



Rheuma und Herz

Kardiovaskuläres Risiko rheumatischer Erkrankungen

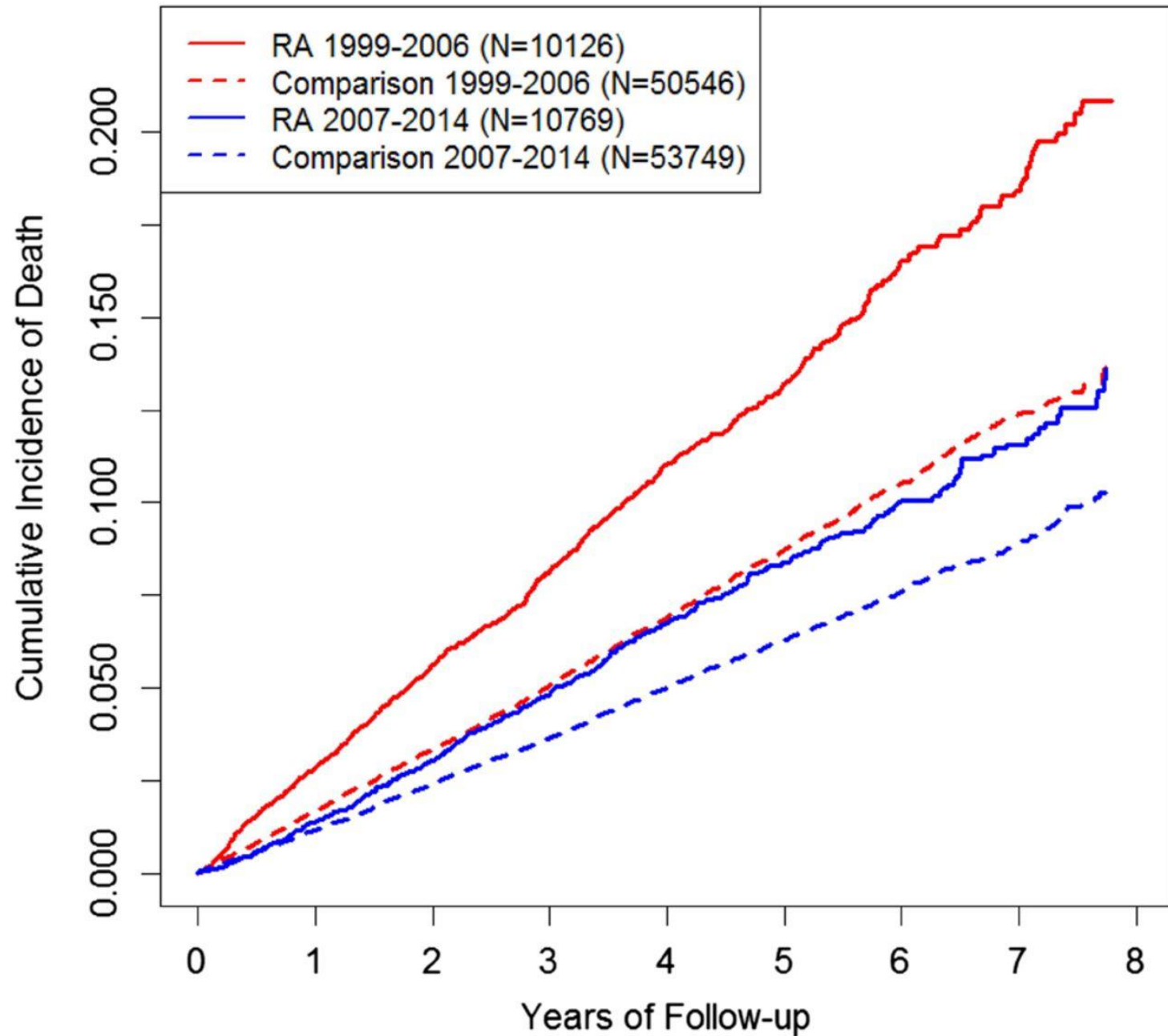
Klagenfurt, 06.11.2025

Dr. Mathias Ausserwinkler, MSc

Internist, Kardiologe und Rheumatologe

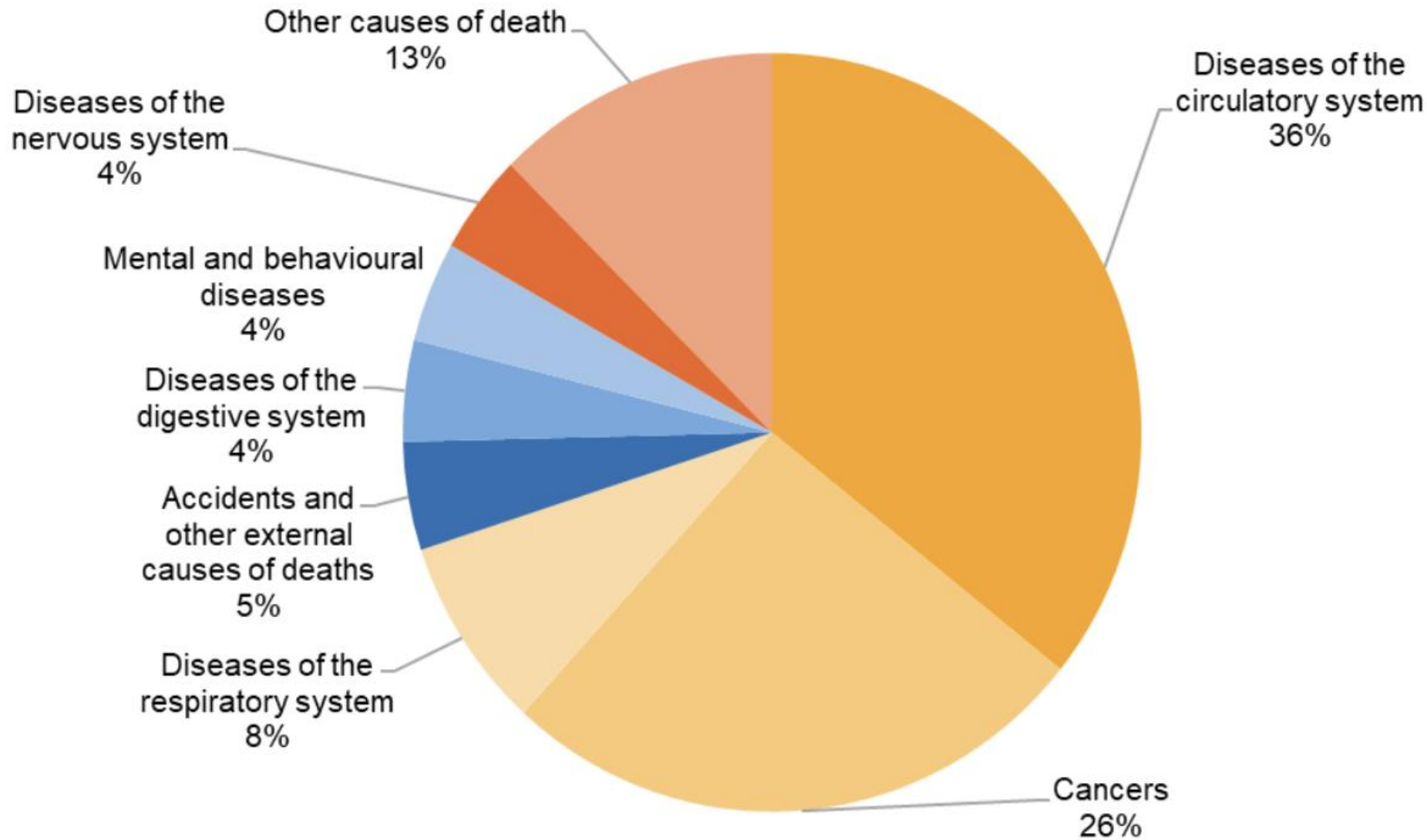
Disclosure of conflicts

Abbvie, Alfasigma, Amgen, Boehringer Ingelheim, Bristol Myers Squibb, Fresenius, Galapagos, Janssen, Johnson and Johnson, Lilly, Pfizer, Roche, Sandoz, Stada, UCB



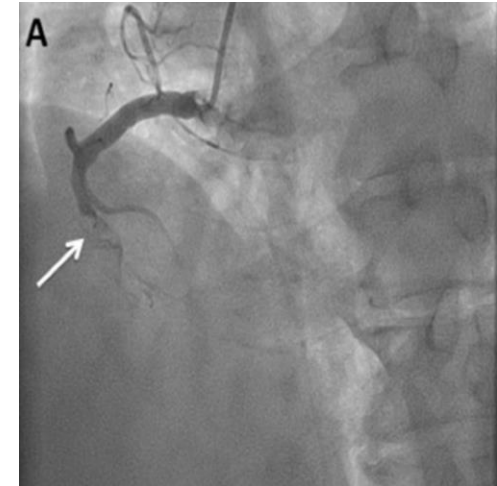
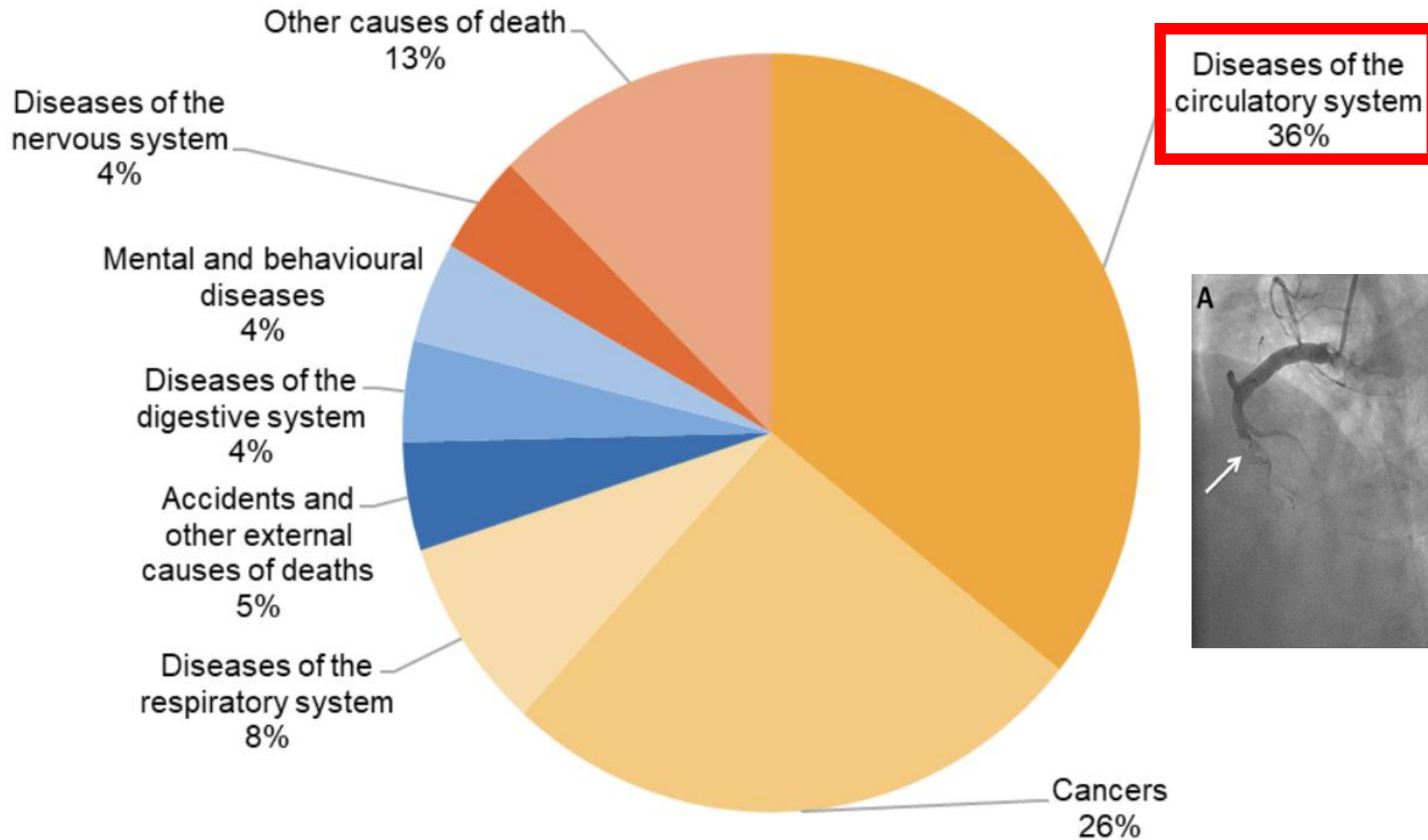
Causes of death in the EU by type, 2016

(as % of all deaths)



Causes of death in the EU by type, 2016

(as % of all deaths)



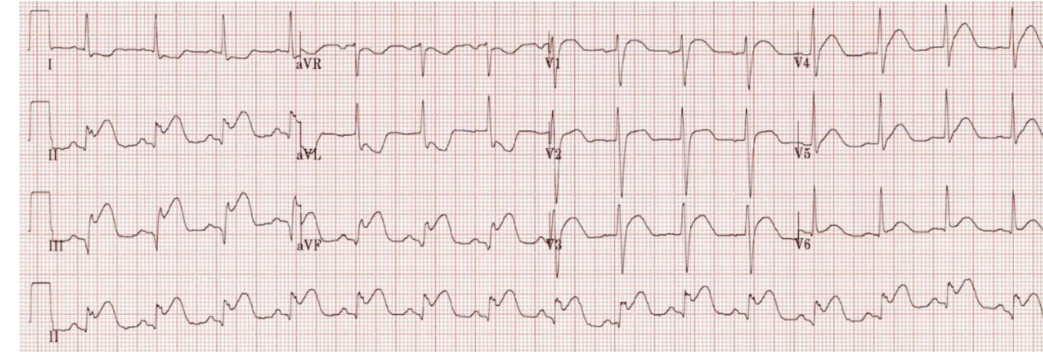
Kardiovaskuläre Risikofaktorerhebung

RISK FACTORS

- Age (older than 40 years for men, 45 years for women)
- Male sex
- Family history of coronary heart disease
- Smoking
- **Hypertension** (high blood pressure)
- Diabetes
- Obesity
- Unhealthy cholesterol levels—high total cholesterol, low HDL cholesterol, high LDL cholesterol, high triglycerides
- Low physical activity
- Accumulation of abdominal fat (“apple” body shape)

