

Commotio Cordis

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MIAMI 2023
VALVES
MiamiValves.org

The Sussex Express.

Sussex Local News.

HASTINGS & ST. LEONARDS.

KILLED BY A CRICKET BALL.—On Tuesday night the Borough Coroner held an inquest at the Market Hall on the body of a Grammar School boy, named John Henry Blomfield, 13 years of age, and the son of the well-known local photographer.—The evidence was that on Monday night the deceased was with other boys of the school practising in the nets in the Cricket Ground. Five boys were bowling and the deceased was batting. A ball delivered by Frank Cave struck deceased in the heart, and he fell and never spoke again. Deceased was playing forward at the ball, which, according to witnesses, was not a very swift one. Dr. Kraemar was called, and found deceased dead. He found an impact mark between the fifth and sixth rib, such as might be caused by a cricket ball. Death resulted from shock to the heart. If deceased had been over 20 his ribs would have been stronger, and a fatal result would have been almost impossible. In his (the doctor's) opinion the ball must have been a swift one.—The jury found a verdict of "Accidental death," and expressed sympathy with the parents.

25th June 1898

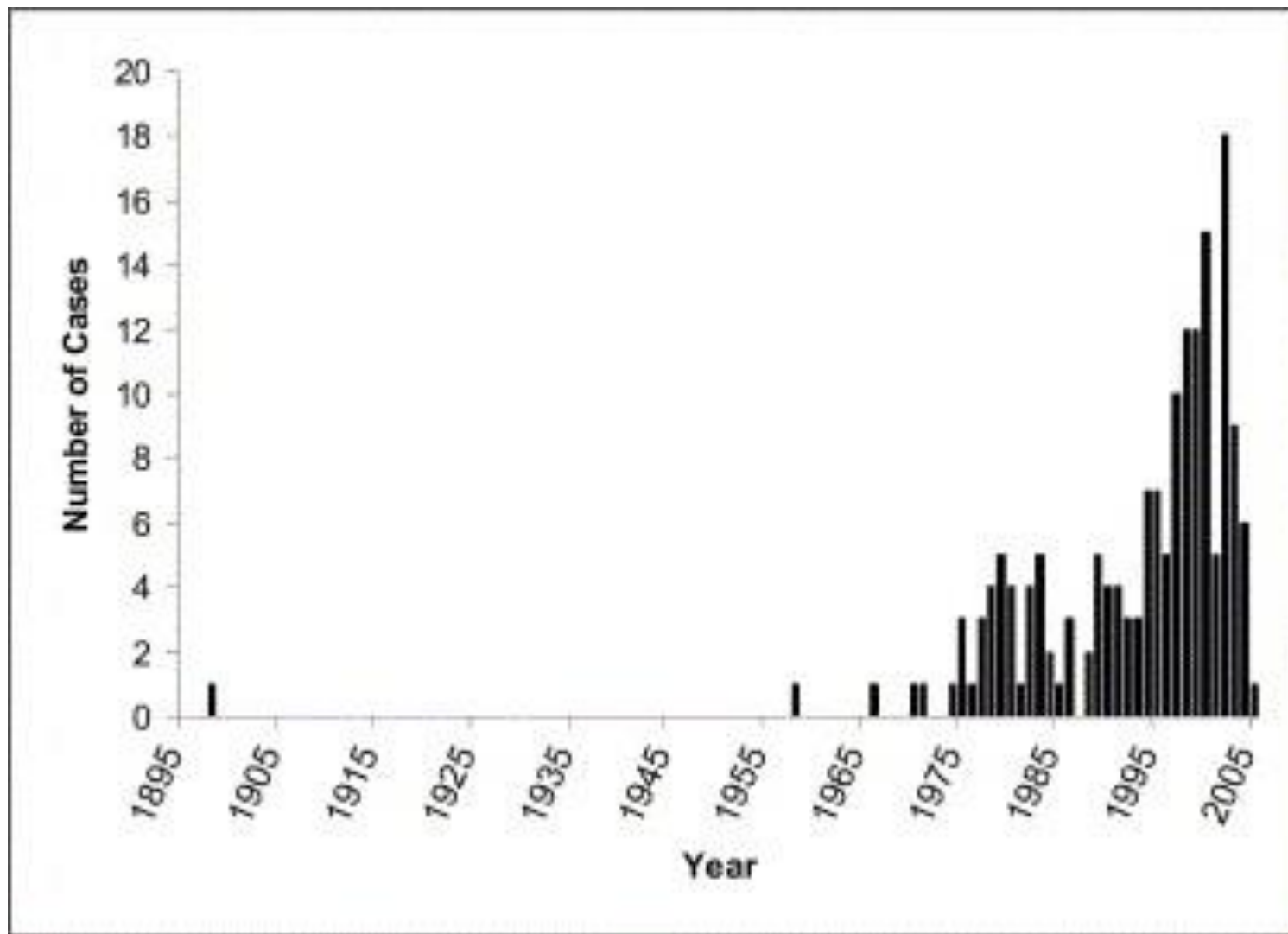


Table 1. Causes of Sudden Death in 387 Young Athletes.*

Cause	No. of Athletes	Percent
Hypertrophic cardiomyopathy	102	26.4
Commotio cordis	77	19.9
Coronary-artery anomalies	53	13.7
Left ventricular hypertrophy of indeterminate causation†	29	7.5
Myocarditis	20	5.2
Ruptured aortic aneurysm (Marfan's syndrome)	12	3.1
Arrhythmogenic right ventricular cardiomyopathy	11	2.8
Tunneled (bridged) coronary artery‡	11	2.8
Aortic-valve stenosis	10	2.6
Atherosclerotic coronary artery disease	10	2.6
Dilated cardiomyopathy	9	2.3
Myxomatous mitral-valve degeneration	9	2.3
Asthma (or other pulmonary condition)	8	2.1
Heat stroke	6	1.6
Drug abuse	4	1.0
Other cardiovascular cause	4	1.0
Long-QT syndrome§	3	0.8
Cardiac sarcoidosis	3	0.8
Trauma involving structural cardiac injury	3	0.8
Ruptured cerebral artery	3	0.8

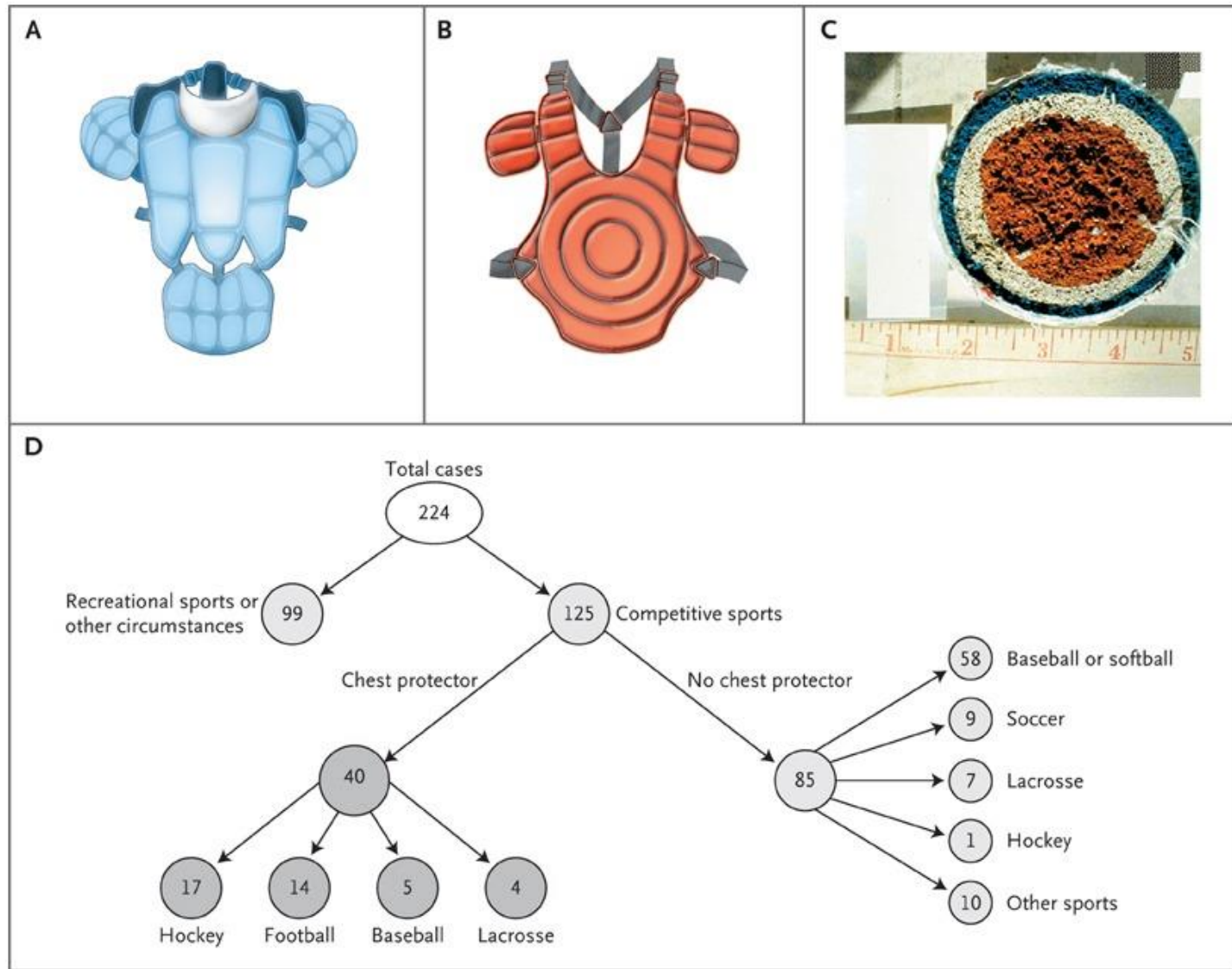
* Data are from the registry of the Minneapolis Heart Institute Foundation.^{6,28}

