

SESSION — TO SCREEN OR NOT TO SCREEN:
THE ITALIAN/EUROPEAN AND AMERICAN POINT OF VIEW

MORE AEDS: A BETTER IDEA THAN SCREENING TO PREVENT SUDDEN DEATH ON THE ATHLETIC FIELD?

ELOI MARIJON, M.D., PH.D.

*European Georges Pompidou Hospital, Paris
Cardiology Department, Clinical Electrophysiology Unit*



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BETTER CURE THAN PREVENT??(!)



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CONFLICT OF INTEREST

None



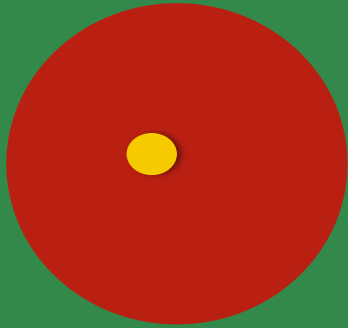
SCA AMONG ATHLETES



- **Highly visible public event**
- **Healthiest segment of society**
- **Highly covered by media**

Marc-Vivien Foe, 23 June 2003

DECREASE SPORTS SCD BURDEN



1) Decrease the Number of SCA – ^{Early} PREVENTION

2) Increase Number of Survivors – TREATMENT

Athletes in the Field

(not correctly scaled!)

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DIFFERENT WAYS FOR PRIMARY PREVENTION

SCREENING



EDUCATION

Cœur et activité sportive :

Les 10 règles d'or
« Absolument, pas n'importe comment »

Recommandations édictées par le Club des Cardiologues du Sport

- 1** Je signale à mon médecin toute douleur dans la poitrine ou tout essoufflement anormal survenant à l'effort.
- 2** Je signale à mon médecin toute palpitation cardiaque survenant à l'effort ou juste après l'effort.
- 3** Je signale à mon médecin tout malaise survenant à l'effort ou juste après l'effort.
- 4** Je respire toujours un sifflement et une récupération de 10 minutes de mes activités sportives.
- 5** Je bois 3 ou 4 gorgées d'eau toutes les 30 minutes d'entraînement comme en compétition.
- 6** J'évite les activités intenses par des températures extérieures < -15°C ou > 30°C et lors des pics de pollution.
- 7** Je ne fume jamais.
- 8** Je ne consomme jamais de substance dopante et/ou de médication en général.
- 9** Je ne fais pas de sport intense si j'ai de la fièvre ou dans les 3 jours qui suivent un épisode grippal (fièvre + toux + fatigue).
- 10** Je pratique un bilan médical avant de reprendre une activité sportive intense (plus de 30 ans pour les hommes et plus de 45 ans pour les femmes).

*Quels que soient leur âge, leur niveau d'entraînement et de performance ou les résultats d'un précédent bilan cardiologique.

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Participants)

Primary Prevention

WHY LESS ATTENTION FOR TREATMENT?



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STILL CONSIDERED AS A FATAL CONDITION?



Despite major investments, survival after SCA remains extremely low and stable in the general population

Sasson et al. Circ Cardiovasc Qual Outcomes 2009

**PREVENTION AND TREATEMENT ARE
COMPLEMENTARY, NOT COMPETITIVE!!!!**



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SO, THE REAL QUESTION IS:

**TO WHICH EXTENT, TREATMENT OF SCA
MAY DECREASE SPORTS SCD BURDEN?**



ATHLETIC FIELD: FAVORABLE TO SURVIVE!

