The Behaviour Change Wheel – A Guide to Designing Interventions

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Dr Lou Atkins
Centre for Behaviour Change

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Welcome and introductions

Dr Lou Atkins

Dr Caroline Wood
What will today’s session cover?

Section 1: Behaviour – how should we think about it?

Section 2: COM-B model – behavioural analysis and diagnosis

10.30am - Coffee break

Section 3: The Behaviour Change Wheel - Moving from diagnosis to interventions and policy

12.30pm - Lunch

Section 4: The Behaviour Change Technique Taxonomy v1 (BCTTv1) – a methodology for specifying intervention content

3pm – Coffee break

Section 5: Intervention design – Selecting BCTs for your intervention

Section 6: Summarising your toolkit / Q&A session

4.45pm - End of workshop
Scene setting
We know we can’t build bridges or perform open heart surgery.

We recognise these tasks require expert knowledge and skills.
Yet when it comes to changing behaviour......

we all behave and see others behave ....

and have our own theories about how to change behaviour ...

*and they can be wrong!*

There is a science of behaviour change but it is not always applied...
Many interventions designed according to The ISLAGIATT principle of intervention design...

It **Seemed Like A Good Idea At The Time**

- **Behavioural problem**
- **Understanding the behaviour(s) we are trying to change**
- **Intervention**
Use an integrative theoretical framework

• Use a framework that integrates wide range of theories

• Start by understanding target behaviour in context

• Link theoretical analysis of behaviour in context to intervention design
Going to see your GP: An analogy for a method of intervention design...

1. Examine the problem

2. Make a diagnosis

3. Prescribe a treatment
Going to see your GP: An analogy for a method of intervention design…

1. Examine the problem
2. Make a diagnosis
3. Prescribe a treatment

Would you want to be given a prescription by your GP without a thorough assessment and diagnosis?
..and so with designing interventions to change behaviour

1. Examine the problem or do a behavioural analysis

2. Make a behavioural diagnosis

3. Prescribe a treatment or design an intervention based on the behavioural diagnosis
..and so with designing interventions to change behaviour

1. Examine the problem or do a behavioural analysis

2. Make a behavioural diagnosis

3. Prescribe a treatment or design an intervention based on the behavioural diagnosis
Section 1: Behaviour - how we should think about it?
Behaviour is ....

• “anything a person does in response to internal or external events.

• Actions may be
  – overt (motor or verbal) and directly measurable or,
  – covert (activities not viewable but involving voluntary muscles) and indirectly measurable;

• behaviours are physical events that occur in the body and are controlled by the brain”
Causal model of behaviour as applied to health

- Intervention
- Behaviour
- Cognition
- Emotion
- Quality of life
- Clinical
- Economic

Determinants

Outcomes
Which behaviours to target?

- Identify key specific behaviours
  - **Who** needs to do
    - what differently,
    - when,
    - where,
    - how?

- Behaviours are often dependent on or influenced by other behaviours
  - One’s own
  - Other people’s
A simple behavioural map – going to the gym

**TARGET PERSON**
- Going to the gym
- Washed gym kit

**PARTNER**
- Looking after children whilst partner at gym

**FRIEND**
- Giving target person a lift to the gym

**Individual**
- Target behaviour
- Influencing behaviour
Example: Townsville Residential Energy Demand Program (TRED Program)

- Identified **240** separate behaviours
  - Reducing Electricity Consumption
    - Hot Water Systems - **24**
    - Kitchen Appliances - **53**
    - Entertainment Equipment - **18**
    - Laundry Appliances and Bathroom - **28**
    - Pools, Hot Tubs and Saunas - **7**
    - Heating & Cooling – **40**
    - Lighting - **17**
  - Complimenting Energy Efficiency Behaviours with Onsite Generation - **7**
  - Options for House Construction and Retrofit - **24**
  - Additional Behaviours related to housing construction - **13**
Which behaviours?

