

Coeur et sexe

Pr Xavier JOUVEN

centre d'expertise
mort subite

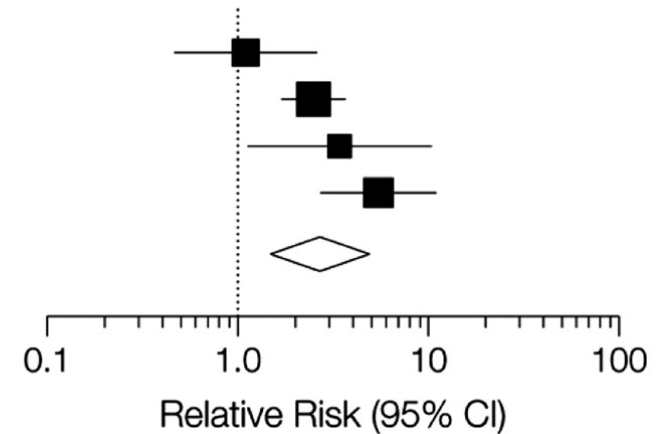
INSERM U970

*Cardiovascular epidemiology
and
sudden death*



Forest plot of case-crossover studies assessing the association of sexual activity with myocardial infarction.

	No. of Patients	Relative Risk (95% CI)
Sexual activity: myocardial infarction		
Möller et al, 2001	659	1.10 (0.46-2.60)
Muller et al, 1996	1633	2.50 (1.69-3.69)
Masoomi et al, 2010	198	3.42 (1.13-10.42)
Baylin et al, 2007	470	5.47 (2.71-11.03)
Test for heterogeneity: $I^2=64\%$; $P=.04$		2.70 (1.48-4.91)



Levine G N et al. *Circulation* 2012;125:1058-1072



During sexual activity

increase in systolic and diastolic BP, heart rate

maximum during the 15s of orgasm

Rapid return to normal

Men and women have similar neuroendocrine,
BP and HR response to sexual activity

Comparable to mild to moderate physical activity (3 to 4 METS)
(2 flights of stairs)

