Update ESC-Leitlinie zum Lipidmanagement

Was ist neu?

Dieter Ropers

Malteser Waldkrankenhaus Erlangen

Update ESC-Leitlinie zum Lipidmanagement

Was ist neu?

Dieter Ropers

Malteser Waldkrankenhaus Erlangen

"There is no glory in prevention"

12:05 Update ESC-Leitlinie zum Lipidmanagement – Was ist neu? *Ropers*

12:30 **Mittagspause in der Industrieausstellung**

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Rose G: Sick individuals and sick populations. Int J Epidemiol 1985

Malteser … weil Nähe zählt.

Offenlegung möglicher Interessenskonflikte

Sprecher-Honorar	Sanofi-Aventis, Novartis AG, Bayer Vital GmbH Boehringer Ingelheim, AstraZeneca, Pfizer Pharma GmbH Bristol Myers Squibb, Novo Nordisk, Daiichi Sankyo
Beratung:	Novartis AG, Bayer Vital GmbH, Sanofi-Aventis, Boehringer Ingelheim, Pfizer Pharma GmbH, Novo Nordisk
Podcast*	Sanofi-Aventis

*„Lipids-on-Air“: mit Prof. Dr. Ksenija Stach-Jablonski, Potsdam

Leitlinien

2019 ESC/EAS Guidelines for the management of dyslipidaemias: *lipid modification to reduce cardiovascular risk* Mach F et al. Eur Heart J 2019

2021 ESC Guidelines on cardiovascular disease prevention in clinical practice Visseren F et al. Eur Heart J 2021

2025 Focused Update of the 2019 ESC/EAS Guidelines for the management of dyslipidaemias Mach F et al. Eur Heart J 2025

Leitlinien 2025

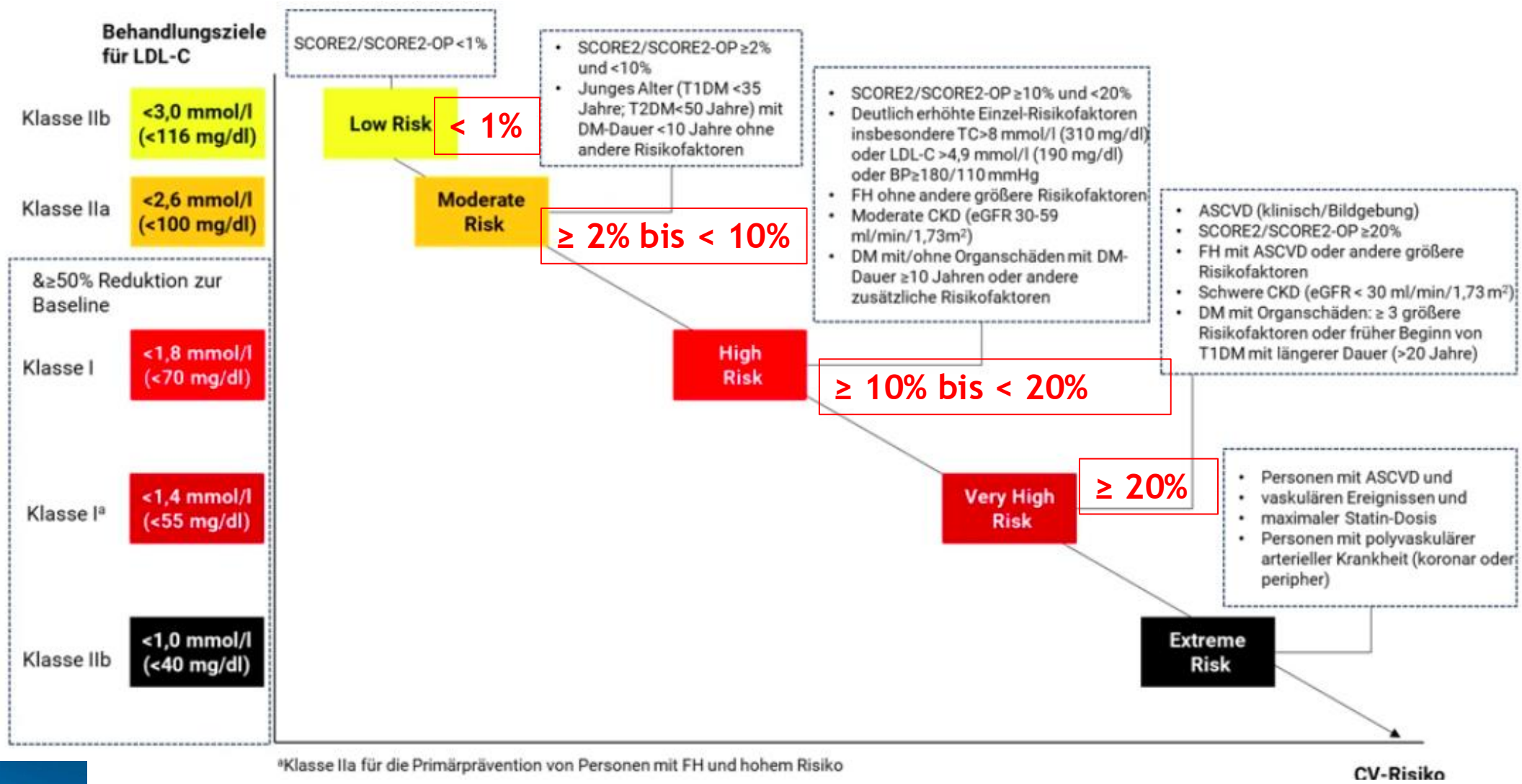
2025 Focused Update of the 2019 ESC/EAS Guidelines for the management of dyslipidaemias

1. Risiko-Abschätzung (10 Jahres-R.) anhand von SCORE2 und SCORE2-OP

1. Wie hoch ist das kardiovaskuläre Risiko?
2. Wo liegt der LDL-Zielwert?
3. Aktuelles LDL-Cholesterin?
4. Wie kann ich den Zielwert erreichen?

Mach F et al. Eur Heart J 2025

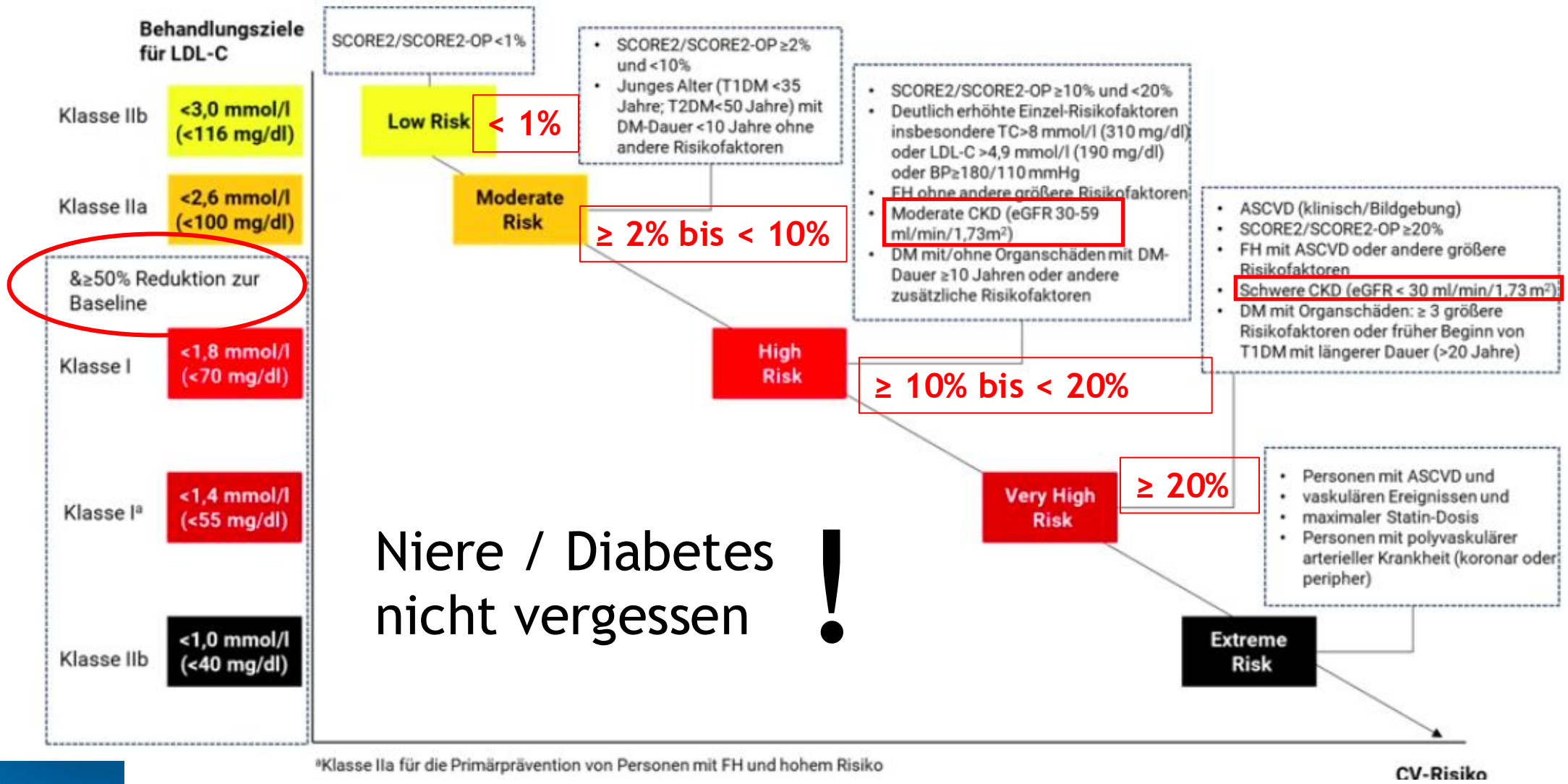
Risikoklassifikation (SCORE2 / SCORE2-OP) und Zielwerte



[a]Klasse IIa für die Primärprävention von Personen mit FH und hohem Risiko

Mach F et al. Eur Heart J 2025

Risikoklassifikation und Zielwerte



Niere / Diabetes nicht vergessen !

Mach F et al. Eur Heart J 2025

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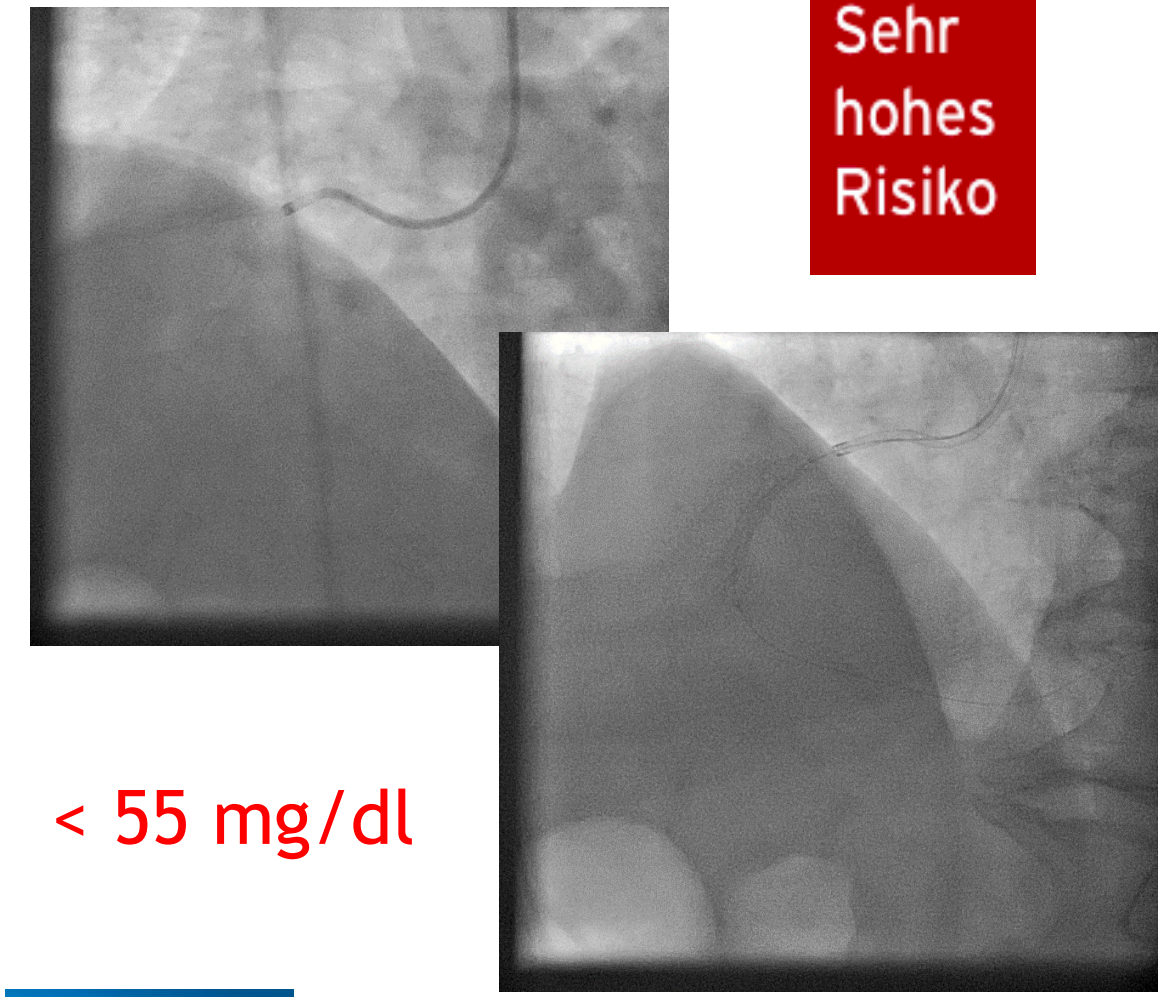
Malteser … weil Nähe zählt.

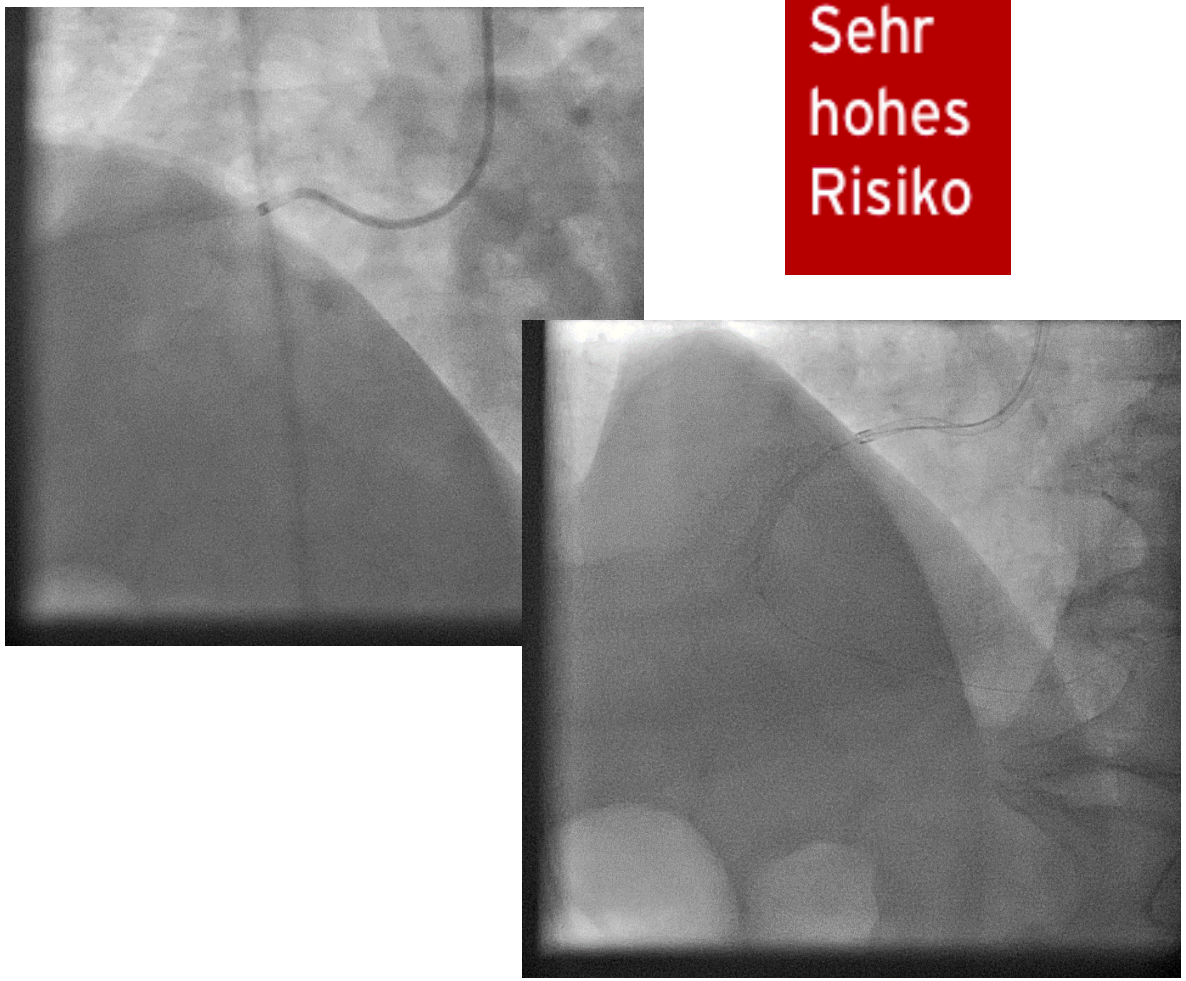
Risikoklassifikation und Zielwert



Sehr hohes Risiko

< 55 mg/dl

Risikoklassifikation und Zielwert



Sehr hohes Risiko

70 Jahre
190 cm; 107 kg

122/74 mmHg
HF 68/min

Cholesterin 223 mg/dl

LDL-C 143 mg/dl

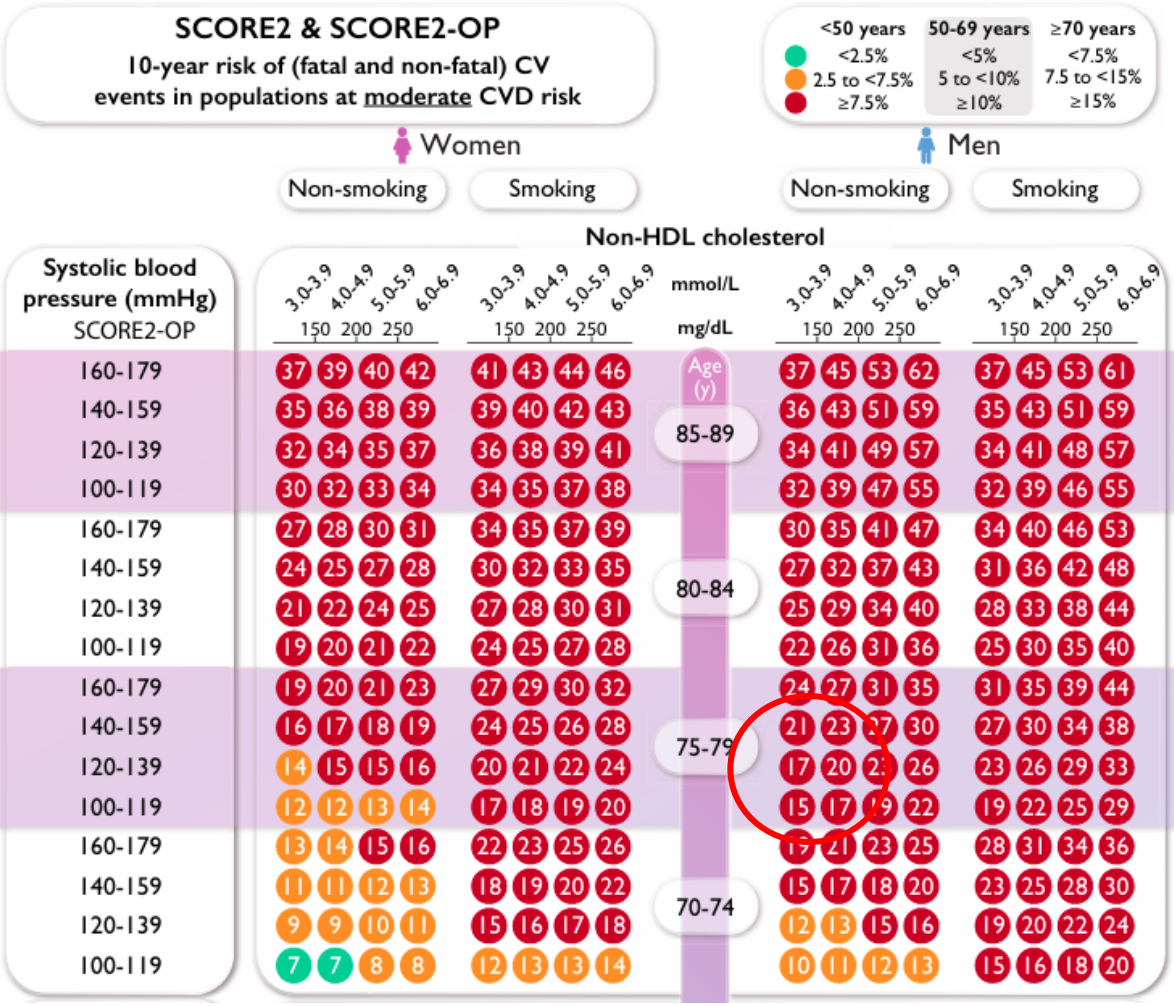
HDL-C 67 mg/dl

TG 129 mg/dl

Ronny Jackson, MD, 01/2018

Risikoklassifikation und Zielwert

Hohes Risiko



70 Jahre
190 cm; 107 kg

122/74 mmHg
HF 68/min

Cholesterin 223 mg/dl

LDL-C 143 mg/dl

HDL-C 67 mg/dl

TG 129 mg/dl

SCORE2-OP 17% – 20%

< 70 mg/dl

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Visseren F et al. Eur Heart J 2021

Ronny Jackson, MD, 01/2018

Malteser
… weil Nähe zählt.

Risikoklassifikation und Zielwert

Hohes Risiko

Agatston-Sore

Risk modifiers
- Psychosocial stress
- Ethnicity
- Imaging (e.g. coronary calcium scoring)

Comorbidity
- e.g. cancer, COPD, inflammatory disease, mental disorders, sex-specific conditions

> 100 hohes R.

> 300 sehr hoch

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)].