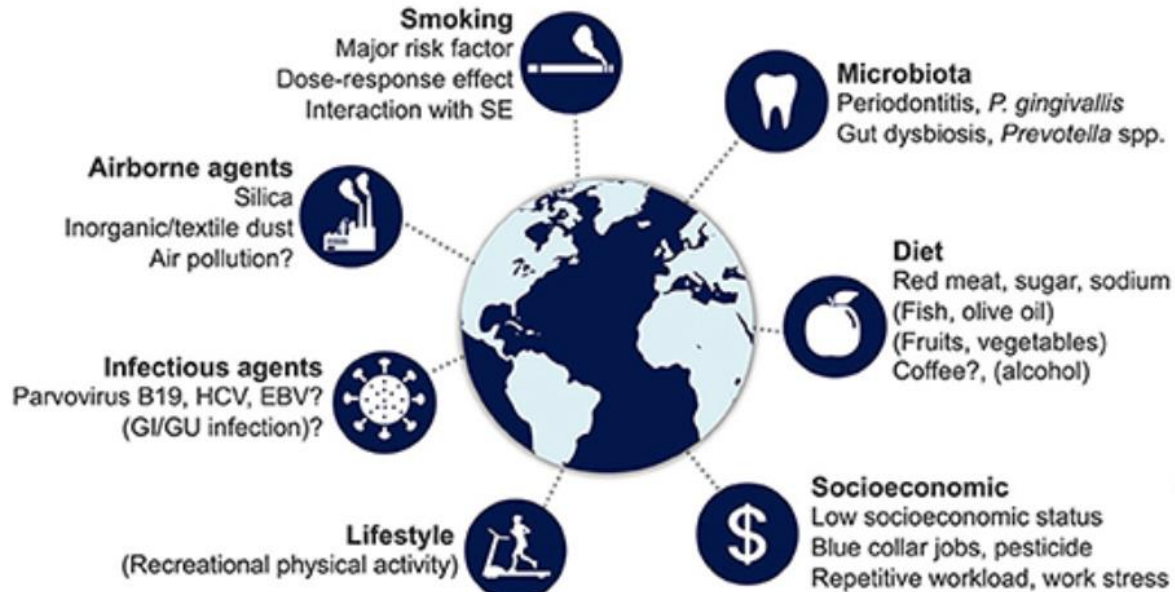
PREVENTION

- Stop smoking
- Exercise at least 30 minutes most days of the week
- Treat high blood pressure
- Control blood sugar if you have diabetes
- Lose excess weight and maintain a healthy weight through a balanced diet and exercise
- Eat lots of high-fiber fruits, vegetables, and whole grains
- Limit intake of animal fats, *trans* fats, sugars, and starches
- Lower your cholesterol through diet, exercise, and medications if prescribed by your doctor

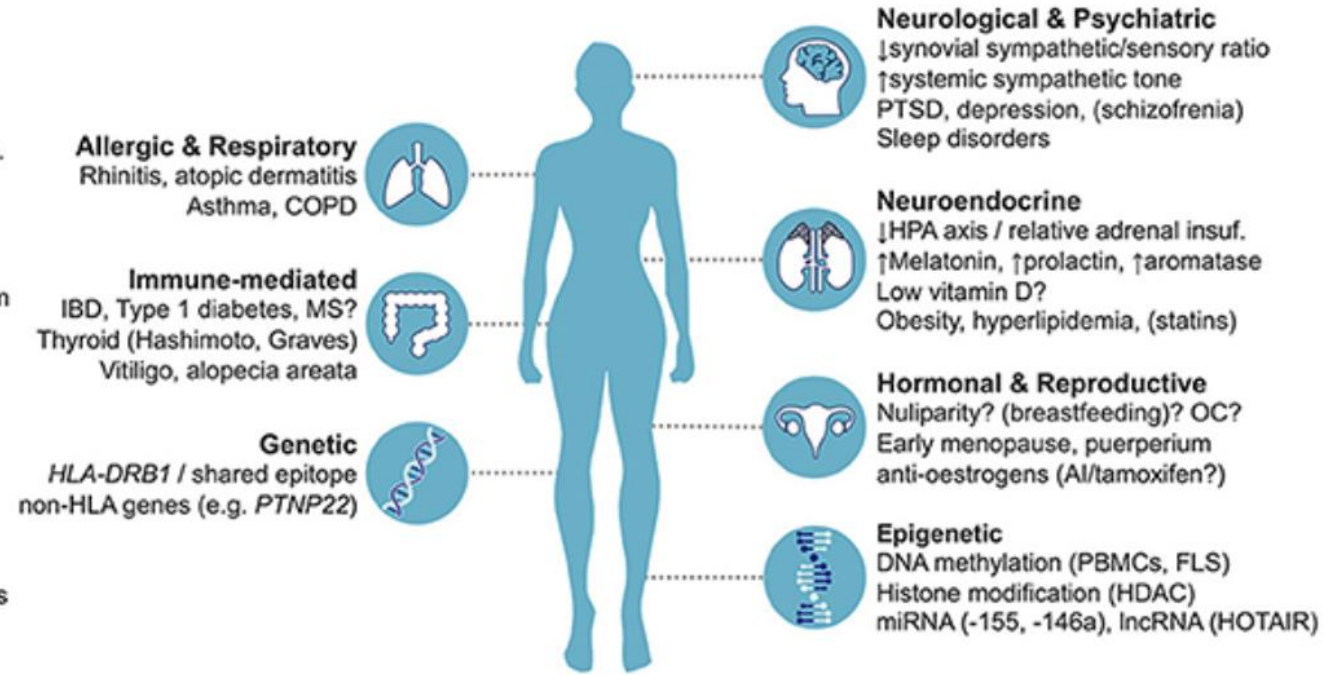


Risk factors for RA

Environmental factors



Host factors

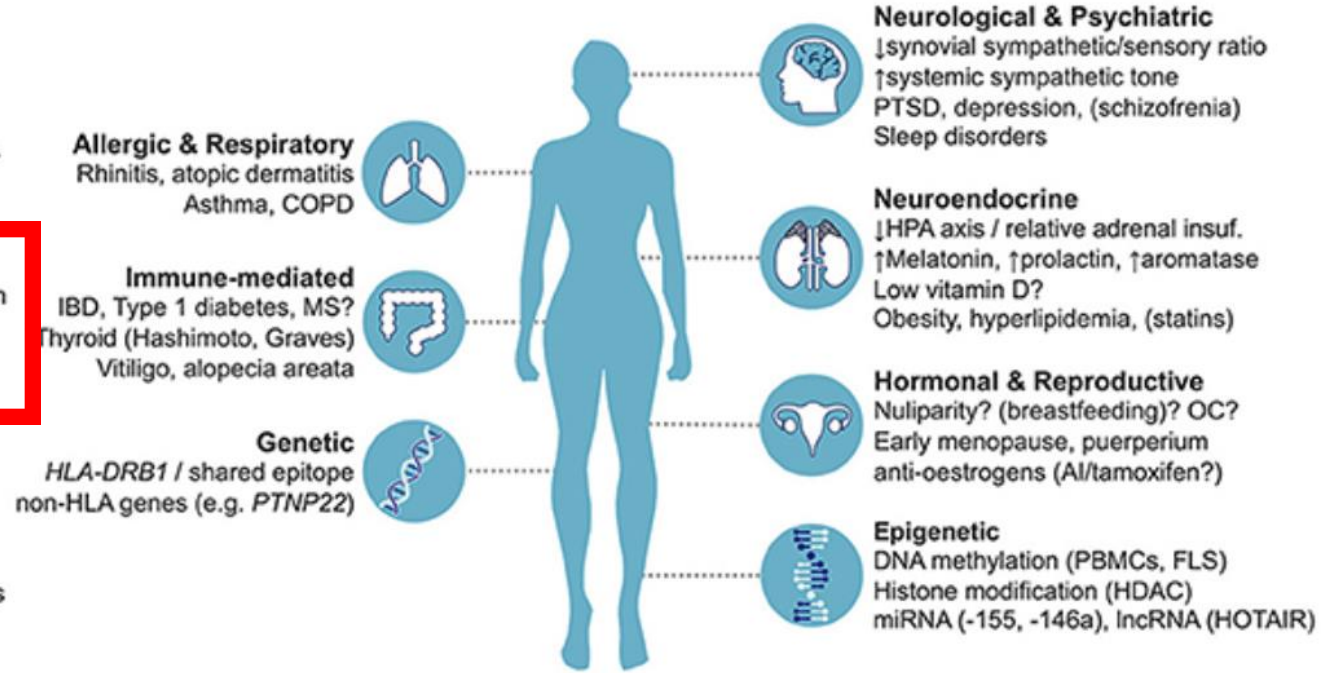


Risk factors for RA

Environmental factors



Host factors

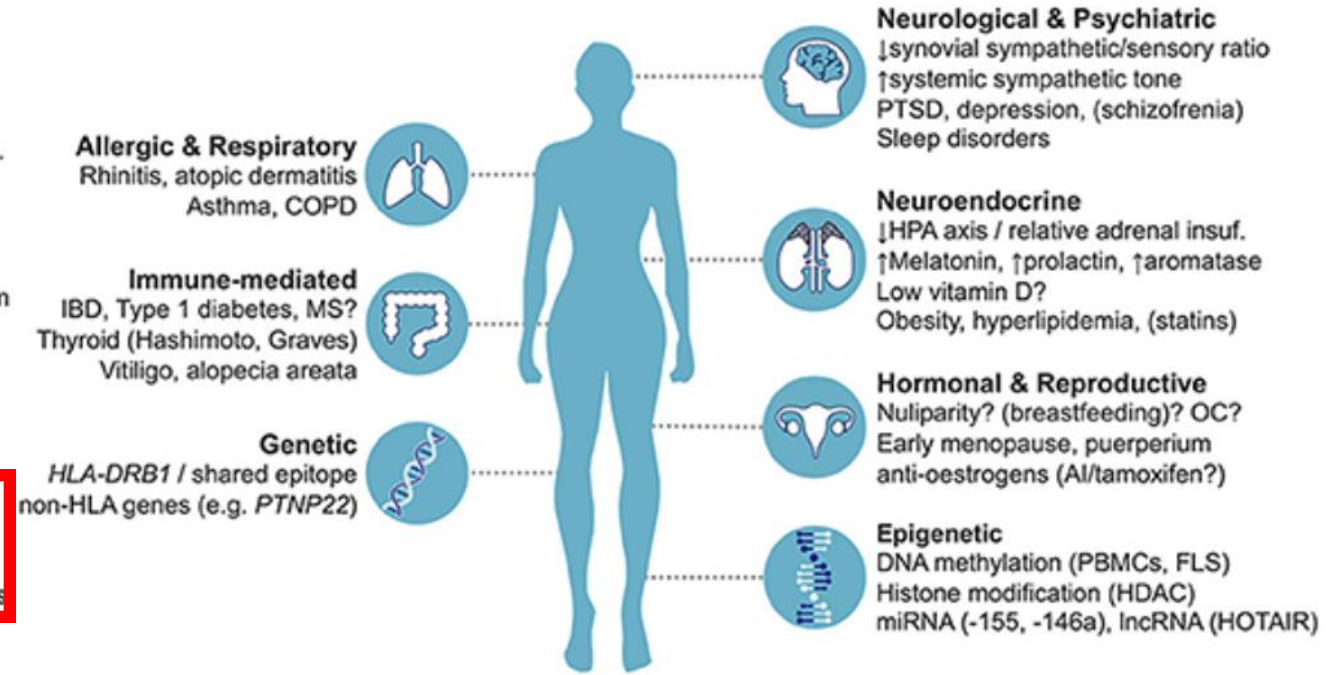


Risk factors for RA

Environmental factors



Host factors





Exploring the link between socioeconomic factors and rheumatoid arthritis: Insights from a large Austrian study

Mathias Ausserwinkler^{a,b,*,1}, Maria Flamm^{c,2}, Sophie Gensluckner^{b,3},
Kathrin Bogensberger^{d,e,f,g,4}, Bernhard Paulweber^{b,5}, Eugen Trinkka^{h,i,6}, Patrick Langthaler^{h,i,7},
Christian Datz^{j,8}, Boris Lindner^{k,9}, Bernhard Iglseder^{1,10}, Elmar Aigner^{b,11},
Bernhard Wernly^{b,c,12}

