IT STARTS WITH ONE

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Meta-research to drive improvements of the modelling of human diseases

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Disclosures

• Editor-in-Chief of BMJ Open Science

• Convenor of the Collaborative Approach to Meta-Analysis and Review of Animal Data from Experimental Studies (CAMARADES)
My background

- Meta-research scientist with a background in pharmacology and neuroscience
- Approach is based on systematic review & meta-analysis
It’s a problem.....

<table>
<thead>
<tr>
<th>Condition</th>
<th>Randomisation</th>
<th>Blinded Outcome Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stroke</td>
<td>36%</td>
<td>29%</td>
</tr>
<tr>
<td>MND</td>
<td>31%</td>
<td>20%</td>
</tr>
<tr>
<td>AD</td>
<td>15%</td>
<td>25%</td>
</tr>
<tr>
<td>PD</td>
<td>12%</td>
<td>15%</td>
</tr>
<tr>
<td>EAE</td>
<td>8%</td>
<td>15%</td>
</tr>
<tr>
<td>Glioma</td>
<td>14%</td>
<td>0%</td>
</tr>
</tbody>
</table>

Sena et al, TiNS 2007
Good ‘quality’ journals

Macleod et al, PLOS Bio 2015
It’s not just a neuroscience problem

- The “best” UK institutions
- RAE – 1,173 studies

Macleod et al, PLOS Bio 2015
Things are improving

“The 2009 systematic review highlighted areas of weakness with respect to the lack of reporting on certain aspects of experimental design. While we did not necessarily agree with all recommendations and also felt that not-reported did not mean not done we did take on board that future studies did need to more fully report details of experimental design. This change is reflected in the positive outcome of the follow-up 2016 systematic review”

--- Professor Stuart Allan, University of Manchester

We are extending this programme of work to develop guidance to support improved reporting of *in vitro* research. These guidelines (working title, the RIVER guidelines - reporting *In Vitro* Experiments Responsibly) will optimise the reproducibility of *in vitro* studies and improve confidence in their validity to support wider uptake.
Thanks to.........