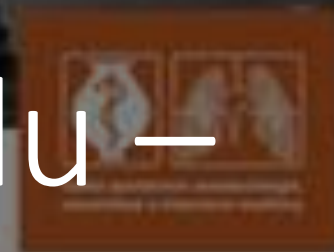


Revaskularizace myokardu – pohled anesteziologa

Michal Lipš

KARIM VFN a 1.LF UK



XXVI.

kongres České společnosti
anesteziologie, resuscitace
a intenzivní medicíny

9.-11. ŘÍJNA 2025

CLARION CONGRESS HOTEL PRAGUE****

www.csarim.cz

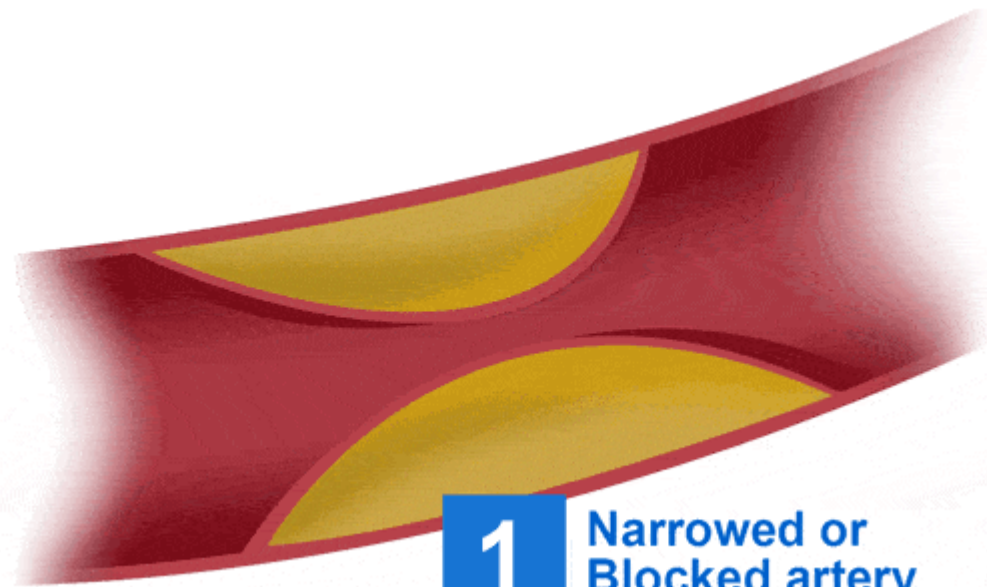
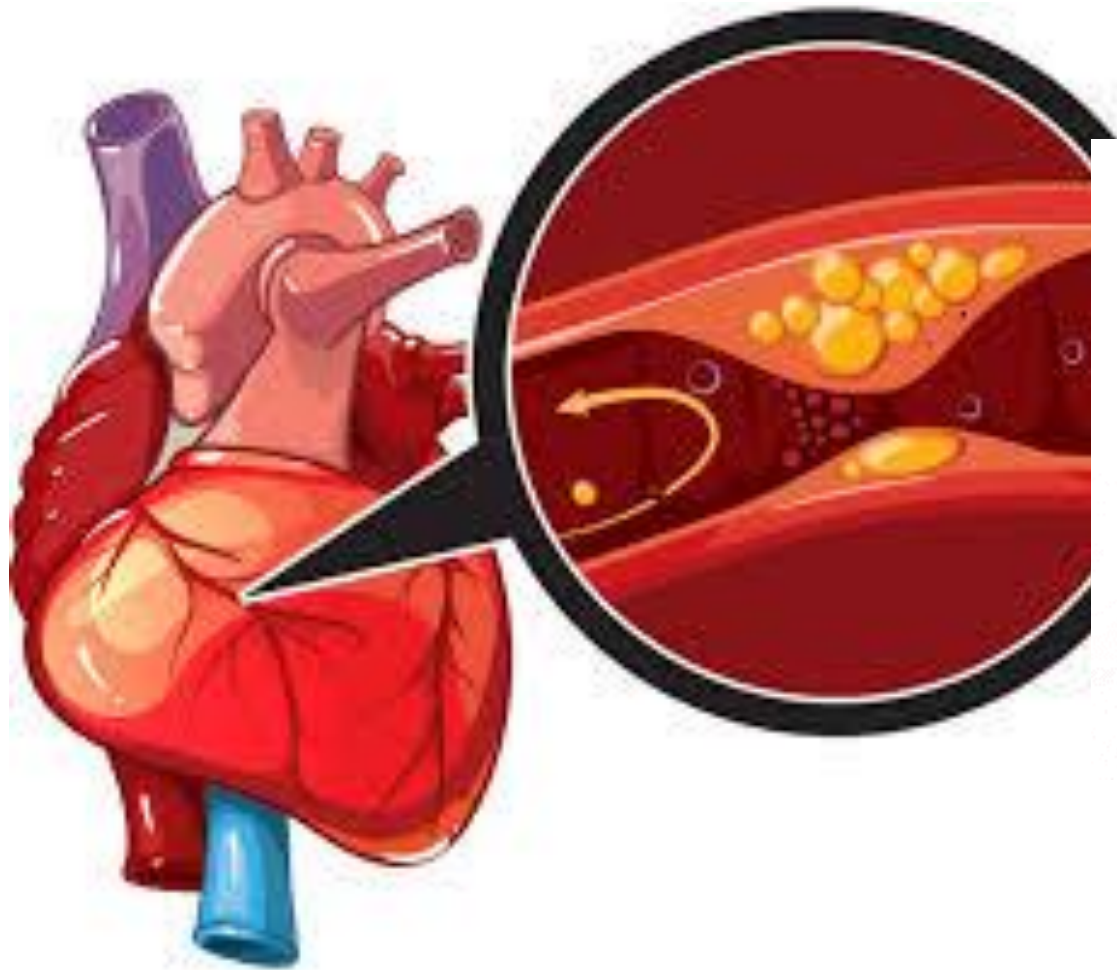


VFN





Co nás učili ve škole...



1

Narrowed or
Blocked artery

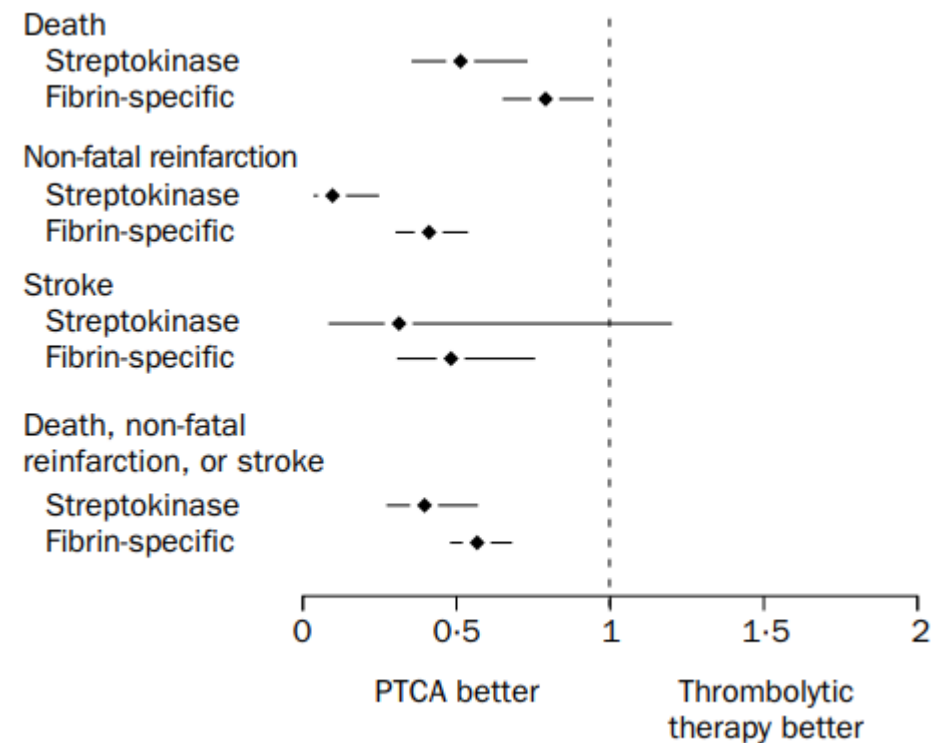
Co nás učili o revaskularizaci...

- Zachraňuje a prodlužuje životy
- Prevence infarktu myokardu a dalších srdečních příhod
- Zlepšení funkce myokardu
- Odstranění anginosních bolestí

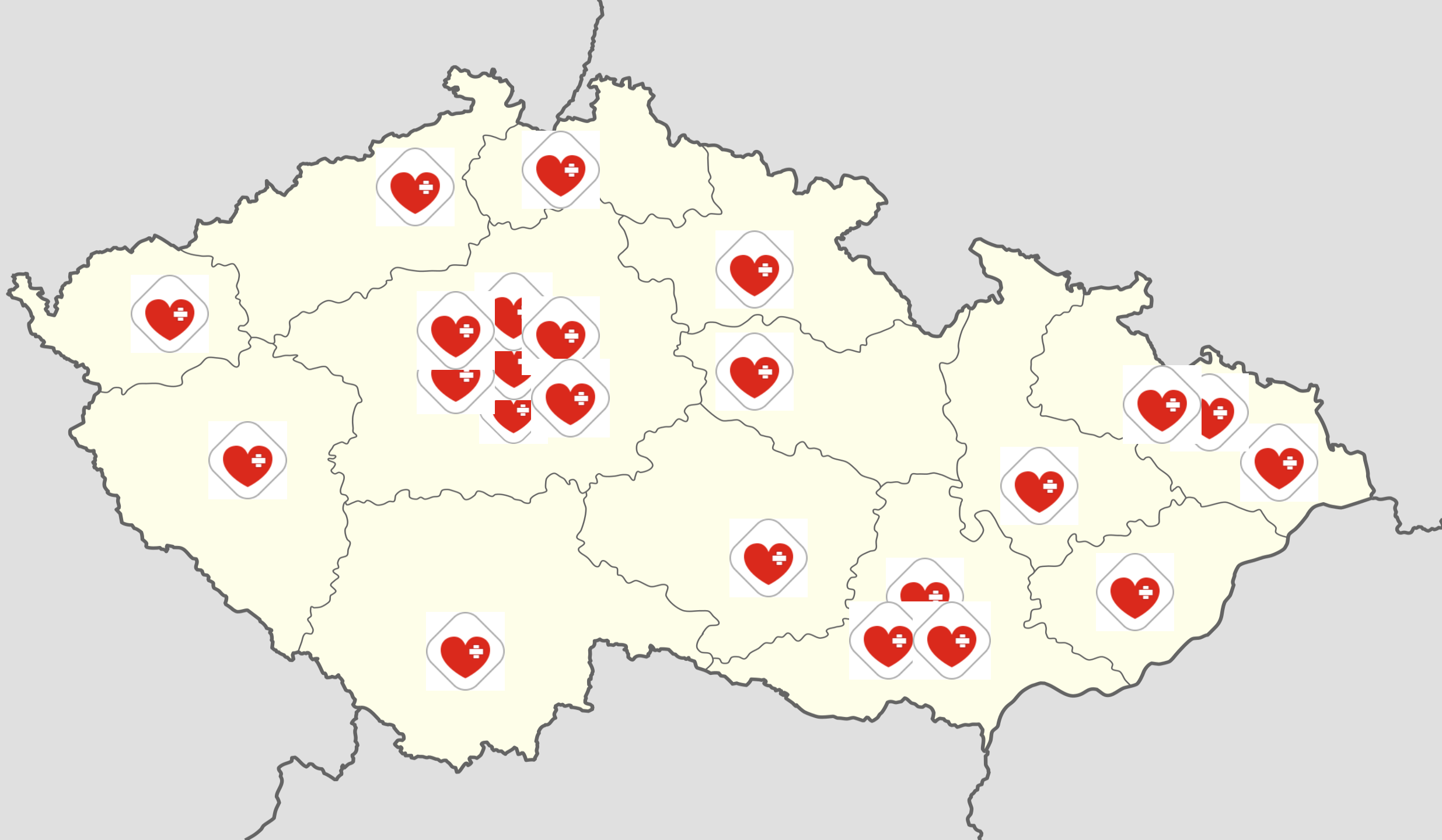
Articles

Primary angioplasty versus intravenous thrombolytic therapy for acute myocardial infarction: a quantitative review of 23 randomised trials