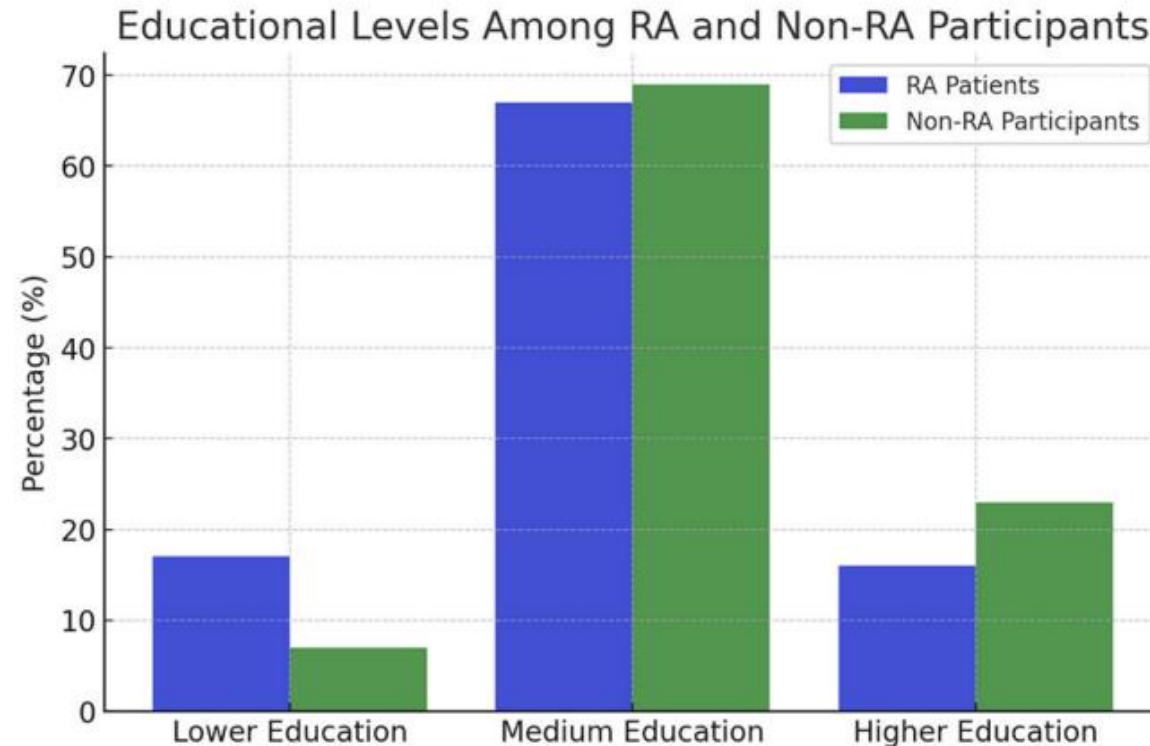
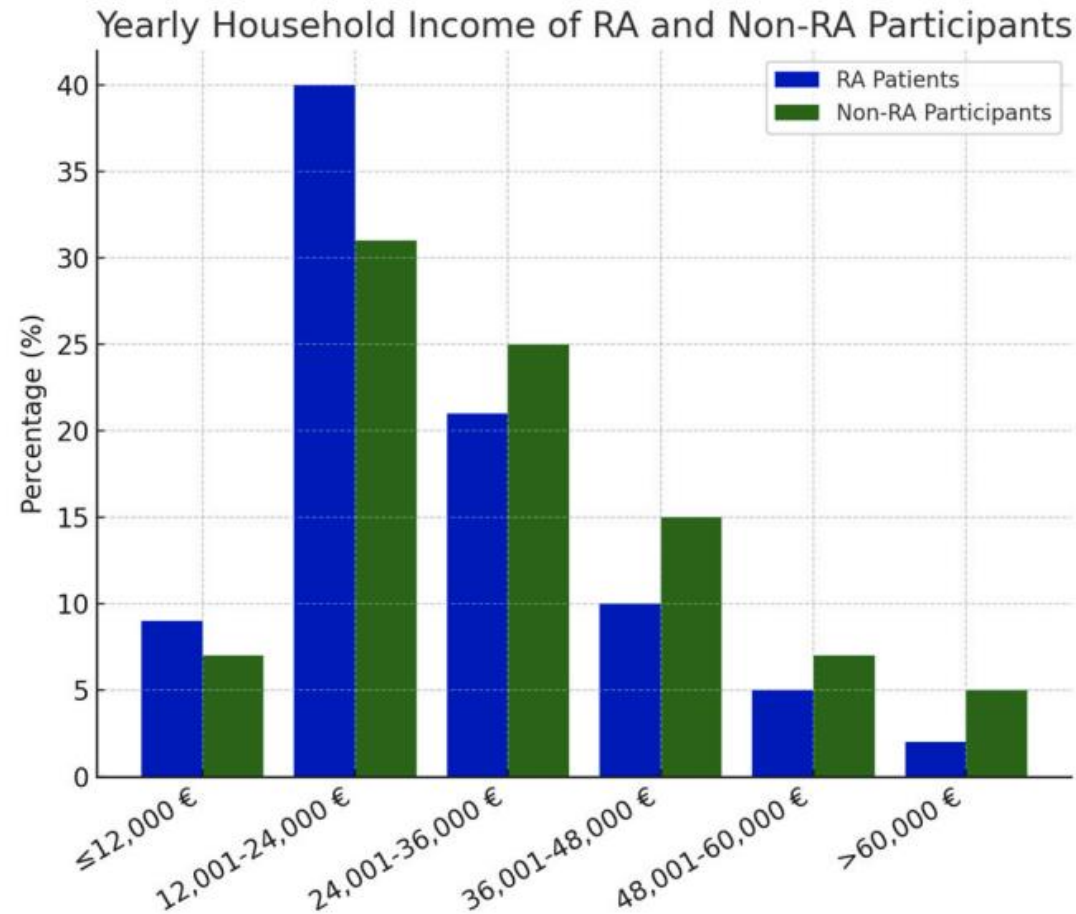


Fig. 1. shows the differences in percentage between RA and non-RA participants through their education level.



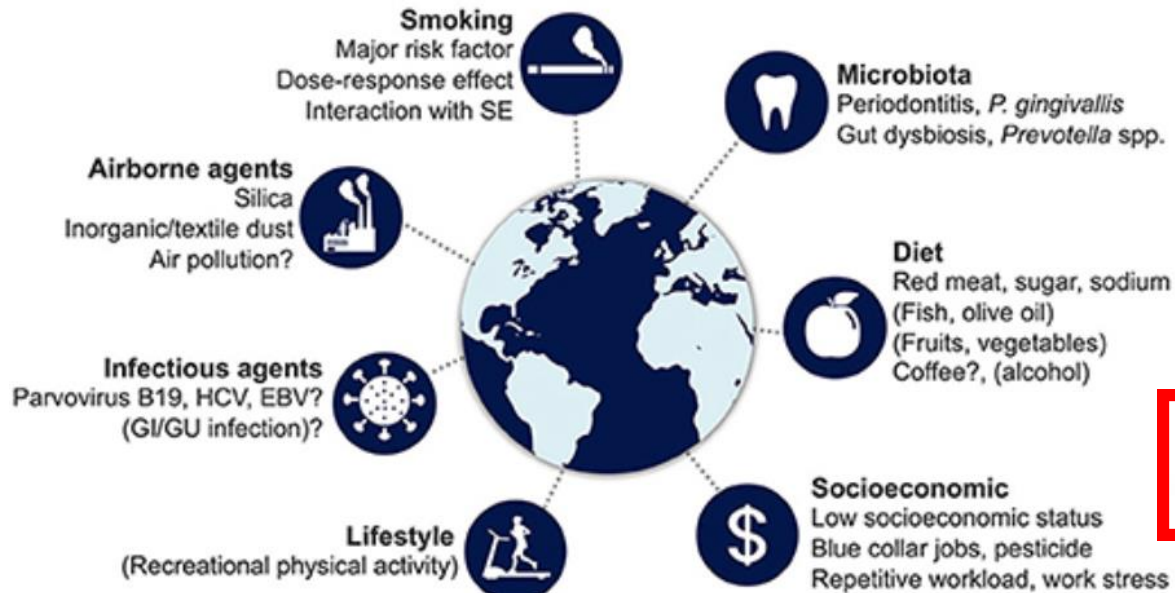
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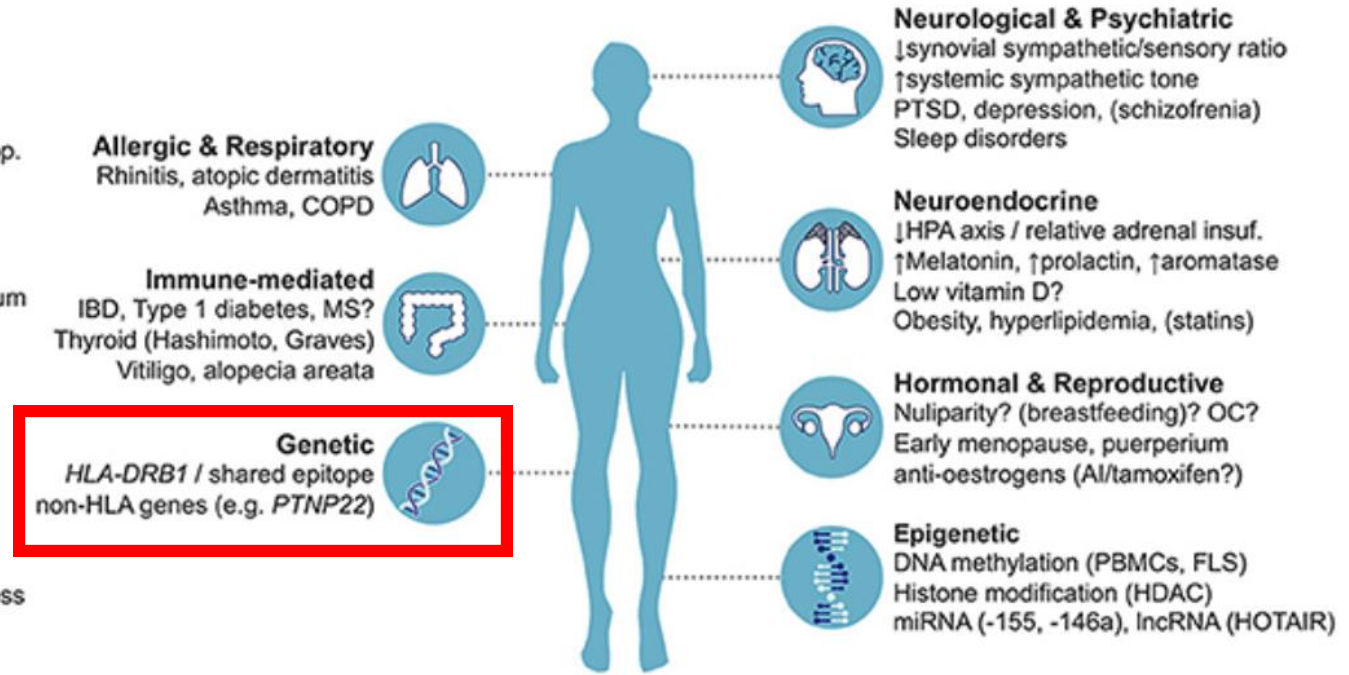


Risk factors for RA

Environmental factors



Host factors





Genetic relationship between rheumatoid arthritis and cardiovascular diseases

A systematic review of Mendelian randomization studies

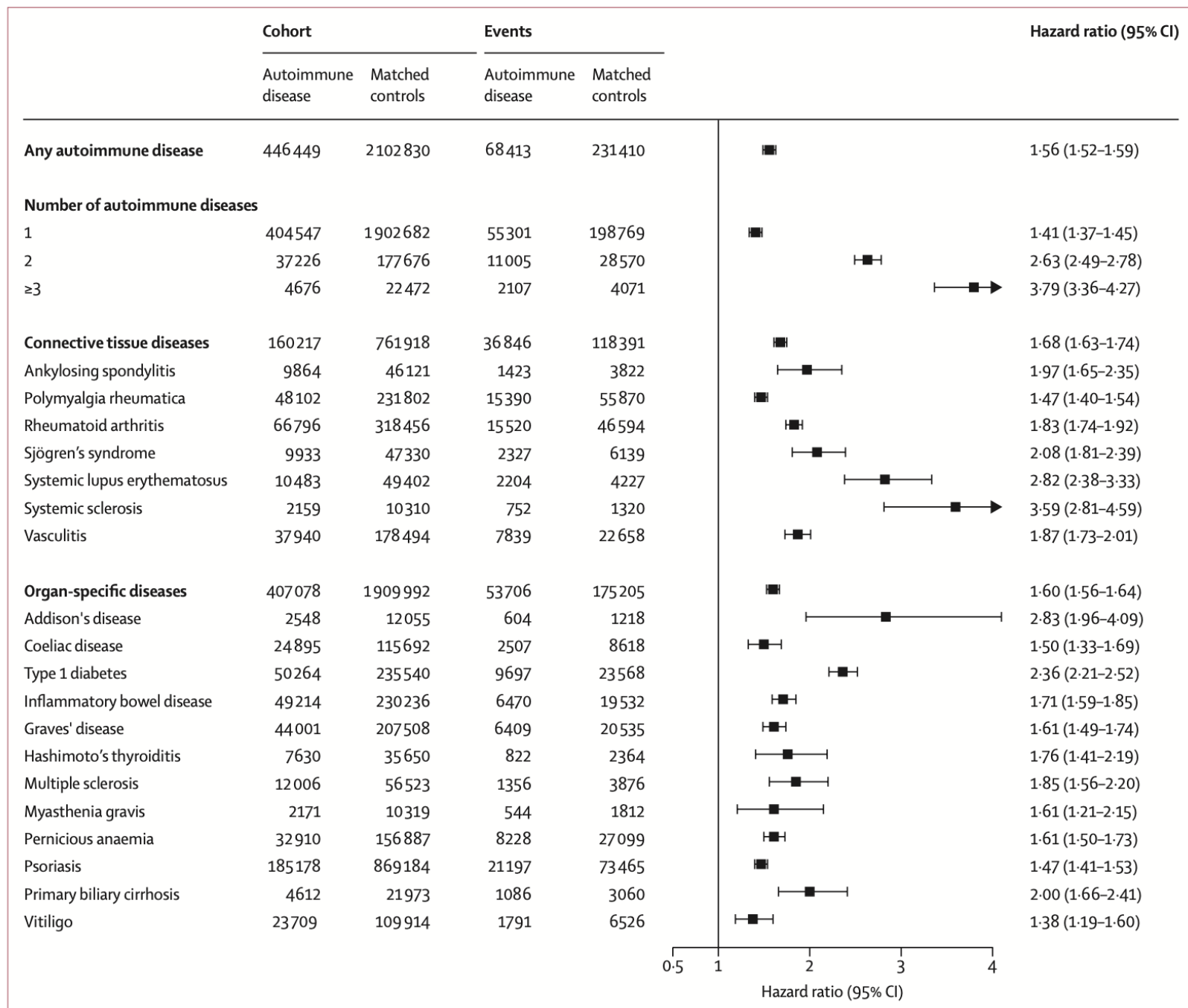
Mathias Ausserwinkler  · **Sophie Gensluckner** · **Andreas Voelkerer** · **Jens Thiel** · **Hans-Jörg Neumann** · **Maria Flamm** · **Christian Datz** · **Elmar Aigner** · **Bernhard Wernly**

