

Repetitive Behaviours in Angelman

‘Repetitive behaviours’ is an umbrella term given to a number of different types of repeated behaviours. Behaviours may vary in the amount of time they are repeated, their appropriateness in a given situation, and how much they impact on a person’s day to day functioning. Examples of repetitive behaviour are listed in the box below.

Key Facts

Studies show that approximately **77%** of individuals with AS show repetitive behaviours on a daily basis.

Although individuals with AS may show other repetitive behaviours, **hand stereotypy** (for example hand flapping) appears to be highly characteristic of Angelman syndrome.

Repetitive behaviours

In 2009, Dr Jo Moss studied repetitive behaviours in Angelman syndrome. The percentage of individuals with Angelman who showed repetitive behaviours above the clinical cut-off on the Repetitive Behaviour Questionnaire are as follows:

64.7%	Hand stereotypy
43.6%	Object stereotypy
40.6%	Body stereotypy
21.6%	Attachment to objects
18.3%	Repetition of phrases/sounds/signs
17.8%	Insistence on the sameness of routines
23.1%	Attachment to particular persons
5.9%	Hoarding
Occurrence of less than 5%	Other – Rituals, Lining up objects, Organising objects, Tidying, Spotless behaviour, Completing behaviour, Just right behaviour



Why does repetitive behaviour occur?

There are a number of ideas about why repetitive behaviour might occur.

- **Executive dysfunction theory** – Behaviour might occur because of problems with executive functions (cognitive processes). Difficulties with executive functioning may make it harder for individuals to put the brakes on a behaviour, shift to a new way of doing things, or generate a different behaviour in response to the same situation. This theory has not been explored in depth in Angelman syndrome but there is supporting evidence for it from other genetic syndromes (i.e. Fragile X, Rubinstein-Taybi and Prader Willi syndrome) and Autism Spectrum Disorder.

Object mouthing and Pica

The chewing of non-edible objects or the person putting objects into their mouth is known as object mouthing. Pica refers to the eating of non-edible objects.

Studies such as Walz & Benson (2002) or Pelc et al. (2008) have reported individuals with Angelman syndrome will show repetitive behaviours involving the mouth, such as the chewing of non-edible objects.

It is hard to know how common these behaviours are in Angelman but different studies have estimated anywhere from 5% to 45% of individuals will show the chewing of non-edible objects.

- **Neurotransmitter theories** - behaviours are due to damage to neurotransmitters (chemicals in the body which carry messages). Within this there is the ‘Dopamine theory’, the ‘Serotonin theory’ and the ‘Opioid theory’ which focus on damage to specific neurotransmitters or their receptors.
- **Developmental theory** - repetitive behaviours are present in young typically developing children before declining later as they help development of certain skills. In children with intellectual disability development is halted so the decline is not seen.
- **Homeostatic theory** - behaviours are a source of stimulation. Individuals may engage in repetitive behaviours in order to increase arousal or decrease arousal.
- **Perceptual reinforcement theory** - behaviour is rewarded and encouraged by the sensory feedback the child receives from the behaviour.

When and how should repetitive behaviours be changed?

Ritualistic behaviours should only be reduced if they are having an impact on an individual's well-being or ability to do other activities that are important.

- When trying to reduce these behaviours, focus on limiting the behaviour rather than stopping it completely.
 - Increasing structure and using visual supports such as timetables, photos and symbols can be effective
 - Also setting limits to the number of times an individual engages in the behaviour on each occasion. This number can be gradually reduced over time.
- Some children and adults who are more able might benefit from increasing their self regulation skills by gaining insight into their rituals and learning strategies to put the brakes on their behaviours. These strategies are more likely to be successful if delivered with support from a Clinical Psychologist who will develop a personalised intervention plan.



Repetitive behaviours have been linked to other behaviours such as self-injury and hyper-activity.

You can read more about these behaviours and how to manage difficult behaviours on our website.