

MS 1132100059162845

**Additional File 2**

**Matrix of relevant BCTs for intervention functions**

from Michie et al. (2014). *The Behaviour Change Wheel: A Guide to Designing Interventions*. London, Silverback.

<b>Intervention function</b>	<b>Individual BCTs</b>
<b>Education</b>	<p><b>Most frequently used BCTs:</b></p> <ul style="list-style-type: none"><li><b>Information about social and environmental consequences</b></li><li><b>Information about health consequences</b></li><li><b>Feedback on behaviour</b></li><li><b>Feedback on outcome(s) of the behaviour</b></li><li><b>Prompts/cues</b></li><li><b>Self-monitoring of behaviour</b></li></ul> <p>Less frequently used BCTs:</p> <ul style="list-style-type: none"><li>Biofeedback</li><li>Self-monitoring of outcome(s) of behaviour</li><li>Cue signalling reward</li><li>Satiation</li><li>Information about antecedents</li><li>Re-attribution</li><li>Behavioural experiments</li><li>Information about emotional consequences</li><li>Information about others' approval</li></ul>

<b>Intervention function</b>	<b>Individual BCTs</b>
<b>Persuasion</b>	<p><b>Most frequently used BCTs:</b></p> <ul style="list-style-type: none"> <li><b>Credible source</b></li> <li><b>Information about social and environmental consequences</b></li> <li><b>Information about health consequences</b></li> <li><b>Feedback on behaviour</b></li> <li><b>Feedback on outcome(s) of the behaviour</b></li> </ul> <p>Less frequently used BCTs:</p> <ul style="list-style-type: none"> <li>Biofeedback</li> <li>Re-attribution</li> <li>Focus on past success</li> <li>Verbal persuasion about capability</li> <li>Framing/reframing</li> <li>Identity associated with changed behaviour</li> <li>Identification of self as role model</li> <li>Information about emotional consequences</li> <li>Salience of consequences</li> <li>Information about others' approval</li> <li>Social comparison</li> </ul>
<b>Incentivisation</b>	<p><b>Most frequently used BCTs:</b></p> <ul style="list-style-type: none"> <li><b>Feedback on behaviour</b></li> <li><b>Feedback on outcome(s) of behaviour</b></li> <li><b>Monitoring of behaviour by others without evidence of feedback</b></li> <li><b>Monitoring outcome of behaviour by others without evidence of feedback</b></li> </ul>

Intervention function	Individual BCTs
	<p data-bbox="464 300 855 331"><b>Self-monitoring of behaviour</b></p> <p data-bbox="426 432 762 463">Less frequently used BCTs:</p> <ul style="list-style-type: none"> <li data-bbox="464 499 767 530">Paradoxical instructions</li> <li data-bbox="464 566 624 598">Biofeedback</li> <li data-bbox="464 633 1007 665">Self-monitoring of outcome(s) of behaviour</li> <li data-bbox="464 701 735 732">Cue signalling reward</li> <li data-bbox="464 768 791 799">Remove aversive stimulus</li> <li data-bbox="464 835 751 866">Reward approximation</li> <li data-bbox="464 902 751 934">Rewarding completion</li> <li data-bbox="464 969 775 1001">Situation-specify reward</li> <li data-bbox="464 1037 863 1068">Reward incompatible behaviour</li> <li data-bbox="464 1104 791 1135">Reduce reward frequency</li> <li data-bbox="464 1171 815 1202">Reward alternate behaviour</li> <li data-bbox="464 1238 727 1270">Remove punishment</li> <li data-bbox="464 1305 632 1337">Social reward</li> <li data-bbox="464 1373 663 1404">Material reward</li> <li data-bbox="464 1440 807 1471">Material reward (outcome)</li> <li data-bbox="464 1507 616 1538">Self-reward</li> <li data-bbox="464 1574 719 1606">Non-specific reward</li> <li data-bbox="464 1641 584 1673">Incentive</li> <li data-bbox="464 1709 727 1740">Behavioural contract</li> <li data-bbox="464 1776 632 1807">Commitment</li> <li data-bbox="464 1843 1078 1874">Discrepancy between current behaviour and goal</li> <li data-bbox="464 1910 695 1942">Imaginary reward</li> </ul>

