# Sensitivity Analysis 1: Without BMI and Diabetes - Stroke

|  | **ENMO** | **Random Forest and HMM** |
| --- | --- | --- |
| **Characteristic** | **HR** **(95% CI)**1 | **HR** **(95% CI)**1 |
| **MVPA Quartile** |  |  |
| [0.917,291] | — |  |
| (291,417] | 0.67 (0.58 to 0.77) |  |
| (417,562] | 0.62 (0.53 to 0.72) |  |
| (562,2.11e+03] | 0.55 (0.47 to 0.64) |  |
| **MVPA Quartile** |  |  |
| [0,106] |  | — |
| (106,220] |  | 0.71 (0.61 to 0.82) |
| (220,379] |  | 0.67 (0.58 to 0.78) |
| (379,2.43e+03] |  | 0.53 (0.45 to 0.62) |
| 1HR = Hazard Ratio, CI = Confidence Interval | | |

No Mediator , withoubt BMI and Diabetes (Stroke)

# Sensitivity Analysis 1: Without BMI and Diabetes - MI

|  | **ENMO** | **Random Forest and HMM** |
| --- | --- | --- |
| **Characteristic** | **HR** **(95% CI)**1 | **HR** **(95% CI)**1 |
| **MVPA Quartile** |  |  |
| [0.917,291] | — |  |
| (291,417] | 0.75 (0.63 to 0.89) |  |
| (417,562] | 0.76 (0.63 to 0.92) |  |
| (562,2.11e+03] | 0.54 (0.43 to 0.68) |  |
| **MVPA Quartile** |  |  |
| [0,106] |  | — |
| (106,220] |  | 0.69 (0.57 to 0.84) |
| (220,379] |  | 0.80 (0.66 to 0.96) |
| (379,2.43e+03] |  | 0.65 (0.53 to 0.80) |
| 1HR = Hazard Ratio, CI = Confidence Interval | | |

No Mediator , withoubt BMI and Diabetes (MI)

# Sensitivity Analysis 2: Hazard ratios for incidence Stroke, truncated MVPA

|  | **ENMO** | | **Random Forest and HMM** | |
| --- | --- | --- | --- | --- |
| **Characteristic** | **HR** **(95% CI)**1 | **p-value** | **HR** **(95% CI)**1 | **p-value** |
| MVPA Quartile |  |  |  |  |
| [0.917,291] | — |  |  |  |
| (291,417] | 0.72 (0.63 to 0.83) | <0.001 |  |  |
| (417,562] | 0.68 (0.59 to 0.80) | <0.001 |  |  |
| (562,1.25e+03] | 0.63 (0.53 to 0.74) | <0.001 |  |  |
| MVPA Quartile |  |  |  |  |
| [0,106] |  |  | — |  |
| (106,219] |  |  | 0.76 (0.66 to 0.88) | <0.001 |
| (219,377] |  |  | 0.74 (0.64 to 0.86) | <0.001 |
| (377,1.25e+03] |  |  | 0.61 (0.52 to 0.71) | <0.001 |
| 1HR = Hazard Ratio, CI = Confidence Interval | | | | |

Removed people with huge duration (>1200min) of MVPA, Stroke

# Sensitivity Analysis 2: Hazard ratios for incidence MI, truncated MVPA

|  | **ENMO** | | **Random Forest and HMM** | |
| --- | --- | --- | --- | --- |
| **Characteristic** | **HR** **(95% CI)**1 | **p-value** | **HR** **(95% CI)**1 | **p-value** |
| MVPA Quartile |  |  |  |  |
| [0.917,291] | — |  |  |  |
| (291,417] | 0.76 (0.64 to 0.91) | 0.003 |  |  |
| (417,562] | 0.78 (0.64 to 0.94) | 0.010 |  |  |
| (562,1.25e+03] | 0.55 (0.44 to 0.69) | <0.001 |  |  |
| MVPA Quartile |  |  |  |  |
| [0,106] |  |  | — |  |
| (106,219] |  |  | 0.70 (0.58 to 0.85) | <0.001 |
| (219,377] |  |  | 0.82 (0.68 to 1.00) | 0.048 |
| (377,1.25e+03] |  |  | 0.68 (0.55 to 0.83) | <0.001 |
| 1HR = Hazard Ratio, CI = Confidence Interval | | | | |

Removed people with huge duration (>1200min) of MVPA, MI

# Sensitivity Analysis 3: Female - Hazard ratios for incidence Stroke

|  | **ENMO** | | **Random Forest and HMM** | |
| --- | --- | --- | --- | --- |
| **Characteristic** | **HR** **(95% CI)**1 | **p-value** | **HR** **(95% CI)**1 | **p-value** |
| MVPA Quartile |  |  |  |  |
| [0.917,291] | — |  |  |  |
| (291,417] | 0.71 (0.56 to 0.90) | 0.005 |  |  |
| (417,562] | 0.69 (0.52 to 0.90) | 0.006 |  |  |
| (562,1.25e+03] | 0.44 (0.31 to 0.64) | <0.001 |  |  |
| MVPA Quartile |  |  |  |  |
| [0,106] |  |  | — |  |
| (106,219] |  |  | 0.81 (0.64 to 1.03) | 0.084 |
| (219,377] |  |  | 0.78 (0.60 to 1.02) | 0.068 |
| (377,1.25e+03] |  |  | 0.36 (0.24 to 0.56) | <0.001 |
| 1HR = Hazard Ratio, CI = Confidence Interval | | | | |

Male and Female separate (Stroke)