BP rarely exceeds 170 mmHg and HR 130 bpm

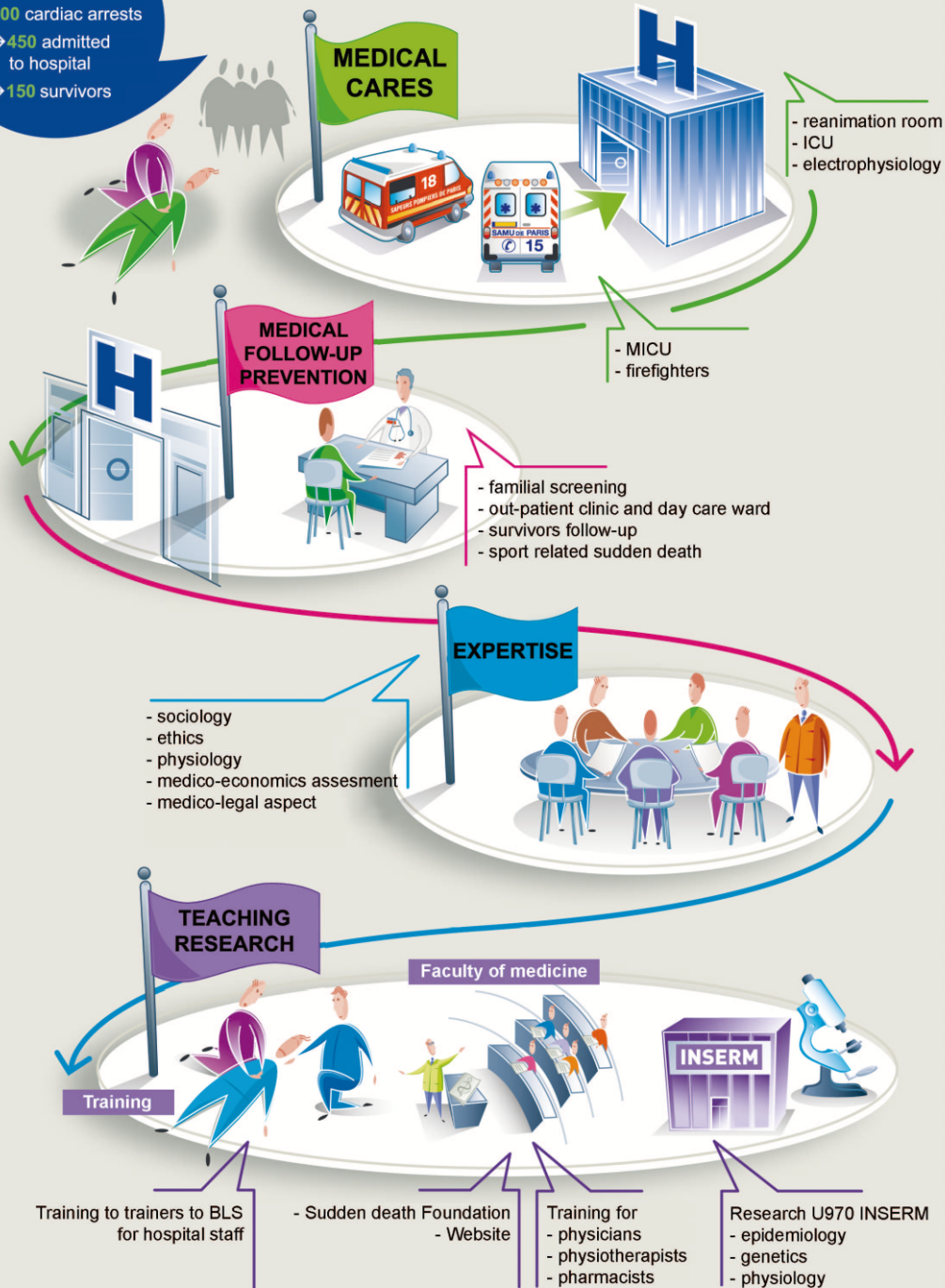
SUDDEN DEATH EXPERTISE CENTER

CARE - TEACHING - RESEARCH

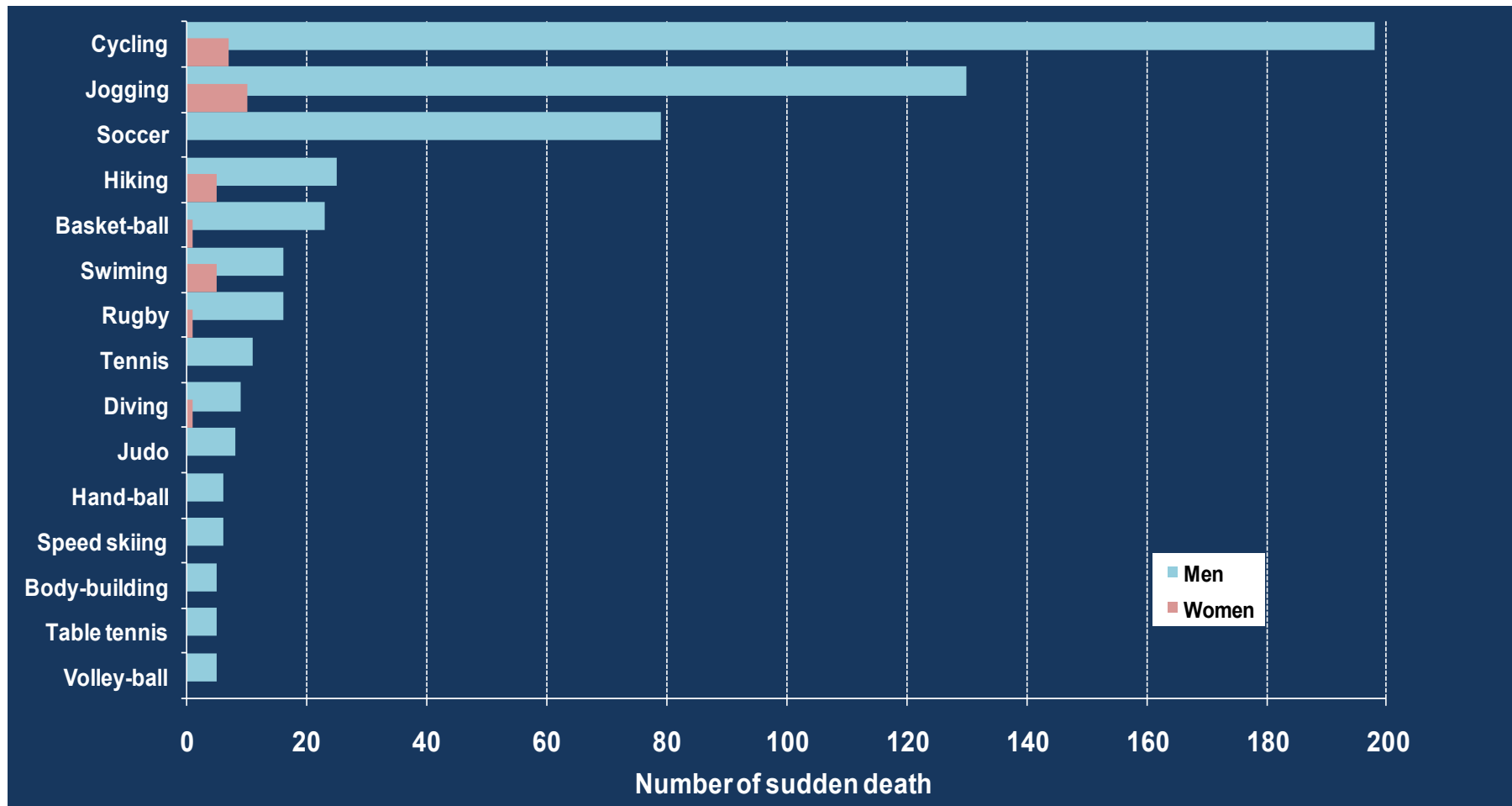
AP-HP / HÔPITAL EUROPÉEN GEORGES-POMPIDOU - UNIVERSITÉ PARIS DESCARTES - INSERM

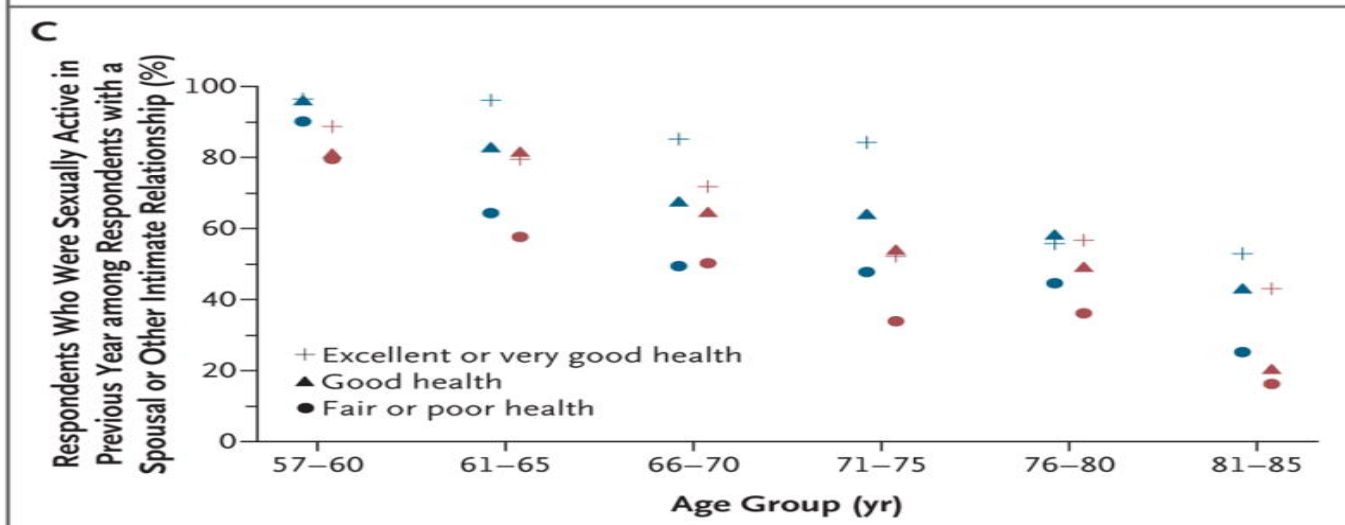
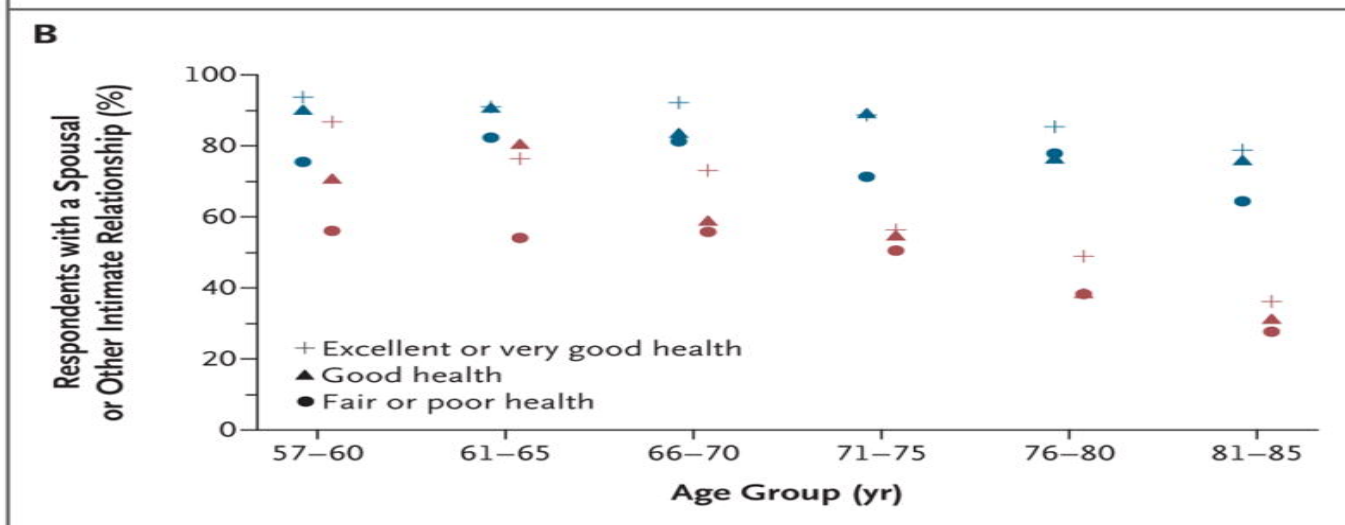
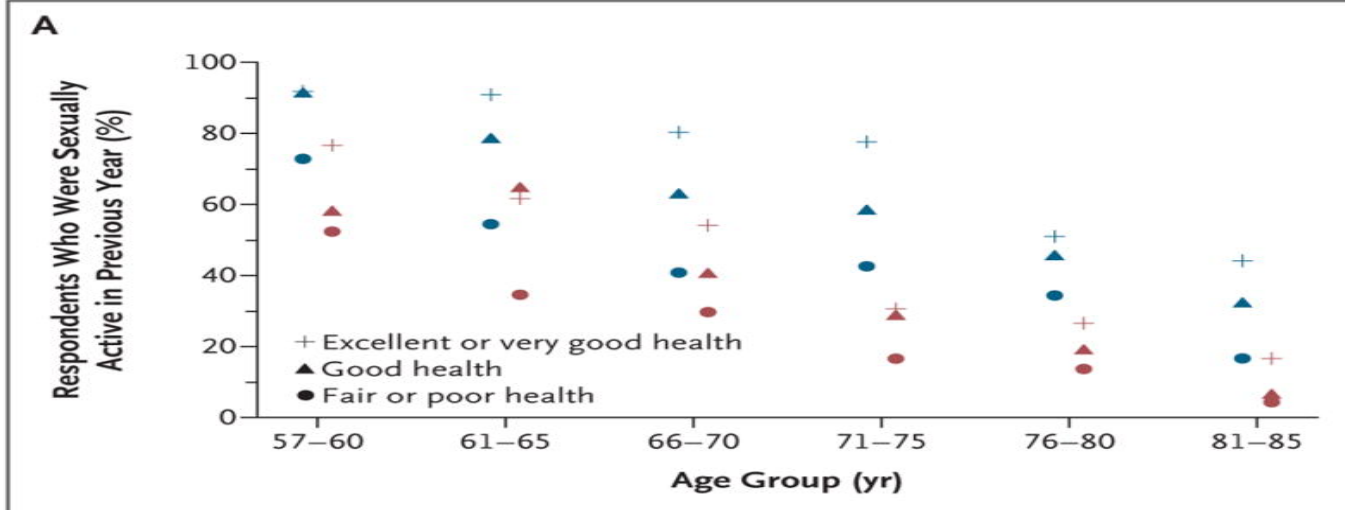
PARIS & suburban area

- 3,500 cardiac arrests
- 450 admitted to hospital
- 150 survivors



Cycling, Jogging, Soccer





Cœur et sexe

Études prospectives

cohorte (exposés / non exposés)

Études rétrospectives

études contrôlées...

