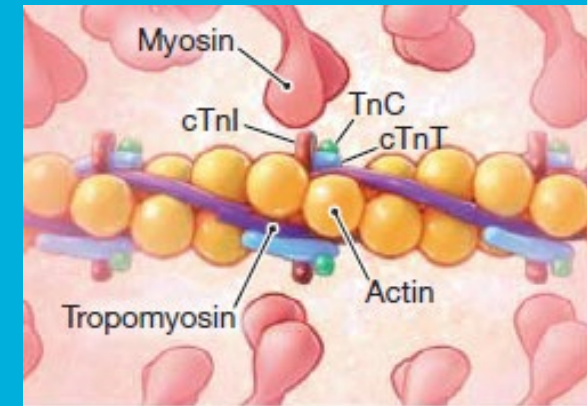


Exercise-Induced Cardiac Troponin I Increase and Incident Mortality and Cardiovascular Events



Drs. V.L. Aengevaeren



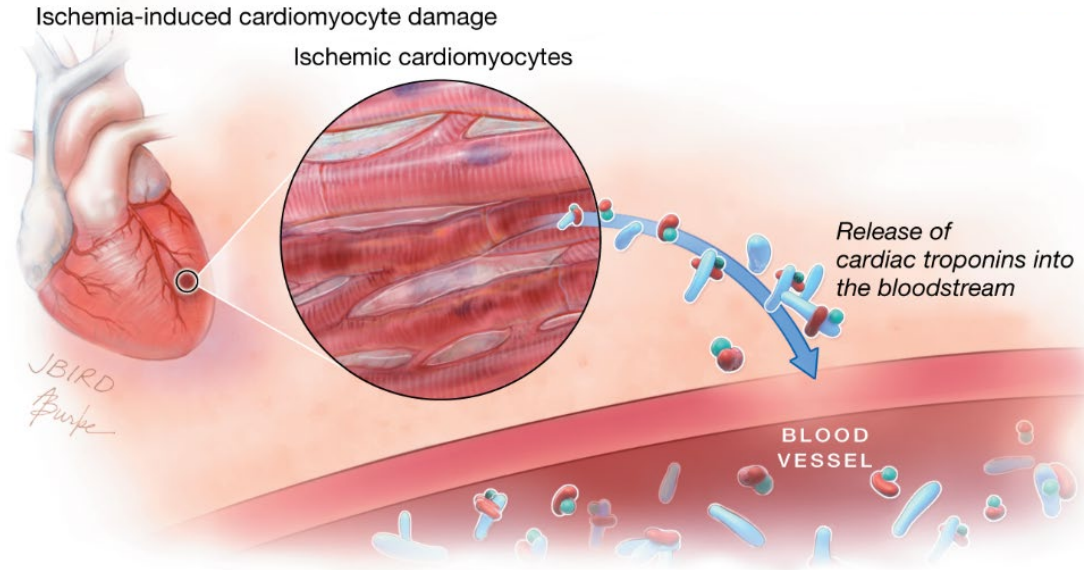
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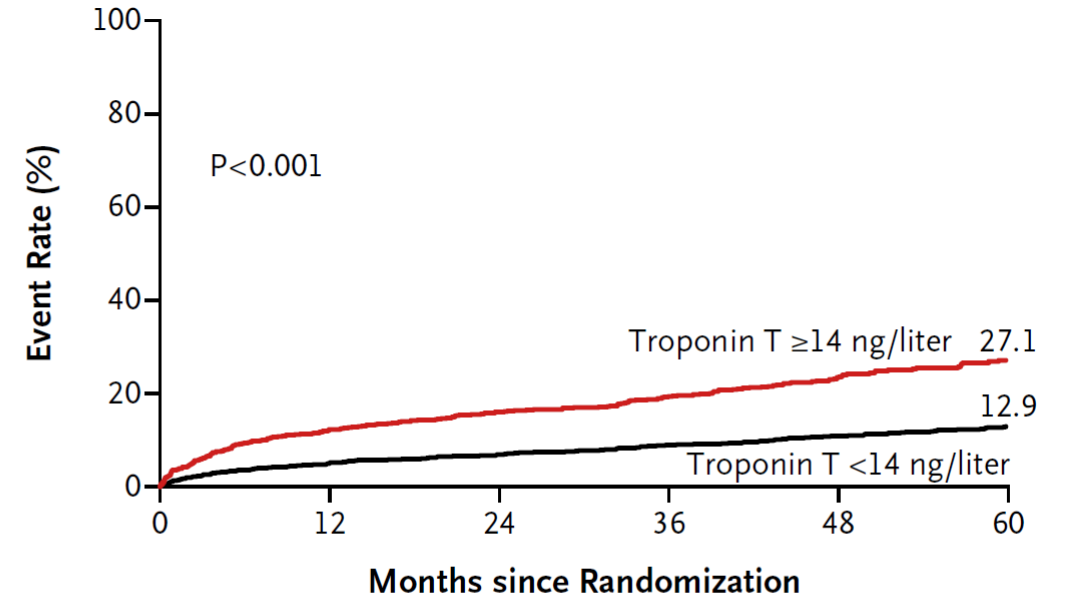
Troponine stijging & myocardial injury



