The Mellanby effect
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You’re not as think as you drunk you are…
Hypothesis
Ethanol concentration on rising curve causes more impairment

The Mellanby effect: impairment (×) at concentration C1 is greater on the way up than on the way down
Many functional tests

Fig 14.—Drawings of a man at different intervals after imbibing Whisky

Random Object Span Task

(1)  1  2  3  4  5  –
(2)  white black short long down – –
…
(20) two w four r one o three –

Shipley Institute for Living Test
Systematic review → 19 included studies

<table>
<thead>
<tr>
<th>Less impaired (Better descending)</th>
<th>More impaired (Worse descending)</th>
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<tbody>
<tr>
<td>$t_{\text{mean}}$ for maze &amp; peg-board arithmetic ability abstraction subjective drunkenness willingness to drive (x 2)</td>
<td>cognitive tasks error performance inhibitory control visual memory simulated driving task</td>
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Conclusion

Mellanby was about half right

Half empty  Half full
Experiments on four dogs

Brown  Large black
Small black  White

Hard to tell if a dog is intoxicated:
Weak hind legs, rolling gait, stumbling

‘usually appear in first 2 hours… after this period… the dog appears normal’
Theory

Ethanol concentration on rising curve causes more impairment

Blood ethanol concentration

Impairment

Time

Concn

C1

West Midlands Centre for ADRs
Systematic review → 19 included studies

Mellanby wrong  Mellanby correct
Systematic review → 19 included studies