Ellen C Keeley, Judith A Boura, Cindy L Grines







KATETRIZAČNÍ PRACOVISTĚ V ČR

Město	Nemocnice	Pracoviště
Brno	Fakultní nemocnice Brno	Pracoviště
Brno	Fakultní nemocnice u sv. Anny	
Brno	Centrum kardiovaskulární a transplantační chirurgie	
Brno	Brno	
České Budějovice	Nemocnice České Budějovice, a. s.	Oddělení intervenční kardiologie
Hradec Králové	Fakultní nemocnice Hradec Králové	
Jihlava	Nemocnice Jihlava	
Karlovy Vary	Karlovarská krajská nemocnice, a. s.	
Liberec	Krajská nemocnice Liberec, a. s.	
Olomouc	Fakultní nemocnice Olomouc	
Ostrava	Fakultní nemocnice Ostrava	
Ostrava	Městská nemocnice Ostrava	
Pardubice	Kardiologické centrum AGEL, a. s.	
Plzeň	Fakultní nemocnice Plzeň	
Praha	Nemocnice Na Homolce	
Praha	Institut klinické a experimentální medicíny	
Praha	Fakultní nemocnice Královské Vinohrady	
Praha	Fakultní nemocnice Motol	
Praha	Kardiologie na Bulovce, s. r. o.	
Praha	Ústřední vojenská nemocnice	
Praha	Všeobecná fakultní nemocnice	
Třinec	Nemocnice Podlesí	
Ústí nad Labem	Masarykova nemocnice v Ústí nad Labem, o. z.	
Zlín	Krajská nemocnice T. Bati, a. s.	

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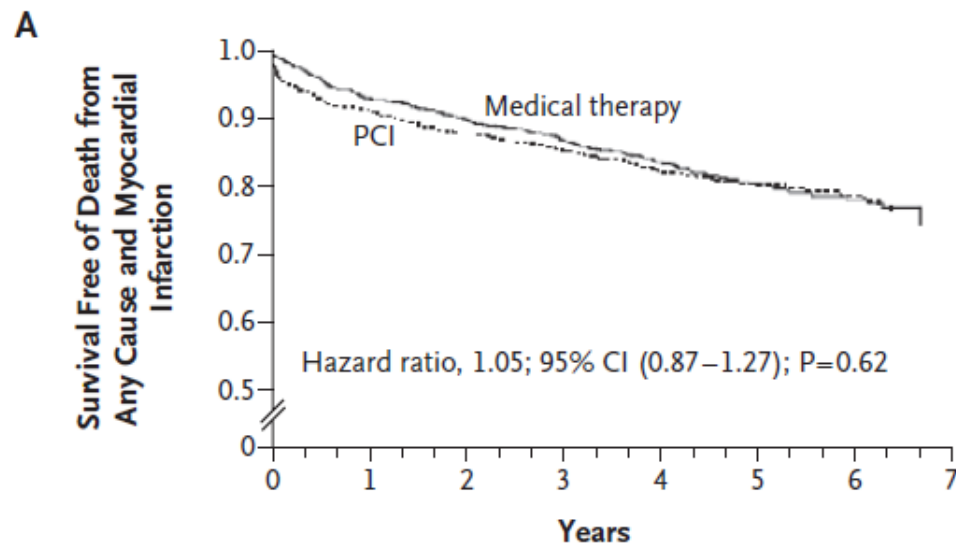
ESTABLISHED IN 1812

APRIL 12, 2007

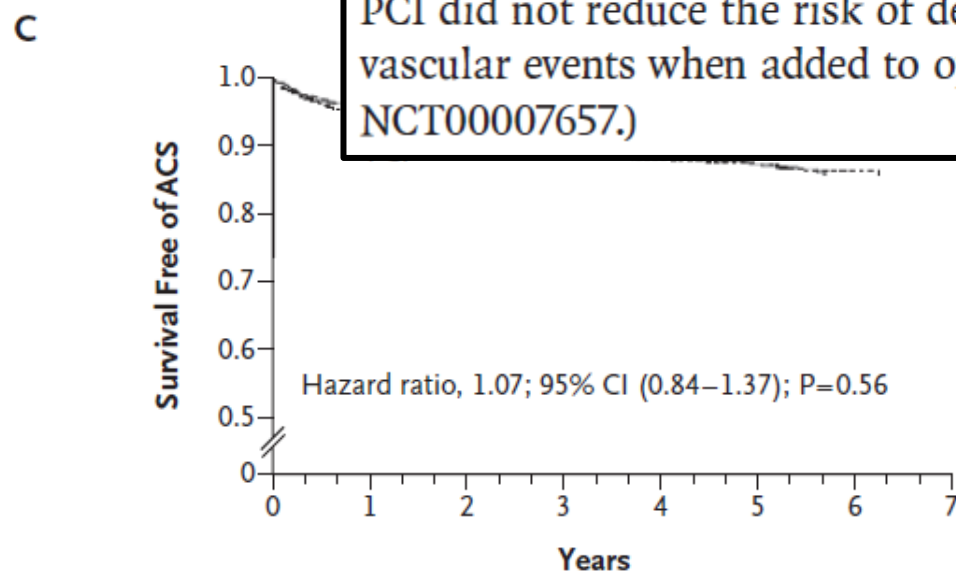
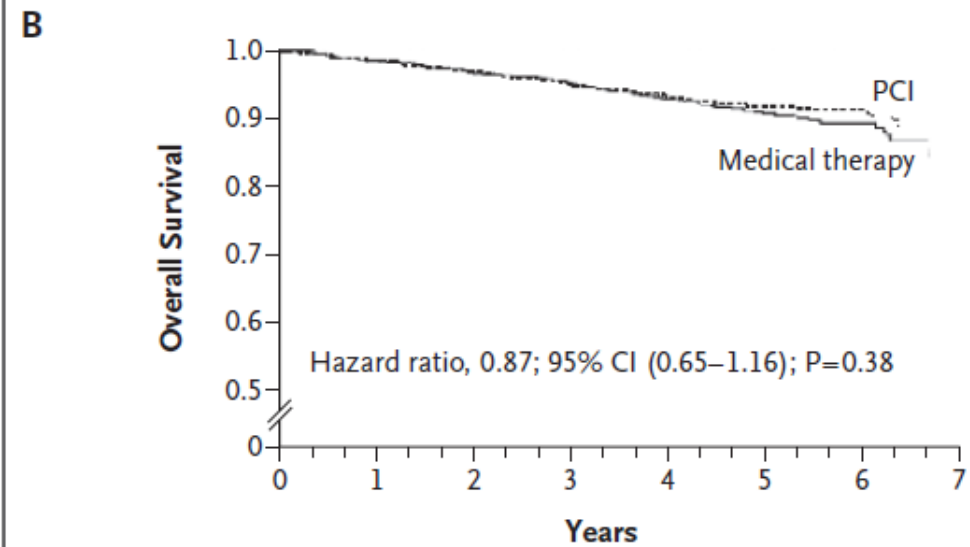
VOL. 356 NO. 15

Optimal Medical Therapy with or without PCI for Stable Coronary Disease

William E. Boden, M.D., Robert A. O'Rourke, M.D., Koon K. Teo, M.B., B.Ch., Ph.D., Pamela M. Hartigan, Ph.D., David J. Maron, M.D., William J. Kostuk, M.D., Merrill Knudtson, M.D., Marcin Dada, M.D., Paul Casperson, Ph.D., Crystal L. Harris, Pharm.D., Bernard R. Chaitman, M.D., Leslee Shaw, Ph.D., Gilbert Gosselin, M.D., Shah Nawaz, M.D., Lawrence M. Title, M.D., Gerald Gau, M.D., Alvin S. Blaustein, M.D., David C. Booth, M.D., Eric R. Bates, M.D., John A. Spertus, M.D., M.P.H., Daniel S. Berman, M.D., G.B. John Mancini, M.D., and William S. Weintraub, M.D., for the COURAGE Trial Research Group*

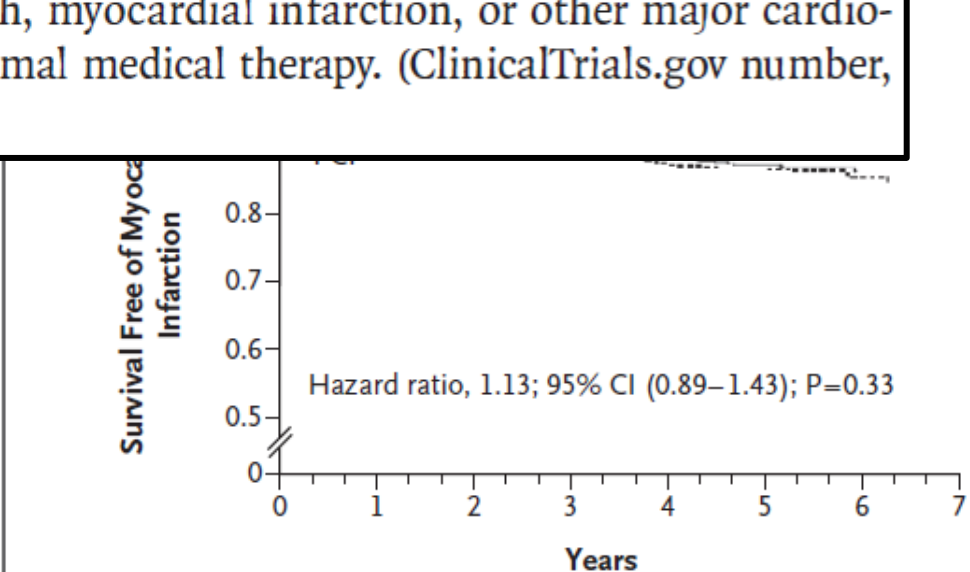


No. at Risk
Medical therapy 1138
PCI 1149



No. at Risk

Medical therapy	1138	1025	956	833	662	418	236	127
PCI	1149	1027	957	835	667	431	246	134



