Kardiometabolische Prävention mit besonderem Blick auf Lipidmanagement und Hypertonie

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Disclosures

Mit freundlicher Unterstützung von:

Bezahlte Fortbildungen:

Böhringer Ingelheim, Cardiac Dimensions, Daiichi Sankyo, Amgen

Vortragstätigkeit:

Novartis, Kwizda, Boehringer Ingelheim, Bayer, Amgen

Gliederung

- Lipidmanagement
- Art. Hypertonie

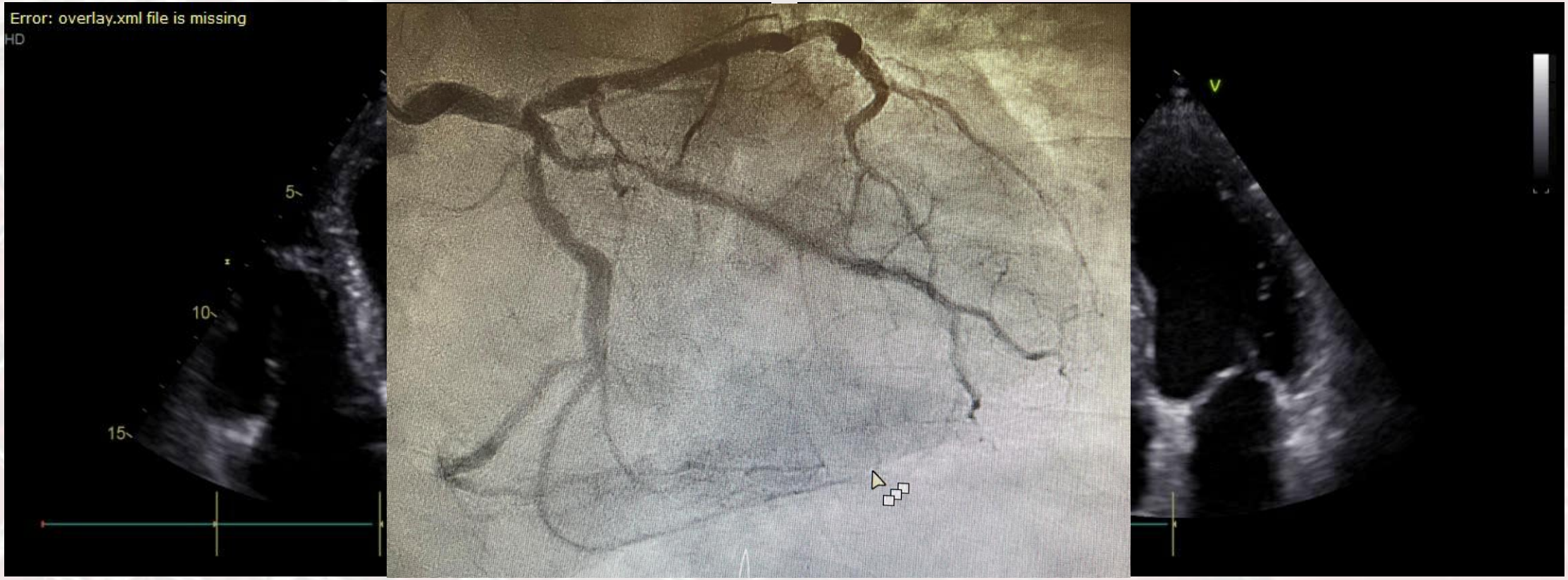

becel
CLASSIC
becel
CLASSIC
GUT FÜR DAS HERZ*
NATÜRLICH REICH AN OMEGA 3

Gesamtcholesterin 5,18 mmol/L (200 mg/dL), LDL-C bei 3,68 mmol/L (142 mg/dL), HDL-C bei 1,17 mmol/L (45 mg/dL).

Reduzierte intestinale Cholesterinresorption: Der Mann nahm nur etwa 18 % des zugeführten Cholesterins tatsächlich auf – im Vergleich zu 46–55 % bei gesunden Vergleichspersonen unter cholesterinreicher bzw. -armer Diät.
Gesteigerte Gallensäuresynthese: Die Umwandlung von Cholesterin zu Gallensäuren war bei dem Mann gegenüber den Vergleichspersonen nahezu verdoppelt. Er synthetisierte täglich rund 1.513 µmol Gallensäuren, die Vergleichsprobanden bei cholesterinarmer Ernährung 766 µmol pro Tag und bei cholesterinreicher Ernährung 812 µmol pro Tag.

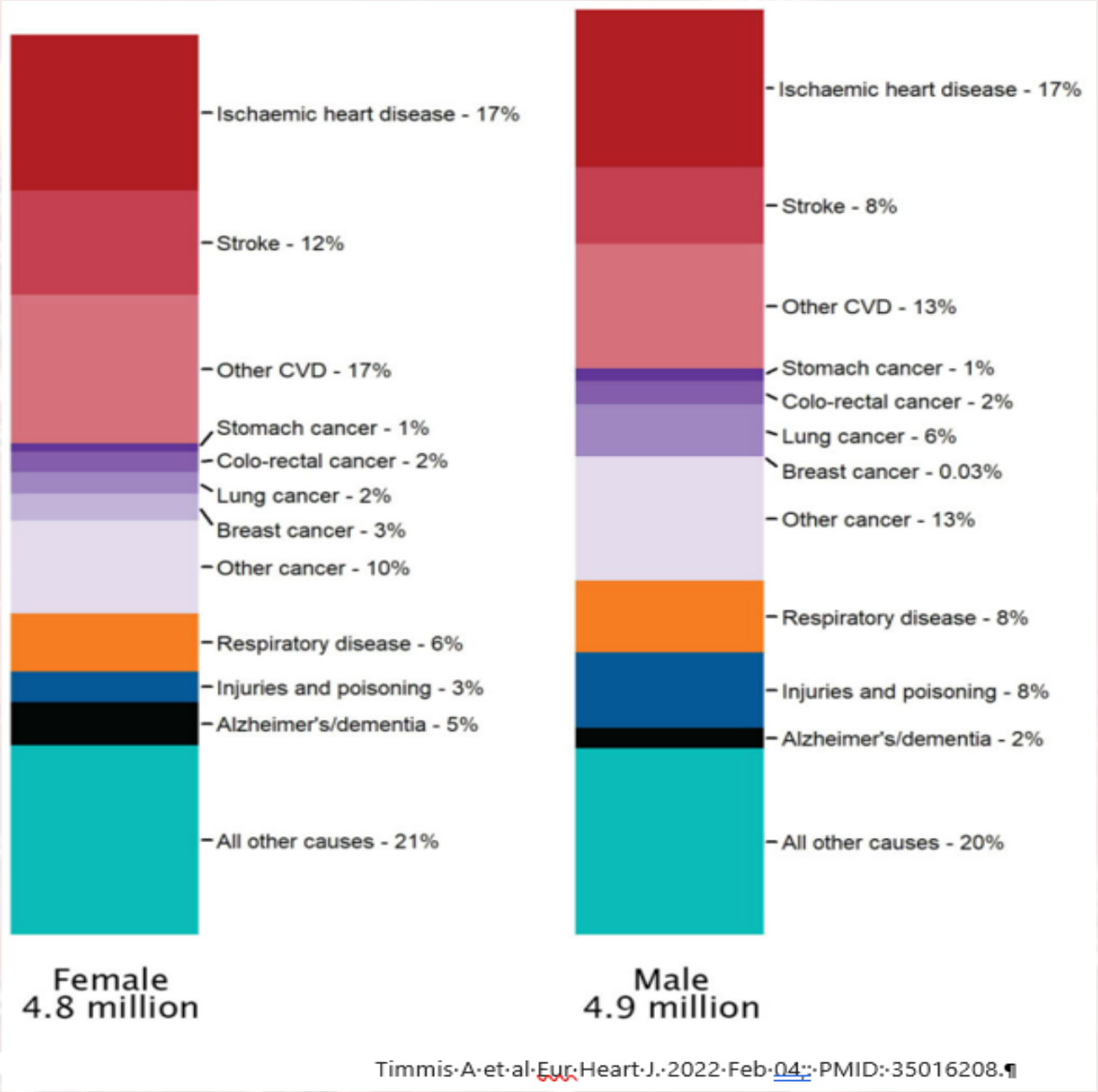
Kern F Jr N Engl J Med. 1991 Mar 28;324(13):896-9.

Machen wir alles richtig?



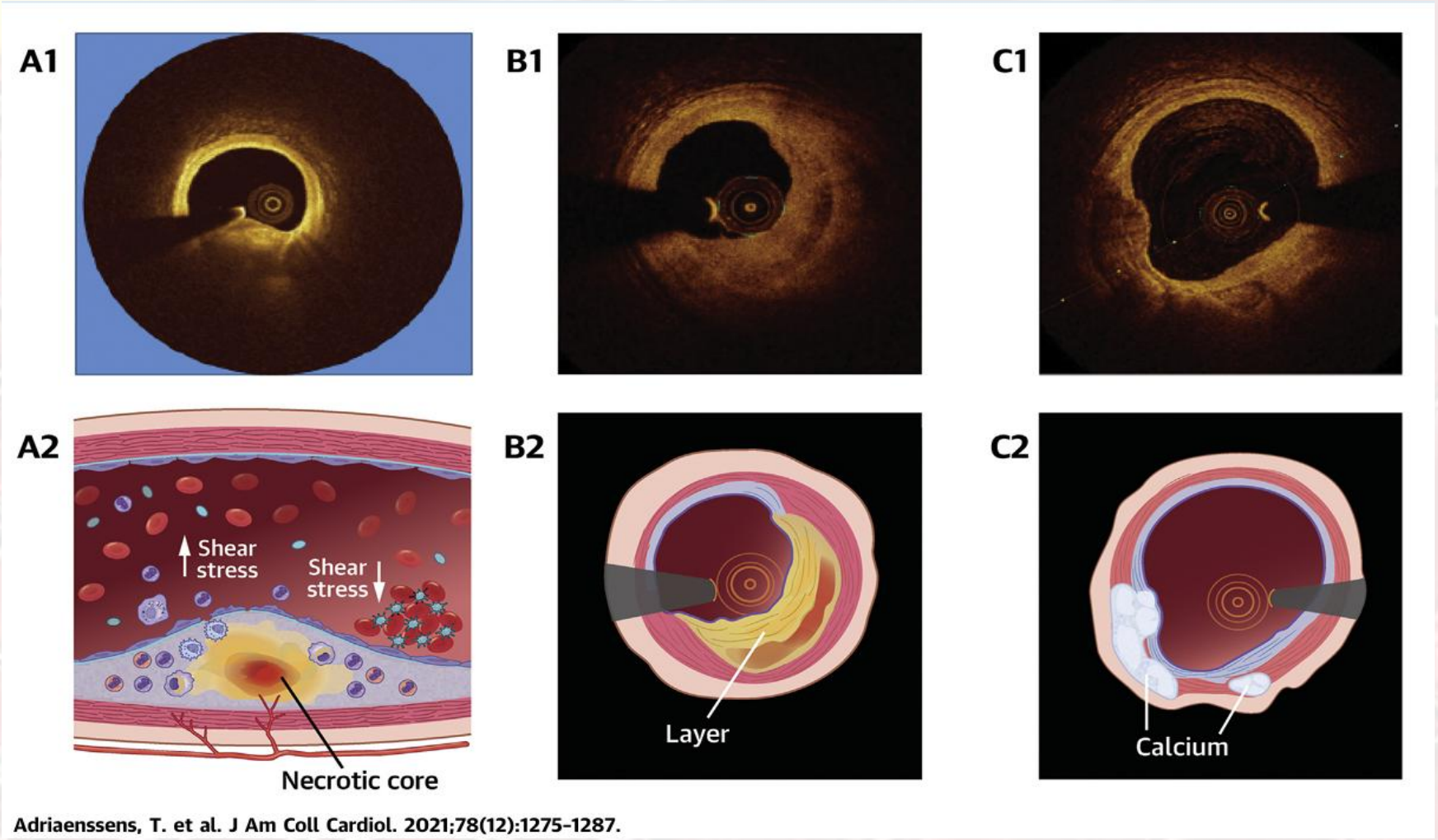
Qelle: Georg Parsché

Todesursachen in Europa



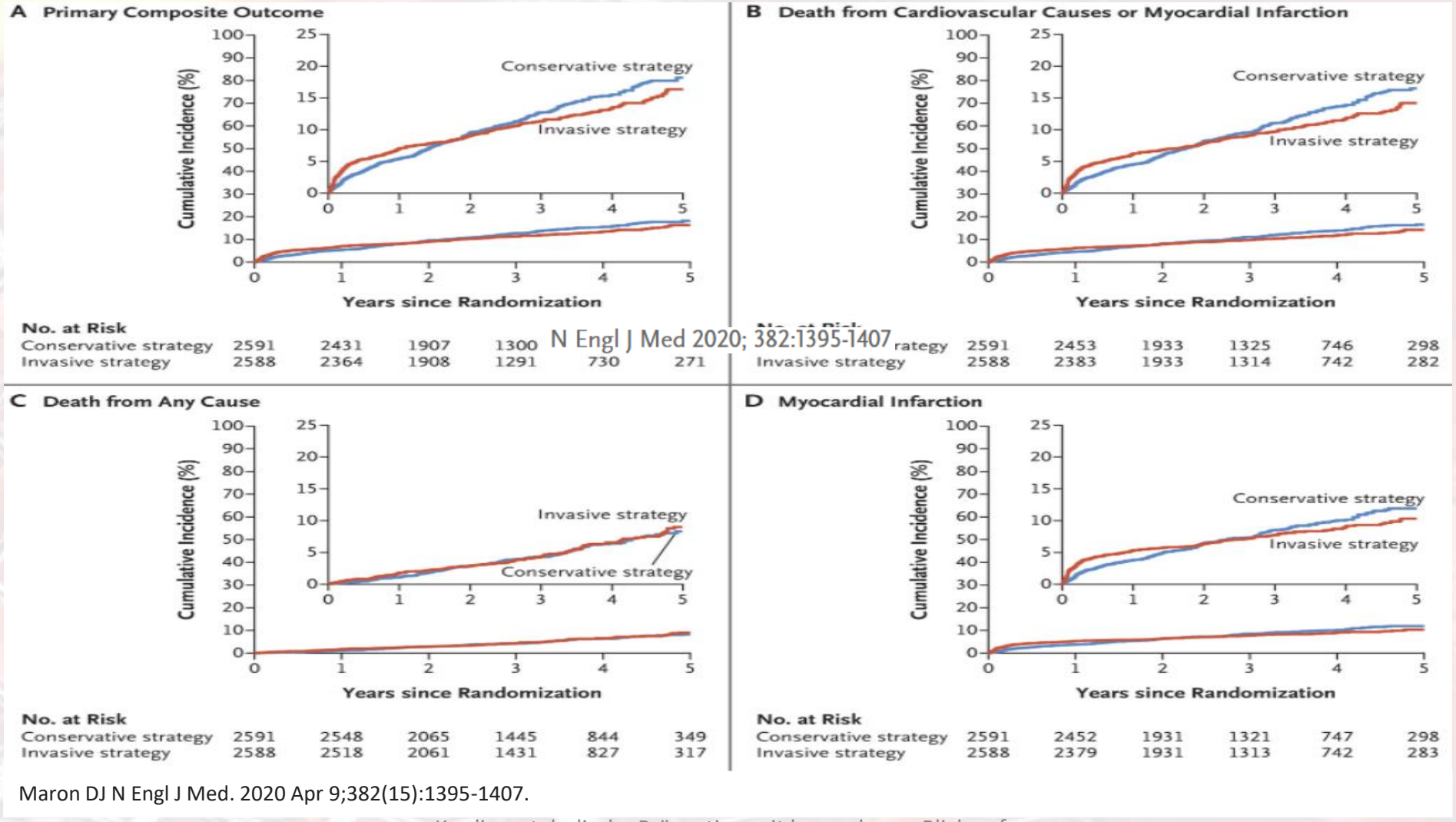
Timmis·A·et·al·Eur·Heart·J.·2022·Feb·04;·PMID:·35016208.¶

OCT- Plaquebogen/Fibröse Kappe



Adriaenssens, T. et al. J Am Coll Cardiol. 2021;78(12):1275-1287.

Ischemia-Studie



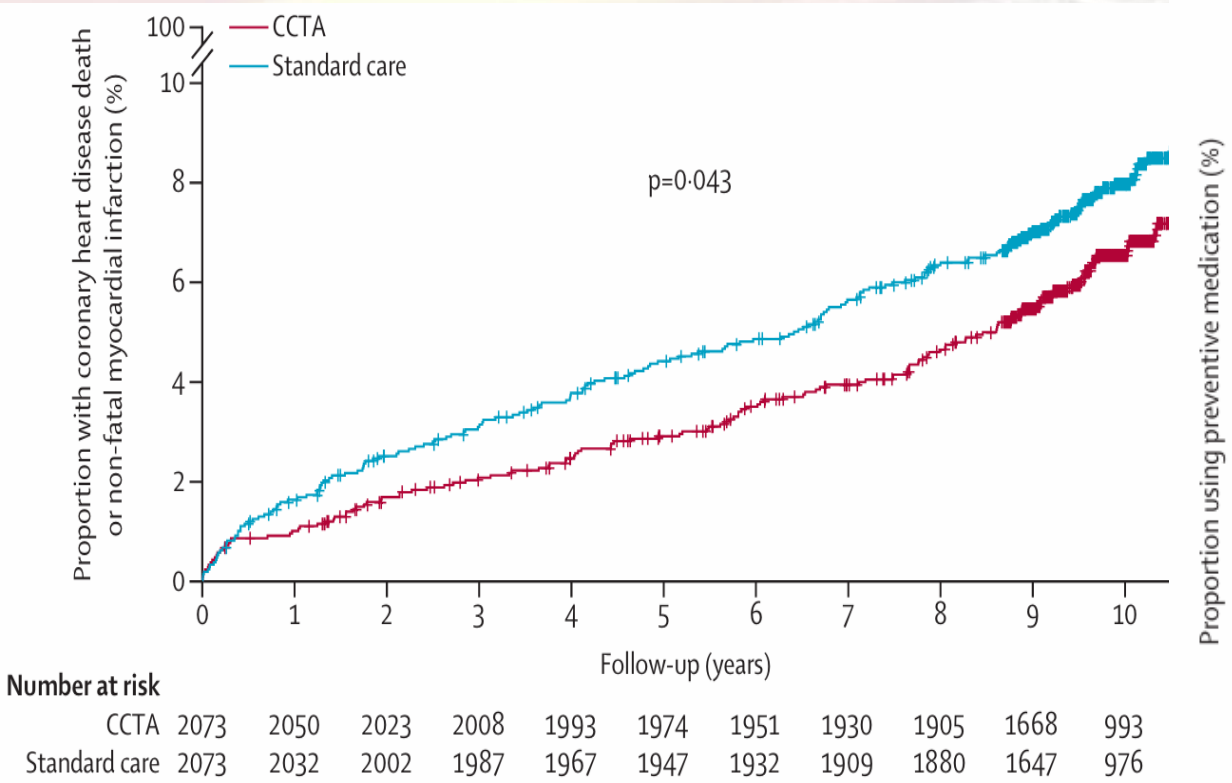
N Engl J Med 2020; 382:1395-1407

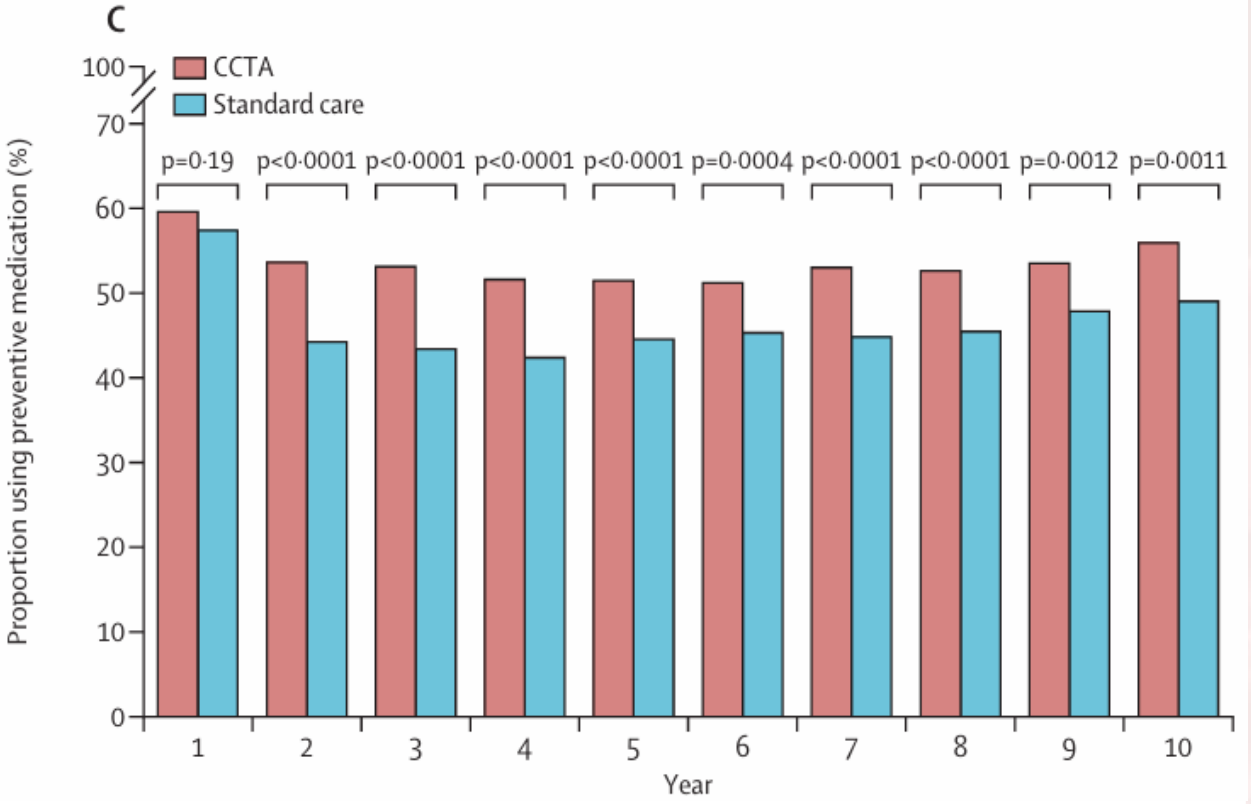
Maron DJ N Engl J Med. 2020 Apr 9;382(15):1395-1407.

Stellenwert der LDL-Senkung/ individuelles Ziel-LDL

- Eine entscheidende Rolle spielt hierbei die **individuelle** Senkung des LDL-Cholesterins. Je nach Kollektiv Beginn und Ziel-LDL in Abhängigkeit von:
- SCORE 2, SCORE 2-Diabetes , SCORE 2 -DM
- zusätzl. RF: Stress, Bewegungsmangel, Adipositas, Familienanamn. etc.
- vorhandene ASCVD
- GFR, Proteinurie
- Mikrovaskulopathie (bei DM, Endorganschäden)

Coronar-CT reduziert Infarkte





Williams MC et al. Lancet. 2025 Jan 25;405(10475):329-337

CT-Gruppe mit weniger Infarkten als ohne CT wegen besserer Prävention bei hämodynamisch nicht relevanter KHK, Revaskularisation in beiden Gruppen gleich (initial stabile AP und V.a. KHK)

Primärprävention bei vermeintlich Gesunden: SCORE 2* = Systematic Coronary Risk Evaluation

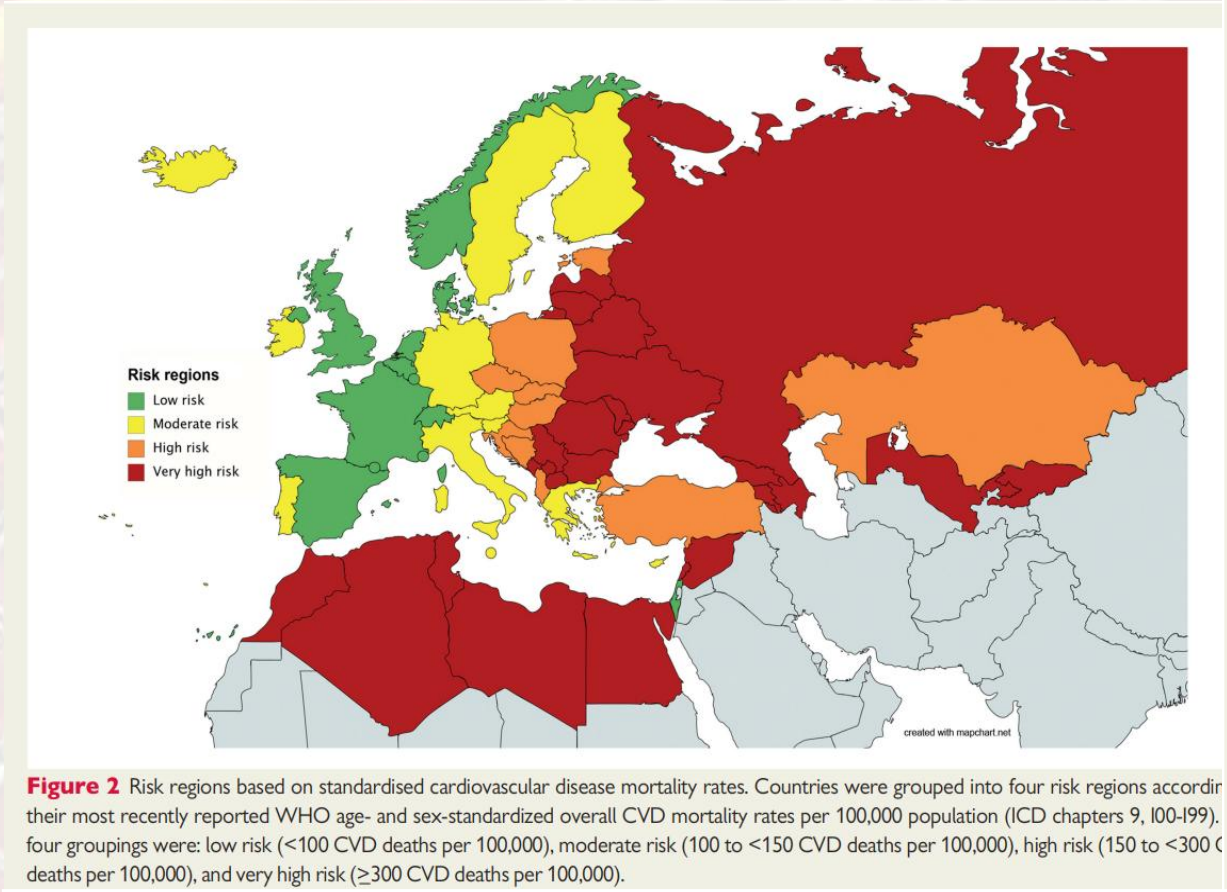


Figure 2 Risk regions based on standardised cardiovascular disease mortality rates. Countries were grouped into four risk regions accordir their most recently reported WHO age- and sex-standardized overall CVD mortality rates per 100,000 population (ICD chapters 9, I00-I99). four groupings were: low risk (<100 CVD deaths per 100,000), moderate risk (100 to <150 CVD deaths per 100,000), high risk (150 to <300 (deaths per 100,000), and very high risk (≥300 CVD deaths per 100,000).

