

Sneak peek: The CVD Prevention Mobile App

A Resource generated within the
ESC CVD Prevention Programme

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Background: Usage of Risk Calculators

- Guidelines on the prevention of CVD **recommend the use of risk prediction tools** for better risk stratification of individual patients.
- Improves clinical outcomes and resources allocation.
- CVD risk assessment in clinical practice across Europe is **not adequate**.
- **Simple** risk assessment tools are warranted.

Case study themes	Country							
	Bulgaria	Germany	UK	Greece	Spain	Finland	Latvia	Sweden
Policies and guidelines								
ESC prevention guidelines are endorsed	X	X		X	X	X	X	X
Also have national guidelines		X	X	X	X	X	X	X
Also have regional guidelines					X			X
The SCORE risk assessment tool is recommended	X	X		X	X	X	X	X
Alternative risk assessment tools in addition to/instead of SCORE are also recommended			X		X	X		
Financial incentive for risk assessment			X				X	
Current practice								
Risk assessment is primarily the responsibility of GPs and mostly takes place in primary care	X	X	X		X	X	X	X
CVD risk assessment is acceptable to patients	X	X	X	X	X	X	X	X
CVD risk assessment is targeted at specific population groups	X	X	X	X	X	X	X	X
Use of risk assessment is variable between health professionals, practices and regions and often is not frequently used	X	X	X	X	X	X	X	X
Risk assessment is often estimated based on risk factors rather than formally calculated	X	X	X	X	X			
Treatment and secondary prevention are prioritized	X		X			X	X	X
There are mixed views regarding the acceptability of risk assessment tools for use in practice	X	X	X	X	X	X		
Barriers								
Time constraints and clinician workload	X	X	X	X	X	X	X	X
Shortage/under-utilization of nurses	X			X	X	X	X	X
Funding for risk assessment and follow-up	X		X	X	X		X	
Lack of re-imbursment of medicines prescribed for primary prevention	X			X				
Lack of awareness of risk assessment among clinicians	X	X		X				X
Lack of awareness of risk assessment among patients	X	X						X
Facilitators								
Simple risk assessment tools		X	X	X				X
Incorporation of risk assessment tools into electronic medical records	X		X	X	X	X		
Calibration of risk assessment tools to national populations		X	X					
Flexibility in the setting for risk assessment			X			X		X
Training for clinicians			X	X	X			X
Awareness raising activities	X			X	X	X	X	

Background: Usage of Risk Calculators

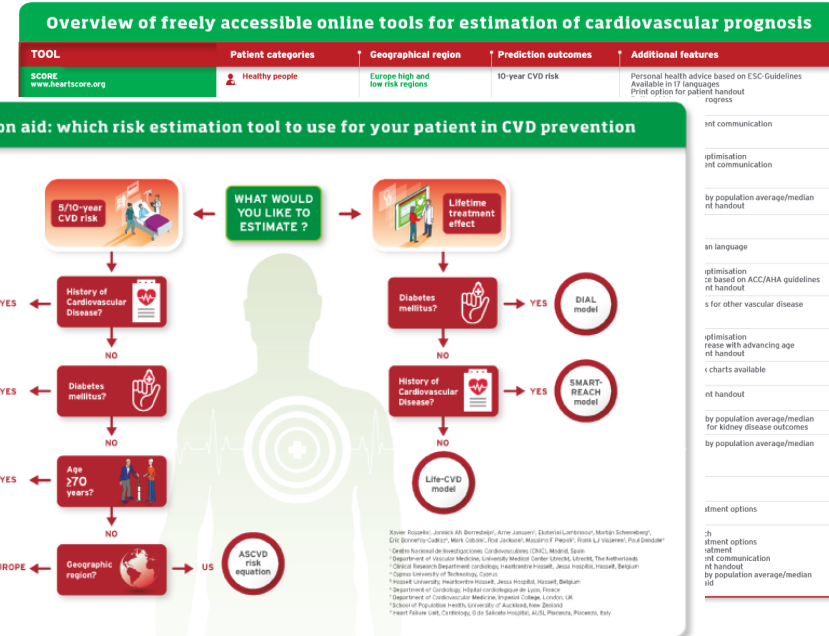
- Different cardiovascular risk algorithms are needed for different **groups of patients**
 - young patients
 - older patients
 - diabetic patients
 - high-risk patients
- Different **geographic regions**
 - Europe (SCORE)
 - UK (QRISK)
 - North America (pooled cohort equations)
- Different **time frames/measures**
 - 10-year risk
 - lifetime risk
 - heart age