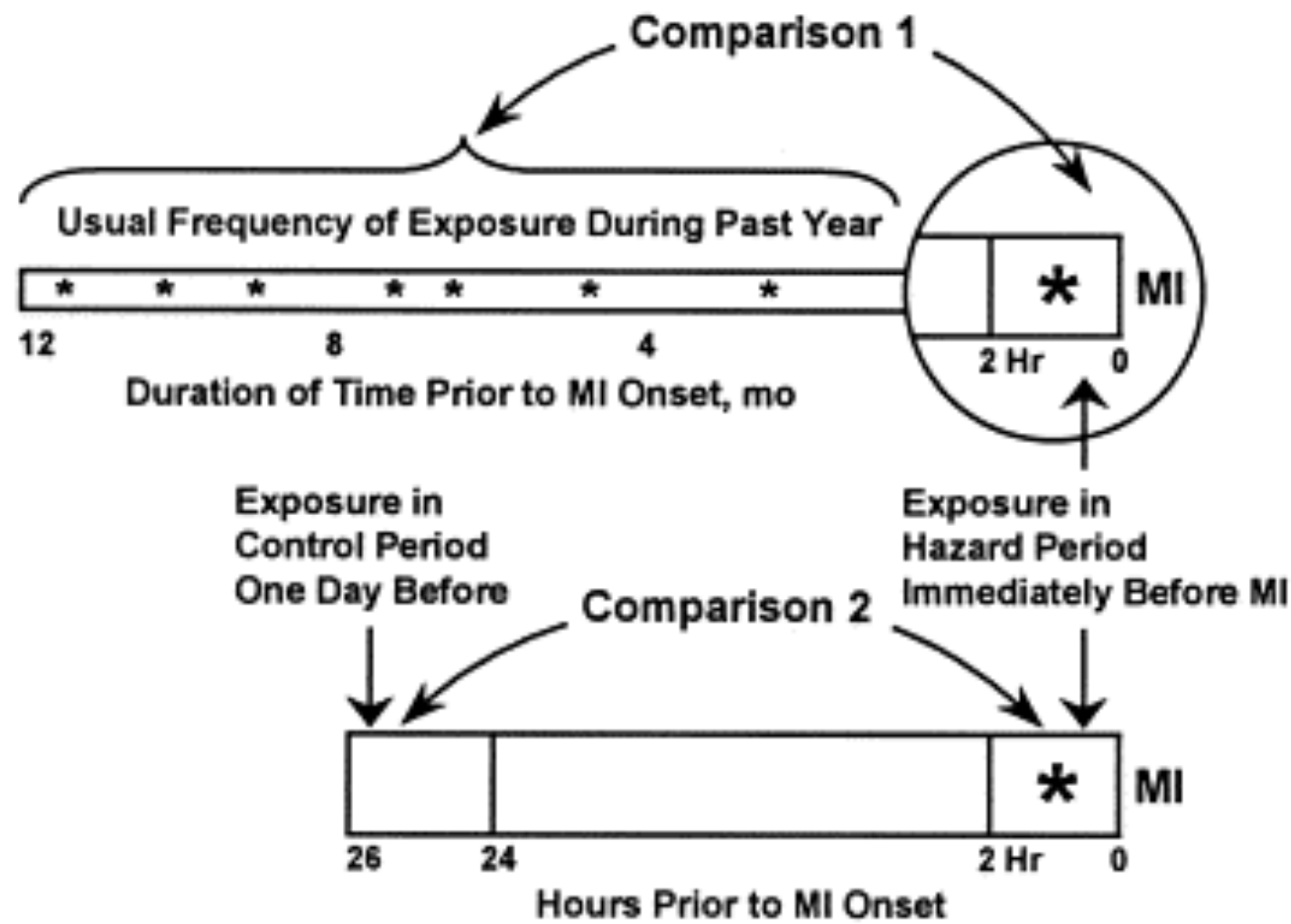
double aveugle...

études cas-témoins

pourquoi ce sujet a fait un IDM et pas un autre?