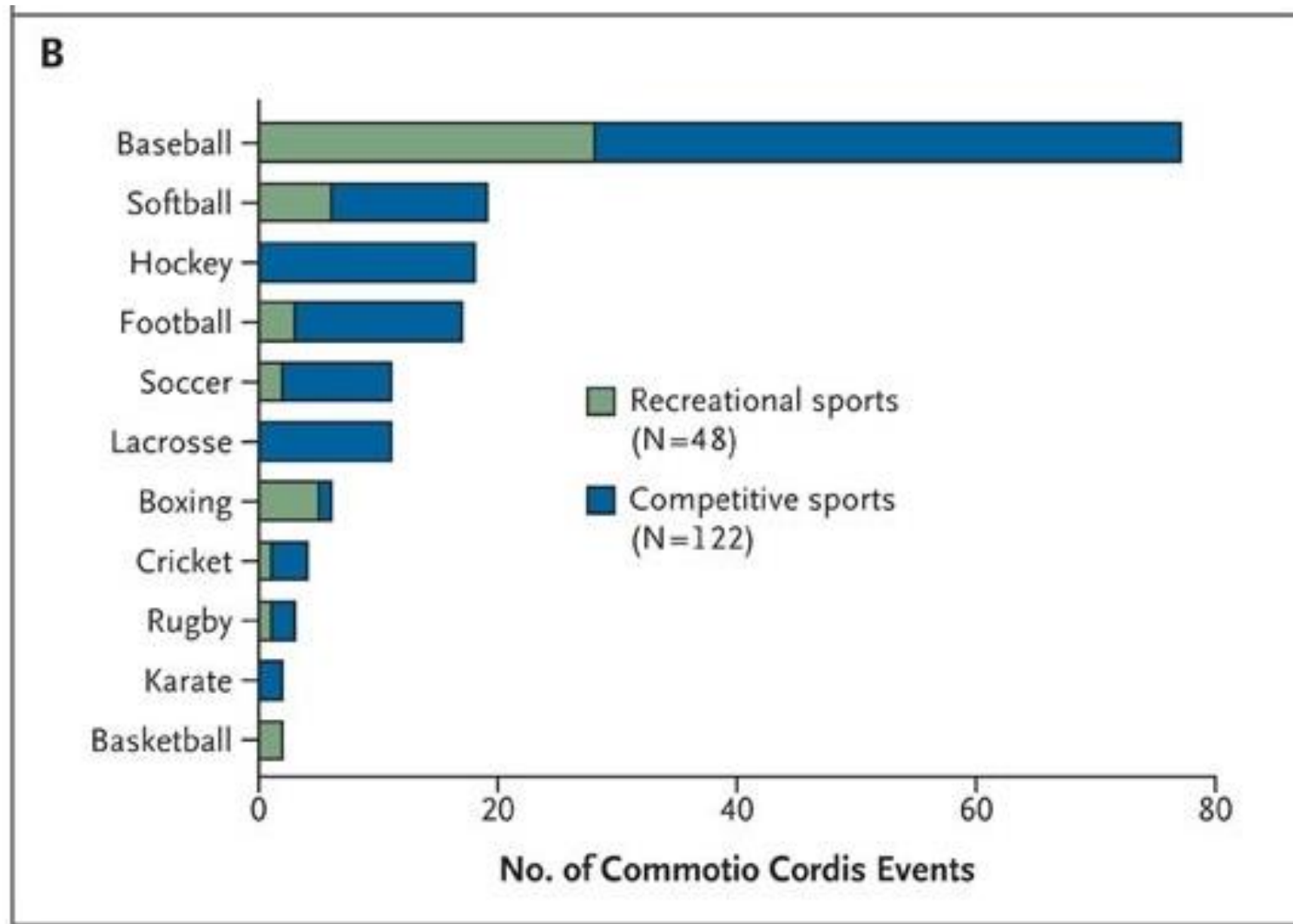
† Findings at autopsy were suggestive of hypertrophic cardiomyopathy but were insufficient to be diagnostic.