• **Consider:**
  – likely *impact* if undertaken
  – likelihood that such a behaviour will be *implemented*
    • ease, cost
    • preference, acceptability
  – *spillover* to other behaviours and people
    • every behaviour is within a network of behaviours within each person and each person is within a network of other people
Group Exercise

1. Select a problem relevant to your work, e.g.
   - Encouraging midwives to deliver smoking cessation advice to pregnant women
   - Increasing adherence in children to asthma medication
   - Implementing evidence-based guidelines relating to PA
   - Increasing PA in older adults

2. Make it behaviourally specific and list three possible target behaviours

3. Select a key target behaviour to work on

4. Specify the behaviour in as much detail as possible
Section 2: COM-B model - Behavioural analysis and diagnosis
Understand the behaviour in context

- To change behaviour we need to understand it
- Why are behaviours as they are?
- What needs to change for the desired behaviour/s to occur?
The COM-B model: Behaviour occurs as an interaction between three necessary conditions

- **Capability**: Psychological or physical ability to enact the behaviour
- **Motivation**: Reflective and automatic mechanisms that activate or inhibit behaviour
- **Opportunity**: Physical and social environment that enables the behaviour

Michie et al (2011) Implementation Science
Using COM-B to understand an implementation problem

• **Aim**
  – To understand what needs to shift for health professionals to deliver an intervention to reduce cardiovascular disease risk in people with severe mental illness

• **Methods**
  – 14 focus groups with 74 healthcare professionals, carers and service users
  – Focus group interviews structured by COM-B
Using COM-B to understand an implementation problem

- Did not know what specialist weight-management services were available for people with SMI
- Didn’t feel comfortable burdening the patient
- Didn’t have time in a standard appointment to offer support to change dietary behaviours
Using COM-B to understand an implementation problem

- Didn’t feel comfortable burdening the patient
- Didn’t have time in a standard appointment to offer support to change dietary behaviours
- Did not know what specialist weight-management services were available for people with SMI
- Using this model, we can make the ‘behavioural diagnosis’
- This is the starting point for intervention design…
- Didn’t have time in a standard appointment to offer support to change dietary behaviours
Using the COM-B model as a starting point for intervention design

• Design of a weight management smartphone “app” for parents of overweight children

• Focus groups were conducted with parents of overweight children - questions were framed using COM-B model components

• Target behaviour - Providing appropriate portion sizes across the five food groups

Kurtis et al. in preparation
Behavoural analysis

- Parents didn’t know what correct portion sizes were and had difficulty understanding food packaging portion guidelines
- Parents said they lacked confidence in their ability to provide correct portion sizes
- Parents said they didn’t have time to read food and preferred using non-specific measuring tools (cups/spoons) instead of scales
- Partners were not always supportive and continued to give too big portion sizes
Group Exercise

1. Applying the COM-B model to understand behaviour in context
   - Make a behavioural diagnosis of what needs to shift in terms of capability, opportunity or motivation
Coffee break!
Section 3: The Behaviour Change Wheel - Moving from diagnosis to interventions and policy
From behaviour to intervention and policy

• Start by understanding the behaviour in context
• Use a method to design the intervention
  – General principles
    • NICE, Behaviour Change, 2014
  – Specific framework
    • The Behaviour Change Wheel
Intervening: Consider the full range of options

• Need a framework that is:
  – Comprehensive
    • So don’t miss options that might be effective
  – Coherent
    • So can have a systematic method for intervention design
  – Linked to a model of behaviour
    • So that can draw on behavioural science
Intervening: Consider the full range of options

• Need a framework that is:
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Useable by, and useful to, policy makers, service planners and intervention designers
Do we have such a framework?

- Systematic literature review identified 19 frameworks of behaviour change interventions
  - related to health, environment, culture change, social marketing etc.
- None met all these three criteria
- So .... Developed a synthesis of the 19 frameworks

The Behaviour Change Wheel

- Synthesis identified 9 intervention functions and 7 policy categories

- Linked to a model of behaviour – COM-B
  - Forms the hub of the ‘wheel’

Michie et al (2011) Implementation Science
Behaviour at the hub .... COM-B

- Sources of behaviour
- Intervention functions
- Policy categories
Interventions: activities designed to change behaviours
Use rules to reduce the opportunity to engage in the behaviour

Increase knowledge or understanding

Use communication to induce positive or negative feelings to stimulate action

Create an expectation of reward

Create an expectation of punishment or cost

Impart skills

Increase means or reduce barriers to increase capability (beyond education or training) or opportunity (beyond environmental restructuring)

Provide an example for people to aspire to or emulate

Change the physical or social context
An intervention can have different functions ...