No. at Risk

Medical therapy	1138	1019	962	834	638	409	192	120
PCI	1149	1015	954	833	637	418	200	134

CONCLUSIONS

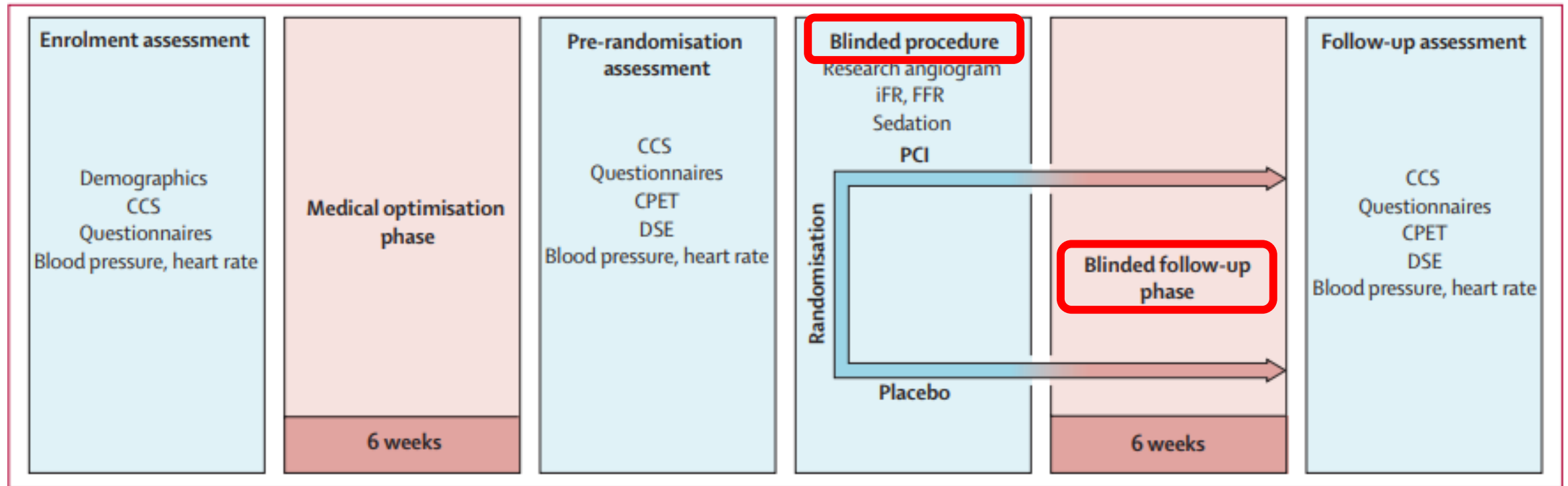
As an initial management strategy in patients with stable coronary artery disease, PCI did not reduce the risk of death, myocardial infarction, or other major cardiovascular events when added to optimal medical therapy. (ClinicalTrials.gov number, NCT00007657.)

Co nás učili o revaskularizaci...

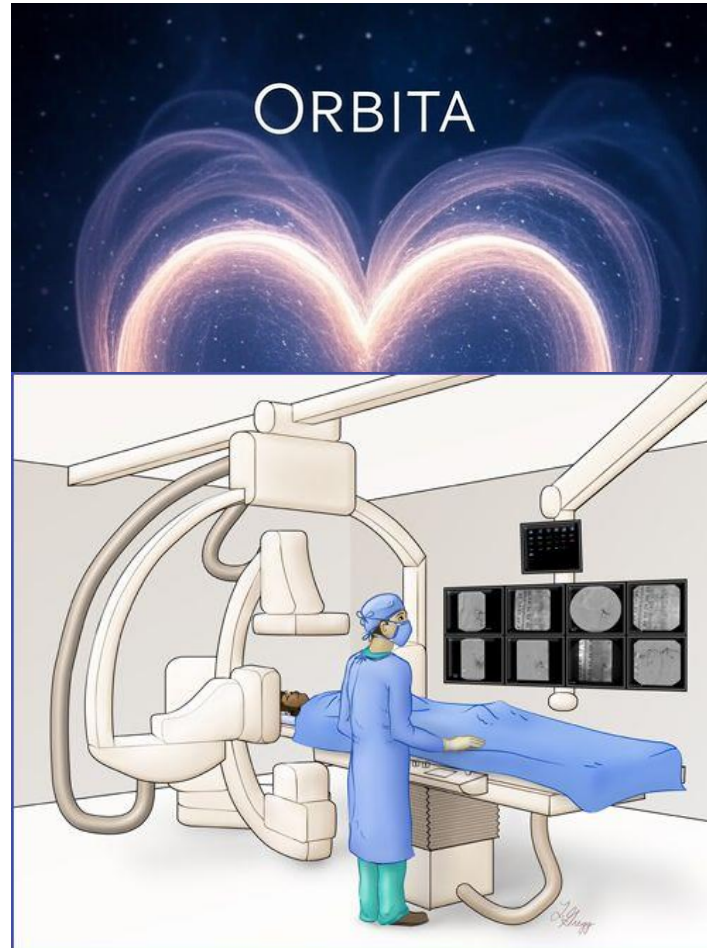
- ~~Zahraňuje a prodlužuje životy~~
- ~~Prevence infarktu myokardu a dalších srdečních příhod~~
- Odstranění anginosních bolestí

Percutaneous coronary intervention in stable angina (ORBITA): a double-blind, randomised controlled trial

*Rasha Al-Lamee, David Thompson, Hakim-Moulay Dehbi, Sayan Sen, Kare Tang, John Davies, Thomas Keeble, Michael Mielewczik, Raffi Kaprielian, Iqbal S Malik, Sukhjinder S Nijjer, Ricardo Petraco, Christopher Cook, Yousif Ahmad, James Howard, Christopher Baker, Andrew Sharp, Robert Gerber, Suneel Talwar, Ravi Assomull, Jamil Mayet, Roland Wensel, David Collier, Matthew Shun-Shin, Simon A Thom, Justin E Davies, Darrel P Francis, on behalf of the ORBITA investigators**



Percutaneous coronary intervention in stable angina (ORBITA): a double-blind, randomised controlled trial



Percutaneous
(ORBITA): a

e angina
olled trial



The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812

APRIL 12, 2007

VOL. 356 NO. 15

Optimal Medical
Therapy for S

Percutaneous coronary intervention in stable angina (ORBITA): a double-blind, randomised controlled trial

William E. Boden, M.D., Robert A. O'Rourke,
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Crystal L. Harris, Pharm.D., Bernard
Shah Nawaz, M.D., Lawrence M. Title,
Eric R. Bates, M.D., John A. Spertus,
and William S. Weintraub

Rasha Al-Lamee, David Thompson, Hakim-Moul
Raffi Kaprielian, Iqbal S Malik, Sukhjinder S Nijjer,
Andrew Sharp, Robert Gerber, Suneel Talwar, Rav
Justin E Davies, Darrel P Francis, on behalf of the

The NEW ENGLAND JOURNAL of MEDICINE

VOL. 382 NO. 15

STABLE CAD

A meta-analysis of optimal medical therapy with or without percutaneous coronary intervention in patients with stable coronary artery disease

Shah, Rahman^{a,b}; Nayyar, Mannu^a; Le, Francis K^b; Labroo, Ajay^b; Nasr, Abrar^c; Rashid, Abdul^d; Davis, Donnie
A^b; Weintraub, William S.^e; Boden, William E.^{f,g}

[Author Information](#) ✓

Coronary Artery Disease 33(2):p 91-97, March 2022. | DOI: 10.1097/MCA.0000000000001041

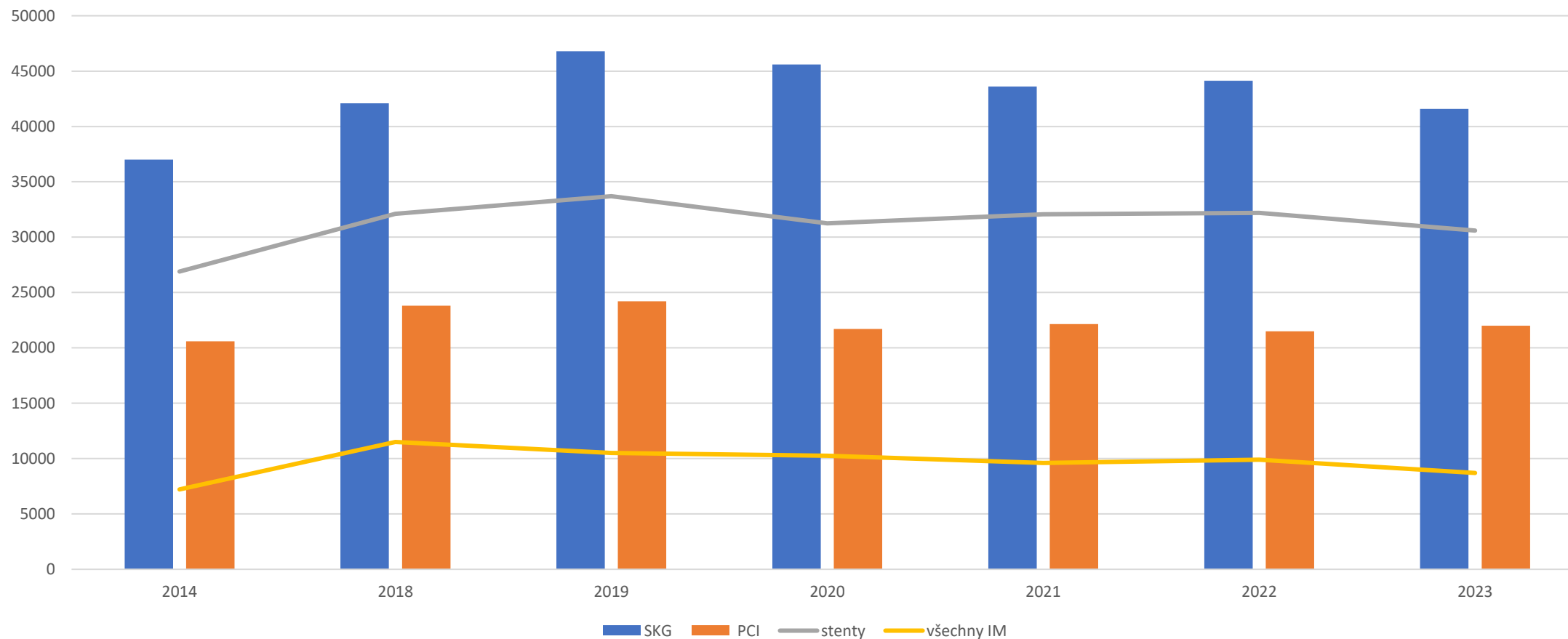
for Stable Coronary Disease

'Brien, W.E. Boden, B.R. Chaitman, R. Senior,
ger, J.D. Newman, M.S. Sidhu, S.G. Goodman,
K. Min, G.B.J. Mancini, D.S. Berman, M.H. Picard,
ghamaz, N. Moorthy, W.A. Hueb, M. Demkow,
r, M. Keltai, J.B. Selvanayagam, P.G. Steg, C. Held,
, F.W. Rockhold, S. Broderick, T.B. Ferguson, Jr.,
berg, for the ISCHEMIA Research Group*

