# UNIVERSITYOF <br> BIRMINGHAM <br> University of Birmingham Research at Birmingham 

# Does the intensity of daily walking matter for protecting against the development of a slow gait speed in people with or at high risk of Knee Osteoarthritis? 

Fenton, Sally; Neogi, Tuhina; Dunlop, Dorothy; Nevitt, Michael; Doherty, Michael; Duda, Joan<br>L; Klocke, Rainer; Abhishek, Abhishek; Rushton, Alison; Zhang, Weiya; Lewis, Cora E.; Torner, James; Kitas, George; White, Daniel K.; Multicenter Osteoarthritis Group<br>DOI:<br>10.1016/j.joca.2018.04.015

License:
Creative Commons: Attribution-NonCommercial-NoDerivs (CC BY-NC-ND)

## Document Version

Peer reviewed version
Citation for published version (Harvard):
Fenton, S, Neogi, T, Dunlop, D, Nevitt, M, Doherty, M, Duda, JL, Klocke, R, Abhishek, A, Rushton, A, Zhang, W, Lewis, CE, Torner, J, Kitas, G, White, DK \& Multicenter Osteoarthritis Group 2018, 'Does the intensity of daily walking matter for protecting against the development of a slow gait speed in people with or at high risk of Knee Osteoarthritis? An observational study', Osteoarthritis and Cartilage. https://doi.org/10.1016/j.joca.2018.04.015

Link to publication on Research at Birmingham portal

## General rights

Unless a licence is specified above, all rights (including copyright and moral rights) in this document are retained by the authors and/or the copyright holders. The express permission of the copyright holder must be obtained for any use of this material other than for purposes permitted by law.
-Users may freely distribute the URL that is used to identify this publication.
-Users may download and/or print one copy of the publication from the University of Birmingham research portal for the purpose of private study or non-commercial research.
-User may use extracts from the document in line with the concept of 'fair dealing' under the Copyright, Designs and Patents Act 1988 (?)
-Users may not further distribute the material nor use it for the purposes of commercial gain.
Where a licence is displayed above, please note the terms and conditions of the licence govern your use of this document.
When citing, please reference the published version.

## Take down policy

While the University of Birmingham exercises care and attention in making items available there are rare occasions when an item has been uploaded in error or has been deemed to be commercially or otherwise sensitive.

If you believe that this is the case for this document, please contact UBIRA@lists.bham.ac.uk providing details and we will remove access to the work immediately and investigate.

Figure 1. Flow chart for sample size for MOST and OAI



Figure 2. Associations of replacing not walking with equal periods of walking at different intensities on incident slow gait ( $<1.0 \mathrm{~m} / \mathrm{s}$ ).

MOST: $<1.0 \mathrm{~m} / \mathrm{s}$


OAI: < $1.0 \mathrm{~m} / \mathrm{s}$


Figure 3. Associations of replacing not walking with equal periods of walking at different intensities on incident slow gait ( $<1.2 \mathrm{~m} / \mathrm{s}$ ).

MOST: < $1.2 \mathrm{~m} / \mathrm{s}$


OAI: $<1.2 \mathrm{~m} / \mathrm{s}$


1 Table 1. Participant characteristics included in analyses in MOST and OAI datasets.
2

|  | MOST: $\mathrm{N}=1731$ | OAI: $\mathrm{N}=1925$ |
| :---: | :---: | :---: |
| Age [mean (sd) range] | 67.2 (7.7), 55.0-84.0 | 65.1 (9.1), 50.0-84.0 |
| Sex [\% women] | 59.8 | 55.2 |
| BMI [ $\mathrm{kg} / \mathrm{m}]$ [mean (sd) range] | 30.6 (5.9), 18.2-62.4 | 28.3 (4.6), 17.2-44.6 |
| Education [\% $\geq$ college degree] | 47.3 | 86.7 |
| Race [\% White] | 90.8 | 83.2 |
| ROA [\%] | 50.0 | 55.8 |
| Knee pain [MOST: 0-100] [OAl: 0-10] [mean (sd) range] | 18.6 (20.7), 0-100 | 3.2 (2.8), 0.0-10.0 |
| Comorbidity ( $\geq 1$ [ [\%] | 30.0 | 29.4 |
| Pain in the lower body [\%] | 70.7 | 59.6 |
| Depressive Symptoms [\% CES-D $\geq 16$ ] | 8.9 | 11.5 |

1 Table 2: Time spent not walking and walking at different intensities at baseline according to

## MOST:

| $<1.0$ m/s |  | $<1.2$ m/s |  |
| :---: | :---: | :---: | :---: |
| $\mathrm{N}=1342$ |  | $\mathrm{N}=878$ |  |
| $\begin{gathered} \text { Yes } \\ {[\text { Mean min/day (SD)] }} \end{gathered}$ | No [Mean min/day (SD)] | $\begin{gathered} \text { Yes } \\ \text { [Mean min/day (SD)] } \end{gathered}$ | No [Mean min/day (SD)] |
| $\mathrm{n}=108$ | $\mathrm{n}=1234$ | $\mathrm{n}=156$ | $\mathrm{n}=722$ |

## Walking intensity at Baseline

| Not walking | $611.2(111.2)$ | $586.1(104.6)$ | $589.3(109.2)$ | $576.5(101.4)$ |
| :--- | :---: | :---: | :---: | :---: |
| Very-Light | $262.3(78.7)$ | $288.4(74.6)$ | $276.8(74.4)$ | $296.3(73.5)$ |
| Light | $38.8(21.4)$ | $50.9(25.0)$ | $45.6(20.6)$ | $55.0(23.4)$ |
| Moderate-to-vigorous | $4.4(7.3)$ | $9.4(11.8)$ | $6.8(8.4)$ | $11.7(13.1)$ |

OAI:

|  | $\begin{aligned} & <1.0 \mathrm{~m} / \mathrm{s} \\ & \mathrm{~N}=1551 \end{aligned}$ |  | $\begin{gathered} <1.2 \mathrm{~m} / \mathrm{s} \\ \mathrm{~N}=1221 \end{gathered}$ |  |
| :---: | :---: | :---: | :---: | :---: |
|  | $\begin{gathered} \text { Yes } \\ {[\text { Mean } \min / \text { day (SD)] }} \\ n=70 \end{gathered}$ | $\begin{gathered} \text { No } \\ {[\text { Mean min/day (SD)] }} \\ \mathrm{n}=1481 \end{gathered}$ | $\begin{gathered} \text { Yes } \\ {[\text { Mean min/day (SD)] }} \\ \mathrm{n}=163 \end{gathered}$ | $\begin{gathered} \mathrm{No} \\ {[\text { Mean } \min / \text { day }(S D)]} \\ \mathrm{n}=1058 \end{gathered}$ |
| Walking intensity at Baseline |  |  |  |  |
| Not walking | 459.8 (85.2) | 458.1 (90.5) | 468.8 (88.4) | 454.4 (90.6) |
| Very-Light | 379.3 (78.9) | 408.9 (87.8) | 393.4 (80.0) | 414.7 (84.6) |
| Light | 9.7 (11.6) | 20.5 (16.3) | 15.9 (13.7) | 22.5 (16.7) |
| Moderate-to-vigorous | 2.0 (4.2) | 8.6 (11.7) | $5.5 \pm(10.9)$ | 10.0 (12.3) |