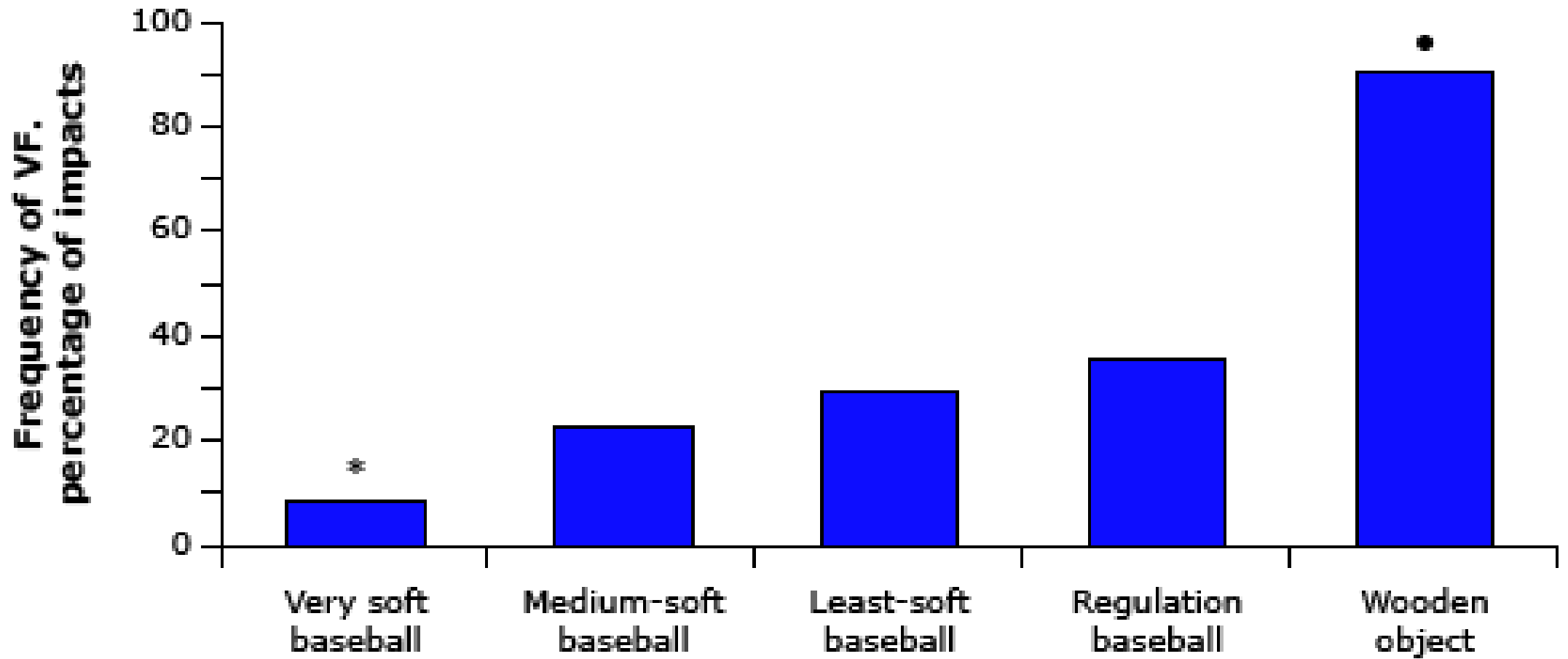
‡ Tunneled coronary artery was deemed the cause in the absence of any other cardiac abnormality.