Reakce intervenčních kardiologů



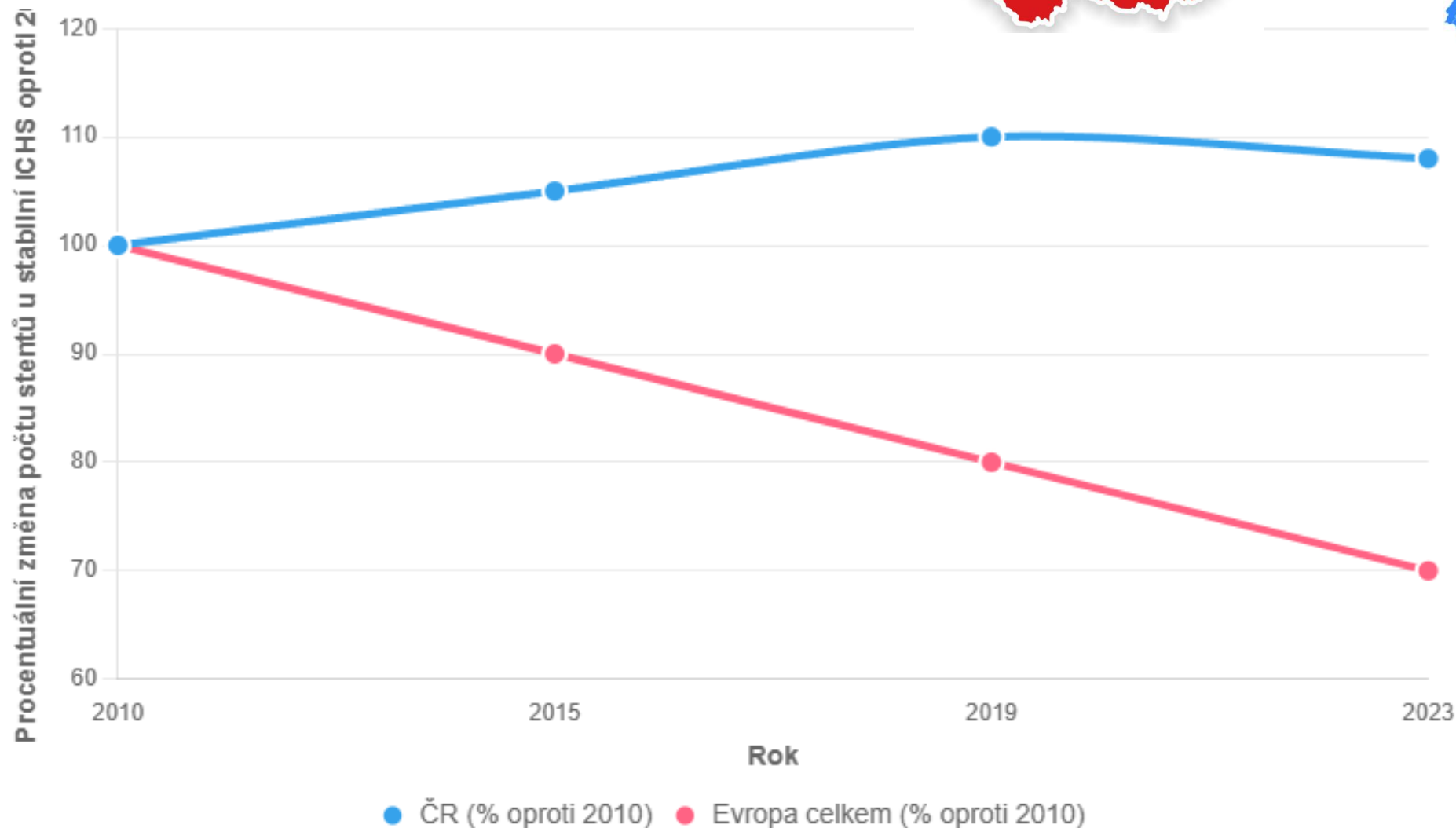
Koronární intervence 2014-2023



Stenty u stabilní ICHS



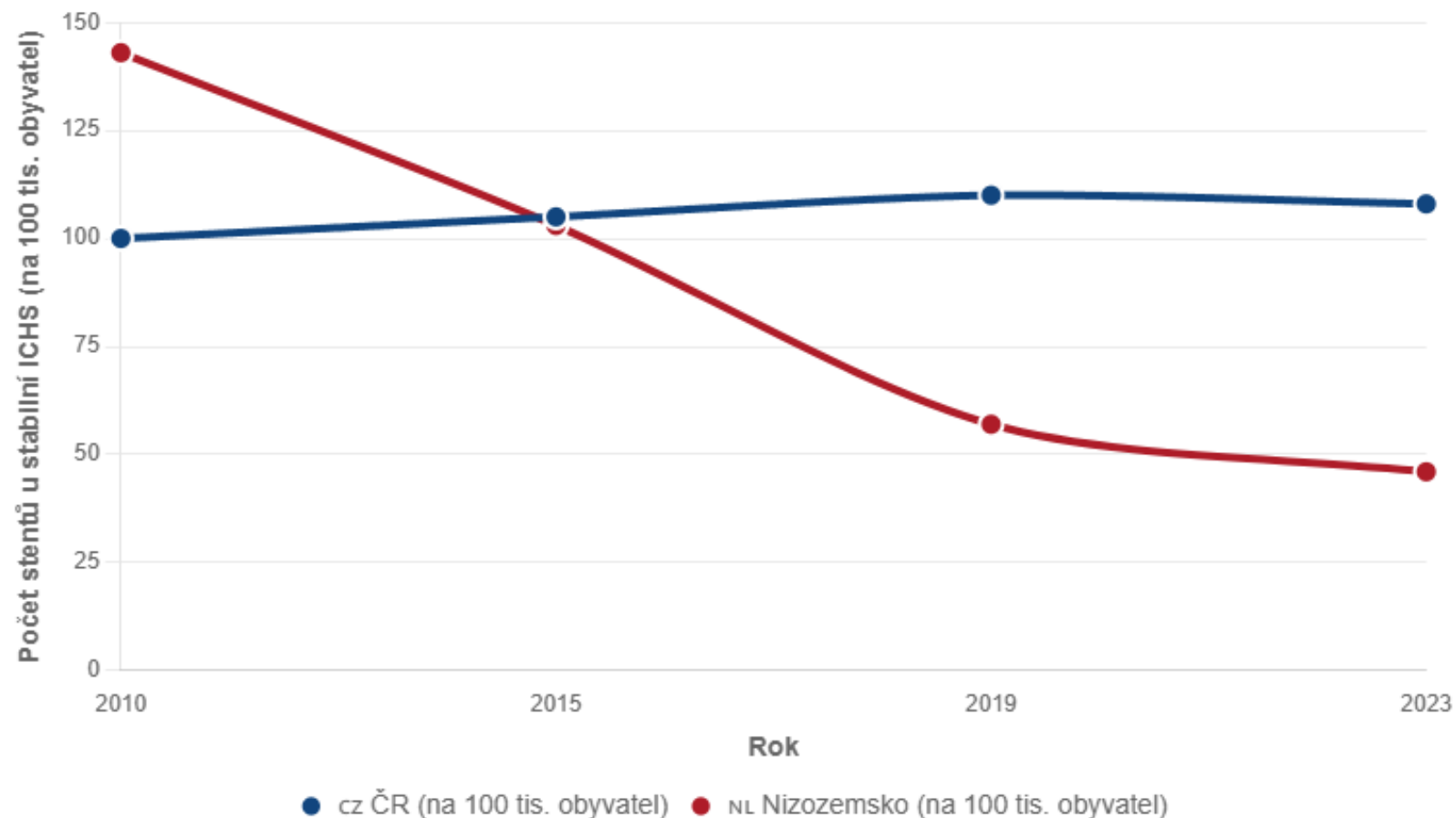
vs



Stenty u stabilní ICHS



vs

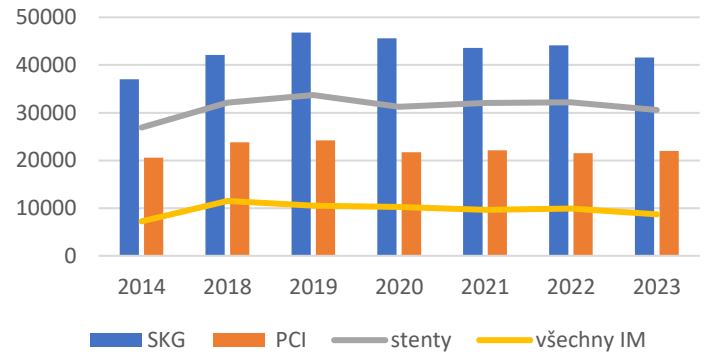


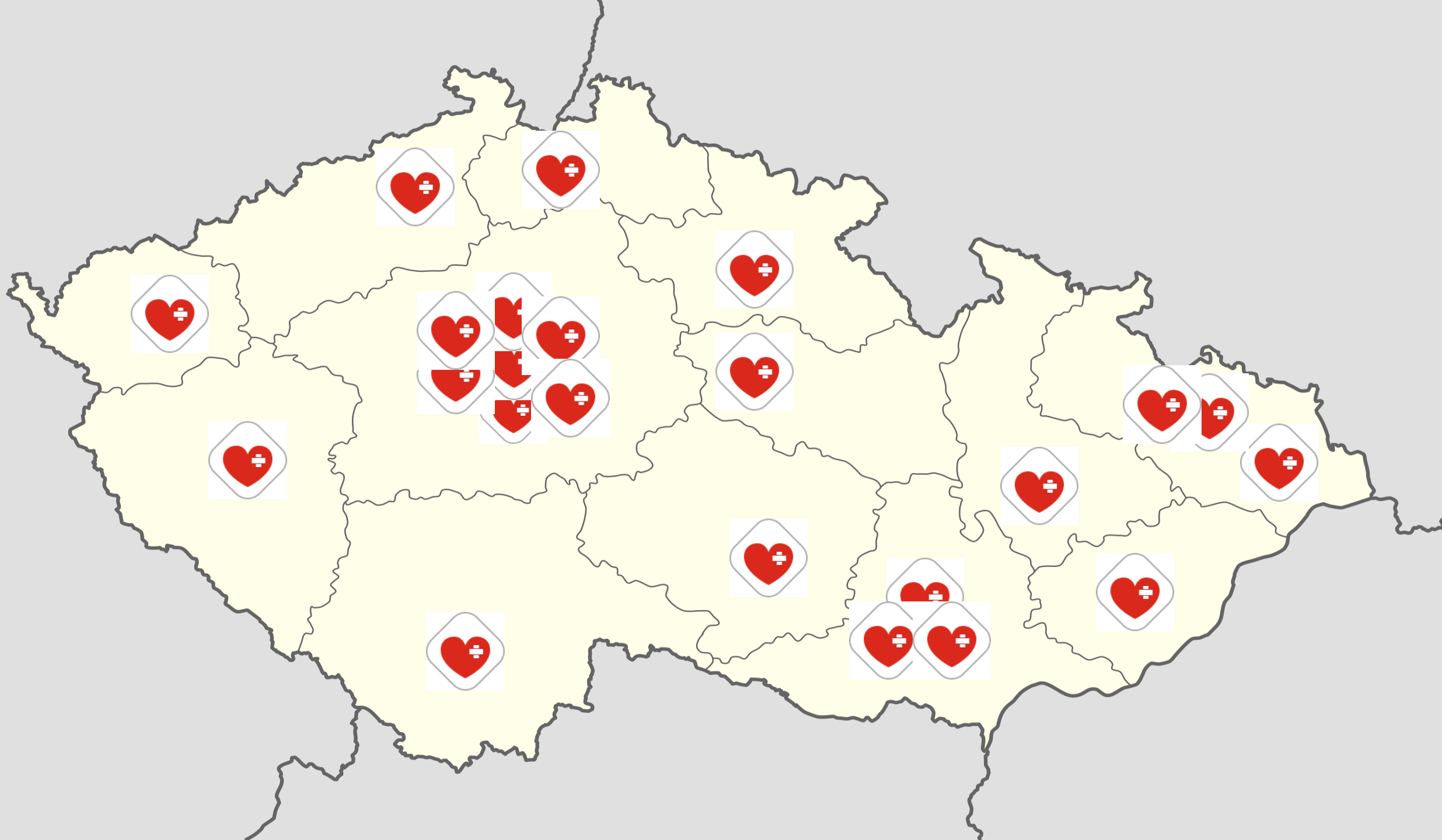
Jde to jinak ?



● Kaiser Permanente areas²
(CA, CO, D.C., GA, HI, MD, OR, VA, WA)

● Other areas





PROČ ?

- Když vidím významnou stenózu, tak ji tam přeci nenechám
- Moji pacienti nemají rádi tolik prášků
- Když to neudělám já, udělá to konkurence
- Anesteziolog ho jinak neuspí na banální výkon
- Ve studiích jsou méně nemocní pacienti

Stories Leading to the REVIVED Trial

Timeline
leading
to
REVIVED



Story of surgical revascularization in severe CAD + HFrEF

STICH (2011)

CABG + Medical Therapy (Rx) vs. Rx only

STICHES (2016)

↓ Death from any cause (HR=0.84, p=0.02)
↓ CV causes (HR=0.79, p=0.006) in CABG group in 10-year follow-up



Story of PCI in Stable CAD

COURAGE (2007)

PCI + Rx vs. Rx alone
No difference in death, MI, or MACE over 4.6 years

Ischemia (2020)

PCI + Rx vs. Rx (in mod-severe ischemia)
No difference in death/MI over 3.2 years