- E.g. education and persuasion
Policies: decisions made by authorities concerning interventions

Policies

Sources of behaviour

Intervention functions

Policy categories

Michie et al (2011) Implementation Science
Making or changing laws

Designing and/or controlling the physical or social environment

Creating documents that recommend or mandate practice. This includes all changes to service provision

Using the tax system to reduce or increase the financial cost

Establishing rules or principles of behaviour or practice

Delivering a service

Using print, electronic, telephonic or broadcast media

Making or changing laws
Selecting relevant intervention functions

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<tr>
<th>Intervention functions</th>
<th>Education</th>
<th>Persuasion</th>
<th>Incentivisation</th>
<th>Coercion</th>
<th>Training</th>
<th>Restriction</th>
<th>Environmental restructuring</th>
<th>Modelling</th>
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## Selecting relevant policy categories

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<th>Policy categories</th>
<th>Communication / marketing</th>
<th>Guidelines</th>
<th>Fiscal measures</th>
<th>Regulation</th>
<th>Legislation</th>
<th>Environmental/ Social planning</th>
<th>Service provision</th>
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## The APEASE criteria

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Use the Behaviour Change Wheel to ...

1. **Design** interventions and policies
   - COM-B links to intervention functions link to techniques
2. “Retrofit” – **identify** what is in current interventions and policies
3. Provide a framework for **evaluation**
   - How are interventions working?
4. Structure **systematic reviews** of evidence
Group Exercise

Based on your behavioural diagnosis, design an intervention to change the target behaviour

- Definitions, matrices and APEASE criteria are on your worksheets
In summary ....

- Select and specify the behaviour

- Understanding the behaviour
  - Behavioural analysis and diagnosis using COM-B

- Systematically select appropriate intervention functions and policy categories to bring about change
  - Design the intervention using BCW based on the behavioural diagnosis
Lunch!
Section 4: The Behaviour Change Technique Taxonomy v1 – a methodology for specifying intervention content
The key questions:

1. What exactly do we want the person to do?
2. What will it take to get them to do it?
3. How do we get them to do it?
4. How do we roll out the intervention?
The key questions:

1. What exactly do we want the person to do?

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1. What exactly do we want the person to do?
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Defining characteristics of Behaviour Change Techniques (BCTs)

• “Active ingredients” within the intervention designed to change behaviour

• They are:
  • irreducible components of an intervention
  • observable/measurable
  • replicable

• Can be used alone or in combination with other BCTs
A few examples of BCTs...

‘Behaviour substitution’

‘Self-monitoring’

‘Goal setting’
Now it’s your turn...

Are these BCTs?

1) Provide pregnant smokers with vouchers for having quit smoking for one month

2) Wear a pedometer for one month

3) Set a goal to lose 1lb a week by increasing exercise

4) Reward an intention to drink no more than two units of alcohol a day

5) Demonstrate how to cook food with minimal fat
1) Provide pregnant smokers with vouchers for having quit smoking for one month

2) Wear a pedometer for one month

3) Set a goal to lose 1lb a week by increasing exercise

4) Reward an intention to drink no more than two units of alcohol a day

5) Demonstrate how to cook food with minimal fat
But – we use variable terminology

Descriptions of “behavioural counselling” in two interventions

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Also, terminology is used interchangeably: Different labels = same BCT

Daily Diaries vs. Self-monitoring
Behavioural interventions are often poorly described compared to interventions in biomedicine...

"Take this pill, three times daily and this will reduce your symptoms within a week"

"...because this drug contains x, y and z which we know from clinical trials, leads...

- “Review smoking history and motivation to quit
- Help identify high risk situation
- Generate problem solving strategies
- Non-specific support and encouragement"

What are the mechanisms of action?

Intervention content for Varenicline/Champix *(JAMA, 2006)*:

Intervention content *(Cochrane, 2005)*:
If we don’t know the exact ingredients...

1. We can’t tell exactly ‘what’ was delivered in the intervention

2. We can’t identify which BCTs contributed to intervention effectiveness / ineffectiveness

3. We can’t communicate our intervention clearly to the rest of the world!

4. We can’t replicate our intervention or guide someone else to do so
One solution?

*Taxonomies of Behaviour Change Techniques (BCTs)*...