<b>Intervention function</b>	<b>Individual BCTs</b>
<b>Coercion</b>	<p><b>Most frequently used BCTs:</b></p> <ul style="list-style-type: none"> <li><b>Feedback on behaviour</b></li> <li><b>Feedback on outcome(s) of behaviour</b></li> <li><b>Monitoring of behaviour by others without evidence of feedback</b></li> <li><b>Monitoring outcome of behaviour by others without evidence of feedback</b></li> <li><b>Self-monitoring of behaviour</b></li> </ul> <p>Less frequently used BCTs:</p> <ul style="list-style-type: none"> <li>Biofeedback</li> <li>Self-monitoring of outcome(s) of behaviour</li> <li>Remove access to the reward</li> <li>Punishment</li> <li>Behaviour cost</li> <li>Remove reward</li> <li>Future punishment</li> <li>Behavioural contract</li> <li>Commitment</li> <li>Discrepancy between current behaviour and goal</li> <li>Incompatible beliefs</li> <li>Anticipated regret</li> <li>Imaginary punishment</li> </ul>
<b>Training</b>	<p><b>Most frequently used BCTs:</b></p> <ul style="list-style-type: none"> <li><b>Demonstration of the behaviour</b></li> </ul>

<b>Intervention function</b>	<b>Individual BCTs</b>
	<p><b>Instruction on how to perform a behaviour</b></p> <p><b>Feedback on the behaviour</b></p> <p><b>Feedback on outcome(s) of behaviour</b></p> <p><b>Self-monitoring of behaviour</b></p> <p><b>Behavioural practice/rehearsal</b></p> <p>Less frequently used BCTs:</p> <ul style="list-style-type: none"> <li>Biofeedback</li> <li>Self-monitoring of outcome(s) of behaviour</li> <li>Habit formation</li> <li>Habit reversal</li> <li>Graded tasks</li> <li>Behavioural experiments</li> <li>Mental rehearsal of successful performance</li> <li>Self-talk</li> <li>Self-reward</li> </ul>
<b>Restriction</b>	<p><i>No BCTs in BCTTv1 are linked to this intervention function because they are focused on changing the way that people think, feel and react rather than the way the external environment limits their behaviour.</i></p>
<b>Environmental restructuring</b>	<p><b>Most frequently used BCTs:</b></p> <ul style="list-style-type: none"> <li><b>Adding objects to the environment</b></li> <li><b>Prompts/cues</b></li> <li><b>Restructuring the physical environment</b></li> </ul>

<b>Intervention function</b>	<b>Individual BCTs</b>
	<p>Less frequently used BCTs:</p> <ul style="list-style-type: none"> <li>Cue signalling reward</li> <li>Remove access to the reward</li> <li>Remove aversive stimulus</li> <li>Satiation</li> <li>Exposure</li> <li>Associative learning</li> <li>Reduce prompt/cue</li> <li>Restructuring the social environment</li> </ul>
<b>Modelling</b>	<p><b>Most frequently used BCTs:</b></p> <p><b>Demonstration of the behaviour</b></p>
<b>Enablement</b>	<p><b>Most frequently used BCTs:</b></p> <ul style="list-style-type: none"> <li><b>Social support (unspecified)</b></li> <li><b>Social support (practical)</b></li> <li><b>Goal setting (behaviour)</b></li> <li><b>Goal setting (outcome)</b></li> <li><b>Adding objects to the environment</b></li> <li><b>Problem solving</b></li> <li><b>Action planning</b></li> <li><b>Self-monitoring of behaviour</b></li> <li><b>Restructuring the physical environment</b></li> </ul>

<b>Intervention function</b>	<b>Individual BCTs</b>
	<p><b>Review behaviour goal(s)</b></p> <p><b>Review outcome goal(s)</b></p> <p>Less frequently used BCTs:</p> <ul style="list-style-type: none"> <li>Social support (emotional)</li> <li>Reduce negative emotions</li> <li>Conserve mental resources</li> <li>Pharmacological support</li> <li>Self-monitoring of outcome(s) of behaviour</li> <li>Behaviour substitution</li> <li>Overcorrection</li> <li>Generalisation of a target behaviour</li> <li>Graded tasks</li> <li>Avoidance/reducing exposure to cues for the behaviour</li> <li>Restructuring the social environment</li> <li>Distraction</li> <li>Body changes</li> <li>Behavioural experiments</li> <li>Mental rehearsal of successful performance</li> <li>Focus on past success</li> <li>Self-talk</li> <li>Verbal persuasion about capability</li> <li>Self-reward</li> <li>Behavioural contract</li> <li>Commitment</li> <li>Discrepancy between current behaviour and goal</li> </ul>

<b>Intervention function</b>	<b>Individual BCTs</b>
	<p>Pros and cons</p> <p>Comparative imagining of future outcomes</p> <p>Valued self-identity</p> <p>Framing/reframing</p> <p>Incompatible beliefs</p> <p>Identity associated with changed behaviour</p> <p>Identification of self as role model</p> <p>Salience of consequences</p> <p>Monitoring of emotional consequences</p> <p>Anticipated regret</p> <p>Imaginary punishment</p> <p>Imaginary reward</p> <p>Vicarious consequences</p>