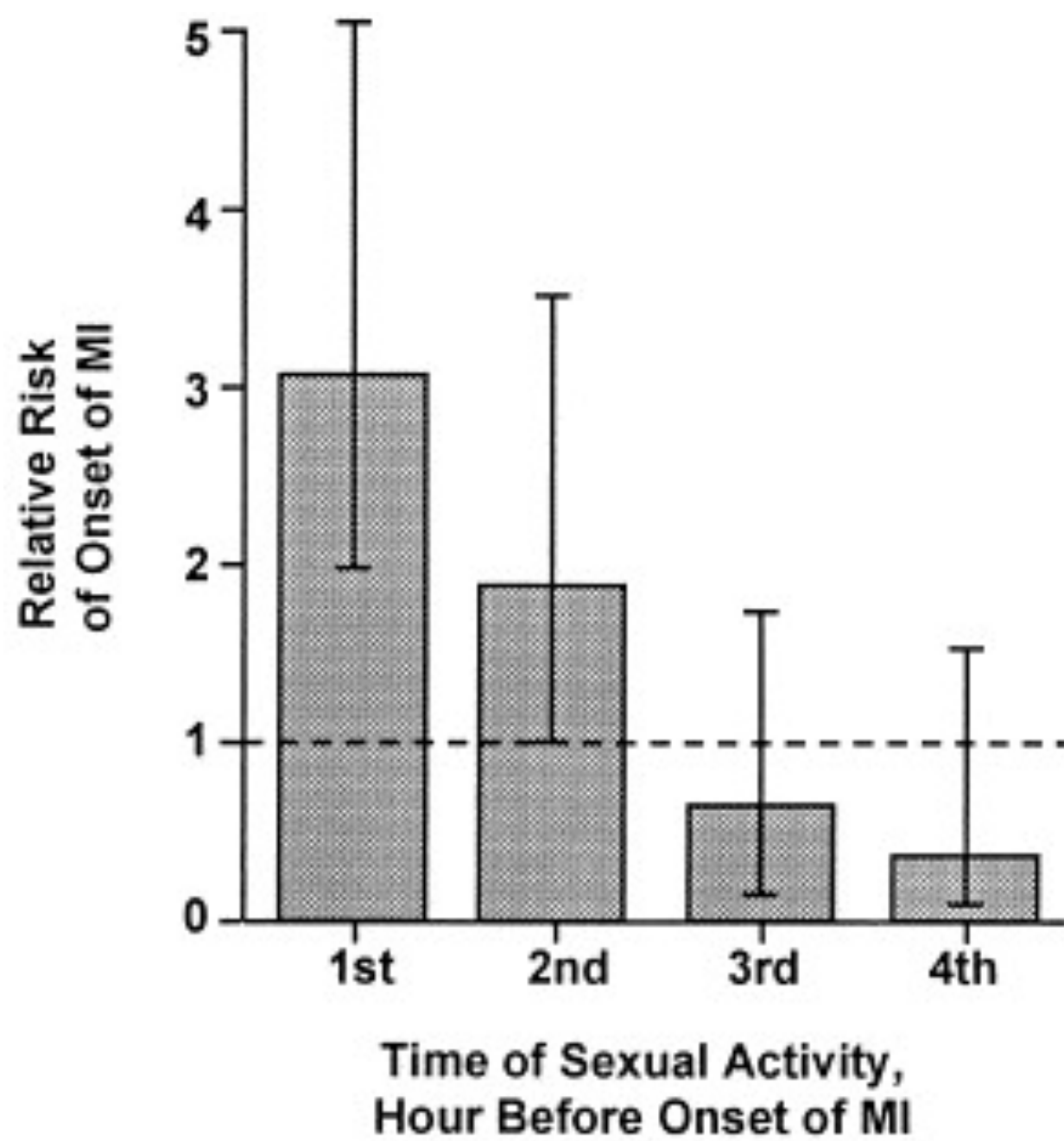
études cas-croisés

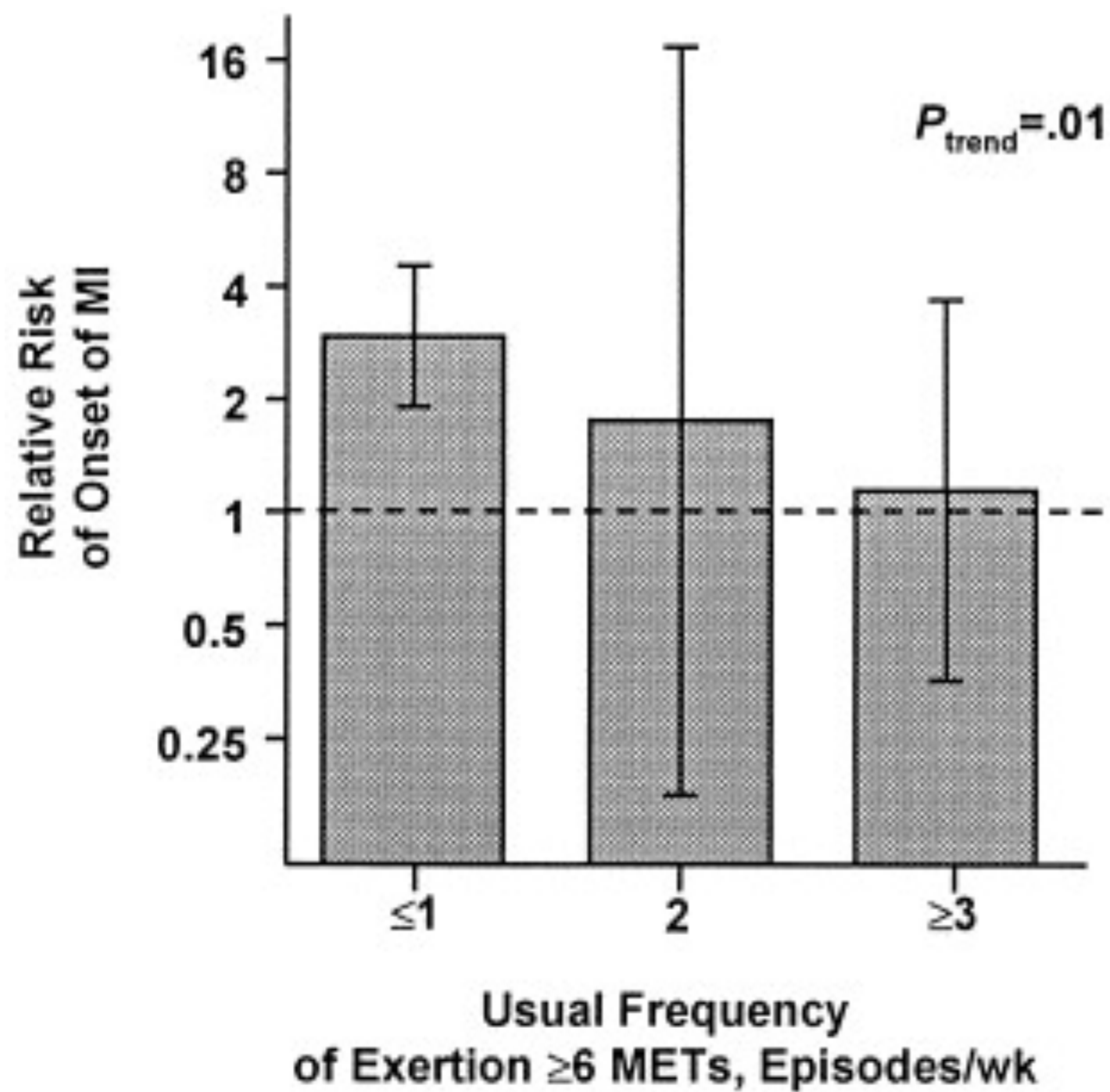
pourquoi cet individu a fait un IDM à ce moment précis?



Triggering of cardiac events by sexual activity: findings from a case-crossover analysis

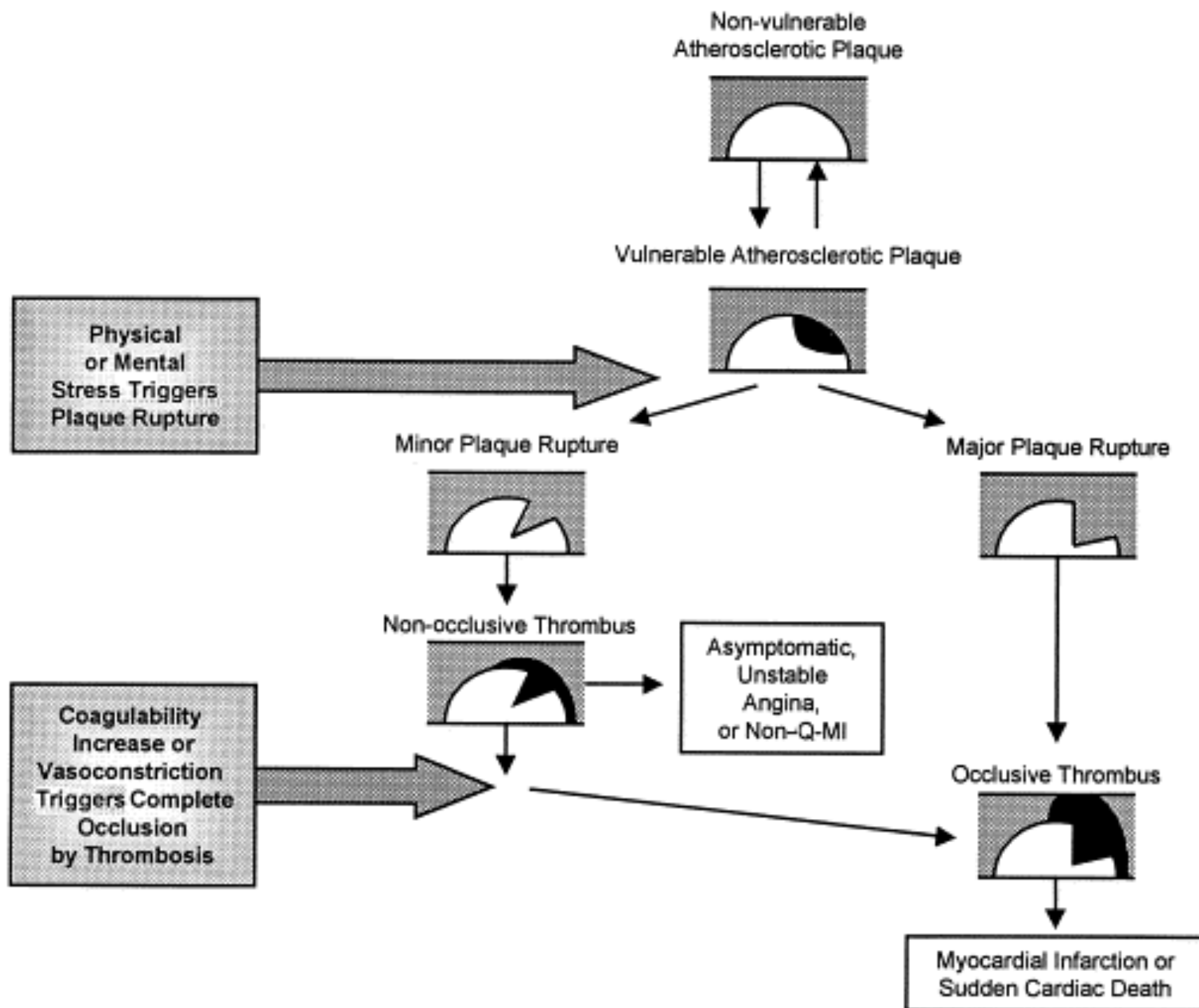
- James Muller
- Am J Cardiol. 2000 Jul 20;86(2A):14F-18F.
- Division of Cardiology, Massachusetts General Hospital, Boston, Massachusetts 02114, USA.