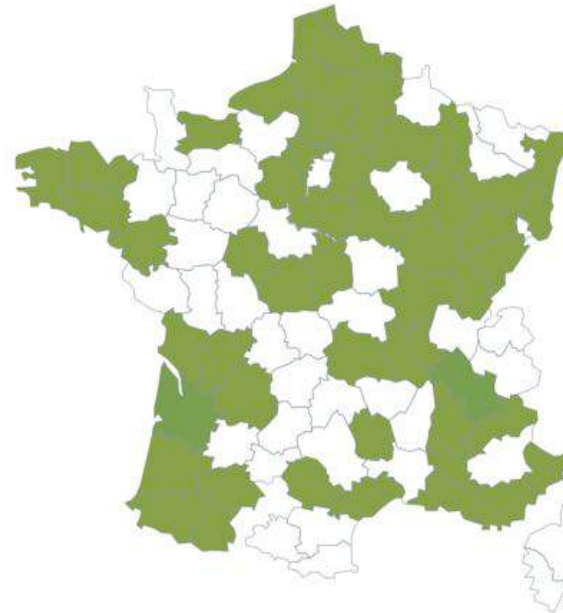
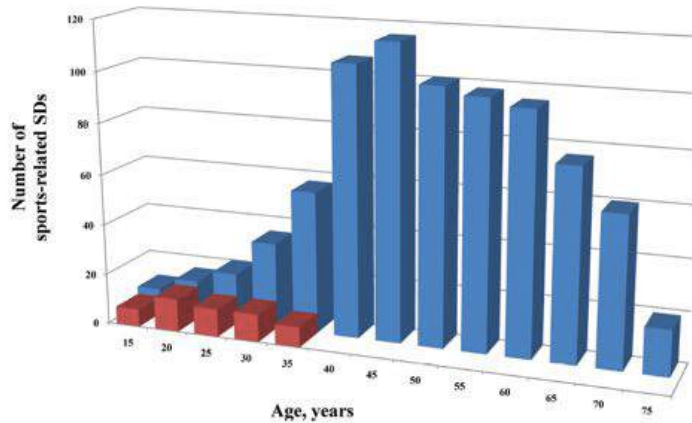
- **Relatively young age, no comorbidity**
 - **Sudden collapse in front of many witnesses**
— more likely to be trained to BLS
 - **Short response time possible**
 - **Higher access to defibrillation**
- => We may expect very high survival**

WHAT IS THE ACTUAL SURVIVAL RATE AFTER SCA ON THE ATHLETIC FIELD??



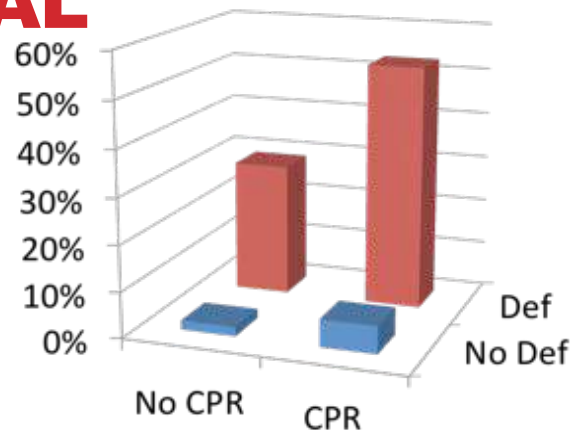
	Periods	Age Range	Population
French Registry	2005-2010	10-75	33 Millions

820 Sports SCA In the General Population

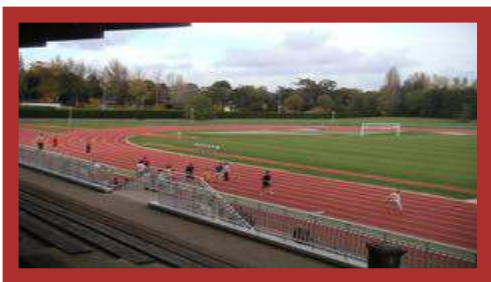


RELATIVELY GOOD SURVIVAL

SURVIVAL
at hospital discharge
15.7% (95% CI 13.2–18.2)



