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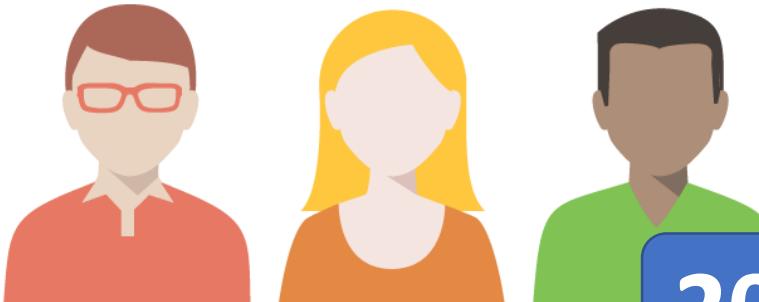


# Dementia in Numbers



# Dementia in Numbers

44 million



2003

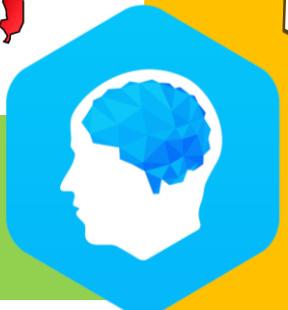
...2X every 20 years



# Dementia in Numbers

**76m by 2030**

**136m by 2050**



# Dementia in Numbers

Estimated annual worldwide cost of dementia was:

**\$604B** in 2010





**6 per year!**

# Background

- No known cure!
- Major public health priority by the

G8 Dementia Summit & WHO



# Background

- The **CAIDE** (Cardiovascular Risk Factors, Aging, and Incidence of Dementia) Dementia Risk Score was developed to identify individuals at increased risk for dementia.
- This risk score is based on risk factors such as:
  - Age
  - Hypertension
  - High cholesterol
  - Physical inactivity
  - Obesity
  - Educational level



# CAIDE Risk Score Study

- The intervention consisted of nutritional guidance, exercise, cognitive training, and monitoring of risk factors.
- Participants: with risk factors present and cognitive performance at mean or lower.
- When participants were subjected to an intensive lifestyle intervention for 2 years, there was a significant beneficial effect on global cognition score:
  - The score in the intervention group was 25% higher than control group.
  - The risk of cognitive impairment was 31% higher in the control group compared to the intervention group.



# More findings

These findings indicate that the CAIDE Dementia Risk Score is an extremely valuable tool for detecting individuals at high risk for dementia, who are also likely to benefit from lifestyle interventions.

**Important:** Most of the risk factors for dementia and cognitive decline are modifiable!





## CAIDE Dementia Risk App (*Dementia Risk Tool*):

- ❖ Assess the 20-year risk of developing dementia.
- ❖ Inform users about the meaning of their risk score through a graphic display.
- ❖ Provide users with guidance and suggestions for methods to decrease their score.
- ❖ Recommend users to consult with a health care practitioner (if needed).



# Methods



Dementia Risk Tool  
RISE SICS

Medical



## CAIDE Dementia Risk Score APP:

- To develop the CAIDE Risk Score App, the authors worked with Merz Pharmaceuticals Germany.
- Users are asked to enter age, sex, height, weight, cholesterol level, blood pressure, physical activity, and years of education.

Let's see!

Risk score	
0-5	1 %
6-7	1.9 %
8-9	4.2 %
10-11	7.4 %
12-15	16.4 %



# Explanation - beginning

## Dementia Risk Tool



The Dementia Risk Tool mobile app allows you to get an estimate of your risk of developing dementia in the future.

The app will pose a series of questions concerning factors that affect the risk, and then calculates a risk score based on your answers. It will also give you advice on how you can lower the risk via lifestyle changes.

**Please note that the calculated risk is not an absolute prediction for a single individual as there are other factors as well. Although the risk tool app is based on studies with participants aged 40 and over, the risk score results can also apply to younger adults.**

## MULTI-MODE

The Dementia Risk Tool was developed within the EIT-funded MULTI-MODE project. The project partners are Karolinska Institute (Sweden), RISE (Sweden), Imperial College London (UK), Parc Sanitari Sant Joan de Deu (Spain) and Erasmus University Medical Centre Rotterdam (the Netherlands).



