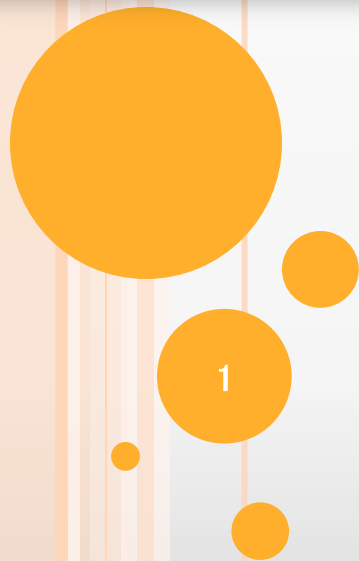
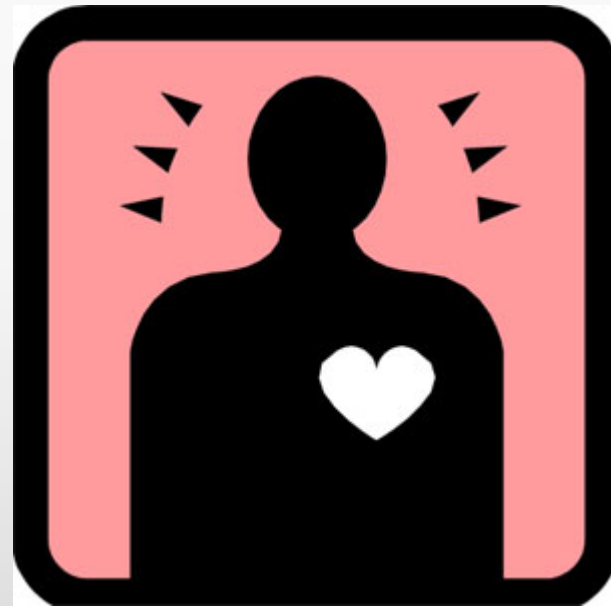


# **Cardiac Arrest during Long-Distance Running Races**



# Outline

- Introduction
- Background
- Methods
- Results
- Conclusions
- Discussion
- Advice



# Introduction

- Cardiac arrest sometimes occurs during games or races of various sports.  
(e.g. marathon, soccer)
- This article was picked up from The New England Journal of Medicine.

# Background

- In the United States, about 2 million participants in long-distance running races per year.
- Concern about the safety of this activity because of reports of race-related cardiac arrests.

# Methods

- In the United States.
- Assessing the incidence and outcomes of cardiac arrest associated with marathon and half-marathon races.
- January 1, 2000, through May 31, 2010.
- Determining the clinical characteristics of the arrests by the following ways.
  - Interviewing survivors and close relatives of nonsurvivors.
  - Reviewing medical records.
  - Analyzing postmortem data.

# Results

- 59 of 10.9 million runners had cardiac arrest.
- Cardiovascular disease accounted for the majority of cardiac arrests.

# Results

- The incidence rate:

Marathons > Half-marathons

Men > Women

- Male marathon runners had an increased incidence of cardiac arrest during the latter half of the study decade.

# Results

- The cardiac arrest occurred most:  
31.5 km - finish (marathon).  
15.8 km - finish (half-marathon).

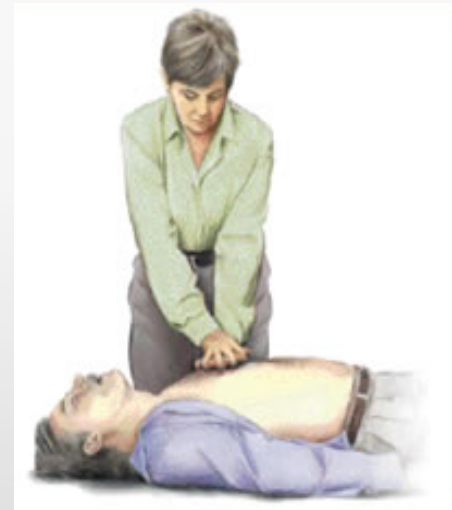


To account for differences in race distance between the marathon (42.2 km) and half-marathon (21.1 km), the point in the race course where the cardiac arrest occurred was examined as a function of the total race-distance quartile.

# Results

- 42 of the 59 cases were fatal.
- The strongest predictors of survival (among the 31 cases with complete clinical data):

- Initiation of bystander-administered CPR.
- An underlying diagnosis other than hypertrophic cardiomyopathy.



# Conclusions

- A low overall risk of cardiac arrest and sudden death.
- Hypertrophic cardiomyopathy or atherosclerotic coronary disease.
- Primarily among male marathon participants.

# Discussion

- Unable to obtain complete clinical data.
- Examined the incidence of cardiac arrest as a function only of race distance and sex.



Further work is needed.

# Advice

- People with cardiovascular disease should be careful.
- Early bystander-administered CPR and use of AED at the scene of the arrest are important.



**Thank you for listening!**

**Any questions?**