Exploring the Heart Age 2 tool

Martin Moth (NHS Choices)
Chair: Catherine Lagord (PHE)

Thursday 8th December 2016
Background

• Original JBS3 tool used by clinicians
• Identified need for a public facing tool
• Tool developed in partnership with JBS3, UCL and BHF
• Methodology: based on JBS3 clinical tool and QRisk2, an open source tool built by ClinRisk
The parent.. JBS3

Profile

Date of Birth: 28 11 1976
Gender: ☐ male ☐ female
Ethnic group: White or not stated
Height (m): 1.70
Weight (kg): 81.3
BMI: 28.1
Townsend quintile (3 if unknown): 5: Least affluent

Do you smoke? ☐ I smoke less than 10/day
Total Cholesterol: 7.1 mmol/L
HDL Cholesterol: 1.2
Non-HDL Cholesterol: 5.9
Systolic Blood Pressure: 158 mm Hg

Have you received blood pressure treatment? ☐
Do you suffer from diabetes? ☐
Does a close relative under 60 suffer from CVD? ☐
Do you have a chronic kidney disease? ☐
Have you suffered atrial fibrillation? ☐
Do you have rheumatoid arthritis? ☐

I have never suffered from Cardiovascular Disease ☑
I have read the terms and conditions ☑

Save  Load  Next
The parent.. JBS3
The parent.. JBS3

On average, expect to survive to age 81 without a heart attack or stroke gaining 12 years through interventions

expected life without a heart attack or stroke

Your risk of a heart attack or stroke in the next 10 years is 1.6%
assuming you don't die of anything else

Interventions

Future smoking category
I quit

Systolic Blood Pressure
150 → 119

Total Cholesterol
7.8 → 4.5

HDL Cholesterol
1.2 → 1.2

NonHDL Cholesterol: 3.3
BMI: 31.1

Reset
The child.. Heart Age v1

Start screen

Check your heart age

How healthy is your heart? Use this tool to find out if your heart age is higher or lower than your actual age.

Anyone over 30 can use the tool, even if you don’t know your blood pressure and cholesterol. However, without these numbers, your result will be an estimate and we recommend you get tested to get an accurate result.

Start

Full terms and conditions can be read here

This tool is a collaboration between NHS Choices, Public Health England and the British Heart Foundation.

Full credits can be read here
The child.. Heart Age v1

Questions
Screen 1

Check your heart age
Please give us some details about you

<table>
<thead>
<tr>
<th>Date of birth</th>
<th>28 ▼ 11 ▼ 1976 ▼</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day</td>
<td>Month</td>
</tr>
</tbody>
</table>

| Gender        | Male ○ Female ○ |

<table>
<thead>
<tr>
<th>Ethnic group</th>
<th>White ▼</th>
</tr>
</thead>
<tbody>
<tr>
<td>Why is this important?</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Postcode</th>
<th>e.g CB10 2PS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Why is this being asked?</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Do you have cardiovascular disease?</th>
<th>Yes ○ No ○</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is cardiovascular disease?</td>
<td></td>
</tr>
</tbody>
</table>

Back Next
The child.. Heart Age v1

Questions
Screen 2

Check your heart age
Please give us some details about you

Do you smoke?
I smoke less than 10 a day

Height
6 ft 1 in
Switch to metric

Weight
17 st 4 lb
Switch to metric

Back

Next
Check your heart age
Please give us some details about you

Do you know your cholesterol?  
- Yes  
- No

- Cholesterol information

Total cholesterol  
7.8 mmol/L
HDL cholesterol  
1 mmol/L

- Switch to mg/dl

Do you know your blood pressure?  
- Yes  
- No

- Blood pressure information

Systolic blood pressure  
166 mmHg

Have you ever received blood pressure treatment?  
- Yes  
- No

- Blood pressure treatment

Back  
Next
The child.. Heart Age v1

Questions
Screen 4

Check your heart age
Please give us some details about you

- Do you have diabetes? [ ] Yes [ ] No
- Do you have rheumatoid arthritis? [ ] Yes [ ] No
- Do you have chronic kidney disease? [ ] Yes [ ] No
- Have you had atrial fibrillation? [ ] Yes [ ] No
- Has a close relative under 60 been told they have a cardiovascular disease? [ ] Yes [ ] No

What does this mean?

Back | | | | | Next
The child.. Heart Age v1

Results

Your results

Your heart age is about 50
compared to a person of the same age, gender and ethnicity without raised risk factors

On average, someone like you can expect to live to the age of 69 without having a heart attack or stroke.

You have a 4.7% risk of having a heart attack or stroke in the next 10 years.

Your heart age is higher than your actual age. You can lower it by making some simple changes to your diet and lifestyle.

Check out the advice below
Results
- full screen

Public Health England

Find out more about blood pressure

Cholesterol
Ratio 8:1  Very high
Having very high cholesterol can have a serious effect on your health. It doesn’t cause any symptoms itself but increases your risk of heart attack and stroke. The good news is that cholesterol levels can be lowered by having a healthy diet and being physically active. You may also need medication.

