Supplementary information

Supplementary Table 1: Summary of smoking history data (i.e. those with at least 1 wave of smoking data and pain at age 68, n=2409)

<table>
<thead>
<tr>
<th></th>
<th>Men, N (%)</th>
<th>Women, N (%)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ever smoker, N=2409</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>310 (26.8)</td>
<td>431 (34.5)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Yes</td>
<td>848 (73.2)</td>
<td>820 (65.6)</td>
<td></td>
</tr>
<tr>
<td><strong>Smoking history at</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Age 20, n=2074</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current smoker</td>
<td>551 (55.8)</td>
<td>508 (46.8)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Ex-smoker</td>
<td>129 (13.1)</td>
<td>145 (13.4)</td>
<td></td>
</tr>
<tr>
<td>Never</td>
<td>308 (31.2)</td>
<td>433 (39.9)</td>
<td></td>
</tr>
<tr>
<td><strong>Age 25, N=1956</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Current smoker</td>
<td>390 (42.4)</td>
<td>344 (33.2)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Ex-smoker</td>
<td>255 (27.8)</td>
<td>302 (29.1)</td>
<td></td>
</tr>
<tr>
<td>Never</td>
<td>274 (29.8)</td>
<td>391 (37.7)</td>
<td></td>
</tr>
<tr>
<td><strong>Age 31, N=2032</strong></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Current smoker</td>
<td>375 (38.5)</td>
<td>373 (35.3)</td>
<td>.001</td>
</tr>
<tr>
<td>Ex-smoker</td>
<td>336 (34.5)</td>
<td>318 (30.1)</td>
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<tr>
<td>Never</td>
<td>263 (27)</td>
<td>367 (34.7)</td>
<td></td>
</tr>
<tr>
<td><strong>Age 36, N=2129</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current smoker</td>
<td>301 (29.7)</td>
<td>298 (26.8)</td>
<td>.001</td>
</tr>
<tr>
<td>Age</td>
<td>Men, N (%)</td>
<td>Women, N (%)</td>
<td>P value</td>
</tr>
<tr>
<td>------------</td>
<td>------------</td>
<td>--------------</td>
<td>---------</td>
</tr>
<tr>
<td>Ex-smoker</td>
<td>431 (42.5)</td>
<td>423 (38)</td>
<td></td>
</tr>
<tr>
<td>Never</td>
<td>283 (27.9)</td>
<td>393 (35.3)</td>
<td></td>
</tr>
<tr>
<td><strong>Age 43, N=2196</strong></td>
<td></td>
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<tr>
<td>Current smoker</td>
<td>278 (26.6)</td>
<td>270 (23.5)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Ex-smoker</td>
<td>397 (38)</td>
<td>312 (27.1)</td>
<td></td>
</tr>
<tr>
<td>Never</td>
<td>371 (35.5)</td>
<td>568 (49.4)</td>
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</tr>
<tr>
<td><strong>Age 53, N=2157</strong></td>
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<td></td>
</tr>
<tr>
<td>Current smoker</td>
<td>201 (19.9)</td>
<td>210 (18.3)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Ex-smoker</td>
<td>437 (43.2)</td>
<td>348 (30.4)</td>
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<tr>
<td>Never</td>
<td>374 (37.0)</td>
<td>587 (51.3)</td>
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</tr>
<tr>
<td><strong>Age 60-64, N=2027</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current smoker</td>
<td>109 (11.4)</td>
<td>120 (11.2)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Ex-smoker</td>
<td>452 (47.3)</td>
<td>367 (34.3)</td>
<td></td>
</tr>
<tr>
<td>Never</td>
<td>395 (41.3)</td>
<td>584 (54.5)</td>
<td></td>
</tr>
<tr>
<td><strong>Age 68, N=2366</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current smoker</td>
<td>113 (9.9)</td>
<td>96 (7.8)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Ex-smoker</td>
<td>537 (47.1)</td>
<td>413 (33.7)</td>
<td></td>
</tr>
<tr>
<td>Never</td>
<td>489 (48.9)</td>
<td>718 (58.5)</td>
<td></td>
</tr>
</tbody>
</table>
Supplementary Table 2: Associations between lifetime smoking history (vs never smoker) and pain outcomes, n=1759 (complete case analysis)

<table>
<thead>
<tr>
<th>Model</th>
<th>CWP vs no pain</th>
<th>CRP vs no pain</th>
<th>Other pain vs no pain</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>RRR (95% CI)</td>
<td>P value</td>
<td>RRR (95% CI)</td>
</tr>
<tr>
<td><strong>Sex-adjusted</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never smoker</td>
<td>1</td>
<td>.0028</td>
<td>1</td>
</tr>
<tr>
<td>Predominantly non-smoker</td>
<td>1.83 (1.22, 2.75)</td>
<td>1.14 (0.89, 1.48)</td>
<td>1.11 (0.79, 1.57)</td>
</tr>
<tr>
<td>Predominantly smoker</td>
<td>2.39 (1.49, 3.84)</td>
<td>1.34 (0.97, 1.84)</td>
<td>1.53 (1.02, 2.29)</td>
</tr>
<tr>
<td>Lifelong smoker</td>
<td>1.60 (0.75, 3.46)</td>
<td>0.78 (0.45, 1.37)</td>
<td>0.91 (0.45, 1.85)</td>
</tr>
<tr>
<td><strong>Fully-adjusted</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Never smoker</td>
<td>1</td>
<td>.024</td>
<td>1</td>
</tr>
<tr>
<td>Predominantly non-smoker</td>
<td>1.76 (1.15, 2.70)</td>
<td>1.10 (0.84, 1.44)</td>
<td>1.09 (0.77, 1.55)</td>
</tr>
<tr>
<td>Predominantly smoker</td>
<td>2.09 (1.26, 3.47)</td>
<td>1.20 (0.86, 1.69)</td>
<td>1.52 (0.99, 2.31)</td>
</tr>
<tr>
<td>Lifelong smoker</td>
<td>1.47 (0.65, 3.31)</td>
<td>0.73 (0.41, 1.31)</td>
<td>0.99 (0.48, 2.06)</td>
</tr>
</tbody>
</table>

*Adjusted for all covariates (sex, own occupational class, educational level, BMI, leisure time physical activity, alcohol intake, longstanding illness and symptoms of anxiety and depression.)
Supplementary Table 3: Hazard ratio for all-cause mortality by lifetime smoking history

<table>
<thead>
<tr>
<th>Smoking History</th>
<th>Sex adjusted</th>
<th>Adjusted*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HR (95% CI)</td>
<td>P value (95% CI)</td>
</tr>
<tr>
<td>Never smoker</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Predominantly non-smoker</td>
<td>1.21 (0.89 1.64)</td>
<td>.22</td>
</tr>
<tr>
<td>Predominantly smoker</td>
<td>1.59 (1.14 – 2.22)</td>
<td>.007</td>
</tr>
<tr>
<td>Lifelong smoker</td>
<td>5.12 (3.79 – 6.90)</td>
<td>&lt;.001</td>
</tr>
</tbody>
</table>

*adjusted for sex, father’s occupational class and own occupational class