# Main Analysis: Hazard ratios for incidence Stroke

|  | **ENMO** | **Random Forest and HMM** |
| --- | --- | --- |
| **Characteristic** | **HR** **(95% CI)**1 | **HR** **(95% CI)**1 |
| **MVPA Quartile** |  |  |
| [0.167,319] | — |  |
| (319,464] | 0.71 (0.62 to 0.81) |  |
| (464,641] | 0.70 (0.61 to 0.81) |  |
| (641,2.39e+03] | 0.62 (0.52 to 0.72) |  |
| **Sex** |  |  |
| Female | — | — |
| Male | 2.62 (2.33 to 2.94) | 2.81 (2.49 to 3.16) |
| **Age** | 1.06 (1.05 to 1.07) | 1.07 (1.06 to 1.07) |
| **Race** |  |  |
| Nonwhite | — | — |
| White | 0.76 (0.57 to 1.03) | 0.79 (0.59 to 1.07) |
| **Deprivation index** |  |  |
| Quarter 1 | — | — |
| Quarter 2 | 1.08 (0.94 to 1.25) | 1.09 (0.94 to 1.25) |
| Quarter 3 | 0.99 (0.85 to 1.14) | 1.00 (0.86 to 1.15) |
| Quarter 4 | 0.99 (0.85 to 1.15) | 1.01 (0.87 to 1.17) |
| **Education** |  |  |
| None of the above | — | — |
| O levels/GCSEs or equivalent, CSEs or equivalent | 0.94 (0.81 to 1.09) | 0.95 (0.82 to 1.11) |
| A levels/AS, NVQ/HND/HNC or equivalent |  |  |
| College or University degree | 0.78 (0.66 to 0.91) | 0.81 (0.69 to 0.95) |
| **Household Income** |  |  |
| Less than 18,000 | — | — |
| 18,000 to 30,999 | 0.92 (0.78 to 1.07) | 0.92 (0.78 to 1.07) |
| 31,000 to 51,999 | 0.90 (0.76 to 1.06) | 0.90 (0.76 to 1.06) |
| 52,000 to 100,000 | 0.81 (0.67 to 0.98) | 0.81 (0.68 to 0.98) |
| Greater than 100,000 | 0.79 (0.60 to 1.05) | 0.81 (0.62 to 1.07) |
| Do not know/Prefer not to answer | 0.86 (0.70 to 1.06) | 0.85 (0.69 to 1.05) |
| **Smoking** |  |  |
| Never | — | — |
| Previous | 1.13 (1.01 to 1.26) | 1.12 (1.00 to 1.25) |
| Current | 1.63 (1.36 to 1.95) | 1.62 (1.35 to 1.95) |
| **Alcohol** |  |  |
| Never | — | — |
| Less than once a week | 0.89 (0.71 to 1.12) | 0.89 (0.71 to 1.12) |
| Once or twice a week | 0.88 (0.70 to 1.10) | 0.88 (0.70 to 1.10) |
| Three or four times a week | 0.80 (0.64 to 1.00) | 0.80 (0.64 to 1.00) |
| Daily or almost daily | 0.69 (0.55 to 0.87) | 0.69 (0.55 to 0.87) |
| **Processed meat** |  |  |
| Less than 2 times a week | — | — |
| 2-4 times a week | 1.02 (0.91 to 1.14) | 1.02 (0.91 to 1.14) |
| More than 4 times a week | 1.08 (0.85 to 1.37) | 1.08 (0.85 to 1.37) |
| **Fresh fruit** |  |  |
| Less than 2 servings a day | — | — |
| Between 2 and 4 servings a day | 0.87 (0.78 to 0.97) | 0.87 (0.78 to 0.97) |
| More than 4 servings a day | 0.89 (0.73 to 1.10) | 0.90 (0.73 to 1.10) |
| **Cooked vegetables** |  |  |
| Less than 2 servings a day | — | — |
| Between 2 and 4 servings a day | 0.97 (0.85 to 1.12) | 0.98 (0.85 to 1.12) |
| More than 4 servings a day | 1.01 (0.83 to 1.24) | 1.01 (0.82 to 1.23) |
| **Oily fish** |  |  |
| Less than 2 times a week | — | — |
| 2-4 times a week | 1.34 (1.18 to 1.52) | 1.34 (1.18 to 1.52) |
| More than 4 times a week | 1.28 (0.80 to 2.05) | 1.27 (0.79 to 2.05) |