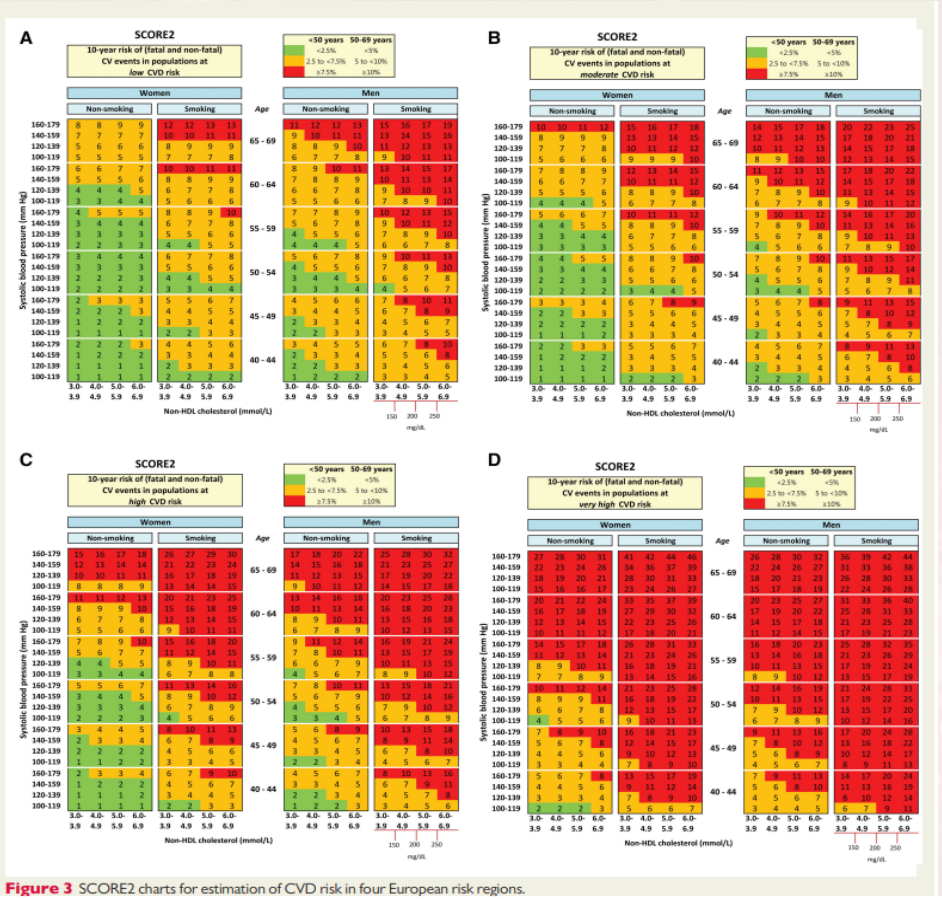


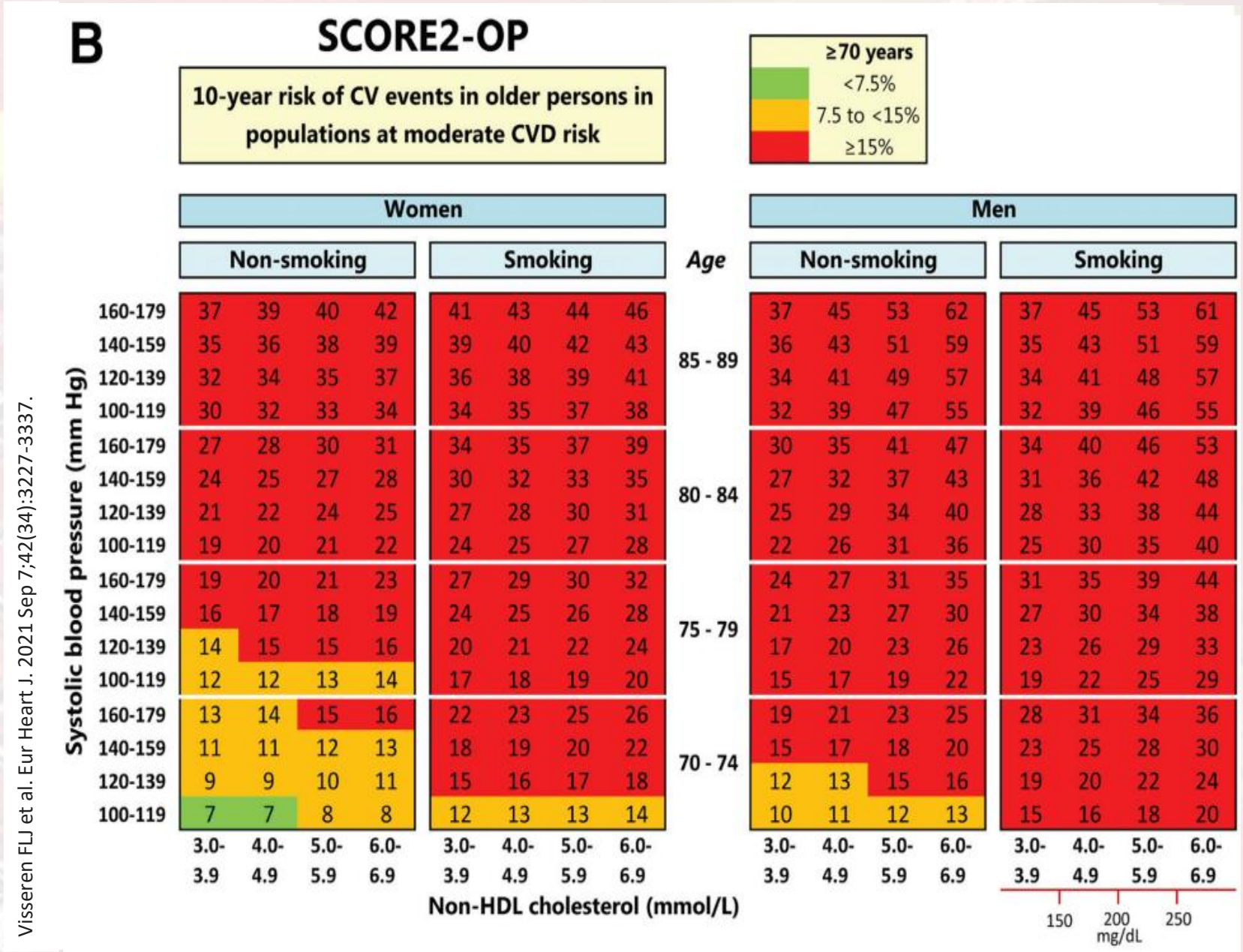
Figure 3 SCORE2 charts for estimation of CVD risk in four European risk regions.

SCORE2 working group et al. Eur Heart J. 2021 Jul 1;42(25):2439-2454.

* ab einem Alter von 40 Jahren

Non-HDL :

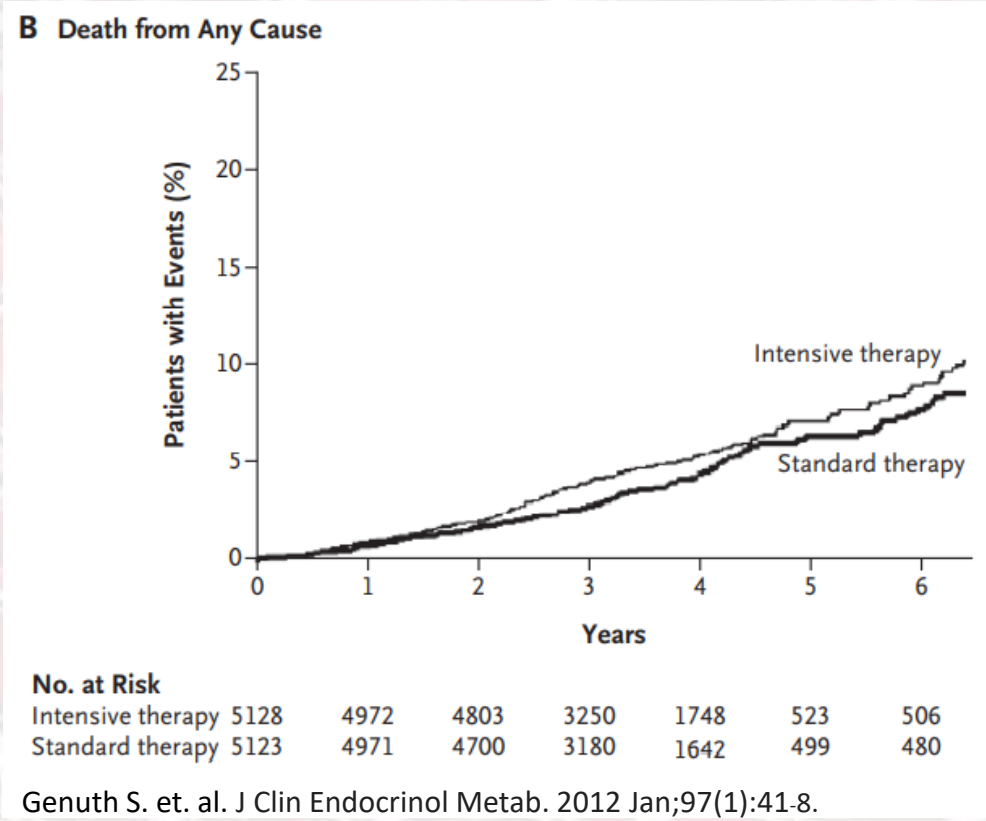
$CHOL_{ges.}$ minus HDL-Chol.



Visseren FLJ et al. Eur Heart J. 2021 Sep 7;42(34):3227-3337.

Diabetes mellitus

Accord-Studie

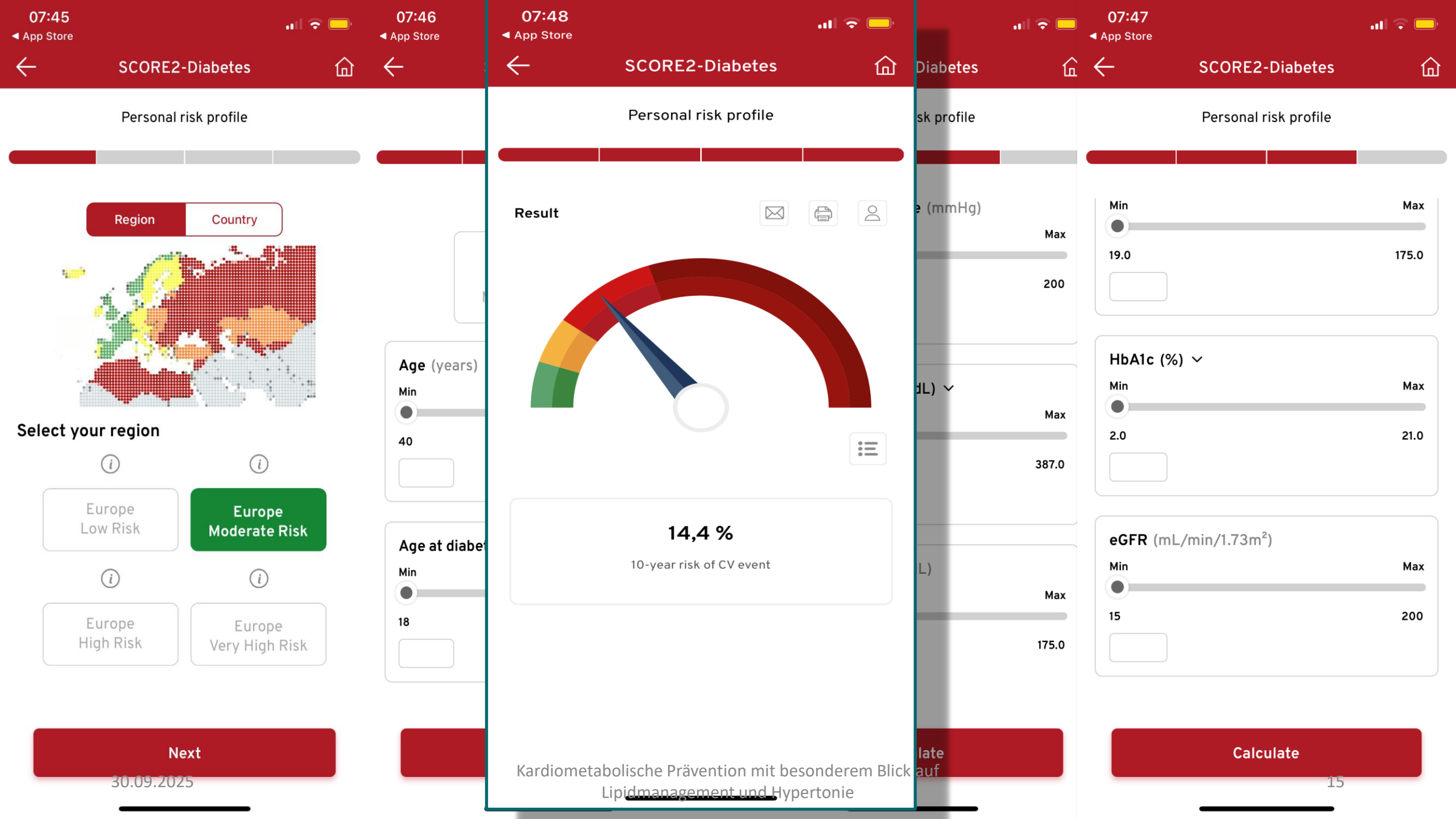


Genuth S. et. al. J Clin Endocrinol Metab. 2012 Jan;97(1):41-8.

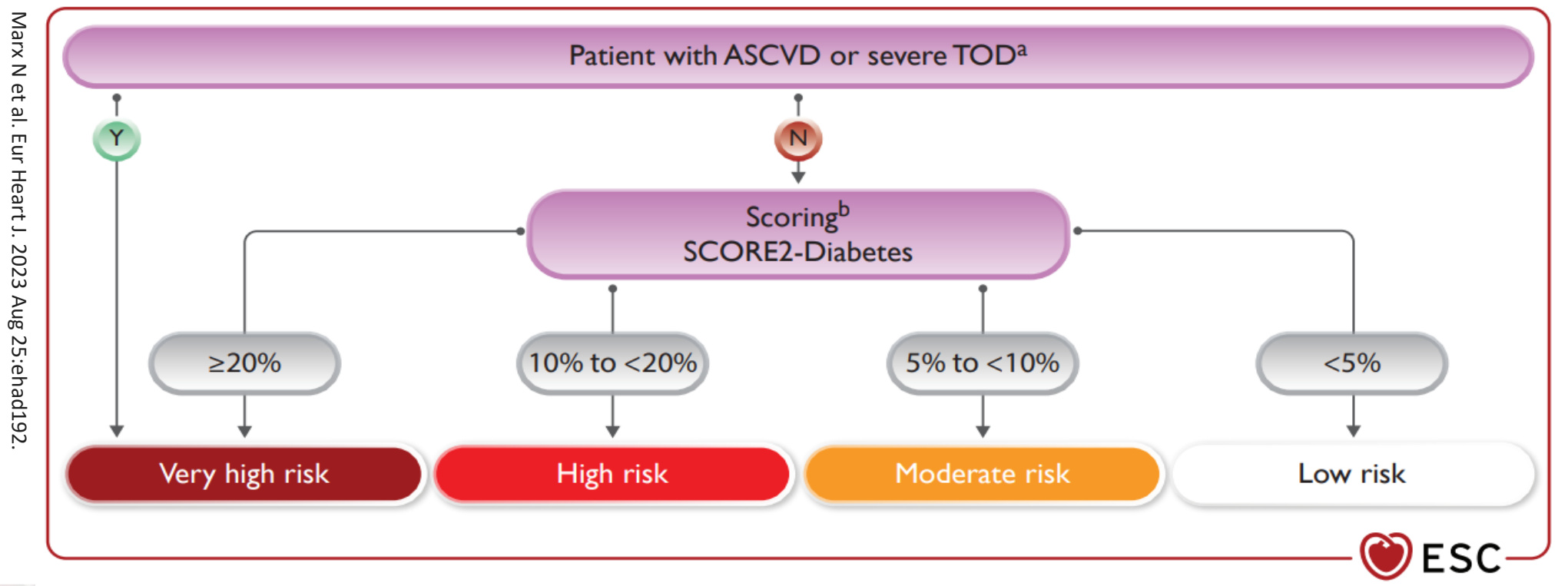
Studiendesign

- Über 10000 Patienten
- Intensivierte Therapie: HbA1c <6%
- Standardtherapie: HbA1c 7,0-7,9%

-> wir sind mittlerweile von einer Behandlung des HbA1c zu einer suffizienten Organprotektion übergegangen.


07:45
App Store
SCORE2-Diabetes
Personal risk profile
Region
Country
Select your region
Europe Low Risk
Europe Moderate Risk
Europe High Risk
Europe Very High Risk
Next
07:46
App Store
Age (years)
Min
40
Age at diabe
Min
18
07:48
App Store
SCORE2-Diabetes
Personal risk profile
Result
14,4 %
10-year risk of CV event
Diabetes
sk profile
e (mmHg)
Max
200
dL)
Max
387.0
L)
Max
175.0
late
07:47
App Store
SCORE2-Diabetes
Personal risk profile
Min
Max
19.0
175.0
HbA1c (%)
Min
Max
2.0
21.0
eGFR (mL/min/1.73m²)
Min
Max
15
200
Calculate

Diabetes ohne ASCVD und Endorganschäden→ SCORE 2 Diabetes*



Marx N et al. Eur Heart J. 2023 Aug 25:ehad192.

* 10-Jahres-Risiko für CVD in Abh. vom SCORE 2 + Hba1c, Alter bei Diagnose DM und der GFR (40- 69 Jahre)

Primär …M– Ziel-

Risikopro…	Ziel-LDL
Geringes Risiko	…5 mg/dl
Mittleres Risiko	…0 mg/dl
Hohes Risiko(I)	…mg/dl + 50% v. BL
Sehr hohes Risi…	…mg/dl + 50% v. BL
Sekundärpräver…	…mg/dl + 50% v. BL
Extremes Risiko	…mg/dl

Mach F et al. Eur Heart J. 2020 Jan 1;41(…

Mach F et al. Eur Heart J. 2025 Aug 29:e…

Box 1 Risk modifiers for consideration beyond the risk estimation based on the SCORE2 and SCORE2-OP algorithms

Demographic/clinical conditions

- Family history of premature CVD (men: <55 years; women: <60 years)
- High-risk ethnicity (e.g. Southern Asian)
- Stress symptoms and psychosocial stressors
- Social deprivation
- Obesity
- Physical inactivity
- Chronic immune-mediated/inflammatory disorders
- Major psychiatric disorders
- History of premature menopause
- Pre-eclampsia or other hypertensive disorders of pregnancy
- Human immunodeficiency virus infection
- Obstructive sleep apnoea syndrome

Biomarkers

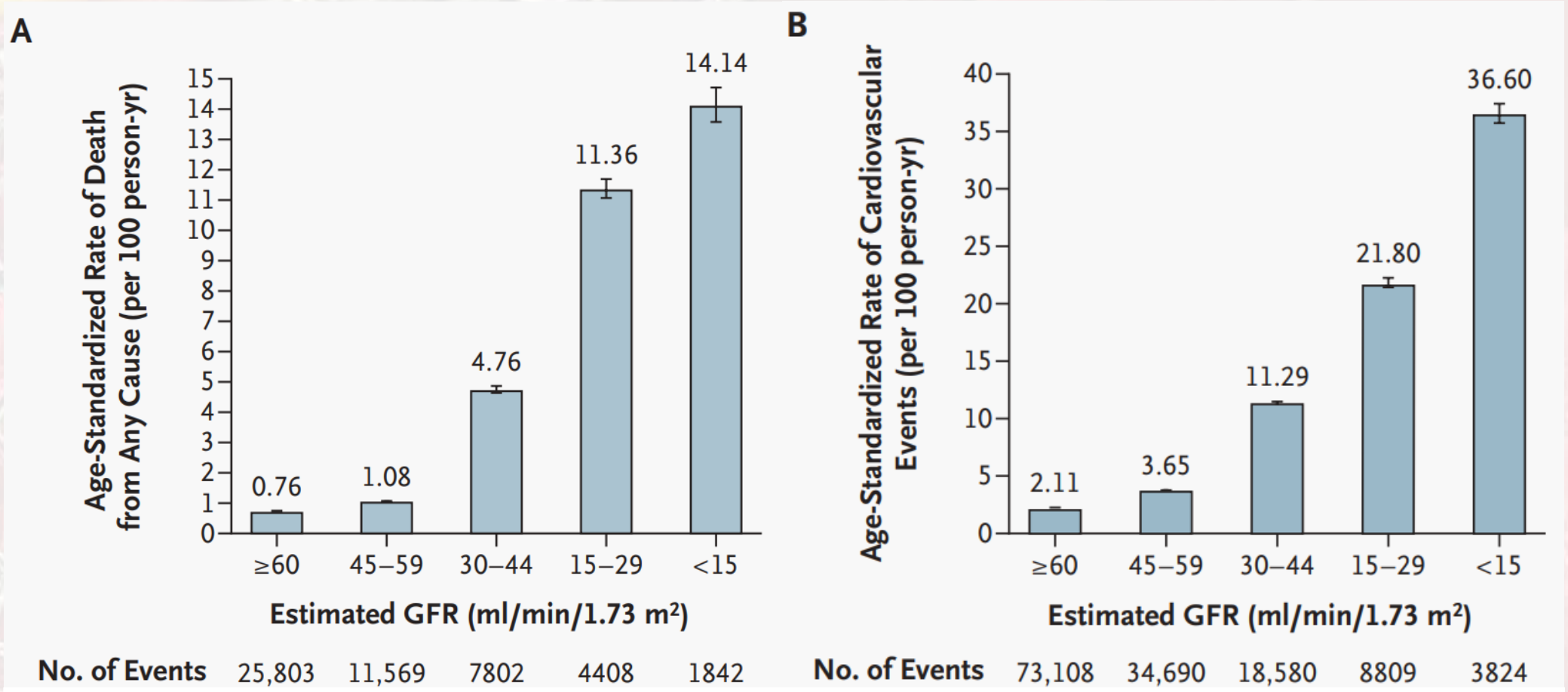
- Persistently elevated hs-CRP (>2 mg/L)
- Elevated Lp(a) [>50 mg/dL (>105 nmol/L)].

Risikoeinteilung

Very high risk	People with any of the following: • Documented ASCVD, either clinical or unequivocal on imaging. Documented ASCVD includes previous ACS (MI or unstable angina), chronic coronary syndromes, coronary revascularization (PCI, CABG, and other arterial revascularization procedures), stroke and TIA, and peripheral arterial disease. Unequivocally documented ASCVD on imaging includes those findings that are known to be predictive of clinical events, such as significant plaque[a] on coronary angiography or CT scan or on carotid or femoral ultrasound or markedly elevated CAC score by CT[b] • DM with target organ damage,[c] or at least three major risk factors, or early onset of T1DM of long duration (>20 years) • Severe CKD (eGFR <30 mL/min/1.73 m^2) • A calculated SCORE2 or SCORE2-OP ≥20% for 10 year risk of fatal or non-fatal CVD • FH with ASCVD or with another major risk factor
High risk	People with any of the following: • Markedly elevated single risk factors, in particular TC >8 mmol/L (>310 mg/dL), LDL-C >4.9 mmol/L (>190 mg/dL) or BP ≥180/110 mmHg • Patients with FH without other major risk factors • Patients with DM without target organ damage,[c] with DM duration ≥10 years or another additional risk factor • Moderate CKD (eGFR 30–59 mL/min/1.73 m^2) • A calculated SCORE2 or SCORE2-OP ≥10% and <20% for 10 year risk of fatal or non-fatal CVD
Moderate risk	People with any of the following: • Young patients (T1DM <35 years; T2DM <50 years) with DM duration <10 years, without other risk factors • Calculated SCORE2 or SCORE2-OP ≥2% and <10% for 10 year risk of fatal or non-fatal CVD
Low risk	• Calculated SCORE2 or SCORE2-OP <2% for 10 year risk of fatal or non-fatal CVD

Mach F et al. Eur Heart J. 2025 Aug 29:ehaf190. doi: 10.1093/eurheartj/ehaf190. Epub ahead of print. PMID: 40878289.

Niereninsuffizienz: ein unabhängiger CV-Risikofaktor



Go AS et al. N Engl J Med. 2004 Sep 23;351(13):1296-305.