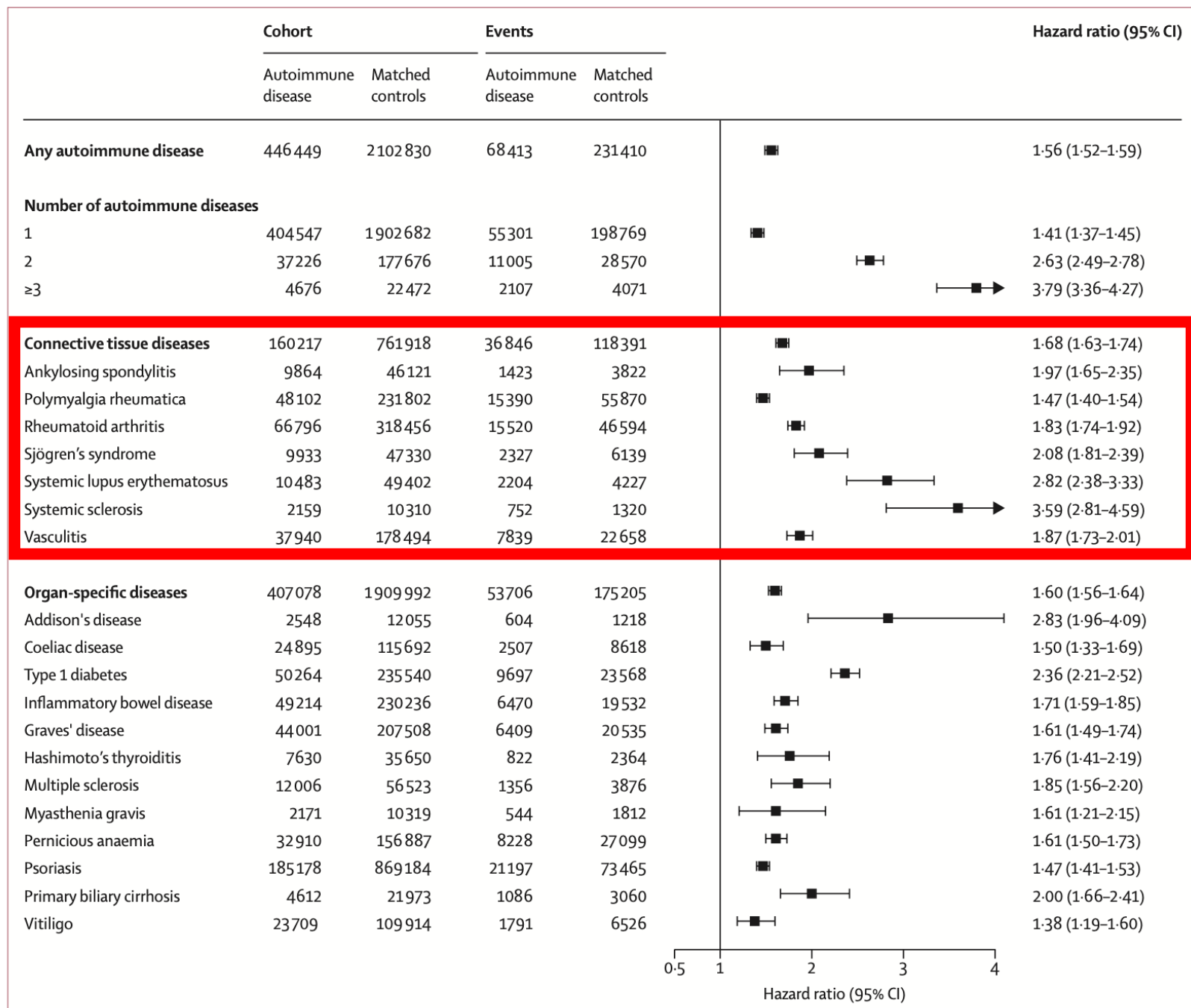
Autoimmune diseases and cardiovascular risk: a population-based study on 19 autoimmune diseases and 12 cardiovascular diseases in 22 million individuals in the UK

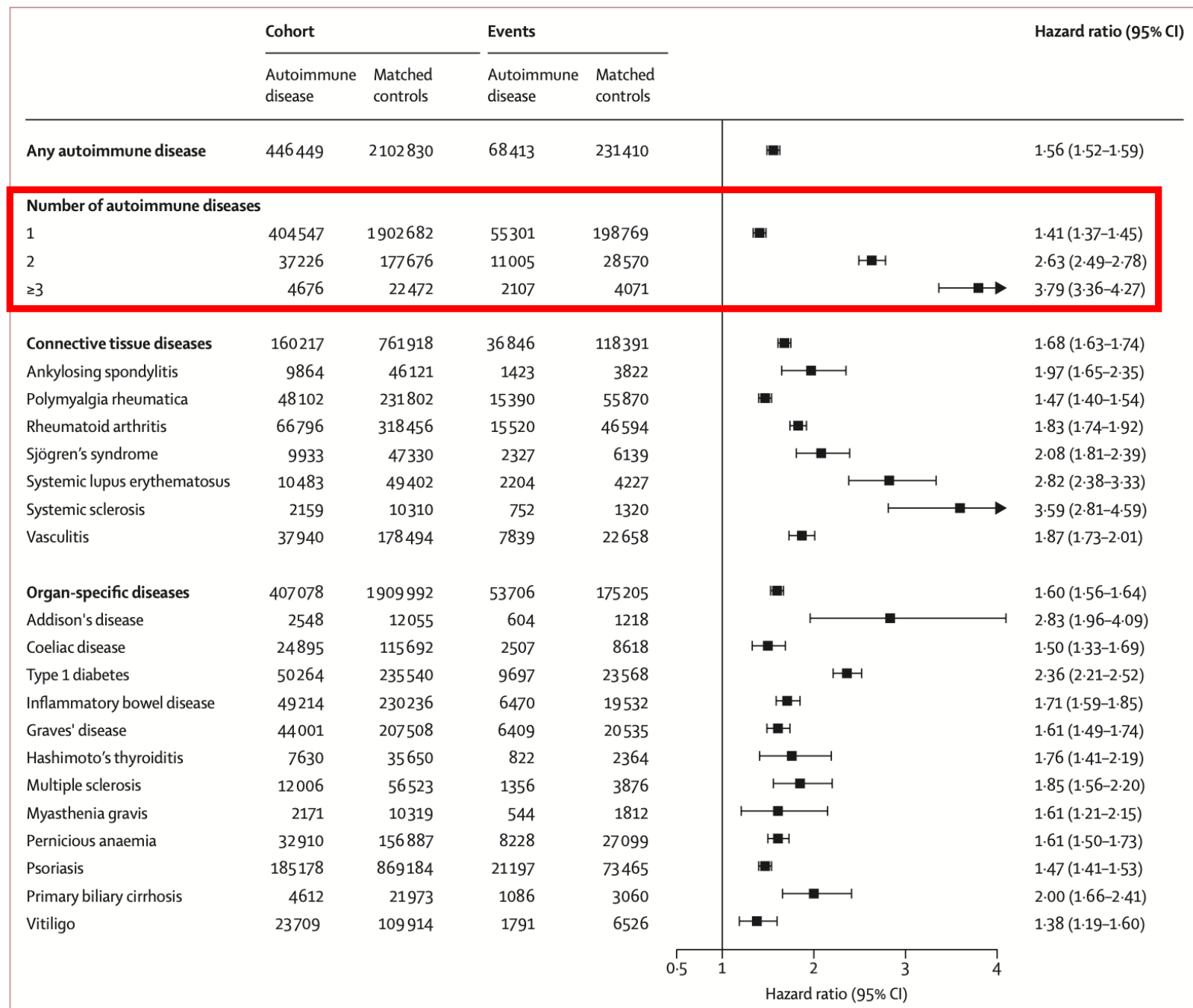


Nathalie Conrad, Geert Verbeke, Geert Molenberghs, Laura Goetschalckx, Thomas Callender, Geraldine Cambridge, Justin C Mason, Kazem Rahimi, John J V McMurray, Jan Y Verbakel

- This is a population-based study in the UK examining the association between autoimmune disease and incident cardiovascular disease.
- All 19 examined autoimmune diseases were associated with a 1.5-3.5x increased risk of a broad swath of cardiovascular diseases—an association that was strongest in younger individuals and that was not attenuated by adjustment for cardiovascular risk factors.
- Cardiovascular risk prevention should be considered as an integral part of the management of autoimmune diseases.







Increased Unrecognized Coronary Heart Disease and Sudden Deaths in Rheumatoid Arthritis

A Population-Based Cohort Study

Hilal Maradit-Kremers, Cynthia S. Crowson, Paulo J. Nicola, Karla V. Ballman, Véronique L. Roger, Steve J. Jacobsen, and Sherine E. Gabriel

Table 2. Prevalence of coronary heart disease in rheumatoid arthritis (RA) and non-RA subjects at index date (Rochester, Minnesota, 1955–1995)

Characteristic	Observed, no. (%)		Odds ratio (95% confidence interval)	
	RA cohort (n = 603)	Non-RA cohort (n = 603)	Age- and sex-adjusted*	Multivariable- adjusted*
Hospitalized myocardial infarction	17 (2.8)	5 (0.8)	3.40 (1.25–9.22)†	3.17 (1.16–8.68)†
Unrecognized myocardial infarction	11 (1.8)	2 (0.3)	5.50 (1.22–24.81)†	5.86 (1.29–26.64)†
Angina pectoris	27 (4.5)	43 (7.1)	0.59 (0.35–0.99)†	0.58 (0.34–0.99)†
Revascularization procedures	6 (1.0)	6 (1.0)	1.00 (0.29–3.45)	1.04 (0.30–3.60)

* Conditional logistic regression analyses were used for both the age- and sex-adjusted and the multivariable-adjusted odds ratio estimates. Multivariable-adjusted logistic regression models included age, sex, smoking status, body mass index, and the presence or absence of diabetes mellitus and hypertension.

† $P < 0.05$ between cohorts.

Rheumatoid arthritis versus diabetes as a risk factor for cardiovascular disease: a cross-sectional study, the CARRÉ Investigation

V P van Halm,^{1,2} M J L Peters,¹ A E Voskuyl,¹ M Boers,^{1,3} W F Lems,^{1,2} M Visser,⁴ C D A Stehouwer,^{4,5} A M W Spijkerman,⁴ J M Dekker,⁴ G Nijpels,⁴ R J Heine,^{4,6} L M Bouter,⁴ Y M Smulders,⁷ B A C Dijkmans,^{1,2} M T Nurmohamed^{1,2,7}

	OR (95% CI)	p Value
Model I		
Non-diabetic controls	1.00 (reference)	
DM2	2.62 (1.29 to 5.32)	0.008
RA	2.81 (1.46 to 5.42)	0.002
Model II		
Non-diabetic controls	1.00 (reference)	
DM2	2.31 (1.13 to 4.72)	0.022
RA	3.11 (1.59 to 6.08)	0.001
Model III		
Non-diabetic controls	1.00 (reference)	
DM2	2.01 (0.90 to 4.51)	0.090
RA	2.70 (1.24 to 5.86)	0.012

Cardiovascular Risk/Disease in Type 2 Diabetes Mellitus

WRITTEN BY

Gabriela Roman and Anca Pantea Stoian

Submitted: 09 June 2020 , Reviewed: 25 March 2021 , Published: 20 April 2021

DOI: 10.5772/intechopen.97422

High Cardiovascular Risk: T2DM patients have a 2-3 times higher risk of cardiovascular disease (CVD) than non-diabetics.

Significant Mortality: Over 30% of those with T2DM have CVD and more than half die from it, primarily coronary heart disease, reducing life expectancy by 10-14 years.

Risk Stratification: The European Society of Cardiology and American Association of Clinical Endocrinologists classify T2DM as high to very high cardiovascular risk.

Heart Failure: T2DM increases the risk of heart failure by 75%, requiring a multifactorial approach to reduce cardiovascular morbidity and mortality.

