**Supplementary document**

**Questions**

|  |
| --- |
| 1. I understand that my participation is voluntary. I have read and understand the participant information and I agree to participate in this survey. |
| 2. Have you competed in at least one competitive sporting event? \*this is defined as an event where you were placed and ranked on performance against other competitors in an organised event. This can be at any level. |
| 3. Are you at least 40 years old? |
| 4. Please tell us how old you are. |
| 5. Where are you completing this survey from? |
| 6. What was your sex at birth? |
| 7. What is your ethnicity? |
| 8. Please tell us what your main job is. If you have had multiple job roles, please state the job that you have spent the most time in. |
| 9. How would you best describe your smoking status? |
| 10. How many units of alcohol would you say that you have consumed on average PER WEEK in the last 20 years? (Pint of beer/lager or cider = 2 Units, Pint of premium beer or larger or cider = 3 Units, Alcopop or can/bottle of regular lager = 1.5 units, Can of premium lager or strong beer = 2 units, Glass of wine 175ml = 2 units, Large glass of wine 250ml = 3 units, single measure of spirits = 1.5 units). |
| 11. How many times on average over the last 20 years would you binge drink PER MONTH? (more than 8 units in one session for males OR more than 6 units in one session for females) (Pint of beer/lager or cider = 2 Units, Pint of premium beer or larger or cider = 3 Units, Alcopop or can/bottle of regular lager = 1.5 units, Can of premium lager or strong beer = 2 units, Glass of wine 175ml = 2 units, Large glass of wine 250ml = 3 units, single measure of spirits = 1.5 units). |
| 12. Please tell us what sport(s) you have competed in. Tick all that apply. |
| 12.a. If you selected Other, please specify: |
| 13. What is/was the highest level you competed at? |
| 14. Were you a professional or non-professional athlete in your respective sport? \*professional is defined by a regular salary given to you through your employer for your competition in sport. Prize money alone is not considered professional |
| 15. How many hours on average PER WEEK, have you trained in sport? |
| 16. How many years have you trained for? (to the nearest whole year) |
| 17. How many competitive events did/do you do on average PER YEAR? |
| 18. Do you/have you suffered with any of these conditions? Please tick all that apply |
| 19. What is your resting heart rate? |
| 20. Have you ever been told you have an irregular heart rhythm called atrial fibrillation? |
| 21. How would you best describe the AF that you had? |
| 22. What age were you when you were first diagnosed with AF? Please state |
| 23. Did you have heart disease before your diagnosis with AF? |
| 24. How did you get diagnosed with AF? |
| 25. Do you take blood thinning medication as a result of your AF? |
| 26. Have you ever been told you have had a stroke or mini-stroke (also called a TIA)? |
| 27. How old were you at the time of your first stroke? |
| 28. Since your first stroke or mini stroke have you had any further strokes despite being on blood thinning medication? |
| 29. If you would like the results of the study emailed to you, or you are happy to be contacted to participate in future studies related to this project, then please leave your email below. Leaving your email does not mean that you are obliged to participate in future studies. |

**List of countries from where participants completed the survey**

Australia - 46

Austria – 3

Belgium – 2

Bulgaria – 1

Canada – 21

Colombia – 1

Croatia – 2

Denmark – 2

Dominican Republic – 1

Finland – 1

France – 6

Germany – 7

Hong-Kong - 1

Hungary - 2

India – 1

Ireland – 8

Italy – 2

Japan – 3

Malaysia – 3

Mexico – 1

Netherlands – 6

New Zealand – 12

Norway – 2

Philippines – 1

Poland – 2

Portugal – 1

Saudi Arabia – 1

Serbia – 1

Singapore – 1

Slovakia – 1

Slovenia – 2

South Africa – 9

Spain – 4

Sri Lanka – 1

Sweden – 8

Switzerland – 3

Thailand – 2

Turkey – 1

UAE – 1

United Kingdom – 676

USA – 116

**Supplementary Table 1 - CHA2DS2-VASc score calculation**

The relevant components are scored as shown below which are totalled to give each individual a CHA2DS2-VASc score.