Agreed, standard method of describing intervention content

• ‘Periodic table’ of BCTs

• Range of BCTs, each described using consistent terminology + clear labels → provides a *common language*

• ‘Taxonomy’ means ‘tree-like structure’: Organised hierarchically
An early reliable taxonomy to change frequently used behaviours

1. General information
2. Information on consequences
3. Information about approval
4. Prompt intention formation
5. Specific goal setting
6. Graded tasks
7. Barrier identification
8. Behavioural contract
9. Review goals
10. Provide instruction
11. Model/demonstrate
12. Prompt practice
13. Prompt monitoring
14. Provide feedback
15. General encouragement
16. Contingent rewards
17. Teach to use cues
18. Follow up prompts
19. Social comparison
20. Social support/change
21. Role model
22. Prompt self-talk
23. Relapse prevention
24. Stress management
25. Motivational interviewing
26. Time management

The person is asked to keep a record of specified behaviour/s. This could e.g. take the form of a diary or completing a questionnaire about their behaviour.

Abraham & Michie, 2008,
Health Psychology
<table>
<thead>
<tr>
<th>Behavior Change</th>
<th>BCTs</th>
<th>Reference</th>
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<tr>
<td>Smoking cessation</td>
<td>53</td>
<td>Michie et al, Annals behavioural Medicine, 2010</td>
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<tr>
<td>Physical activity &amp; healthy eating</td>
<td>40</td>
<td>Michie et al, Psychology &amp; Health, 2011</td>
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<tr>
<td>Reducing excessive alcohol use</td>
<td>42</td>
<td>Michie et al, Addiction, 2012</td>
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<tr>
<td>Sexual behavior</td>
<td>47</td>
<td>Abraham et al, Psychology &amp; Health, 2011</td>
</tr>
<tr>
<td>Health Behaviour Change Competency Framework</td>
<td>98</td>
<td>Dixon &amp; Johnston, NHS Health Scotland, 2010</td>
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The **BCTT Project**…

Developed a **hierarchically structured taxonomy** of clearly labelled, well defined BCTs with consensus that they are proposed **active components** of behaviour change interventions, that they are **distinct** (non-overlapping, non-redundant) and **precise**, and that they can be **used with confidence** to describe interventions.
BCT Taxonomy v1

The Behavior Change Technique Taxonomy (v1) of 93 Hierarchically Clustered Techniques: Building an International Consensus for the Reporting of Behavior Change Interventions

Susan Michie DPhil, CPsychol, Michelle Richardson PhD, Marie Johnston PhD, CPsychol, Charles Abraham DPhil, CPsychol, Jill Francis PhD, CPsychol, Wendy Hardeman PhD, Martin P. Eccles MD, James Cane PhD, Caroline E. Wood PhD

Abstract

Background
CONSORT guidelines call for precise reporting of behavior change interventions: we need rigorous methods of characterizing active content of interventions with precision and specificity.

Objectives
The objective of this study is to develop an extensive, consensually agreed hierarchically structured...
BCT Taxonomy v1

- 93 BCTs
- Labels, definitions and examples

### Grouping and BCTs

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<td>1. Goals and planning</td>
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<td>6. Comparison of behaviour</td>
<td>16</td>
<td>12. Antecedents</td>
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<td>1.1. Goal setting (behavior)</td>
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<td>6.1. Demonstration of the behavior</td>
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<td>12.1. Restructuring the physical environment</td>
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<td>1.2. Problem solving</td>
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<td>6.2. Social comparison</td>
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<td>12.2. Restructuring the social environment</td>
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<td>1.3. Goal setting (outcome)</td>
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<td>6.3. Information about others’ approval</td>
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<td>12.3. Avoidance/reducing exposure to cues for the behavior</td>
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<td>12.4. Distraction</td>
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<td>1.5. Review behavior goal(s)</td>
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<td>12.5. Adding objects to the</td>
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<td>1.6. Discrepancy between current behavior and goal</td>
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<td>1.7. Review outcome goal(s)</td>
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<td>7. Associations</td>
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<td>12.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>No.</th>
<th>Label</th>
<th>Definition</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>Goal setting (behavior)</td>
<td>Set or agree on a goal defined in terms of the behavior to be achieved</td>
<td>Agree on a daily walking goal (e.g. 3 miles) with the person and reach agreement about the goal</td>
</tr>
<tr>
<td></td>
<td><em>Note: only code goal-setting if there is sufficient evidence that goal set as part of intervention; if goal unspecified or a behavioral outcome, code 1.3, Goal setting (outcome); if the goal defines a specific context, frequency, duration or intensity for the behavior, also code 1.4, Action planning</em></td>
<td></td>
<td>Set the goal of eating 5 pieces of fruit per day as specified in public health guidelines</td>
</tr>
</tbody>
</table>
The BCTTv1 app

- Fully searchable version of BCTTv1
- Search by BCT label, BCT grouping or alphabetically
- Increases familiarity with the taxonomy
- Increases speed and recall of BCT labels and definitions

* You'll need an internet connection to use the app
Could BCT Taxonomy v1 help solve the problem?