Find out more about cholesterol

Weight
BMI 31.9  Obese
BMI is a measure of whether you’re a healthy weight for your height. Having a BMI above 30 is classified as obese and being obese puts you at raised risk of health problems such as heart disease, stroke and diabetes. Losing weight will bring significant health improvements and could help with lowering your blood pressure and cholesterol levels.

Find out more about being a healthy weight

Looking after your heart
If you’re aged 40 to 74 and you’re not already being treated for cardiovascular disease, make sure you get a free NHS Health Check. You’ll find out your blood pressure and cholesterol numbers and learn how healthy your heart is.

It’s an opportunity to put right emerging problems and get personalised advice on keeping yourself healthy and active.
Read more about the NHS Health Check.

Start again
Your results

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compared to a person of the same age, gender and ethnicity without raised risk factors

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Check out the advice below

- Drop down option for further info

Smoking

I smoke less than 10 a day

Stopping smoking is the single biggest change you can make for your health. One year after stopping, your heart attack risk is half that of a smoker.

You don’t have to go cold turkey alone. There is a wealth of information and support to help you stop.

Get help with quitting

Blood pressure 166 High

Your systolic blood pressure is 166. If your doctor or nurse does not know about this, make an appointment to see them in the next month to let them know.

Known as the "silent killer", high blood pressure rarely has obvious symptoms but left untreated, it increases your risk of heart attack or stroke.

The good news is, it can be brought under control through lifestyle changes such as losing weight, reducing the amount of salt you eat, exercising regularly and cutting back on alcohol and caffeine. You may also need medication.

Find out more about blood pressure
Your results

Your heart age is about 50

compared to a person of the same age, gender and ethnicity without raised risk factors.

On average, someone like you can expect to live to the age of 89 without having a heart attack or stroke.

You have a 4.7% risk of having a heart attack or stroke in the next 10 years.

Your heart age is higher than your actual age. You can lower it by making some simple changes to your diet and lifestyle. Check out the advice below.

• Drop down option for further info
• Links to Choices or BHF content
• Controversial nature meant good coverage in national press
• 420k completed journeys in a single day
Main findings

• Overall good completion ratio despite dropouts
My Heart Age - Version 1

BMJ Open

Online self-assessment of cardiovascular risk using the Joint British Societies (JBS3)-derived heart age tool: a descriptive study

Riyaz S Patel,1,2 Catherine Lagord,3 Jamie Waterall,3 Martin Moth,4 Mike Knapton,5 John E Deanfield1,2

ABSTRACT
Objective: A modified version of the Joint British Societies (JBS3) ‘heart age’ tool was introduced online to broaden access to personalised risk assessment to the general population and encourage participation in the National Health Service (NHS) Health Check programme. This study reports on its early uptake and the profiles of those who used the self-assessment tool to determine their own cardiovascular risk.

Design: Observational, retrospective analysis of online tool use.

Strengths and limitations of this study
- The first study on the uptake and use of the Joint British Societies (JBS3)-derived ‘heart age’ tool by members of the public in the UK for self-assessment of cardiovascular disease (CVD) risk.
- Academic and public health collaboration with full access and analysis of anonymised online data for over 500 000 users, collected through the National Health Service (NHS) Choices

BMJ Open 2016;6: e011511. doi:10.1136/bmjopen-2016-011511
Who is using the tool?

- in 5 months, 500,000+ calculated their heart age
- broadly resembled England population …
Who is using the tool?

- broadly resembled England population...

![](chart.png)

Proportion with or treated for hypertension

- Heart Age women
- Health survey for England women

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Heart Age Women</th>
<th>Health Survey for England Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aged 35-44</td>
<td>17%</td>
<td>10%</td>
</tr>
<tr>
<td>Aged 45-54</td>
<td>26%</td>
<td>22%</td>
</tr>
<tr>
<td>Aged 55-64</td>
<td>38%</td>
<td>38%</td>
</tr>
<tr>
<td>Aged 65-74</td>
<td>50%</td>
<td>59%</td>
</tr>
<tr>
<td>Aged 75+</td>
<td>66%</td>
<td>67%</td>
</tr>
</tbody>
</table>
Who is using the tool?

- More men: 61%
- Younger: 2/3 aged 40-74
- 30% less than 40
Did users know their numbers?

- 50% knew BP
- 1 in 4 knew cholesterol
Half million users: how old was their heart?

