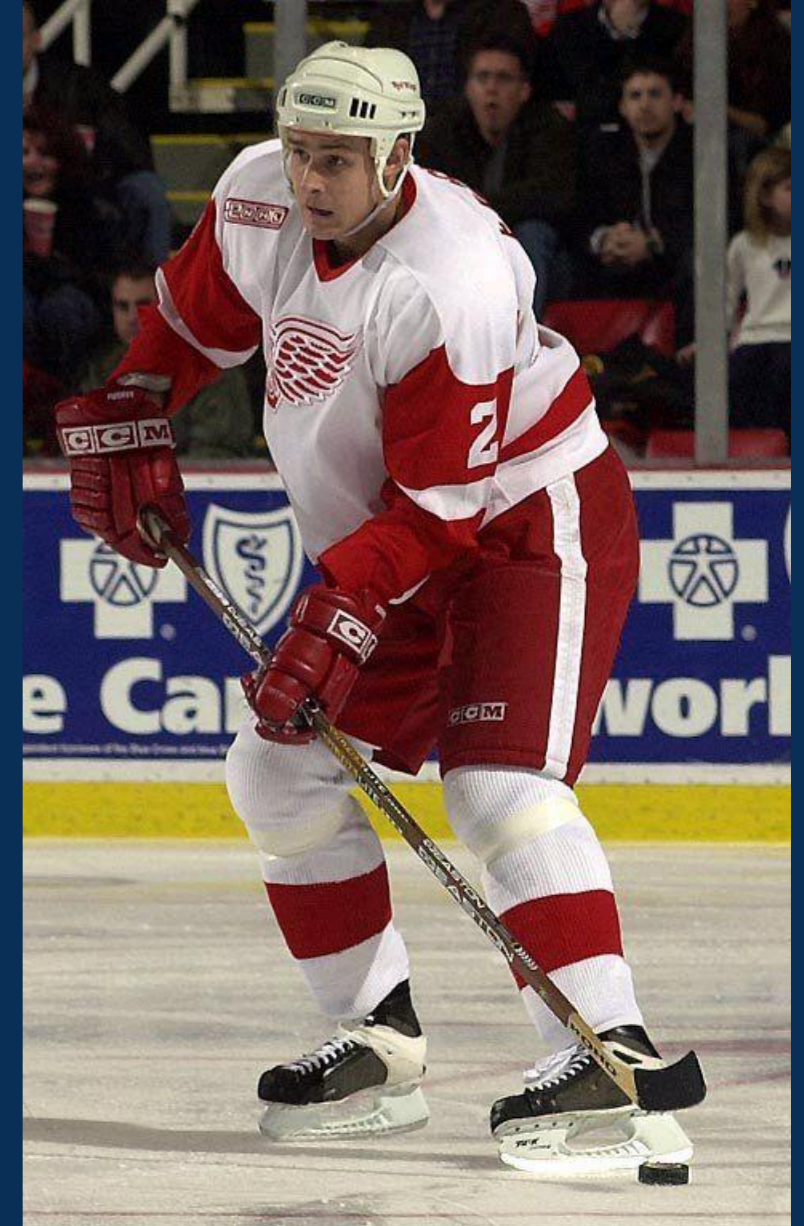
**American
Heart
Association®**

CPR & First Aid

- Cardiac Emergency Response Plan
- Cardiac Emergency Response Team
- heart.org/handsonlycpr



Sudden Cardiac Arrest



Jason Collier Thomas Herrion Jiri Fischer

Conclusion

- SCA in athletes is a rare, but highly visible event
- Diverse range of causes
- May be preventable in some cases
- Early recognition of loss of pulse and rapid response with CPR and AED is key