# Sensitivity Analysis 1: Without BMI and Diabetes - Stroke

|  | **ENMO** | **Random Forest and HMM** |
| --- | --- | --- |
| **Characteristic** | **HR** **(95% CI)**1 | **HR** **(95% CI)**1 |
| **MVPA Quartile** |  |  |
| [3.17,367] | — |  |
| (367,511] | 0.85 (0.62 to 1.16) |  |
| (511,692] | 0.54 (0.37 to 0.79) |  |
| (692,2.14e+03] | 0.66 (0.46 to 0.96) |  |
| **MVPA Quartile** |  |  |
| [0,150] |  | — |
| (150,281] |  | 0.64 (0.45 to 0.91) |
| (281,459] |  | 0.63 (0.45 to 0.90) |
| (459,2.47e+03] |  | 0.66 (0.46 to 0.94) |
| 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** |  |  |
| [3.17,367] | — |  |
| (367,511] | 1.37 (0.88 to 2.14) |  |
| (511,692] | 0.98 (0.59 to 1.61) |  |
| (692,2.14e+03] | 1.38 (0.86 to 2.23) |  |
| **MVPA Quartile** |  |  |
| [0,150] |  | — |
| (150,281] |  | 1.39 (0.88 to 2.21) |
| (281,459] |  | 1.18 (0.73 to 1.91) |
| (459,2.47e+03] |  | 0.89 (0.53 to 1.50) |
| 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 |  |  |  |  |
| [3.17,365] | — |  |  |  |
| (365,507] | 0.91 (0.66 to 1.24) | 0.54 |  |  |
| (507,683] | 0.56 (0.38 to 0.82) | 0.003 |  |  |
| (683,1.25e+03] | 0.72 (0.49 to 1.05) | 0.089 |  |  |
| MVPA Quartile |  |  |  |  |
| [0,149] |  |  | — |  |
| (149,278] |  |  | 0.66 (0.46 to 0.94) | 0.021 |
| (278,453] |  |  | 0.68 (0.47 to 0.97) | 0.032 |
| (453,1.25e+03] |  |  | 0.74 (0.52 to 1.06) | 0.10 |
| 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 |  |  |  |  |
| [3.17,365] | — |  |  |  |
| (365,507] | 1.49 (0.95 to 2.34) | 0.081 |  |  |
| (507,683] | 1.08 (0.64 to 1.80) | 0.78 |  |  |
| (683,1.25e+03] | 1.54 (0.94 to 2.54) | 0.088 |  |  |
| MVPA Quartile |  |  |  |  |
| [0,149] |  |  | — |  |
| (149,278] |  |  | 1.43 (0.90 to 2.28) | 0.13 |
| (278,453] |  |  | 1.35 (0.83 to 2.19) | 0.23 |
| (453,1.25e+03] |  |  | 1.05 (0.62 to 1.78) | 0.86 |
| 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 |  |  |  |  |
| [3.17,365] | — |  |  |  |
| (365,507] | 1.13 (0.62 to 2.05) | 0.69 |  |  |
| (507,683] | 0.29 (0.11 to 0.78) | 0.014 |  |  |
| (683,1.25e+03] | 0.55 (0.24 to 1.23) | 0.14 |  |  |
| MVPA Quartile |  |  |  |  |
| [0,149] |  |  | — |  |
| (149,278] |  |  | 0.71 (0.38 to 1.35) | 0.30 |
| (278,453] |  |  | 0.70 (0.34 to 1.43) | 0.32 |
| (453,1.25e+03] |  |  | 0.60 (0.26 to 1.42) | 0.25 |
| 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 |  |  |  |  |
| [3.17,365] | — |  |  |  |
| (365,507] | 0.82 (0.56 to 1.20) | 0.30 |  |  |
| (507,683] | 0.66 (0.43 to 1.01) | 0.057 |  |  |
| (683,1.25e+03] | 0.79 (0.51 to 1.21) | 0.27 |  |  |
| MVPA Quartile |  |  |  |  |
| [0,149] |  |  | — |  |
| (149,278] |  |  | 0.64 (0.42 to 0.98) | 0.040 |
| (278,453] |  |  | 0.69 (0.45 to 1.05) | 0.082 |
| (453,1.25e+03] |  |  | 0.76 (0.51 to 1.14) | 0.18 |
| 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 |  |  |  |  |
| [3.17,365] | — |  |  |  |
| (365,507] | 2.14 (1.03 to 4.43) | 0.041 |  |  |
| (507,683] | 1.48 (0.65 to 3.37) | 0.35 |  |  |
| (683,1.25e+03] | 2.24 (1.03 to 4.90) | 0.043 |  |  |
| MVPA Quartile |  |  |  |  |
| [0,149] |  |  | — |  |
| (149,278] |  |  | 2.27 (1.12 to 4.58) | 0.022 |
| (278,453] |  |  | 2.39 (1.15 to 4.98) | 0.020 |
| (453,1.25e+03] |  |  | 1.91 (0.81 to 4.48) | 0.14 |
| 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 |  |  |  |  |
| [3.17,365] | — |  |  |  |
| (365,507] | 1.26 (0.70 to 2.26) | 0.44 |  |  |
| (507,683] | 0.90 (0.46 to 1.76) | 0.76 |  |  |
| (683,1.25e+03] | 1.22 (0.63 to 2.37) | 0.55 |  |  |
| MVPA Quartile |  |  |  |  |
| [0,149] |  |  | — |  |
| (149,278] |  |  | 0.95 (0.50 to 1.78) | 0.87 |
| (278,453] |  |  | 0.82 (0.43 to 1.57) | 0.55 |
| (453,1.25e+03] |  |  | 0.67 (0.35 to 1.29) | 0.23 |
| 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 |  |  |  |  |
| [3.17,365] | — |  |  |  |
| (365,507] | 0.91 (0.66 to 1.24) | 0.54 |  |  |
| (507,683] | 0.56 (0.38 to 0.82) | 0.003 |  |  |
| (683,1.25e+03] | 0.72 (0.49 to 1.05) | 0.089 |  |  |
| MVPA Quartile |  |  |  |  |
| [0,149] |  |  | — |  |
| (149,278] |  |  | 0.66 (0.46 to 0.94) | 0.021 |
| (278,453] |  |  | 0.68 (0.47 to 0.97) | 0.032 |
| (453,1.25e+03] |  |  | 0.74 (0.52 to 1.06) | 0.10 |
| 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 |  |  |  |  |
| [3.17,365] | — |  |  |  |
| (365,507] | 1.49 (0.95 to 2.34) | 0.081 |  |  |
| (507,683] | 1.08 (0.64 to 1.80) | 0.78 |  |  |
| (683,1.25e+03] | 1.54 (0.94 to 2.54) | 0.088 |  |  |
| MVPA Quartile |  |  |  |  |
| [0,149] |  |  | — |  |
| (149,278] |  |  | 1.43 (0.90 to 2.28) | 0.13 |
| (278,453] |  |  | 1.35 (0.83 to 2.19) | 0.23 |
| (453,1.25e+03] |  |  | 1.05 (0.62 to 1.78) | 0.86 |
| 1HR = Hazard Ratio, CI = Confidence Interval | | | | |

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