| **Non-oily fish** |  |  |
| Less than 2 times a week | — | — |
| 2-4 times a week | 1.10 (0.96 to 1.26) | 1.10 (0.96 to 1.26) |
| More than 4 times a week | 0.83 (0.37 to 1.88) | 0.84 (0.37 to 1.89) |
| **Type II Diabetes** |  |  |
| No | — | — |
| Yes | 0.57 (0.48 to 0.69) | 0.57 (0.47 to 0.68) |
| **Body Mass Index** |  |  |
| Underweight (< 18.5 kg/m2) | — | — |
| Normal (18.5 kg/m2 to < 25 kg/m2) | 0.88 (0.36 to 2.12) | 0.87 (0.36 to 2.09) |
| Overweight (25 kg/m2 to < 30 kg/m2) | 1.12 (0.46 to 2.71) | 1.12 (0.46 to 2.70) |
| Obesity Class I, II or III (> 30 kg/m2) | 1.38 (0.57 to 3.35) | 1.37 (0.57 to 3.33) |
| **MVPA Quartile** |  |  |
| [0,115] |  | — |
| (115,234] |  | 0.74 (0.64 to 0.85) |
| (234,404] |  | 0.71 (0.61 to 0.82) |
| (404,2.47e+03] |  | 0.62 (0.53 to 0.72) |
| 1HR = Hazard Ratio, CI = Confidence Interval | | |

# Main Analysis: Hazard ratios for incidence MI

|  | **ENMO** | **Random Forest and HMM** |
| --- | --- | --- |
| **Characteristic** | **HR** **(95% CI)**1 | **HR** **(95% CI)**1 |
| **MVPA Quartile** |  |  |
| [0.167,319] | — |  |
| (319,464] | 0.71 (0.62 to 0.81) |  |
| (464,641] | 0.70 (0.61 to 0.81) |  |
| (641,2.39e+03] | 0.62 (0.52 to 0.72) |  |
| **Sex** |  |  |
| Female | — | — |
| Male | 2.62 (2.33 to 2.94) | 2.81 (2.49 to 3.16) |
| **Age** | 1.06 (1.05 to 1.07) | 1.07 (1.06 to 1.07) |
| **Race** |  |  |
| Nonwhite | — | — |
| White | 0.76 (0.57 to 1.03) | 0.79 (0.59 to 1.07) |
| **Deprivation index** |  |  |
| Quarter 1 | — | — |
| Quarter 2 | 1.08 (0.94 to 1.25) | 1.09 (0.94 to 1.25) |
| Quarter 3 | 0.99 (0.85 to 1.14) | 1.00 (0.86 to 1.15) |
| Quarter 4 | 0.99 (0.85 to 1.15) | 1.01 (0.87 to 1.17) |
| **Education** |  |  |
| None of the above | — | — |
| O levels/GCSEs or equivalent, CSEs or equivalent | 0.94 (0.81 to 1.09) | 0.95 (0.82 to 1.11) |
| A levels/AS, NVQ/HND/HNC or equivalent |  |  |
| College or University degree | 0.78 (0.66 to 0.91) | 0.81 (0.69 to 0.95) |
| **Household Income** |  |  |
| Less than 18,000 | — | — |
| 18,000 to 30,999 | 0.92 (0.78 to 1.07) | 0.92 (0.78 to 1.07) |
| 31,000 to 51,999 | 0.90 (0.76 to 1.06) | 0.90 (0.76 to 1.06) |
| 52,000 to 100,000 | 0.81 (0.67 to 0.98) | 0.81 (0.68 to 0.98) |
| Greater than 100,000 | 0.79 (0.60 to 1.05) | 0.81 (0.62 to 1.07) |
| Do not know/Prefer not to answer | 0.86 (0.70 to 1.06) | 0.85 (0.69 to 1.05) |
| **Smoking** |  |  |
| Never | — | — |
| Previous | 1.13 (1.01 to 1.26) | 1.12 (1.00 to 1.25) |
| Current | 1.63 (1.36 to 1.95) | 1.62 (1.35 to 1.95) |
| **Alcohol** |  |  |
| Never | — | — |
| Less than once a week | 0.89 (0.71 to 1.12) | 0.89 (0.71 to 1.12) |
| Once or twice a week | 0.88 (0.70 to 1.10) | 0.88 (0.70 to 1.10) |
| Three or four times a week | 0.80 (0.64 to 1.00) | 0.80 (0.64 to 1.00) |
| Daily or almost daily | 0.69 (0.55 to 0.87) | 0.69 (0.55 to 0.87) |
| **Processed meat** |  |  |
