Lipid lowering drugs lower the risk of ischaemic cardiovascular events. The absolute benefit is highest in people at greatest risk of having an event in the near future, but adverse effects and costs are similar whatever the baseline risk. The decision to treat entails balancing expected benefits with expected harms, but is essentially a value judgement. Treatment preferences may vary systematically between groups of people either because they have different levels of baseline risk, or because they have different values and priorities.

Current UK guidelines recommend treatment for those whose 10 year risk of coronary heart disease is at least 30%.

Assuming a relative risk reduction of one third this is an absolute benefit of about 10% over 10 years (or 5% over five years). Very little is known about the level of coronary risk at which either doctors or patients want treatment.

One small study suggested that patients and nurses would choose higher risk thresholds (larger absolute benefits) than doctors. The policy to treat a risk of 30% over 10 years is an arbitrary choice.

This study compared the absolute benefits of treatment different groups would require before starting treatment themselves.

**METHODS**

A questionnaire described a tablet reducing the risk of heart attack by about one third. Respondents were asked how many of 100 people similar to themselves should be saved from a heart attack for it to be worthwhile all of them taking the tablet for five years (see journal web site for a copy of the questionnaire). The number chosen is the minimum absolute benefit. Questionnaires were posted to: a random sample of 100 general practitioners on the health authority list, 35 health service managers, 204 patients of an inner city general practice, and 160 patients of a suburban practice. Questionnaires were handed to: 40 general practitioner registrars attending a course, medical and pharmaceutical advisers attending seminars, patients attending a cardiology clinic, and people attending a day centre for the homeless.

### Table 1

<table>
<thead>
<tr>
<th>Group</th>
<th>Questionnaires posted</th>
<th>Number (% returned)</th>
<th>Incomplete response*</th>
<th>Valid number</th>
<th>Would not wish treatment</th>
<th>Median benefit (% saved from heart attack in 5 years)</th>
<th>Interquartile range</th>
<th>Rank sum p for difference</th>
<th>Mean age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suburban patients</td>
<td>160</td>
<td>81(51)</td>
<td>8</td>
<td>71</td>
<td>2</td>
<td>30</td>
<td>2 to 60</td>
<td>0.0004†</td>
<td>52</td>
</tr>
<tr>
<td>Inner city patients</td>
<td>204</td>
<td>52(26)</td>
<td>13</td>
<td>37</td>
<td>1</td>
<td>50</td>
<td>30 to 75</td>
<td>0.38†</td>
<td>50</td>
</tr>
<tr>
<td>Cardiac clinic patients</td>
<td>9</td>
<td>32</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Homeless</td>
<td>0</td>
<td>23</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General practitioners</td>
<td>100</td>
<td>43(43)</td>
<td>11</td>
<td>88</td>
<td>2</td>
<td>10</td>
<td>5 to 30</td>
<td>0.36†</td>
<td>41</td>
</tr>
<tr>
<td>Advisors/managers</td>
<td>35</td>
<td>29(83)</td>
<td>5</td>
<td>67</td>
<td>4</td>
<td>20</td>
<td>10 to 50</td>
<td>0.04‡</td>
<td>38</td>
</tr>
<tr>
<td>All patients</td>
<td>30</td>
<td>163</td>
<td>4</td>
<td>16</td>
<td>10</td>
<td>50</td>
<td>10 to 75</td>
<td>&lt;0.0001</td>
<td>52</td>
</tr>
<tr>
<td>Health professionals</td>
<td>16</td>
<td>155</td>
<td>6</td>
<td>10</td>
<td>6</td>
<td>50</td>
<td>5 to 38</td>
<td>(patients v professionals)</td>
<td>38</td>
</tr>
<tr>
<td>Male</td>
<td>24</td>
<td>170</td>
<td>3</td>
<td>25</td>
<td>5</td>
<td>50</td>
<td>5 to 60</td>
<td>0.5</td>
<td>47</td>
</tr>
<tr>
<td>Female</td>
<td>22</td>
<td>147</td>
<td>6</td>
<td>30</td>
<td>10</td>
<td>65</td>
<td></td>
<td>43</td>
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<tr>
<td>Age &lt;36</td>
<td>14</td>
<td>113</td>
<td>4</td>
<td>20</td>
<td>5</td>
<td>50</td>
<td></td>
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<tr>
<td>Age 36–55</td>
<td>12</td>
<td>101</td>
<td>4</td>
<td>20</td>
<td>5</td>
<td>50</td>
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<td></td>
</tr>
<tr>
<td>Age &gt;55</td>
<td>20</td>
<td>103</td>
<td>1</td>
<td>50</td>
<td>10</td>
<td>75</td>
<td>0.0002§</td>
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<td></td>
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<tr>
<td>Personal history of “heart attack”</td>
<td>9</td>
<td>27</td>
<td>0</td>
<td>70</td>
<td>50</td>
<td>50 to 95</td>
<td>&lt;0.0001</td>
<td>60</td>
<td></td>
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<tr>
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<td>9</td>
<td>27</td>
<td>0</td>
<td>70</td>
<td>50</td>
<td>50 to 95</td>
<td>&lt;0.0001</td>
<td>60</td>
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<tr>
<td>No</td>
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<td>290</td>
<td>9</td>
<td>20</td>
<td>3</td>
<td>50</td>
<td></td>
<td>44</td>
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<tr>
<td>Personal history of “heart attack”</td>
<td>9</td>
<td>25</td>
<td>75</td>
<td>50</td>
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<td>50 to 95</td>
<td>&lt;0.0001</td>
<td>61</td>
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<tr>
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<td>9</td>
<td>25</td>
<td>75</td>
<td>50</td>
<td>50</td>
<td>50 to 95</td>
<td>&lt;0.0001</td>
<td>61</td>
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</tr>
<tr>
<td>No</td>
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<td>137</td>
<td>50</td>
<td>10 to 70</td>
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<td></td>
<td>50</td>
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</tr>
<tr>
<td>Family history of “heart attack”</td>
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<td>110</td>
<td>2</td>
<td>50</td>
<td>10</td>
<td>75</td>
<td>0.0004</td>
<td>50</td>
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<tr>
<td>Yes</td>
<td>16</td>
<td>110</td>
<td>2</td>
<td>50</td>
<td>10</td>
<td>75</td>
<td>0.0004</td>
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<tr>
<td>No</td>
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<td>20</td>
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<td>50</td>
<td></td>
<td>42</td>
<td></td>
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<tr>
<td>All</td>
<td>46</td>
<td>318</td>
<td>9</td>
<td>25</td>
<td>5</td>
<td>60</td>
<td></td>
<td>45</td>
<td></td>
</tr>
</tbody>
</table>