The Dementia Risk Tool uses for instance the Cardiovascular Risk Factors, Aging, and Incidence of Dementia (CAIDE) risk score model to predict the risk of developing dementia in the future among middle aged and elderly people ([see reference](#)).

## Contribute to research

Using the Dementia Risk Tool you can also contribute to research by allowing us to anonymously collect and analyse your answers to the app's questions. If you give your consent below, your answer data will be sent to a secure scientific database, where it can be accessed and analysed by [RISE](#) scientists.



I agree that my answers are collected, stored and analysed anonymously for scientific purposes according to our [Privacy Policy](#).

# Visualization

The first four screens show the entry of personal information:

- How old are you?**: A slider with a value of 25. Below it is a note: "Pull slider or use - and + to enter age, press OK when done".
- What is your weight?**: A slider with a value of 125 lbs. Below it is a note: "Enter weight in pounds, press OK when done". Units (Kg, Pound, Stone) are shown below the slider.
- What is your blood pressure?**: A slider with a value of 120 / 70 mmHg. Below it is a note: "Enter systolic (top) and diastolic (bottom) blood pressure. Press OK when done or Skip if you don't know your values".
- How many times a week do you exercise or engage in physical activity?**: A slider with a value of 4. Below it is a note: "Count physical activities that last at least 20 minutes, and that cause sweating and breathlessness".

The fifth screen shows the education level selection:

**What is your level of education?**: Includes primary school and vocational studies or other secondary studies. Options: -6 Years (orange icon), 7 - 9 Years (green icon), 10+ Years (blue icon).

Note: app interface has changed since paper publication, but algorithm remains the same.

# SCORE



4.8

The three screens show the risk score results:

- Low Risk (0/15)**: Your answers indicate that your risk of developing dementia in the next 20 years is **LOW** (1%). The risk is lower than the average in your age group.
- Moderate Risk (3/10)**: Your answers indicate that your risk of developing dementia in the next 10 years is **MODERATE** (6.8%). The risk is higher than the average in your age group. By making changes to your lifestyle you can reduce your risk score, click to see how.
- High Risk (9/12)**: Your answers indicate that your risk of developing dementia in the next 10 years is **HIGH** (35.9%). The risk is higher than the average in your age group. By making changes to your lifestyle you can reduce your risk score, click to see how.

Each screen includes a "Back to start" button at the bottom.

-Depression  
-Heart disease  
-Memory  
-Brain disease  
-Diabetes



# Guidance for risk reduction

By making changes to your lifestyle you can reduce your risk score, click to see how.

Following these tips could reduce your risk score from **11** to **8**



## Diabetes

It is important to get the right treatment for diabetes from your healthcare provider.

## Memory loss

A combination of healthy eating and exercise is good for your brain. If you feel that your memory is clearly worse than before, it is important to contact your healthcare provider.

## Cerebrovascular disease

It is important to get the right treatment for cerebrovascular diseases from your healthcare provider.

## Physical activity

Try to exercise for **at least 20 minutes twice a week**, it could reduce your risk score by **2**.

Research suggests that even small amounts of exercise (including simple exercise like walking) seem to be good for brain health and may protect against dementia. Any physical activity you can build into your daily routine will help. For example:

- Take the stairs instead of the elevator or escalator
- Go for a walk every day for as long as you can

- Work in the garden
- Dancing is a very social activity and can be an enjoyable way to participate in exercise.

## Depression

If you can take steps to feel less depressed it may reduce your risk score by **1**.

It is important to get the right treatment for depression, start by contacting your healthcare provider. Many people with depression benefit from increased activity and socialization, including things like exercise, time with children and activities involving pets.

# Conclusions



The CAIDE Dementia Risk Score is a validated tool to predict late-life dementia risk (20 years later), based on midlife risk factors.