We now have a shared language.

BCT Taxonomy v1 provides an agreed, standard method of describing interventions which has potential to be accessible and supported across:
   a) discipline and countries
   b) behaviours and contexts

1. It can be used reliably to identify BCTs in BC interventions
   Michie, Richardson et al. (2013);
   Abraham, Wood et al. (under review)

2. Reliability is still good even after a month has passed
   Abraham, Wood et al. (under review)
Reliability is dependent on the content of the taxonomy but also the extent to which the user has been trained to use it...
Now it’s your turn...

**TASK:**

1. Read the definition for the BCT ‘Material Reward (behaviour)’

| Material Reward (behaviour) | Arrange for the delivery of money, vouchers or other valued objects if and only if there *has been* effort and/or progress in performing the behavior |

2. Is this BCT in the excerpt on the next slide?
The goal of the intervention is to adopt and maintain a healthier lifestyle, with regard to fruit and vegetables intake. Children will be given additional pocket money for successfully eating five pieces of fruit and vegetables only if achieved every day for one week. The menu of the school lunch cafeteria will be evaluated and specific nutrition improvement will be suggested following this. Meanwhile, nutrition education will be provided to children and parents.

**Material Reward (behaviour)**

| Material Reward (behaviour) | Arrange for the delivery of money, vouchers or other valued objects if and only if there has been effort and/or progress in performing the behavior |

“The goal of the intervention is to adopt and maintain a healthier lifestyle, with regard to fruit and vegetables intake. Children will be given additional pocket money for successfully eating five pieces of fruit and vegetables only if achieved every day for one week. The menu of the school lunch cafeteria will be evaluated and specific nutrition improvement will be suggested following this. Meanwhile, nutrition education will be provided to children and parents.”
The goal of the intervention is to adopt and maintain a healthier lifestyle, with regard to fruit and vegetables intake. Children will be given additional pocket money for successfully eating five pieces of fruit and vegetables only if achieved every day for one week. The menu of the school lunch cafeteria will be evaluated and specific nutrition improvement will be suggested following this. Meanwhile, nutrition education will be provided to children and parents.

| Material Reward (behaviour) | Arrange for the delivery of money, vouchers or other valued objects if and only if there has been effort and/or progress in performing the behavior |

“..."
TASK:

1. Re-read the definition for the BCT ‘Material Reward (behaviour)’
2. Read the definition for ‘Information about health consequences’

<table>
<thead>
<tr>
<th>Material Reward (behaviour)</th>
<th>Arrange for the delivery of money, vouchers or other valued objects if and only if there <strong>has been</strong> effort and/or progress in performing the behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information about health consequences</td>
<td>Provide information (e.g. written, verbal, visual) about health consequences of performing the behavior</td>
</tr>
</tbody>
</table>

3. Are these BCTs in the excerpt on the next slide?
<table>
<thead>
<tr>
<th>Material Reward (behaviour)</th>
<th>Arrange for the delivery of money, vouchers or other valued objects if and only if there <em>has been</em> effort and/or progress in performing the behavior</th>
</tr>
</thead>
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<td>Provide information (e.g. written, verbal, visual) about health consequences of performing the behavior</td>
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</table>

The intervention is delivered at the GP practice level. During regular preventive health checks the link between smoking and chronic heart disease will be explained. An audit will be undertaken to assess the implementation of the intervention.
## Material Reward (behaviour)

Arrange for the delivery of money, vouchers or other valued objects if and only if there **has been** effort and/or progress in performing the behavior.

## Information about health consequences

Provide information (e.g. written, verbal, visual) about health consequences of performing the behavior.

The intervention is delivered at the GP practice level. During regular preventive health checks **the link between smoking and chronic heart disease will be explained**. An audit will be undertaken to assess the implementation of the intervention.
Now it’s over to you!