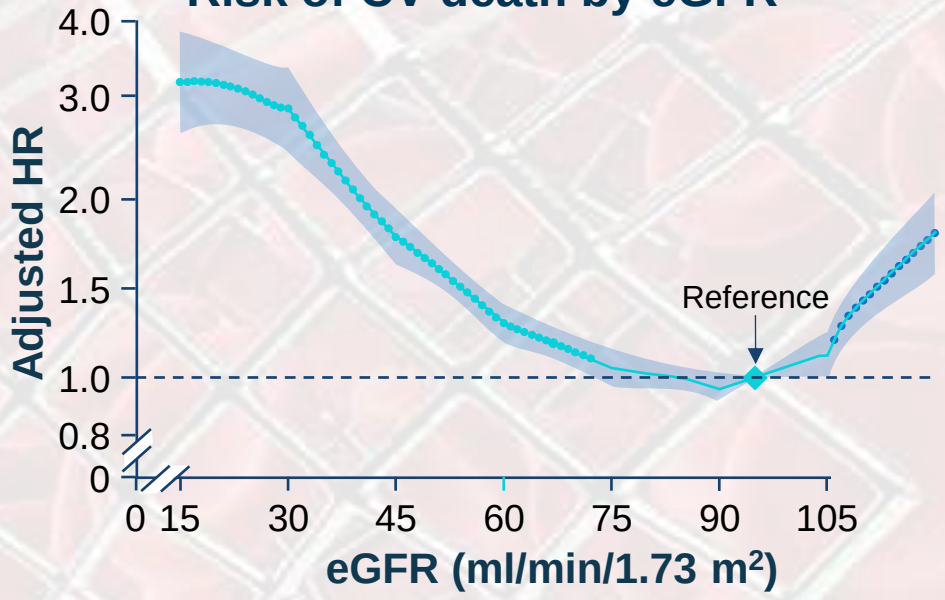
UACR als früher Marker für CKD

CKD = eGFR <60 ml/min/1.73 m² for >3 months[1]

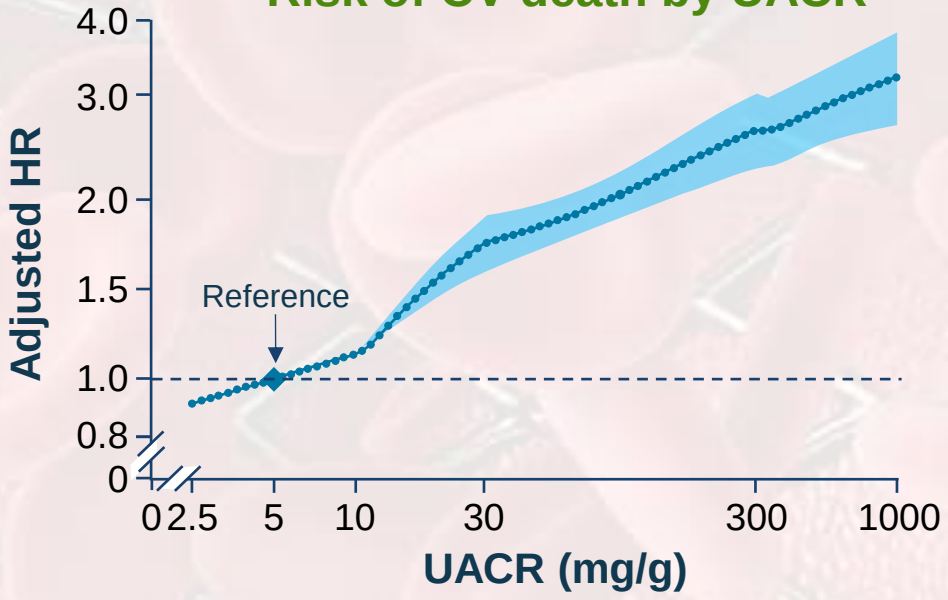
and OR

CKD = albuminuria
UACR >30 mg/g for >3 months[1]

Risk of CV death by eGFR*[2]



Risk of CV death by UACR*[2]



Adapted from Matsushita K, *et al.* 2015
*Adjusted for age, sex, race or ethnic origin, smoking, SBP, antihypertensive drugs, diabetes, total and HDL cholesterol concentrations, and albuminuria (UACR or dipstick) or eGFR, as appropriate; dots represent statistical significance (p<0.05); all axes are log scales except for the eGFR axis
CKD=Chronic kidney disease; CV=Cardiovascular; eGFR=estimated glomerular filtration rate; HR=hazard ratio; SBP=systolic blood pressure; T2D=type-2-diabetes; UACR =Urine albumin-to-creatinine ratio

KDIGO-Klassifikation

Grams ME et al. JAMA. 2023 Oct 3;330(13):1266-1277.

CKD is classified based on: • Cause (C) • GFR (G) • Albuminuria (A)				Albuminuria categories Description and range		
				A1	A2	A3
				Normal to mildly increased	Moderately increased	Severely increased
				<30 mg/g <3 mg/mmol	30–299 mg/g 3–29 mg/mmol	≥300 mg/g ≥30 mg/mmol
GFR categories (ml/min/1.73 m²) Description and range	G1	Normal or high	≥90	Screen 1	Treat 1	Treat 3
	G2	Mildly decreased	60–89	Screen 1	Treat 1	Treat 3
	G3a	Mildly to moderately decreased	45–59	Treat 1	Treat 2	Treat 3
	G3b	Moderately to severely decreased	30–44	Treat 2	Treat 3	Treat 3
	G4	Severely decreased	15–29	Treat* 3	Treat* 3	Treat 4+
	G5	Kidney failure	<15	Treat 4+	Treat 4+	Treat 4+

Low risk (if no other markers of kidney disease, no CKD)
Moderately increased risk
High risk
Very high risk

CKD: Ziel-LDL in Abh. von GFR und UACR ohne DM

	A1 (AKR: <30 mg/g)	A2 (AKR30-300mg/g)	A3 (AKR300-3000 mg/g)
G1 >90 ml/min	Score 2	Score 2	
G2 60 – 90 ml/min	Score 2	Score 2	
G3a 45-59 ml/min			
G3b 30-44 ml/min			
G4 15-29 ml/min			
G5 <15 ml/min			

Nach Visseren FLJ et al. . Eur Heart J. 2021 Sep 7;42(34):3227-3337 und Mach F et al. Eur Heart J. 2020 Jan 1;41(1):111-188.

rot = hohes Risiko (Ziel-LDL < 70 mg/dl); hellrot = sehr hohes Risiko (Ziel-LDL < 55 mg/dl)

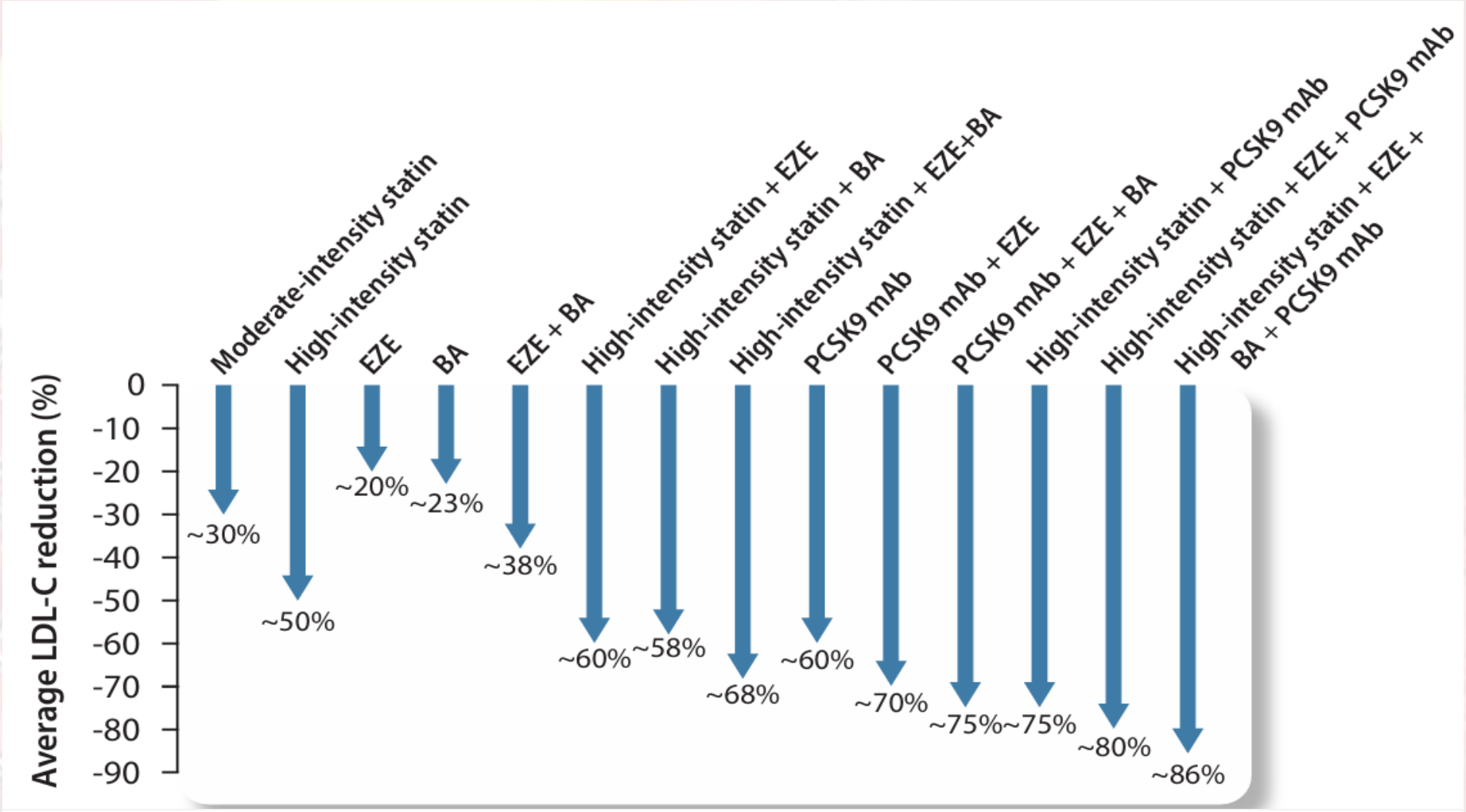
Ziel LDL bei CKD +in Abh. v. der UACR und der GFR bei DM

	A1 (AKR: <30 mg/g)	A2 (30-300mg/g)	A3 (300-3000 mg/g)	Endorgansch.
G1 >90 ml/min	Score 2-DM	Score 2-DM		
G2 60 – 90 ml/min	Score 2-DM	Score 2-DM		
G3a 45-59 ml/min				
G3b 30-44 ml/min				
G4 15-29 ml/min				
G5 <15 ml/min				

Nach Visseren FLJ et al. . Eur Heart J. 2021 Sep 7;42(34):3227-3337 und Mach F et al. Eur Heart J. 2020 Jan 1;41(1):111-188.

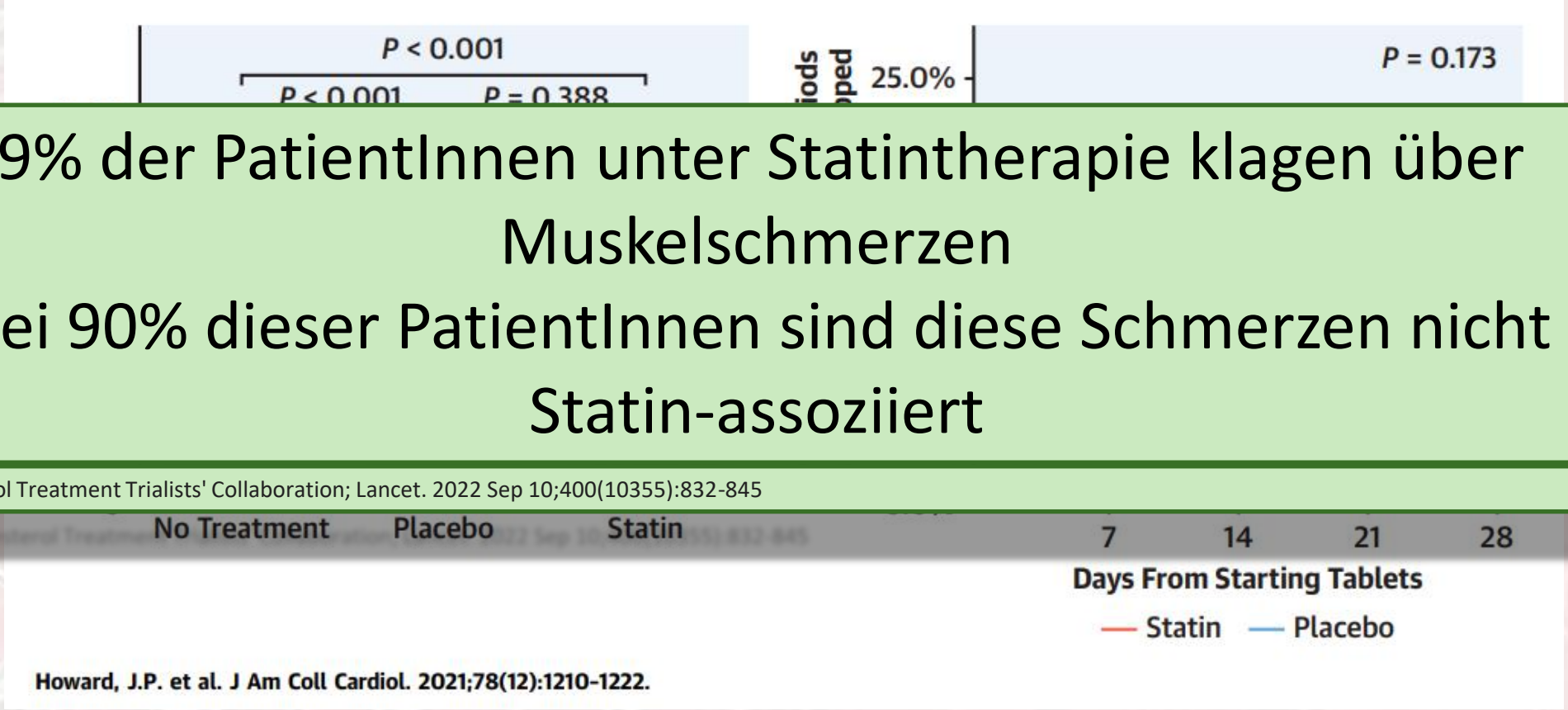
rot = hohes Risiko (Ziel-LDL < 70 mg/dl); hellrot = sehr hohes Risiko (Ziel-LDL < 55 mg/dl)

LDL- senkende Therapie



Mach F et al. Eur Heart J. 2025 Aug 29:ehaf190. doi: 10.1093/eurheartj/ehaf190. Epub ahead of print. PMID: 40878289.

Ist eine Statinmyopathie häufig?

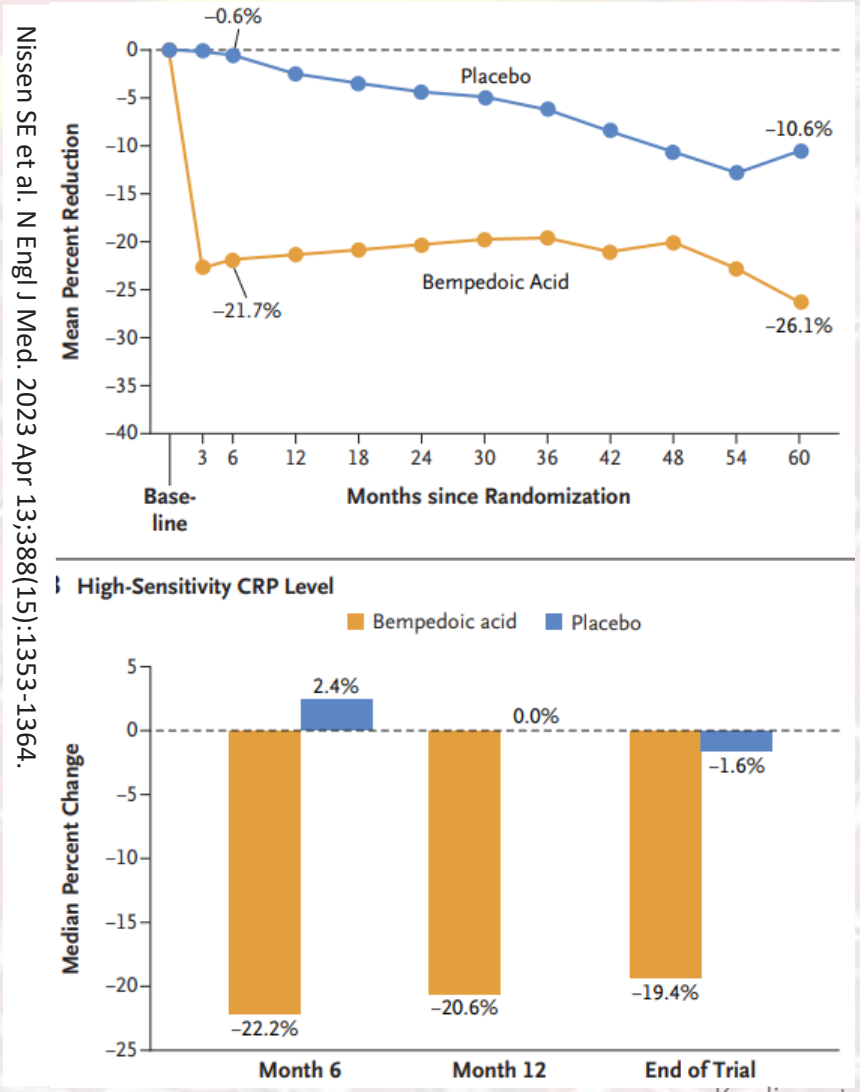


9% der PatientInnen unter Statintherapie klagen über Muskelschmerzen

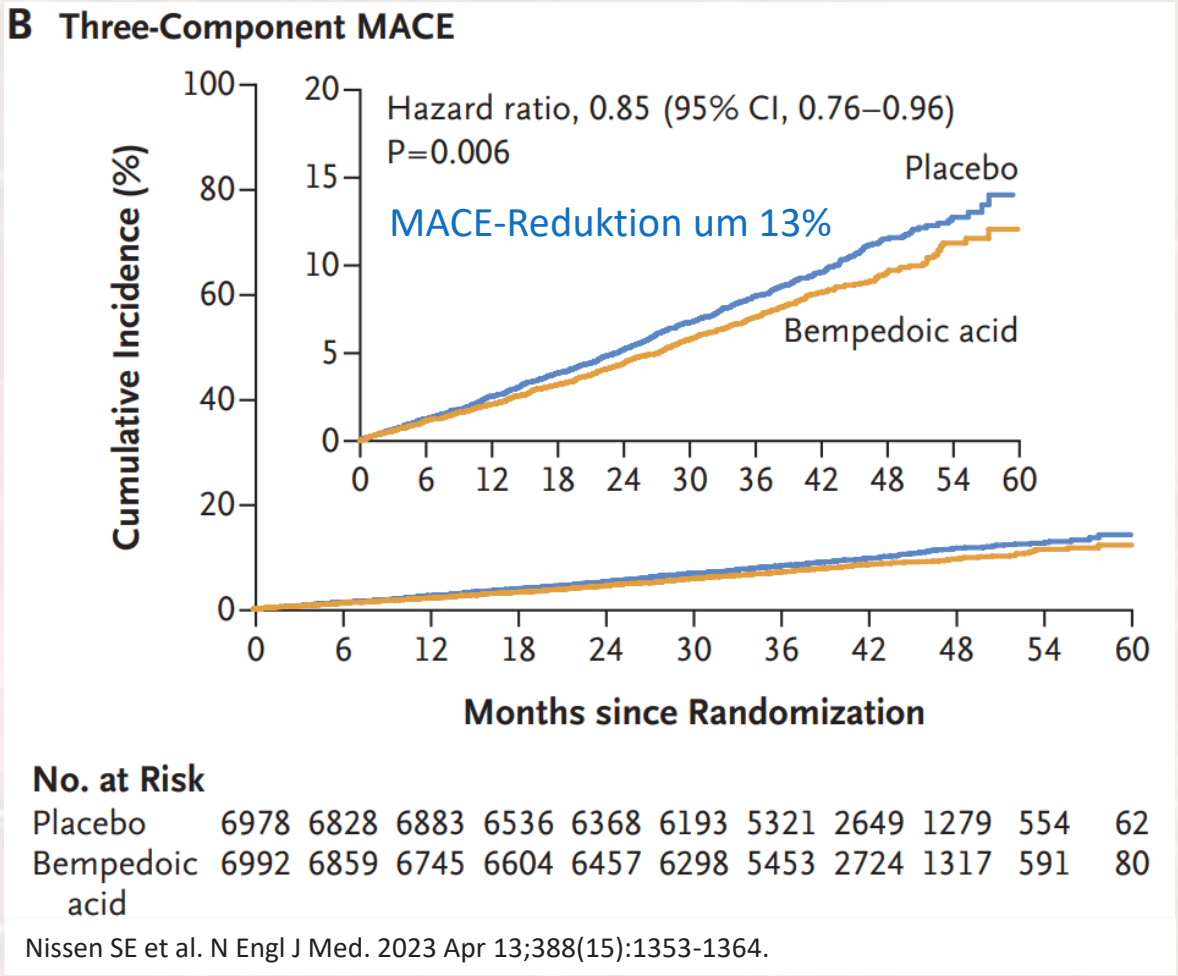
Bei 90% dieser PatientInnen sind diese Schmerzen nicht Statin-assoziiert

Cholesterol Treatment Trialists' Collaboration; Lancet. 2022 Sep 10;400(10355):832-845

Bempedoinsäure-Clear-Studie

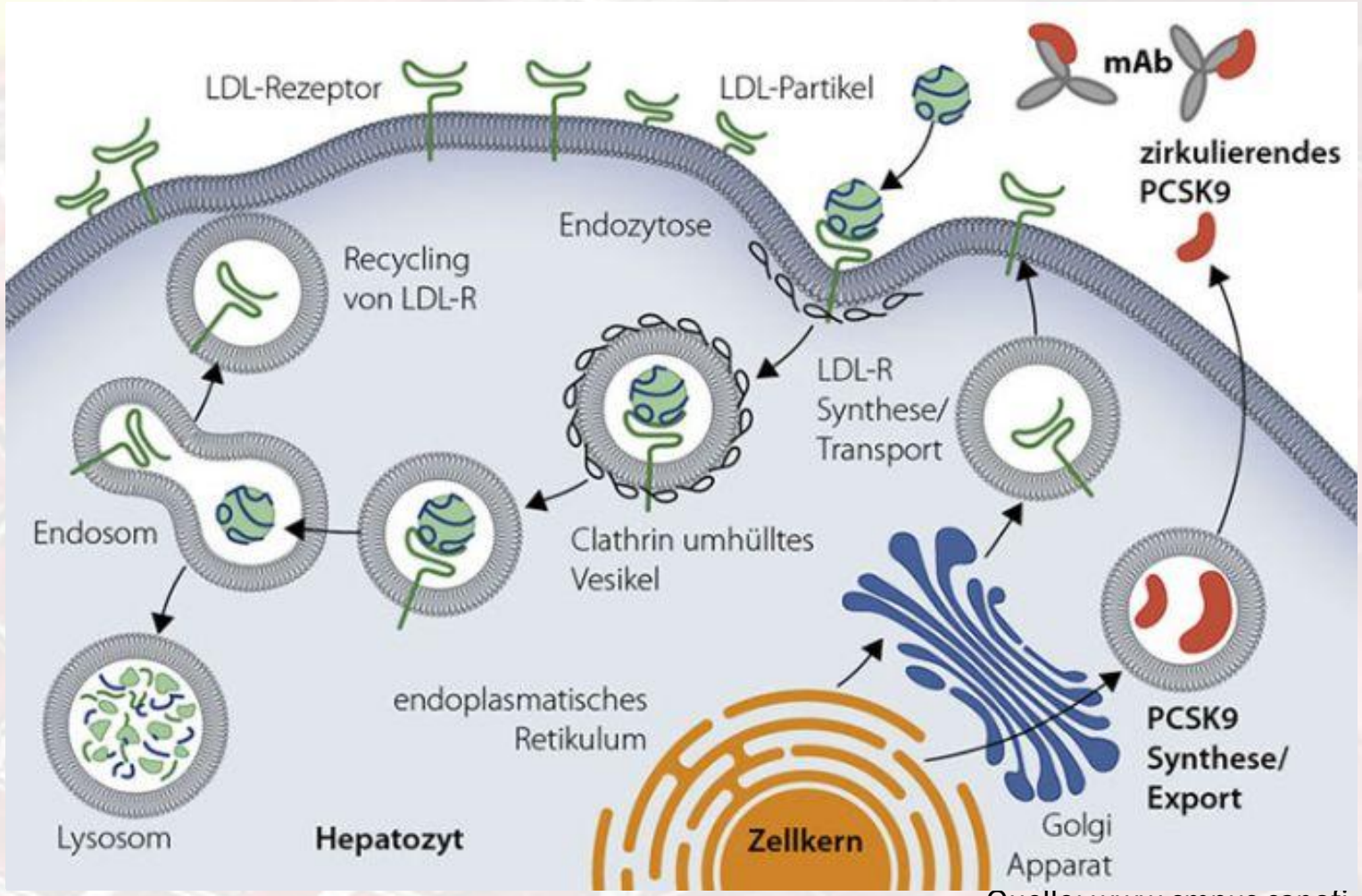


Nissen SE et al. N Engl J Med. 2023 Apr 13;388(15):1353-1364.