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Arbeitskreis

Rheuma und Herz

kardiovaskuläre Komorbiditäten
und Herzbeteiligung bei
rheumatischen Erkrankungen

Allgemeine Angaben

Alter in Jahren (40–89 Jahre)

Jahre

Syst. BD in mmHg (100–225 mmHg)

mmHg

Geschlecht

☐ Mann ☐ Frau

Blutfettwerte

Gesamtcholesterin (3–9 mmol/l)

mmol/l

HDL (0.65–1.94 mmol/l)

mmol/l

Weitere Angaben

Raucher

☐ Ja ☐ Nein

Moderates Risiko:

LDL-Ziel: < 100 mg/dL (< 2.6 mmol/L)

Hohes Risiko:

LDL-Ziel: < 70 mg/dL (< 1.8 mmol/L)

Sehr hohes Risiko:

LDL-Ziel: < 55 mg/dL (< 1.4 mmol/L)



Life's Simple 7

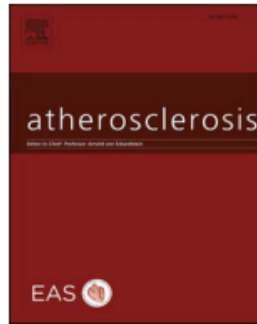




Contents lists available at ScienceDirect

Atherosclerosis

journal homepage: www.elsevier.com/locate/atherosclerosis

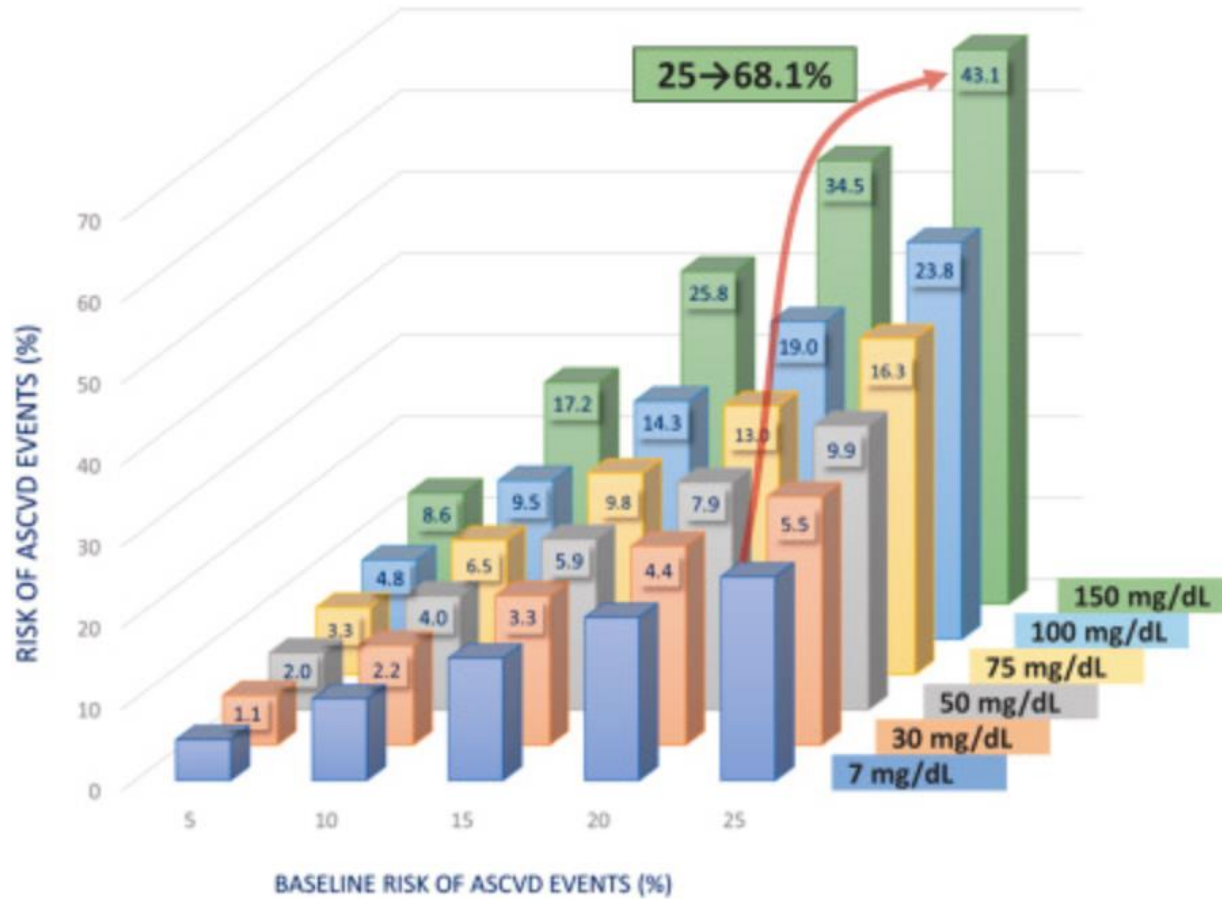


From the EAS

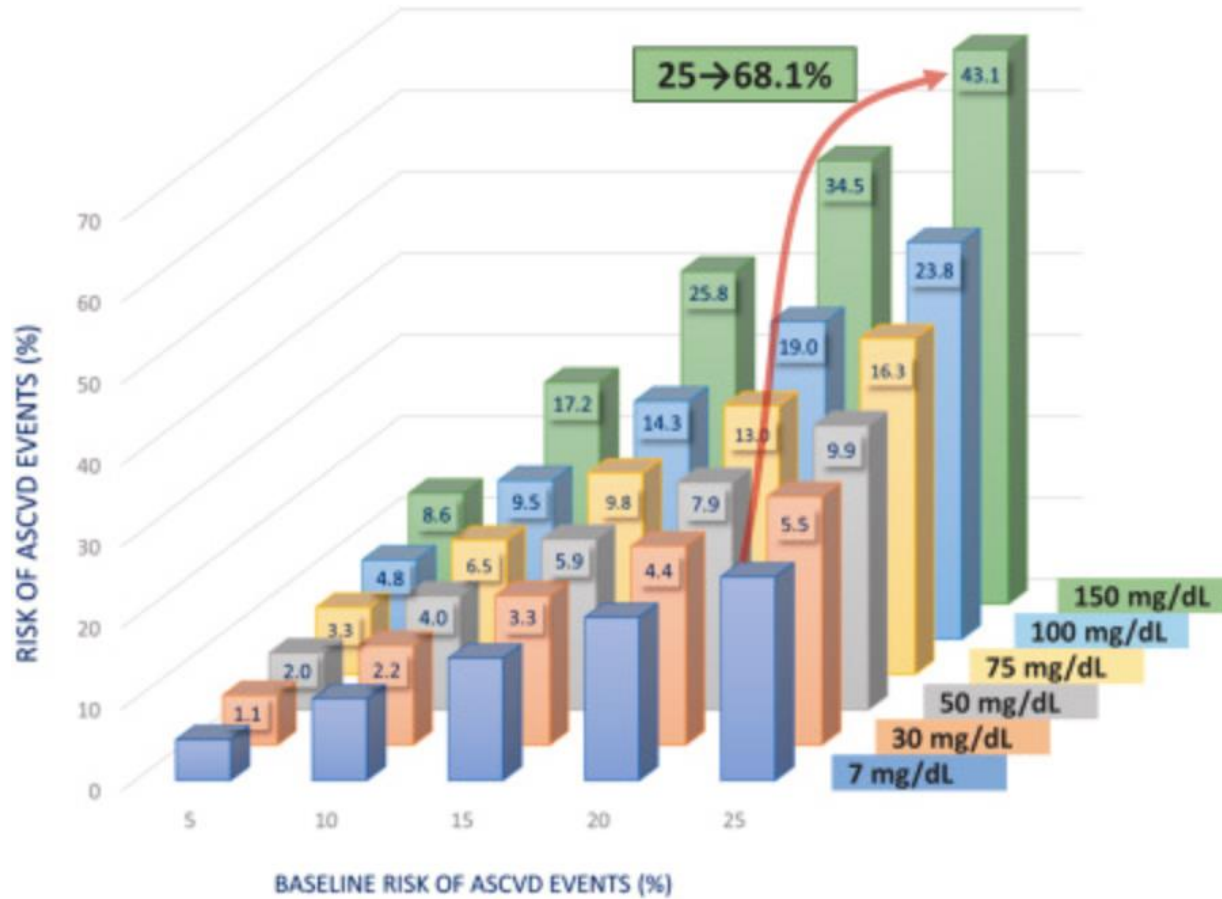
Frequent questions and responses on the 2022 lipoprotein(a) consensus statement of the European Atherosclerosis Society[☆]



Florian Kronenberg^{a,*}, Samia Mora^b, Erik S.G. Stroes^c, Brian A. Ference^d, Benoit J. Arsenault^e, Lars Berglund^f, Marc R. Dweck^g, Marllys L. Koschinsky^h, Gilles Lambertⁱ, François Mach^j, Catherine J. McNeal^k, Patrick M. Moriarty^l, Pradeep Natarajan^{m,n}, Børge G. Nordestgaard^o, Klaus G. Parhofer^p, Salim S. Virani^{q,r}, Arnold von Eckardstein^s, Gerald F. Watts^t, Jane K. Stock^u, Kausik K. Ray^v, Lale S. Tokgözoğlu^w, Alberico L. Catapano^x



Frequent questions and responses on the 2022 lipoprotein(a) consensus statement of the European Atherosclerosis Society[☆]



A Enter your health information below

Cholesterol units: ☐ mmol/L ☒ mg/dL

Height units: ☒ cm ☐ in

Weight units: ☒ kg ☐ lbs

Sex:

Age (ages 30-75):

Height (cm):

Weight (kg):

Cholesterol

Total Cholesterol (mg/dL) (range 135 - 300):

LDL Cholesterol (mg/dL) (range 80 - 200):

HDL Cholesterol (mg/dL) (range 25 - 100):

Systolic Blood Pressure (mmHg) (range 90 - 200):

Are you taking a medicine to lower blood pressure?

Do you have diabetes?

Do you currently smoke?

Have you ever smoked?

Has anyone in your family had a heart attack or stroke?

Frequent questions and responses on the 2022 lipoprotein(a) consensus statement of the European Atherosclerosis Society[☆]



Lepodisiran — A Long-Duration Small Interfering RNA Targeting Lipoprotein(a)

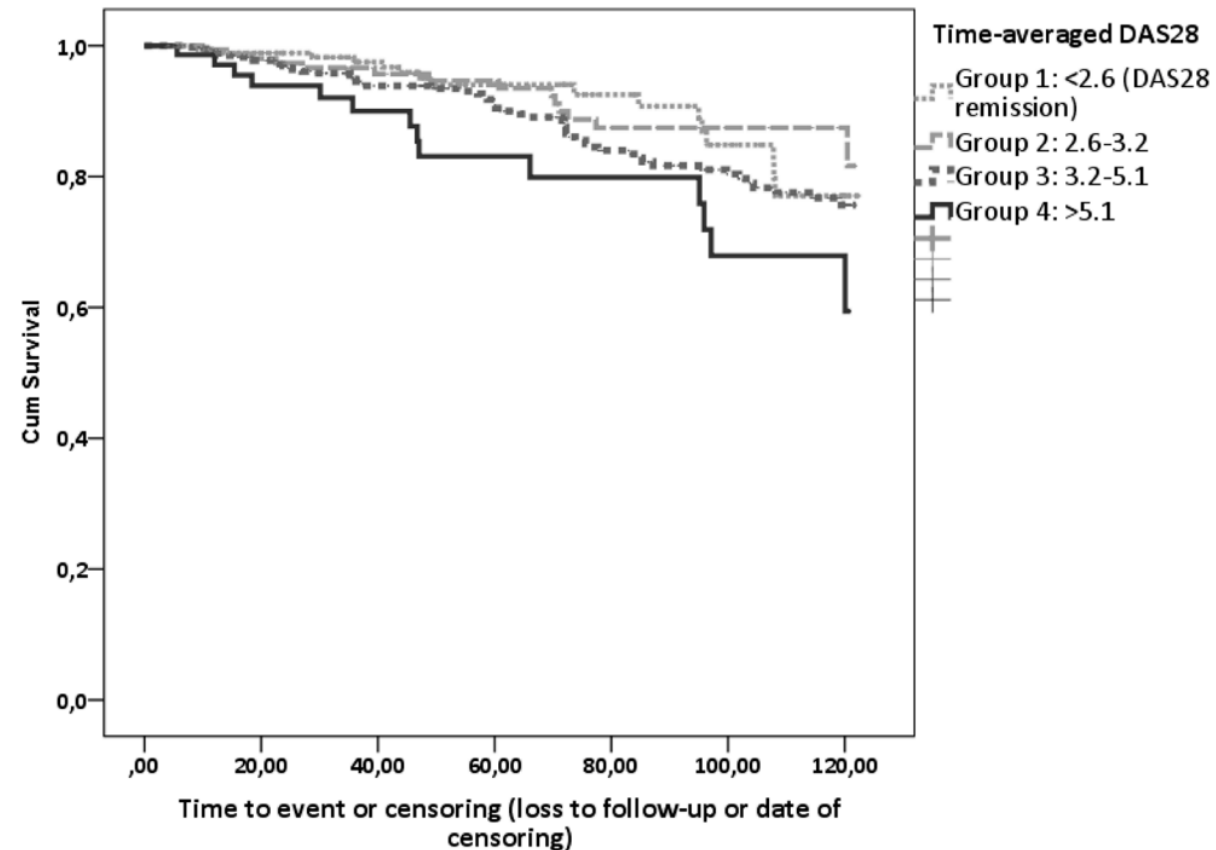
Authors: Steven E. Nissen, M.D. , Wei Ni, Ph.D., Xi Shen, Ph.D., Qiuqing Wang, M.S., Ann Marie Navar, M.D., Ph.D., Stephen J. Nicholls, M.B., B.S., Ph.D., Kathy Wolski, M.P.H., Laura Michael, Ph.D., Axel Haupt, M.D., and John H. Krege, M.D., for the ALPACA Trial Investigators* [Author Info & Affiliations](#)

CONCLUSIONS

Lepodisiran reduced mean serum concentrations of lipoprotein(a) from 60 to 180 days after administration. (Funded by Eli Lilly; ALPACA ClinicalTrials.gov number, [NCT05565742](#).)