Background: Usage of Risk Calculators

- Selection and endorsement of available risk calculators

Rosello X et al. Risk prediction tools in cardiovascular disease prevention. Eur J Prev Cardiol. (2019) / Eur Heart J Acute Cardiovasc Care. (2019) / Eur J Cardiovasc Nurs. (2019)
<https://doi.org/10.1177/2047487319846715>

- Provide tables /charts for selection of risk calculators
www.escardio.org/cvd-prevention



Aim: To provide one easy-to-use interface

Which calculator would you like to use?

[Help me find the right calculator](#) [How to use the calculator?](#)

Patient Group	Calculate 5 or 10-year cardiovascular risk	Calculate lifetime treatment effect
Previous cardiovascular disease	SMART risk score	SMART-REACH model
Type 2 Diabetes Mellitus	ADVANCE risk score	DIAL model
< 70 years <small>No or minimal cardiovascular disease or type 2 diabetes mellitus</small>	SCORE/ASCVD	LIFE-CVD model
≥ 70 years	Elderly risk score	USE ONE of the above

ADVANCE risk score

Intended Treatment

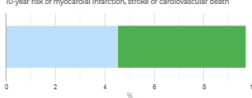
Systolic blood pressure: < 130 mmHg

Current smoking:

LDL cholesterol ≤ 100 mg/dL:

Antithrombotic treatment:

10-year risk of myocardial infarction, stroke or cardiovascular death



10% 5.2% 19

Current risk Reduction with treatment 10-year individual NNT

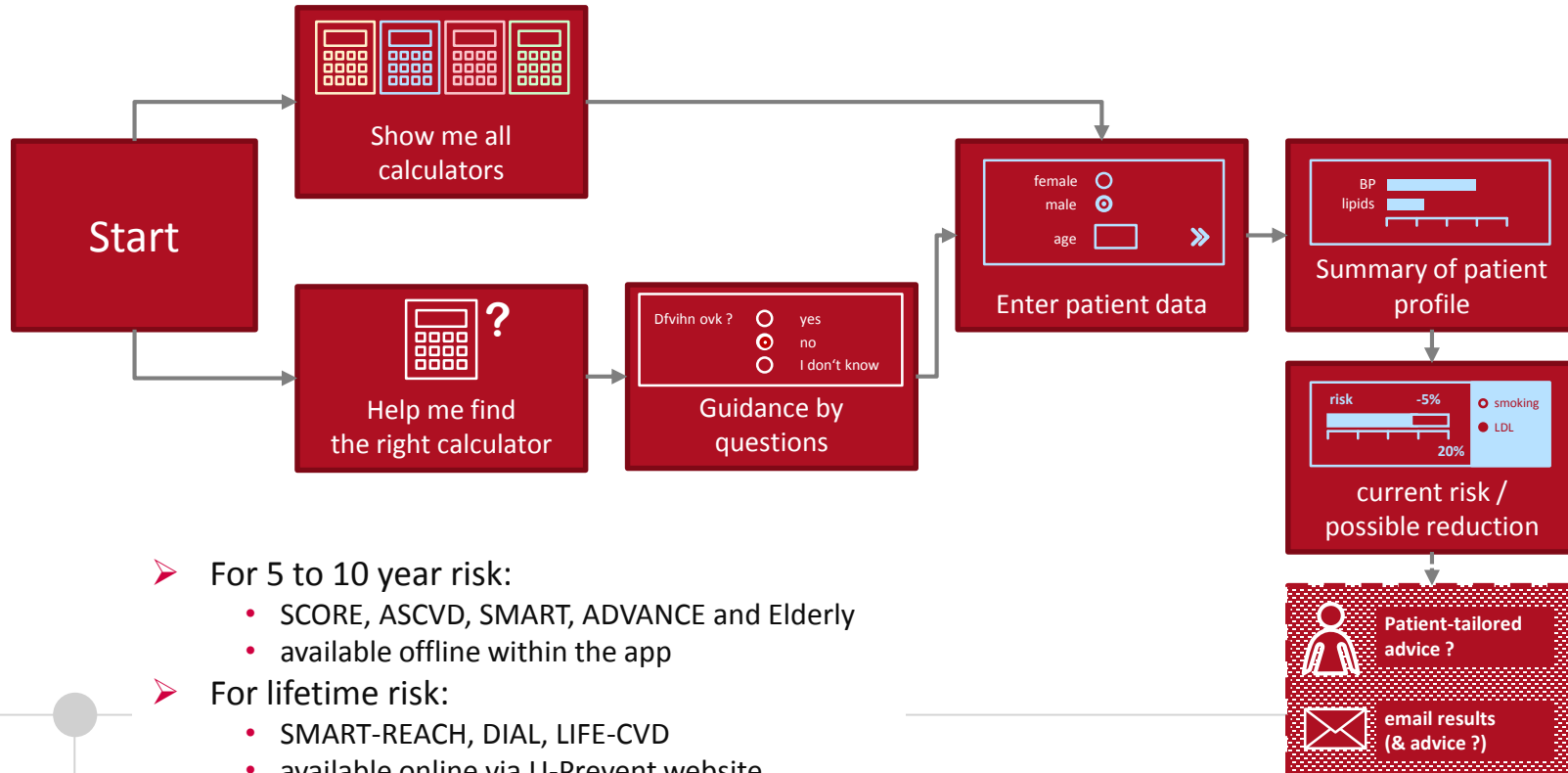
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Creation of the app: Where we stand