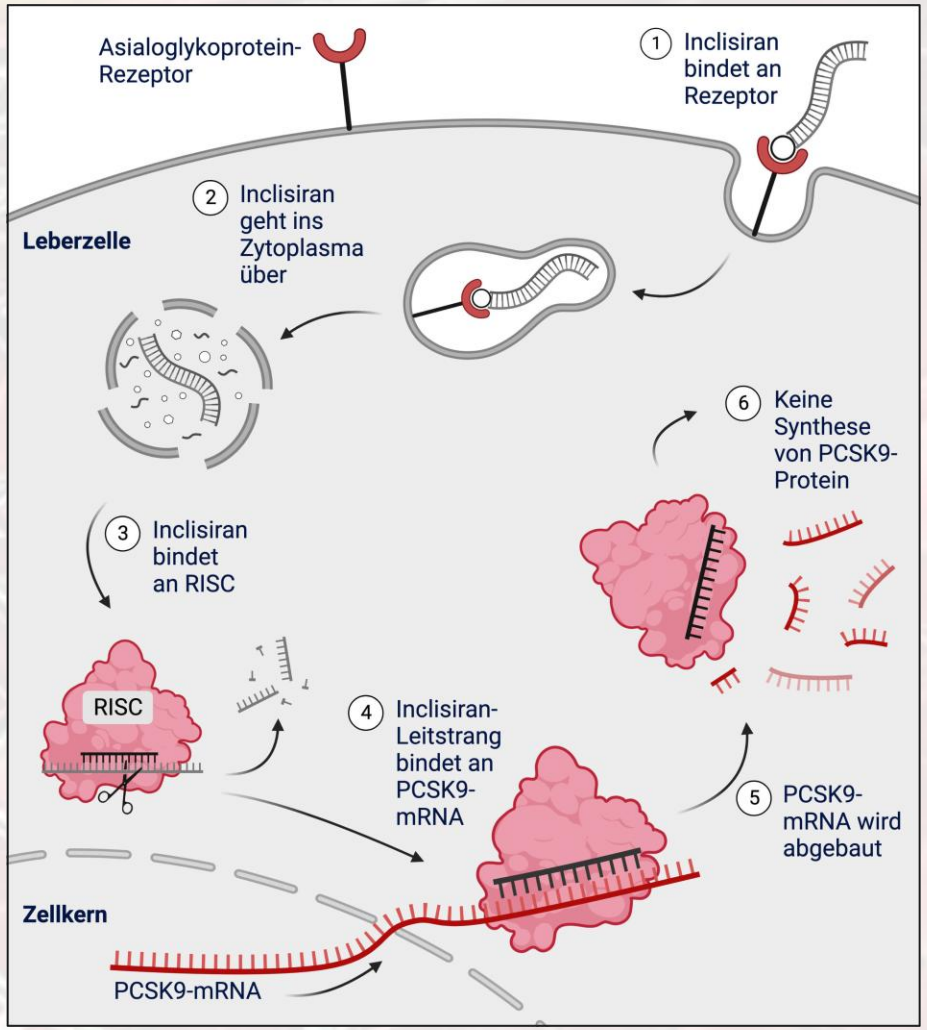
Nissen SE et al. N Engl J Med. 2023 Apr 13;388(15):1353-1364.

PCSK 9-Inhibitoren (Evolocuman, Alirocumab) bzw. siRNA (Inclisiran)



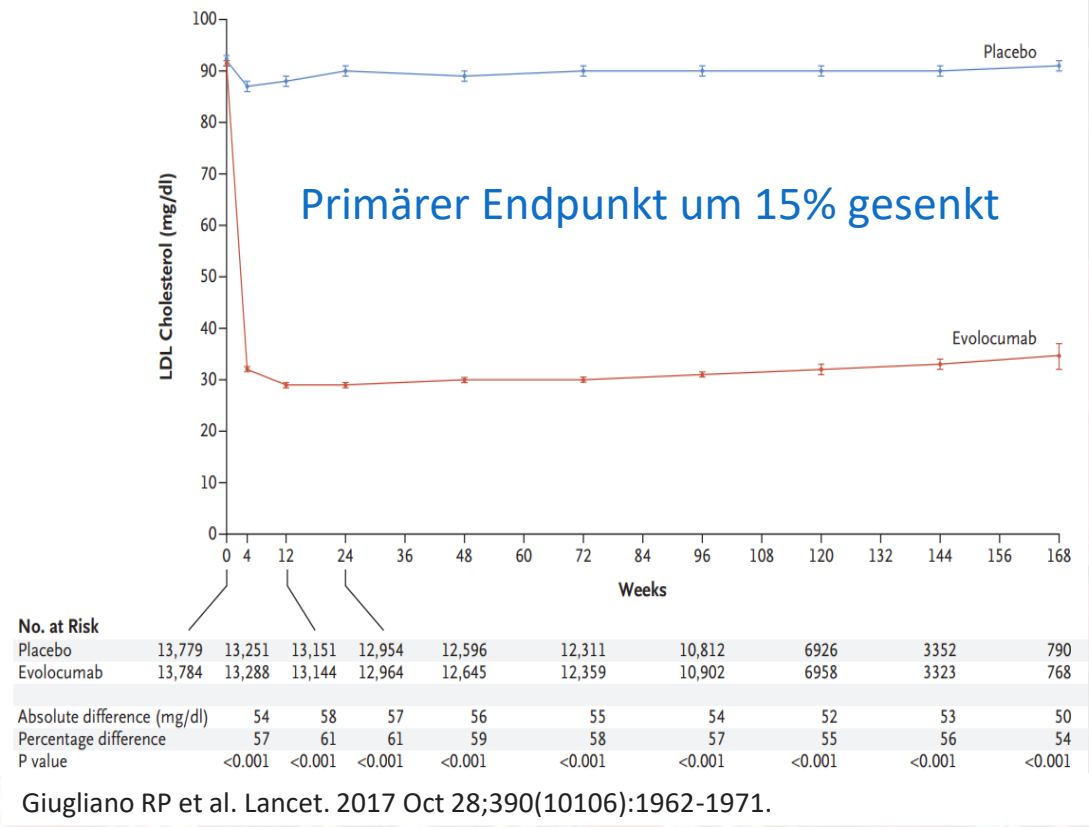
Quelle: www.cmpus.sanofi
Quelle: doccheck.com

PCSK 9-Inhibitoren: siRNA (Inclisiran)

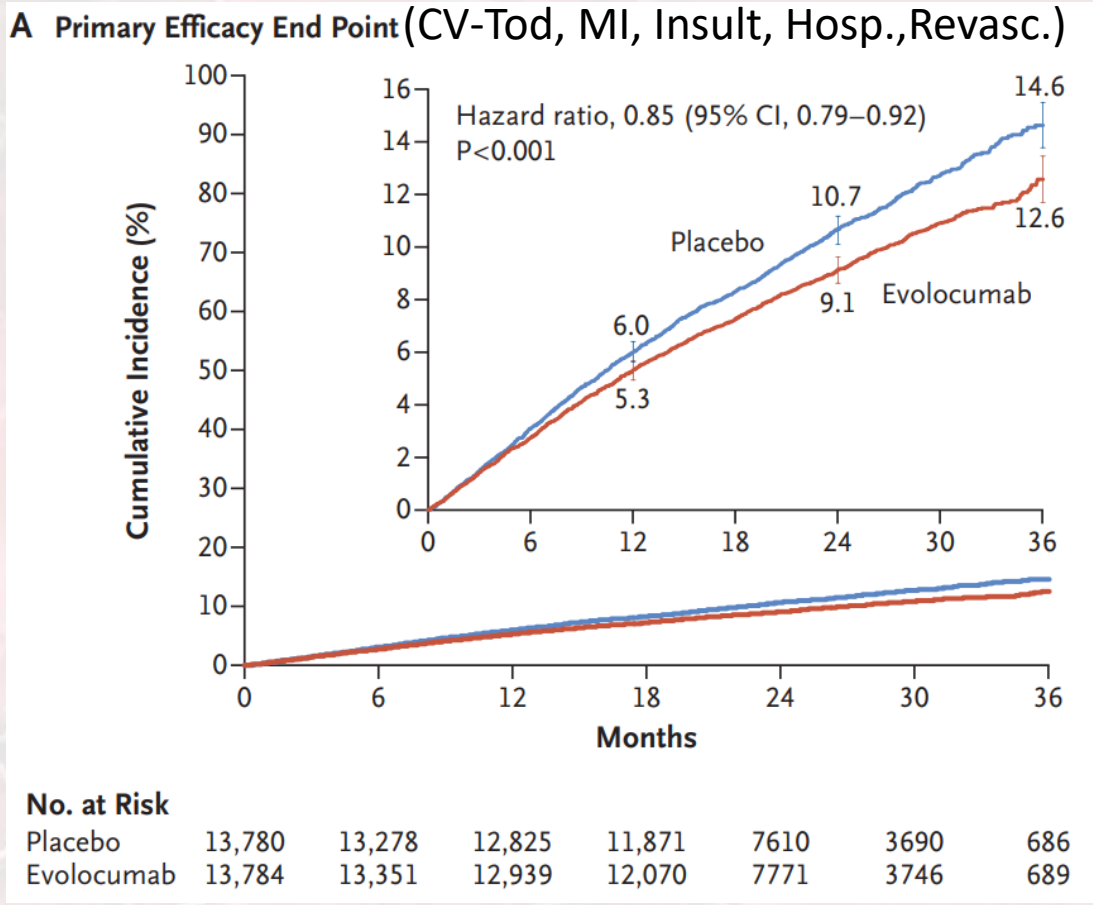


Quelle: www.cmpus.sanofi

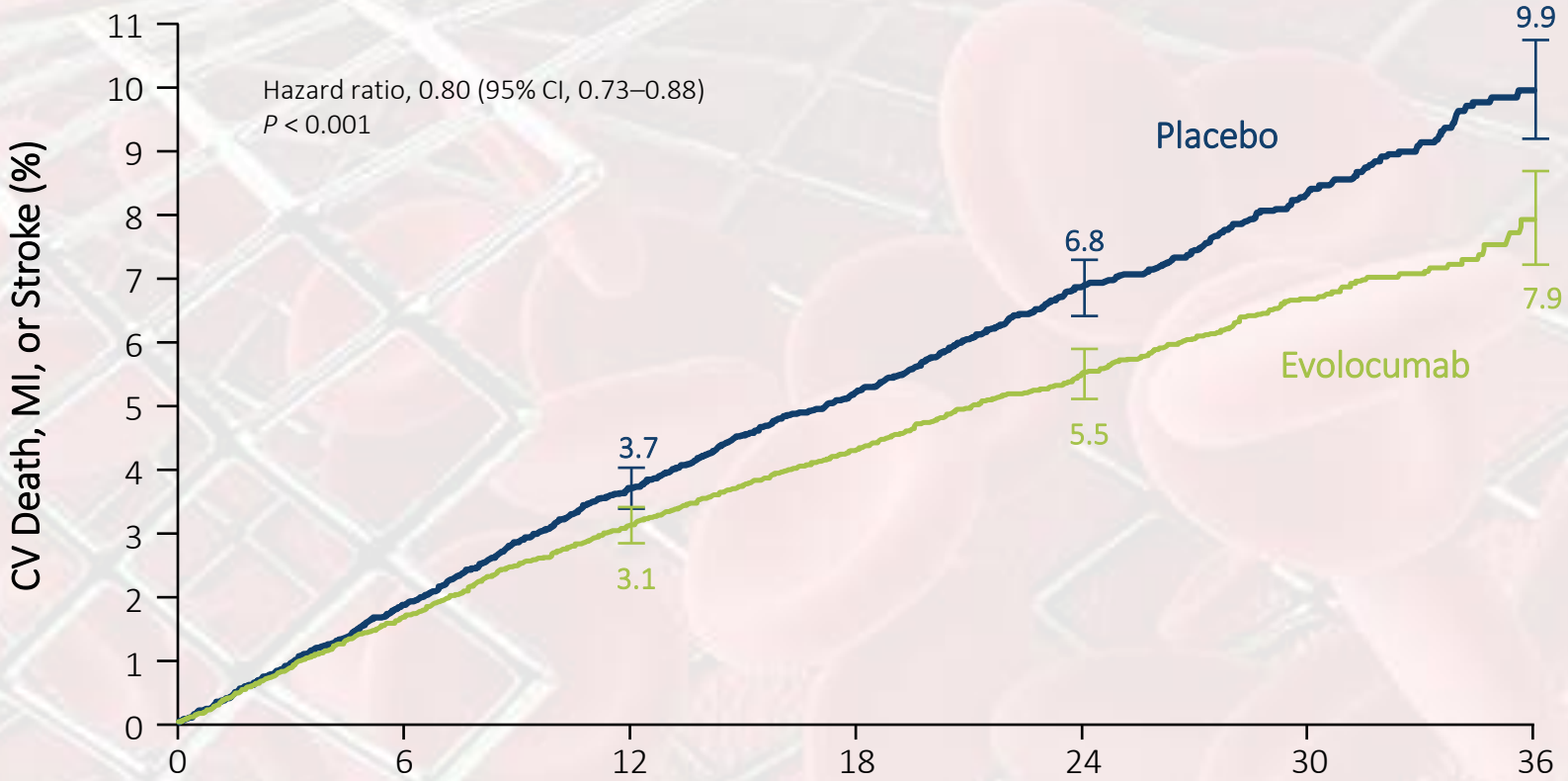
PCSK 9-Fourier (Evolocumab) Verabreichung alle 2-4 Wochen s. c.



Giugliano RP et al. Lancet. 2017 Oct 28;390(10106):1962-1971.

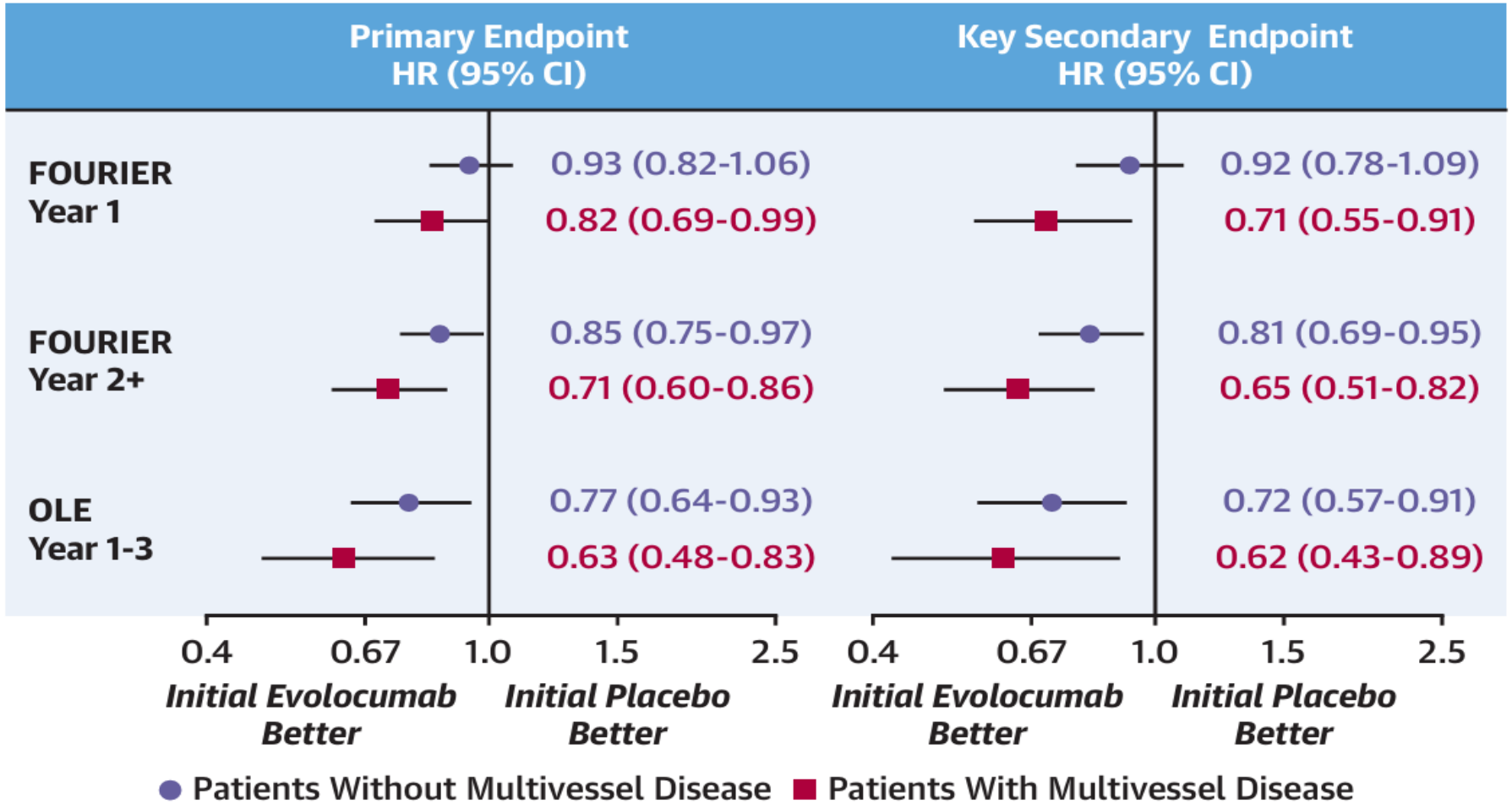


Evolocumab Reduced 3-Point MACE by 20% vs Placebo



No. at Risk							
Placebo	13,780	13,449	13,142	12,288	7,944	3,893	731
Evolocumab	13,784	13,501	13,241	12,456	8,094	3,935	724

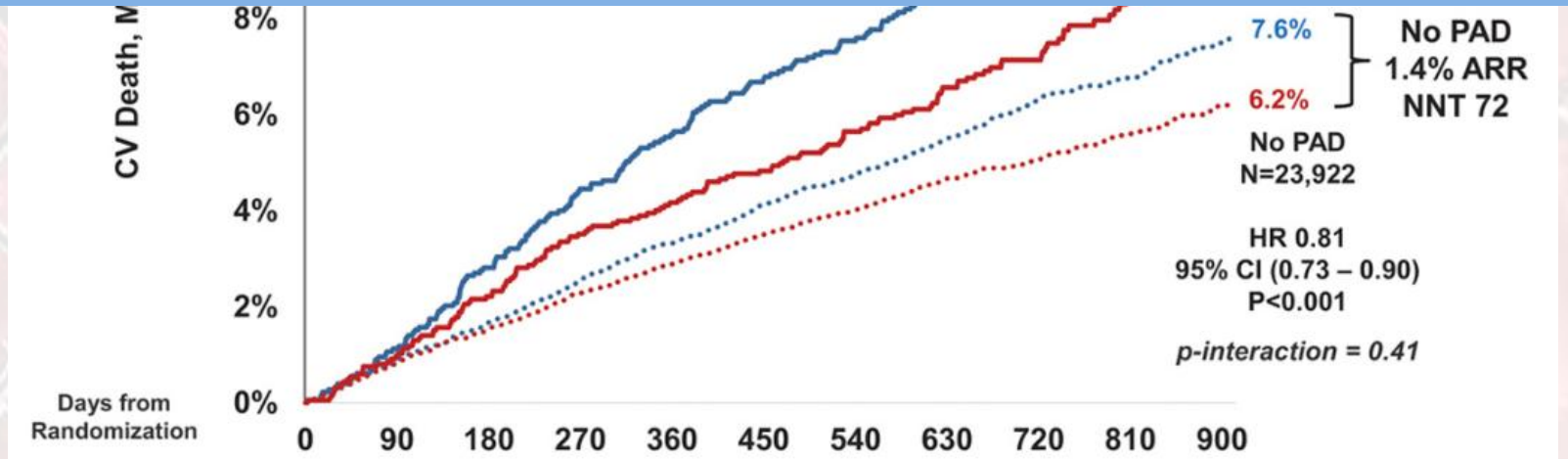
Evolocumab-Langzeitdaten



McClintick DJ, et al. J Am Coll Cardiol. 2024;83(6):652-664.

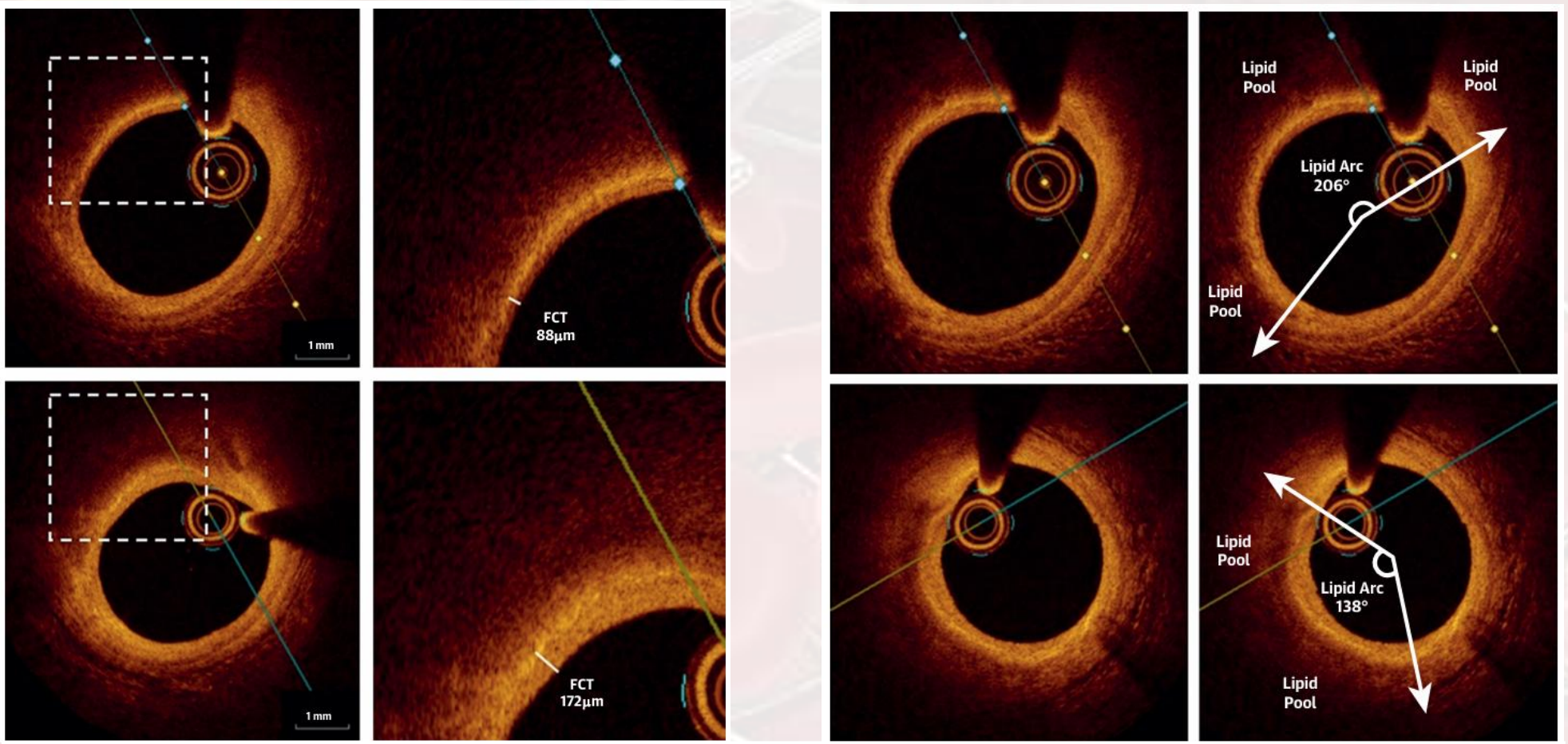
Evolucomab: MACE mit und ohne PAVK

Evolocumab senkt 3-P-MACE bei PAVK ohne MI oder Insult in der Anamnese um 43%



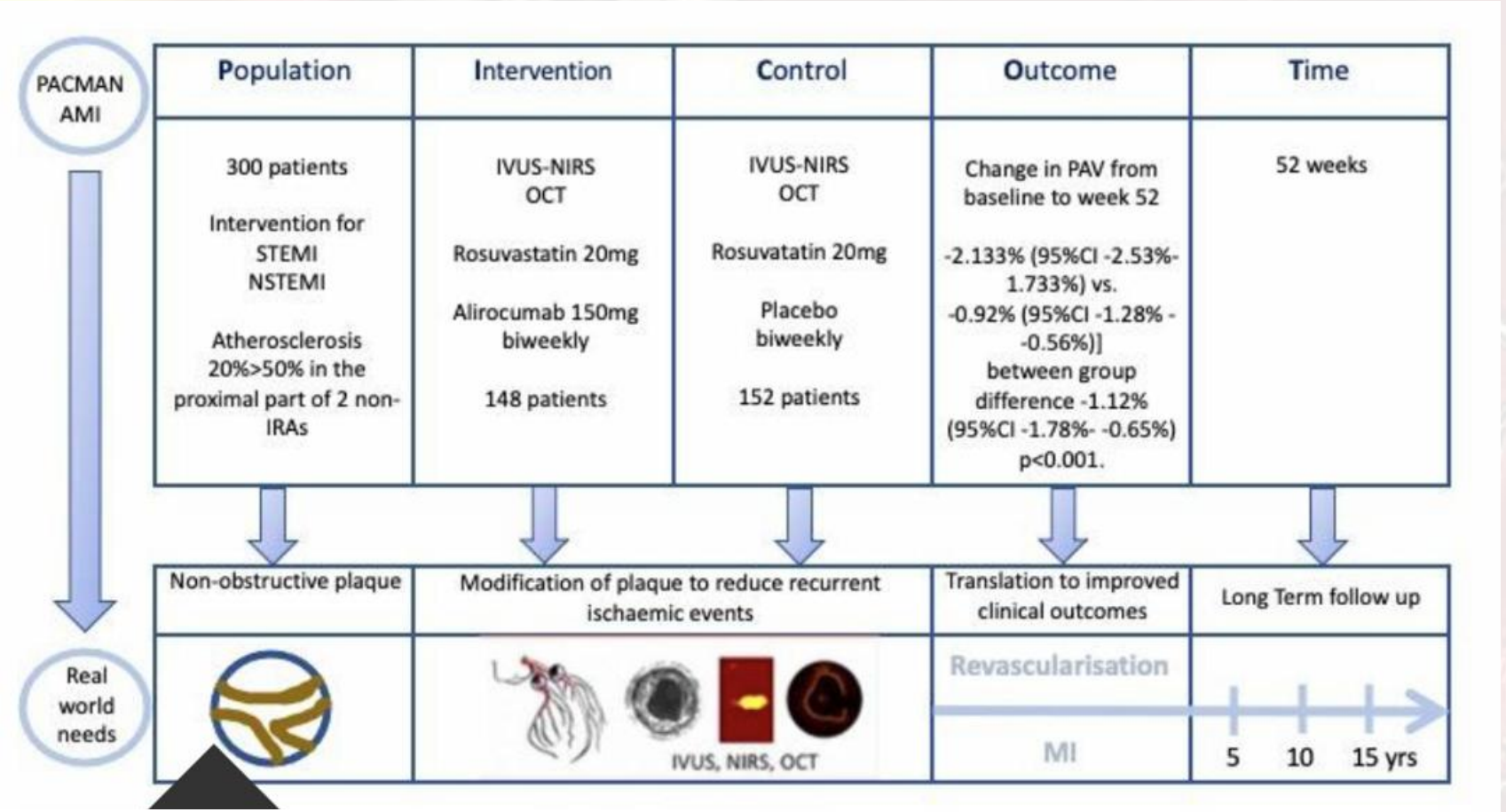
Bonaca MP et al. Circulation. 2018 Jan 23;137(4):338-350.