Cœur et sexe

- Dans l'heure précédant l'IDM
 - Reveil: 19%
 - Stress: 14%
 - Exercice: 5%
 - Activité sexuelle: 1,5%
- Comparaison des risques d'IDM et de MS
 - Activité sexuelle 2,5
 - Exercice 2,5
 - Stress 2,3
 - Cocaïne 24



Age-related changes in heart rate during copulatory behavior of male rats

- Specifically, copulatory behavior increases circulatory load, which may be related to reports of cardiac sudden death following ejaculation.
- heart rate (HR) before and after ejaculation in 48-week-old (aged) and 10-week-old (young) male rats,
- HR after ejaculation was increased by 54.2 ± 3.5 and 41.7 ± 2.7 , respectively, among aged and young male rats.
- We also studied decreases in HR following ejaculation and found that aged male rats had a significantly higher HR at 1 and 2 min after ejaculation than young rats ($P < 0.01$).
- These results suggest that there is a higher risk of sudden cardiac death during sexual behavior in older males.

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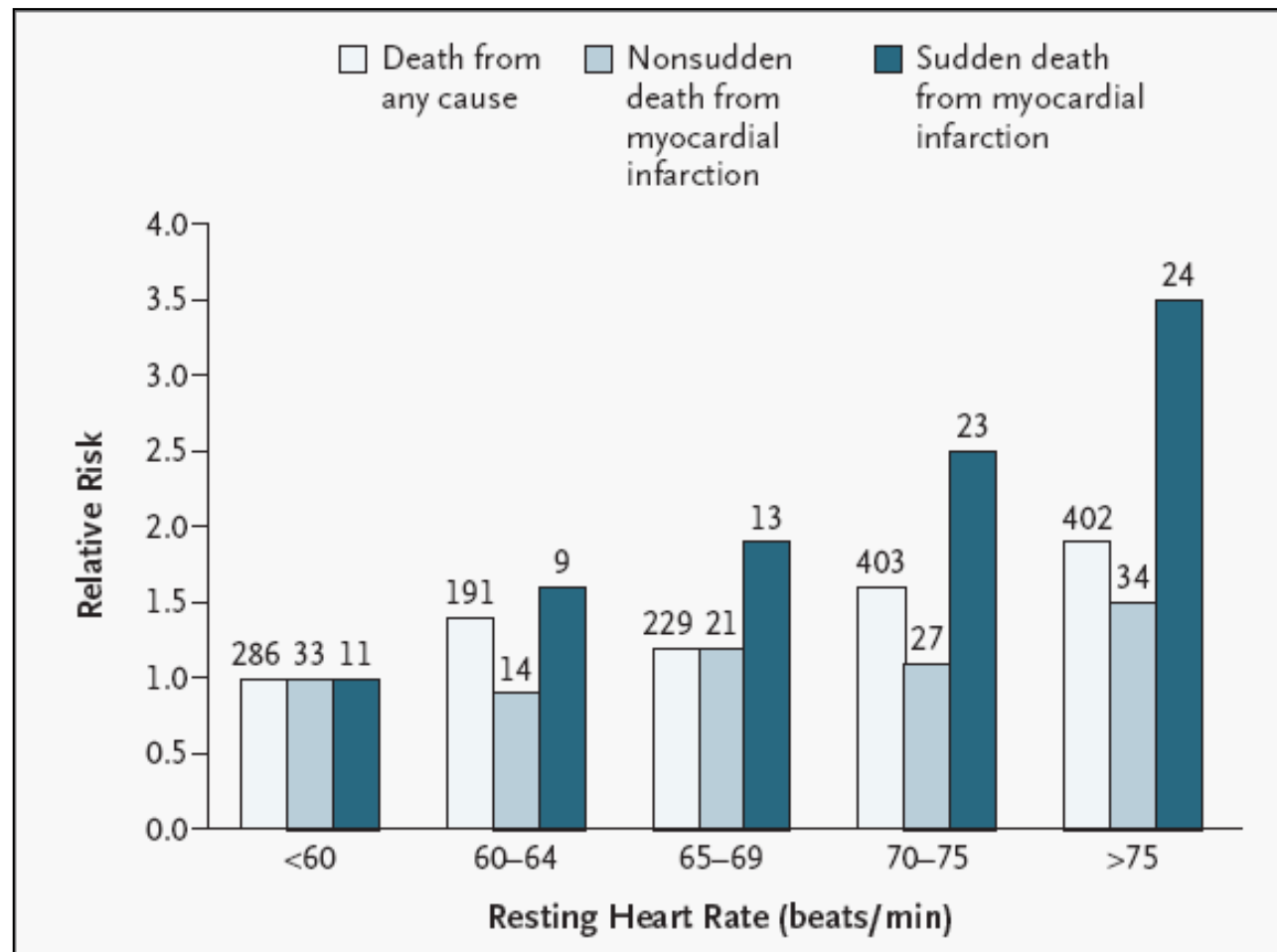
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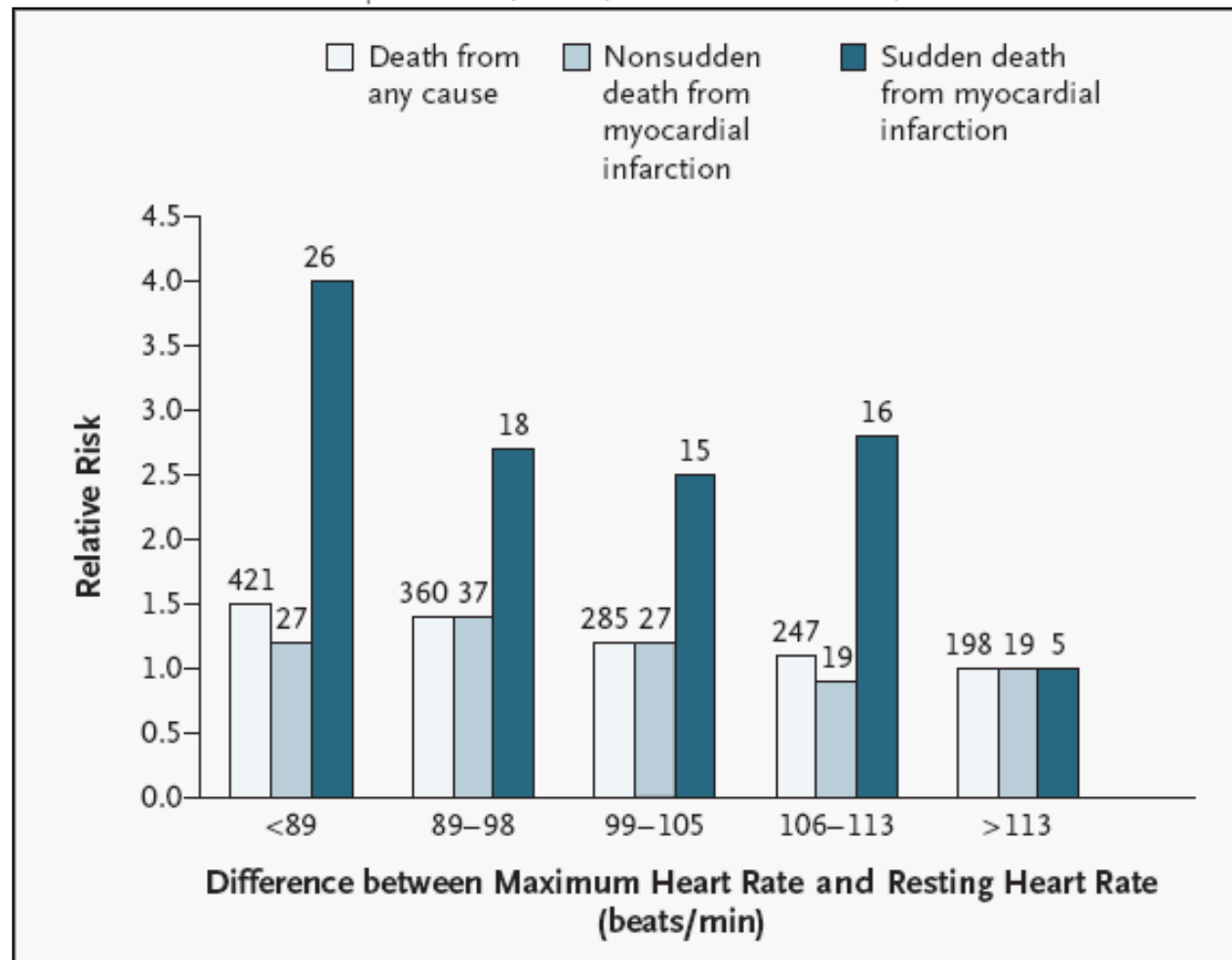
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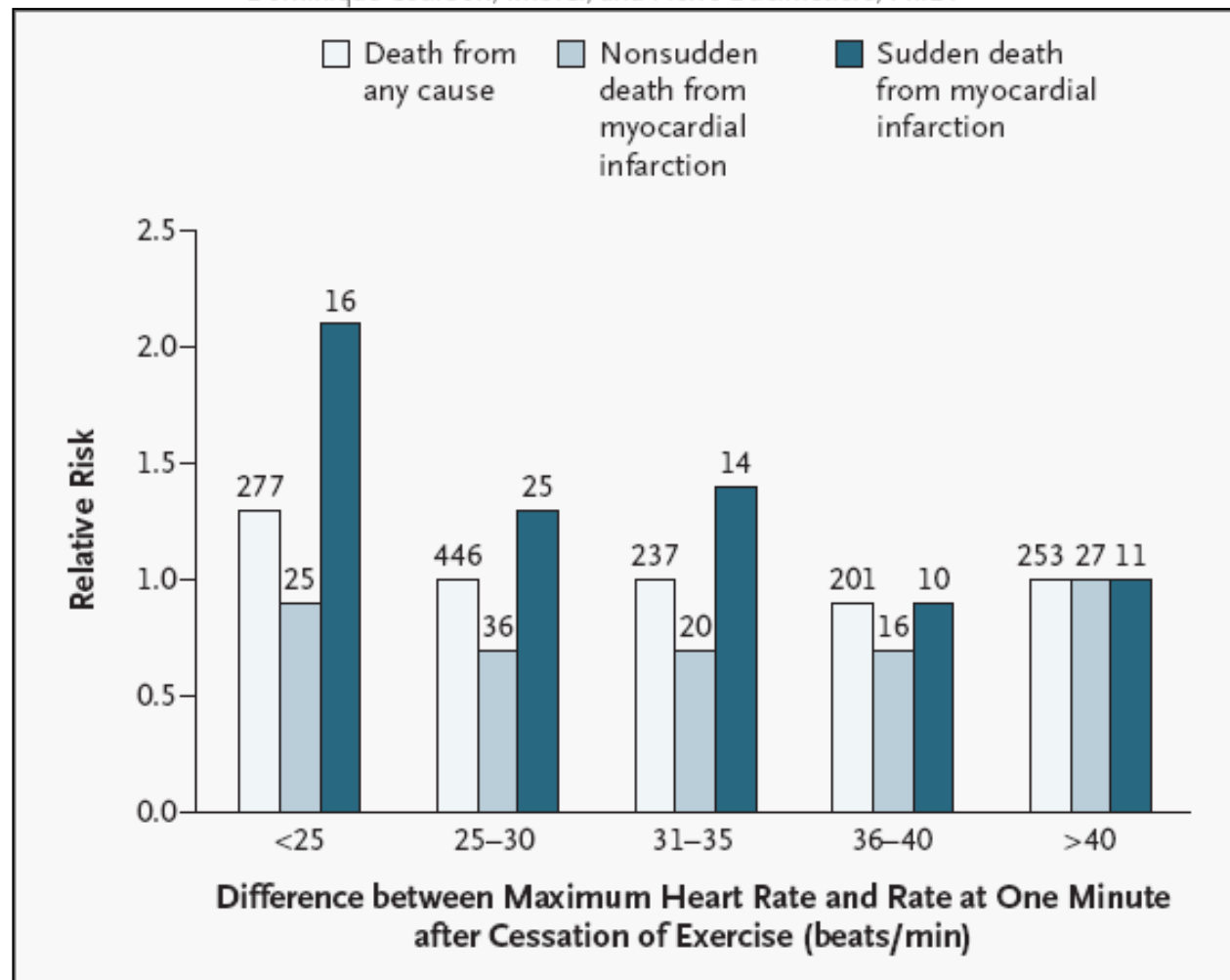
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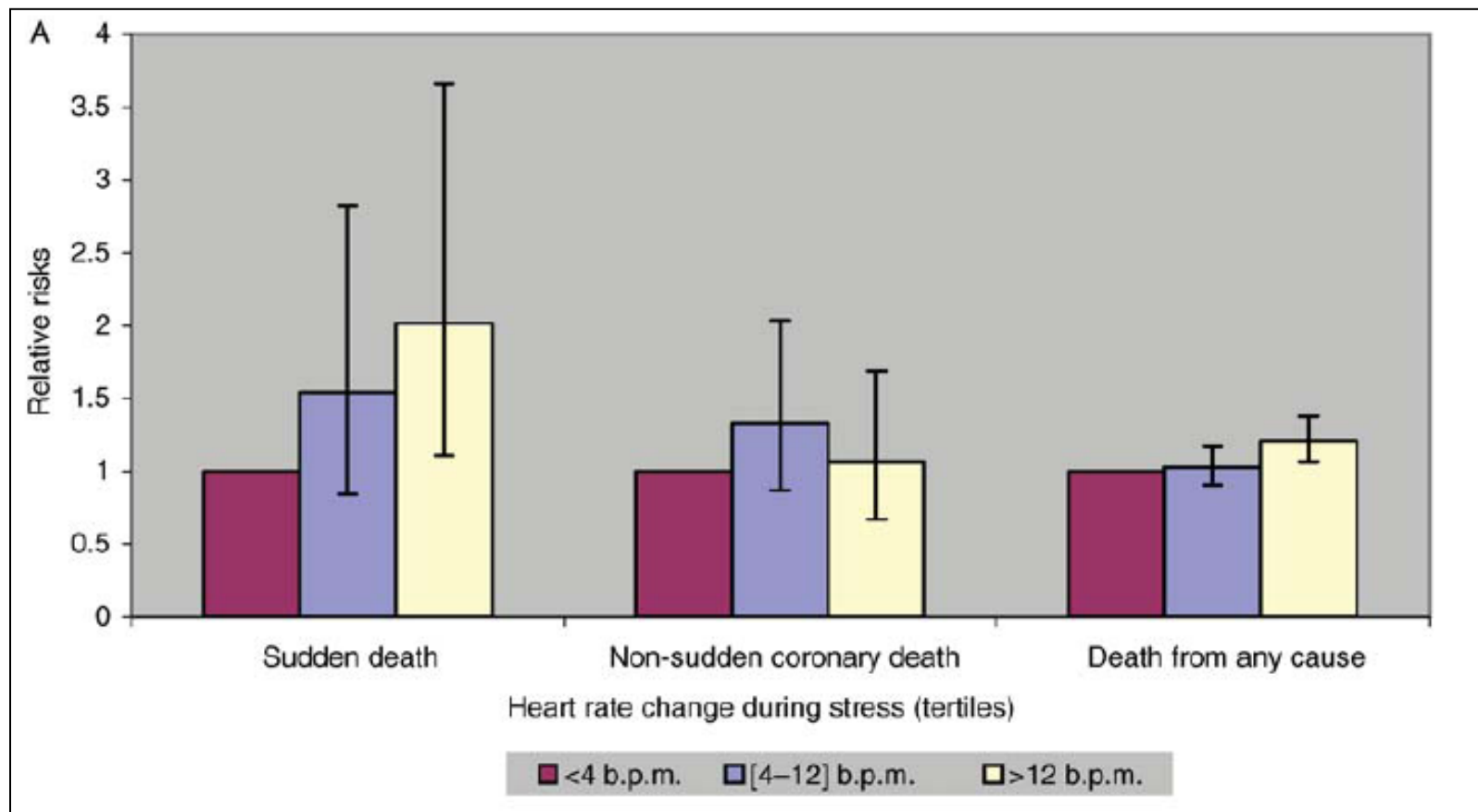