|  |  |
| --- | --- |
| **Component** | **Score** |
| CHF | Yes =1 |
| Hypertension history | Yes = 1 |
| Age (years) | <65 = 0  65-74 = 1  ≥75 = 2 |
| Diabetes history | Yes = 1 |
| Sex | Male = 0  Female = 1 |
| Vascular disease history (prior MI, peripheral artery disease, aortic plaque) | Yes = 1 |
| Stroke/TIA/thromboemcolism history | Yes = 2 |

***Supplementary Table 2 - Chracteristics of individuals diagnosed with AF after their stroke.***

|  |  |
| --- | --- |
| **Variable** |  |
| **N** (% of those with stroke) | 11 (42) |
| **Male** | 10 (11) |
| **Age** (years) | 56.6 (10) |
| **White ethnicity** | 10 (91) |
| White/blue collar profession | 9 (82) |
| Never smoked | 9 (82) |
| **Alcohol Consumption** (Units/week)  0  <8  8-15  ≥15  No binge drinking | 3 (27)  4 (36)  2 (18)  1 (9)  5 (46) |
| **Exercise type** f  Cycling  Running  Swimming  Triathlon  Other | 4 (36)  8 (73)  6 (55)  5 (45)  2 (18) |
| **Highest level of competition**  Local  Regional  National  International/Professional | 1 (9)  2 (18)  2 (18)  5 (46) |
| **Exercise dose per week** (hours) | 10.7 (4.0) |
| **Training years** (years) | 32.3 (17.2) |
| **Lifetime exercise dose** (x 1000 hours) | 15.2 (10.8) |
| **Competitions per year** | 8 (5-25) |
| **Resting heart rate** (beats per minute) | 54.5 (16.0) |
| **Diabetes Mellitus** | 1 (9) |
| **Hypertension** | 1 (9) |
| **Thromboembolism** | 1 (9) |
| **High cholesterol** | 2 (18) |
| **AF type**  Paroxysmal  Persistent  Permanent  Unknown | 3 (27)  3 (27)  3 (27)  2 (18) |
| Age at first stroke | 51.1 (11) |
| **CHADSVASC**  0  1  2  3 | 7 (64)  2 (29)  1 (9)  1 (9) |
|  | |

**Supplementary Table 3 – Anticoagulation in individuals with atrial fibrillation stratified by CHA2DS2VASc score.**

|  |  |  |
| --- | --- | --- |
| **Anticoagulant** | **AFC0/1**  **n=164** | **AFC2**  **n=26** |
| DOAC | 33 (20) | 11 (42) |
| Warfain | 2 (1) | 2 (8) |
| Other medication | 5 (3) | 1 (4) |
| Unknown medication | 4 (2) | 0 |