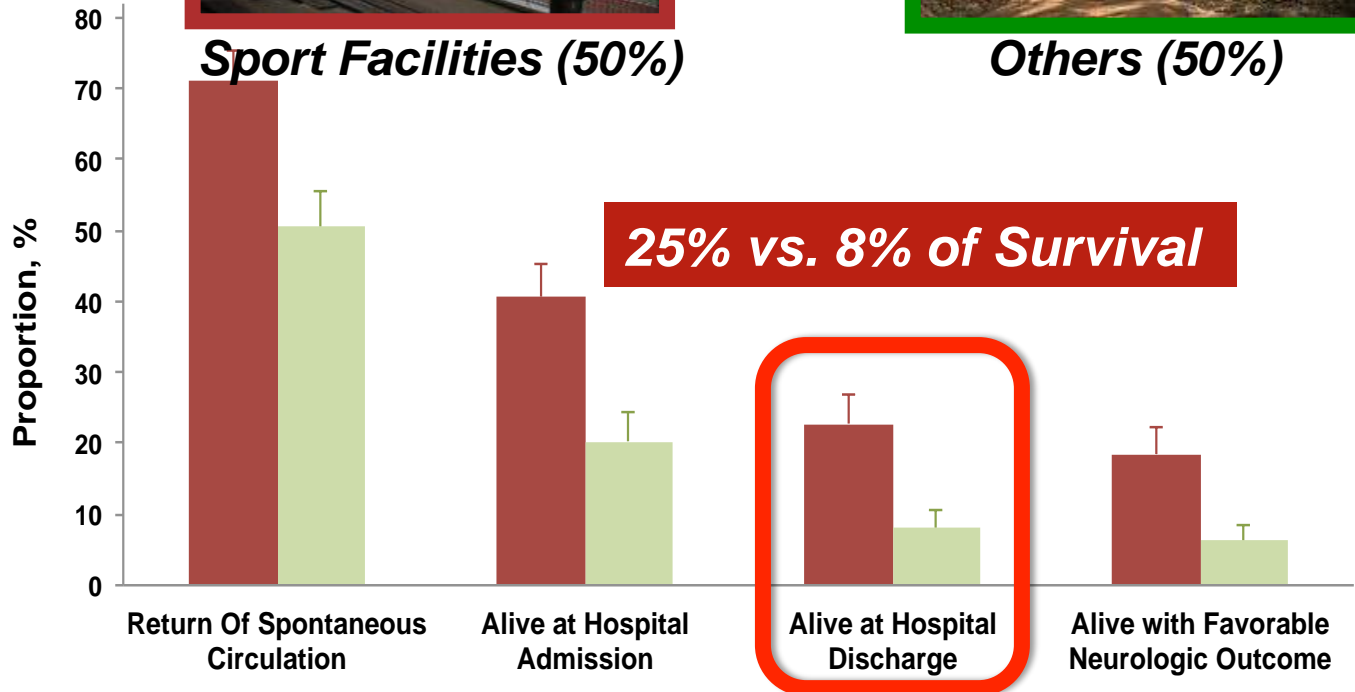
	OR	95%CI	P Value
Bystander CPR	3.73	2.19-6.39	<0.0001
Delay for intervention	1.32	1.08-1.61	0.006
Cardiac defibrillation	3.71	2.07-6.64	<0.0001



Sport Facilities (50%)