70 Jahre
190 cm; 107 kg

122/74 mmHg
HF 68/min

Cholesterin 223 mg/dl

LDL-C 143 mg/dl

HDL-C 67 mg/dl

TG 129 mg/dl

SCORE2-OP 17% – 20%

< 70 mg/dl

Visseren F et al. EHJ 2021; Mach F et al. EHJ 2025 Ronny Jackson, MD, 01/2018

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Malteser … weil Nähe zählt.

Risikoklassifikation und Zielwert

Hohes Risiko

ASS 325 mg/Tag

Rosuvastatin 10 mg/Tag

70 Jahre
190 cm; 107 kg

122/74 mmHg
HF 68/min

Cholesterin 223 mg/dl

LDL-C 143 mg/dl

HDL-C 67 mg/dl

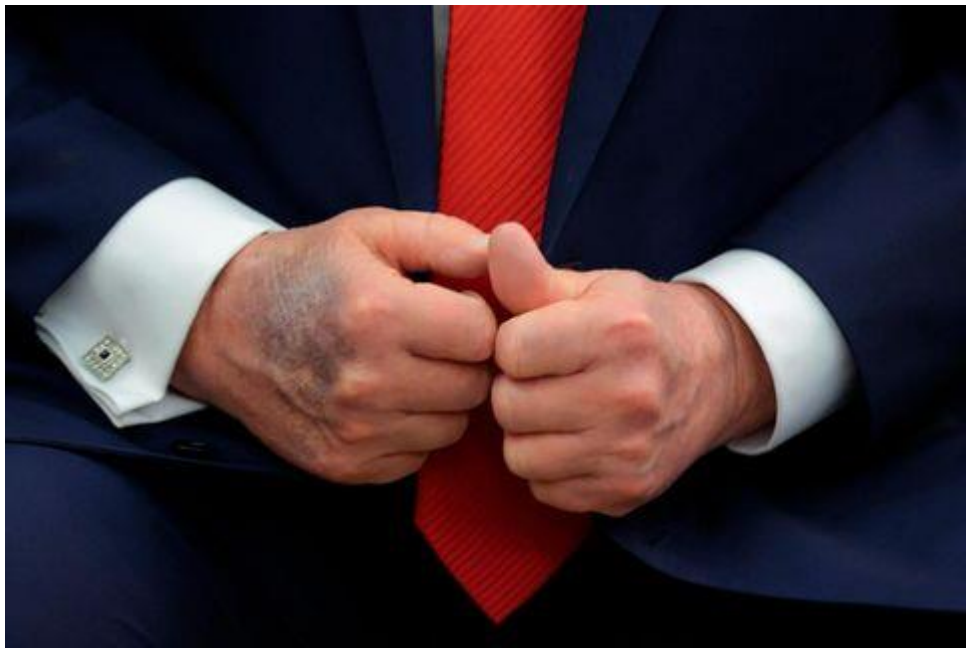
TG 129 mg/dl

SCORE2-OP 17% – 20%

< 70 mg/dl ?

Ronny Jackson, MD, 01/2018

Risikoklassifikation und Zielwert



ASS 325 mg/Tag

Rosuvastatin 10 mg	2018
Rosuvastatin 40 mg	2019
Rosuvastatin 40 mg/Ezetimibe 10 mg	2025

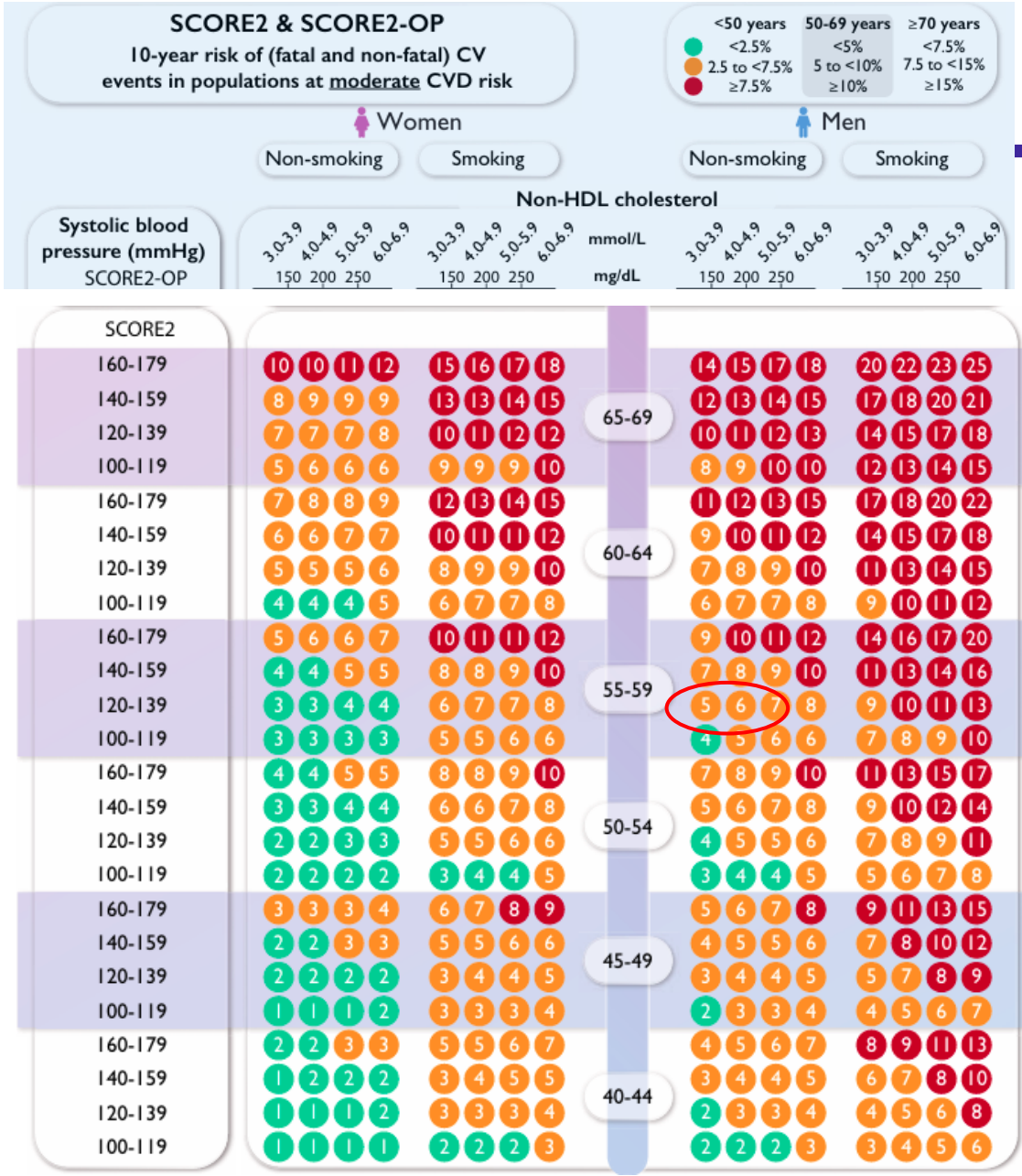
79 Jahre
190 cm; 102 kg

135/80 mmHg
HF 63/min

	2018	2019	2020	04/2025
Cholesterin	223	196	167	140
LDL-C	143	122		51
HDL-C	67			
TG	129 mg/dl			

The Guardian 04/2025

Risikoklassifikation und Zielwert

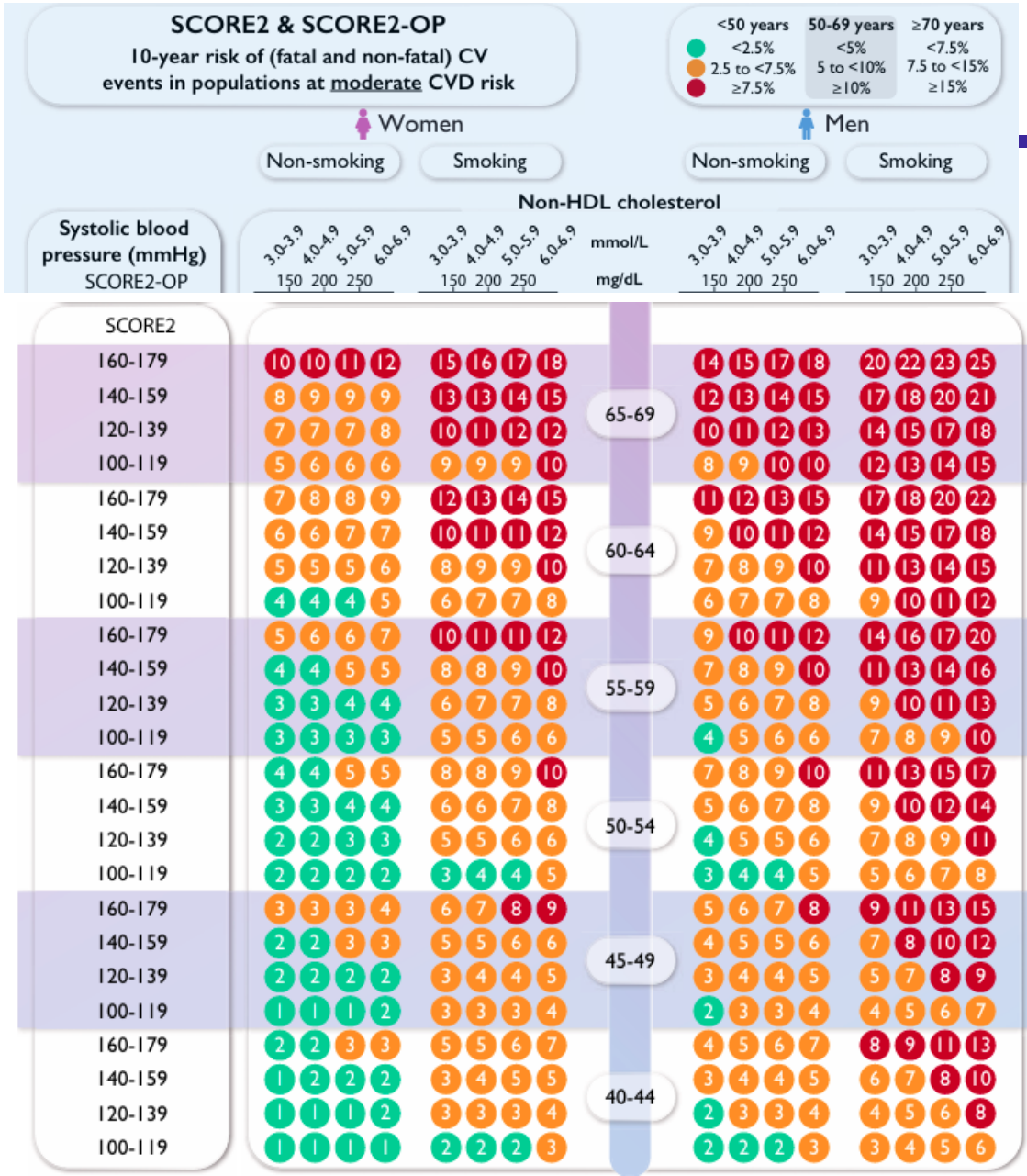


5 - 6%

Moderate Risk

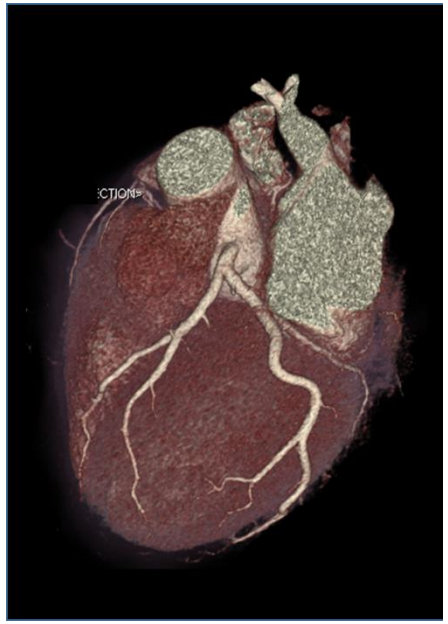
< 100 mg/dl

Risikoklassifikation und Zielwert



5 - 6%

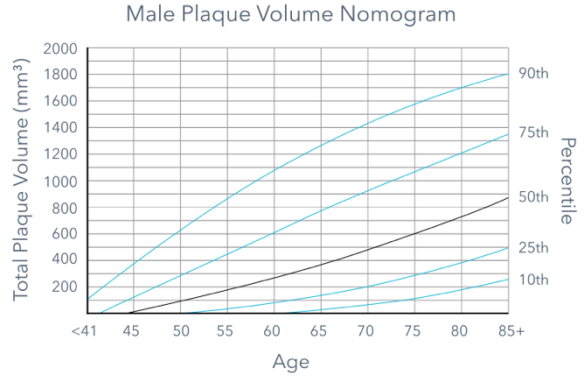
Moderate Risk



LAD

Calcified Plaque	1 (7%)
Non Calcified Plaque	14 (93%)
Low Attenuation Plaque	2 (13%)
Total Plaque (mm^3)	15

Quantitative plaque is provided on vessels > 1.8 mm.



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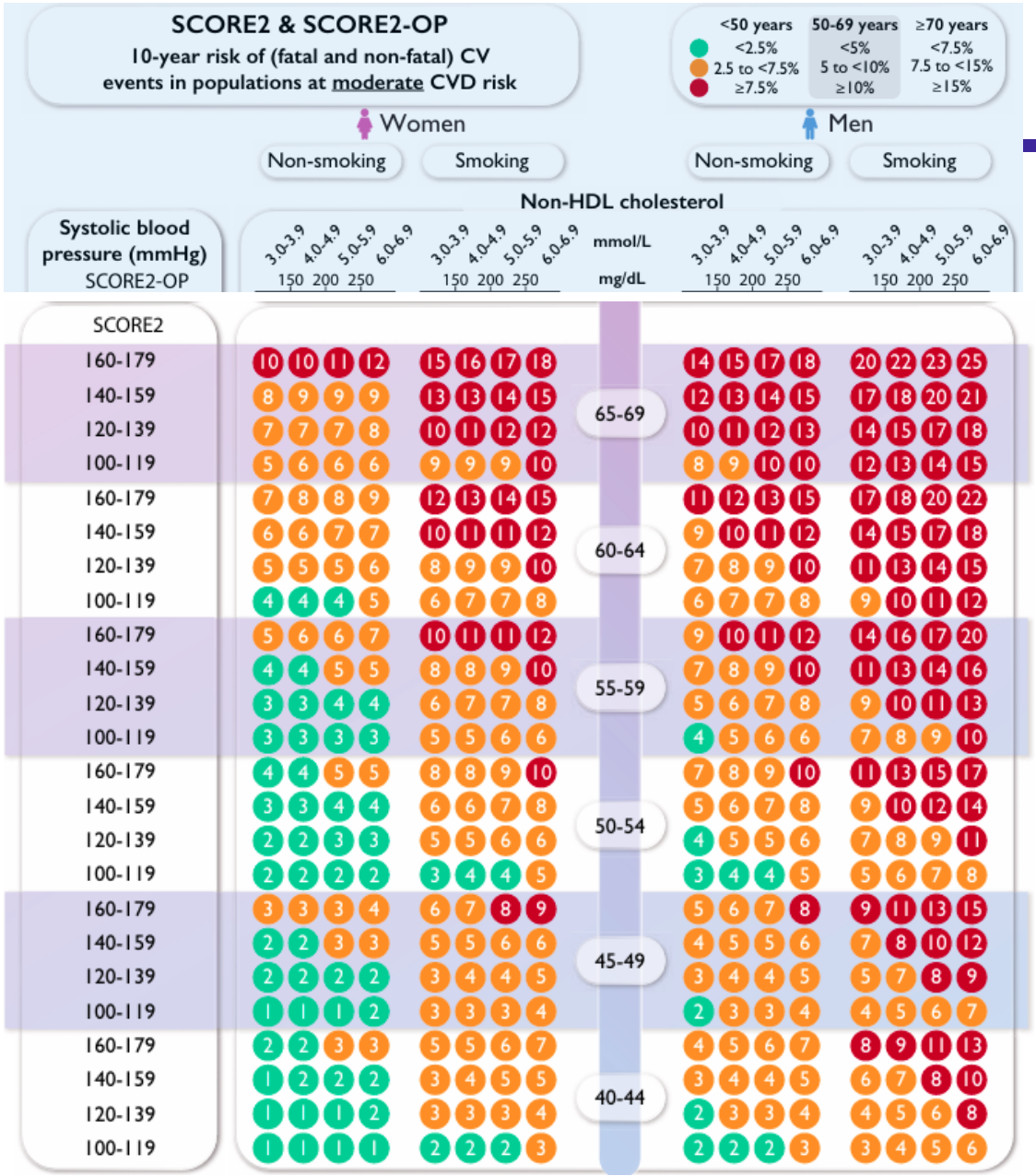
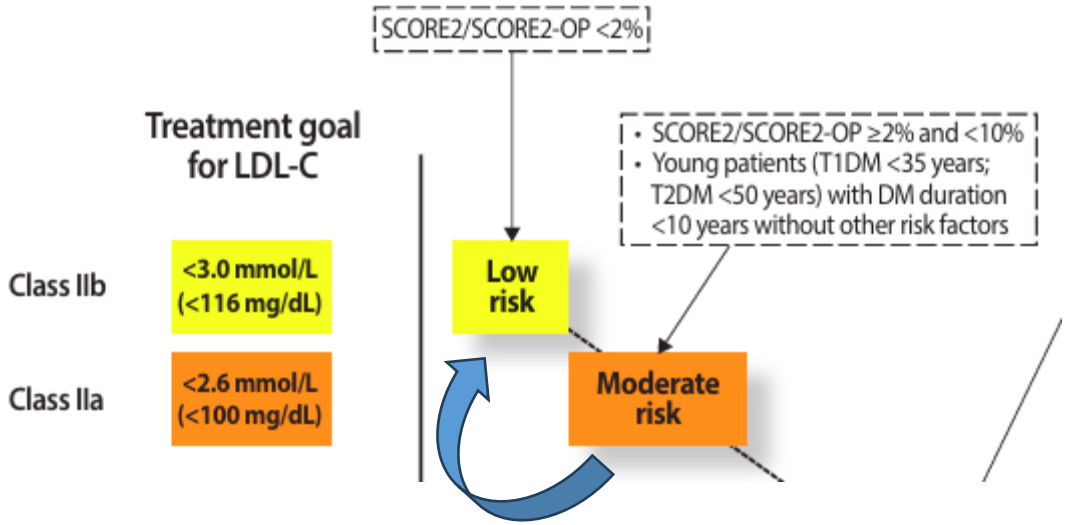
Malteser
… weil Nähe zählt.

Risikoklassifikation und Zielwert



5 - 6% → < 2%



Ziel: < 116 mg/dl

1. Risikoklassifikation (SCORE2-SCORE2-OP, Modifier)

1. Risiko-Abschätzung (10 J.-R) anhand von SCORE2 und SCORE2-OP

Risikomodifikatoren: fam. Disposition (< 55 Jahre /< 60 Jahre)
Stress-Symptome, Einsamkeit, Übergewicht,
körperliche Inaktivität, chronische Entzündungen,
psychische Erkrankungen, vorzeitige Menopause,
HIV-Infektion, Schwangerschafts-Hypertonie

hs-CRP > 2 mg/l, Lp(a)-Spiegel > 50 mg/dl

Koronar-CT, Carotis-Doppler

Visseren F et al. Eur Heart J 2021, Mach F et al. Eur Heart J 2025

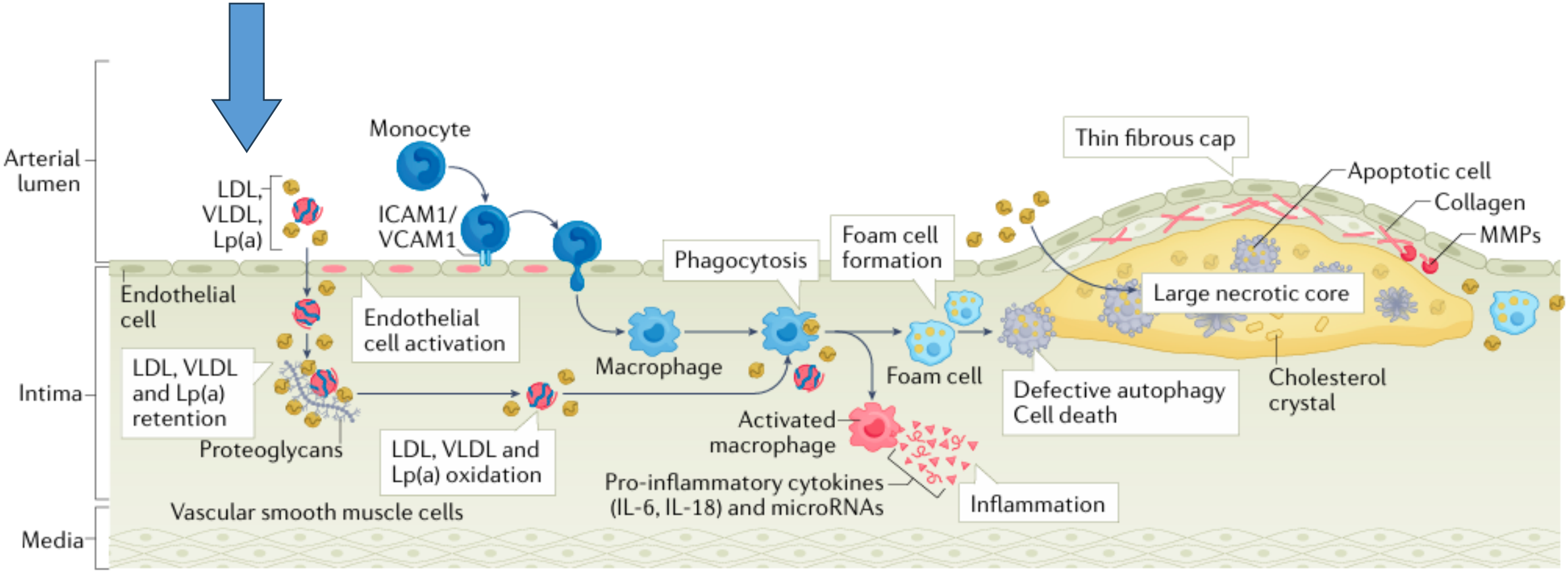
Risikoabschätzung

	Overall (n = 9044)	Risk classification as reported by physician[a]	
		High risk (n = 2637)	Very high risk (n = 6401)
ASCVD, n (%)	6954 (76.9)	1094 (41.5)	5856 (91.5)
Basis for risk classification, n (%)			
Missing	6 (0.1)	0	0
Clinical experience	3089 (34.2)	1154 (43.8)	1935 (30.2)
Institutional practice and/or considerations	111 (1.2)	34 (1.3)	77 (1.2)
Institutional guidelines	109 (1.2)	57 (2.2)	52 (0.8)
Regional guidelines	102 (1.1)	73 (2.8)	29 (0.5)
National guidelines	844 (9.3)	361 (13.7)	483 (7.6)
ESC/EAS guidelines	4706 (52.0)	916 (34.7)	3790 (59.2)
Other	77 (0.9)	42 (1.6)	35 (0.6)
Recalculated risk classification by ESC/EAS criteria, n (%)[b]	4706 (52.0)	308 (6.5)	4284 (91.0)