- 4 in 5: older heart

<table>
<thead>
<tr>
<th>Heart age equal or lower than user's age</th>
<th>Aged 30-39</th>
<th>Aged 40-49</th>
<th>Aged 50-59</th>
<th>Aged 60-69</th>
<th>Aged 70-79</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heart age higher by at least 15 years</td>
<td>35,831</td>
<td>22,763</td>
<td>20,931</td>
<td>14,474</td>
<td>4,369</td>
</tr>
<tr>
<td>+ 10-14 years</td>
<td>73,541</td>
<td>78,673</td>
<td>56,352</td>
<td>28,905</td>
<td>5,981</td>
</tr>
<tr>
<td>+ 5-9 years</td>
<td>22,545</td>
<td>30,941</td>
<td>29,973</td>
<td>19,547</td>
<td>4,949</td>
</tr>
<tr>
<td>+ 1-4 years</td>
<td>689</td>
<td>2,996</td>
<td>9,389</td>
<td>13,567</td>
<td>7,886</td>
</tr>
<tr>
<td></td>
<td>1,487</td>
<td>7,387</td>
<td>13,261</td>
<td>12,433</td>
<td>3,498</td>
</tr>
</tbody>
</table>

Chronological age group of users
What users did next...

- only 2.8% accessed online resources provided
My Heart Age - Version 2

Steering group:

- PHE
- NHS Choices
- BHF
- UCL / JBS3
- Behavioural Insight team

Check your heart age
How healthy is your heart?

What this self-assessment does:

- Tells you your heart age compared to your real age
- Explains why it’s important to know your blood pressure and cholesterol numbers
- Gives advice on how to reduce your heart age

Start

Full terms and conditions can be read here

This tool is a collaboration between NHS Choices, Public Health England and the British Heart Foundation. More information about partners

Full credits can be read here

www.nhs.uk/myheartage
New features in Version 2

- Improved flow/structure
- Fewer words
- More bullet points
- All questions on a single screen
- More focussed results page
- Intervention toggles (what if?)
- Easier syndication
- Better stats/tracking
New features in Version 2

NHS choices
Check your heart age

How healthy is your heart? Use this tool to find out if your heart age is higher or lower than your actual age.

Anyone over 30 can use the tool, even if you don’t know your blood pressure and cholesterol. However, without these numbers, your result will be an estimate and we recommend you get tested to get an accurate result.

Old

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NHS
Public Health
England

Joint British Societies
for the prevention of
cardiovascular disease

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New

Check your heart age
How healthy is your heart?

What this self-assessment does:

• Tells you your heart age compared to your real age
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Full credits can be read here
New features in Version 2

- All questions on a single, scrollable screen
- Suits desktop and mobile (mobile now 60% of all Choices traffic)
- Easier to use, less dropout
New features in Version 2

- Easier to embed tool within another website
New results page

- Longer, but..
- Easier to read and understand
- No ‘walls’
- Improved click-thru
New results page

- Longer, but..
- Easier to read and understand
- No ‘walls’
- Improved click-thru
New results page

- Interventions
  - What if I?
  - Quit smoking
  - Lose weight
  - Lower cholesterol
  - Reduce BP
New results page

- Interventions
  - What if I?
  - Quit smoking
  - Lose weight
  - Lower cholesterol
  - Reduce BP

Your heart age could be about 40

compared to a person of the same age, gender and ethnicity without raised risk factors

On average, someone like you can expect to live to the age of 77 without having a heart attack or stroke.

See how your heart age changes if you:
- Quit smoking
- Lose weight
- Lower cholesterol
- Reduce blood pressure

About your calculation
Tools can easily be...

- Added to your website (embed code)
- Linked via a poster or paper leaflet (QR code - right)
- Tracked as a ‘campaign’
- nhs.uk/myheartage is your most direct route
An example..

Added QR code and link text
First findings

1 week in Nov 2015
2418 completed

1 week in Nov 2016
3185 completed
First findings – age group

Age

By percentage for the period 28/9/2016 – 28/11/2016 sample size: 132,388

- 75+: 3.8%
- 70–74: 6.5%
- 65–69: 11.3%
- 60–64: 12.7%
- 55–59: 14.1%
- 50–54: 14.1%
- 45–49: 11.8%
- 40–44: 11.0%
- 35–39: 6.8%
- 30–34: 8.0%
First findings – feature usage

Feature usage (completed)
Percentage use of features for the period 28/9/2016 – 28/11/2016

- Postcode
- Cholesterol
- Blood pressure
- External links

percentage use
First findings – weight by gender

Male

- Obese: 18.9%
- Healthy weight: 38.4%
- Overweight: 41.8%
- Underweight: 0.9%

Female

- Obese: 21.4%
- Healthy weight: 48.6%
- Overweight: 28.5%
- Underweight: 1.5%
First findings – weight by gender

Male

Female

Weight category

By proportionate share for the period 28/9/2016 – 28/11/2016

Age group

proportionate share

0 10 20 30 40 50 60 70 80 90 100

Underweight
Healthy weight
Overweight
Obese
First findings

As the tool was syndicated out, it was available in different locations. While the majority of visits did occur on nhs.uk still, Daily Mail was not far behind.
First findings

- Cholesterol was the main draw for users clicking sliders or going onto other content on Choices.

- Smoking is the lowest used in both sections. 91% of tool users said they did not smoke.
First findings

Results Screen Links Clicked

- 7220 Cholesterol
- 6318 BMI
- 2979 Blood Pressure
- 746 Smoking
Contact us

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