Criteria for Myocardial Injury

Detection of an elevated cTn value above the 99th percentile URL is defined as myocardial injury. The injury is considered acute if there is a rise and/or fall of cTn values.

BARI2D trial



No. at Risk

Troponin T ≥ 14 ng/liter	897	737	684	620	455	255
Troponin T < 14 ng/liter	1388	1281	1229	1124	892	529

Inspanningsgeïnduceerde troponine

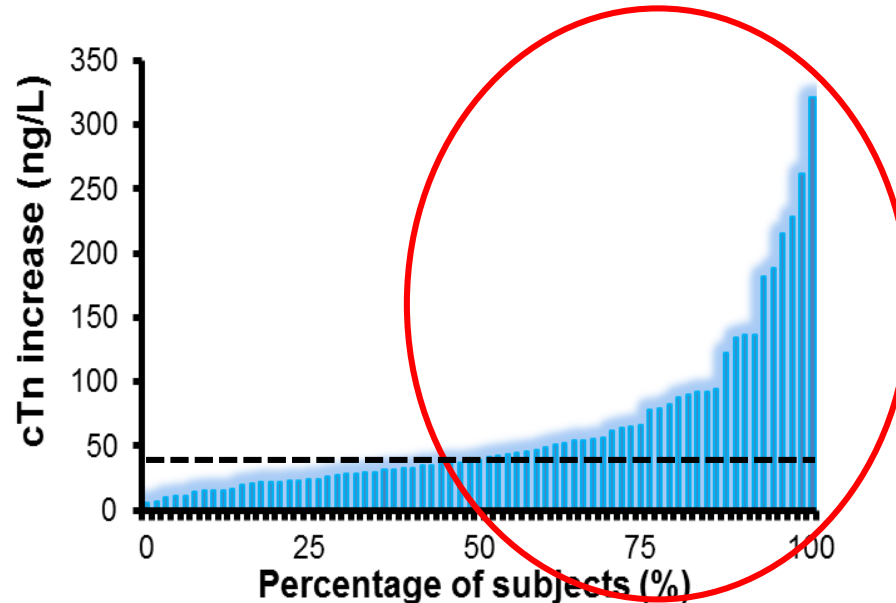
Acute myocardial ischemia	Other causes
Atherosclerotic plaque rupture	<i>Cardiac conditions, e.g.</i>
<i>Reduced perfusion, e.g.</i>	Heart failure
Coronary artery spasm	Myocarditis
Microvascular dysfunction	Cardiomyopathy
Coronary embolism	Takotsubo syndrome
Coronary artery dissection	Coronary revascularization
Sustained bradyarrhythmia	Other cardiac procedure
Hypotension or shock	Catheter ablation
Respiratory failure	Defibrillator shocks
Severe anemia	Cardiac contusion
<i>Increased oxygen demand, e.g.</i>	<i>Systemic conditions, e.g.</i>
Sustained tachyarrhythmia	Sepsis
Severe hypertension	Chronic kidney disease
	Stroke
	Pulmonary embolism
	Infiltrative disease
	Chemotherapeutic agents
	Critically ill patients
	Strenuous exercise

Studie populatie:

- 71 deelnemers aan de 2011 Boston Marathon
- 53 ± 8 jaar oud
- Race tijd: $04:04 \pm 00:41$ (hh:mm)



Fysiologie of pathologie?



Troponine stijgt in elke marathon loper, bij 50% boven het 99^e percentiel

Onderzoeksvraag & Methoden

Is inspanningsgeïnduceerde troponine stijging geassocieerd met klinische uitkomsten?