SANTORINI

Ray KK et al. Lancet Reg Health Eur 2023

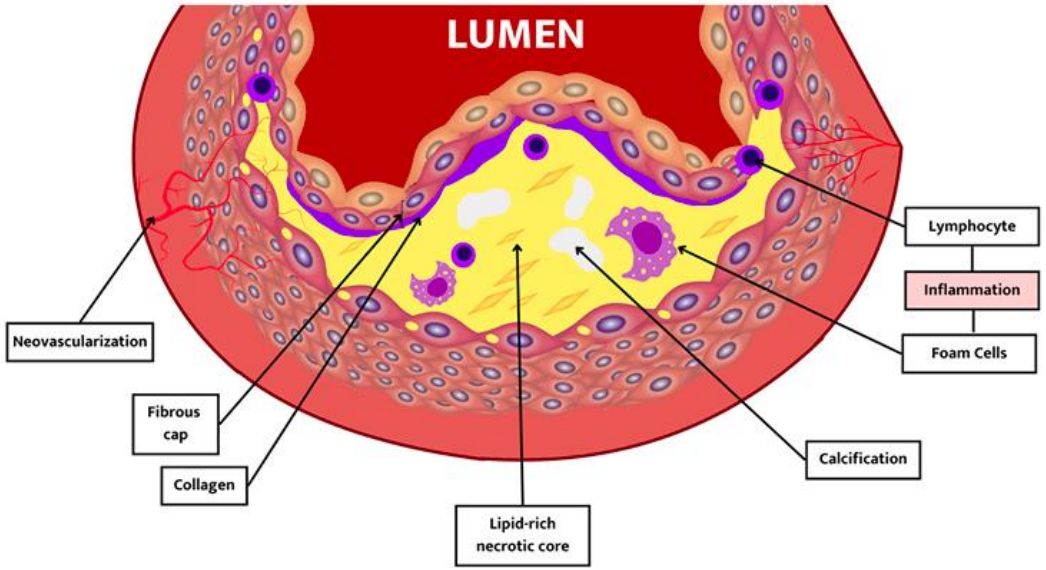
LDL-C und Arteriosklerose

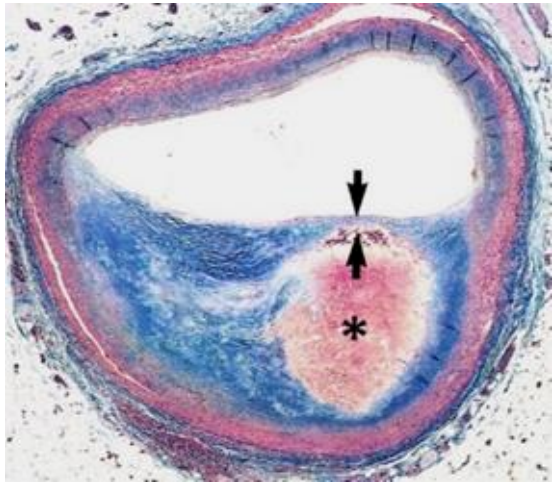


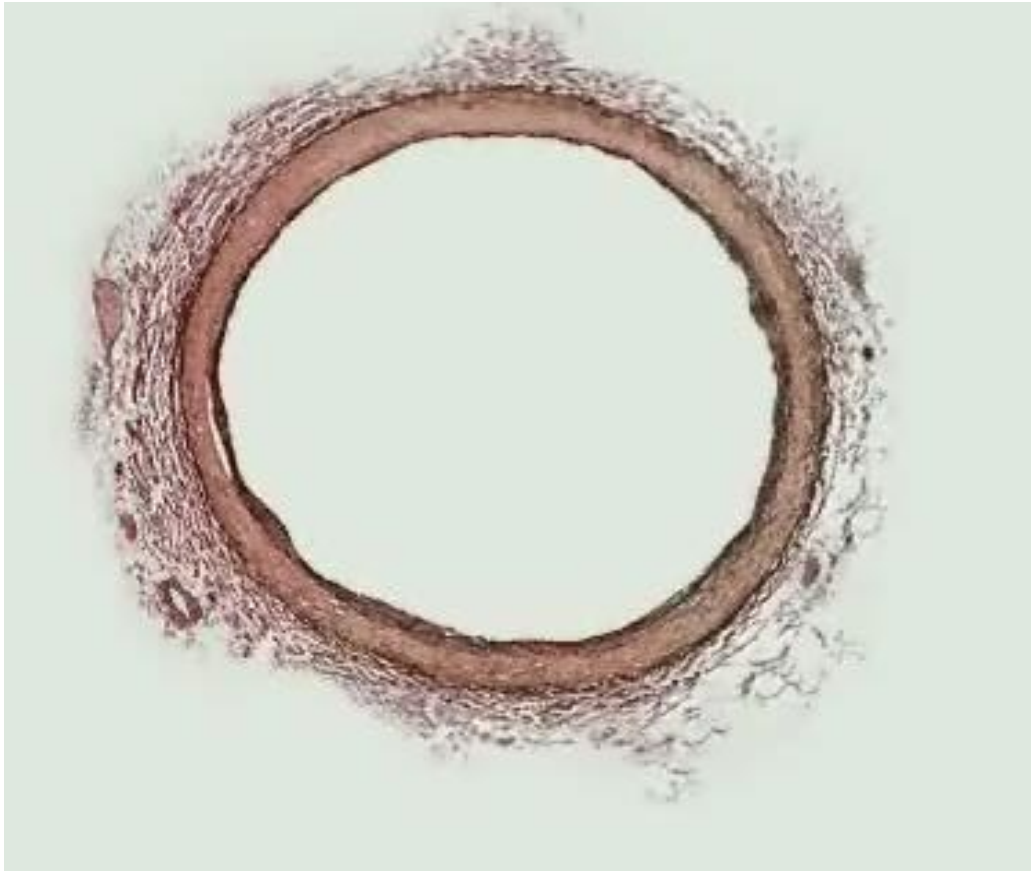
„Ohne LDL-Cholesterin keine Arteriosklerose“

Gaba P et al. Nat Rev 2022

Arteriosklerotische vulnerable Plaque



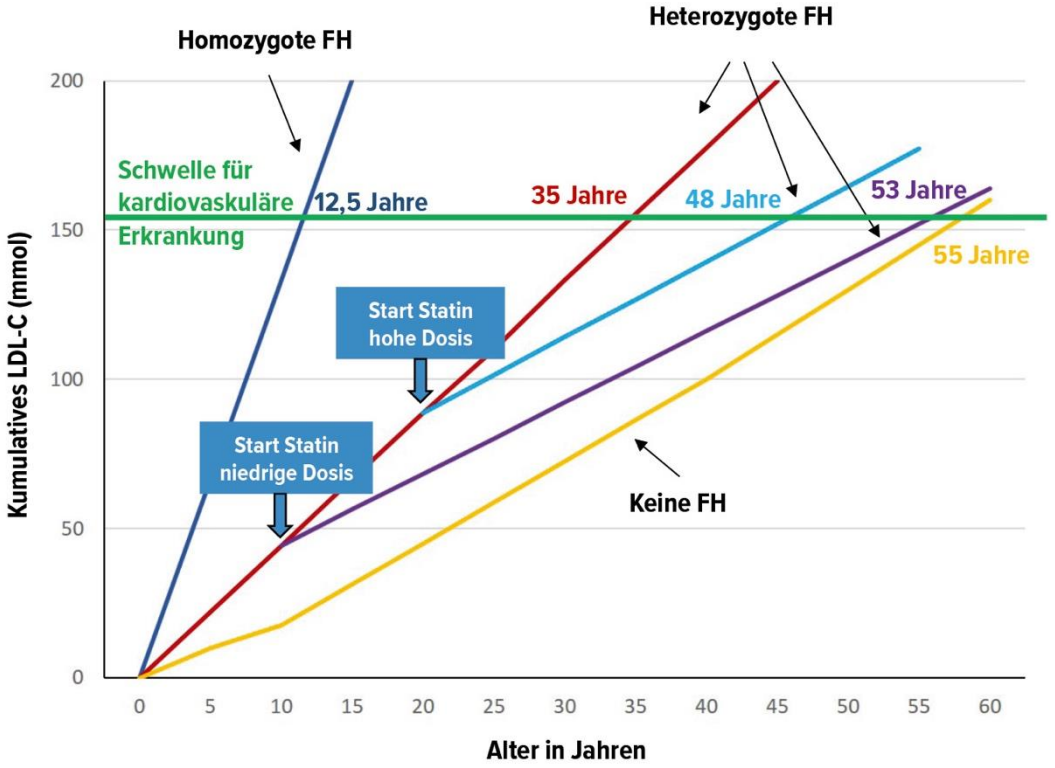


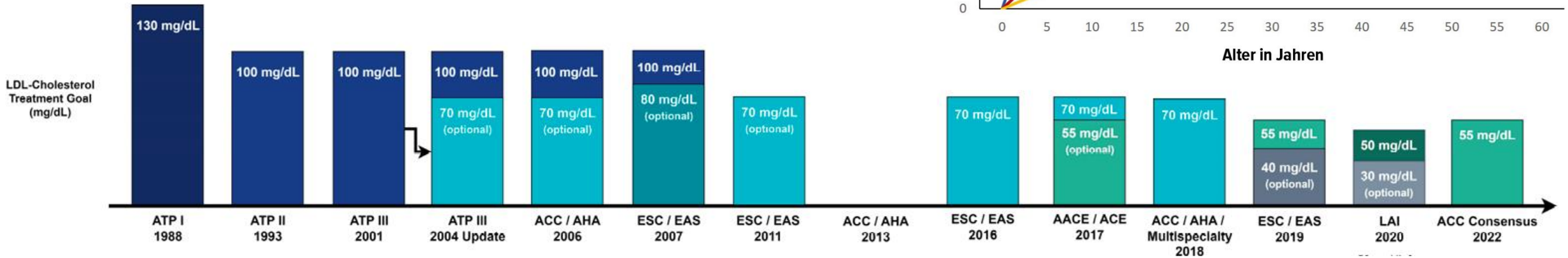


Maidana C et al. J Clin Med 2024

LDL-Cholesterin als primäres Therapieziel

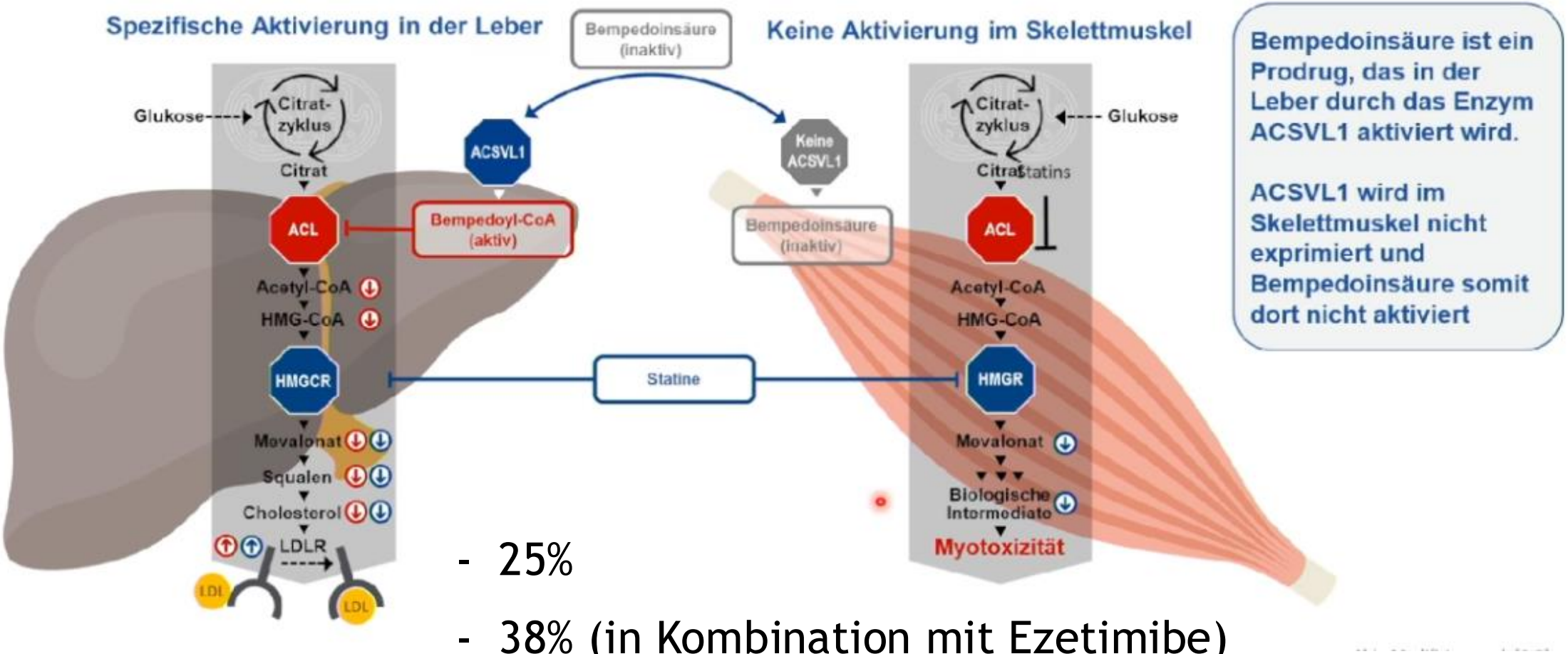
1. Biologisches Modell homozygote FH
2. Interventionsstudien (MACE)
3. Bildgebung (Plaqueregression/- modifikation)





Jones JE et al. J Clin Med 2023, Nordestgaard BG et al Eur Heart J 2013

2. Bempedoinsäure (ATP-Citrat-Lyase Hemmer)



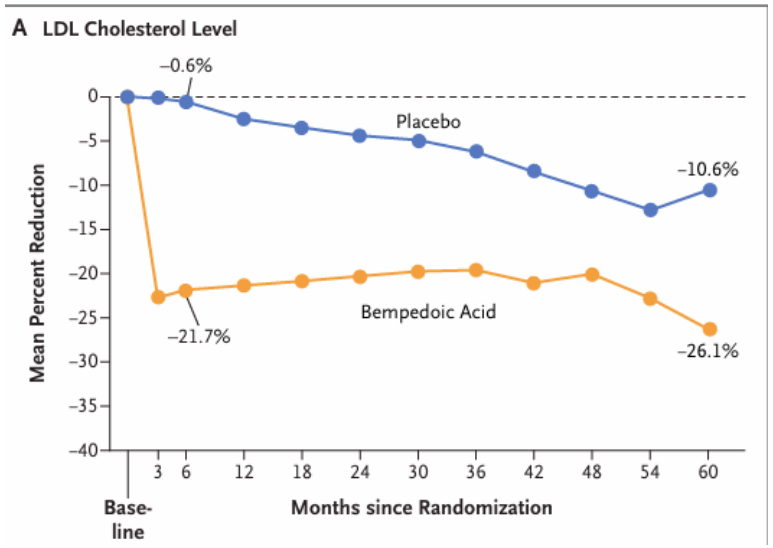
Bempedoinsäure ist ein Prodrug, das in der Leber durch das Enzym ACSVL1 aktiviert wird.

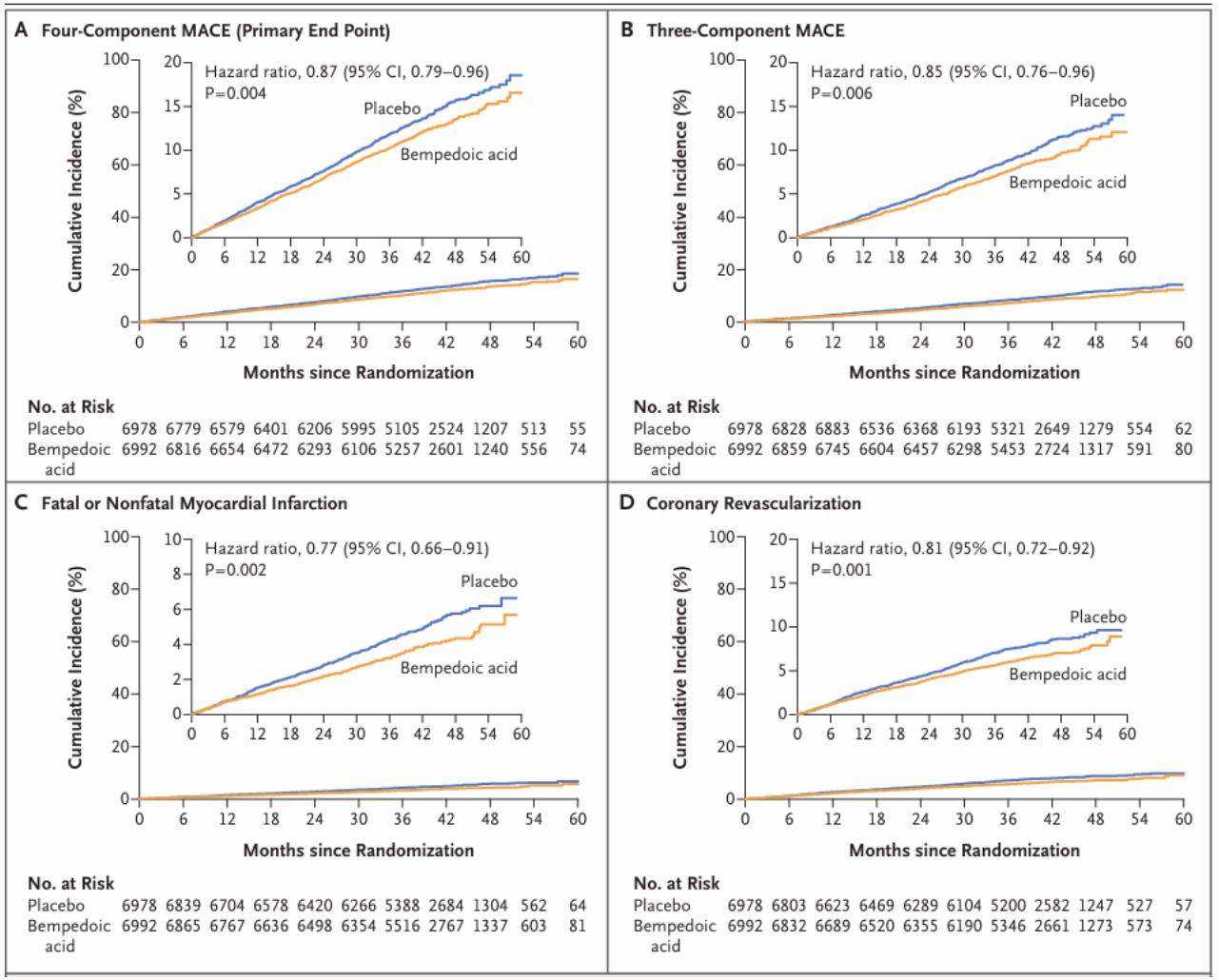
ACSVL1 wird im Skelettmuskel nicht exprimiert und Bempedoinsäure somit dort nicht aktiviert

- 25%
- 38% (in Kombination mit Ezetimibe)
- 20-25% (bei Statinintoleranz)