Evolution of Rx

2005

GLP-1
Introduced

2013

SGLT-2

2014

Long-term
DAPT

2015

ARNI
Ezetimibe

2016

GLP-1 & CV
benefit
published

2017

Low-dose
Rivaroxaban
PCSK9-i

REVIVED (2022) Trial

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OCTOBER 13, 2022

VOL. 387 NO. 15

Percutaneous Revascularization for Ischemic Left Ventricular Dysfunction

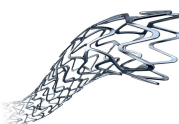
Divaka Perera, M.D., Tim Clayton, M.Sc., Peter D. O'Kane, M.D., John P. Greenwood, Ph.D., Roshan Weerackody, Ph.D., Matthew Ryan, Ph.D., Holly P. Morgan, M.B., B.Ch., Matthew Dodd, M.Sc., Richard Evans, B.A., Ruth Canter, M.Sc., Sophie Arnold, M.Sc., Lana J. Dixon, Ph.D., Richard J. Edwards, Ph.D., Kalpa De Silva, Ph.D., James C. Spratt, M.D., Dwayne Conway, M.D., James Cotton, M.D., Margaret McEntegart, Ph.D., Amedeo Chiribiri, Ph.D., Pedro Saramago, Ph.D., Anthony Gershlick, M.D., Ajay M. Shah, M.D., Andrew L. Clark, M.D., and Mark C. Petrie, M.D., for the REVIVED-BCIS2 Investigators*

United Kingdom



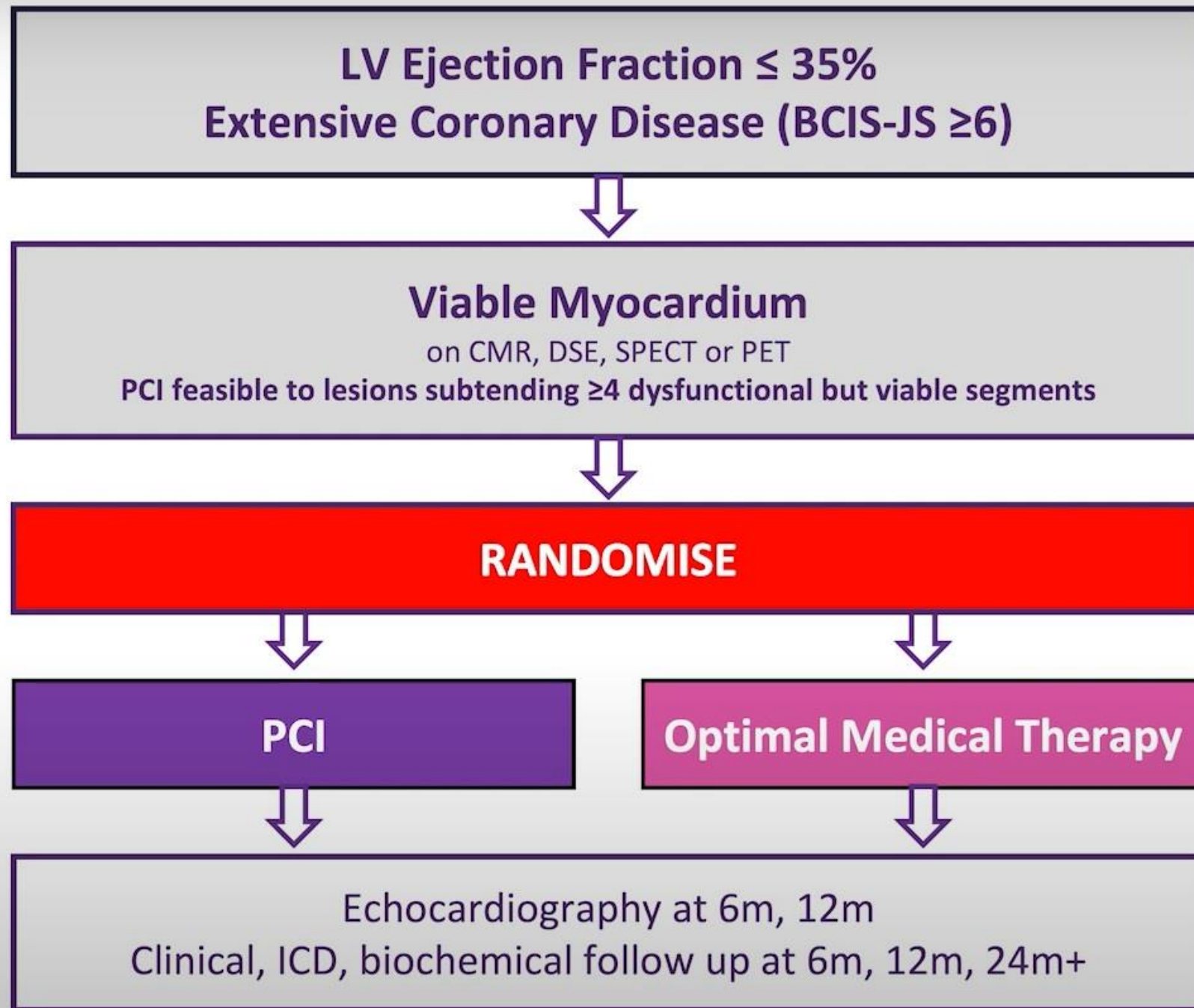
REVascularisation for **I**schaemic **V**entricular
Dysfunction
(REVIVED-BCIS2)



