

What's the Evidence?

Is Colourful Semantics an effective therapy for improving language development in children with Autism Spectrum Disorder?

Key findings

- Colourful Semantics is an approach used in Speech and Language Therapy to help children with language development.
- This approach uses colour codes to breakdown sentence structures.
- There is a lack of research on the use of Colourful Semantics for children with Autism.
- Research with children with Developmental Language Disorder (previously referred to as Specific Language Impairment) suggests Colourful Semantics may be a useful approach to consider for children with more severe language disorders.

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What were we asked?

We were asked by a speech and language therapist whether there was any evidence to support the use of Colourful Semantics to aid language development in children with Autism Spectrum Disorder (ASD).

What did we do?

We carried out a general Internet search for Colourful Semantics. A general search is a useful way of getting familiar with the subject, and is also important for identifying any alternative terms which might be used. In this case, the term Thematic Role Therapy is sometimes used to mean Colourful Semantics. Then we searched NHS Evidence, Cochrane, TRIP, NICE, and

PubMed databases for Colourful Semantics or Thematic Role Therapy. In addition to these health focussed databases, we also searched some key education databases- British Education Index, Education Research Complete, and Education Resources Information Center. We looked for studies that evaluated the effectiveness of Colourful Semantics to improve language for children or young people with ASD.

What did we find?

What is Colourful Semantics?

Colourful Semantics is an approach used in Speech and Language Therapy (SaLT). It uses colour codes to breakdown sentence structures. A different colour is associated with each

part of the sentence. For example, the 'who' (subject) is orange, and the 'doing what' (verb) is yellow (see figure 1 below).^{1,2,3}



Figure 1 Colour and format of Colourful Semantics

The choice of colours is not important and different colours could be used instead, for example using a child's favourite colours. The important thing is that the once colours have been chosen, they remain the same.⁴

Colourful Semantics is usually delivered by Speech and Language Therapists or by specially trained Teaching Assistants in schools. The approach is used widely in the UK for children with Developmental Language Disorder (previously known as Specific Language Impairment). A Colourful Semantics app has also been developed (see figure 2 below).



Figure 2 A screenshot from the Colourful Semantics app

What does the evidence say?

We did not find any research studies which evaluated Colourful Semantics specifically for children with ASD.

Most research into Colourful Semantics has been with children who have Developmental Language Disorder (DLD). Previously the term Specific Language Impairment was used instead of DLD. While children with DLD and ASD differ in many respects, both may present with problems in developing expressive language skills. As a consequence, research on interventions targeting expressive language in children with DLD may also be relevant for children with ASD. Colourful Semantics may also seem a good option for children with ASD because it is a visual approach to language.⁵

A 2011 study tested the effectiveness of Colourful Semantics therapy with a group of six 5- and 6- year olds who had expressive difficulties. These expressive difficulties included word order problems, lack of verb use and failure to complete sentences. The children received therapy twice weekly for 8 weeks. The children were assessed twice before therapy began, and once again at the end of the 8 weeks of therapy. The study found that measures of the children's expressive difficulties had improved after therapy. However this was a very small study and there was no control group which means we cannot be sure that any improvements were due to the therapy- it is possible the children improved due to repetition

of the assessments or natural improvement over time.³

A study in Sri Lanka looked at the use of Colourful Semantics for Sri Lankan Tamil-speaking children diagnosed with intellectual disabilities. Thirty children were included in the study and received therapy twice a week for 6 weeks. The children all had language learning difficulties which were assessed before and after therapy. They found the children's language had improved after therapy compared to before. However, as this study had no control group the findings should be interpreted with caution.⁶

A review of the evidence for Colourful Semantics in children with speech, language and communication needs was published in 2012 by the Communication Trust together with the Better Communication Research Programme. They reported Colourful Semantics to have good face validity - this means that on the face of it, the approach makes sense and seems scientifically plausible. However they state that there was limited research evidence. They conclude '*The colourful semantics approach...is therefore a useful approach to consider when working with children with more severe language disorders.*'^{7,8}

What do we think?

We did not identify any research which evaluated the use of Colourful Semantics for children with ASD. However, the available evidence suggests that

Colourful Semantics may be worth a try for children who have severe language problems.

Signposts to other information

- <https://www.youtube.com/watch?v=Q2MI8IhC-G8&t=9s>
A 5 minute video from TherapyIdeas about using Colourful Semantics.
- www.thecommunicationtrust.org.uk
The Communication Trust works with organisations which support children and young people in England with their speech, language and communication. The Communication Trust also produce the 'What Works' database of interventions.
- www.autism.org.uk
The National Autistic Society provides information and resources to support communication in children with Autism.
- www.rcslt.org
The Royal College of Speech and Language Therapists provides helpful information on Speech and Language Therapy and clinical guidelines for SLTs working with different client groups which includes information on management and intervention.
- www.londonspeechtherapy.co.uk/speech-therapy-colourful-semantics/
London Speech Therapy provides links to some helpful resources.

We would like to hear your feedback on this summary – please email us at pencru@exeter.ac.uk if you have any comments or questions.

References

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Note: the views expressed here are those of the Peninsula Cerebra Research Unit (PenCRU) at the University of Exeter Medical School and do not represent the views of the Cerebra charity, or any other parties mentioned. We strongly recommend seeking medical advice before undertaking any treatments/therapies not prescribed within the NHS.