The goal was to make this prediction tool (*the score*) widely accessible.



# Conclusions



The CAIDE Risk Score App is the first to predict the risk for dementia through an important evidence-based tool.

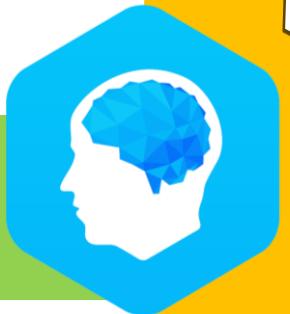
The App can encourage users to actively decrease their risk factors & postpone dementia, taking more responsibility for their health! 💪



# Conclusions

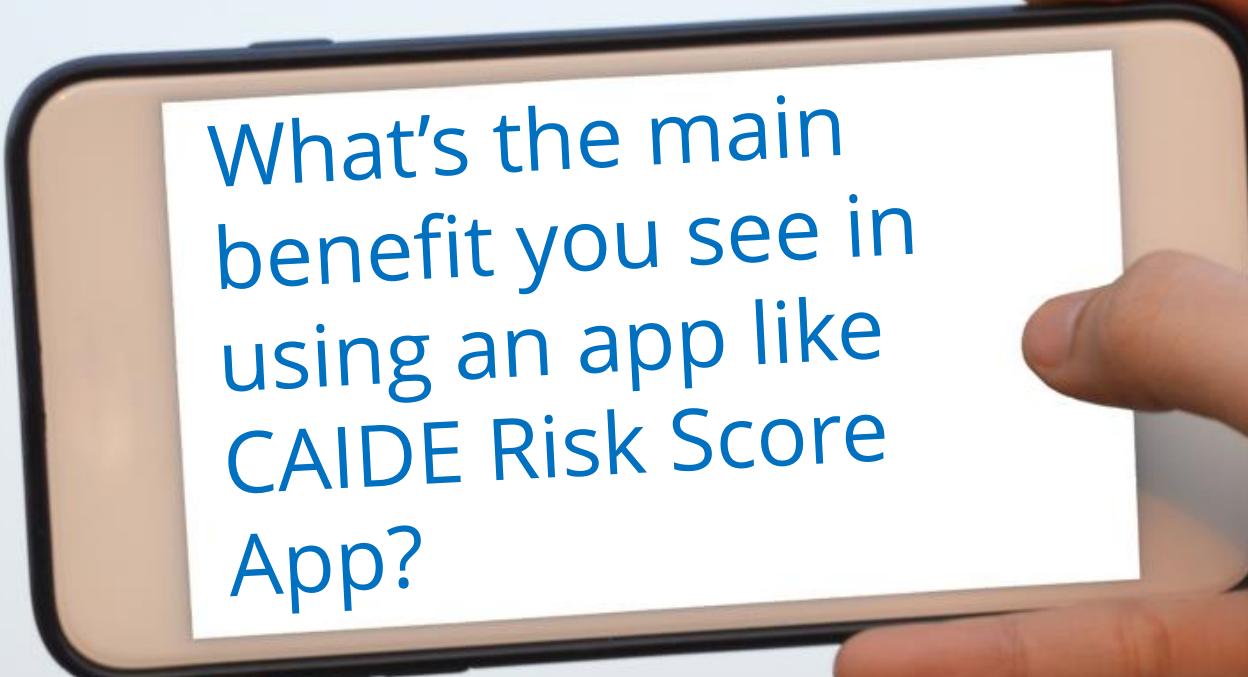


Using the app may help decrease the burden on medical and health services by postponing dementia *and* other chronic diseases such as diabetes and cancer, which share the same risk factors included in the CAIDE Dementia Risk Score.