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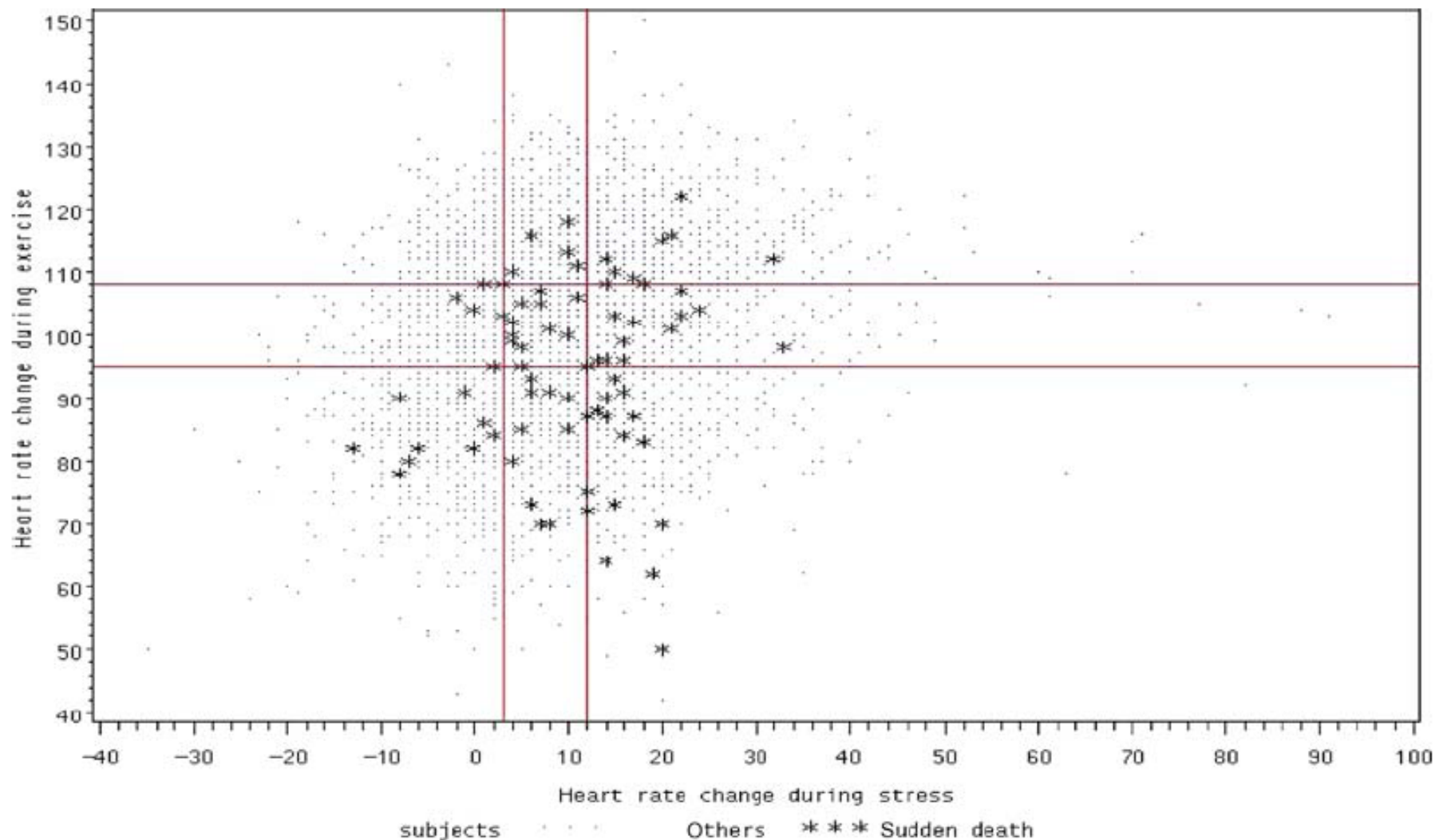
Excessive heart rate increase during mild mental stress in preparation for exercise predicts sudden death in the general population

Xavier Jouven^{1,2,3,4,10*}, Peter J. Schwartz^{5,6,7,8,9}, Sylvie Escolano^{1,3,4,10},
Céline Straczek^{1,3,4,10}, Muriel Tafflet^{1,3,4,10}, Michel Desnos^{2,3},
Jean Philippe Empana^{1,3,4,10}, and Pierre Ducimetière^{1,3,4,10}