Nijmeegse Vierdaagse 2008-2016 (1^e dag)



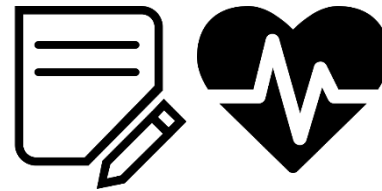
N = 725

Leeftijd 61 jaar [54 – 69]

62% man

30-55 km (68% max HR)

60% Controles, 26% CVRF, 14% CVD



43 [23–77] mnd

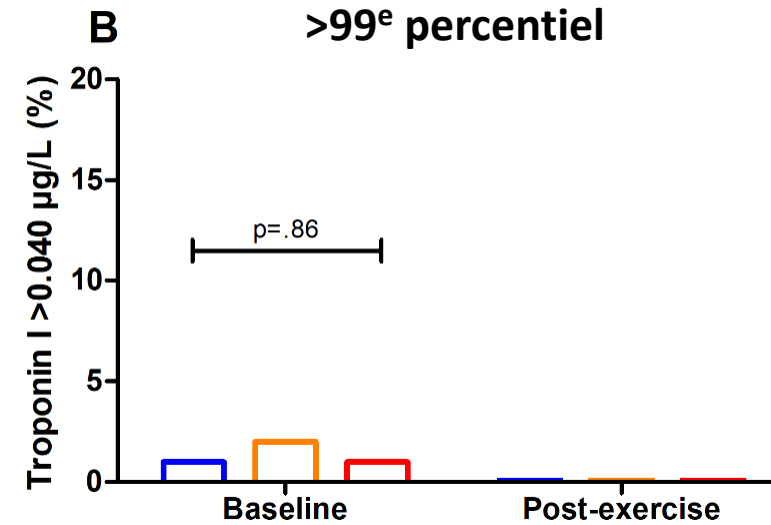
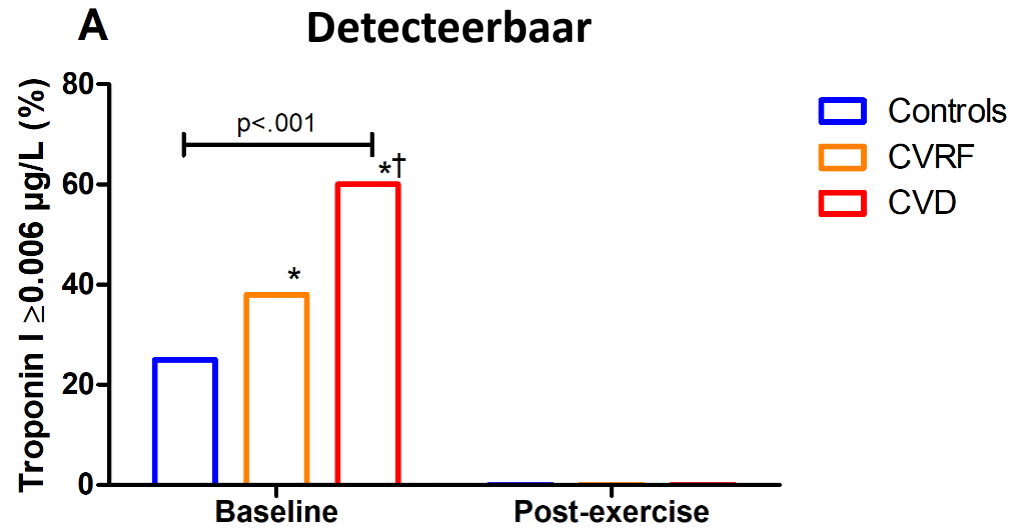
All-cause mortaliteit

MACE (MI, beroerte, hartfalen,
revascularisatie, SCA)



Troponine (pre en post)