 +  347

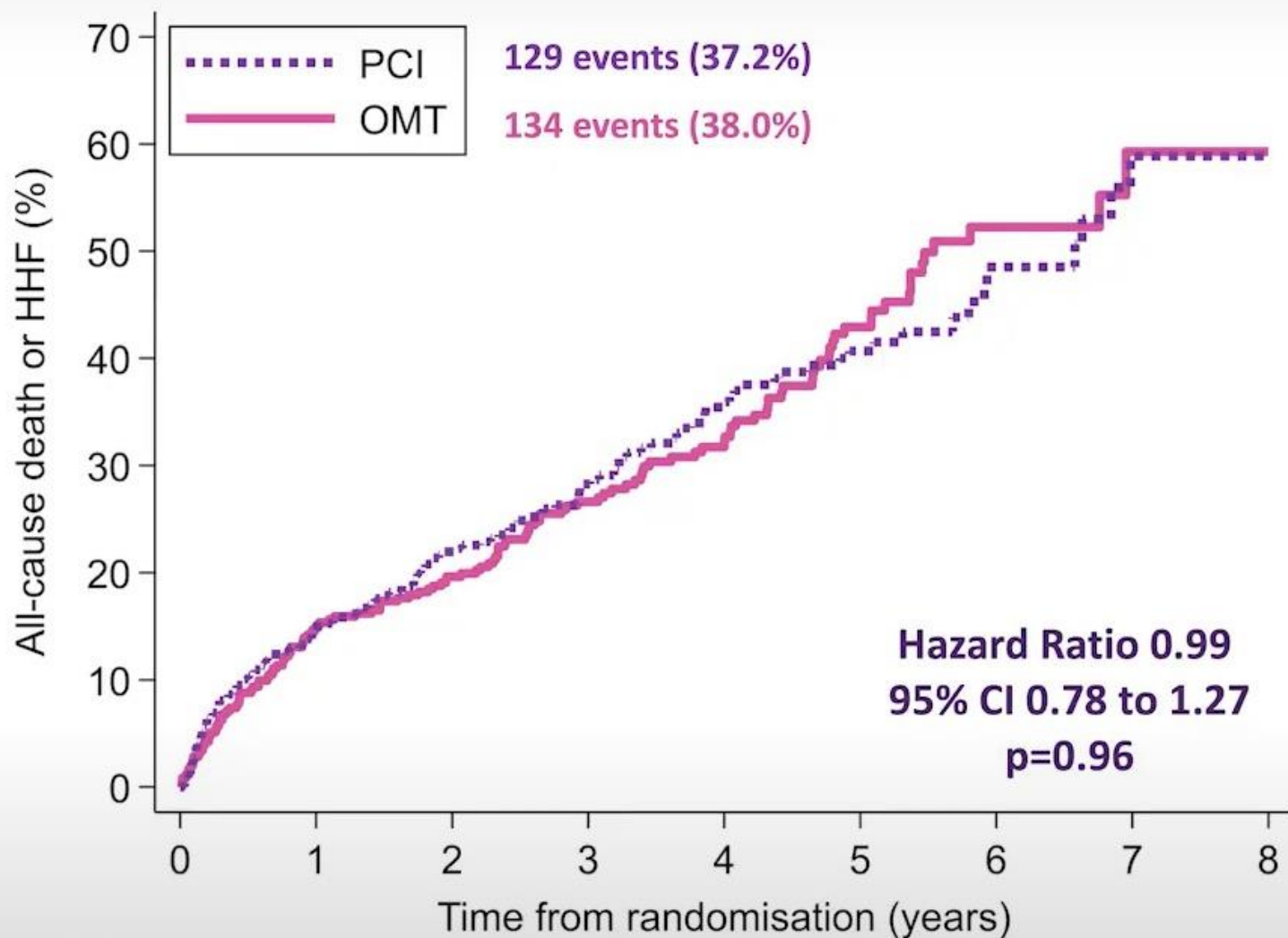
 353

Perera D et al, JACC HF 2018





Primary Outcome



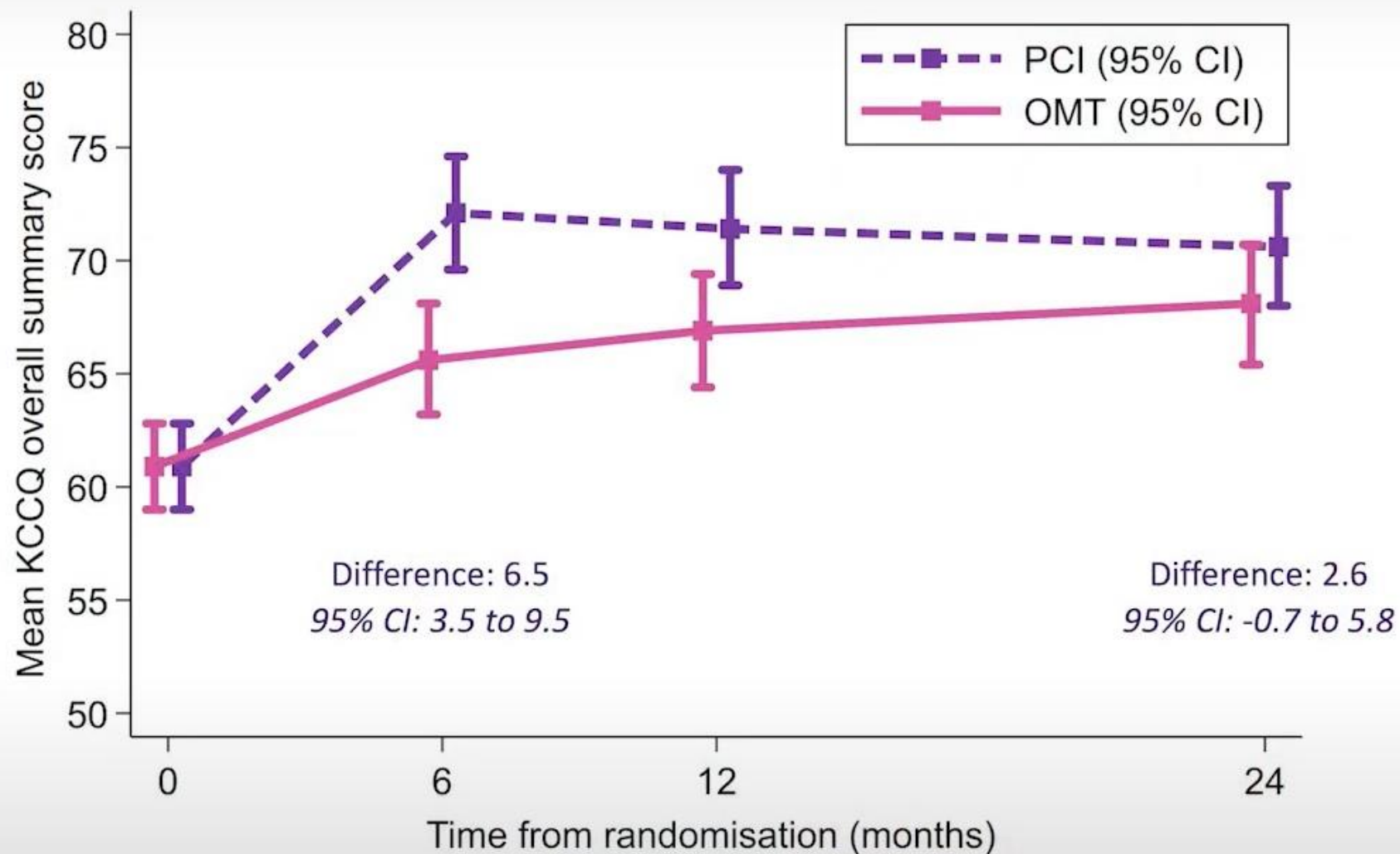
Number at risk

PCI	347	295	262	179	130	80	32	14	3
OMT	353	299	276	191	142	82	33	10	1



**Major
secondary
outcome:
KCCQ Score**

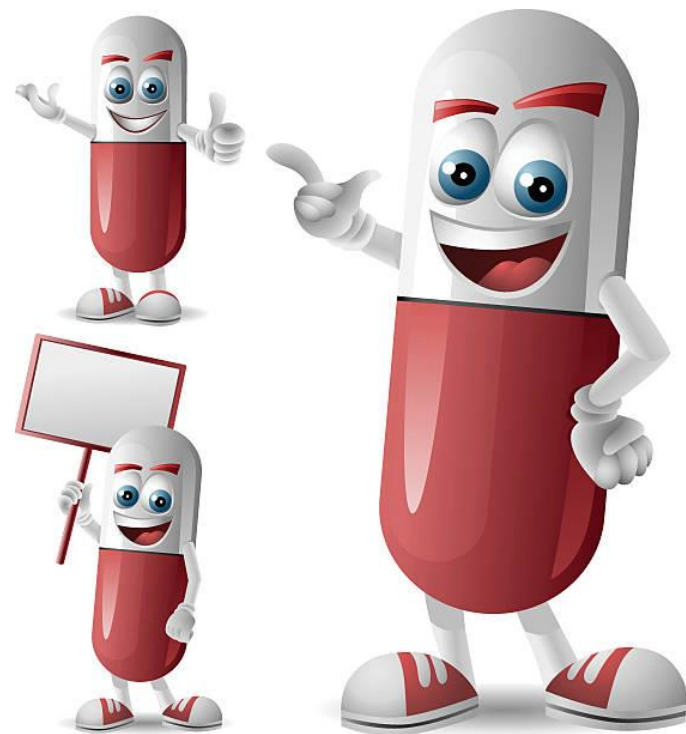
score ranges from
0 (very poor health) to
100 (excellent health)



Number followed up

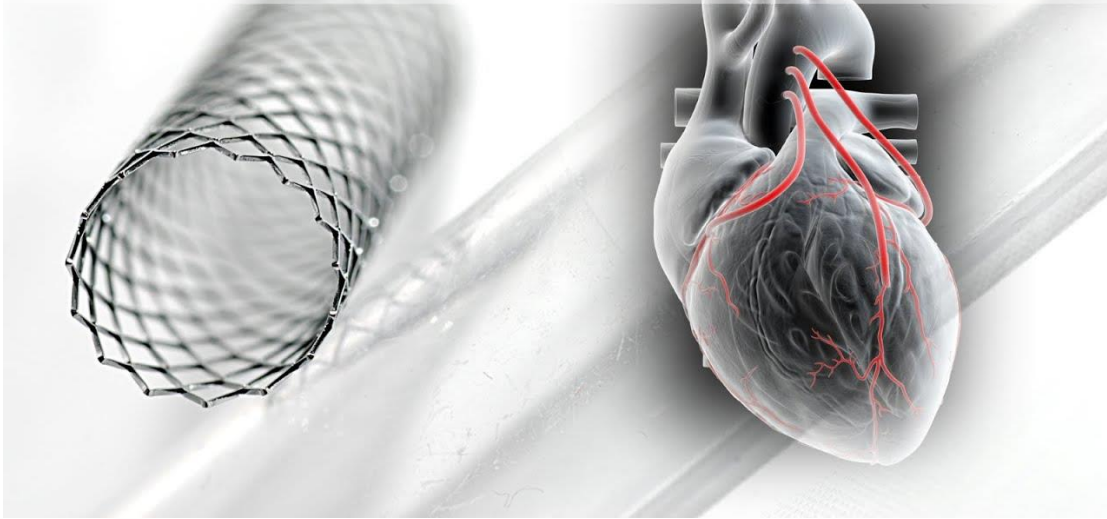
PCI	319	270	268	228
OMT	318	285	268	228

Stenty vs prášky

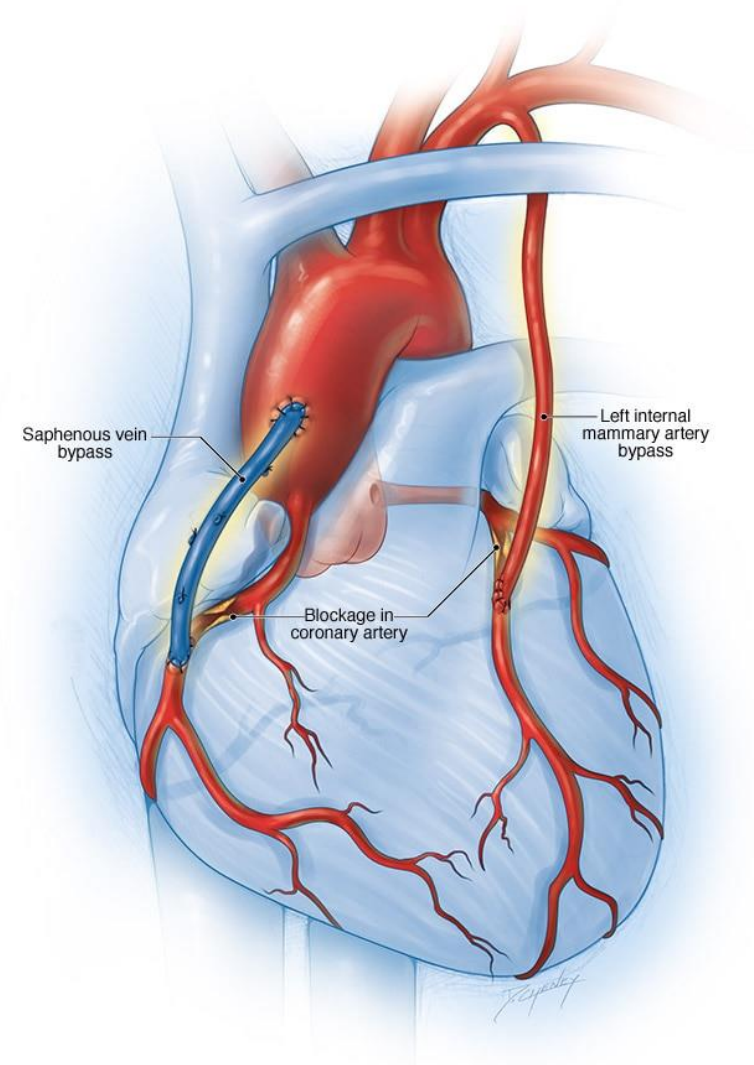




STENT or BYPASS SURGERY?