Low disease activity ($\text{DAS28} \leq 3.2$) reduces the risk of first cardiovascular event in rheumatoid arthritis: a time-dependent Cox regression analysis in a large cohort study

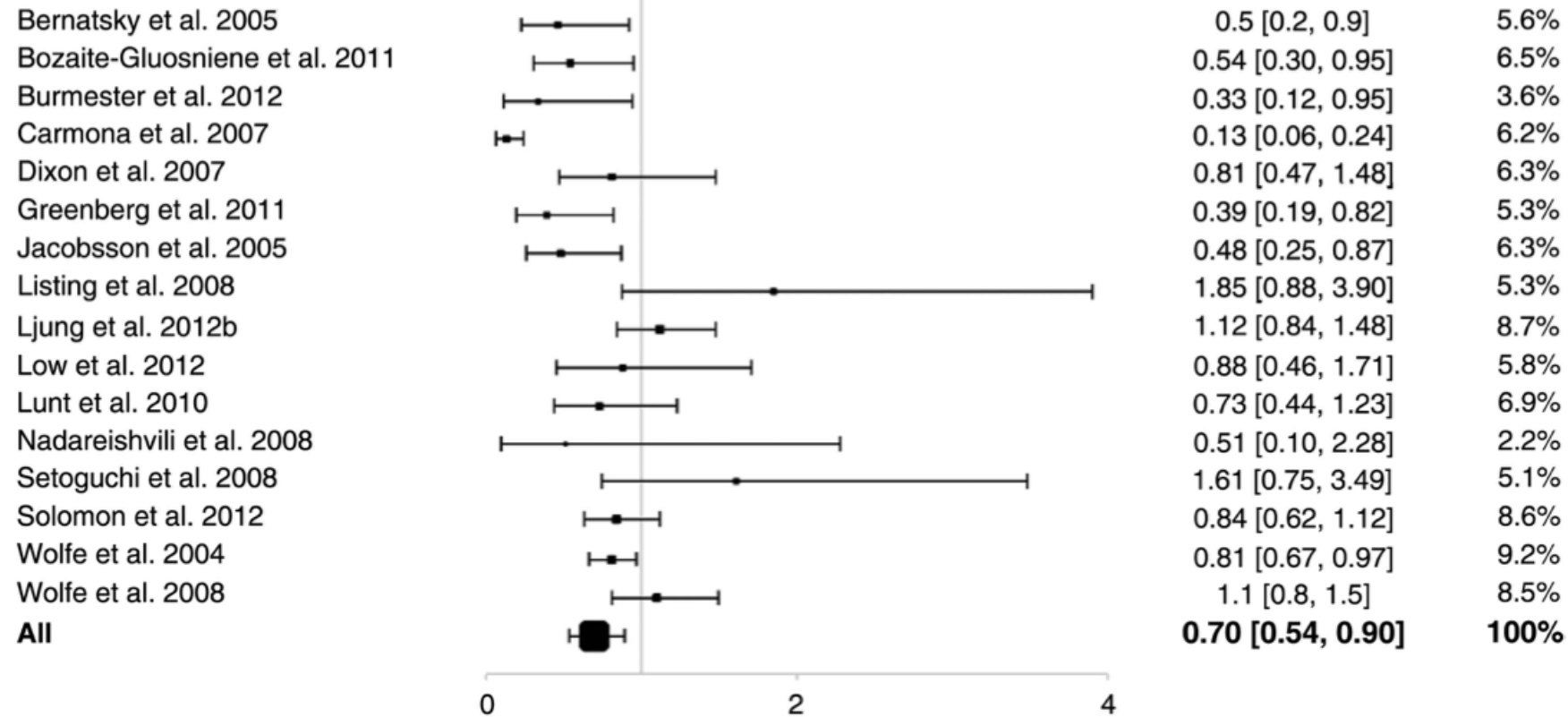
Elke EA Arts,¹ Jaap Fransen,² Alfons A Den Broeder,³ Piet L C M van Riel,^{4,5}
Calin D Popa^{1,3}



TNF-Inhibitoren and Cardiovascular Risk

A Tumour necrosis factor inhibitors

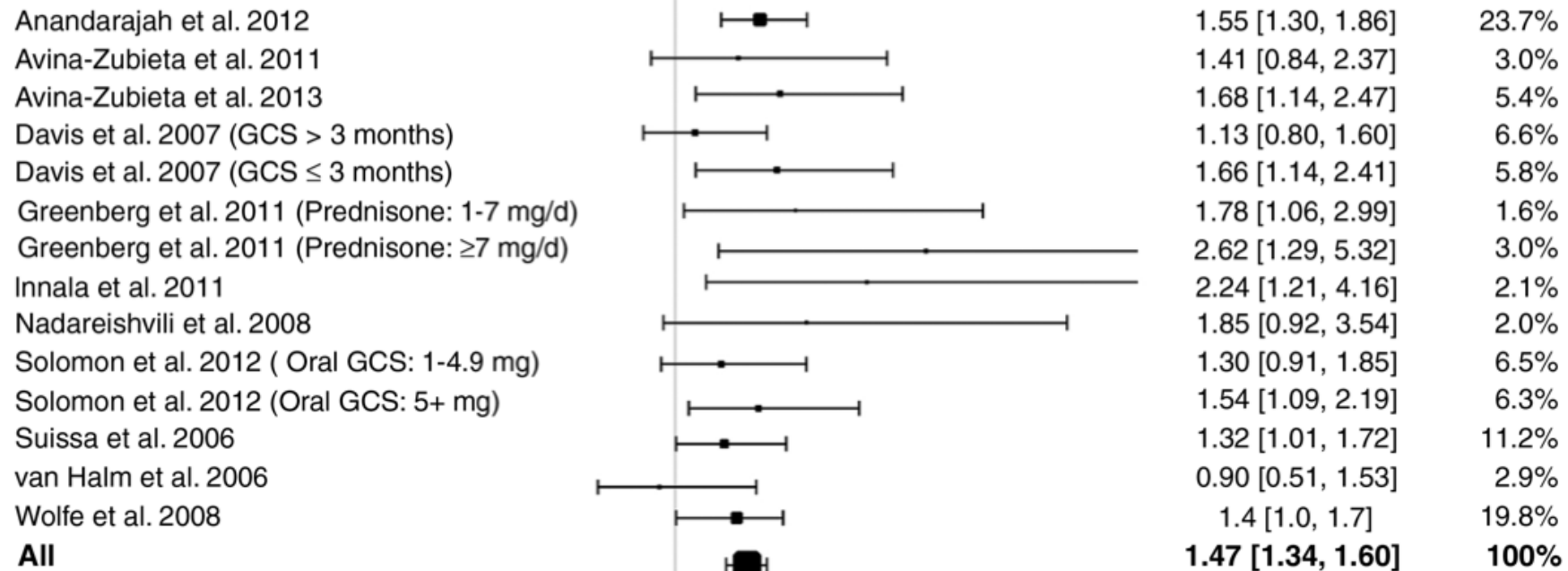
All CVE



Corticosteroids and Cardiovascular Risk

D Corticosteroids

All CVE



Heterogeneity: $\tau^2=0.00$; $\text{Chi}^2=13.44$, $\text{df}=12$ ($p=0.34$); $I^2=11\%$

Test for overall effect, $Z=7.60$ ($p<0.00001$)

TIME TO DIAGNOSIS AND ASSOCIATED COMORBIDITY BURDEN IN AXIAL SPONDYLOARTHRITIS IN GENERAL PRACTICE IN FRANCE: RESULTS FROM THE THIN® DATABASE

Keywords: Observational studies/registry, Real-world evidence, Comorbidities

C. Prati¹, A. Constantin², E. Dernis³, S. Le Mouel⁴, M. Rozenblat⁵, J. E. Gottenberg⁶, C. Tamberou⁷, E. Arnee⁸, A. Vyncke⁹, M. Ducros⁸, J. Gandrup Horan¹⁰

Conclusion: Diagnostic delay remains a key challenge for patients with axSpA in France, with several consultations for back pain in primary care prior to diagnosis and an average time to diagnosis of over 6 years after the earliest back pain consultation. An increased number of musculoskeletal, non-musculoskeletal manifestations and comorbidities were observed at the time of axSpA diagnosis compared to when back pain was first consulted for, highlighting worsening disease burden over time. Importantly, patients may have experienced pain long before consulting their GP, further contributing to diagnostic delays. Interventions are needed to support GPs in recognising chronic back pain patients who could benefit from a timely referral to rheumatology. Earlier diagnosis of axSpA may ultimately lower the burden on patients, healthcare systems and society.

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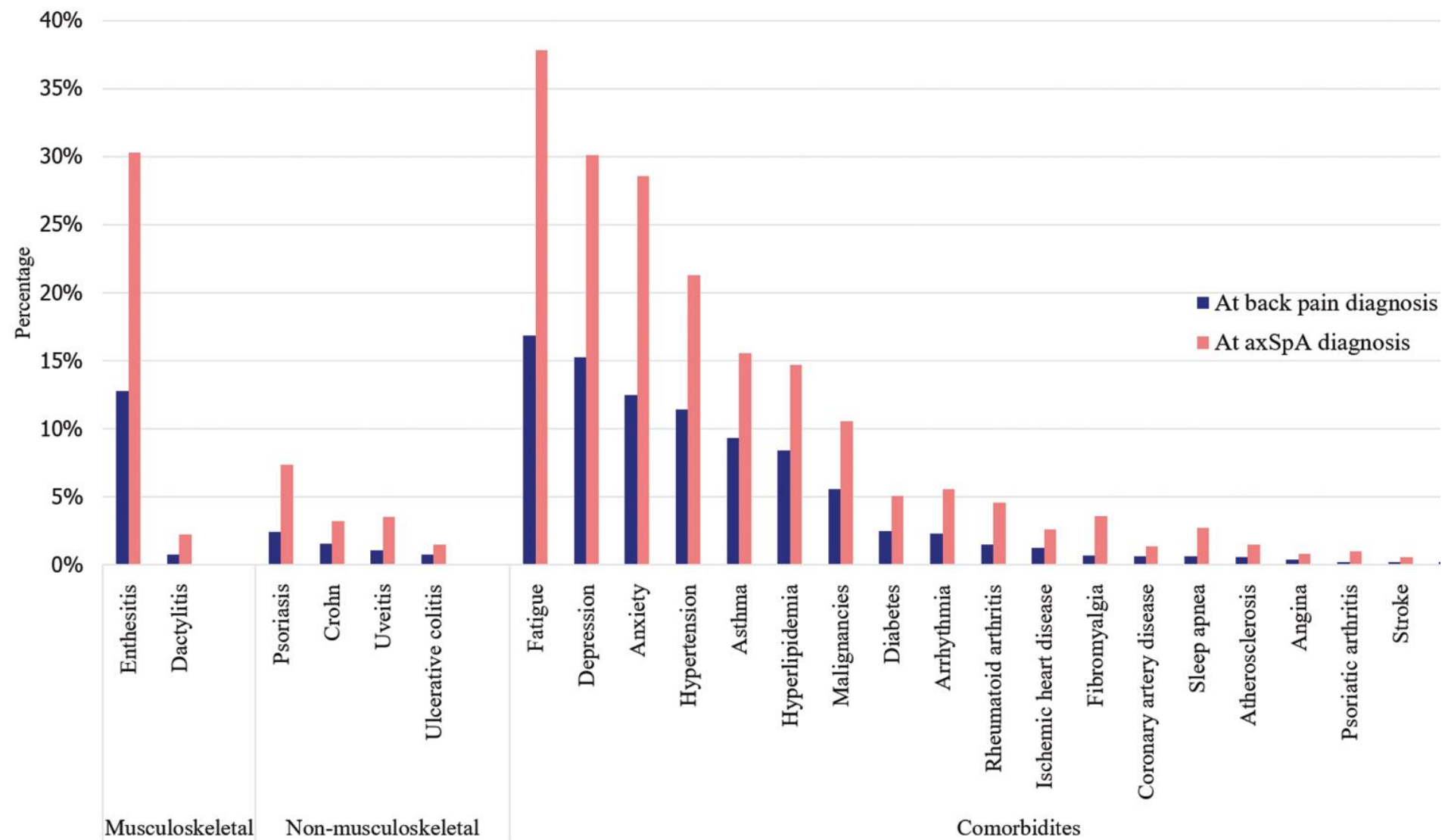
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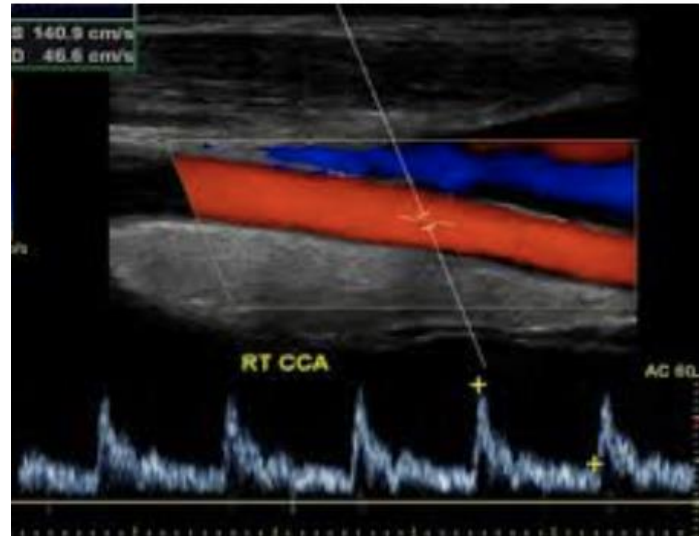
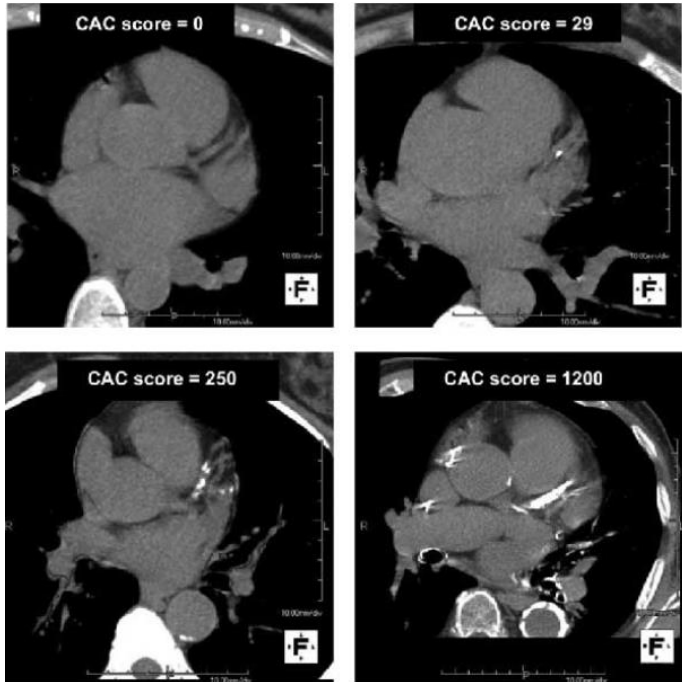
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Screening ?