Mach F et al. Eur Heart J 2025

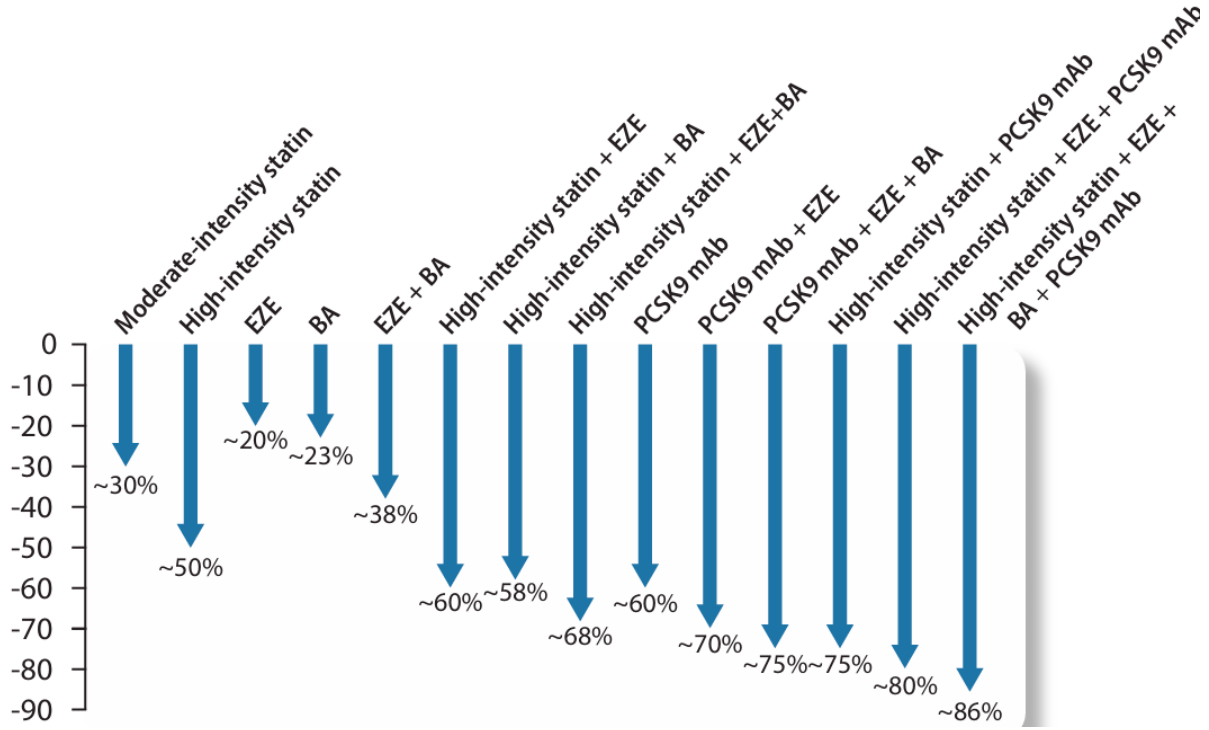
2. Bempedoinsäure: CLEAR OUTCOME





Nissen SE et al. NEJM 2023

2. Bempedoinsäure: CLEAR OUTCOME



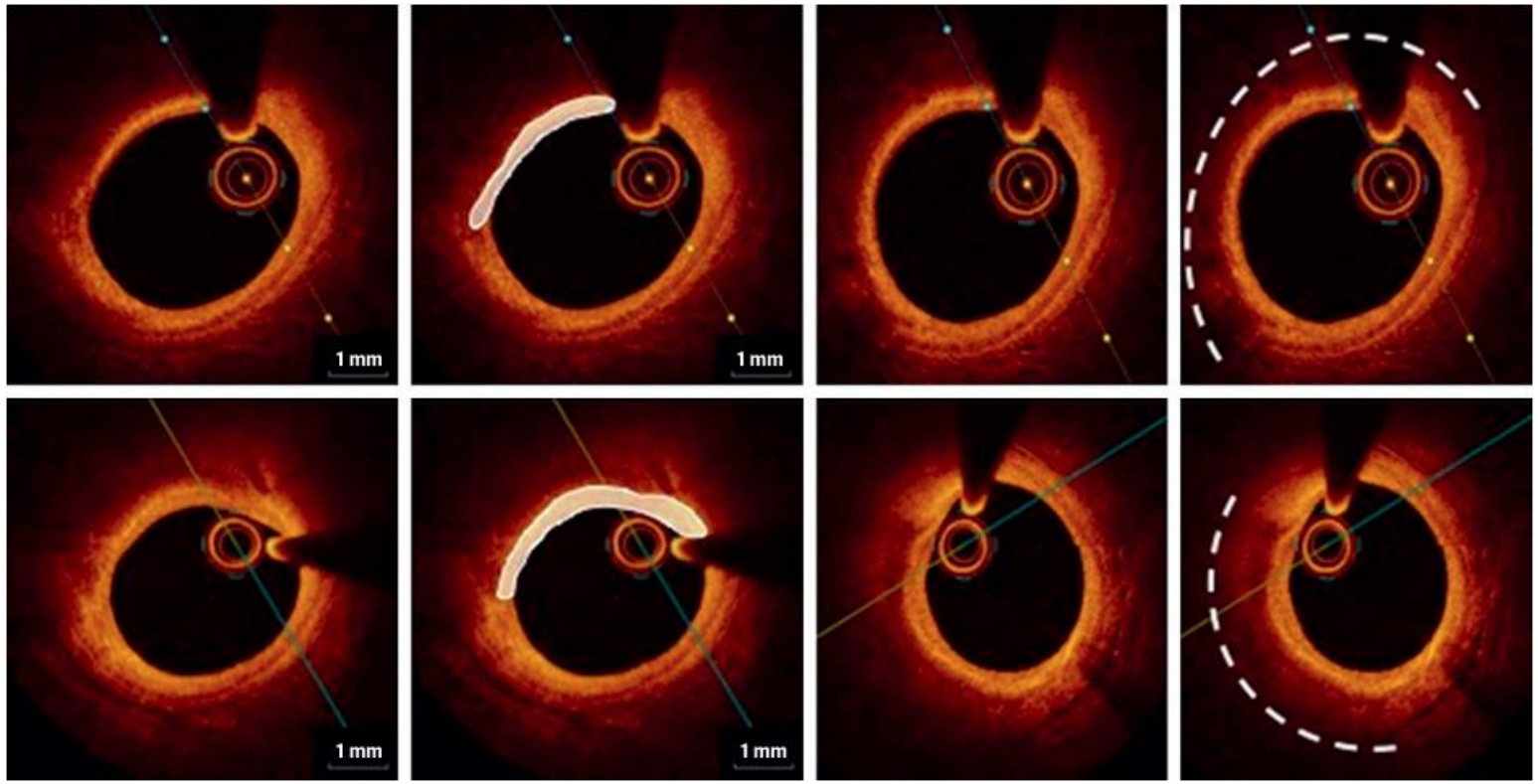
Bempedoic acid is recommended in patients who are unable to take statin therapy to achieve the LDL-C goal.[4]	I	B
The addition of bempedoic acid to the maximally tolerated dose of statin with or without ezetimibe should be considered in patients at high or very high risk in order to achieve the LDL-C goal.[42,55]	IIa	C
Evinacumab should be considered in patients with homozygous familial hypercholesterolaemia aged 5 years or older who are not at LDL-C goal despite receiving maximum doses of lipid-lowering therapy to lower LDL-C levels.[5,50,51]	IIa	B

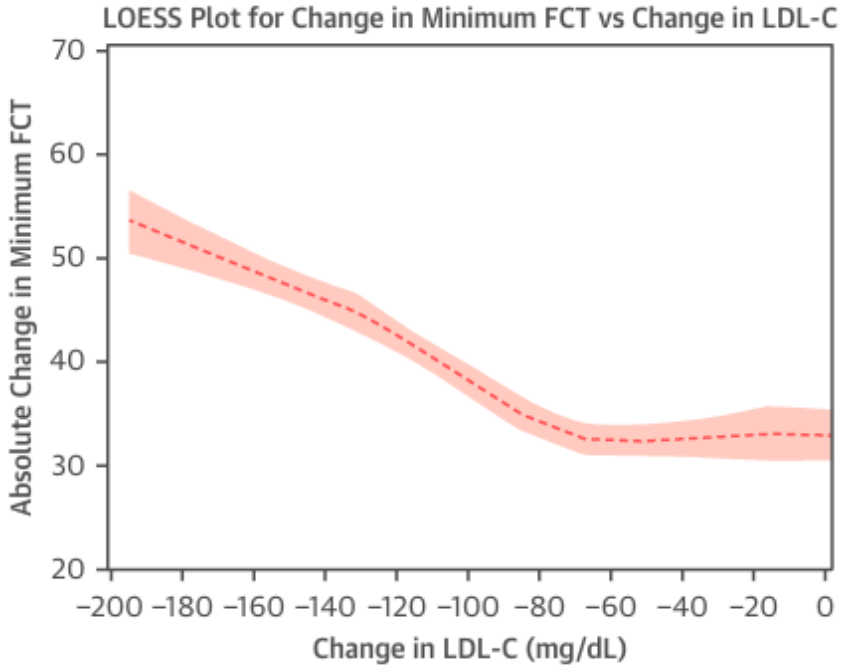
Kontrolle nach 4 – 6 Wochen

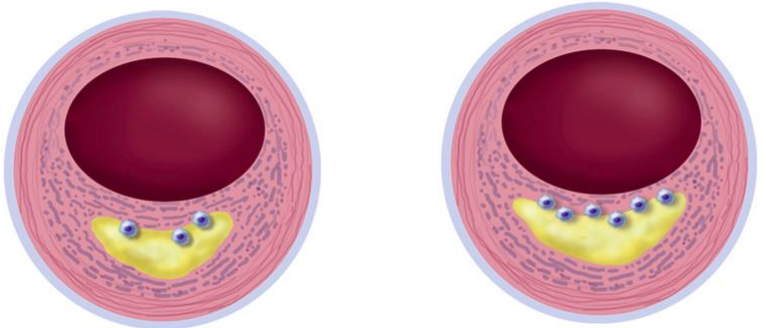
Mach F et al. Eur Heart J 2025

PCSK-9-Inhibition und Plaquemodifikation

ACS: Evolocumab (52 Wo.)







HUYGENS

Nicholls SJ et al. JACC: Cardiovasc Imag 2022

PCSK-9-Inhibition und Plaquemodifikation

ACS: Alirocumab (52 Wo.; LDL-C 23.6 vs. 74.4 mg/dl)

POPULATION

243 Men
56 Women

Adults undergoing percutaneous coronary intervention for acute myocardial infarction

Median age: 58 years

LOCATIONS

9 Hospitals in Europe

INTERVENTION

300 Patients randomized
265 Patients analyzed

148 **Alirocumab**
Biweekly subcutaneous injections of alirocumab

152 **Placebo**
Biweekly subcutaneous injections of placebo

PRIMARY OUTCOME

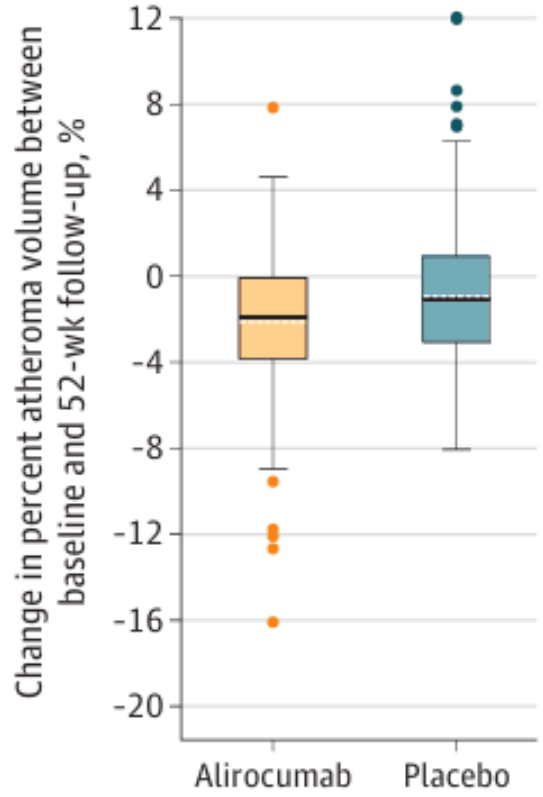
Change in percent atheroma volume from baseline to 52 weeks

FINDINGS

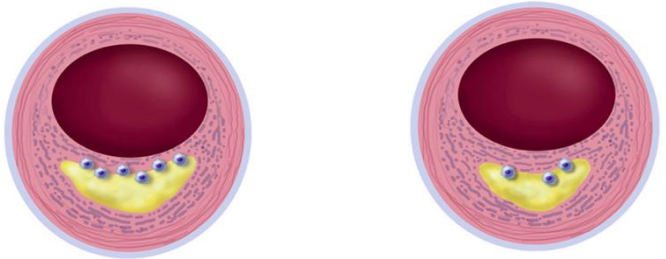
Mean change in percent atheroma volume

Alirocumab	Placebo
Baseline: 40.91%	Baseline: 43.01%
52 weeks: 38.78%	52 weeks: 42.09%
Mean change: **-2.13%**	Mean change: **-0.92%**

Significantly greater reduction in change in mean percent atheroma volume in the alirocumab group:
Difference, **−1.21%**
(95% CI, −1.78% to −0.65%); $P < .001$

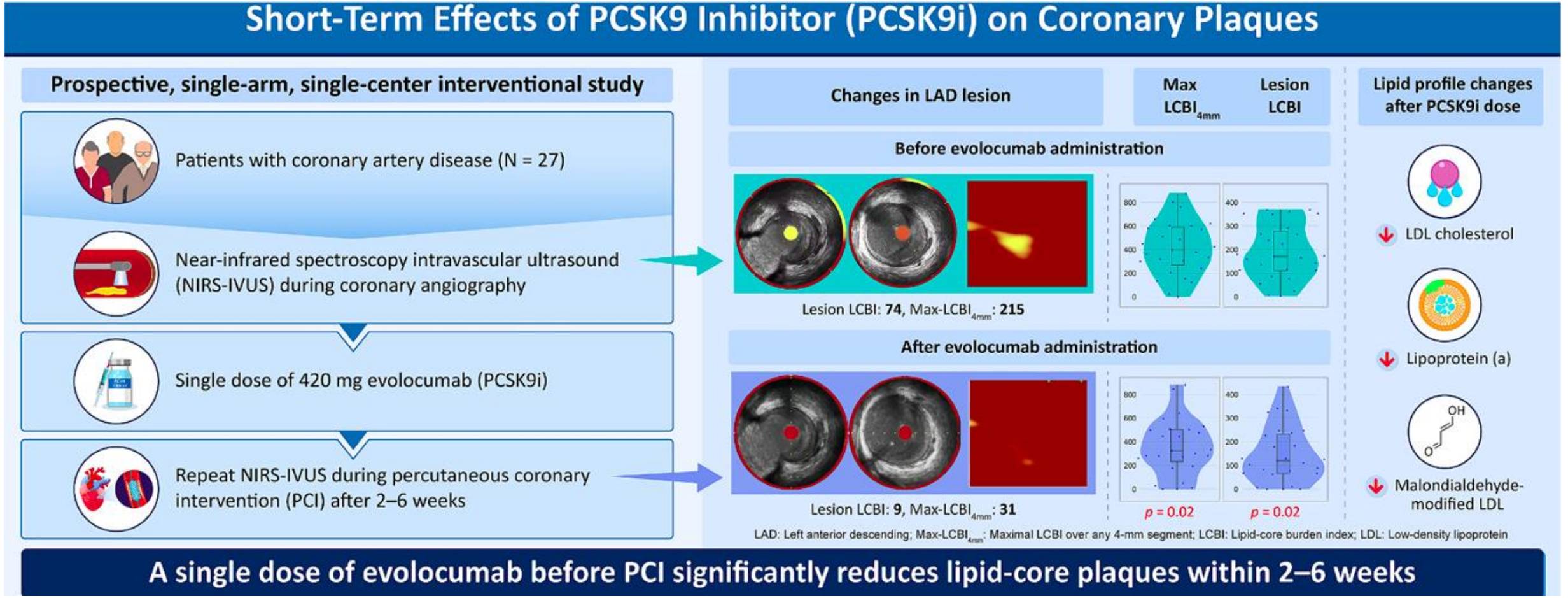


PACMAN-AMI



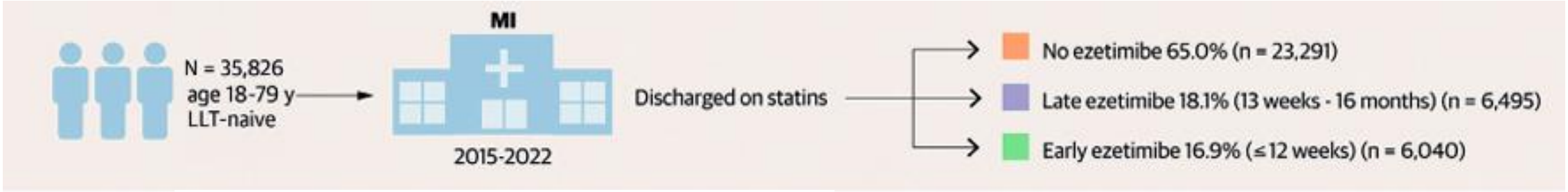
Räber L et al. JAMA 2022

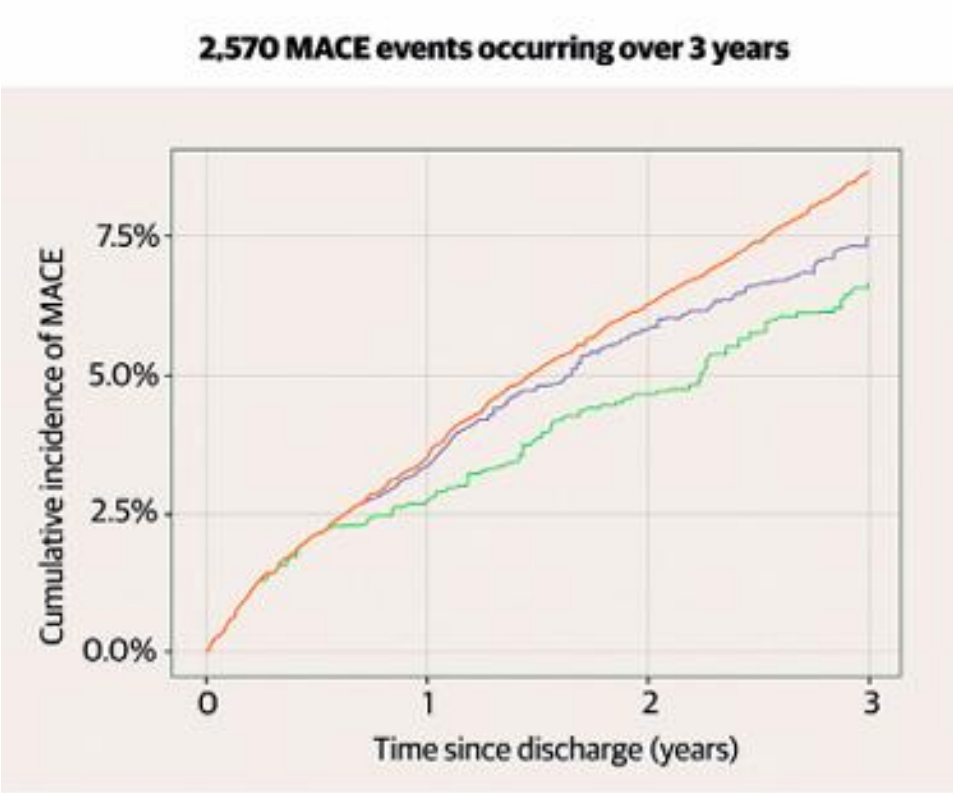
PCSK-9-Inhibition und frühe Plaquemodifikation



Kataoka T et al. Atherosclerosis 2024

3. Frühe LDL-C Therapie nach ACS



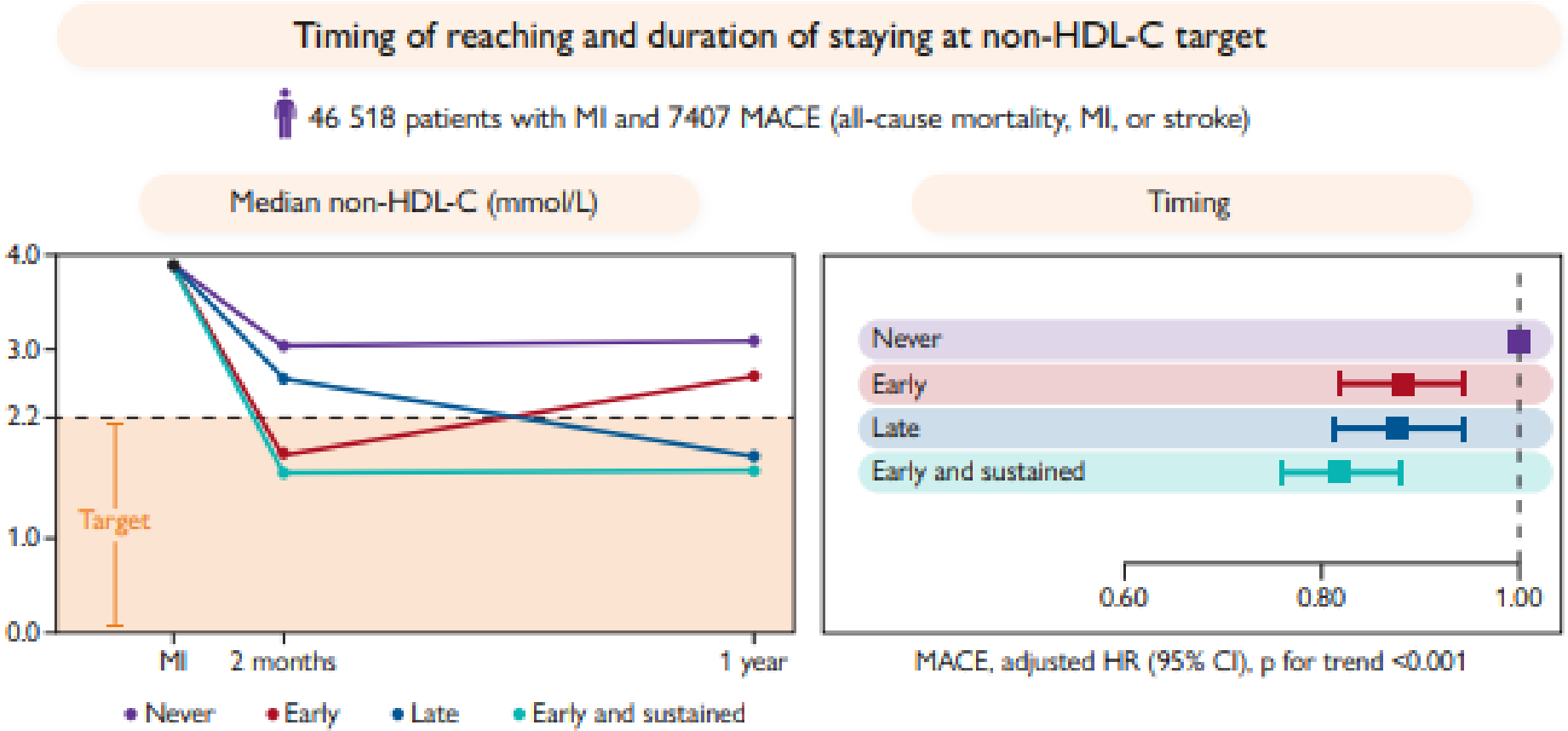


„Verzögerung kostet Leben“

(477 Ereignisse weniger)

Leosdottir M et al. JACC 2025

3. Frühe LDL-C Therapie nach ACS

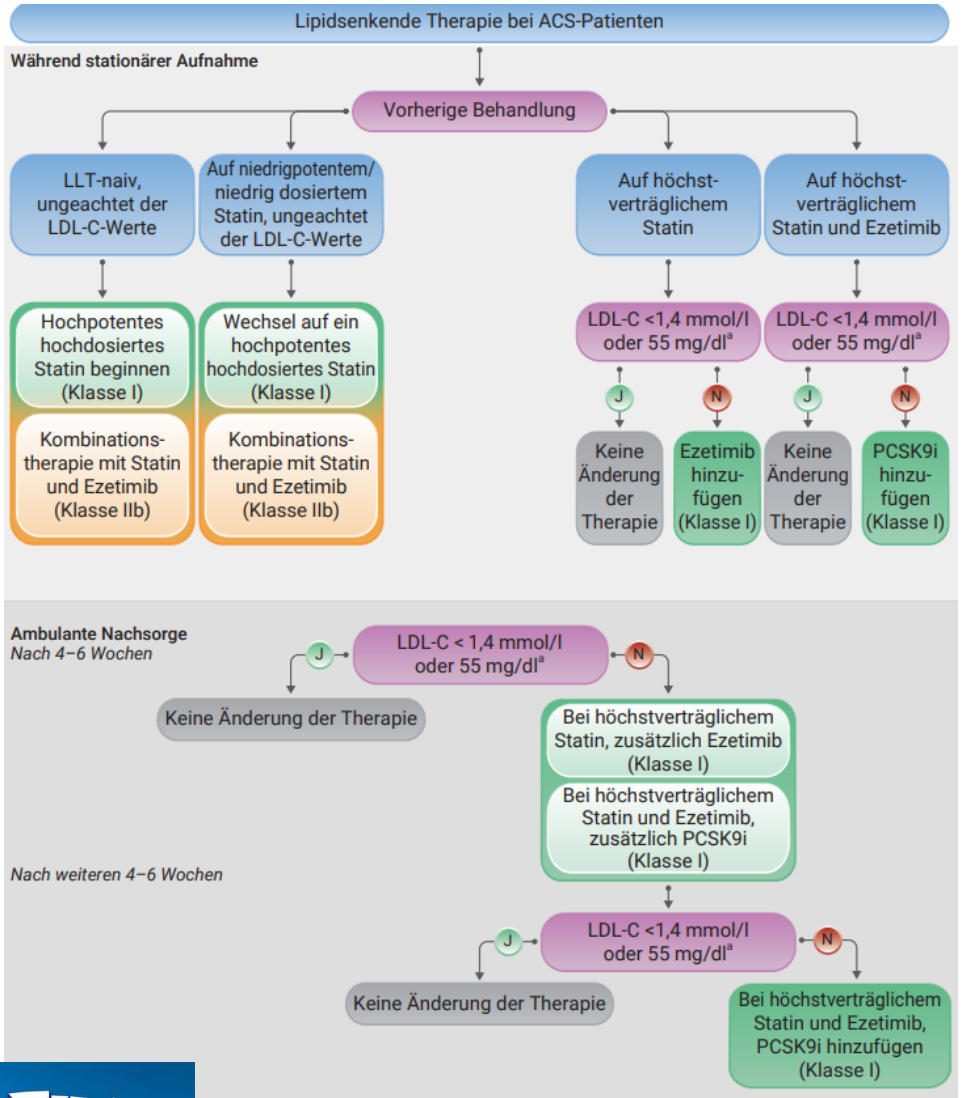


SWEDEHEART

„The sooner, The lower, The better“

Schubert J et al. Eur Heart J 2024

3. Frühe LDL-C Therapie nach ACS



Recommendations	Class[a]	Level[b]
Intensification of lipid-lowering therapy during the index ACS hospitalization is recommended for patients who were on any lipid-lowering therapy before admission in order to further lower LDL-C levels.	I	C
Initiating combination therapy with high-intensity statin plus ezetimibe during index hospitalization for ACS should be considered in patients who were treatment-naïve and are not expected to achieve the LDL-C goal with statin therapy alone.[66]	IIa	B

„Strike strong

Strike early“

Byrne R et al. Eur Heart J 2023, Mach F et al. Eur Heart J 2025

THROMBOSE FORUM2026

Malteser
… weil Nähe zählt.

