Supplementary Table 4. Generalized Additive Models testing for an interaction between age and sex on physical function measures for Hadza participants

Formula: enmo ~ sex + s(age) + s(age, by = sex_orderedFactor)

```
Parametric coefficients:
            Estimate Std. Error t value Pr(>|t|)
(Intercept)   50.221      3.209  15.652   <2e-16 ***
sexm          -6.737      4.338  -1.553    0.127
---
Approximate significance of smooth terms:
              edf Ref.df     F p-value
s(age)          1      1 1.407   0.241
s(age):sexOFm   1      1 0.485   0.489
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

R-sq.(adj) =  0.0921   Deviance explained = 14.4%
-REML = 211.01  Scale est. = 246.61    n = 53
```

Formula: mvpa ~ sex + s(age) + s(age, by = sex_orderedFactor)

```
Parametric coefficients:
            Estimate Std. Error t value Pr(>|t|)
(Intercept)   225.95      19.59  11.534 4.95e-15 ***
sexm          -14.01      26.39  -0.531    0.598
---
Approximate significance of smooth terms:
              edf Ref.df     F p-value
s(age)          1      1 2.688   0.108
s(age):sexOFm   1      1 0.136   0.714
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

R-sq.(adj) =  0.0816   Deviance explained = 13.9%
-REML = 273.64  Scale est. = 8431.9    n = 49
```

Formula: walk test ~ sex + s(age) + s(age, by = sex_orderedFactor)

```
Parametric coefficients:
            Estimate Std. Error t value Pr(>|t|)
(Intercept)  159.838      6.700  23.855   <2e-16 ***
sexm          12.457      9.006   1.383    0.178
---
Approximate significance of smooth terms:
                edf Ref.df     F p-value
s(age)        1.762   2.23 0.517   0.558
s(age):sexOFm 1.000   1.00 0.949   0.339
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

R-sq.(adj) =  0.0771   Deviance explained = 18.9%
-REML = 135.07  Scale est. = 590.63    n = 32
```

Formula: grip strength ~ sex + s(age) + s(age, by = sex_orderedFactor)

```
Parametric coefficients:
            Estimate Std. Error t value Pr(>|t|)
(Intercept)  21.5026     0.8676   24.79  < 2e-16 ***
sexm          4.9141     1.1118    4.42 2.27e-05 ***
---
Approximate significance of smooth terms:
                edf Ref.df      F  p-value
s(age)        5.552  6.587 11.436 5.66e-11 ***
s(age):sexOFm 2.531  3.162  3.278    0.021 *
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

R-sq.(adj) =  0.619   Deviance explained = 64.7%
-REML = 398.54  Scale est. = 34.503    n = 124
```

Supplementary Table 5. Generalized Additive Models testing for an interaction between age and sex on physical function measures for Pokot participants

```
Formula: enmo ~ sex + s(age) + s(age, by = sex_orderedFactor)

    Parametric coefficients:
                Estimate Std. Error t value Pr(>|t|)
    (Intercept)   35.098      2.601   13.49 1.97e-15 ***
    sexm           8.969      3.463    2.59   0.0139 *
    ---
    Approximate significance of smooth terms:
                  edf Ref.df     F p-value
    s(age)          1      1 3.892  0.0563 .
    s(age):sexOFm   1      1 0.002  0.9649
    ---
    Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

    R-sq.(adj) =  0.273   Deviance explained =   33%
    -REML = 138.61  Scale est. = 115.03    n = 39

Formula: mvpa ~ sex + s(age) + s(age, by = sex_orderedFactor)

    Parametric coefficients:
                Estimate Std. Error t value Pr(>|t|)
    (Intercept)   173.34      13.67  12.683 8.65e-13 ***
    sexm           28.30      17.03   1.662    0.108
    ---
    Approximate significance of smooth terms:
                   edf Ref.df      F p-value
    s(age)       1.000  1.001 10.652 0.00294 **
    s(age):sexOFm 1.399  1.679  0.197 0.72316
    ---
    Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

    R-sq.(adj) =  0.497   Deviance explained = 55.4%
    -REML = 146.89  Scale est. = 2054.5    n = 31

Formula: walk test ~ sex + s(age) + s(age, by = sex_orderedFactor)

    Parametric coefficients:
                Estimate Std. Error t value Pr(>|t|)
    (Intercept)  110.808      5.314  20.851   <2e-16 ***
    sexm          15.018      7.628   1.969   0.0559 .
    ---
    Approximate significance of smooth terms:
                   edf Ref.df     F p-value
    s(age)       1.934  2.393 2.954  0.0738 .
    s(age):sexOFm 1.000  1.000 0.032  0.8579
    ---
    Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

    R-sq.(adj) =  0.183   Deviance explained = 25.6%
    -REML = 197.67  Scale est. = 643.9     n = 45

Formula: grip strength ~ sex + s(age) + s(age, by = sex_orderedFactor)

    Parametric coefficients:
                Estimate Std. Error t value Pr(>|t|)
    (Intercept)   22.452      1.400  16.037  < 2e-16 ***
    sexm          13.107      2.047   6.403 1.46e-07 ***
    ---
    Approximate significance of smooth terms:
                   edf Ref.df     F  p-value
    s(age)       1.001  1.001 0.298 0.588887
    s(age):sexOFm 3.214  3.951 6.031 0.000636 ***
    ---
    Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

    R-sq.(adj) =  0.606   Deviance explained = 65.3%
    -REML = 144.89  Scale est. = 45.011    n = 45
```