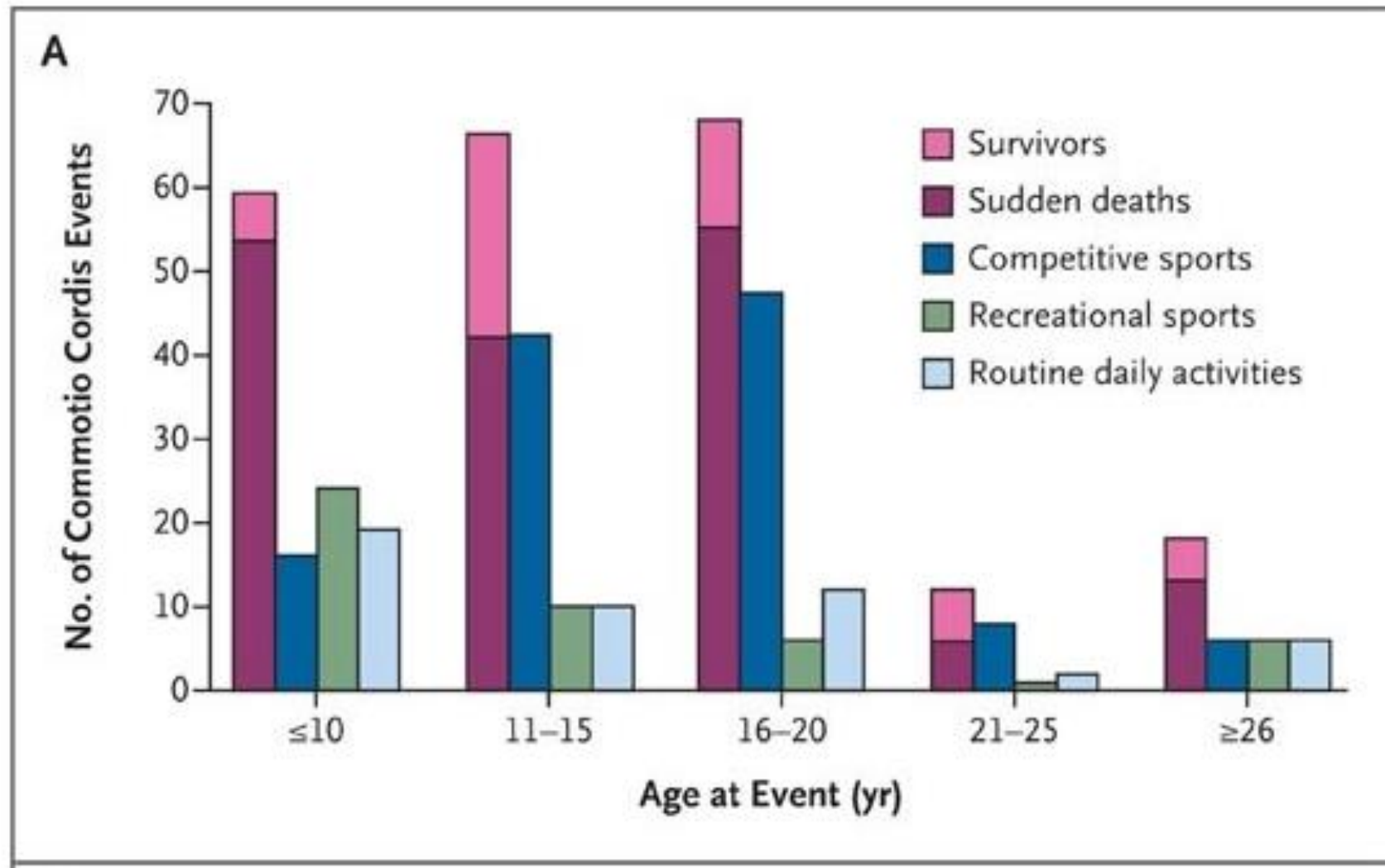
§ The long-QT syndrome was documented on clinical evaluation.