4. Lipoprotein (a) / 5. Hypertriglyceridämie

4. Lipoprotein (a)-Spiegel bestimmen, v. a. bei familiärer Disposition

   bei hohen Lp (a) effektive LDL-Senkung (> 50 mg/dl)

5. Hypertriglyceridämie als unabhängiger Risikofaktor

   Fibrate mit IIb-Indikation (Nischen-Indikation bei Einzelfällen)

   Statine zur Risikomodifikation

   Statine + Eicosapentaensäure 2 x 2 g bei Triglyceriden 135 – 499 mg/dl

   Volanesorsen (300 mg/Woche) bei Triglyceriden > 750 mg/dl

Mach F et al. Eur Heart J 2025

6. HIV-Patienten / 7. Chemotherapie (Anthrazyklin)

8. Nahrungsergänzungsmittel / Vitamine

6. Statine bei HIV-Pat. > 40 J. unabhängig vom LDL-C. und CV-Risiko
   Chronische Inflammation, HIV-Medikation führt zur Lipidsteigerung

7. Statine bei Anthrazyklin-basierter Chemotherapie

8. Keine Evidenz für Nahrungsergänzungsmittel u. Vitamine (Klasse III)

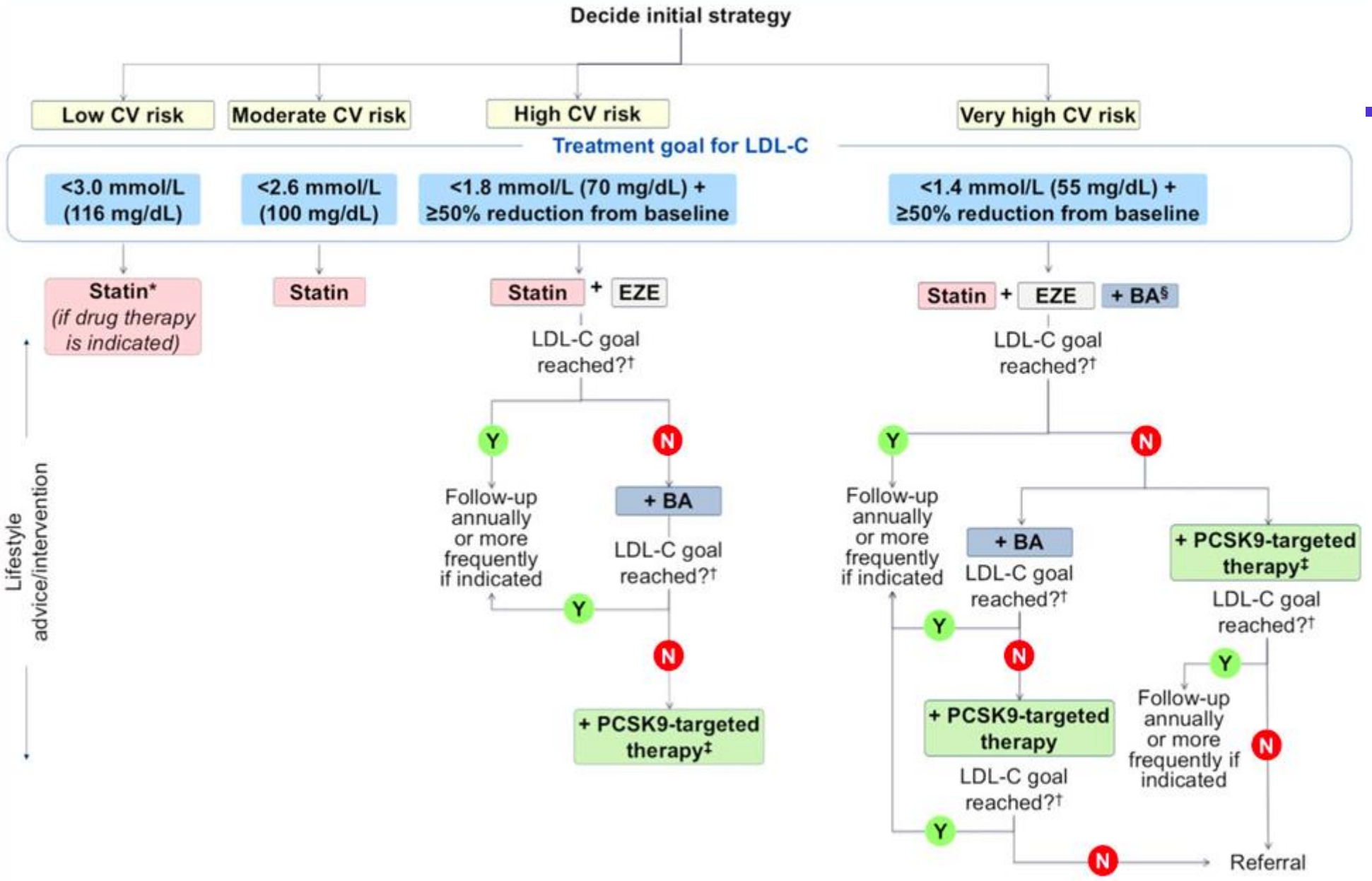
Mach F et al. Eur Heart J 2025, Lyon AR et al. Eur Heart J 2022

Leitlinien 2025

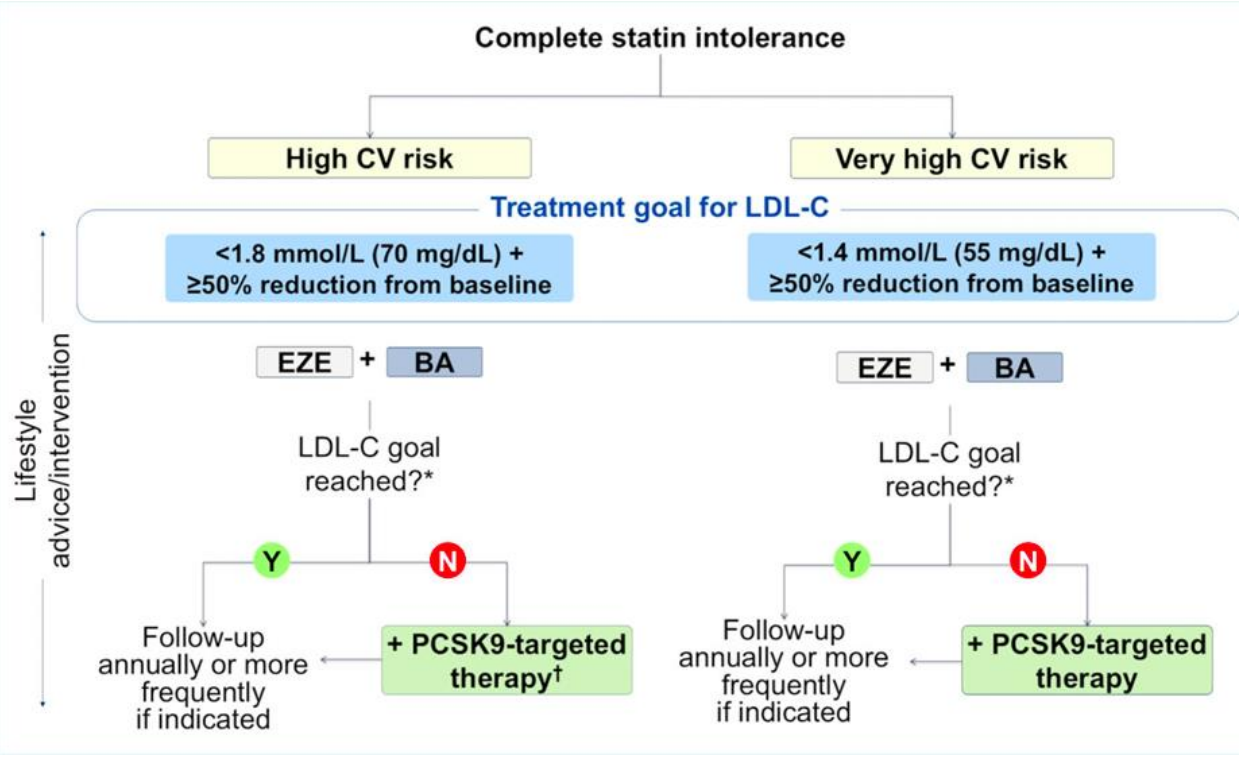
2025 Focused Update of the 2019 ESC/EAS Guidelines for the management of dyslipidaemias

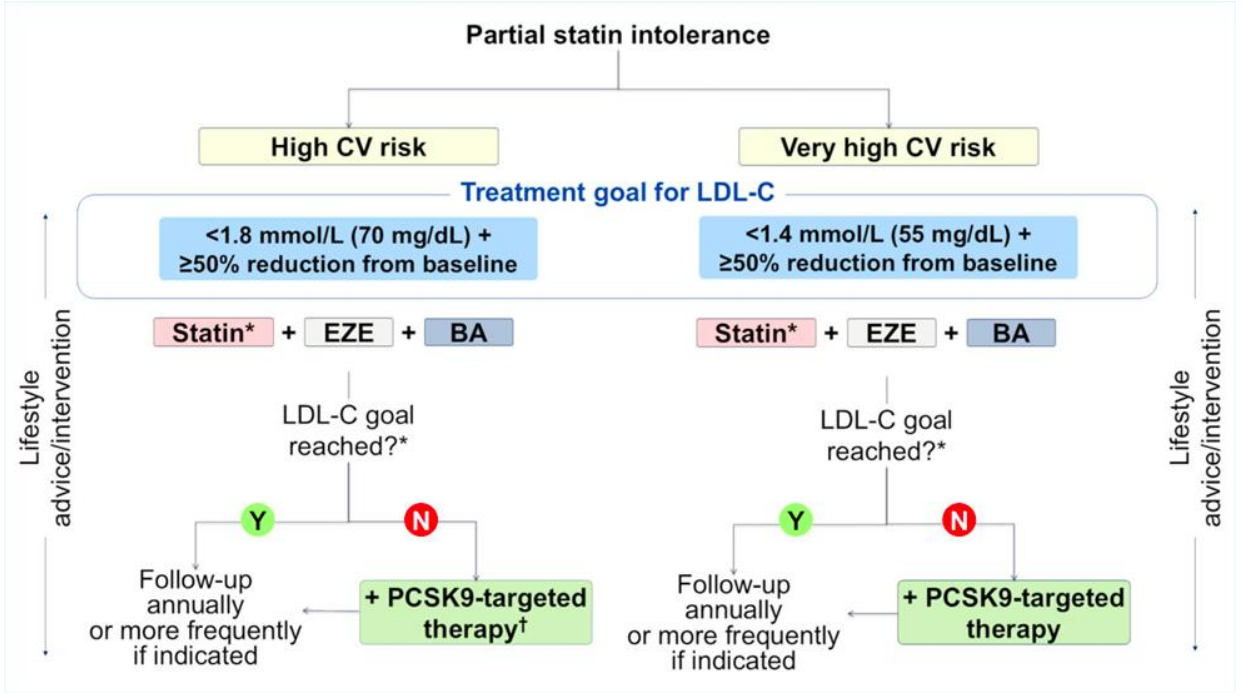
1. Risiko-Abschätzung (10 J.-R) anhand von SCORE2 und SCORE2-OP
2. Bempedoinsäure, Evinacumab (AK gg. ANGPTL3)
3. Frühe und effektive LDL-C Therapie nach ACS
4. Lipoprotein (a)-Spiegel bestimmen, v. a. bei familiärer Disposition
5. Hypertriglyceridämie als vom LDL-Cholesterin unabhängiger Risikofaktor
6. Statine bei HIV-Pat. > 40 J. unabhängig vom LDL-C. und CV-Risiko
7. Statine bei Anthrazyklin-basierter Chemotherapie
8. Keine Evidenz für Nahrungsergänzungsmittel u. Vitamine (Klasse III-Ind.)

Mach F et al. Eur Heart J 2025, Lyon AR et al. Eur Heart J 2022



Parhofer KG KK et al. Eur Heart J - Cardiovasc Pharmacotherapy 2025

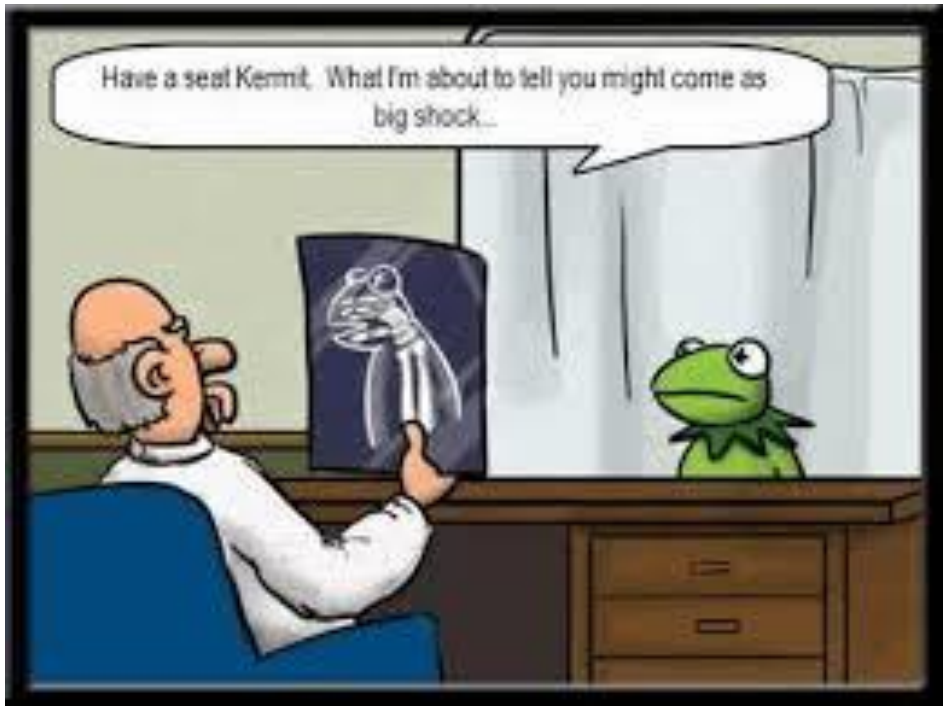




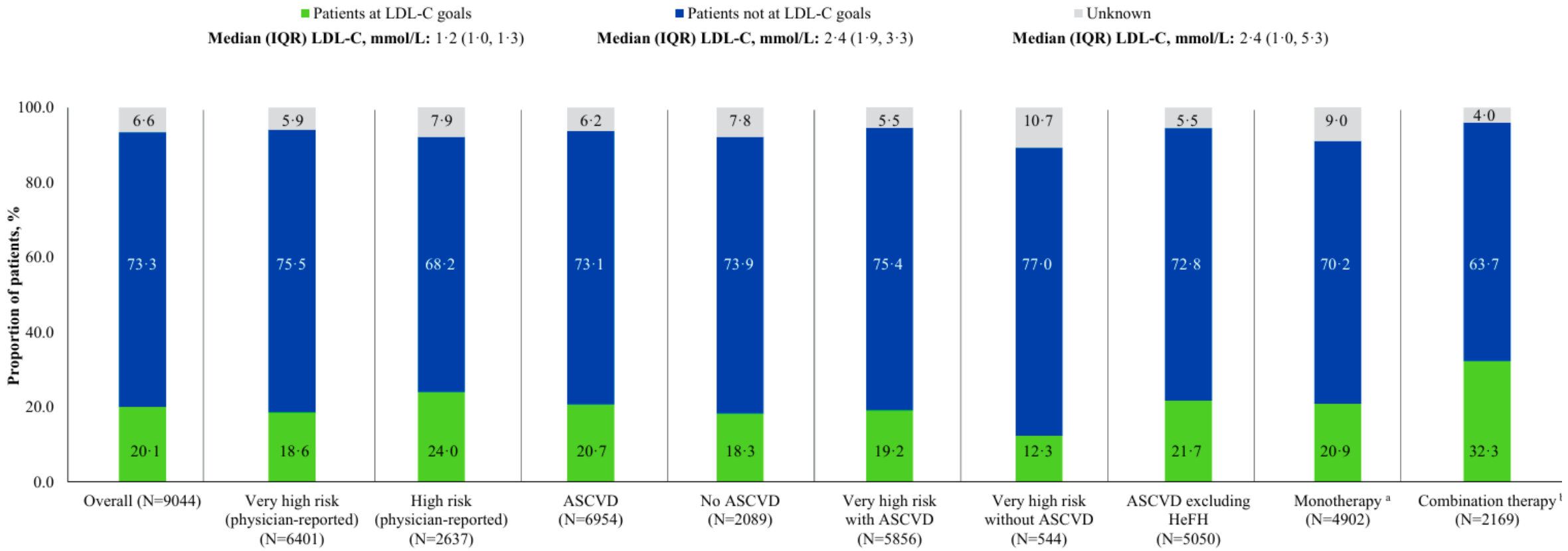
. * Maximally tolerated statin

Parhofer KG KK et al. Eur Heart J - Cardiovasc Pharmacotherapy 2025

Und die wirkliche Welt . . .