Evolocumab: Lipidbogen/Fibröse Kappe



Nicholls SJ et al. JACC Cardiovasc Imaging. 2022 Jul;15(7):1308-1321

PCSK-9-Inhibitoren



JAMA. Published online April 3, 2022. doi:10.1001/jama.2022.5218

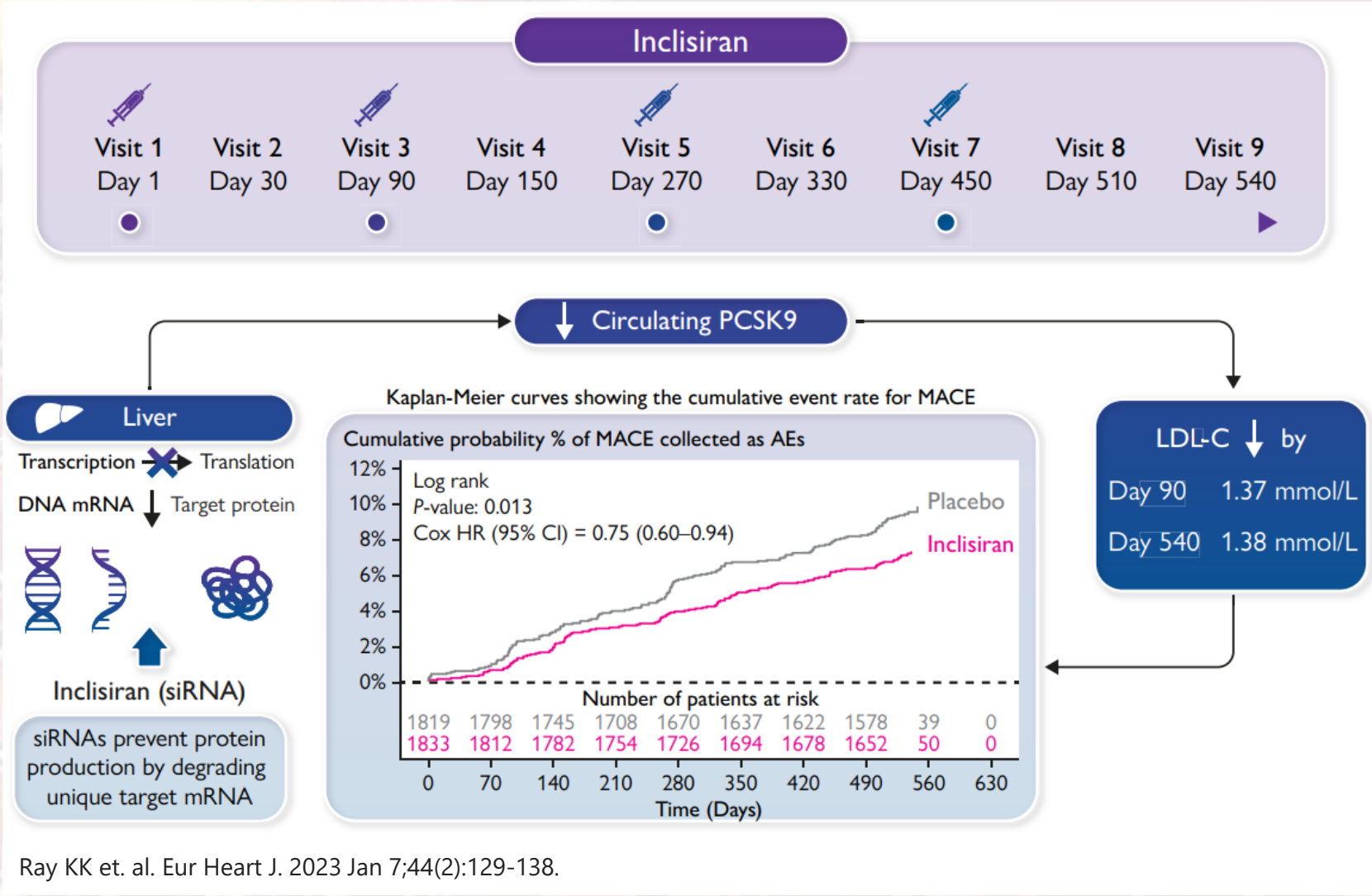
PCSK-9-Inhibitoren/Plaquemorphologie

- Primärer Endpunkt: Veränderung des Plaquevolumens nach 52 Wochen
- Abnanahme mittleres Plaquvolumen um 2,3% (Placebo 0,92%)
- Zunahme der Dicke der fibrösen Kappe (Plaquestabilisierung)
- Signifikante Abnhame des Lipidgehaltes in der Plauque

→Somit deutliche Verbesserung des morphologischen Bildes

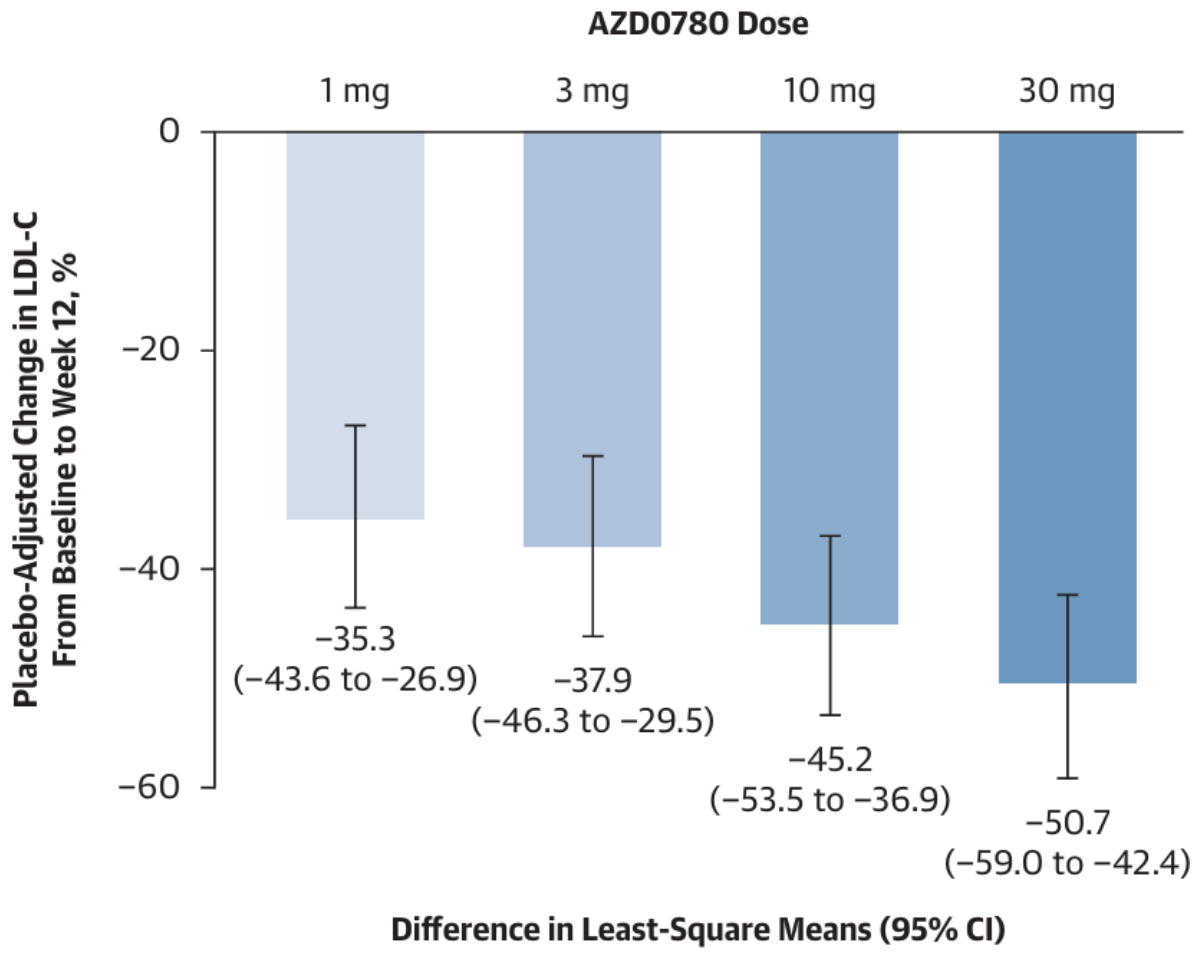
Gepoolte retrospektive Analyse aus ORION 9-11.
Hinweise auf Reduktion des kombinierten Endpunktes

Endpunktdaten aus prospektiv randomisierten Doppelblindstudien fehlen



Ray KK et. al. Eur Heart J. 2023 Jan 7;44(2):129-138.

Oraler PCSK 9 Inhibitor



Key Points

- All AZD0780 doses demonstrated statistically significant reductions in LDL-C vs placebo ($P < 0.001$)
- AZD0780 was well tolerated at all doses

Koren MJ, et al. JACC. 2025;■(■):■-■.

Empfehlungen zum Einsatz von PCSK 9-I.

Diabetes mellitus

Lipid-lowering treatment in patients with diabetes		
Statins are recommended as the first-choice LDL-C-lowering treatment in patients with diabetes and above-target LDL-C levels. Administration of statins is defined based on the CV risk profile of the patients and the recommended LDL-C (or non-HDL-C) target levels.	I	A
A PCSK9 inhibitor is recommended in patients at very high CV risk, with persistently high LDL-C levels above target despite treatment with a maximum tolerated statin dose, in combination with ezetimibe, or in patients with statin intolerance.	I	A
If the target LDL-C is not reached with statins, combination therapy with ezetimibe is recommended.	I	B

including a PCSK9 inhibitor is recommended.[516,517]

added to ezetimibe may be considered.[523,524,526]

Mach F et al. Eur Heart J. 2020 Jan 1;41(1):111-188. Visseren FLJ et al. Eur Heart J. 2021 Sep 7;42(34):3227-3337. Marx N et al. Eur Heart J. 2023 Aug 25:ehad192.

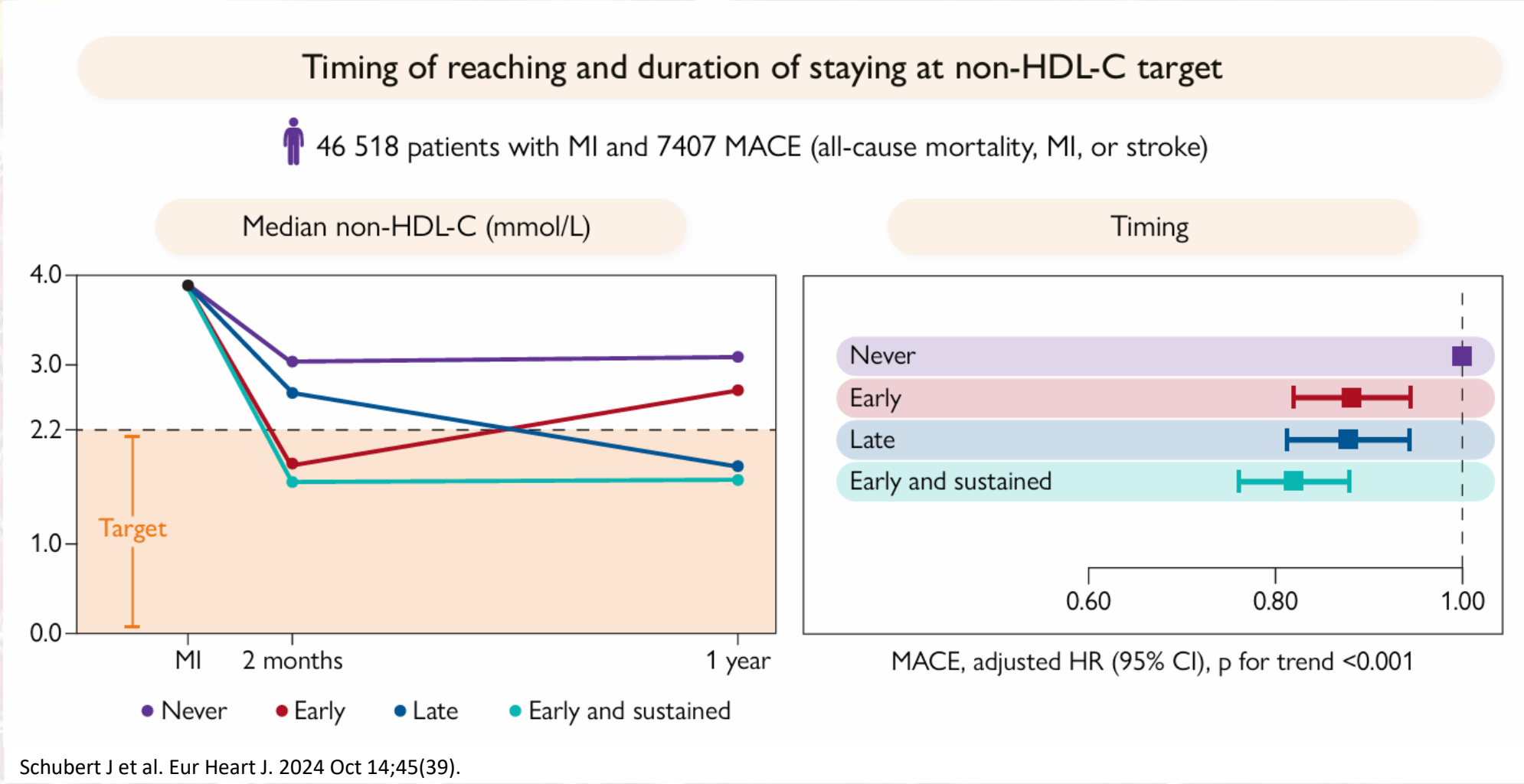
Niereninsuffizienz

The use of statins or statin/ezetimibe combination is recommended in patients with non-dialysis-dependent stage 3–5 CKD.[214,222,495,496]	I	A

More evidence is needed for PCSK9 inhibitors in specific populations, including patients with severe CKD and on dialysis.

Mach F et al. Eur Heart J. 2020 Jan 1;41(1):111-188.

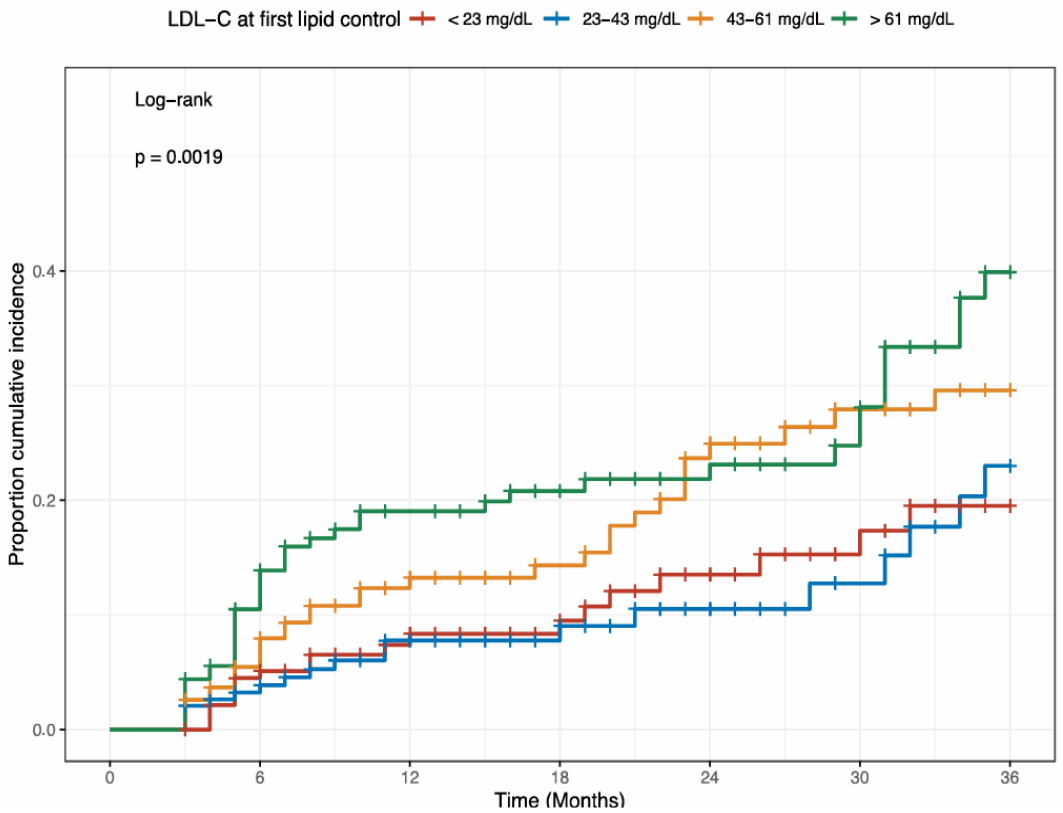
Myokardinfarkt-möglichst früh in Zielbereich



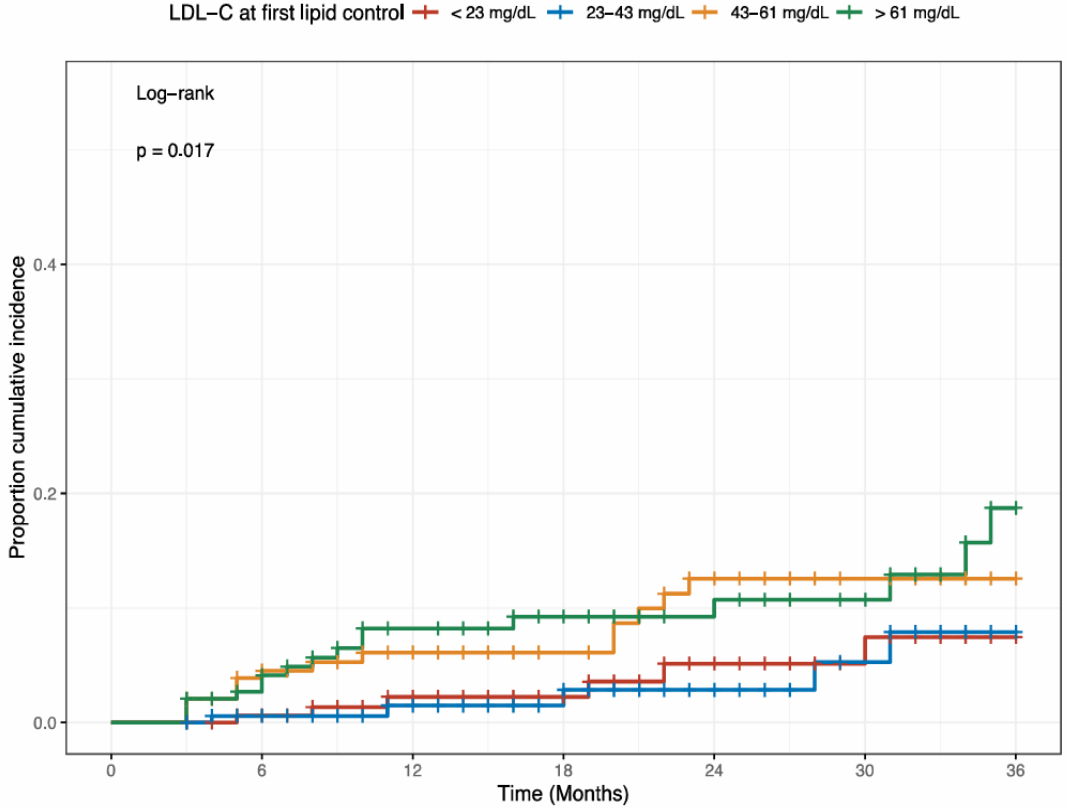
Schubert J et al. Eur Heart J. 2024 Oct 14;45(39).

PCSK 9- strike early, strike strong- MI

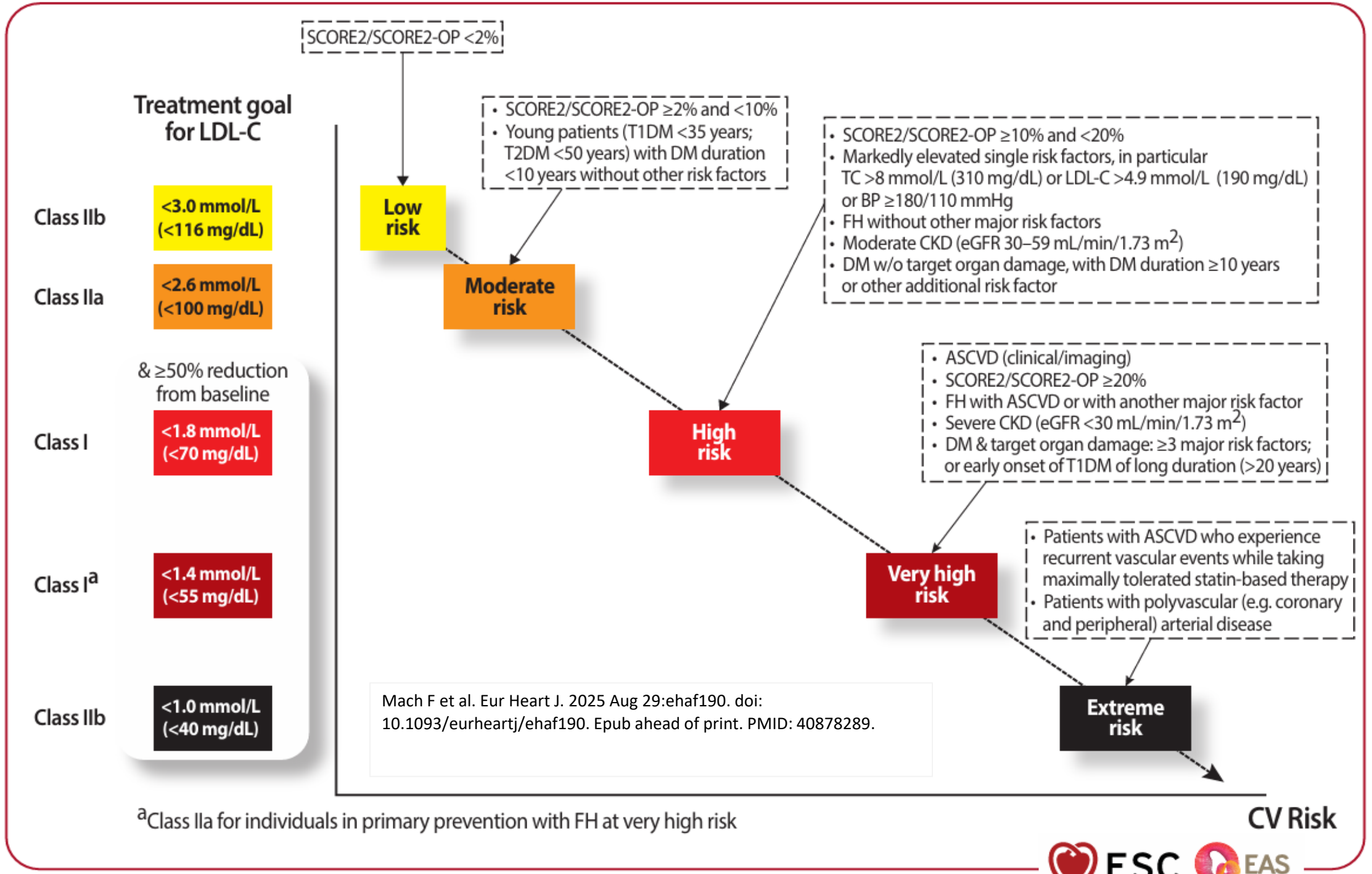
4 Punkt MACE



Gesamtmortalität



Gargiulo P. et al. Eur J Prev Cardiol. 2024 Nov 11;31(15):1806-1816.



Mach F et al. Eur Heart J. 2025 Aug 29:ehaf190. doi: 10.1093/eurheartj/ehaf190. Epub ahead of print. PMID: 40878289.