- An **agreement** was made with the **University of Utrecht** for their involvement in developing the app following their creation of the U-Prevent website
- Advisory Group and the EAPC Primary Care section helped refine the app functionalities and calculators
 - The calculators SCORE, ASCVD, SMART, ADVANCE and Elderly will be available **offline** in the app.
 - The calculators SMART-REACH, DIAL, LIFE-CVD (Lifetime risk and treatment effect) will be available **online** and linked to from the app
- **EU regulation on medical devices** meant investigation into possible certification was required, delaying the search for a supplier
 - after consultancy: certification is not necessary
- **Supplier** has been **appointed** and app production is being planned
- Feedback/**user testing** by the EAPC primary care section during the development phase (usability in daily practice)

Creation of the App: Functional overview



- For 5 to 10 year risk:
 - SCORE, ASCVD, SMART, ADVANCE and Elderly
 - available offline within the app
- For lifetime risk:
 - SMART-REACH, DIAL, LIFE-CVD
 - available online via U-Prevent website

Creation of the App: Functional overview

Summary

- patient profile
- current risk
- possible risk reduction
- main advice
- (possibility to show patient-tailored advice, based on guidelines ?)

Graphical reports

Option to email results and advice

Resources

- Links to relevant European guidelines
- Link to website
- Relevant papers and other materials
- Explanation page on the different tools used in the app

About

- How to use the app
- Version of the app
- Scope of the development of the app
- Sponsors of the programme
- Contact details

Creation of the App: Future plans

- Target audience: **Health Care Professionals**
- Initially in English
- Planned launch: 2020
- Regular **updates** (new/updated ESC guidelines)

- Additional tools and functionalities considered for **future releases**:
 - Additional languages
 - Addition of additional calculators like Globorisk, Qrisk, WHO, MAGGIC
 - Inclusion of Heart Age as an output measure (to facilitate communication to the patient)
 - Inclusion other sub-populations (AF, HF, ...)
 - SCORE calibrated per country
 - Patient data storage

Thank you!

Special thanks to all the **volunteers** involved in this project !



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