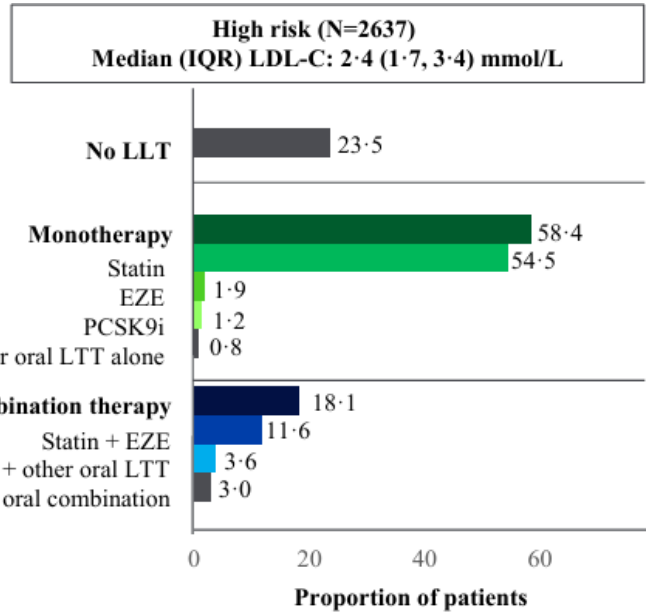
Real World - Europa

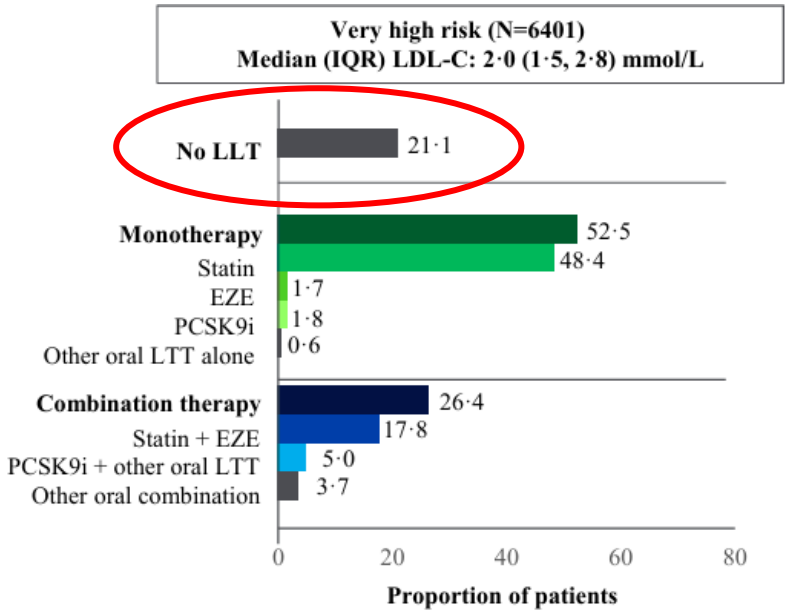


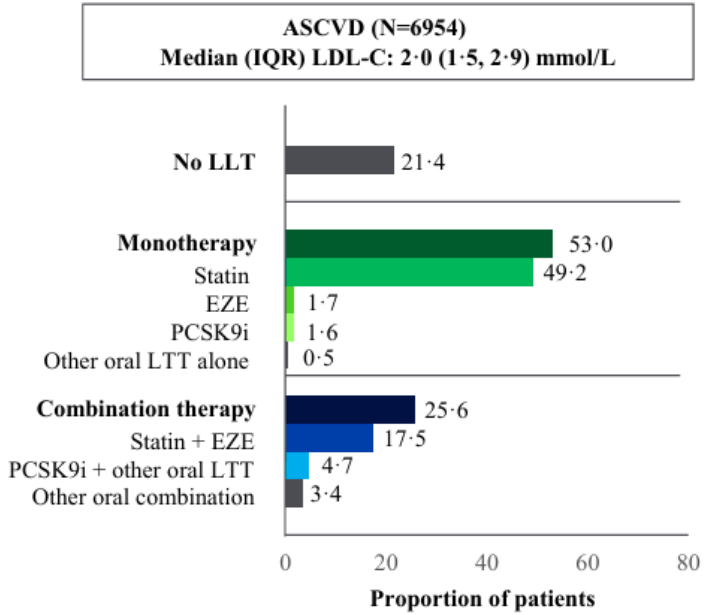
SANTORINI

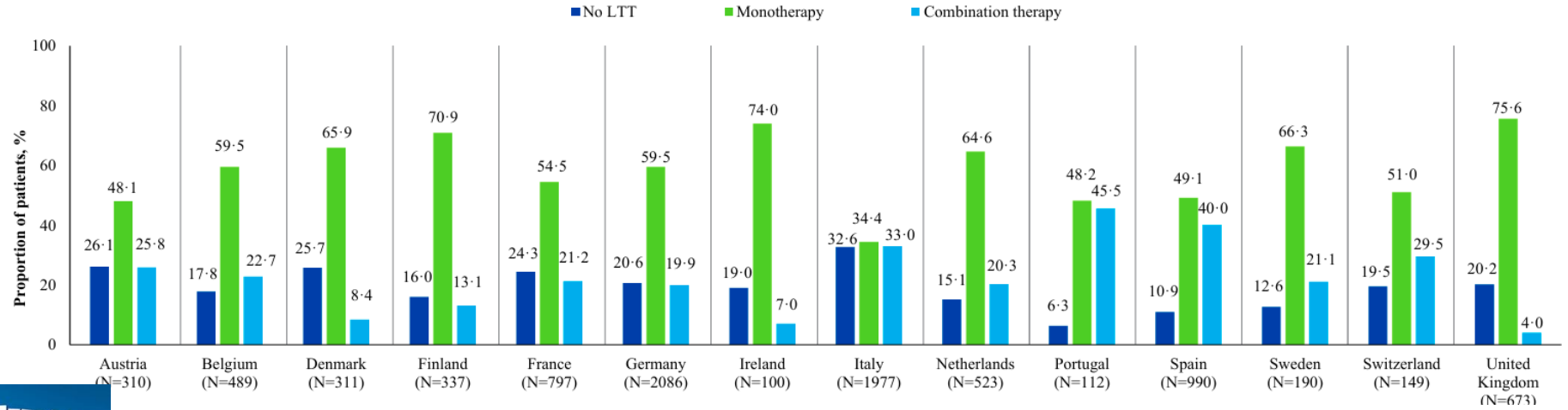
Ray KK et al. Lancet Reg Health Eur 2023

Real World – Europa / Deutschland









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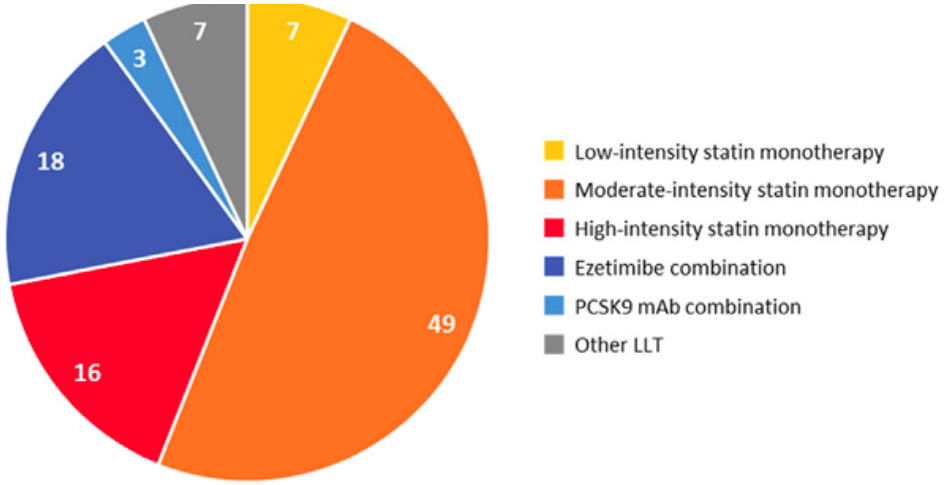
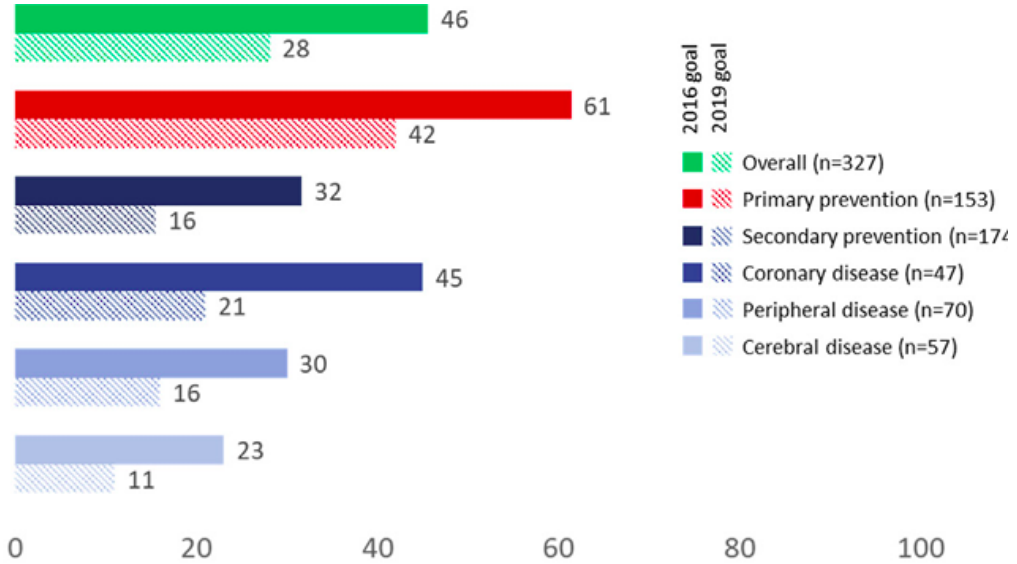
Ray KK et al. Lancet Reg Health Eur 2023

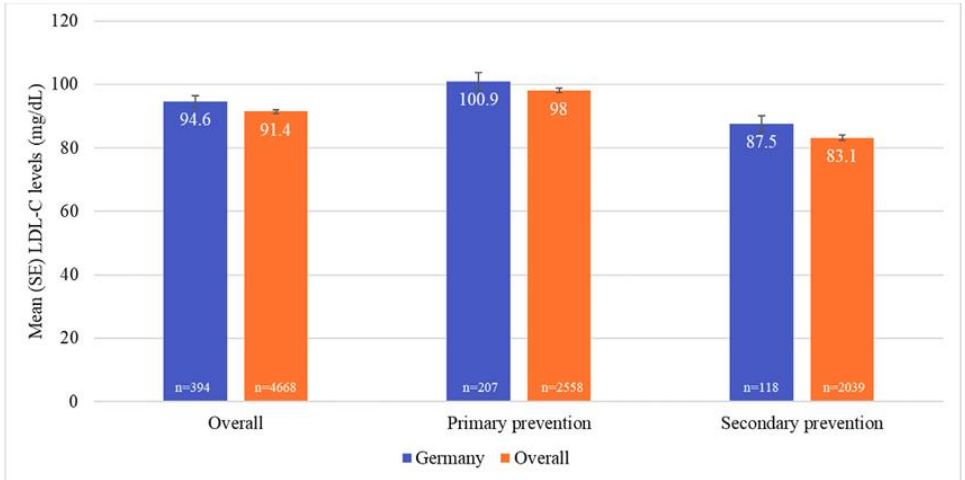
Real World - Deutschland



Proportion of patients receiving LLT[a] (%)



Proportion of patients achieving risk-based LDL-C goal (%)



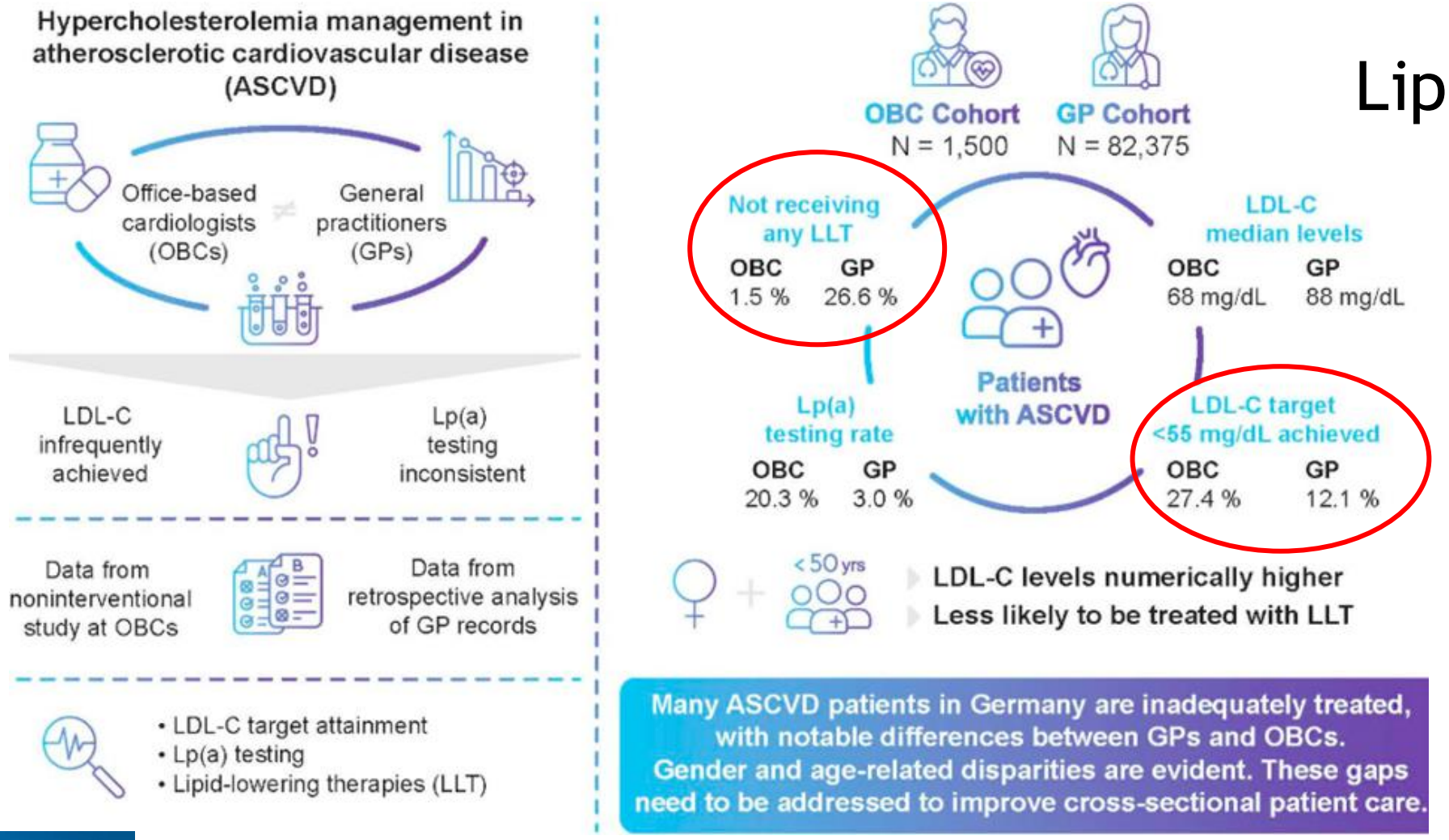
da Vinci

Gouni-Berthold I et al. Atherosclerosis Plus 2022

THROMBOSE FORUM2026

Malteser
... weil Nähe zählt.

Real World - Deutschland



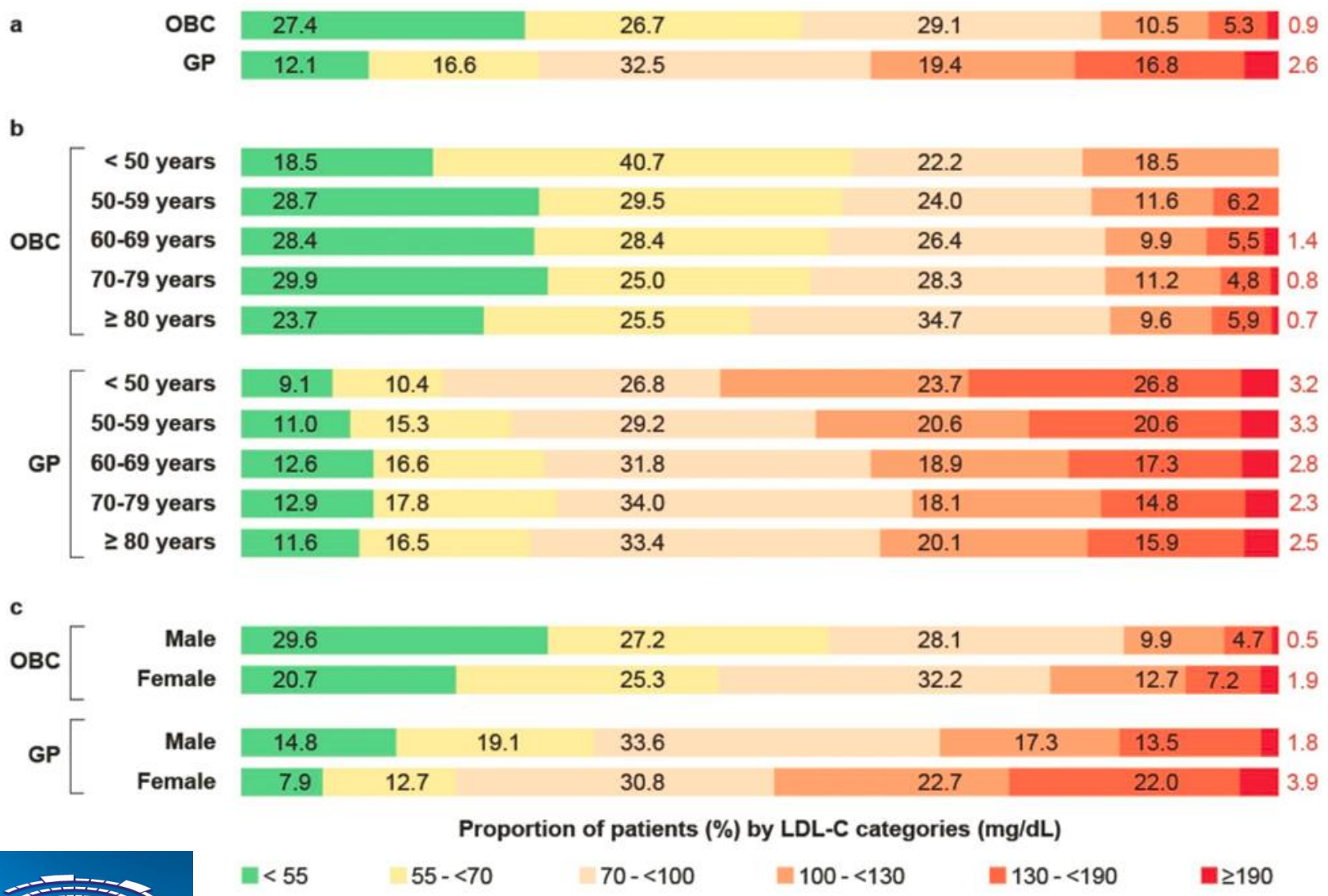
LipidSnapshot

Weingärtner O et al. Clin Res Cardiol 2025

THROMBOSE FORUM2026

Malteser
… weil Nähe zählt.

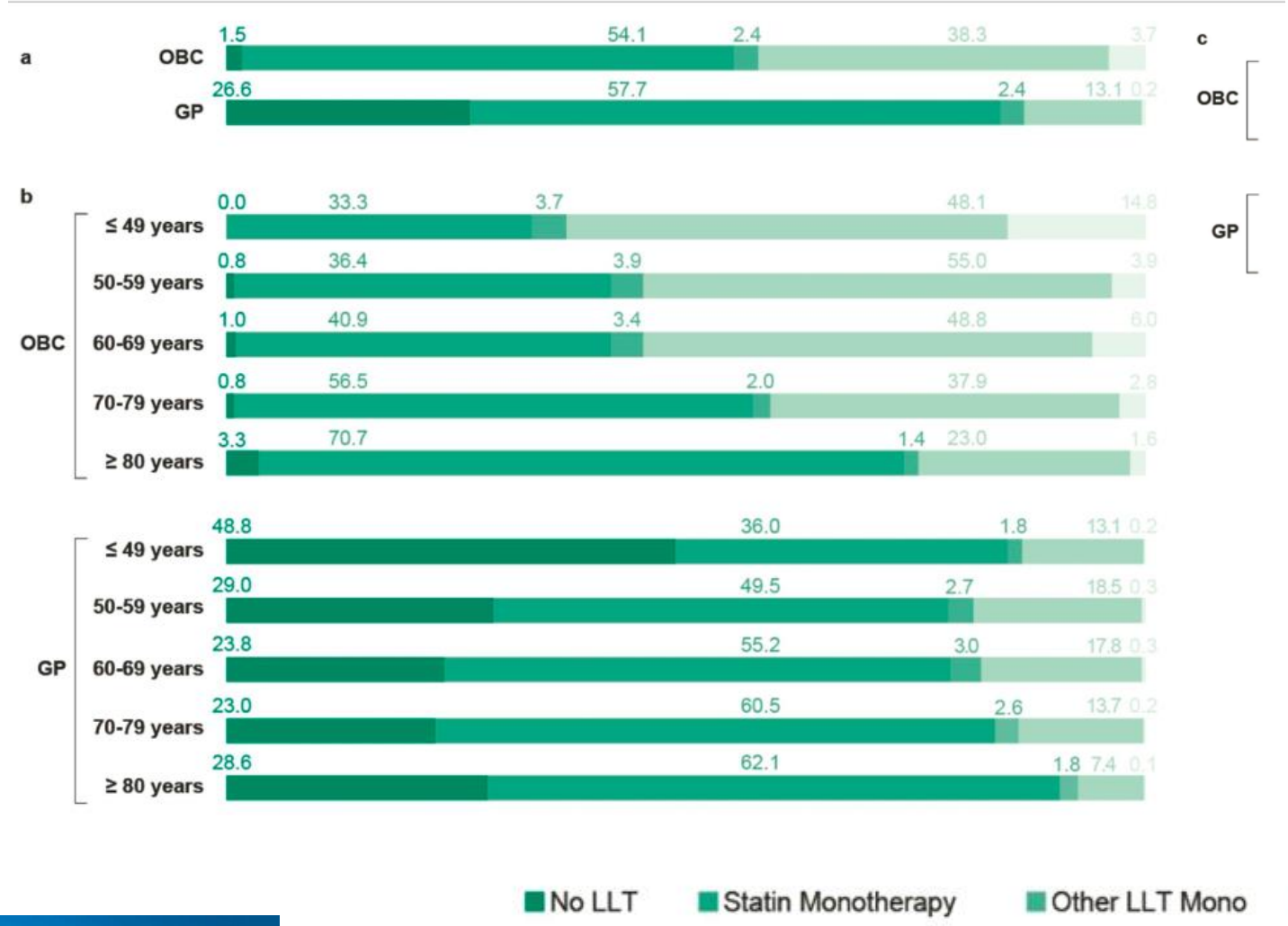
Real World - Deutschland



LipidSnapshot

Weingärtner O et al. Clin Res Cardiol 2025

Real World - Deutschland



LipidSnapshot

Weingärtner O et al. Clin Res Cardiol 2025

THROMBOSE FORUM2026

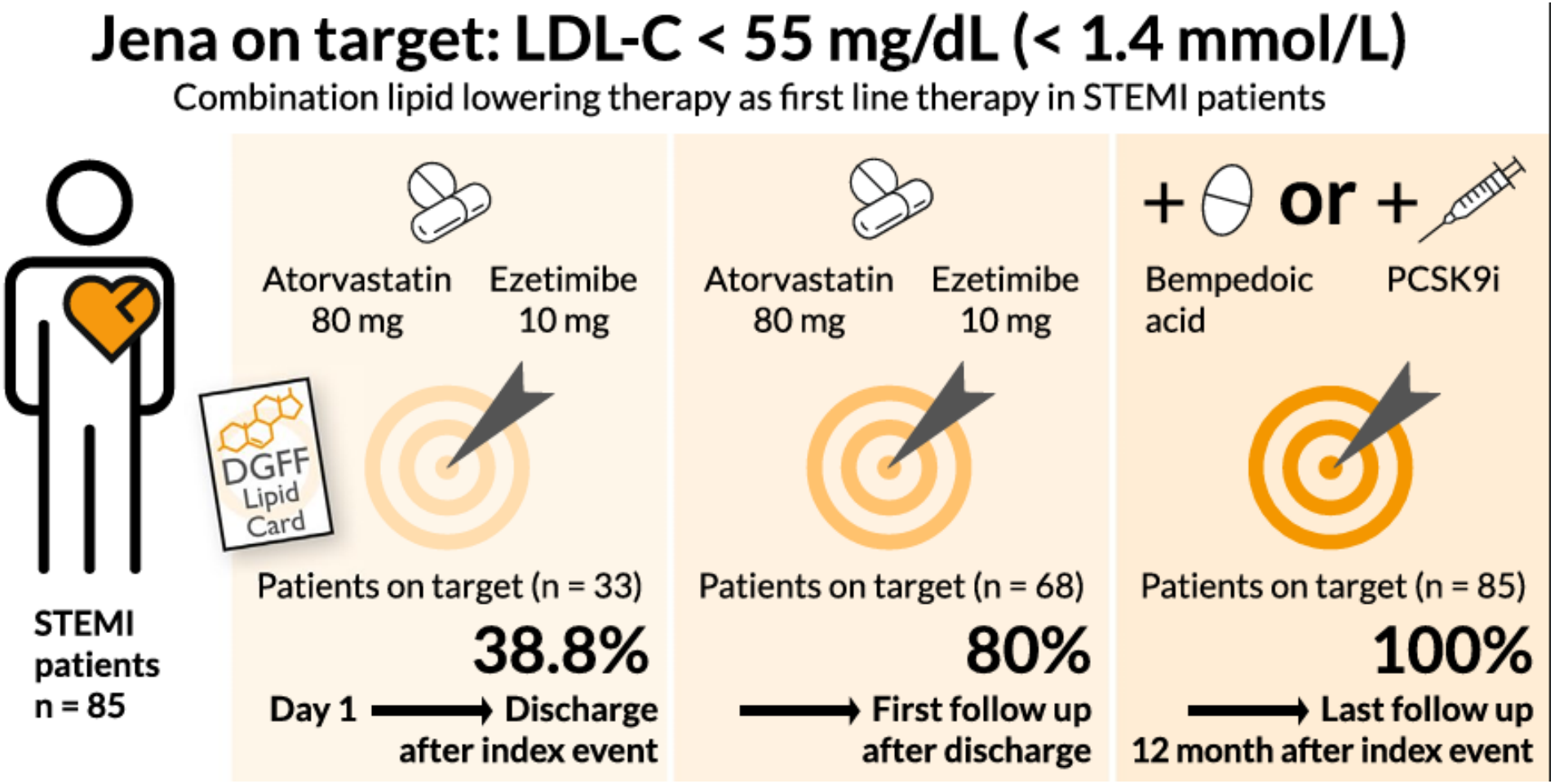
Malteser
… weil Nähe zählt.