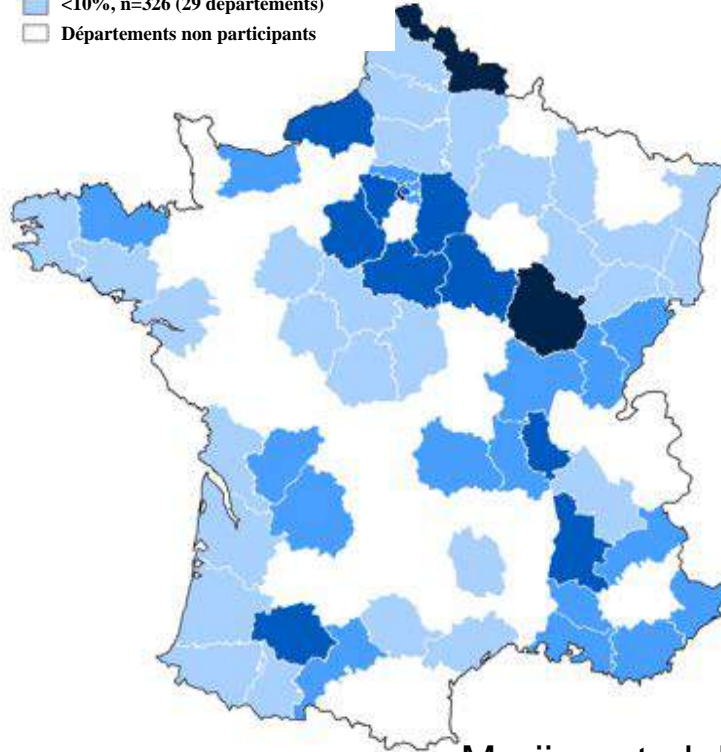
Others (50%)