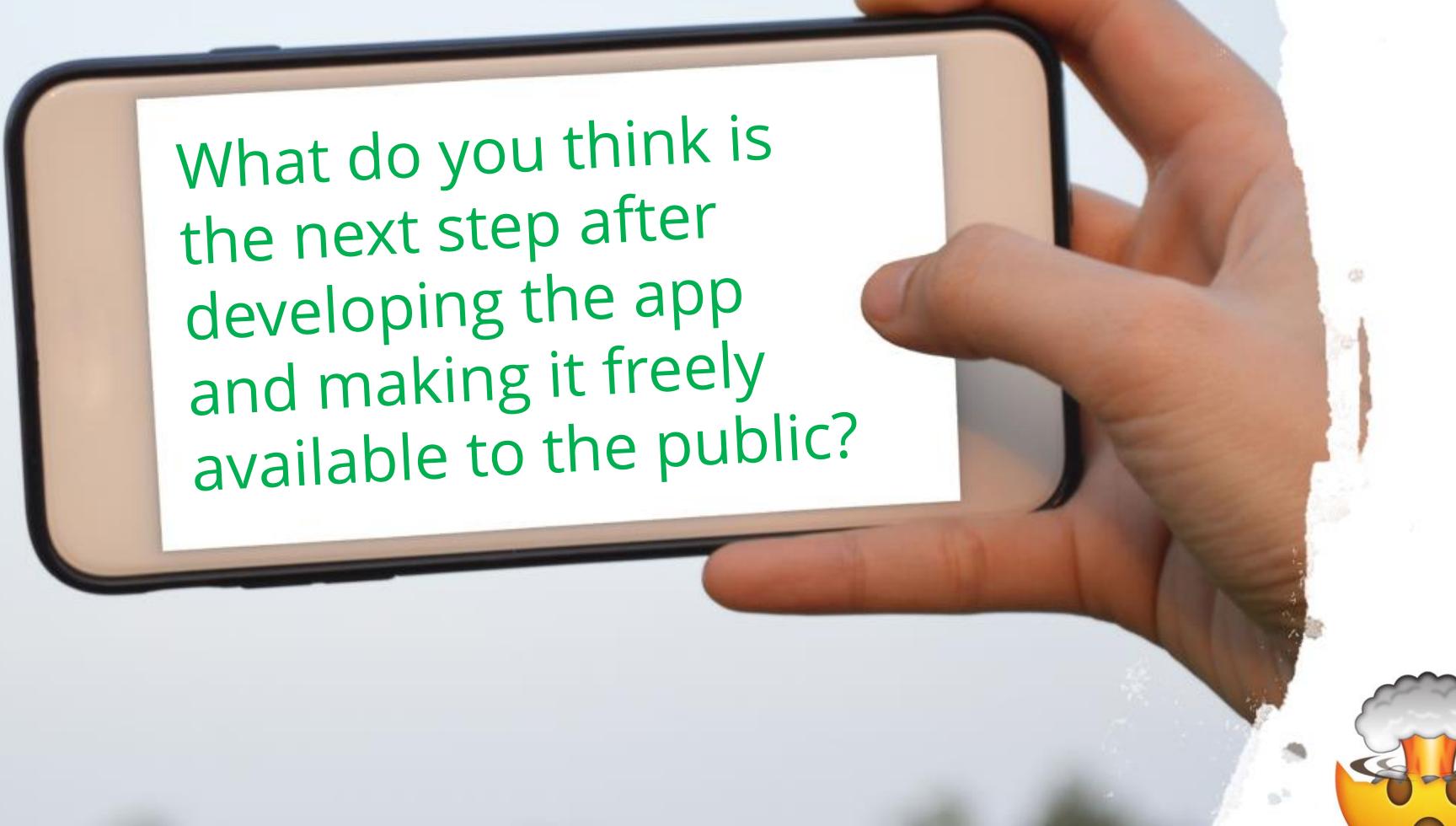


Question  
time!



What's the main benefit you see in using an app like CAIDE Risk Score App?