Real World - Deutschland

	Niedergelassene Kardiolog*innen		Allgemeinmediziner*innen	
	2023 (n=1.500)	2024 (n=1.500)	2023 (n=82.300)	2024 (n=106.200)
Geschlecht (♀ | ♂), %	24,2 | 75,8	24,5 | 75,5	39,5 | 60,5	41,0 | 59,0
Alter (Jahre), %				
18 - 49	1,8	1,7	3,3	4,5
50 - 59	8,6	11,2	11,1	10,6
60 - 69	27,7	29,5	24,5	22,5
70 - 79	33,4	33,5	28,0	25,1
≥80	28,5	24,0	33,0	36,9
LDL-C [mg/dL]				
Mittelwert±SD	74,8±31,8	73,5±33,7	96,1±41,4	94,0±40,0
Median	68,0	66,0	88,0	86,0
LDL-C Kohorten, %				
0 - 54 mg/dL	**27,4**	**31,5**	**12,1**	**14,4**
55 - 69 mg/dL	26,7	24,7	**16,6**	**17,6**
70 - 99 mg/dL	29,1	27,5	32,5	32,0
100 - 129 mg/dL	10,5	9,1	19,4	18,2
130 - 189 mg/dL	5,3	6,2	16,8	15,4
≥190 mg/dL	0,9	1,0	2,6	2,4

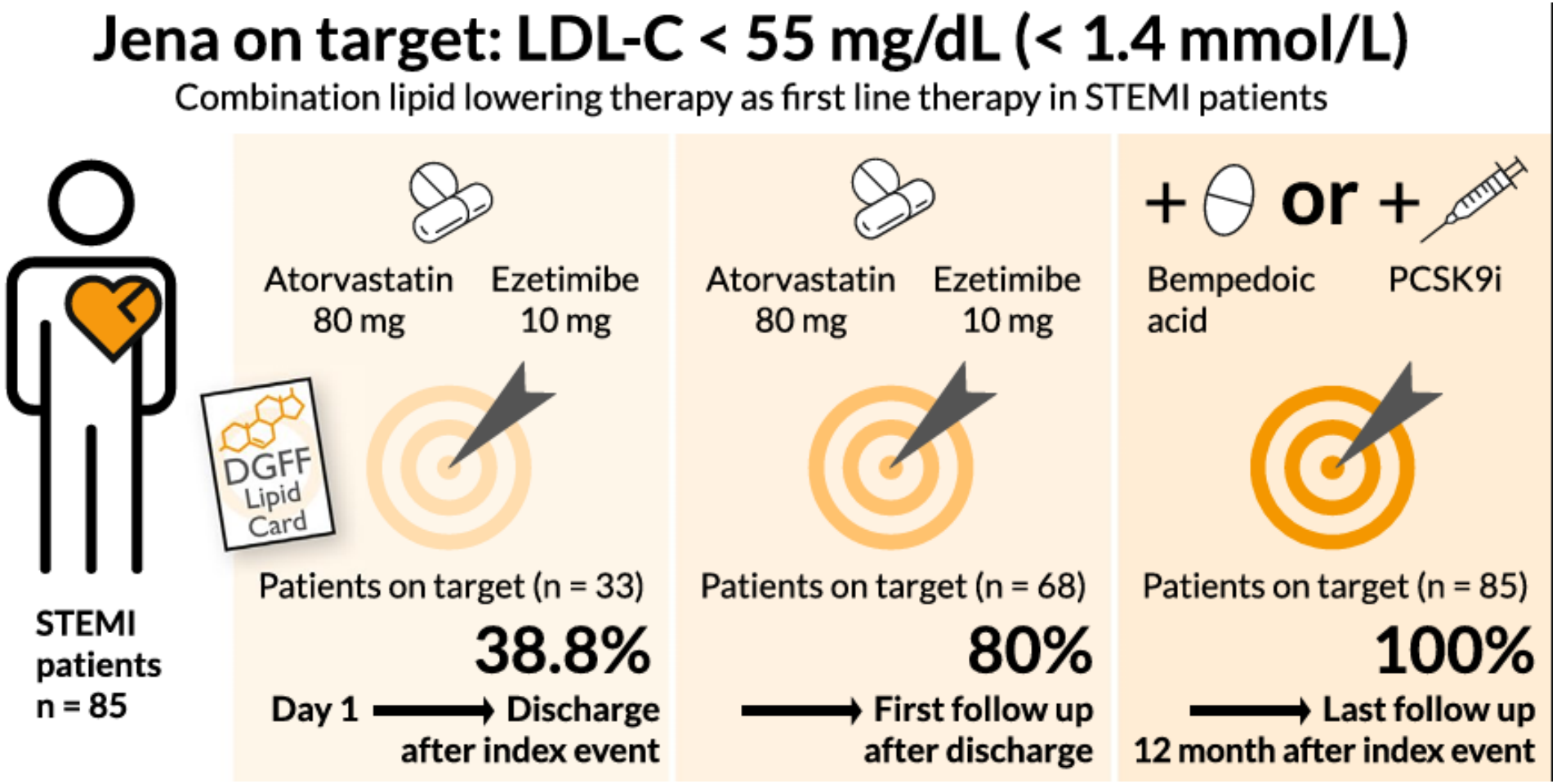
LipidSnapshot

Real World - Deutschland



Makhmudova U et al. Clin Res Cardiol 2023

Real World - Deutschland



Zwei Jahre

60% !!!

HA 81 mg/dl
LA 46 mg/dl

Th.-Stop Adherence

Makhmudova U et al. Clin Res Cardiol 2023; Weingärtner O @ Herztage DGK 2025

Real World - Deutschland

What is the real-world persistence and adherence to lipid-lowering therapy in Germany?
A retrospective analysis of prescription data

Study Design

>62m
Insight Health™ Patient Insight Tool patient records

~1m
Patients with dyslipidemia

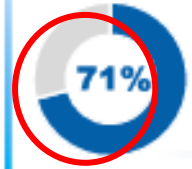
865,732
Statin Rx

34,490
Ezetimibe Rx

1,940
Anti-PCSK9 mAb Rx

Persistence (≤39 months)

Only **~10% of patients persisted with therapy** between 201–300 days



By Day 300, **71%** of patients **on statins** had **discontinued therapy**

Persistence rates at 36 months:

20.6% of patients on **statins**
22.3% of patients on **ezetimibe**
and **50.9%** of patients on **anti-PCSK9 mAbs**

Overall persistence was lower in women than in men

Adherence (Proportion of days covered)

Length of treatment over time

Persistence declined over time across all therapy subgroups

Average length of treatment before discontinuation (days):

265 with **statins**, **255** with **ezetimibe**
387 with **anti-PCSK9 mAbs**

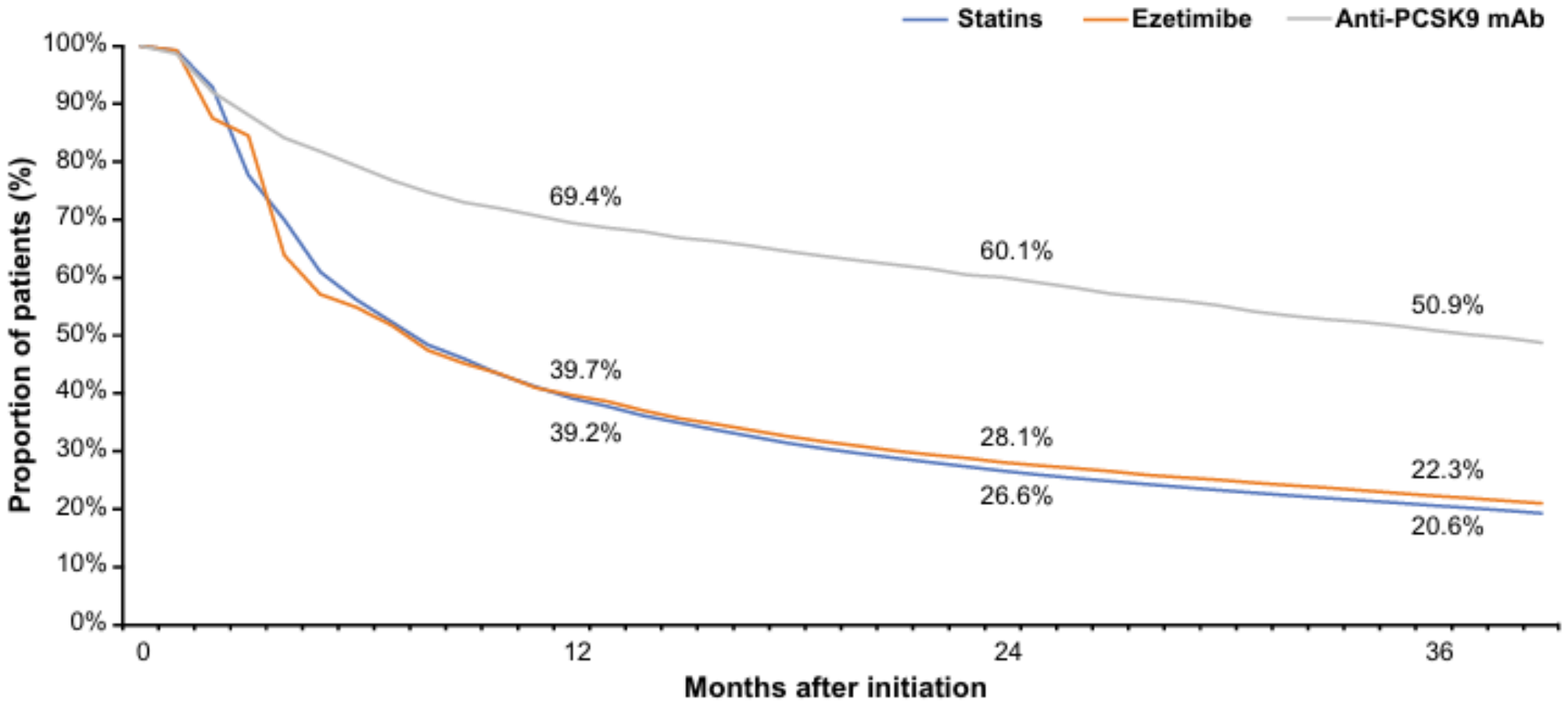
In patients with dyslipidemia, high non-persistence rates were observed across all LLTs analyzed. Persistence rates were lowest with statins and highest with anti-PCSK9 mAbs at 36 months of treatment.

*Analysis period ~45 months

Anti-PCSK9 mAb, anti-proprotein convertase subtilisin/kexin type 9 monoclonal antibody; LLT, lipid-lowering therapy; Rx, prescription.

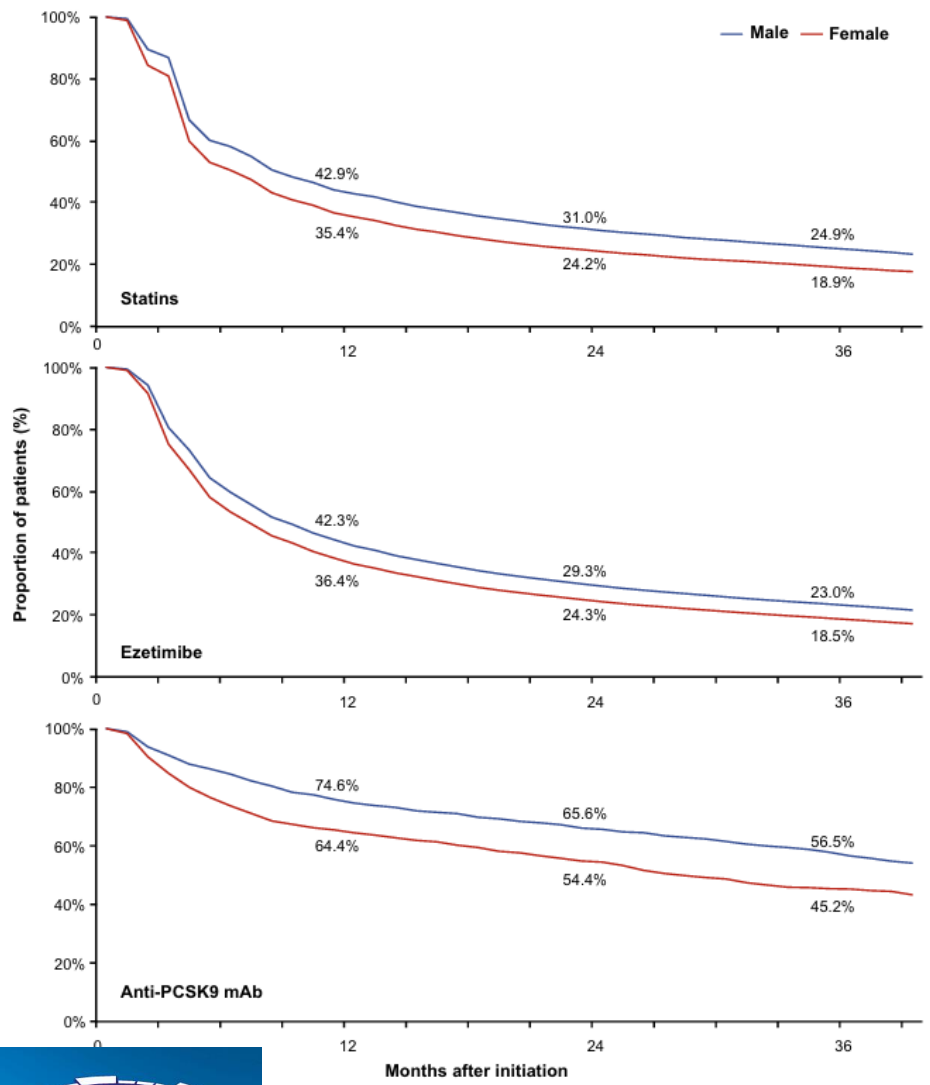
König W et al. Clin Res Cardiol 2024

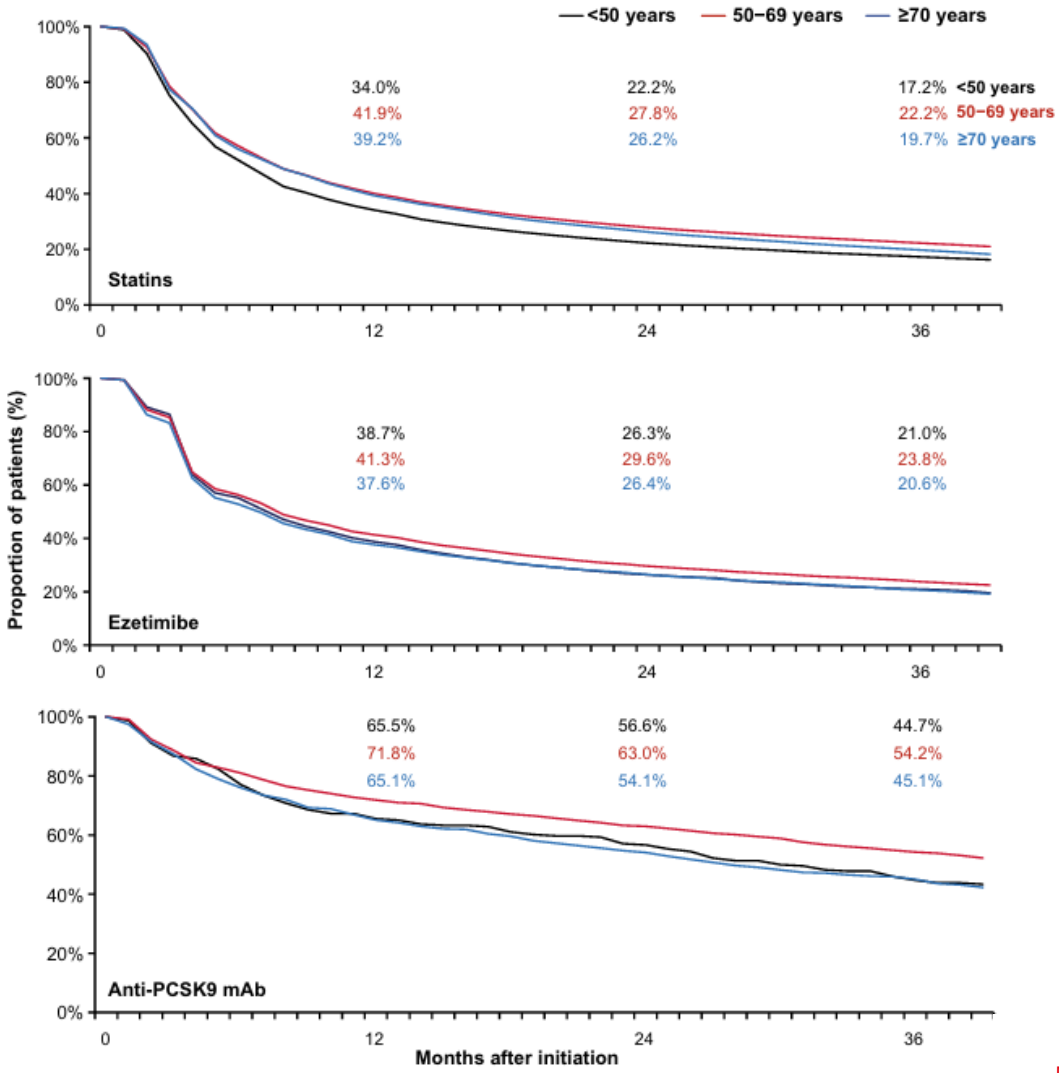
Real World - Deutschland



König W et al. Clin Res Cardiol 2024

Real World - Deutschland





König W et al. Clin Res Cardiol 2024

THROMBOSE FORUM2026

Malteser
... weil Nähe zählt.

Real World – Deutschland: „Viel Luft nach unten“

Zweifel am Konzept der Zielwerte (Ärzt*innen):

Ausdruck eines präventiv-medizinischen Ideals

Arbiträr und nicht durch Outcome-Studien belegt

Eingeschränkte Praktikabilität (FH, Pat. mit sehr hohen / extremem Risiko)

Minimaler Zusatznutzen durch noch weitere LDL-C Senkung (NNT; ARR)

Kontroverse zwischen DEGAM und ESC

Real World – Deutschland: „Viel Luft nach unten“

Verträglichkeit (Statin-Intoleranz – SAMS)

Aufklärung (sozialer Status, Bildung)

Kombinations-Th. (Verträglichkeit, Interaktionen, Regress-Sorge)

Tablettenanzahl

Unterschätzung des kardiovaskulären Risikos („Tut nicht weh“)

„Diffuse“ Ängste / Vorbehalte

Real World – Deutschland: „Viel Luft nach unten“

THROMBOSE FORUM 2026

Malteser
… weil Nähe zählt.