Marijon et al. Am Heart J 2015

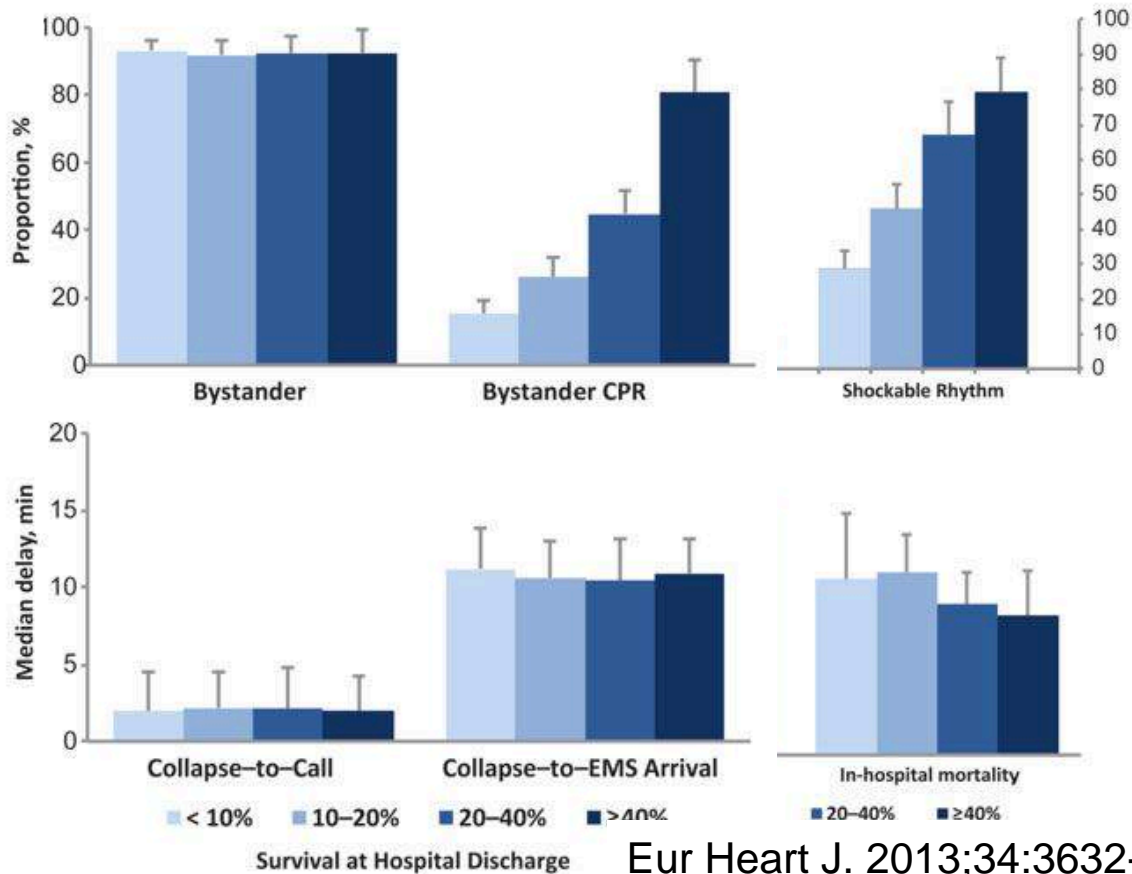
MAJOR REGIONAL DISPARITIES

- >40%, n=68 (3 départements)
- 20–40%, n=189 (10 départements)
- 10–20%, n=237 (18 départements)
- <10%, n=326 (29 départements)
- Départements non participants



Up to 50% of
survival to
hospital
discharge in
two districts

REFLECT OF BYSTANDER'S CPR





Exercise-related out-of-hospital cardiac arrest in the general population: incidence and prognosis

Jocelyn Berdowski¹, Margriet F. de Beus^{2,3}, Marieke Blom⁴, Abdennasser Bardai⁴, Michiel L. Bots², Pieter A. Doevendans^{3,5}, Diederick E. Grobbee^{2,6}, Hanno L. Tan⁴, Jan G.P. Tijssen¹, Rudolph W. Koster¹, and Arend Mosterd^{2,3,7*}

¹Department of Cardiology, Academic Medical Centre, University of Amsterdam, The Netherlands; ²Julius Centre for Health Sciences and Primary Care, University Medical Centre Utrecht, Utrecht, The Netherlands; ³Department of Cardiology, University Medical Centre Utrecht, Utrecht, The Netherlands; ⁴Heart Centre, Academic Medical Centre, University of Amsterdam, The Netherlands; ⁵Interuniversity Cardiology Institute, Utrecht, The Netherlands; ⁶University of Malaya Medical Centre, Kuala Lumpur, Malaysia; and ⁷Department of Cardiology, Meander Medical Centre, Amersfoort, The Netherlands

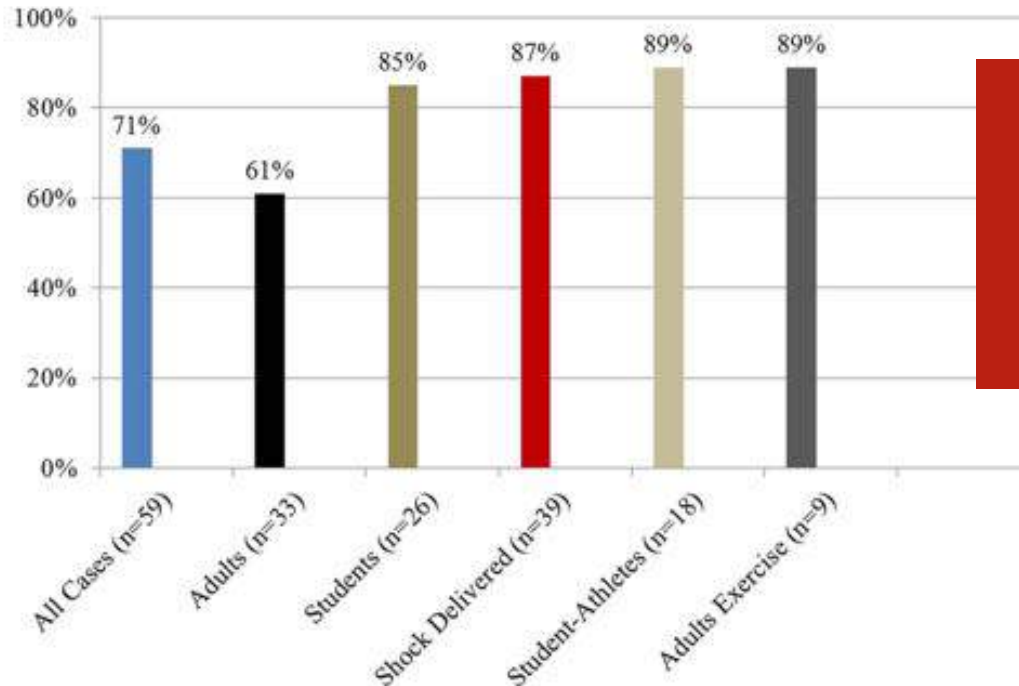
	Periods	Age Range	Population
Amsterdam-ARREST	2006-2009	10-90	2 Millions