# Sensitivity Analysis 3: Male - Hazard ratios for incidence Stroke

|  | **ENMO** | | **Random Forest and HMM** | |
| --- | --- | --- | --- | --- |
| **Characteristic** | **HR** **(95% CI)**1 | **p-value** | **HR** **(95% CI)**1 | **p-value** |
| MVPA Quartile |  |  |  |  |
| [0.917,291] | — |  |  |  |
| (291,417] | 0.73 (0.62 to 0.87) | <0.001 |  |  |
| (417,562] | 0.69 (0.57 to 0.83) | <0.001 |  |  |
| (562,1.25e+03] | 0.70 (0.58 to 0.84) | <0.001 |  |  |
| MVPA Quartile |  |  |  |  |
| [0,106] |  |  | — |  |
| (106,219] |  |  | 0.75 (0.62 to 0.90) | 0.002 |
| (219,377] |  |  | 0.74 (0.62 to 0.89) | 0.001 |
| (377,1.25e+03] |  |  | 0.66 (0.54 to 0.79) | <0.001 |
| 1HR = Hazard Ratio, CI = Confidence Interval | | | | |

Male and Female separate (MI)

# Sensitivity Analysis 3: Female - Hazard ratios for incidence MI

|  | **ENMO** | | **Random Forest and HMM** | |
| --- | --- | --- | --- | --- |
| **Characteristic** | **HR** **(95% CI)**1 | **p-value** | **HR** **(95% CI)**1 | **p-value** |
| MVPA Quartile |  |  |  |  |
| [0.917,291] | — |  |  |  |
| (291,417] | 0.67 (0.51 to 0.88) | 0.004 |  |  |
| (417,562] | 0.83 (0.63 to 1.11) | 0.21 |  |  |
| (562,1.25e+03] | 0.53 (0.36 to 0.77) | <0.001 |  |  |
| MVPA Quartile |  |  |  |  |
| [0,106] |  |  | — |  |
| (106,219] |  |  | 0.77 (0.59 to 1.01) | 0.060 |
| (219,377] |  |  | 0.77 (0.57 to 1.03) | 0.081 |
| (377,1.25e+03] |  |  | 0.83 (0.59 to 1.16) | 0.28 |
| 1HR = Hazard Ratio, CI = Confidence Interval | | | | |

Male and Female separate (MI)

# Sensitivity Analysis 3: Male - Hazard ratios for incidence MI

|  | **ENMO** | | **Random Forest and HMM** | |
| --- | --- | --- | --- | --- |
| **Characteristic** | **HR** **(95% CI)**1 | **p-value** | **HR** **(95% CI)**1 | **p-value** |
| MVPA Quartile |  |  |  |  |
| [0.917,291] | — |  |  |  |
| (291,417] | 0.84 (0.66 to 1.06) | 0.14 |  |  |
| (417,562] | 0.74 (0.58 to 0.96) | 0.023 |  |  |
| (562,1.25e+03] | 0.57 (0.43 to 0.76) | <0.001 |  |  |
| MVPA Quartile |  |  |  |  |
| [0,106] |  |  | — |  |
| (106,219] |  |  | 0.64 (0.49 to 0.85) | 0.002 |
| (219,377] |  |  | 0.85 (0.66 to 1.10) | 0.23 |
| (377,1.25e+03] |  |  | 0.62 (0.47 to 0.81) | <0.001 |
| 1HR = Hazard Ratio, CI = Confidence Interval | | | | |

Male and Female separate (MI)

# Sensitivity Analysis 4: Hazard ratios for incidence Stroke - 2 years Stroke survival

|  | **ENMO** | | **Random Forest and HMM** | |
| --- | --- | --- | --- | --- |
| **Characteristic** | **HR** **(95% CI)**1 | **p-value** | **HR** **(95% CI)**1 | **p-value** |
| MVPA Quartile |  |  |  |  |
| [0.917,291] | — |  |  |  |
| (291,417] | 0.72 (0.63 to 0.83) | <0.001 |  |  |
| (417,562] | 0.68 (0.59 to 0.80) | <0.001 |  |  |
| (562,1.25e+03] | 0.63 (0.53 to 0.74) | <0.001 |  |  |
| MVPA Quartile |  |  |  |  |
| [0,106] |  |  | — |  |
| (106,219] |  |  | 0.76 (0.66 to 0.88) | <0.001 |
| (219,377] |  |  | 0.74 (0.64 to 0.86) | <0.001 |
| (377,1.25e+03] |  |  | 0.61 (0.52 to 0.71) | <0.001 |
| 1HR = Hazard Ratio, CI = Confidence Interval | | | | |

Removed people who have had a Stroke within 2 years following end of accelerometer following

# Sensitivity Analysis 4: Hazard ratios for incidence MI - 2 years MI survival

|  | **ENMO** | | **Random Forest and HMM** | |
| --- | --- | --- | --- | --- |
| **Characteristic** | **HR** **(95% CI)**1 | **p-value** | **HR** **(95% CI)**1 | **p-value** |
| MVPA Quartile |  |  |  |  |
| [0.917,291] | — |  |  |  |
| (291,417] | 0.76 (0.64 to 0.91) | 0.003 |  |  |
| (417,562] | 0.78 (0.64 to 0.94) | 0.010 |  |  |
| (562,1.25e+03] | 0.55 (0.44 to 0.69) | <0.001 |  |  |
| MVPA Quartile |  |  |  |  |
| [0,106] |  |  | — |  |
| (106,219] |  |  | 0.70 (0.58 to 0.85) | <0.001 |
| (219,377] |  |  | 0.82 (0.68 to 1.00) | 0.048 |
| (377,1.25e+03] |  |  | 0.68 (0.55 to 0.83) | <0.001 |
| 1HR = Hazard Ratio, CI = Confidence Interval | | | | |

Removed people who have had a MI within 2 years following end of accelerometer following