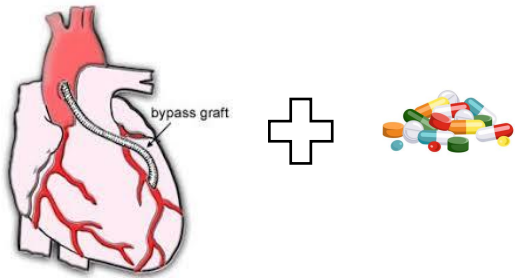
<https://www.youtube.com/watch?v=RAFK4jr6JRs>



<https://www.mayoclinic.org/tests-procedures/coronary-bypass-surgery/about/pac-20384589>

Stitch trial

ICHs, EF $\leq$ 35%



610



602

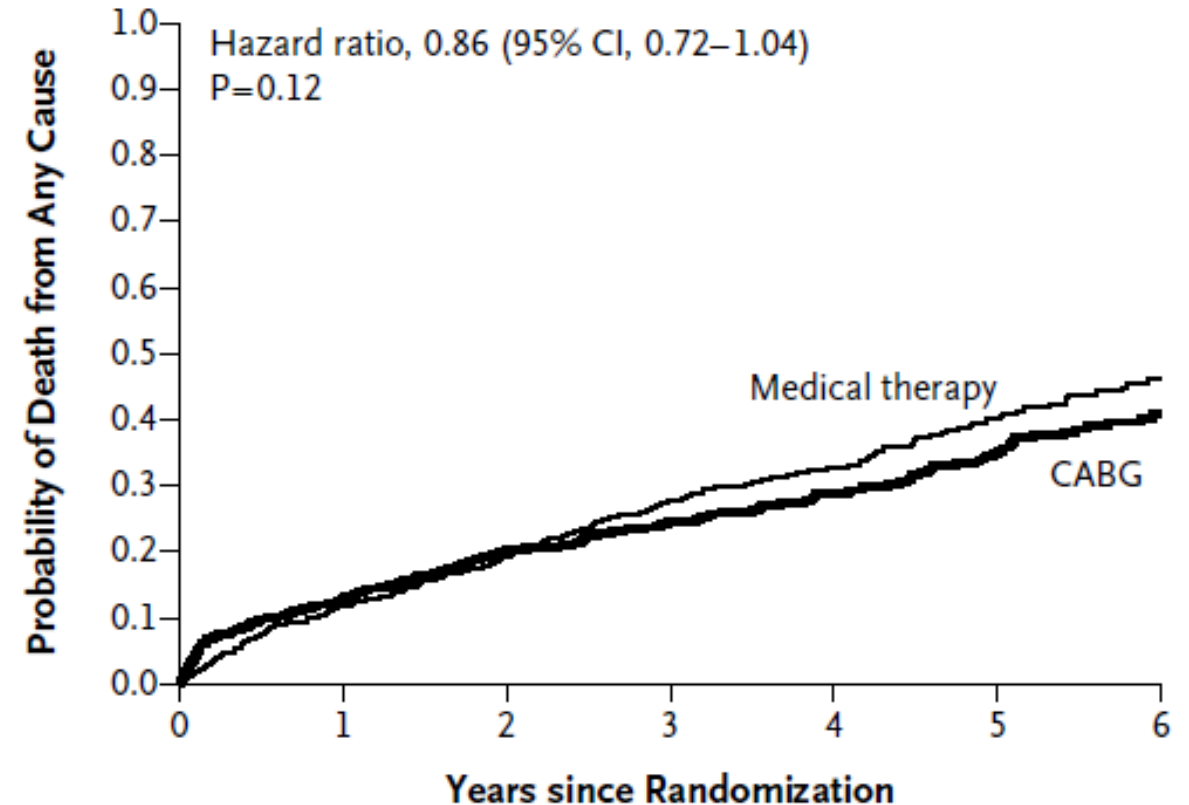
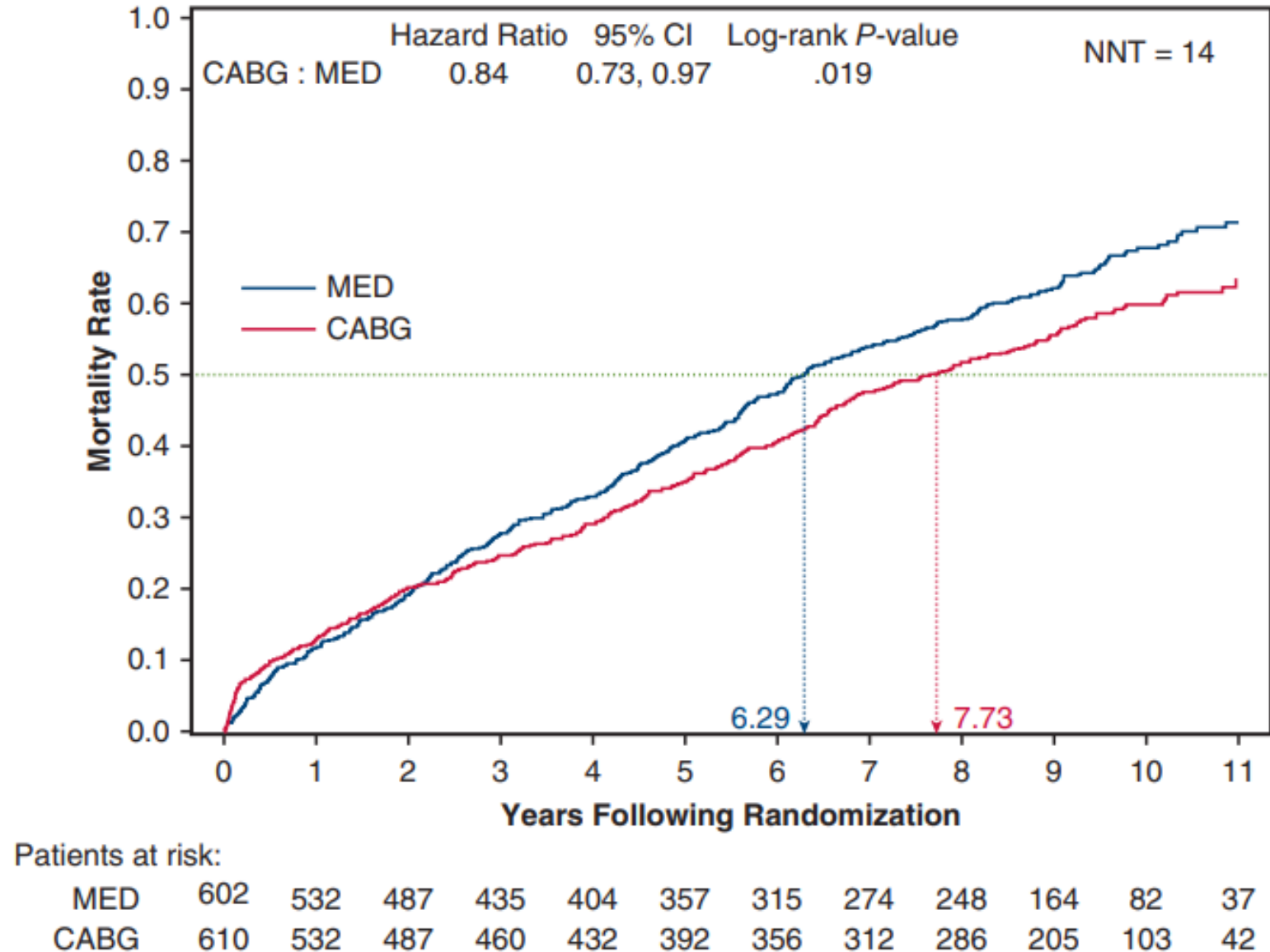
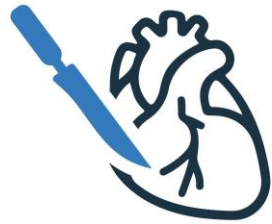
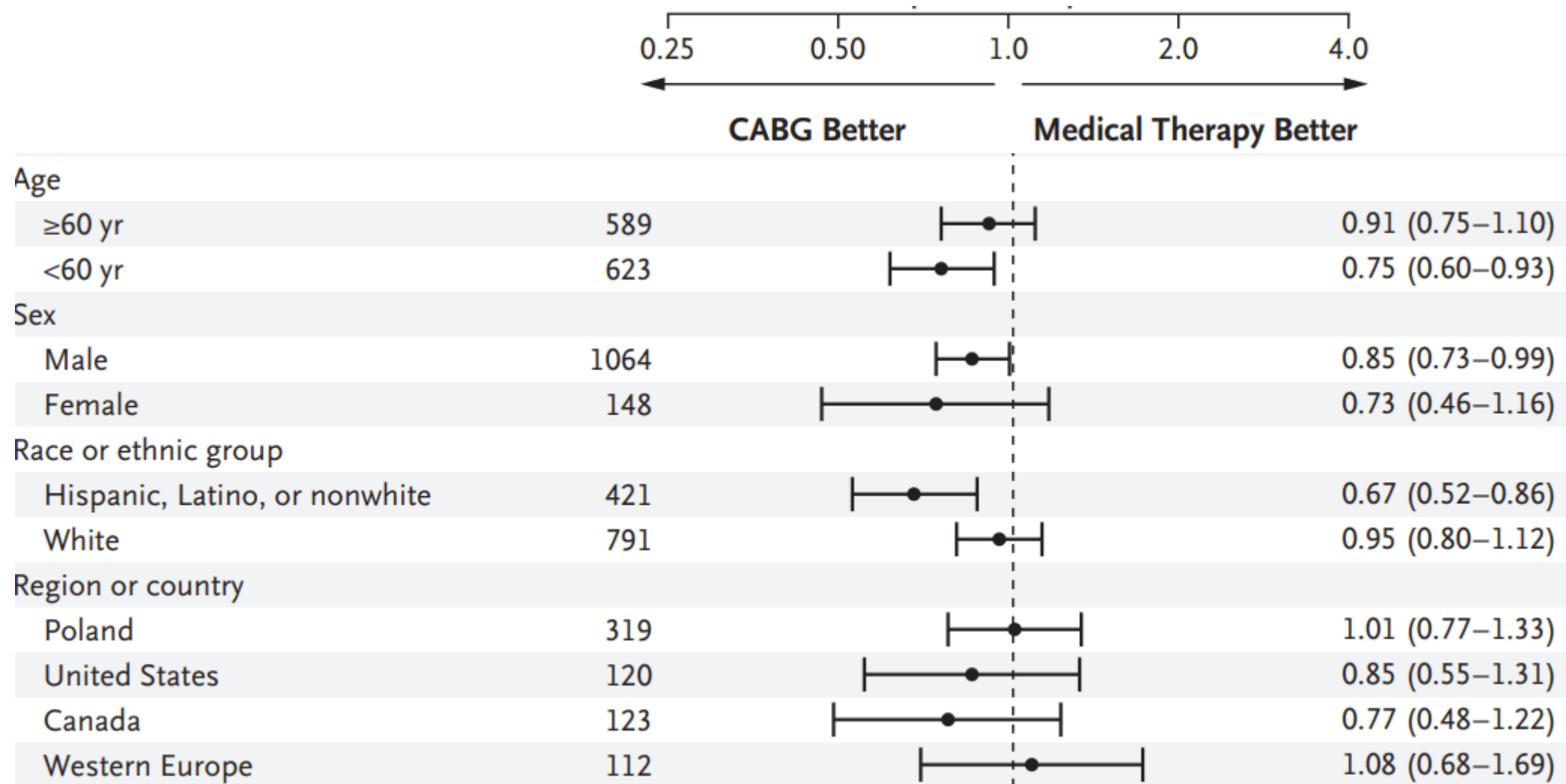


Figure 1. Kaplan–Meier Curves for the Probability of Death from Any Cause. CABG denotes coronary-artery bypass grafting.