Troponine stijging na Vierdaagse



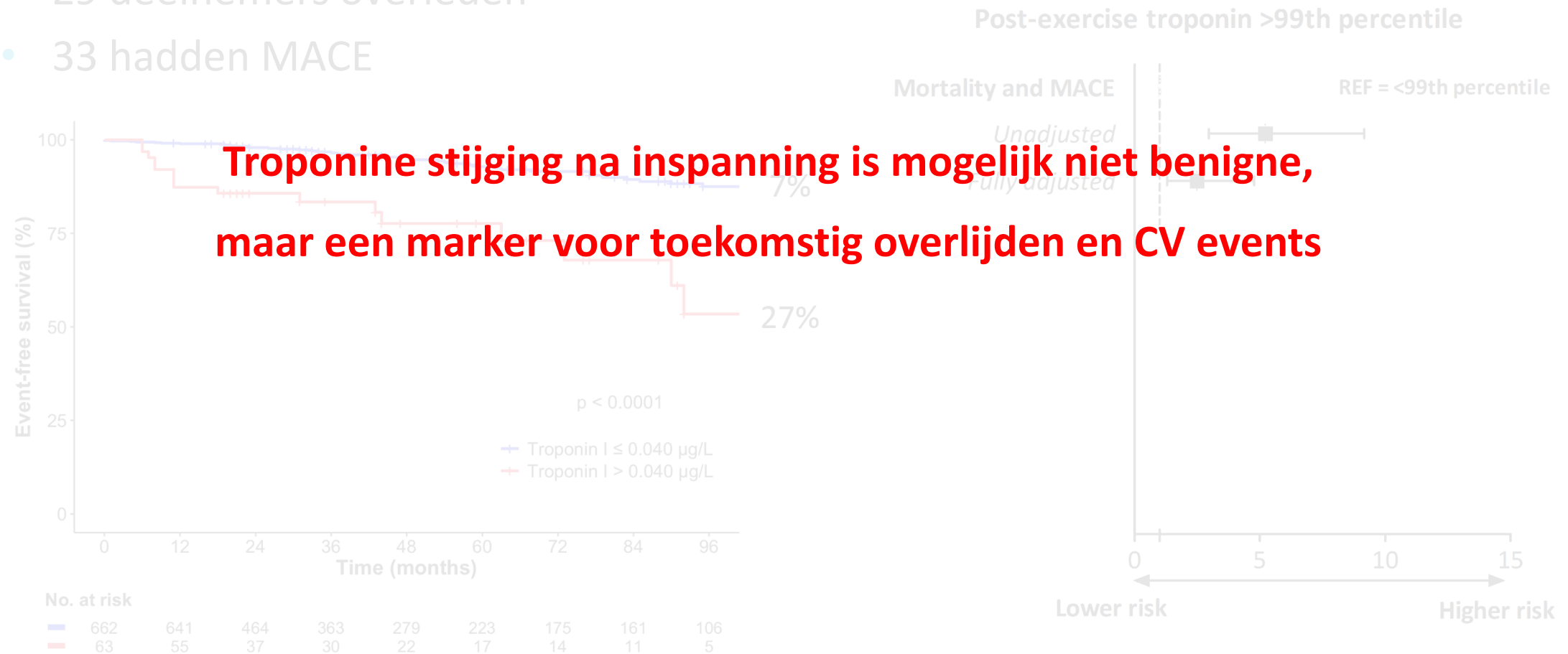
Troponine stijging na 30-55 km wandelen

9% >99^e percentiel

Relevantie van post-exercise troponine

Tijdens follow-up 62 (9%) events

- 29 deelnemers overleden
- 33 hadden MACE



Wat betekent dit?

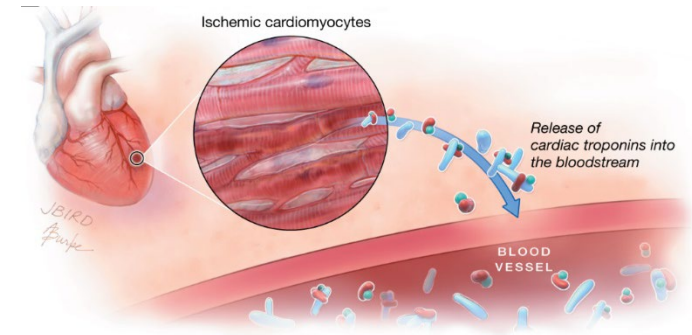
Marker voor CV risico?

EDITORIAL

Cardiac Troponin Increase After Endurance Exercise

A New Marker of Cardiovascular Risk?

Toch schade van inspanning?



Klinisch toepasbaar?

Mechanismen?

Modificeerbaar?

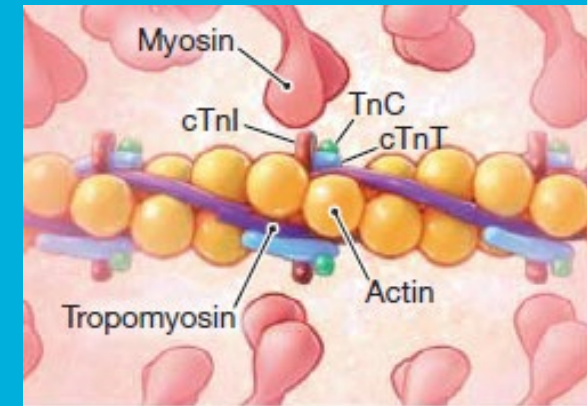
Optimale moment bloed sampling?

Andere populaties?

Toegevoegde prognostische waarde?

Vooralsnog geen reden om sport te ontraden!

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