• Refer to ‘Worksheet 4’ which gives you a mini-taxonomy and an excerpt taken from an intervention description

• Read the labels, definitions and examples of BCTs in your mini-taxonomy

• Read the excerpt and identify which BCT is being delivered

You have 10 minutes for this task
Coffee break!
How did you get on?
Which BCTs did you identify?

**Target behaviour:** Physical activity  
**Target population:** Participants

To promote physical activity, Active U utilizes an online, self-reported physical activity-tracking log combined with goal setting, team competition, and weekly motivational emailed newsletters that support continued physical activity. The physical activity log and goal setting components of this program facilitate self-monitoring and self-regulation and are the main theoretically based intervention components. Experts in health promotion wrote the newsletter content, which was not limited to a single theoretical framework. To authenticate eligible University of Michigan faculty, staff, and graduate students, participants registered online for the Active U program by logging on with their university ID and password and filling out a questionnaire assessing baseline levels of physical activity and weight, as well as height, age, employment type, health status, and gender. During the enrolment process, participants had the opportunity to create a new team and to send out email invitations to others to join. Team competitions were introduced to the program to enhance social support and motivation. Participants were able to track the collective goal attainment of each competitive team of five or more individuals. Competitive teams were ranked according to the average team percentage of goal met for each week. Each week, the teams with the highest percentage of team members meeting their goals were recognised, but not monetary incentives or prizes were given.
Which BCTs did you identify?

**Target behaviour:** Physical activity
**Target population:** Participants

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5 key points to take away:

• BCTs are the intervention content, which is different than their mode of delivery

• Identify target behaviour

• Then identify the BCTs

• Read and re-read BCT definitions!

• Work with someone else so you can check your agreement
The BCTTv1 app

- Fully searchable version of BCTTv1
- Search by BCT label, BCT grouping or alphabetically
- Increases familiarity with the taxonomy
- Increases speed and recall of BCT labels and definitions

Search for: BCTs bcts.23.co.uk*

Search for: BCTs* bcts.23.co.uk*

* You’ll need an internet connection to use the app
Section 5: Intervention design - Selecting BCTs for intervention design
Which BCTs are appropriate for my intervention?

Table 3.3 Linking intervention functions to BCTs

<table>
<thead>
<tr>
<th>Intervention function</th>
<th>Individual BCTs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education</td>
<td></td>
</tr>
<tr>
<td>Most frequently used BCTs:</td>
<td>Information about social and environmental consequences</td>
</tr>
<tr>
<td></td>
<td>Information about health consequences</td>
</tr>
<tr>
<td></td>
<td>Feedback on behaviour</td>
</tr>
<tr>
<td></td>
<td>Feedback on outcome(s) of the behaviour</td>
</tr>
<tr>
<td></td>
<td>Prompts/cues</td>
</tr>
<tr>
<td></td>
<td>Self-monitoring of behaviour</td>
</tr>
<tr>
<td>Less frequently used BCTs:</td>
<td>Biofeedback</td>
</tr>
<tr>
<td></td>
<td>Self-monitoring of outcome(s) of behaviour</td>
</tr>
<tr>
<td></td>
<td>Cue signalling reward</td>
</tr>
<tr>
<td></td>
<td>Satiation</td>
</tr>
<tr>
<td></td>
<td>Information about antecedents</td>
</tr>
<tr>
<td></td>
<td>Re-attribution</td>
</tr>
<tr>
<td></td>
<td>Behavioural experiments</td>
</tr>
<tr>
<td></td>
<td>Information about emotional consequences</td>
</tr>
<tr>
<td></td>
<td>Information about others’ approval</td>
</tr>
<tr>
<td>Persuasion</td>
<td></td>
</tr>
<tr>
<td>Most frequently used BCTs:</td>
<td>Credible source</td>
</tr>
<tr>
<td></td>
<td>Information about social and environmental consequences</td>
</tr>
<tr>
<td></td>
<td>Information about health consequences</td>
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<td>Biofeedback</td>
</tr>
<tr>
<td></td>
<td>Re-attribution</td>
</tr>
<tr>
<td></td>
<td>Focus on past success</td>
</tr>
<tr>
<td></td>
<td>Verbal persuasion about capability</td>
</tr>
<tr>
<td></td>
<td>Financial incentives</td>
</tr>
</tbody>
</table>

- BCW guide sets out which frequently identified BCTs map onto to each of the intervention functions
- See Worksheet 5
Points to consider…

• Why choose BCT X over BCT Y? – look at the evidence for the effectiveness in similar populations and situations to yours

• Is this BCT appropriate for the population and setting of my intervention?

