NO IMPROVEMENT IN HOME FLOW RATES IN A QUARTER OF MEN UNDERGOING TRANSURETHRAL RESECTION OF THE PROSTATE (TURP).

Hypothesis / aims of study
Men who undergo TURP are expected to experience improvement in flow rate as a result of the reduction in outlet resistance. Due to intrasubject variability in maximum flow rate ($Q_{\text{max}}$), this may not be apparent on conventional uroflowmetry (one flow measurement per subject before and after surgery). It should, however, be clearly demonstrable from home uroflowmetry, given that multiple measurements allow precise calculation of an average $Q_{\text{max}}$. Therefore, our aim was to demonstrate the effect of TURP on flow rate and voided volume ($V_{\text{void}}$) using home uroflowmetry.

Study design, materials and methods
17 men selected for TURP according standard institutional criteria were recruited into the study. Each used a portable home flowmeter for one week prior to surgery, and again at least four months following surgery. An IPSS questionnaire was also completed pre, and at least four months post, procedure.

Results
Median patient age at recruitment was 72 years and median time between surgery and follow-up was 5.3 months. 4 men did not experience a significant increase in median $Q_{\text{max}}$ (Figure 1) and 9 men did not experience a significant increase in median $V_{\text{void}}$ (Mann-Whitney U test). Overall, there was a net increase in median $Q_{\text{max}}$ of 5 ml·s$^{-1}$ and in median $V_{\text{void}}$ of 37 ml. Across all 17 men, total IPSS score decreased significantly following surgery from 21 to 8. Voiding score (IPSS Q3, 5 and 6) decreased from 8 to 1 and storage score (IPSS Q2, 4 and 7) was less improved, decreasing from 10 to 6.

Results for all 17 men are summarised in Table I.

<table>
<thead>
<tr>
<th>Pre TURP median</th>
<th>Post TURP median</th>
<th>p (Wilcoxon signed rank test)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median $Q_{\text{max}}$</td>
<td>9.6 ml·s$^{-1}$</td>
<td>14.7 ml·s$^{-1}$</td>
</tr>
<tr>
<td>Median $V_{\text{void}}$</td>
<td>142 ml</td>
<td>179 ml</td>
</tr>
<tr>
<td>Total IPSS score</td>
<td>21</td>
<td>8</td>
</tr>
<tr>
<td>Voiding score</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>Storage score</td>
<td>10</td>
<td>6</td>
</tr>
<tr>
<td>IPSS QOL</td>
<td>5</td>
<td>2</td>
</tr>
</tbody>
</table>

Table I. Pre and post surgery $Q_{\text{max}}$, $V_{\text{void}}$ and IPSS values for all 17 men.

Interpretation of results
24 % of subjects did not experience an improvement in flow rate following TURP. The possible reasons are as follows:

**Absence of prostatic obstruction**
Subjects B and C were deemed to be obstructed on urodynamics prior to surgery, but no record of urodynamics having been performed on subjects A and D was found. In those men found to be obstructed on urodynamics, it is possible that the prostatic region was not in fact the flow-controlling zone.

**Reappearance of obstruction**
It is unlikely that prostatic obstruction returned within the study timeframe, given that regrowth is to the order of 1 g per year [1]. Formation of scar tissue following surgery resulting in constrictive obstruction may result in an unimproved flow rate. This ought to be indicated by less variation in flow rate with voided volume, possibly observed in subject B (Figure 1).

**Decrease in bladder contractility**
Bladder contractility decreases following TURP [2]. It is possible that the decrease in outlet resistance was offset by a decrease in bladder contractility in the months following surgery, resulting in an unimproved flow rate.

Concluding message
A quarter of our patients did not experience improvement in flow rate following TURP. Home uroflowmetry is a sensitive tool for demonstrating treatment-induced changes in $Q_{\text{max}}$ and $V_{\text{void}}$. 
Figure 1. $V_{\text{void}}$ versus $Q_{\text{max}}$ plots, pre and post surgery, for 4 men who did not experience improvement in $Q_{\text{max}}$ following TURP. Change in IPSS total and weak flow score also shown.

References

Disclosures
Funding: The Wellcome Trust Clinical Trial: No Subjects: HUMAN Ethics Committee: Newcastle & North Tyneside 1 Helsinki: Yes Informed Consent: Yes