Exercise related (n = 143)	
Age, years	58.8 ± 13.6
Age range, years	65.8 ± 14.1
Men	133 (93.0)
Public location	142 (99.3)
Location unknown	0 (0)
Bystander witnessed arrest	128 (89.5)
Bystander witness unknown	0
Bystander CPR	124 (86.7)
Bystander CPR unknown	0 (0)

Exercise related		
	n	Survival (%)
All ages		
All	143	46.2

COULD WE EXPECT EVEN BETTER??

Outcomes
higher than
the
Jonath
Kimber



in US

Up to 80% of
survival to
hospital
discharge

Drezner et al. Br J Sports Med 2013

Time for action regarding cardiovascular emergency care at sports arenas: a lesson from the arena study

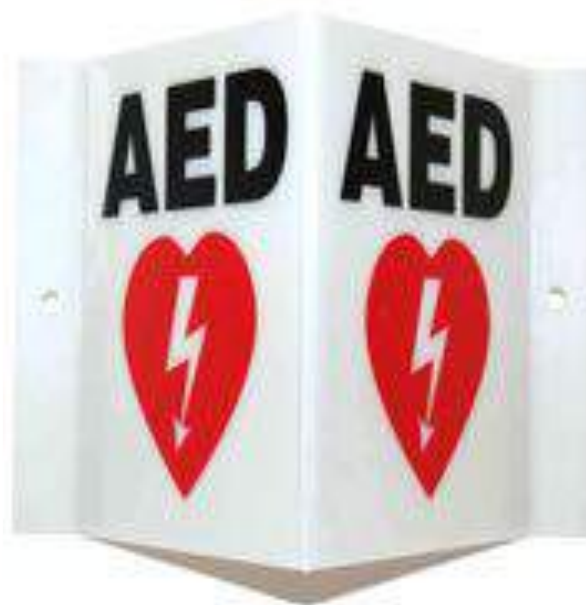
Mats Borjesson¹*, Dorian Dugmore², Klaus-Peter Mellwig³, Frank van Buuren³, Luis Serratos⁴, Eric E. Solberg⁵, and Antonio Pelliccia⁶ On behalf of the Sports Cardiology Section of the European Association of Cardiovascular Prevention and Rehabilitation, European Society of Cardiology

¹Sahlgrenska University Hospital/Östra, Sahlgrenska Academy, Göteborg 416 85, Sweden; ²Walrus International Medical Centre, Stockport, UK; ³Heart Center NRW, University Hospital, Bad Oeynhausen, Germany; ⁴Real Madrid Football Club, Madrid, Spain; ⁵Diakonhjemmet Hospital, Oslo, Norway; and ⁶Institute of Sports Medicine and Science, Rome, Italy

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**One season, 10 european countries
0 SCA among soccer players
77 SCA among spectators !!!**

IN CONCLUSION,



IN CONCLUSION,



- **Primary prevention and treatment of SCA are complementary !**
- **Up to 80% of survival with immediate use of AEDs is achievable**
- **‘Sport setting’ should be ‘used’ to improve public awareness to Basic Life Support and indirectly improve all SCA outcome**

THANK YOU FOR YOUR ATTENTION!