Tiroler Tageszeitung

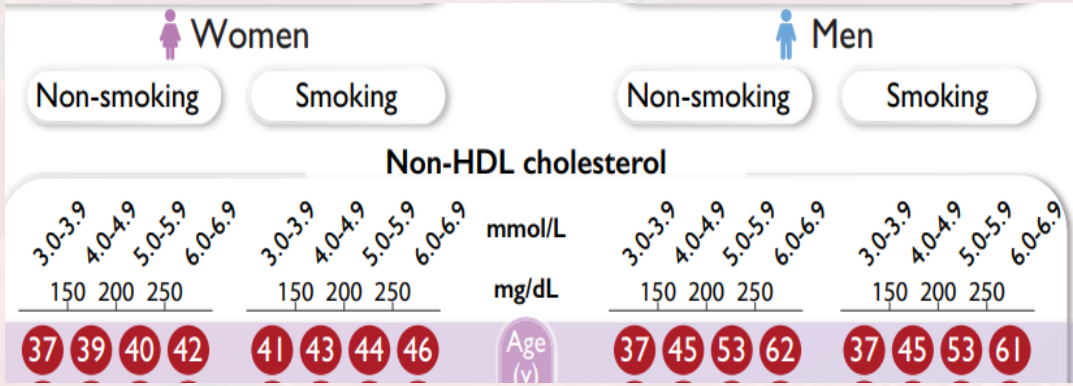
Tiroler Tageszeitung

Gesundheit

Blutfettstoff als Gefahr: „Lp(a) muss bei jedem gemessen werden“

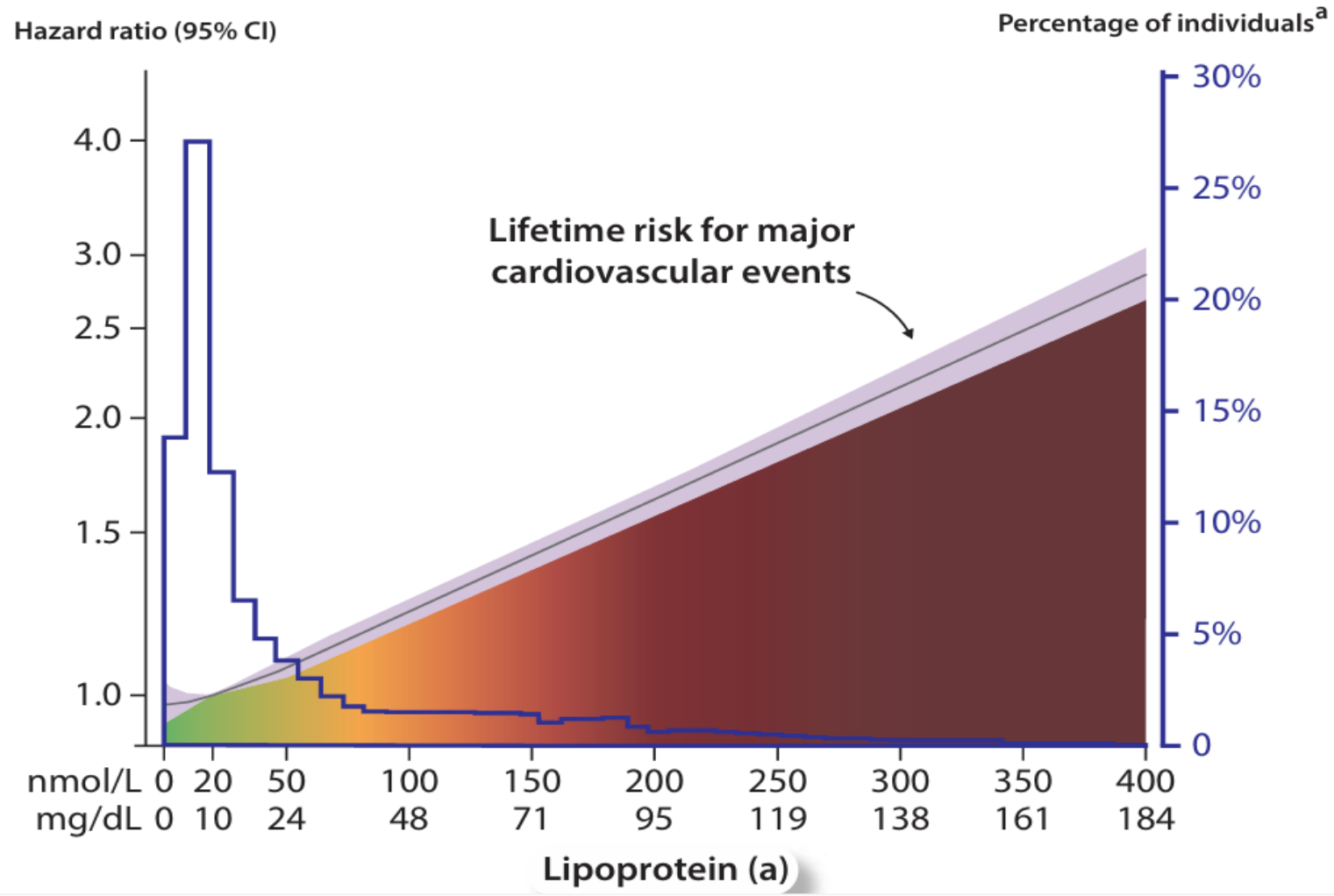
Non-HDL = CHOLges-HDL

Non-HDL = (LP(a)+VLDL+LDL+IDL+Chylomikronen)-HDL



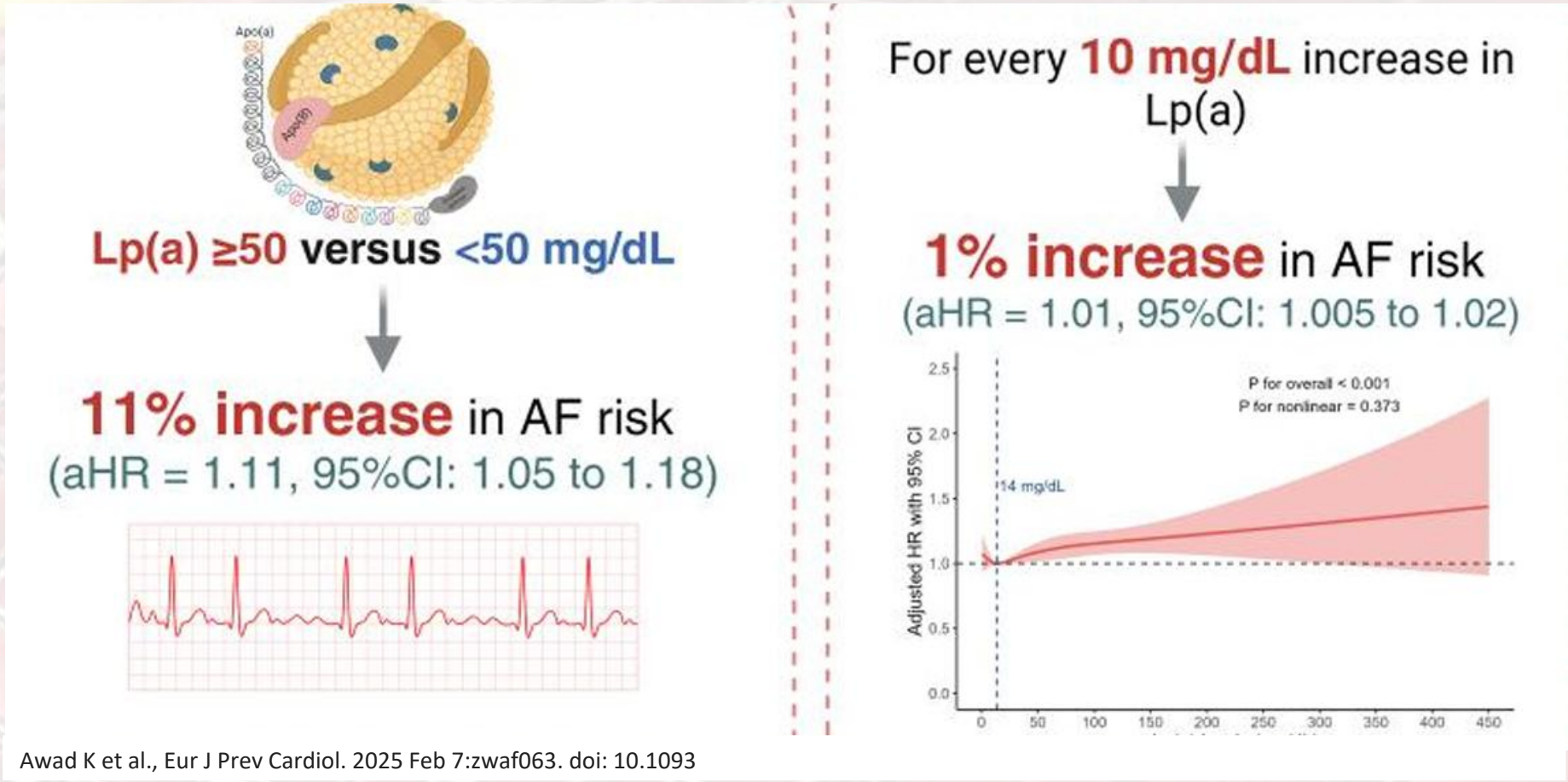
Lp(a): einmal im Leben bestimmen

Lp (a)



Mach F et al. Eur Heart J. 2025 Aug 29:ehaf190. doi: 10.1093/eurheartj/ehaf190. Epub ahead of print. PMID: 40878289.

Lp (a)-Vorhofflimmnern



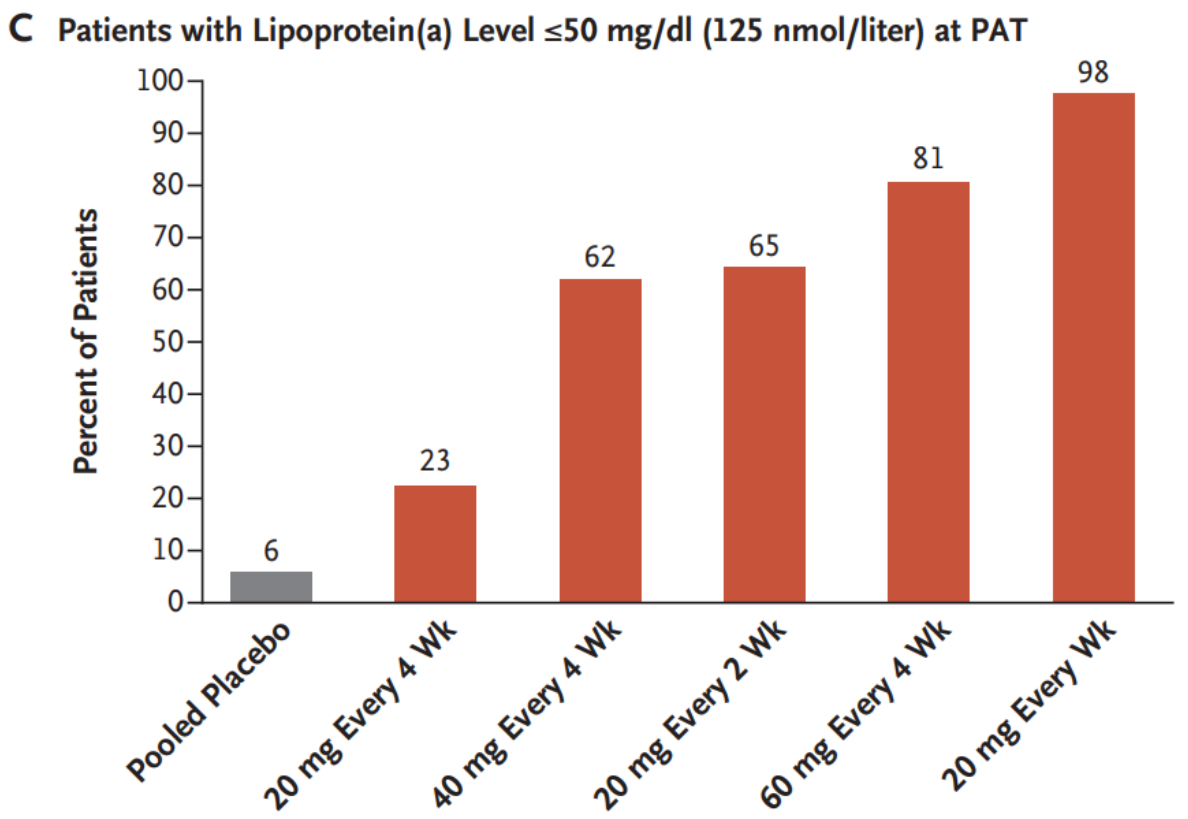
Awad K et al., Eur J Prev Cardiol. 2025 Feb 7:zwaf063. doi: 10.1093

Lp(a)-Risiko

<75 nmol/L (<30 mg/dL)	kein erhöhtes Risiko
75–125 nmol/L (30–50 mg/dL)	moderat erhöhtes Risiko
125–430 nmol/L (50–180 mg/dL)	deutlich erhöhtes Risiko
>430 nmol/L (>180 mg/dL)	sehr stark erhöhtes Risiko

Quelle: cholesterinallianz.at

Ausblick Lp(a)-Plasma-Levels-Pelacarsen



Tsimikas S et al. N Engl J Med. 2020 Jan 16;382(3):244-255.

Pelecarsen-Antisense-Oligonucleotid → Hemmung der mRNA von Lp(a)

Je nach Dosierung und Verabreichungsintervall senkt Pelecarsen Lp(a) in bis zu 98% der Fälle unter 50 mg/dl im Vergleich zu Placebo

Senkung von bis zu 80%

Endpunktdaten 2026 erwartet (HORIZON)

Warum Non-HDL?

- Alle Lipoproteine berücksichtigt: VLDL, Lp (a), IDL, LDL,Chylomikronen

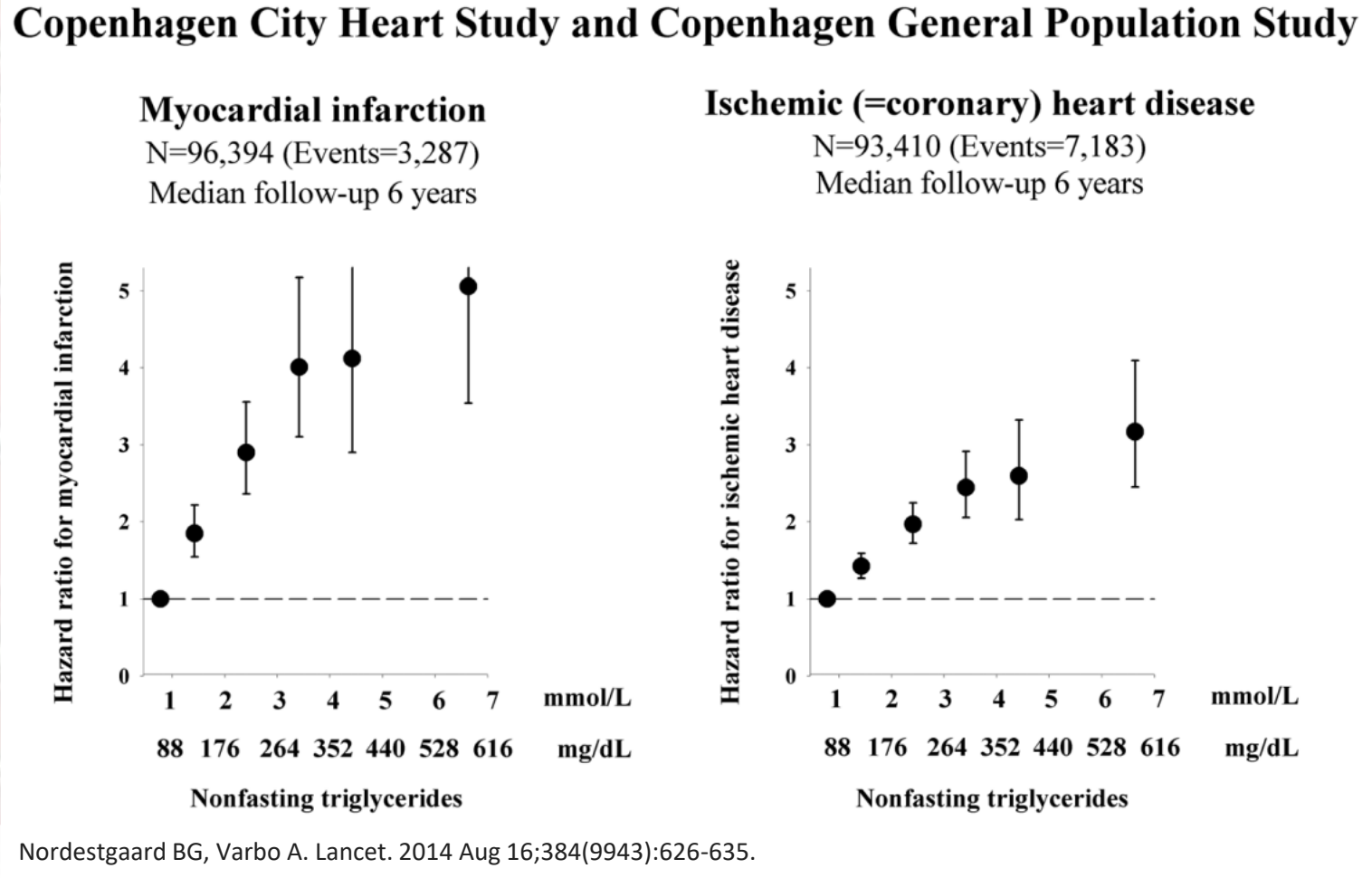
- $\underline{\text{NON-HDL}} = CHOLges - HDL$

- Friedewal-Formel: $LDL = CHOLges - HDL - ({}^{TRI}/_{5})$

——≫ Hohe TRI→ falsch niedriges LDL

Score 2 ist unabhängig von den Triglyceriden, Fibrat erst wenn TRI >500 mg/dl (Pankreas) oder um Ausgangs-LDL zu bestimmen

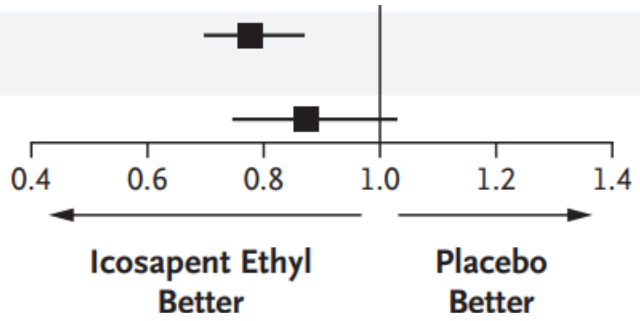
Triaglyceride



Nordestgaard BG, Varbo A. Lancet. 2014 Aug 16;384(9943):626-635.

Icosapent ethyl (=Omega 3 Fettsäure)→IIb

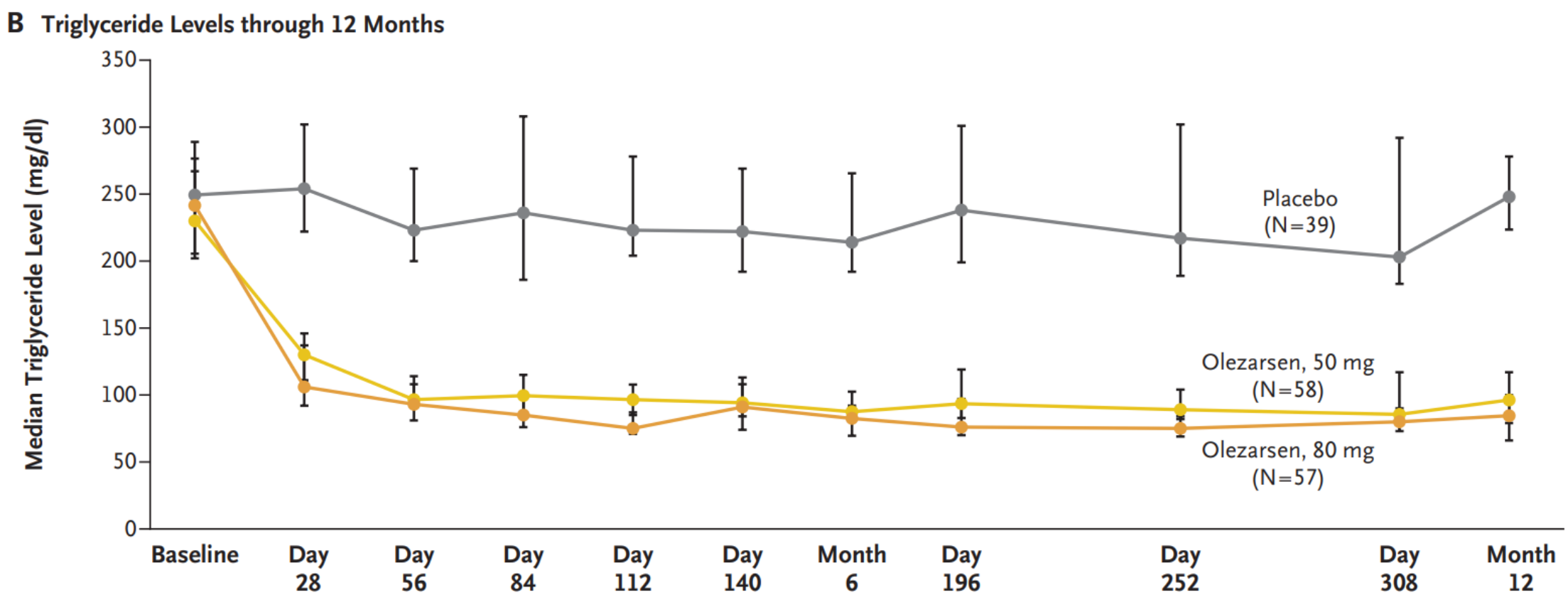
End Point	Icosapent Ethyl (N=4089)	Placebo (N=4090)	Hazard Ratio (95% CI)	P Value
	no. of patients with event (%)			
Primary composite	705 (17.2)	901 (22.0)	0.75 (0.68–0.83)	<0.001
Death from any cause, nonfatal myocardial infarction, or nonfatal stroke	549 (13.4)	690 (16.9)	0.77 (0.69–0.86)	<0.001
Death from any cause	274 (6.7)	310 (7.6)	0.87 (0.74–1.02)	—



Recommendations	Class[a]	Level[b]
High-dose icosapent ethyl (2 × 2 g/day) should be considered in combination with a statin in high-risk or very high-risk patients with elevated triglyceride levels (fasting triglyceride level 135–499 mg/dL or 1.52–5.63 mmol/L) to reduce the risk of cardiovascular events.[8,111]	IIa	B
Volanesorsen (300 mg/week) should be considered in patients with severe hypertriglyceridaemia (>750 mg/dL or >8.5 mmol/L) due to familial chylomicronaemia syndrome, to lower triglyceride levels and reduce the risk of pancreatitis.[6,117]	IIa	B

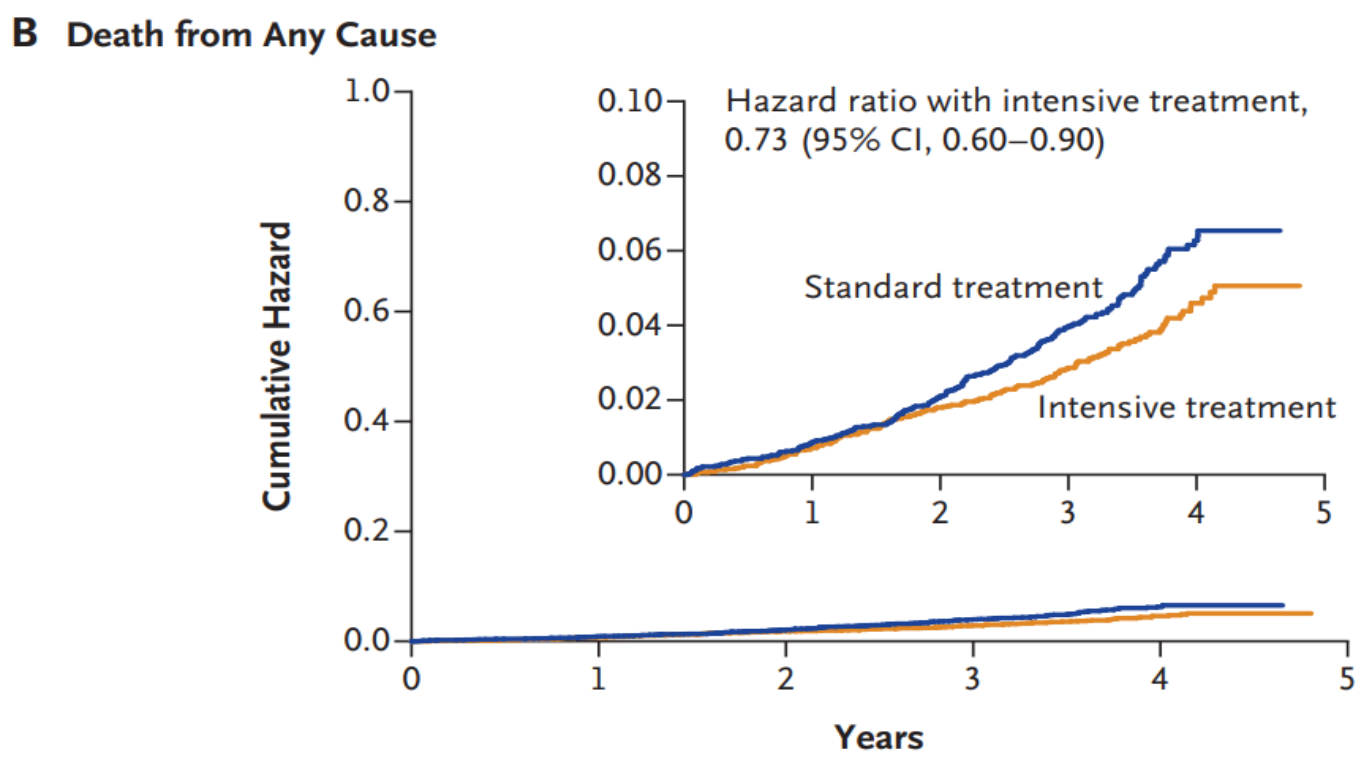
Bhatt DL et.al, N Engl J Med. 2019 Jan 3;380(1):11-22.