**Supplementary Table 4 - Univariable associations with AF**

|  |  |  |
| --- | --- | --- |
| **Variable** | **Odds ratio**  **(95% CI)** | **p** |
| **Male sex** | 2.65 (1.51, 4.63) | <0.01 |
| **Age** | 1.07 (1.05, 1.10) | <0.01 |
| **Non-white** | 1.11 (0.47, 2.61) | 0.81 |
| **Profession**  White/Blue Collar  Manual labourers  Full time athlete  Unemployed | 0.69 (0.43, 1.11)  1.20 (0.66, 2.19)  1.32 (0.14, 12.77)  1.93 (0.90, 4.18) | 0.13  0.55  0.81  0.09 |
| **Current/previous smoker** | 0.98 (0.68, 1.41) | 0.91 |
| **Alcohol units**  0  <8  8-15  >15 | 1.30 (0.84, 1.99)  0.98 (0.71, 1.34)  0.89 (0.62, 1.28)  0.94 (0.59, 1.52) | 0.24  0.88  0.53  0.81 |
| **Binge drinking**  Never  Up to once per month  More than once per month | 1.70 (1.24, 2.35)  0.80 (0.57, 1.13)  0.54 (0.33, 0.86) | <0.01  0.21  0.01 |
| **Exercise type**  Cycling  Running  Swimming  Triathlon | 1.38 (0.95, 2.00)  0.96 (0.69, 1.32)  1.65 (1.12, 2.45)  0.86 (0.59, 1.24) | 0.09  0.80  0.01  0.41 |
| **Highest level of competition**  Local  Regional  National  International/Professional | 0.80 (0.58, 1.09)  0.68 (0.45, 1.03)  1.38 (0.88, 2.16)  3.45 (1.46, 8.15) | 0.16  0.07  0.16  <0.01 |
| **Exercise dose per week** (hours) | 1.05 (1.02, 1.08) | <0.01 |
| **Training years** (years) | 1.03 (1.02, 1.04) | <0.01 |
| **Lifetime exercise dose** (x 1000 hours) | 1.04 (1.02, 1.05) | <0.01 |
| **Competitions per year** | 1.02 (1.01, 1.04) | <0.01 |
| **Resting heart rate** (beats per minute) | 0.99 (0.98, 1.01) | 0.40 |
| **Diabetes Mellitus** | 1.32 (0.36, 4.94) | 0.68 |
| **Hypertension** | 1.61 (1.01, 2.57) | 0.047 |
| **Thromboembolism** | 2.58 (0.99, 6.74) | 0.05 |
| **Congestive heart failure** | - | - |
| **Vascular disease** (peripheral artery disease, aortic plaques) | 2.51 (0.81, 7.77) | 0.11 |
| **High cholesterol** | 1.14 (0.70, 1.87) | 0.60 |

**Supplementary Table 5 - Univariable associations with stroke**

|  |  |  |
| --- | --- | --- |
| **Variable** | **Odds ratio (95% CI)** | **p** |
| **Male sex** | 1.05 (0.36, 3.10) | 0.92 |
| **Age** | 1.05 (1.01, 1.10) | 0.02 |
| **Non-white** | 1.17 (0.15, 8.93) | 0.88 |
| **Profession**  White/Blue Collar  Manual labourers  Full time athlete  Unemployed | 0.47 (0.17, 1.27)  1.84 (0.54, 6.32)  -  2.73 (0.61, 12.16) | 0.14  0.33  -  0.19 |
| **Smoking** | 0.67 (0.25, 1.79) | 0.42 |
| **Alcohol Consumption** (units/week)  0  <8 units  8-15 units  >15 units | 2.18 (0.90, 5.28)  0.76 (0.34, 1.70)  0.65 (0.24, 1.74)  0.86 (0.25, 2.90) | 0.09  0.51  0.39  0.80 |
| **Binge drinking**  Never  Up to once per month  More than once per month | 1.36 (0.62, 2.97)  0.68 (0.28, 1.65)  1.03 (0.38, 2.77) | 0.44  0.40  0.96 |
| **Exercise type**  Cycling  Running  Swimming  Triathlon | 0.53 (0.24, 1.17)  0.95 (0.43, 2.08)  2.84 (1.24, 6.49)  1.86 (0.83, 4.15) | 0.12  0.89  0.01  0.13 |
| **Highest level of competition**  Local  Regional  National  International + Professional | 0.49 (0.22, 1.10)  0.94 (0.35, 2.51)  0.90 (0.27, 3.05)  3.45 (1.46, 8.15) | 0.08  0.89  0.87  <0.01 |
| **Exercise dose per week** | 1.04 (0.99, 1.09) | 0.09 |
| **Training years** (years) | 1.05 (1.02, 1.07) | <0.01 |
| **Lifetime exercise dose (**per 1000 hours) | 1.03 (1.00, 1.05) | 0.02 |
| **Competitions per year** | 1.01 (0.97, 1.04) | 0.82 |
| **Resting heart rate** (beats per minute) | 1.01 (0.97, 1.05) | 0.71 |
| **Diabetes Mellitus** | 7.23 (1.50, 34.78) | 0.01 |
| **Hypertension** | 1.05 (0.31, 3.56) | 0.94 |
| **Thromboembolism** | 2.30 (0.29, 18.09) | 0.43 |
| **Vascular disease** | 2.88 (0.36, 23.04) | 0.32 |
| **High cholesterol** | 1.96 (0.72, 5.32) | 0.19 |
| **AF** (Any) Paroxysmal  Persistent  Permanent  CHA2DS2VASc 0/1  CHA2DS2VASc ≥2 | 4.71 (2.14, 10.37)  2.94 (1.10, 7.89)  7.78 (2.39, 25.39)  5.27 (1.43, 19.45)  4.15 (1.88, 9.16)  2.96 (0.66, 13.25) | <0.01  0.03  <0.01  0.01  <0.01  0.16 |
| **Age of AF diagnosis** | 1.00 (0.96, 1.04) | 0.95 |