*Incomplete response, did not answer the question about absolute benefit. †Rank sum differences between patient groups are between that group and all other patients. ‡Rank sum difference between general practitioners and advisors/managers. §Age group differences compare over 55 with 55 years or under. One inner city practice patient did not include details of age, sex, personal or family history of heart attack.
RESULTS
Nine people indicated that they would not wish such treatment. The absolute benefit chosen was skewed and so medians are shown (table 1). Doctors and other health professionals chose similar absolute benefits (10% and 20%), although doctors were twice as likely to choose an absolute benefit of 10% or under. This was not changed by adjusting for age, sex, personal or family history of heart attack (AOR 1.9, 95% CI 1 to 3.8). Patients chose significantly higher benefits. Health professionals were three times more likely than patients to choose an absolute benefit of under 20% (OR 3.0, 95% CI 1.9 to 4.8, unchanged by adjustment).

Older people chose higher benefits, which was almost all explained by there being fewer professionals in those over 55 years old. People who had had a heart attack chose very high absolute benefits, which was only partly explained by there being fewer professionals in this group.

DISCUSSION
Our study did not specify the mechanism of the drug, and could apply to hypertension, lipid lowering, or some other treatment. The median absolute benefit required by doctors implies treating people at 30% risk of coronary events in five years (60% in 10 years)—much higher than that recommended guidelines. The high absolute benefits chosen by many patients would require both improbably effective drugs and extraordinarily high baseline risk, but the difference between health professionals and non-professionals is striking. Differences between groups may reflect socioeconomic status; homeless people and inner city patients may have more immediate concerns than professionals and suburban patients, viewing such preventive treatment as low priority.

Many people who would be targeted for preventive treatment might not wish it unless they were at higher risk of cardiac events. We believe that patients’ preferences should be elicited before treating asymptomatic conditions. The range of preferences is wide, but many decisions made on this basis will be in contrast with expert guidelines. Decision aids for preventive treatment may need to be written in a flexible style to cope with the diversity of values.

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Thanks to staff at Vauxhall Primary Health Care, at Mather Avenue Practice, at The Whitechapel Day Centre, and Bev Seel (cardiac specialist nurse) for help distributing and collecting questionnaires, and to Fiona Johnstone, Sam Vincent and James Woodcock for advice on the manuscript.

The questionnaire used in the study is available to view on the journal web site (www.jech.com/supplemental)

Key points
- Lipid lowering drugs lower the risk of ischaemic cardiac events, and people at the highest risk of events gain the greatest absolute benefit from treatment. Current UK guidelines recommend treatment for people with a 10 year risk of coronary disease of at least 30%, equating to an absolute benefit of about 5% over five years, but very little is known about the level of risk at which either doctors or patients want treatment.
- Doctors and other health professionals chose smaller absolute benefits than patient groups; patients from an inner city practice chose higher benefits than patients from a suburban practice, and homeless people chose the highest absolute benefits.

Policy implications
Guidelines are likely to be very different if they incorporate the observed range of preferences.

REFERENCES

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S Barton, Editor, Clinical Evidence, BMJ Publishing Group, London, UK

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Who decides when to start preventive treatment? A questionnaire survey to compare the views of different population subgroups

D K Lewis and S Barton

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