| Less than 2 times a week | — | — |
| 2-4 times a week | 1.02 (0.91 to 1.14) | 1.02 (0.91 to 1.14) |
| More than 4 times a week | 1.08 (0.85 to 1.37) | 1.08 (0.85 to 1.37) |
| **Fresh fruit** |  |  |
| Less than 2 servings a day | — | — |
| Between 2 and 4 servings a day | 0.87 (0.78 to 0.97) | 0.87 (0.78 to 0.97) |
| More than 4 servings a day | 0.89 (0.73 to 1.10) | 0.90 (0.73 to 1.10) |
| **Cooked vegetables** |  |  |
| Less than 2 servings a day | — | — |
| Between 2 and 4 servings a day | 0.97 (0.85 to 1.12) | 0.98 (0.85 to 1.12) |
| More than 4 servings a day | 1.01 (0.83 to 1.24) | 1.01 (0.82 to 1.23) |
| **Oily fish** |  |  |
| Less than 2 times a week | — | — |
| 2-4 times a week | 1.34 (1.18 to 1.52) | 1.34 (1.18 to 1.52) |
| More than 4 times a week | 1.28 (0.80 to 2.05) | 1.27 (0.79 to 2.05) |
| **Non-oily fish** |  |  |
| Less than 2 times a week | — | — |
| 2-4 times a week | 1.10 (0.96 to 1.26) | 1.10 (0.96 to 1.26) |
| More than 4 times a week | 0.83 (0.37 to 1.88) | 0.84 (0.37 to 1.89) |
| **Type II Diabetes** |  |  |
| No | — | — |
| Yes | 0.57 (0.48 to 0.69) | 0.57 (0.47 to 0.68) |
| **Body Mass Index** |  |  |
| Underweight (< 18.5 kg/m2) | — | — |
| Normal (18.5 kg/m2 to < 25 kg/m2) | 0.88 (0.36 to 2.12) | 0.87 (0.36 to 2.09) |
| Overweight (25 kg/m2 to < 30 kg/m2) | 1.12 (0.46 to 2.71) | 1.12 (0.46 to 2.70) |
| Obesity Class I, II or III (> 30 kg/m2) | 1.38 (0.57 to 3.35) | 1.37 (0.57 to 3.33) |
| **MVPA Quartile** |  |  |
| [0,115] |  | — |
| (115,234] |  | 0.74 (0.64 to 0.85) |
| (234,404] |  | 0.71 (0.61 to 0.82) |
| (404,2.47e+03] |  | 0.62 (0.53 to 0.72) |
| 1HR = Hazard Ratio, CI = Confidence Interval | | |

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|  | **ENMO** | **Random Forest and HMM** |
| --- | --- | --- |
| **Characteristic** | **HR** **(95% CI)**1 | **HR** **(95% CI)**1 |
| **MVPA Quartile** |  |  |
| [3.17,367] | — |  |
| (367,511] | 0.89 (0.65 to 1.23) |  |
| (511,692] | 0.59 (0.40 to 0.86) |  |
| (692,2.14e+03] | 0.74 (0.51 to 1.08) |  |
| **Sex** |  |  |
| Female | — | — |
| Male | 3.03 (2.22 to 4.14) | 3.18 (2.32 to 4.37) |
| **Age** | 1.07 (1.05 to 1.09) | 1.08 (1.05 to 1.10) |
| **Race** |  |  |
| Nonwhite | — | — |
| White | 0.57 (0.26 to 1.23) | 0.58 (0.27 to 1.27) |
| **Deprivation index** |  |  |
| Quarter 1 | — | — |
| Quarter 2 | 1.40 (1.01 to 1.94) | 1.41 (1.02 to 1.95) |
| Quarter 3 | 0.91 (0.63 to 1.32) | 0.91 (0.63 to 1.32) |
| Quarter 4 | 0.98 (0.66 to 1.44) | 0.98 (0.67 to 1.45) |
| **Education** |  |  |
| None of the above | — | — |
| O levels/GCSEs or equivalent, CSEs or equivalent | 0.97 (0.63 to 1.49) | 0.98 (0.63 to 1.51) |
| A levels/AS, NVQ/HND/HNC or equivalent |  |  |
| College or University degree | 0.70 (0.45 to 1.08) | 0.72 (0.47 to 1.11) |
| **Household Income** |  |  |
| Less than 18,000 | — | — |