RadiologyInfo.org



 Salzburger Landeskliniken

OBSERVATIONAL RESEARCH

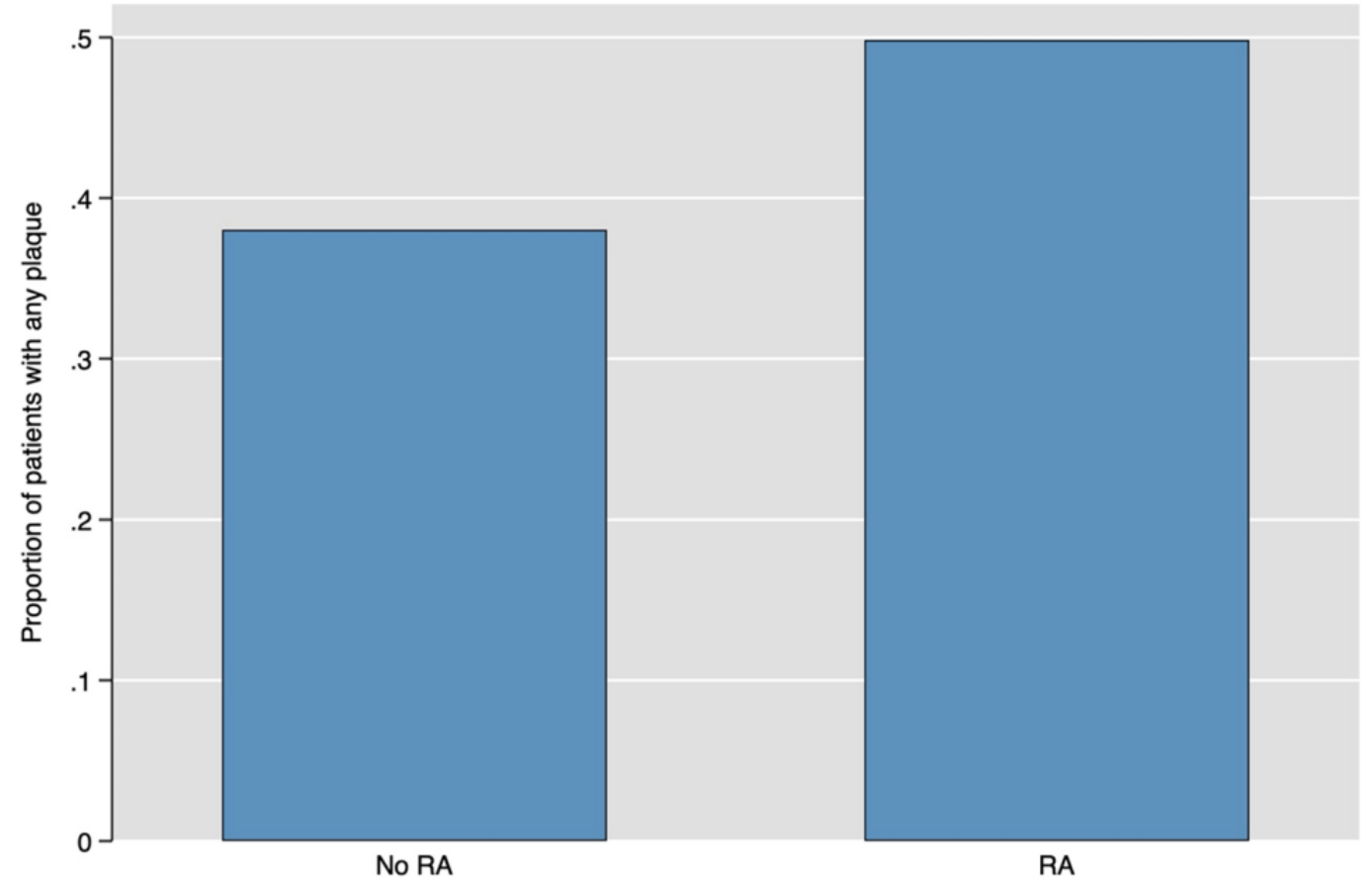
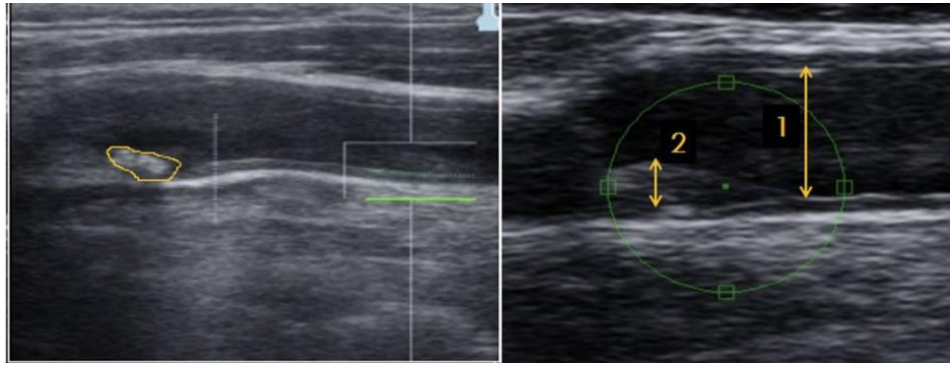


Cerebrovascular risk in rheumatoid arthritis patients: insights from carotid artery atherosclerosis in the Paracelsus 10,000 study

Mathias Ausserwinkler^{1,2}  · Sophie Gensluckner²  · Vanessa Frey^{3,4}  · Isabella Gostner³ · Bernhard Paulweber²  · Eugen Trinkka^{3,4}  · Patrick Langthaler^{3,4}  · Christian Datz⁵  · Bernhard Iglseder⁶  · Jens Thiel^{7,8}  · Hans-Joerg Neumann¹ · Maria Flamm⁹  · Elmar Aigner²  · Bernhard Wernly^{5,9,10} 

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Prognose der Herzinsuffizienz bei Patienten mit rheumatoider Arthritis

Meissner Y¹, Schäfer M¹, Manger B², Zänker M³, Ochs W⁴, Listing J¹, Strangfeld A¹

¹Deutsches Rheuma-Forschungszentrum (DRFZ), Programmbereich Epidemiologie, Berlin; ²Rheumatologie und Immunologie, Universitätsklinikum, Erlangen; ³Innere Medizin, Immanuel Klinikum, Bernau; ⁴Internistisch-rheumatologische Praxisgemeinschaft, Bayreuth



NYHA CLASS



Class I

No symptoms
Can perform ordinary activities without any limitations

Class II

Mild symptoms
Occasional swelling
Somewhat limited in ability to exercise or do other strenuous activities
No symptoms at rest

Class III

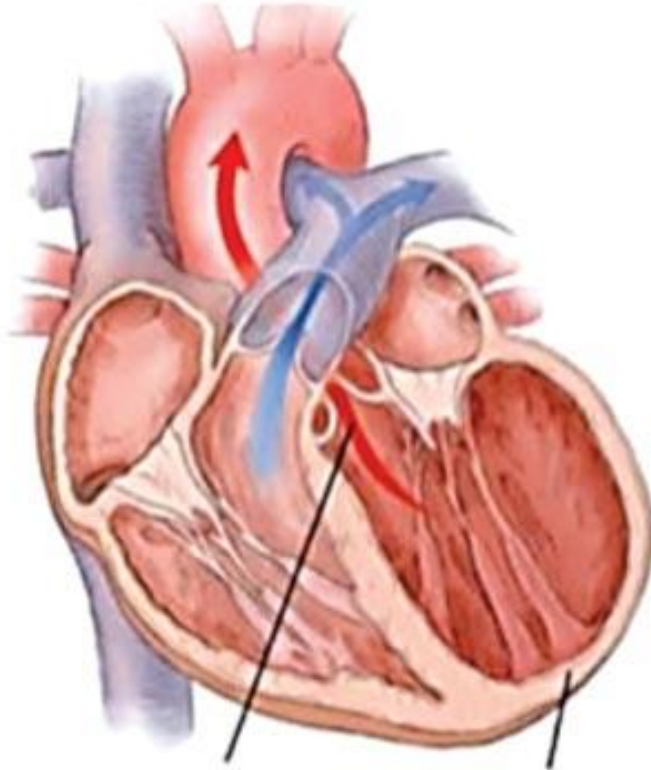
Noticeable limitations in ability to exercise or participate in mildly strenuous activities
Comfortable only at rest

Class IV

Unable to do any physical activity without discomfort
Symptoms at rest

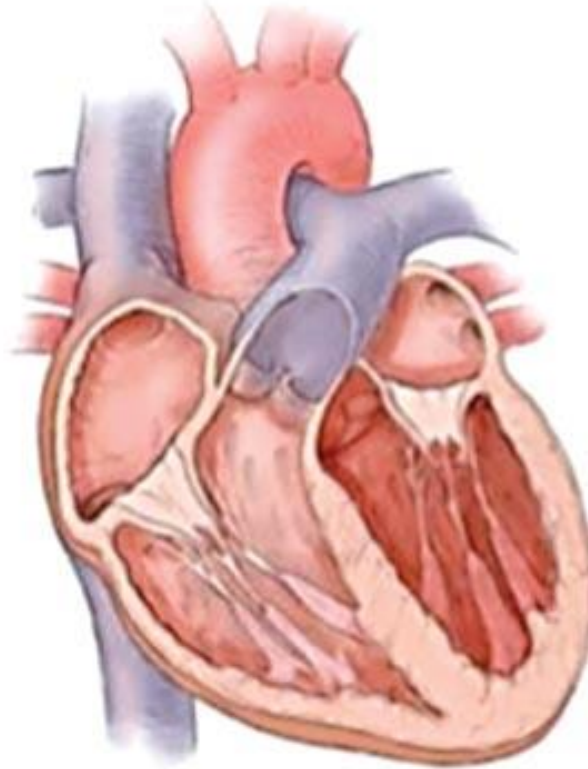


Heart Failure Reduced Ejection Fraction

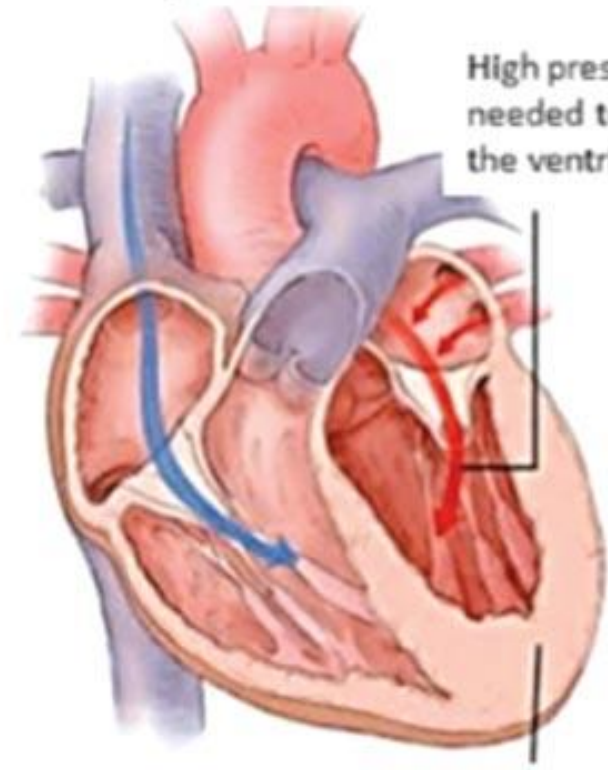


- Enlarged left ventricle
- Reduced pumping ability
- Thinned walls
- Weakened muscle

Normal Heart



Heart Failure Preserved Ejection Fraction



- Normal or small left ventricle size
- Thickened walls
- Stiff muscle
- Normal pumping capacity

2021 ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure

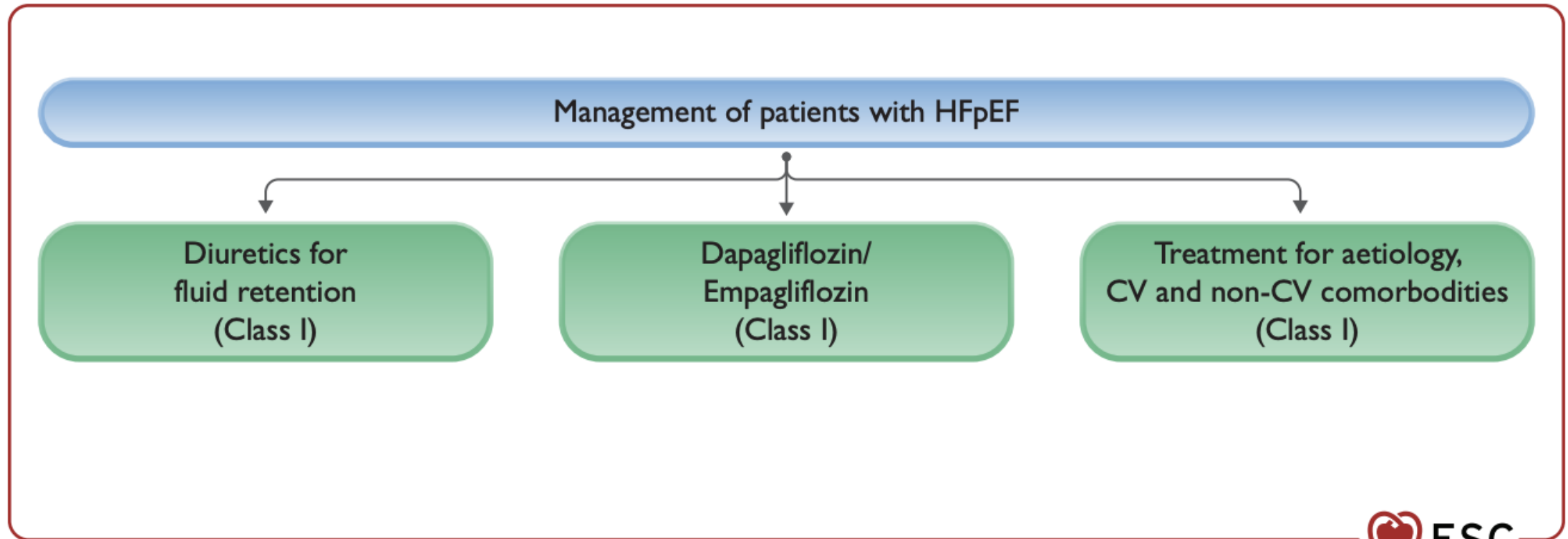
Developed by the Task Force for the diagnosis and treatment of acute and chronic heart failure of the European Society of Cardiology (ESC)

Management of patients with HFrEF



- ACE-I/ARNI^a
- Beta-blocker
- MRA
- Dapagliflozin/Empagliflozin
- Loop diuretic for fluid retention
(Class I)

