
**Background**
Stereotypies are involuntary, repetitive and seemingly meaningless movements. Hand stereotypies such as wringing or clapping, are one of the most recognised features of Rett syndrome. We investigated the occurrence of different types of hand stereotypies and whether they were more frequent in one hand or the other. We also investigated relationships between hand stereotypies, age and specific *MECP2* mutations.

**What we did**
Using videos provided by their families, we examined the types of hand stereotypies seen in 144 girls and women in the Australian Rett Syndrome Study. We described 15 different types of hand movements including wringing, clapping, mouthing and hair twirling. We then examined how age and mutation type might influence these hand stereotypies.

**What we found**
Hand stereotypies were observed during the video in over 90% of the girls and women in this study and in most cases were occurring frequently to constantly over the course of each day. Midline wringing of hands was most common and occurred in about two thirds of girls and women. Most of the girls and women in this study had more than one type of hand stereotypy. Those who were older tended to have fewer types of hand stereotypies and some stereotypies, such as clapping and mouthing, were also less common in older girls and women.

For those with a p.R306C mutation or with an early truncating mutation, hand clapping was more common than hand wringing. Slightly more girls and women showed left-handed, rather than right-handed dominance in their hand stereotypies and of these, nearly half were left-handed. Hand stereotypies were
much more frequent in those with p.R294X and C-terminal deletions, in comparison to those with p.R270X.

*What does it mean*
We found that hand stereotypies changed and became less frequent with age. We also saw some relationships with mutation type.

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