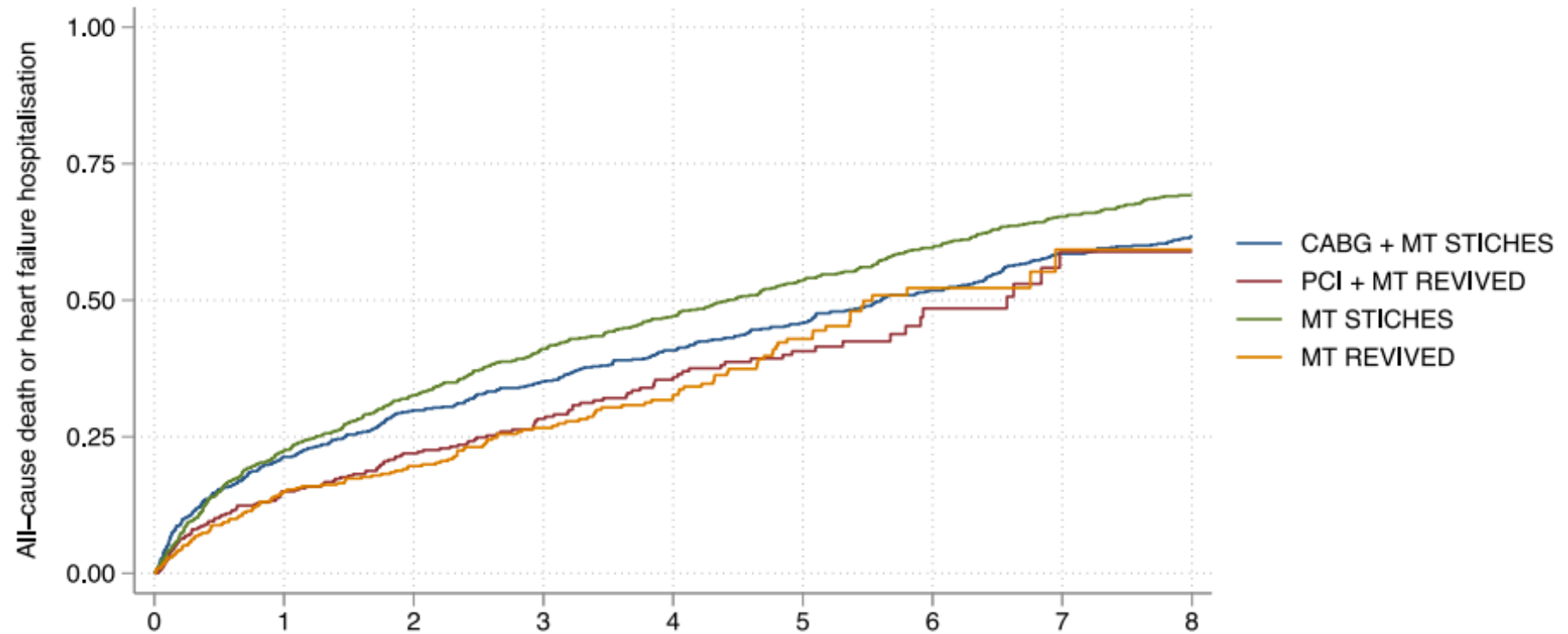
Stitch trial



Coronary-Artery Bypass Surgery in Patients with Ischemic Cardiomyopathy



Medical therapy and outcomes in REVIVED-BCIS2 and STICHES: an individual patient data analysis



Number at risk		
CABG + MT STICHES	610	480
PCI + MT REVIVED	347	295
MT STICHES	601	466
MT REVIVED	353	299



Evolution of Rx

2005
GLP-1
Introduced

2013
SGLT-2

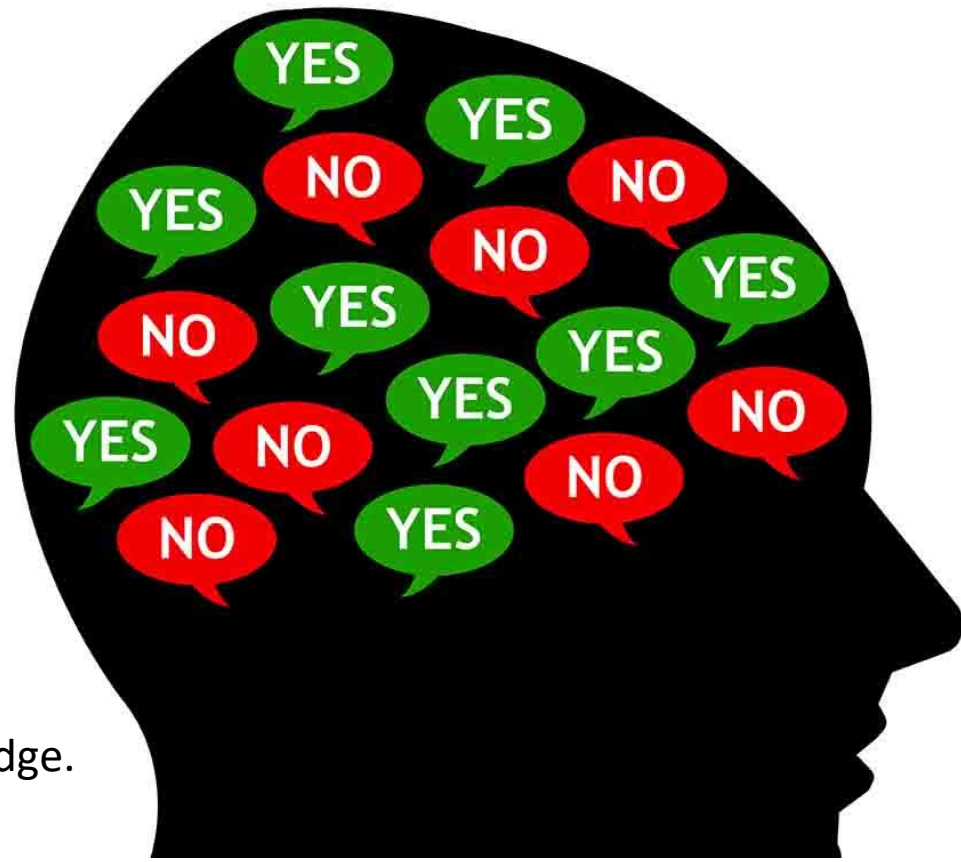
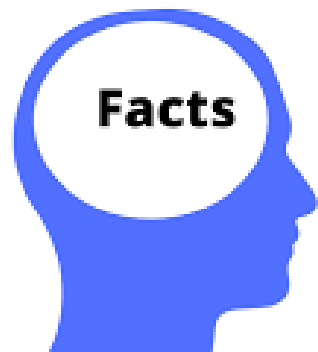
2014
Long-term
DAPT

2015
ARNI
Ezetimibe

2016
GLP-1 & CV
benefit
published

2017
Low-dose
Rivaroxaban
PCSK9-i

cognitive dissonance - poznávací nesoulad



Steven Hawking alluded to, the greatest enemy of knowledge is not ignorance, but the illusion of knowledge. In other words the greatest barrier to the truth is psychological, not intellectual.

Otec EBM

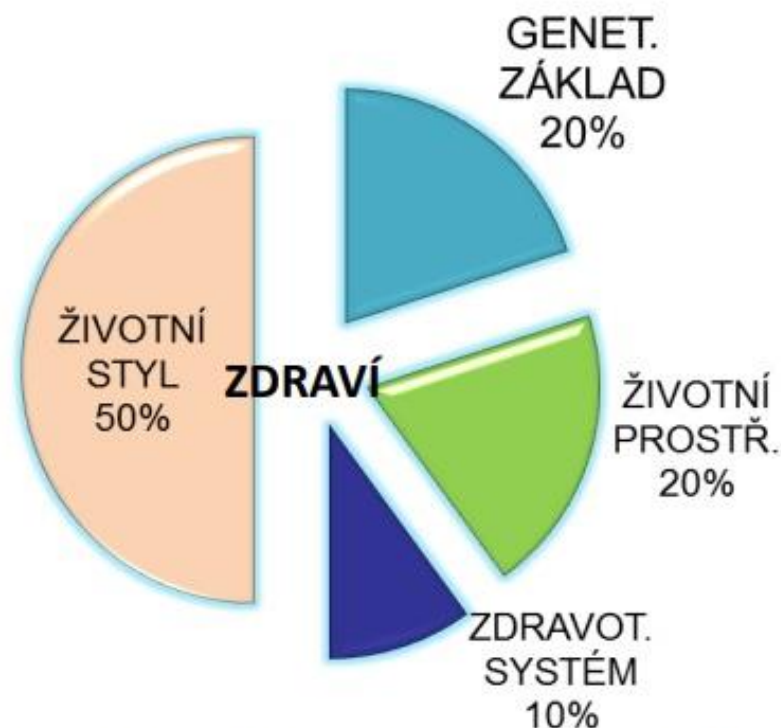


Half of what you'll learn in medical school will be shown to be wrong or out of date within five years of your graduation; the trouble is no one can tell you which half - so the most important thing to learn is how to learn on your own."

— Dr. David Sackett

ZÁKLADNÍ DETERMINANTY ZDRAVÍ

- Lalondova zpráva – vymezuje čtyři základní okruhy determinant zdraví



- Smyslem této kvantifikace však bylo především ukázat, že kromě vliv zdravotní péče na zdraví populace byl přeceňován.
- Nejvýznamnější determinanty zdraví leží mimo tradičně chápaný sektor zdravotnictví

Děkuji za pozornost