Olezarsen- noch keine MACE-Daten

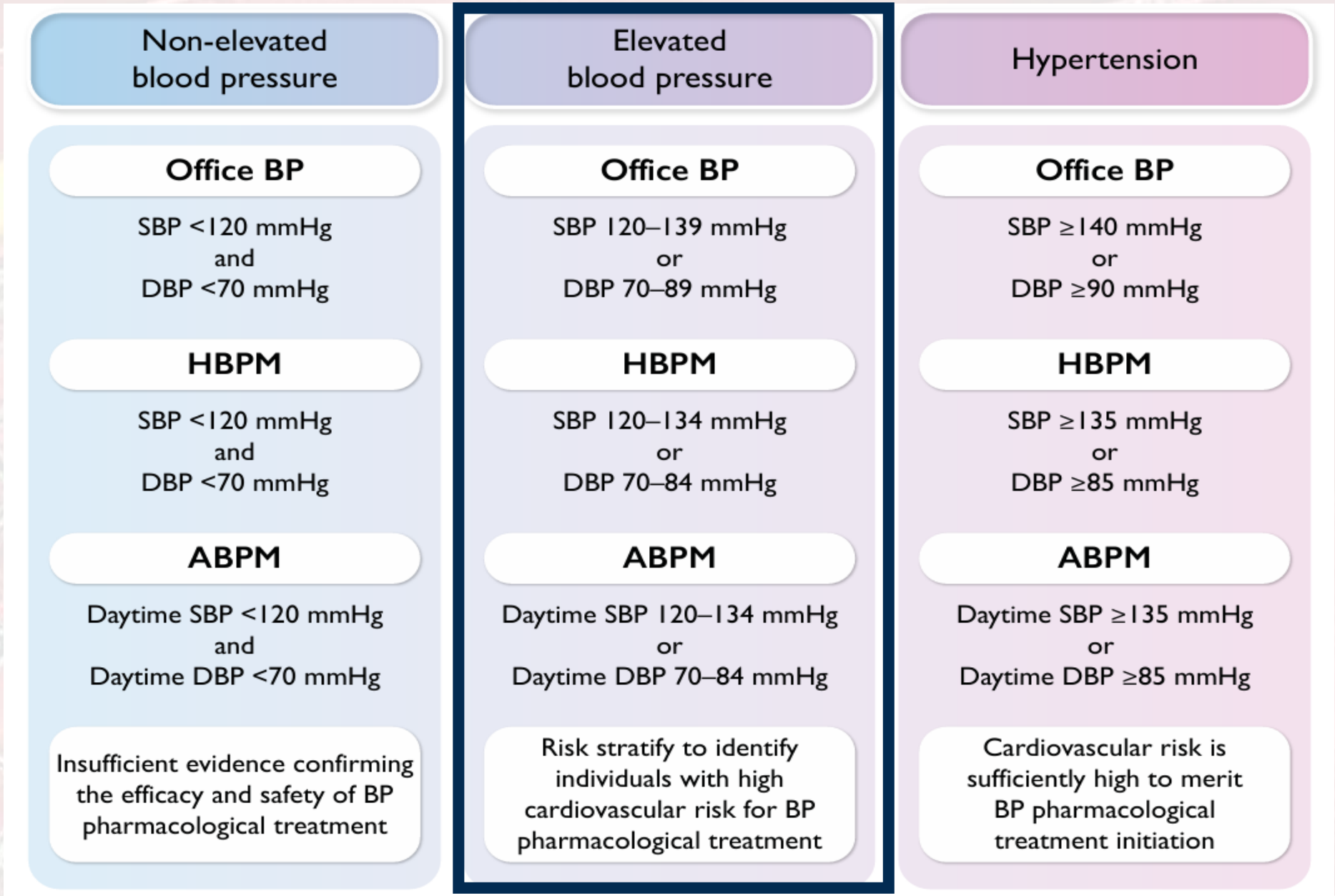


Bergmark BA et al. N Engl J Med. 2024 Apr 7. doi: 10.1056/NEJMoa2402309.

Blutdruck: Sprint-Studie

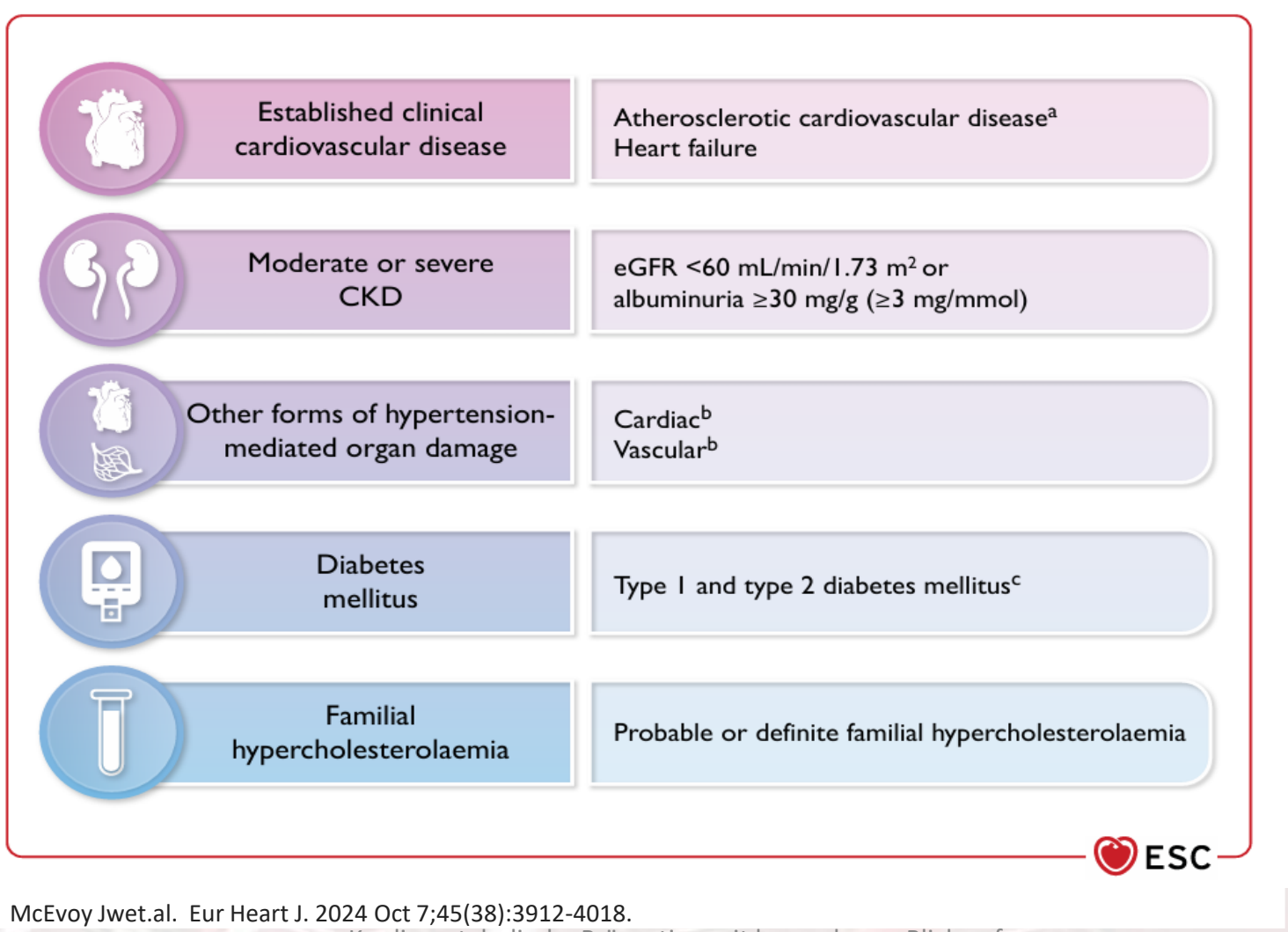


Wright JT Jr et al. N Engl J Med. 2017 Dec 21;377(25):2506.



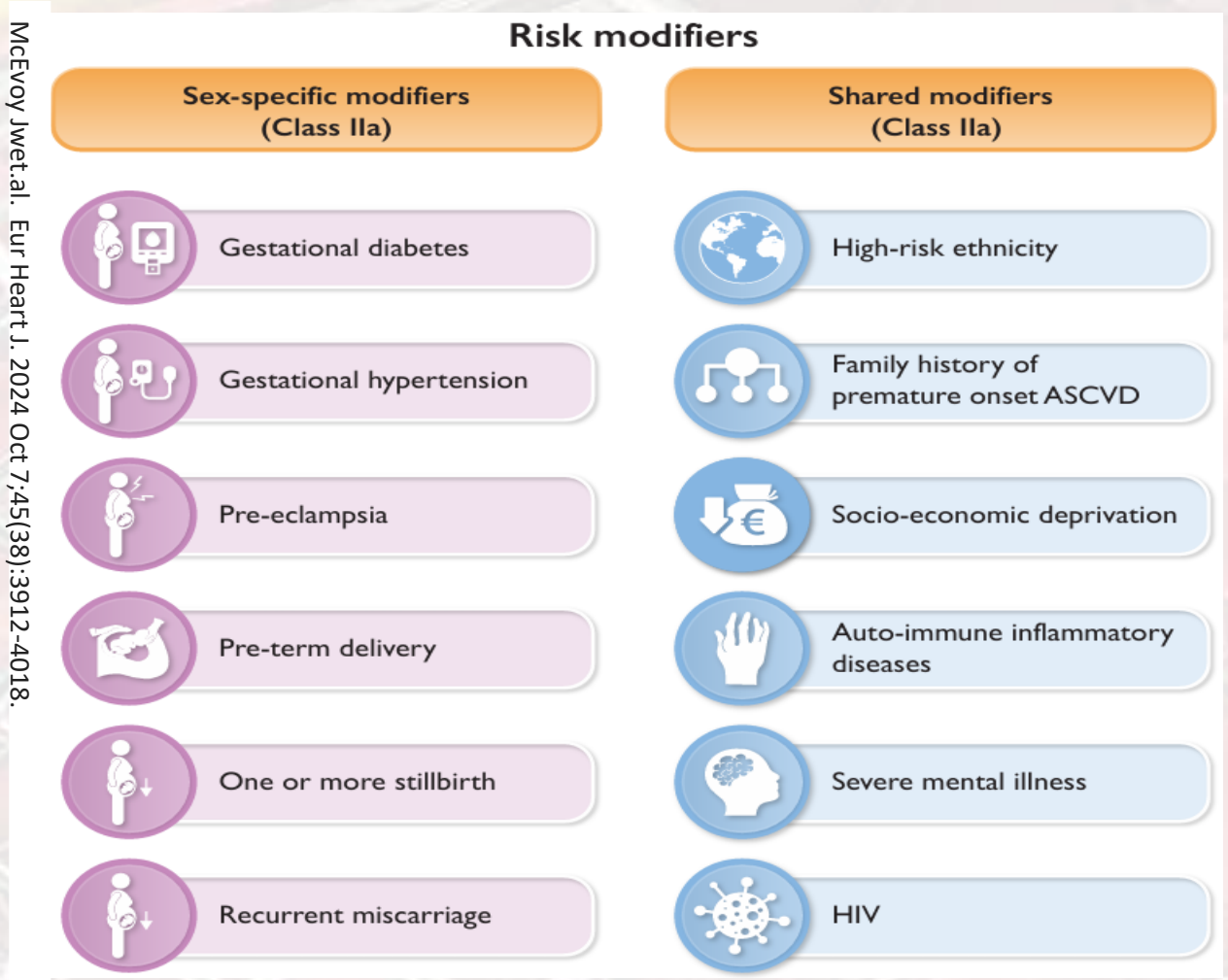
McEvoy Jwet.al. Eur Heart J. 2024 Oct 7;45(38):3912-4018.

Elevated Blood Preassure + Kardiovaskuläre RF: Ziel-RR: **immer** 120-129/70-85 mmHG



McEvoy Jwet.al. Eur Heart J. 2024 Oct 7;45(38):3912-4018.

Elevated Blood Preassure + SCORE 2/OP/DM(<60 a ohne Endorganschäden) 5-10% + Modified Risk Faktors: Ziel-RR: 120-129/70-85 mmHg



McEvoy Jwet.al. Eur Heart J. 2024 Oct 7;45(38):3912-4018.

Elevated Blood Preassure ohne kardiovaskuläre RF +/- Modified Risc Factors: Ziel-RR: 120-129/70-85 mmHg in Abh. von SCORES

- SCOR 2/SCORE 2OP/SCORE 2 DM (<60 a ohne Organschäden) >10%

→ sofort medikamentöse Th. wenn SBP 130-139 mmHg

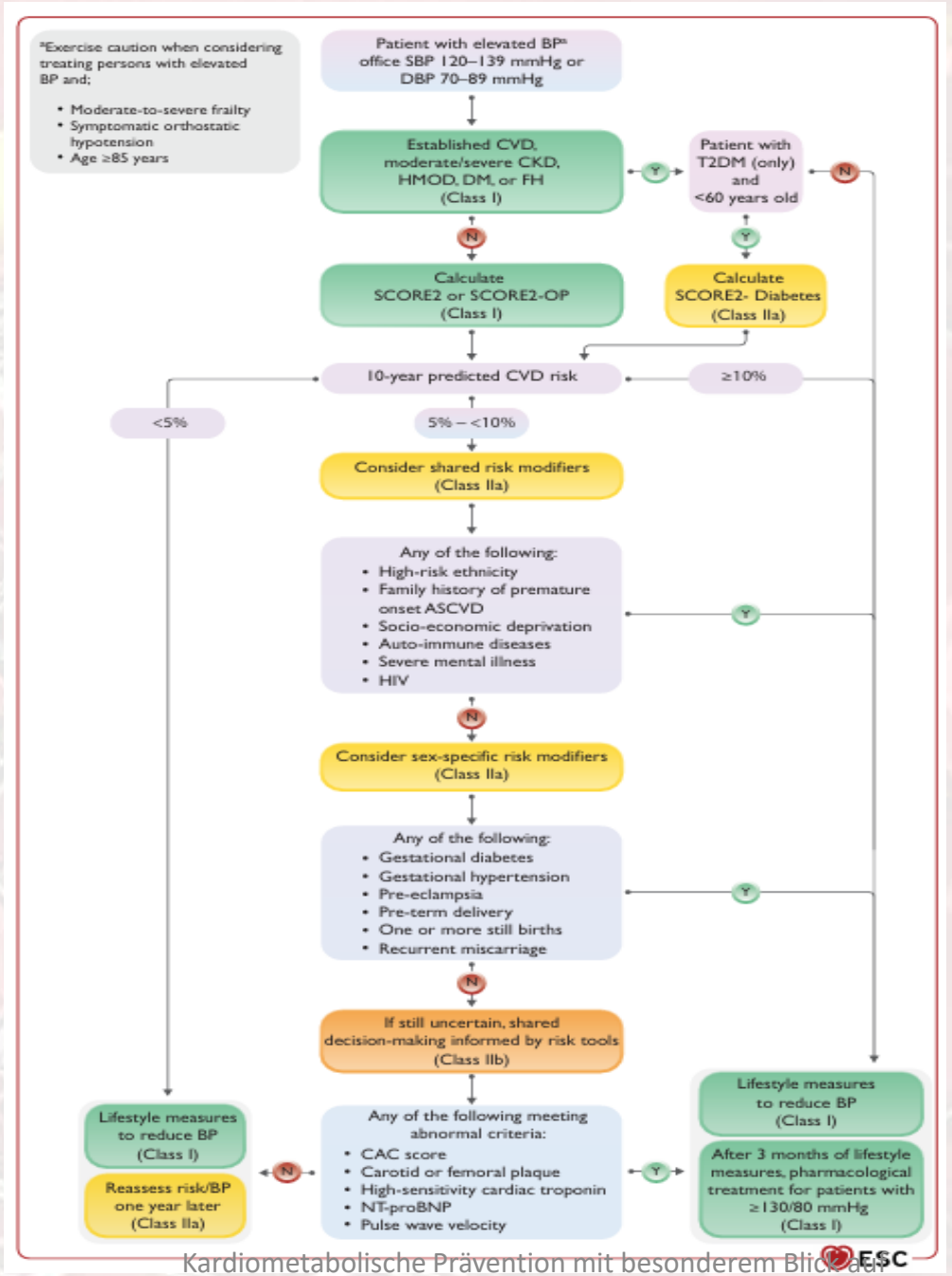
- SCOR 2/SCORE 2OP/SCORE 2 DM (<60 a ohne Organschäden) 5-10%

→ medikamentöse Therapie nach 3 Monaten Lebensstilmodifikation, wenn RR > 130/80 mmHG

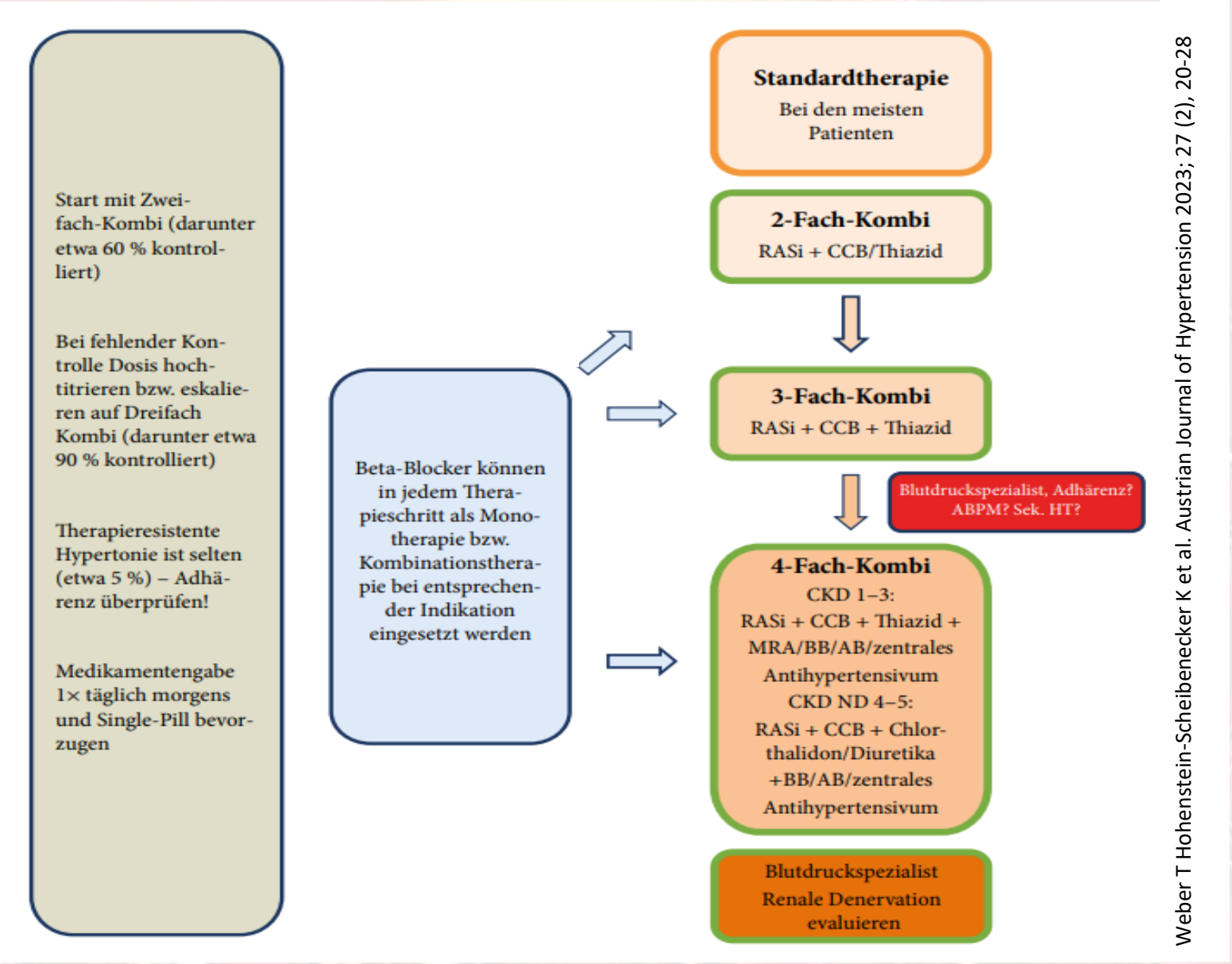
Ohne Modified Risc Faktors:SCOR 2/SCORE 2OP /SCORE 2 DM(<60 a ohne Organschäden) <10% → Therapie erst wenn RR > 140/90 mmHG

Ohne Modified Risc Faktors:SCOR 2/SCORE 2OP /SCORE 2 DM(<60 a ohne Organschäden) >10% → medikamentöse Th. wenn SBP 130-139 mmHg

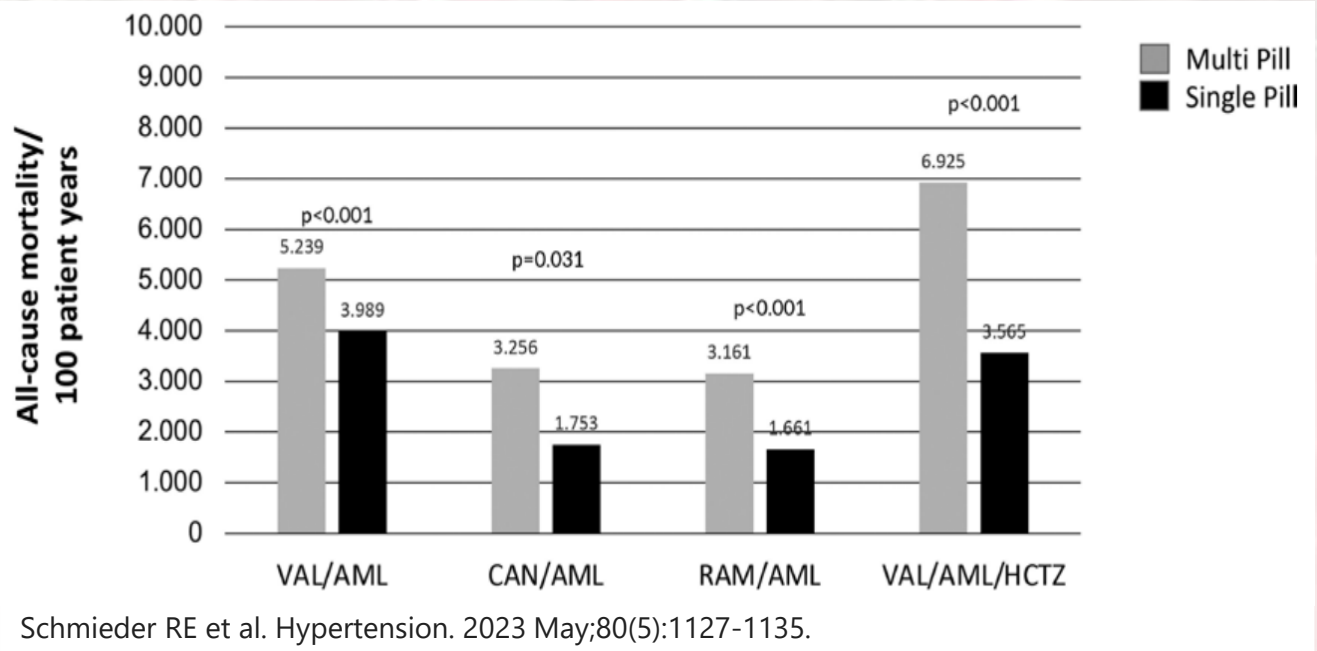
Gilt nur für Selbstmessung zu Hause, für alle gilt: wenn Elevated Blood Preassure vor medikamentöser Therapie **Lebensstielmodifikation für 3 Monate.**


[a]Exercise caution when considering treating persons with elevated BP and;
• Moderate-to-severe frailty
• Symptomatic orthostatic hypotension
• Age ≥85 years
Patient with elevated BP[a] office SBP 120–139 mmHg or DBP 70–89 mmHg
Established CVD, moderate/severe CKD, HMOD, DM, or FH (Class I)
Y
Patient with T2DM (only) and <60 years old
N
N
Y
Calculate SCORE2 or SCORE2-OP (Class I)
Calculate SCORE2- Diabetes (Class IIa)
10-year predicted CVD risk
≥10%
<5%
5% – <10%
Consider shared risk modifiers (Class IIa)
Any of the following:
• High-risk ethnicity
• Family history of premature onset ASCVD
• Socio-economic deprivation
• Auto-immune diseases
• Severe mental illness
• HIV
Y
N
Consider sex-specific risk modifiers (Class IIa)
Any of the following:
• Gestational diabetes
• Gestational hypertension
• Pre-eclampsia
• Pre-term delivery
• One or more still births
• Recurrent miscarriage
Y
N
If still uncertain, shared decision-making informed by risk tools (Class IIb)
Lifestyle measures to reduce BP (Class I)
Reassess risk/BP one year later (Class IIa)
N
Any of the following meeting abnormal criteria:
• CAC score
• Carotid or femoral plaque
• High-sensitivity cardiac troponin
• NT-proBNP
• Pulse wave velocity
Y
Lifestyle measures to reduce BP (Class I)
After 3 months of lifestyle measures, pharmacological treatment for patients with ≥130/80 mmHg (Class I)
ESC

Screening sekundäre Hypertonie: Bei PatientInnen <40 a bei dehnen die voll ausdosierte Dreifachtherapie keine zufriedenstellneden RR-Werte liefert

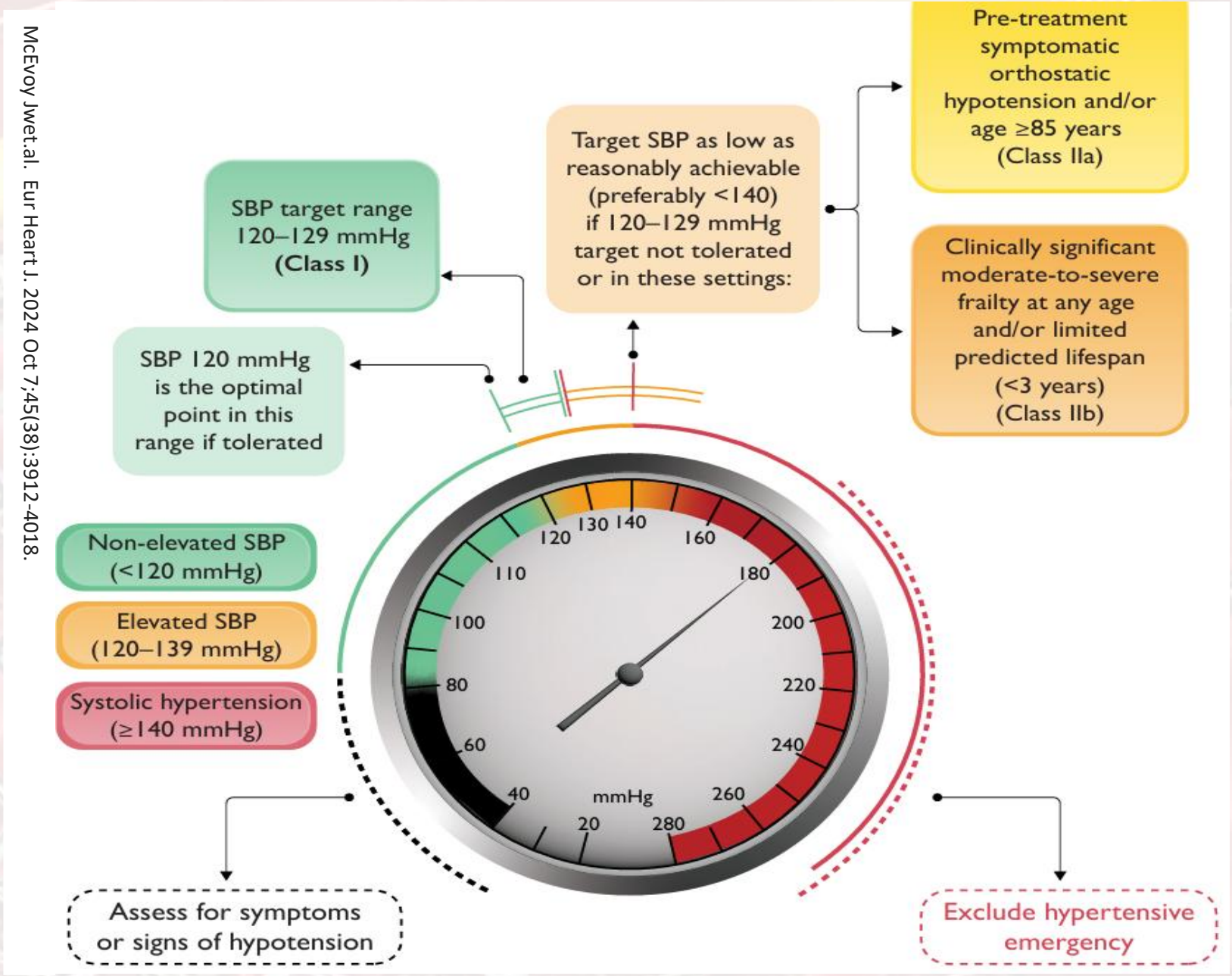


Immer nach dem „Single-Pill-Prinzip“ vorgehen: START-Studie



Schmieder RE et al. Hypertension. 2023 May;80(5):1127-1135.