European Heart Journal (2009) 30, 1703–1710

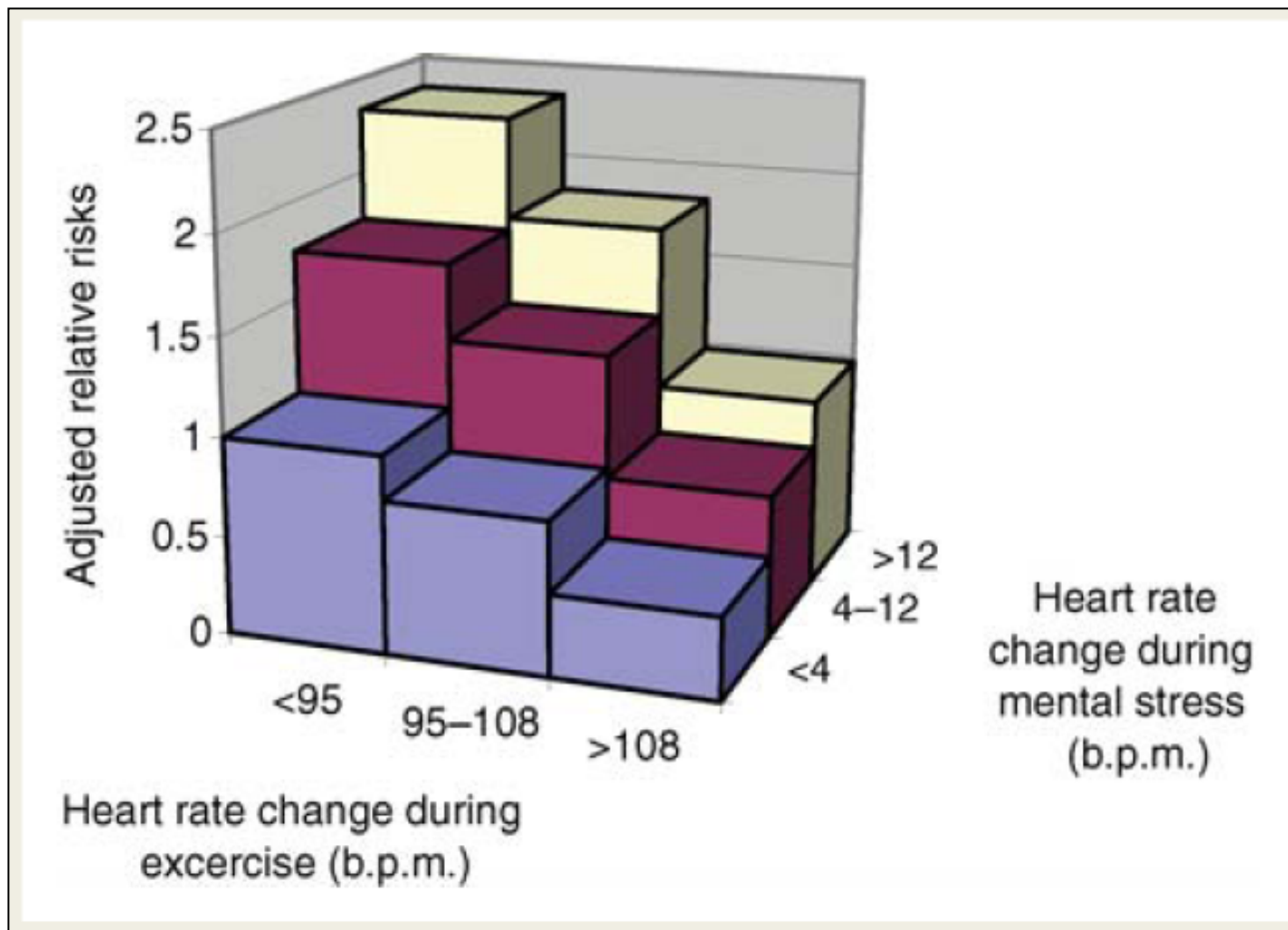


Excessive heart rate increase during mild mental stress in preparation for exercise predicts sudden death in the general population



Values of heart rate change during exercise vs. heart rate change during mild mental stress.

Excessive heart rate increase during mild mental stress in preparation for exercise predicts sudden death in the general population



From: **Association of Episodic Physical and Sexual Activity With Triggering of Acute Cardiac Events: Systematic Review and Meta-analysis**

JAMA. 2011;305(12):1225-1233. doi:10.1001/jama.2011.336

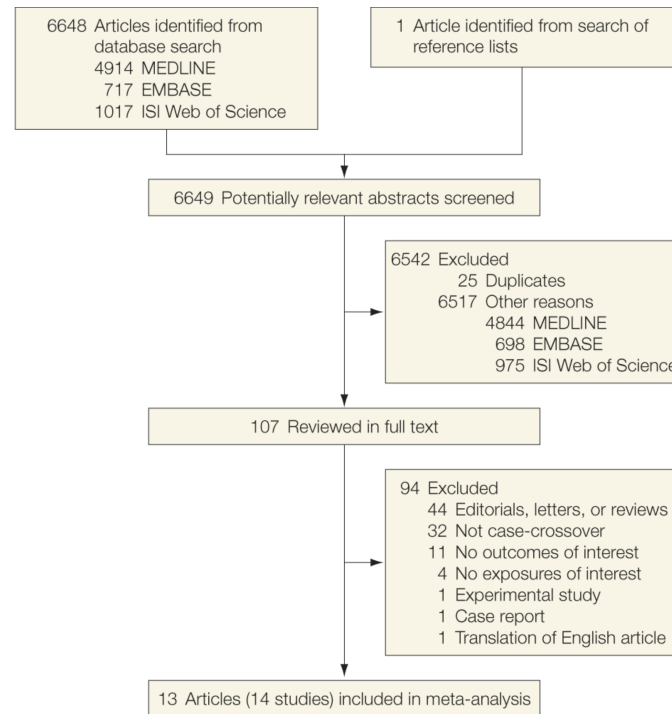


Figure Legend:

One publication provided results from 2 separate populations, which were considered as independent strata in our analyses. ISI indicates Institute of Scientific Information.

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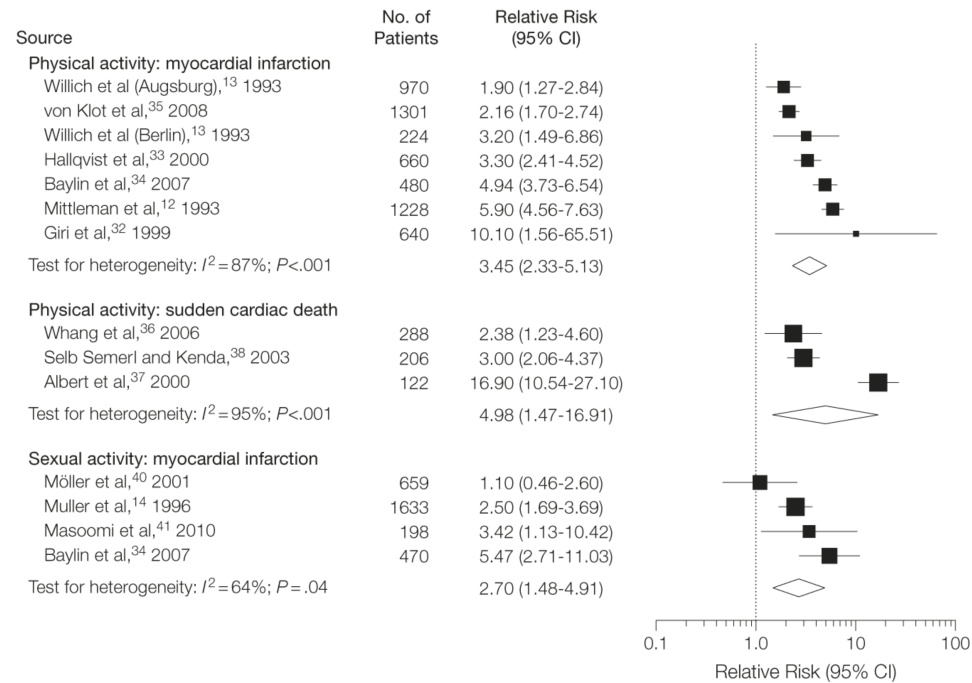


Figure Legend:

Summary results for each exposure-outcome subgroup are presented separately. Within each subgroup, studies are arranged by the point estimate of relative risk. Values greater than 1 indicate that exposure is associated with increased risk of the outcome. Squares are proportional to the weight of each study in the meta-analysis. CI indicates confidence interval.

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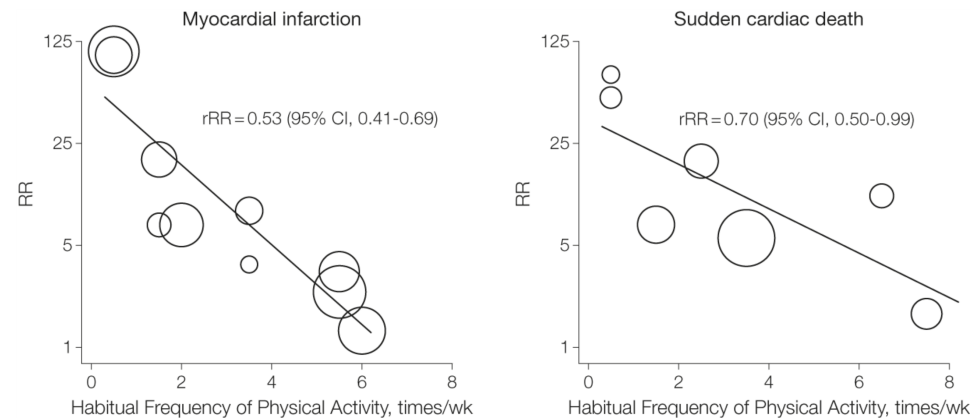


Figure Legend:

Meta-regression graph of relative risks (RRs) for myocardial infarction is based on 3 studies that used the same scale (weekly frequency) to report habitual activity levels; graph for sudden cardiac death is based on 2 studies that used the same scale. Subgroup estimates are depicted as circles proportional to their precision (inverse of the variance of the log[RR]). The solid line indicates fitted values by random-effects meta-regression. rRR indicates relative RR calculated from the meta-regression.

Cœur et sexe

- L'activité sexuelle est responsable de peu d'IDM
- Plus on pratique (activité physique) plus le risque diminue
- -50% d'IDM et -30% de MS par activité supplémentaire/semaine