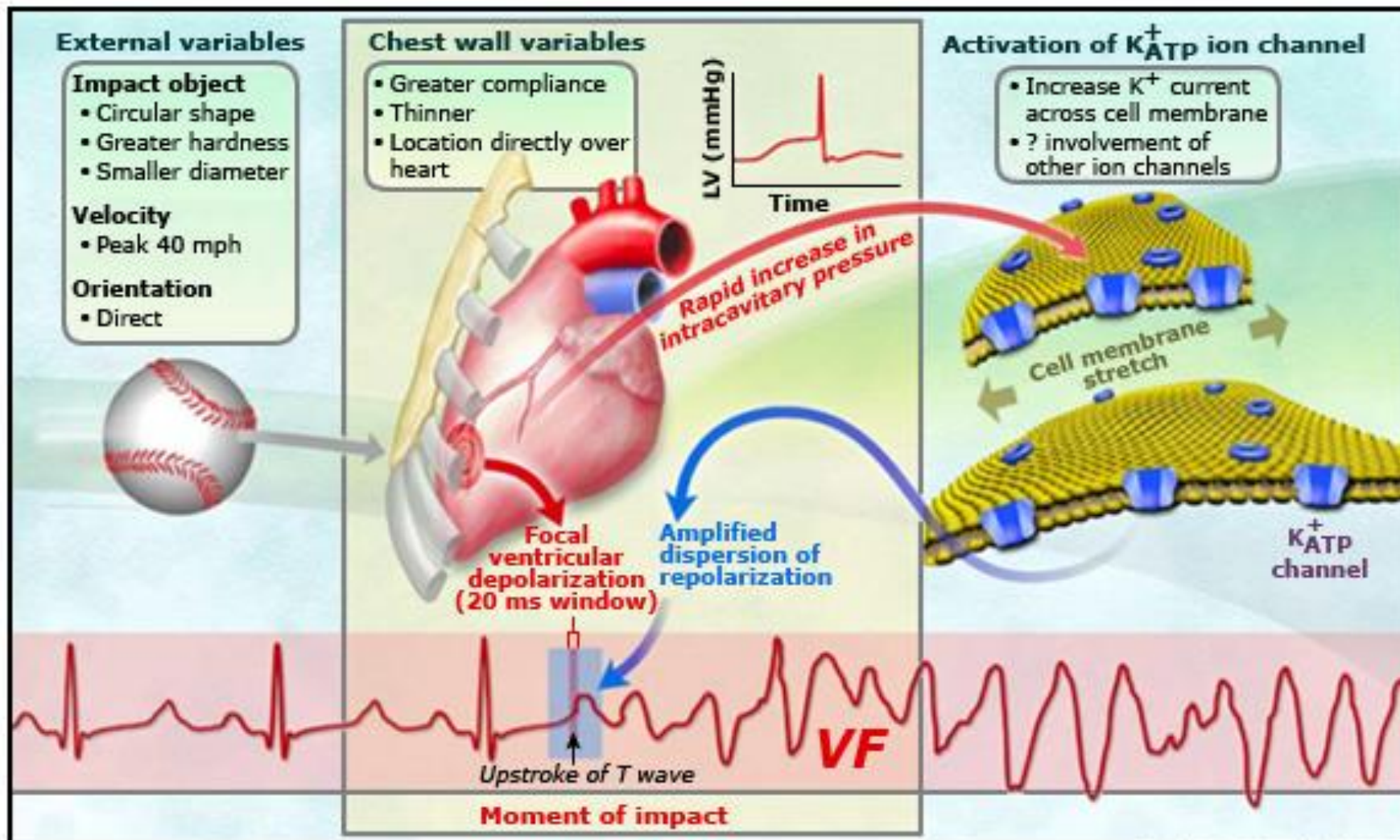
Maron, B. N Engl J Med
2003; 349:1064-1075
DOI:
10.1056/NEJMra022783