• Can I afford to use this BCT? Is it going to be acceptable to my population? Can it be delivered in my intervention?
<table>
<thead>
<tr>
<th>Criteria</th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affordability</td>
<td>Can it be delivered to budget?</td>
</tr>
<tr>
<td>Practicability</td>
<td>Can it be delivered as designed?</td>
</tr>
<tr>
<td>Effectiveness and cost-effectiveness</td>
<td>Does it work (ratio of effect to cost)?</td>
</tr>
<tr>
<td>Acceptability</td>
<td>Is it judged appropriate by relevant stakeholders (publicly, professionally, politically)?</td>
</tr>
<tr>
<td>Side-effects</td>
<td>Does it have any unwanted side-effects or unintended consequences?</td>
</tr>
<tr>
<td>Equity</td>
<td>Will it reduce or increase the disparities in health/wellbeing/standard of living?</td>
</tr>
</tbody>
</table>
Now it’s over to you!

- Refer to ‘Worksheet 5’ which shows you frequently used BCTs mapped onto intervention functions

- Based on the intervention functions you selected for Worksheet 3, discuss and decide on 3-4 BCTs you will use in your intervention

You have 10 minutes for this task
How did you get on?
Where we are now...
1. Specifying content in terms of BCTs...

- We can tell exactly ‘what’ was delivered in the intervention from published work.
- Start to identify out which BCTs contributed to intervention effectiveness / ineffectiveness.
- Communicate our intervention clearly to the rest of the world.
- Enable someone else to replicate our intervention.
Systematic reviews

- Apply taxonomy to identify + characterise BCTs in descriptions of existing interventions

Identify BCTs contributing to effectiveness (using meta-regression)

- Healthy eating (Michie et al. 2009); Only evidence for the BCT Self-monitoring
- Physical activity (Olander et al. 2013)
- Excessive alcohol use (Michie et al. 2011)
1. Specifying content in terms of BCTs...

- We can tell exactly ‘what’ was delivered in the intervention from published work.
- Start to identify out which BCTs contributed to intervention effectiveness / ineffectiveness.
- Communicate our intervention clearly to the rest of the world!
- Using the BCT approach, someone else could understand how to replicate our intervention.
2. Selecting BCTs using a systematic approach...

- Our choice is guided by our behavioural diagnosis and selection of intervention functions.

- We can narrow down our list of BCTs to those judged most appropriate using APEASE.

- We can use the examples listed in BCTTv1 for guidance on how to operationalise BCTs in our intervention.

- We can apply this approach to roll out our intervention in many different ways…
The key questions:

1. What exactly do we want the person to do?
2. What will it take to get them to do it?
3. How do we get them to do it?
4. How do we roll out the intervention?
Examples of different modes of delivery...

- Smartphone apps
- Face-to-face
- Promotional posters
- Wearable tech
- Leaflets & flyers
- Online / websites
Section 6: Your toolkit / workshop summary
Questions the design process answers...

1. What behaviour are you trying to change and in what way?

2. What will it take to bring about the desired change?

3. What types of intervention are likely to bring about the desired change?

4. What should be the specific intervention content?

**Principles of the design process:**

- Theory-based
- Comprehensive
- Systematic
Your toolbox:

• Start by understanding the behaviour
  – Behavioural analysis and diagnosis using COM-B

• Systematically select appropriate intervention functions and policy categories to bring about change
  – Design the intervention (‘prescribed treatment’) using BCW based on the behavioural diagnosis

• Specify active ingredients in the intervention
  – Using BCT Taxonomy
Are there any questions?
The Behaviour Change Wheel
A Guide to Designing Interventions
Susan Michie, Lou Atkins & Robert West

Developed by Susan Michie and Caroline Wood
Applying the Behaviour Change Technique Taxonomy v1 (BCTTv1)

www.bct-taxonomy.com
Registration and poster submission now open!
www.ucl.ac.uk/behaviour-change

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• Training in the principles of behaviour change and how to apply them to a range of practical problems

• Presentations, group work and mentor-led tutorials

REGISTRATION OPENS: Early January 2015