| 18,000 to 30,999 | 0.86 (0.56 to 1.32) | 0.88 (0.58 to 1.35) |
| 31,000 to 51,999 | 0.83 (0.54 to 1.29) | 0.85 (0.55 to 1.31) |
| 52,000 to 100,000 | 0.74 (0.46 to 1.19) | 0.75 (0.46 to 1.20) |
| Greater than 100,000 | 0.54 (0.27 to 1.09) | 0.56 (0.28 to 1.12) |
| Do not know/Prefer not to answer | 0.94 (0.54 to 1.65) | 0.97 (0.55 to 1.70) |
| **Smoking** |  |  |
| Never | — | — |
| Previous | 0.98 (0.75 to 1.29) | 0.98 (0.75 to 1.29) |
| Current | 1.40 (0.82 to 2.36) | 1.37 (0.81 to 2.32) |
| **Alcohol** |  |  |
| Never | — | — |
| Less than once a week | 0.92 (0.44 to 1.92) | 0.91 (0.44 to 1.91) |
| Once or twice a week | 1.11 (0.55 to 2.24) | 1.12 (0.55 to 2.25) |
| Three or four times a week | 1.05 (0.52 to 2.13) | 1.05 (0.52 to 2.12) |
| Daily or almost daily | 0.85 (0.41 to 1.74) | 0.85 (0.42 to 1.75) |
| **Processed meat** |  |  |
| Less than 2 times a week | — | — |
| 2-4 times a week | 1.10 (0.83 to 1.46) | 1.11 (0.83 to 1.46) |
| More than 4 times a week | 1.63 (0.97 to 2.76) | 1.63 (0.97 to 2.76) |
| **Fresh fruit** |  |  |
| Less than 2 servings a day | — | — |
| Between 2 and 4 servings a day | 0.92 (0.69 to 1.21) | 0.92 (0.69 to 1.21) |
| More than 4 servings a day | 1.06 (0.64 to 1.75) | 1.05 (0.63 to 1.73) |
| **Cooked vegetables** |  |  |
| Less than 2 servings a day | — | — |
| Between 2 and 4 servings a day | 1.04 (0.72 to 1.49) | 1.04 (0.73 to 1.50) |
| More than 4 servings a day | 0.61 (0.34 to 1.09) | 0.61 (0.34 to 1.10) |
| **Oily fish** |  |  |
| Less than 2 times a week | — | — |
| 2-4 times a week | 1.16 (0.85 to 1.59) | 1.17 (0.85 to 1.60) |
| More than 4 times a week | 0.30 (0.04 to 2.19) | 0.31 (0.04 to 2.23) |
| **Non-oily fish** |  |  |
| Less than 2 times a week | — | — |
| 2-4 times a week | 1.48 (1.08 to 2.02) | 1.46 (1.07 to 2.00) |
| More than 4 times a week | 2.62 (0.64 to 10.7) | 2.56 (0.63 to 10.5) |
| **Type II Diabetes** |  |  |
| No | — | — |
| Yes | 0.63 (0.35 to 1.15) | 0.63 (0.35 to 1.15) |
| **Body Mass Index** |  |  |
| Underweight (< 18.5 kg/m2) | — | — |
| Normal (18.5 kg/m2 to < 25 kg/m2) | 545,406 (0.00 to Inf) | 550,057 (0.00 to Inf) |
| Overweight (25 kg/m2 to < 30 kg/m2) | 610,920 (0.00 to Inf) | 624,621 (0.00 to Inf) |
| Obesity Class I, II or III (> 30 kg/m2) | 872,110 (0.00 to Inf) | 905,167 (0.00 to Inf) |
| **MVPA Quartile** |  |  |
| [0,150] |  | — |
| (150,281] |  | 0.67 (0.47 to 0.95) |
| (281,459] |  | 0.69 (0.48 to 0.99) |
| (459,2.47e+03] |  | 0.73 (0.51 to 1.05) |
| 1HR = Hazard Ratio, CI = Confidence Interval | | |

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| [3.17,367] | — |  |
| (367,511] | 0.89 (0.65 to 1.23) |  |
| (511,692] | 0.59 (0.40 to 0.86) |  |
| (692,2.14e+03] | 0.74 (0.51 to 1.08) |  |
| **Sex** |  |  |
| Female | — | — |
| Male | 3.03 (2.22 to 4.14) | 3.18 (2.32 to 4.37) |
| **Age** | 1.07 (1.05 to 1.09) | 1.08 (1.05 to 1.10) |