**Supplementary Table 6 – Construction of multivariable models for associations with AF and stroke.**

**Table 6.1 – Construction of multivariable model with AF as outcome.**

|  |  |  |
| --- | --- | --- |
| Co-variable | Odds ratio (95%CI) | p |
| 2 co-variables | | |
| Age | 1.07 (1.05, 1.09) | <0.01 |
| Male sex | 2.46 (1.39, 4.34) | <0.01 |
| 3 co-variables | | |
| Age | 1.07 (1.05, 1.09) | <0.01 |
| Male sex | 2.44 (1.38, 4.31) | <0.01 |
| HTN | 1.20 (0.73, 1.97) | 0.47 |
| 4 co-variables | | |
| Age | 1.07 (1.05, 1.09) | <0.01 |
| Male sex | 2.61 (1.46, 4.64) | <0.01 |
| HTN | 1.21 (0.73, 1.99) | 0.59 |
| Swimming | 1.70 (1.12, 2.58) | 0.01 |
| 5 co-variables | | |
| Age | 1.06 (1.04, 1.09) | <0.01 |
| Male sex | 2.48 (1.38, 4.43) | <0.01 |
| HTN | 1.30 (0.79, 2.15) | 0.31 |
| Swimming | 1.56 (1.02, 2.39) | 0.04 |
| Lifetime exercise dose | 1.02 (1.00, 1.03) | 0.02 |

**Table 6.2 – Construction of multivariable model with stroke as outcome with AF as co-variable.**

|  |  |  |
| --- | --- | --- |
| Co-variable | Odds ratio (95% CI) | p |
| 2 co-variables | | |
| Age | 1.03 (0.99, 1.08) | 0.16 |
| AF | 3.97 (1.74, 9.06) | <0.01 |
| 3 co-variables | | |
| Age | 1.03 (0.99, 1.08) | 0.16 |
| Male sex | 0.75 (0.25, 2.29) | 0.62 |
| AF | 4.09 (1.77, 9.47) | <0.01 |
| 4 co-variables | | |
| Age | 1.03 (0.99, 1.08) | 0.20 |
| Male sex | 0.74 (0.24, 2.27) | 0.60 |
| DM | 6.72 (1.30, 34.75) | 0.02 |
| AF | 4.18 (1.80, 9.72) | <0.01 |

**Table 6.3 – Construction of multivariable model with stroke as outcome with AFC0/1 as co-variable.**

|  |  |  |
| --- | --- | --- |
| Co-variable | Odds ratio (95% CI) | p |
| 2 co-variables | | |
| Age | 1.05 (1.00, 1.10) | 0.04 |
| AFC0/1 | 3.72 (1.68, 8.24) | <0.01 |
| 3 co-variables | | |
| Age | 1.05 (1.00, 1.10) | 0.04 |
| Male sex | 0.71 (0.23, 2.17) | 0.54 |
| AFC0/1 | 3.91 (1.73, 8.84) | <0.01 |
| 4 co-variables | | |
| Age | 1.05 (1.00, 1.10) | 0.06 |
| Male sex | 0.70 (0.23, 2.17) | 0.54 |
| DM | 8.13 (1.55, 42.56) | 0.01 |
| AFC0/1 | 4.20 (1.83, 9.66) | <0.01 |