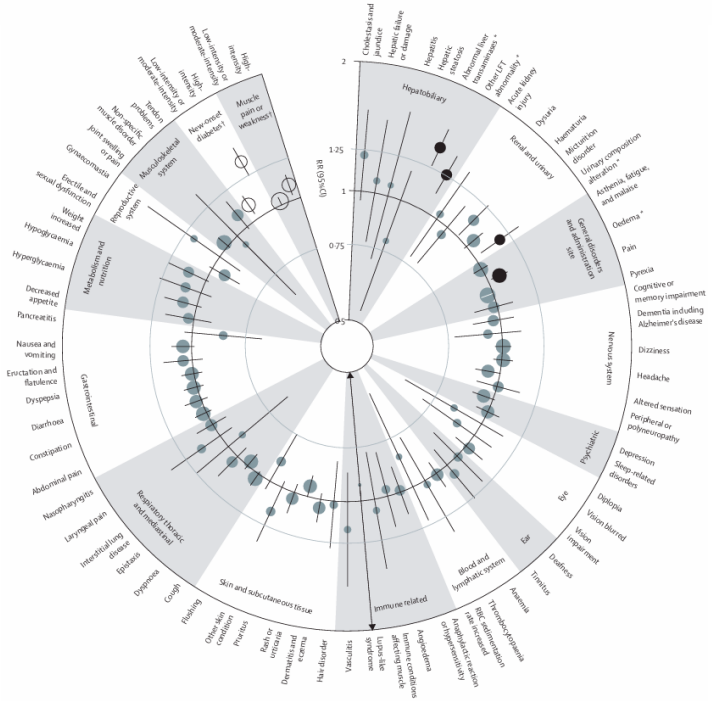
Real World – Deutschland: „Viel Luft nach unten“

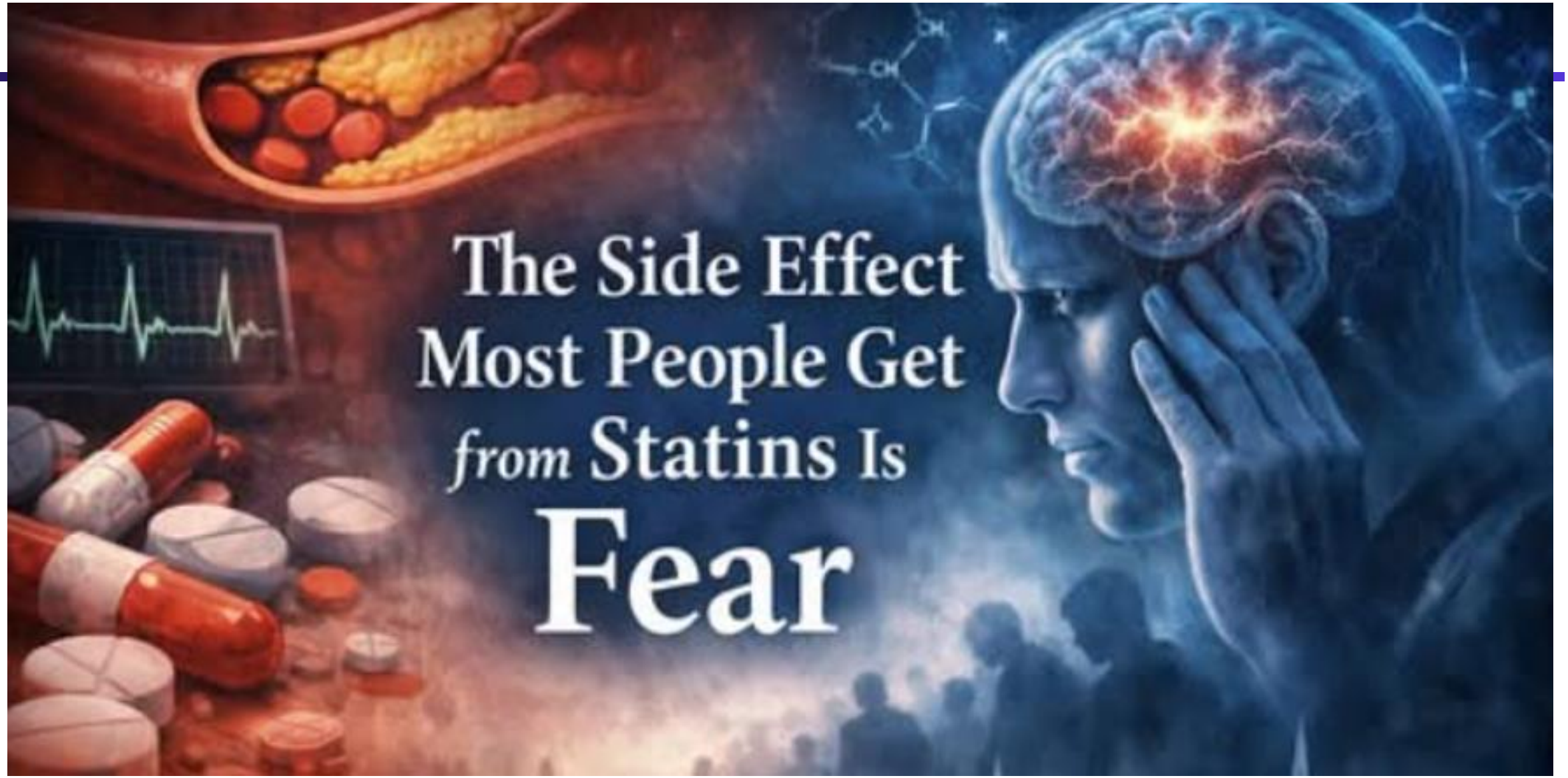
Umsatz von Nahrungs-ergänzungsmitteln in Deutschland

1,3 Milliarden €

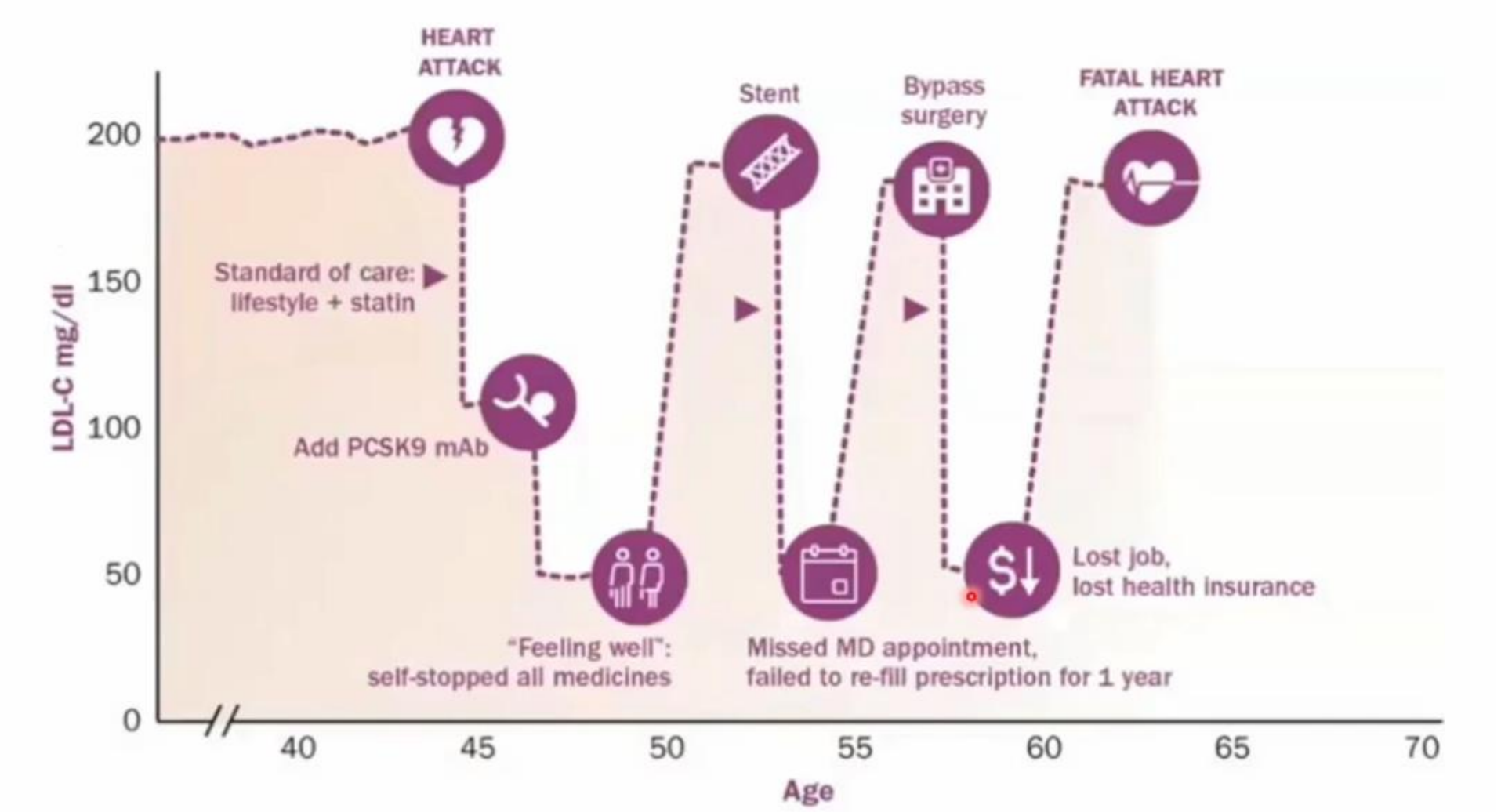
Assessment of adverse effects attributed to statin therapy in product labels: a meta-analysis of double-blind randomised controlled trials

Interpretation Adverse event data from blinded randomised trials do not support causal relationships between statin therapy and most of the conditions (including cognitive impairment, depression, sleep disturbance, and peripheral neuropathy) listed in product labels as potential undesirable effects. In light of these findings, such labelling and other official sources of health information should be revised so that patients and their doctors can make appropriately informed decisions regarding statin therapy.

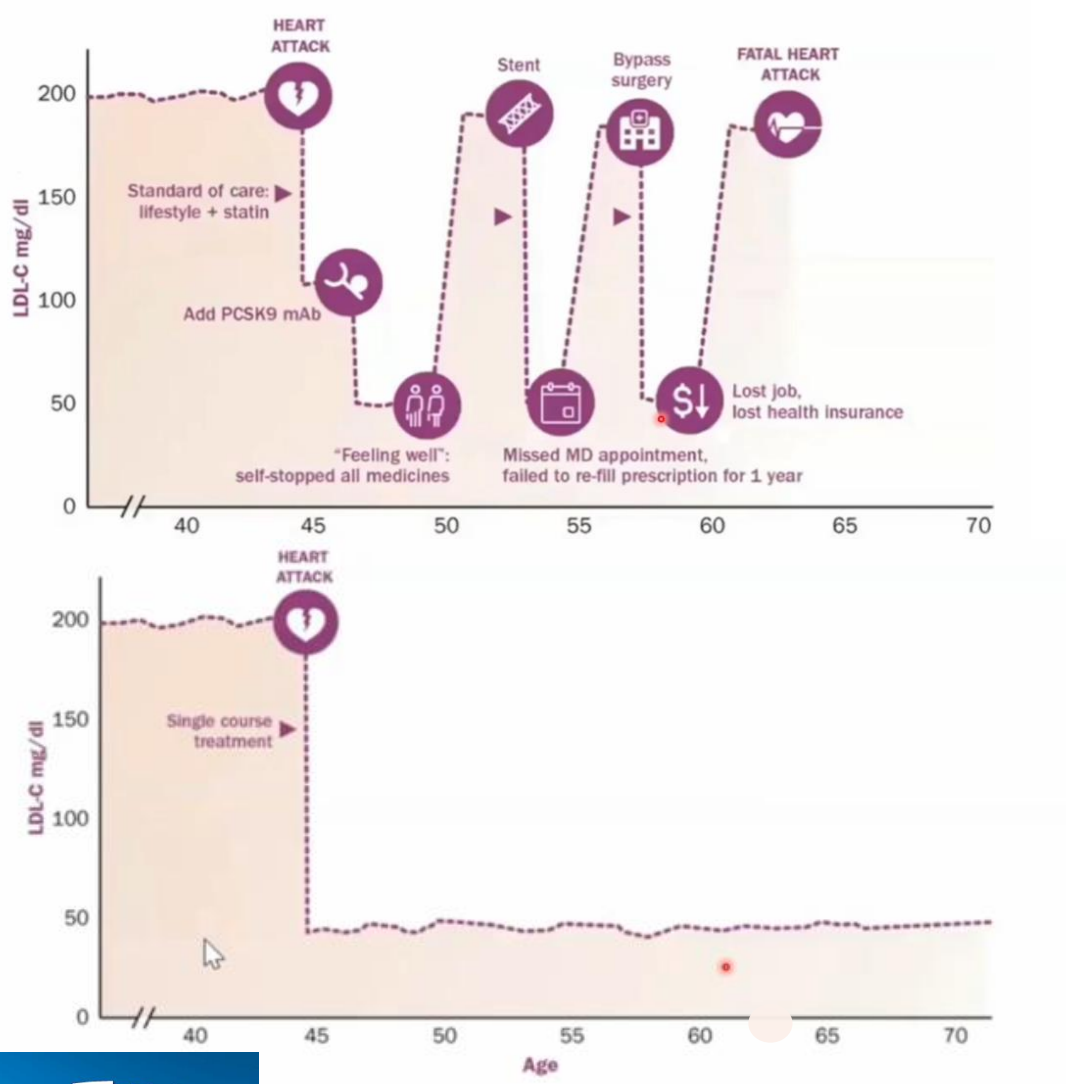


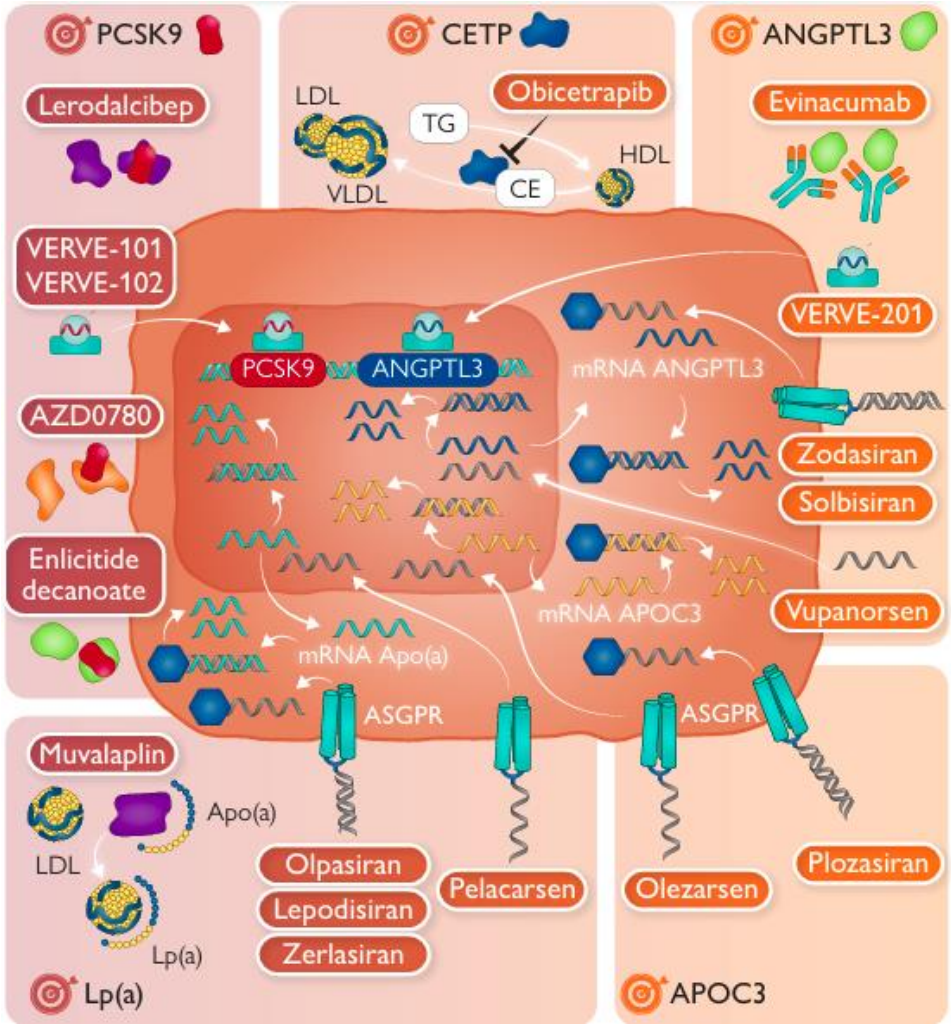

The Side Effect
Most People Get
from Statins Is
Fear

Ausblick


HEART ATTACK
Stent
Bypass surgery
FATAL HEART ATTACK
200
150
100
50
0
LDL-C mg/dl
Standard of care: lifestyle + statin
Add PCSK9 mAb
"Feeling well": self-stopped all medicines
Missed MD appointment, failed to re-fill prescription for 1 year
Lost job, lost health insurance
40
45
50
55
60
65
70
Age

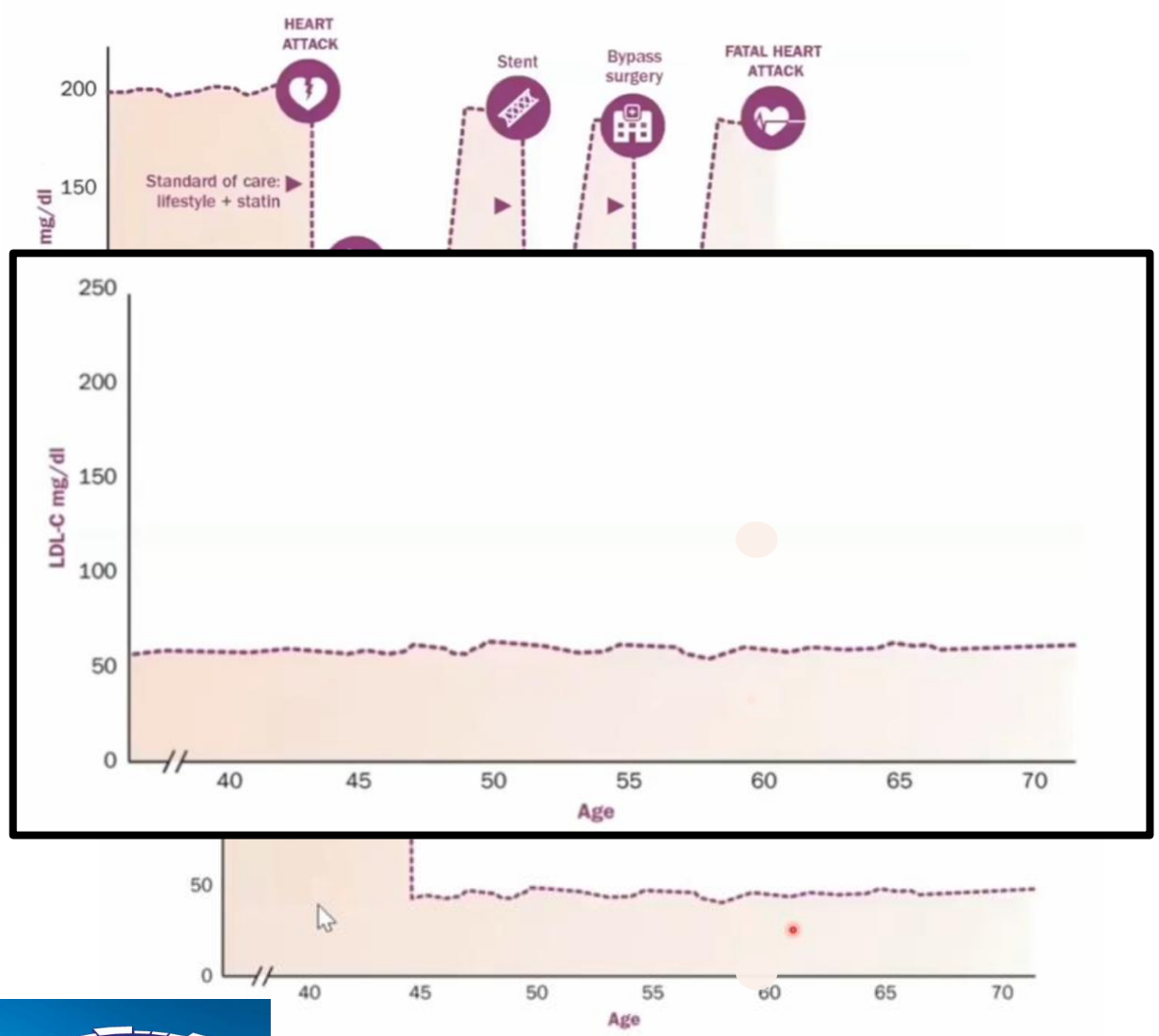
Ausblick

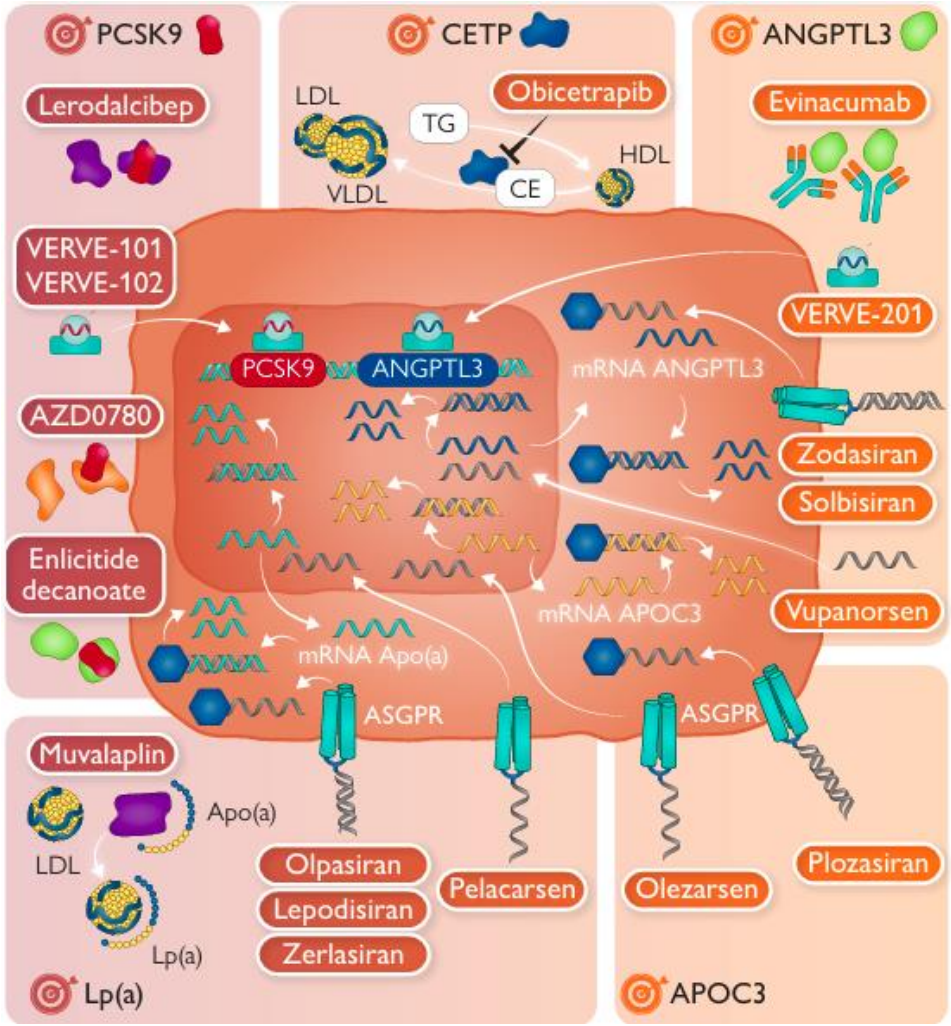




Ballantyne CM, Norata GD. Eur Heart J 2025

Ausblick





Ballantyne CM, Norata GD. Eur Heart J 2025

„You can never be too rich or have too low an LDL“