| **Race** |  |  |
| Nonwhite | — | — |
| White | 0.57 (0.26 to 1.23) | 0.58 (0.27 to 1.27) |
| **Deprivation index** |  |  |
| Quarter 1 | — | — |
| Quarter 2 | 1.40 (1.01 to 1.94) | 1.41 (1.02 to 1.95) |
| Quarter 3 | 0.91 (0.63 to 1.32) | 0.91 (0.63 to 1.32) |
| Quarter 4 | 0.98 (0.66 to 1.44) | 0.98 (0.67 to 1.45) |
| **Education** |  |  |
| None of the above | — | — |
| O levels/GCSEs or equivalent, CSEs or equivalent | 0.97 (0.63 to 1.49) | 0.98 (0.63 to 1.51) |
| A levels/AS, NVQ/HND/HNC or equivalent |  |  |
| College or University degree | 0.70 (0.45 to 1.08) | 0.72 (0.47 to 1.11) |
| **Household Income** |  |  |
| Less than 18,000 | — | — |
| 18,000 to 30,999 | 0.86 (0.56 to 1.32) | 0.88 (0.58 to 1.35) |
| 31,000 to 51,999 | 0.83 (0.54 to 1.29) | 0.85 (0.55 to 1.31) |
| 52,000 to 100,000 | 0.74 (0.46 to 1.19) | 0.75 (0.46 to 1.20) |
| Greater than 100,000 | 0.54 (0.27 to 1.09) | 0.56 (0.28 to 1.12) |
| Do not know/Prefer not to answer | 0.94 (0.54 to 1.65) | 0.97 (0.55 to 1.70) |
| **Smoking** |  |  |
| Never | — | — |
| Previous | 0.98 (0.75 to 1.29) | 0.98 (0.75 to 1.29) |
| Current | 1.40 (0.82 to 2.36) | 1.37 (0.81 to 2.32) |
| **Alcohol** |  |  |
| Never | — | — |
| Less than once a week | 0.92 (0.44 to 1.92) | 0.91 (0.44 to 1.91) |
| Once or twice a week | 1.11 (0.55 to 2.24) | 1.12 (0.55 to 2.25) |
| Three or four times a week | 1.05 (0.52 to 2.13) | 1.05 (0.52 to 2.12) |
| Daily or almost daily | 0.85 (0.41 to 1.74) | 0.85 (0.42 to 1.75) |
| **Processed meat** |  |  |
| Less than 2 times a week | — | — |
| 2-4 times a week | 1.10 (0.83 to 1.46) | 1.11 (0.83 to 1.46) |
| More than 4 times a week | 1.63 (0.97 to 2.76) | 1.63 (0.97 to 2.76) |
| **Fresh fruit** |  |  |
| Less than 2 servings a day | — | — |
| Between 2 and 4 servings a day | 0.92 (0.69 to 1.21) | 0.92 (0.69 to 1.21) |
| More than 4 servings a day | 1.06 (0.64 to 1.75) | 1.05 (0.63 to 1.73) |
| **Cooked vegetables** |  |  |
| Less than 2 servings a day | — | — |
| Between 2 and 4 servings a day | 1.04 (0.72 to 1.49) | 1.04 (0.73 to 1.50) |
| More than 4 servings a day | 0.61 (0.34 to 1.09) | 0.61 (0.34 to 1.10) |
| **Oily fish** |  |  |
| Less than 2 times a week | — | — |
| 2-4 times a week | 1.16 (0.85 to 1.59) | 1.17 (0.85 to 1.60) |
| More than 4 times a week | 0.30 (0.04 to 2.19) | 0.31 (0.04 to 2.23) |
| **Non-oily fish** |  |  |
| Less than 2 times a week | — | — |
| 2-4 times a week | 1.48 (1.08 to 2.02) | 1.46 (1.07 to 2.00) |
| More than 4 times a week | 2.62 (0.64 to 10.7) | 2.56 (0.63 to 10.5) |
| **Type II Diabetes** |  |  |
| No | — | — |
| Yes | 0.63 (0.35 to 1.15) | 0.63 (0.35 to 1.15) |
| **Body Mass Index** |  |  |
| Underweight (< 18.5 kg/m2) | — | — |
| Normal (18.5 kg/m2 to < 25 kg/m2) | 545,406 (0.00 to Inf) | 550,057 (0.00 to Inf) |
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