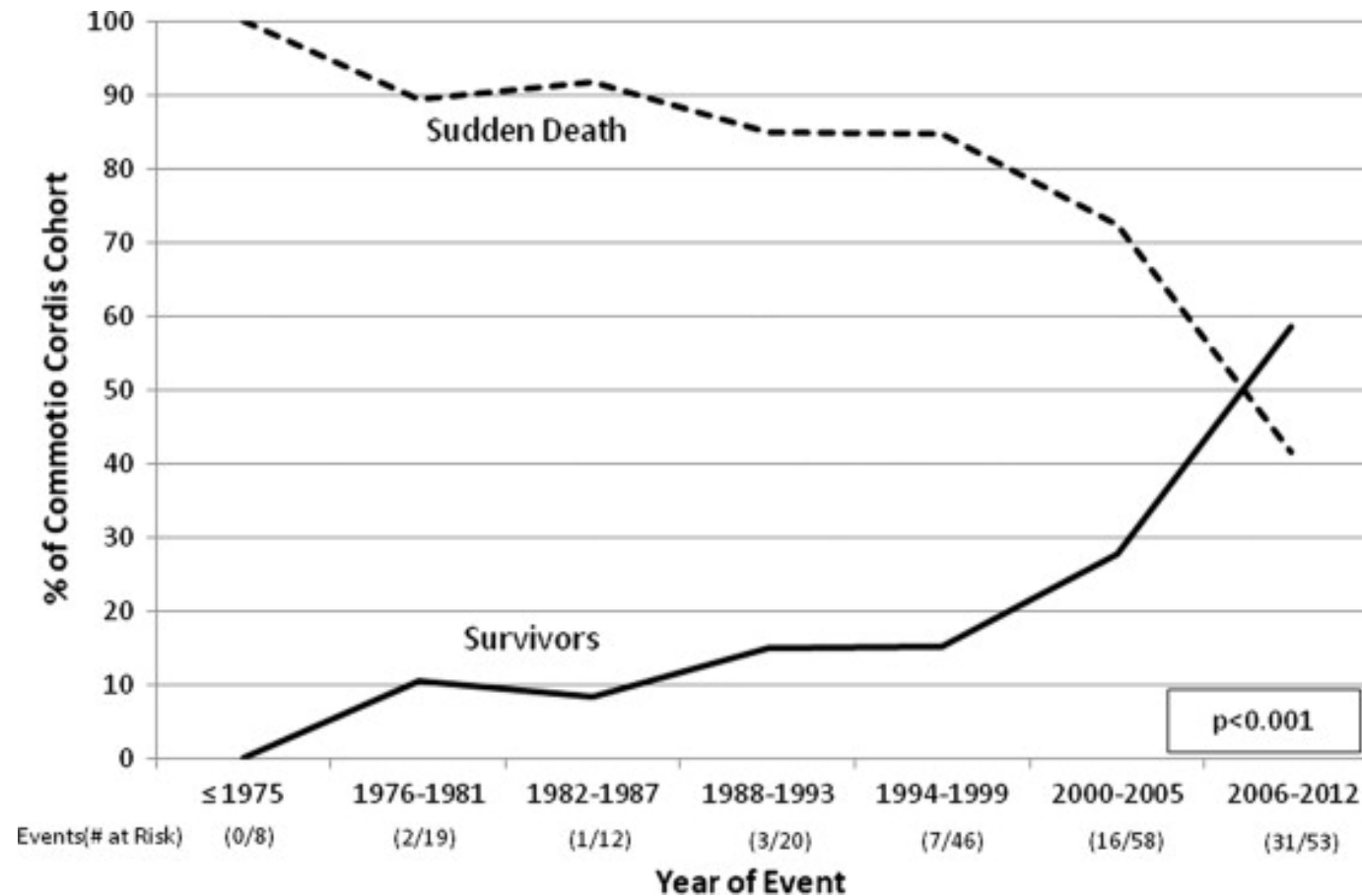






Steven Moskowitz, Advanced Medical Graphics

Survival Improving Over Time



Importance of AEDs

Variable	Survivors	Non survivors	P
No of events	60	156	--
Age (y) (mean, range)	16 (1.5–51)	14 (0.2–50)	0.16
Bodily contact	20 (33)	62 (40)	0.39
Chest padding, competitive sports, n (%)			
Yes	14 (31)	28 (40)	
No	30 (67)	41 (59)	0.61
Unknown	1 (2)	1 (1)	
AED used on-site, n (%)			
Yes	11 (18)	5 (3)	
No	49 (82)	151 (97)	<.001
On-site defibrillation: EMT, AED, or both, n (%)			
Yes	37 (62)	66 (42)	
No	23 (38)	90 (58)	0.014
Time to resuscitation, n (%)			
<3 min	48 (96)	73 (65)	
>3 min	2 (4)	40 (35)	<.001

Post Arrest Care

- R/o alternative diagnoses
 - HCM
 - ARVD
 - Anomalous Coronary Arteries
 - Long QT and Brugada
 - Catecholaminergic PMVT
 - Myocarditis
- ECG, echo, monitoring, exercise stress test, and cMRI
- Individualized decision regarding return to athletics
- If no structural heart disease detected than no need for ICD

Thank You