2023 Focused Update of the 2021 ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure



Association between rheumatoid arthritis and atrial fibrillation: A systematic review and meta-analysis

Vikash Jaiswal MD¹  | Poulami Roy MBBS² | Song Peng Ang MD³ |
Nishat Shama MD⁴ | Novonil Deb MBBS² | Amira Mohamed Taha MD⁵ |
Kripa Rajak MD⁶ | Akanksha Sharma MD⁷ | Anupam Halder MD⁶ |
Zarghoona Wajid MD⁸ | Vibhor Agrawal MBBS⁹  | Harpriya Khela MBBCH¹⁰ |
Monodeep Biswas MD, FACC, FASE, CCDS¹¹

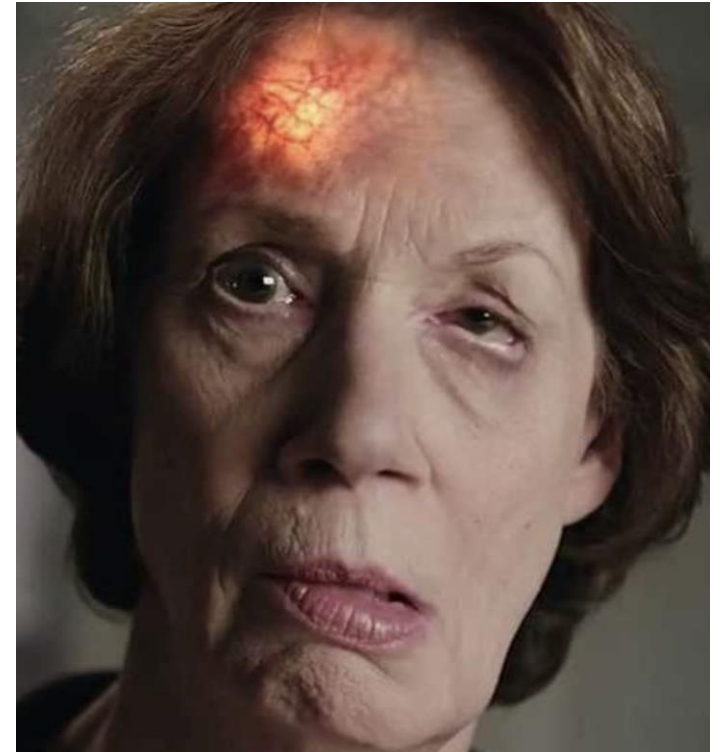


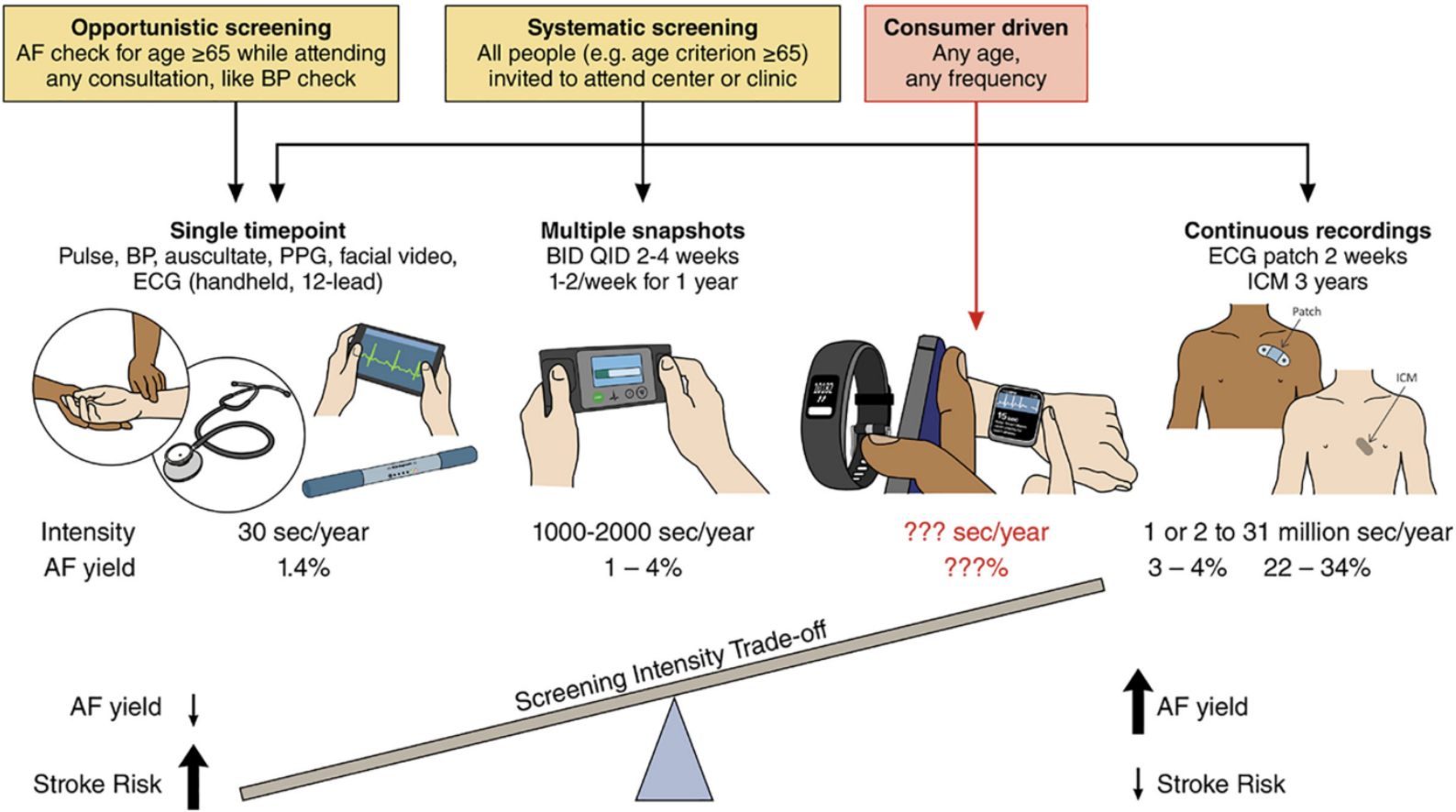
- Studiendesign:

7 Beobachtungsstudien, 4.679.930 Patienten (81.677 mit RA)

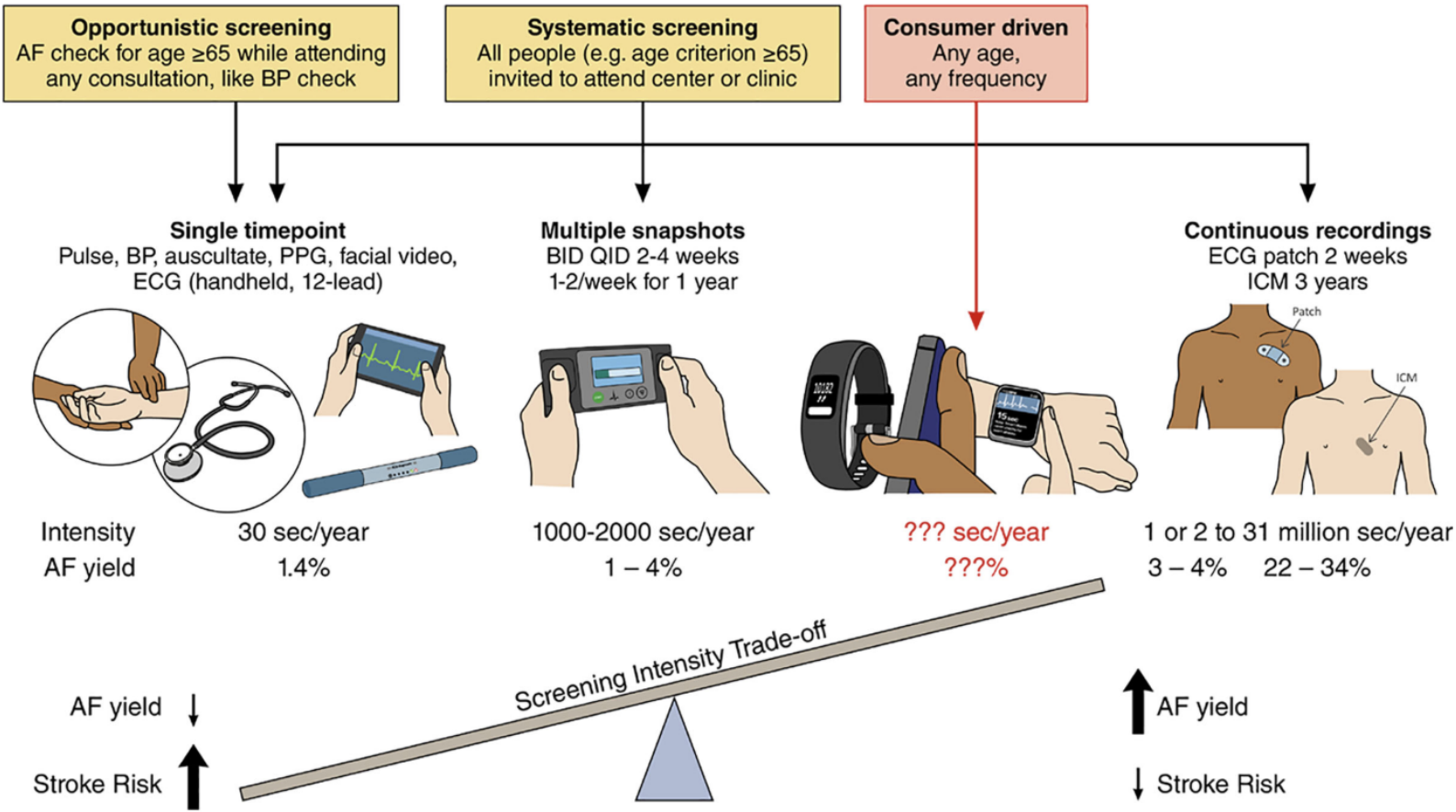
- Ergebnisse:

VHF: OR 1,53 (95% CI: 1,16–2,03, $p < 0.001$)



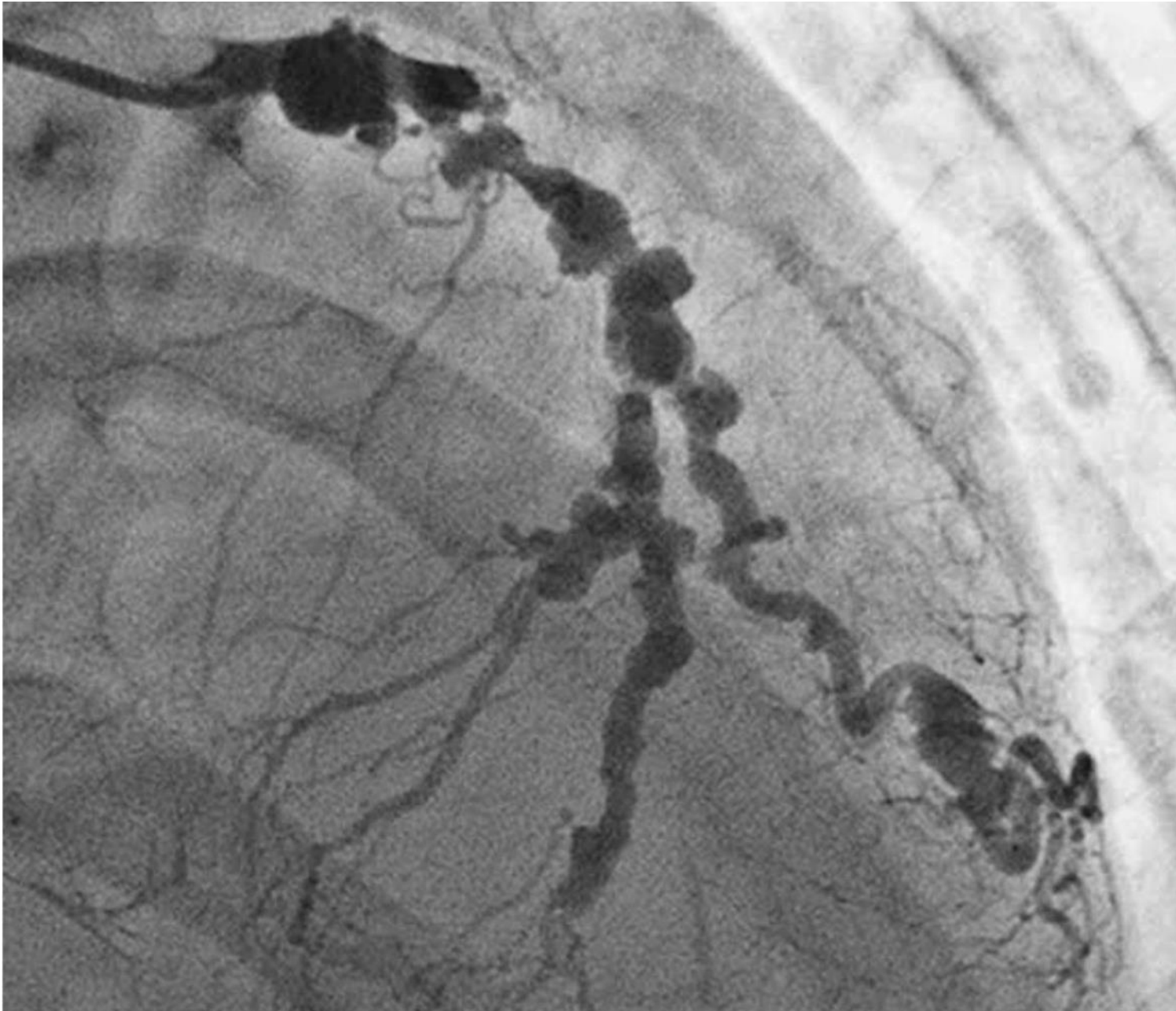


Consumer-Led Screening for Atrial Fibrillation: Frontier Review of the AF-SCREEN International Collaboration. Circulation. [Axel Brandes, MD](#)



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