Supplementary Table 6. Generalized Additive Models for the effect of sex and age on physical function measures for Hadza participants

Formula: enmo ~ sex + s(age)

```
Parametric coefficients:
            Estimate Std. Error t value Pr(>|t|)
(Intercept)   50.156      3.191  15.720   <2e-16 ***
sexm          -6.736      4.315  -1.561    0.125
---
Approximate significance of smooth terms:
       edf Ref.df     F p-value
s(age)   1      1 5.113   0.028 *
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

R-sq.(adj) =  0.101   Deviance explained = 13.6%
-REML = 213.64  Scale est. = 244.07    n = 53
```

Formula: mvpa ~ sex + s(age)

```
Parametric coefficients:
            Estimate Std. Error t value Pr(>|t|)
(Intercept)   225.77      19.40  11.638 2.64e-15 ***
sexm          -13.99      26.14  -0.535    0.595
---
Approximate significance of smooth terms:
       edf Ref.df     F p-value
s(age)   1      1 6.869  0.0118 *
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

R-sq.(adj) =  0.0989   Deviance explained = 13.6%
-REML = 277.89  Scale est. = 8273.5    n = 49
```

Formula: walk test ~ sex + s(age)

```
Parametric coefficients:
            Estimate Std. Error t value Pr(>|t|)
(Intercept)  158.065      6.621  23.875   <2e-16 ***
sexm          14.542      8.882   1.637    0.112
---
Approximate significance of smooth terms:
         edf Ref.df     F p-value
s(age) 1.148  1.283 1.268    0.33
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

R-sq.(adj) =  0.0565   Deviance explained = 12.2%
-REML = 138.56  Scale est. = 603.79    n = 32
```

Formula: grip strength ~ sex + s(age, by = sex)

```
Parametric coefficients:
            Estimate Std. Error t value Pr(>|t|)
(Intercept)  21.5204     0.8743  24.613  < 2e-16 ***
sexm          4.8952     1.1134   4.397 2.51e-05 ***
---
Approximate significance of smooth terms:
               edf Ref.df      F  p-value
s(age):sexf 4.649  5.572  9.287 5.68e-08 ***
s(age):sexm 5.367  6.460 19.526  < 2e-16 ***
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

R-sq.(adj) =  0.617   Deviance explained = 65.1%
-REML = 401.61  Scale est. = 34.696    n = 124
```

Supplementary Table 7. Generalized Additive Models for the effect of sex and age on physical function measures for Pokot participants

```
Formula: enmo ~ sex + s(age)

    Parametric coefficients:
                Estimate Std. Error t value Pr(>|t|)
    (Intercept)   35.098      2.565  13.684  7.8e-16 ***
    sexm           8.968      3.415   2.626   0.0126 *
    ---
    Approximate significance of smooth terms:
           edf Ref.df     F p-value
    s(age)   1      1 10.72 0.00229 **
    ---
    Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

    R-sq.(adj) =  0.293   Deviance explained =   33%
    -REML = 140.78  Scale est. = 111.84    n = 39

Formula: mvpa ~ sex + s(age)

    Parametric coefficients:
                Estimate Std. Error t value Pr(>|t|)
    (Intercept)   173.30      13.58  12.758 3.51e-13 ***
    sexm           27.95      16.91   1.653     0.11
    ---
    Approximate significance of smooth terms:
             edf Ref.df     F  p-value
    s(age) 1.024  1.047 28.52 6.69e-06 ***
    ---
    Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

    R-sq.(adj) =  0.504   Deviance explained = 53.7%
    -REML = 150.77  Scale est. = 2029      n = 31

Formula: walk test ~ sex + s(age)

    Parametric coefficients:
                Estimate Std. Error t value Pr(>|t|)
    (Intercept)  110.759      5.246  21.111   <2e-16 ***
    sexm          15.063      7.536   1.999   0.0523 .
    ---
    Approximate significance of smooth terms:
             edf Ref.df     F p-value
    s(age) 1.979  2.446 3.913  0.0279 *
    ---
    Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

    R-sq.(adj) =  0.203   Deviance explained = 25.7%
    -REML = 200.64  Scale est. = 627.86    n = 45

Formula: grip strength ~ sex + s(age, by = sex)

    Parametric coefficients:
                Estimate Std. Error t value Pr(>|t|)
    (Intercept)   22.452      1.400  16.037  < 2e-16 ***
    sexm          13.107      2.047   6.403 1.46e-07 ***
    ---
    Approximate significance of smooth terms:
                  edf Ref.df     F  p-value
    s(age):sexf 1.000  1.001 0.298 0.588791
    s(age):sexm 3.214  3.951 5.959 0.000693 ***
    ---
    Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

    R-sq.(adj) =  0.606   Deviance explained = 65.3%
    -REML = 144.89  Scale est. = 45.011    n = 45
```