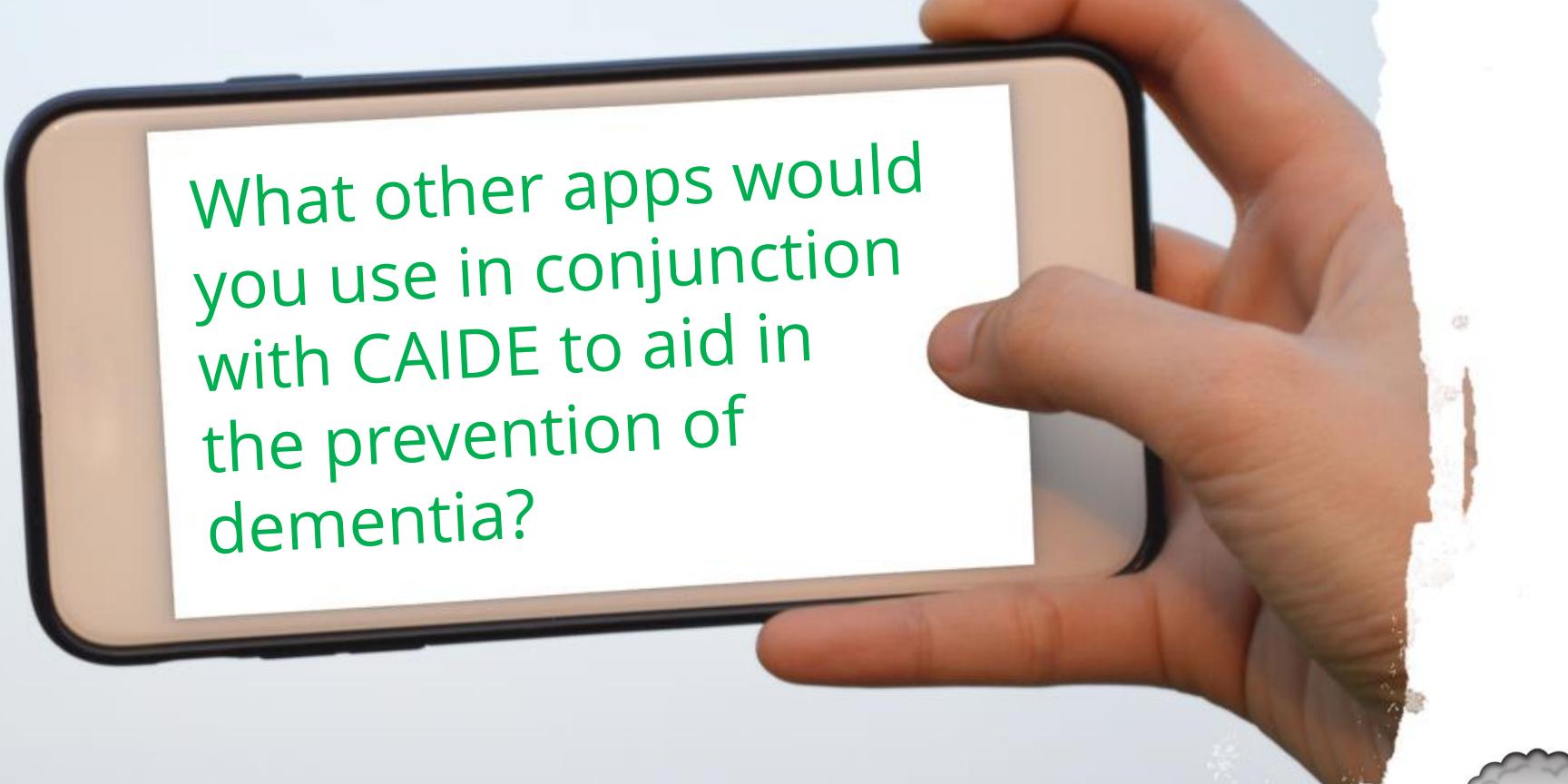
What do you think is  
the next step after  
developing the app  
and making it freely  
available to the public?





What similarities do you see between CAIDE App and the Triage App from the TedTalk (Mohammed Dalwai)?





What other apps would you use in conjunction with CAIDE to aid in the prevention of dementia?





Thanks!