- Kardiovaskuläre Ereignisse um 20% reduziert
- Sterblichkeit um 13% reduziert



McEvoy Jwet.al. Eur Heart J. 2024 Oct 7;45(38):3912-4018.

Zusammenfassung

Eine evidenzbasierte Behandlung des RR und der Hyperlipidämie ist nur durch eine suffiziente Risikostratifizierung möglich

Hierzu sollten die Scores und Checklisten verwendet werden

Hauptziel der Lipidtherapie ist die Verhinderung von Plaquerupturen durch medikamentöse Plaquestabilisierung, bzw. überhaupt die Verhinderung, dass sie sich bilden.

Lp(a): behandeln wir indirekt bei erhöhten Scores (erhöhtes Lp(a) → Non-HDL→ höhere Scores

Triglyceride: errechnetes LDL falsch niedrig, behandeln mit Icosapent-Ethyl

RR: Unterscheidung Normotension, Hypertension und „erhöhter Blutdruck“

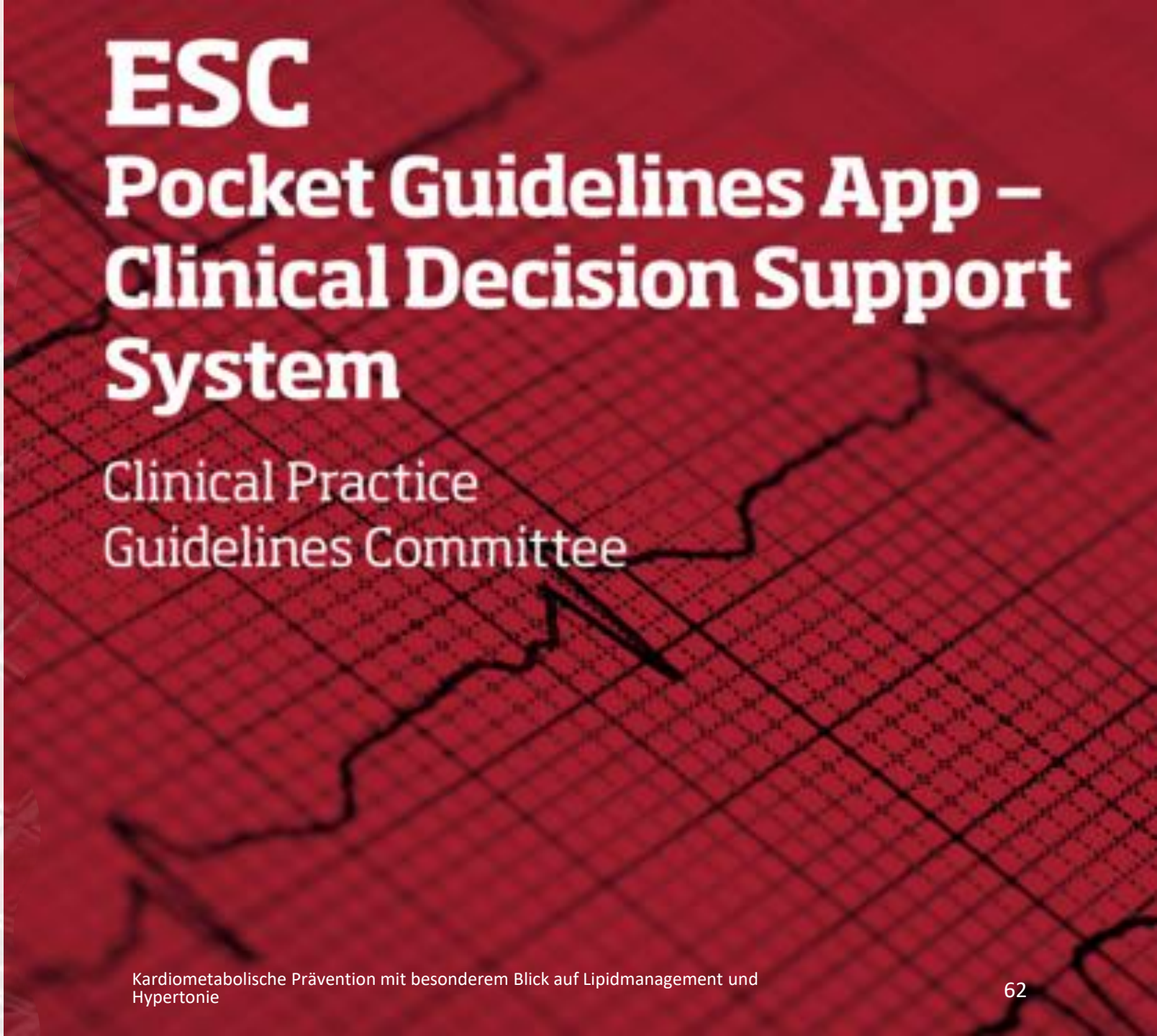
Erhöhter Blutdruck: 3 Monate Lebensstilmodifikation, dann individuelle Risikostratifizierung

Immer Kombipräparate mit Wirkstoffen mit erwiesenem CV-Benefit verabreichen

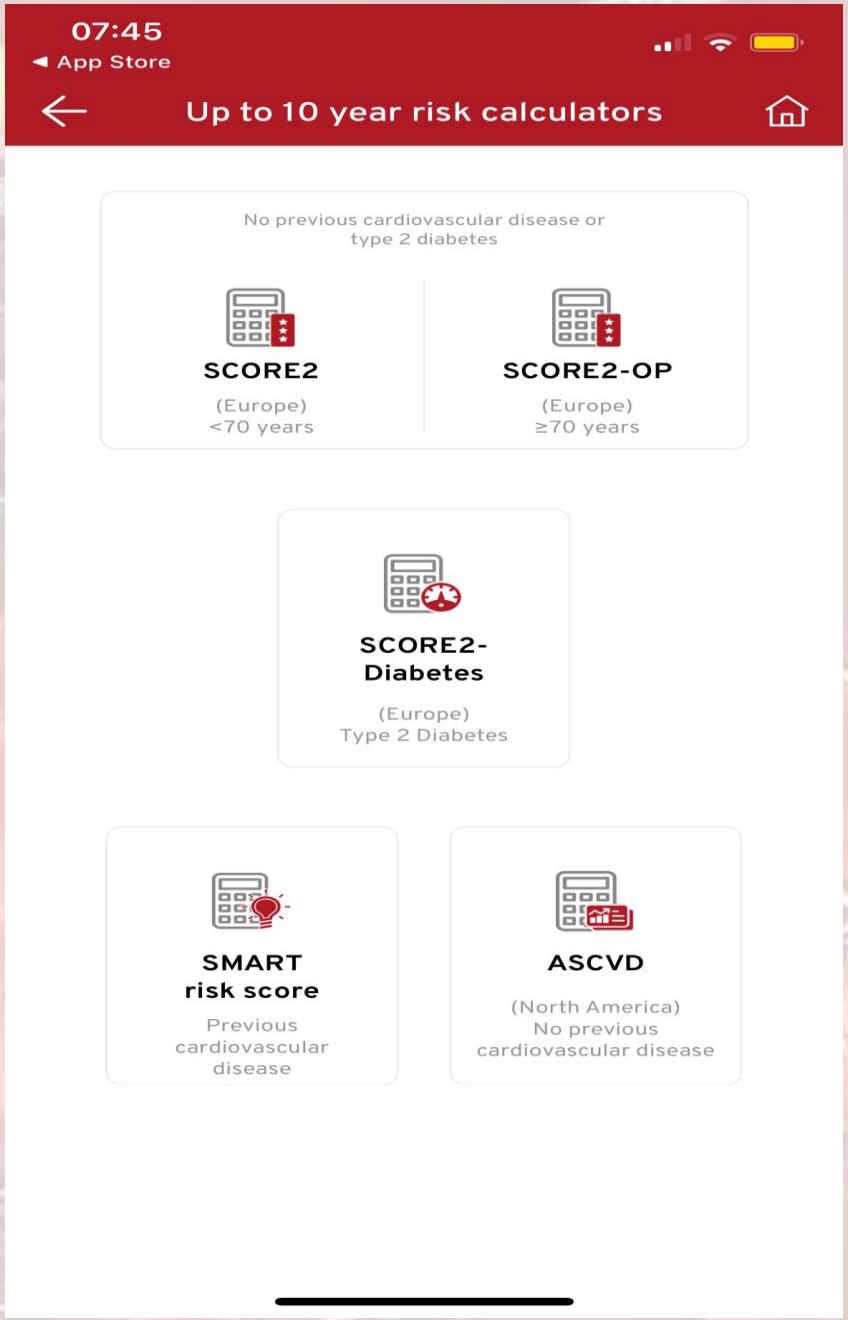
Wir behandeln primär Risiko mit dem Ziel der Organprotektion und nicht rein Zahlen

Und wo kann man das alles nachlesen?

escardio.org/guidelines



ESC-Scores APP



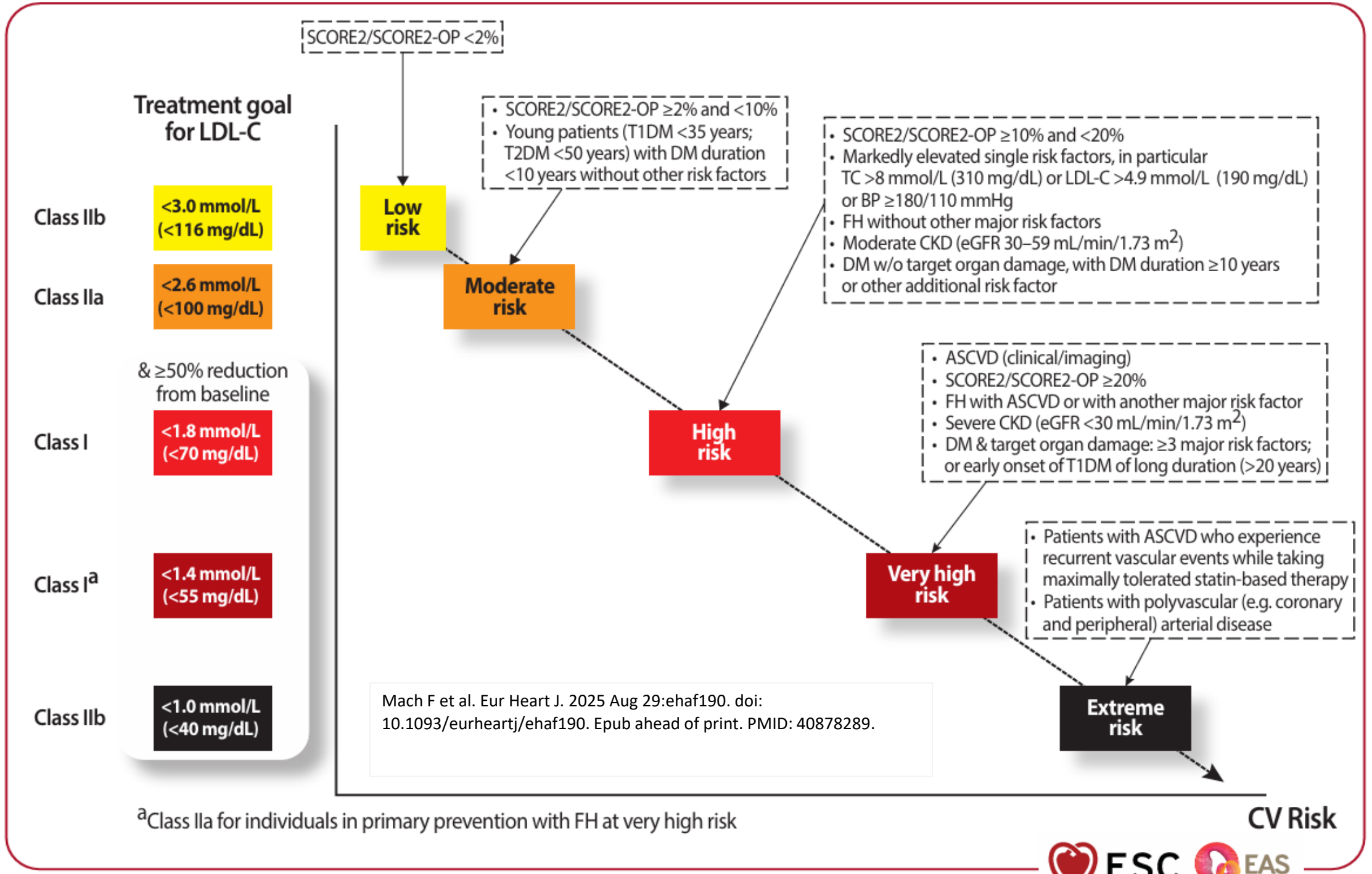
Box 1 Risk modifiers for consideration beyond the risk estimation based on the SCORE2 and SCORE2-OP algorithms

Demographic/clinical conditions

- Family history of premature CVD (men: <55 years; women: <60 years)
- High-risk ethnicity (e.g. Southern Asian)
- Stress symptoms and psychosocial stressors
- Social deprivation
- Obesity
- Physical inactivity
- Chronic immune-mediated/inflammatory disorders
- Major psychiatric disorders
- History of premature menopause
- Pre-eclampsia or other hypertensive disorders of pregnancy
- Human immunodeficiency virus infection
- Obstructive sleep apnoea syndrome

Biomarkers

- Persistently elevated hs-CRP (>2 mg/L)
- Elevated Lp(a) [>50 mg/dL (>105 nmol/L)].



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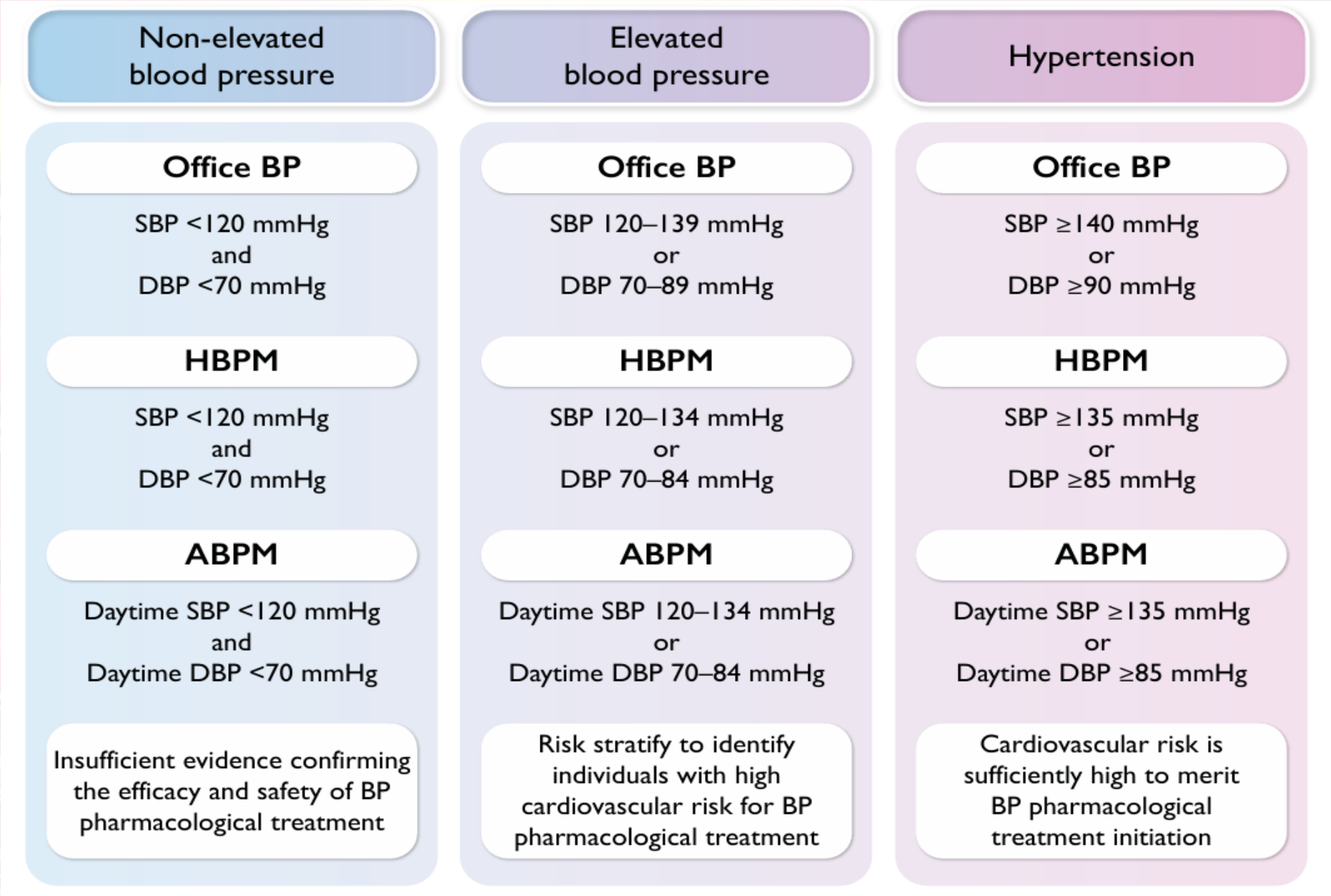
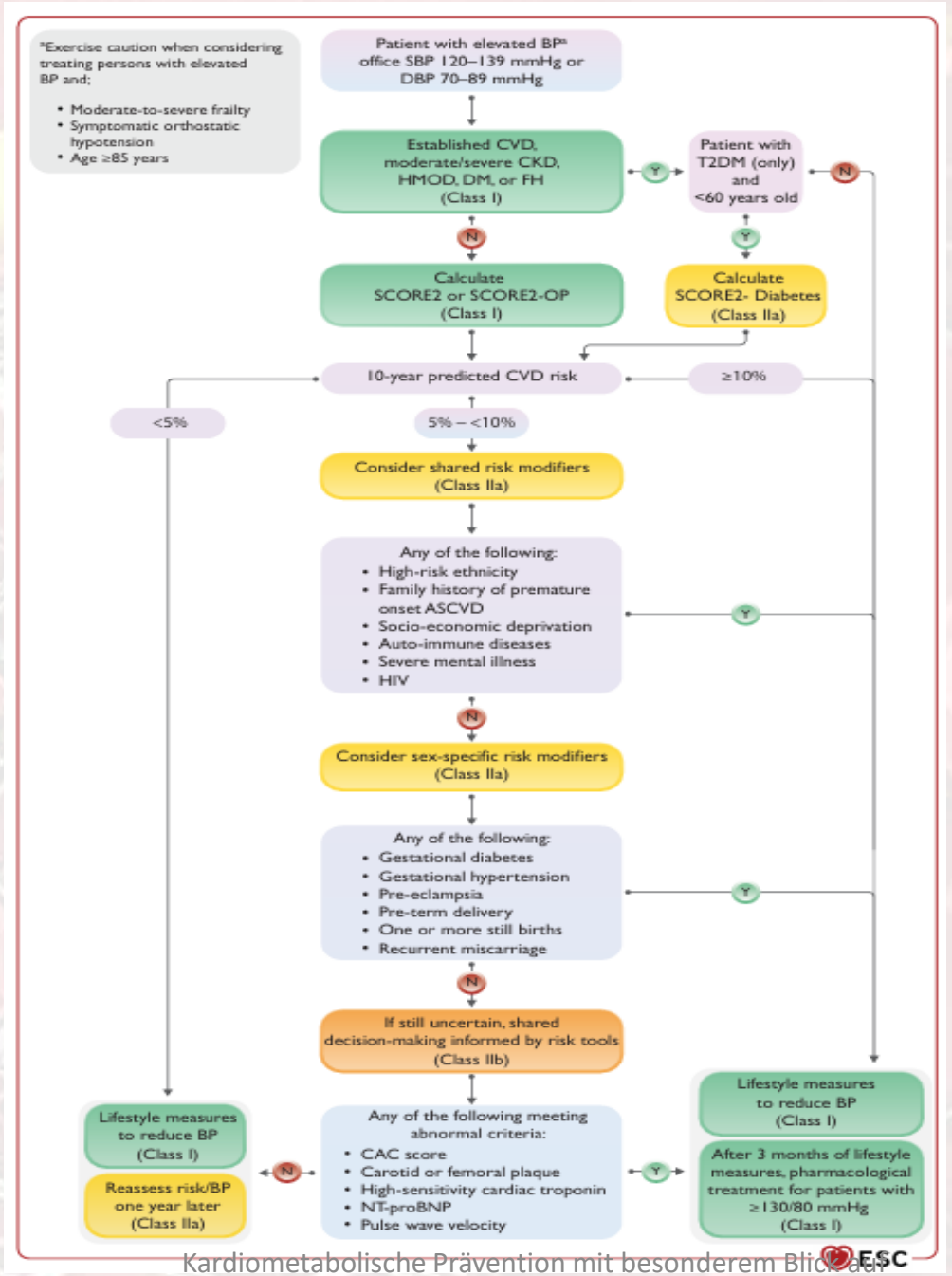

Non-elevated blood pressure
Elevated blood pressure
Hypertension
Office BP
SBP <120 mmHg and DBP <70 mmHg
Office BP
SBP 120–139 mmHg or DBP 70–89 mmHg
Office BP
SBP ≥140 mmHg or DBP ≥90 mmHg
HBPM
SBP <120 mmHg and DBP <70 mmHg
HBPM
SBP 120–134 mmHg or DBP 70–84 mmHg
HBPM
SBP ≥135 mmHg or DBP ≥85 mmHg
ABPM
Daytime SBP <120 mmHg and Daytime DBP <70 mmHg
ABPM
Daytime SBP 120–134 mmHg or Daytime DBP 70–84 mmHg
ABPM
Daytime SBP ≥135 mmHg or Daytime DBP ≥85 mmHg
Insufficient evidence confirming the efficacy and safety of BP pharmacological treatment
Risk stratify to identify individuals with high cardiovascular risk for BP pharmacological treatment
Cardiovascular risk is sufficiently high to merit BP pharmacological treatment initiation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Y
Patient with T2DM (only) and <60 years old
N
Y
N
Calculate SCORE2 or SCORE2-OP (Class I)
Calculate SCORE2- Diabetes (Class IIa)
10-year predicted CVD risk
≥10%
<5%
5% – <10%
Consider shared risk modifiers (Class IIa)
Any of the following:
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• Family history of premature onset ASCVD
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Consider sex-specific risk modifiers (Class IIa)
Any of the following:
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• Gestational hypertension
• Pre-eclampsia
• Pre-term delivery
• One or more still births
• Recurrent miscarriage
Y
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If still uncertain, shared decision-making informed by risk tools (Class IIb)
Lifestyle measures to reduce BP (Class I)
Reassess risk/BP one year later (Class IIa)
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• Pulse wave velocity
Y
Lifestyle measures to reduce BP (Class I)
After 3 months of lifestyle measures, pharmacological treatment for patients with ≥130/80 mmHg (Class I)
ESC


The light at the end of the tunnel