

Predicting eating behaviours in children with Tourette syndrome: the role of sensory sensitivity and tic severity.

Introduction

- ❖ Anecdotal and case reports have suggested that many individuals with TS are more likely to consume an unhealthy diet and overeat energy dense foods (Ludlow & Rogers, 2017).
- ❖ This increases the risk of becoming overweight, and the associated health complications and nutritional deficiencies with being overweight (Liang et al., 2015).
- ❖ Children with Autism Spectrum Disorder (ASD), a commonly comorbid disorder with TS, have been consistently shown to display a range of selective eating behaviours, including lack of dietary variety, preferences for nutrient-poor foods and consumption of fewer fruits and vegetables (Schreck & Williams 2006).
- ❖ Despite anecdotal reports suggesting eating behaviours are a substantial concern in individuals with TS, there is no empirical evidence investigating this by comparing eating behaviours between children with TS and typically developing controls.

Aims

The current study aimed to:

- ❖ Investigate differences in diet and eating behaviours between children with TS and typically developing (TD) children.
- ❖ Investigate potential predictors of selective eating in children with TS.

Method

Caregivers of children with TS (n=32, mean age=10.97 years [SD=2.55]) and TD children (n=28, mean age=9.11 years [SD=2.78]) were recruited through Tourettes Action and local schools. Caregivers completed the following measures online:

- ❖ Short Sensory Profile (SSP; Dunn, 1999)
- ❖ Child Eating Behaviour Questionnaire (CEBQ; Wardle et al., 2001)
- ❖ Food Preference Questionnaire for Children (FPQC; Fildes et al., 2015)
- ❖ Premonitory Urge for Tics Scale (PUTS; Woods et al., 2005)

Results

Two-factor mixed ANOVAs revealed, compared to TD children, children with TS were reported to:

- ❖ Consume significantly less fruit, vegetables and dairy (as measured by the FPQC; see table 1).
- ❖ Exhibit significantly greater fussiness, emotional overeating and food responsiveness (as measured by the CEBQ).
- ❖ Exhibit significantly greater sensory sensitivity (as measured by the SSP).

Among children with TS, simple linear regression analyses revealed:

- ❖ Greater overall sensory sensitivity predicted greater fussiness, slowness in eating and a reduced preference for fruit, starches and dairy.
- ❖ Lower scores for taste/smell sensitivity (indicative of greater sensitivity to taste/smell stimuli) predicted greater food selectivity in children with TS, $\beta = -.76$, $t = -4.51$, $p < .001$ (see figure 1).
- ❖ Tic severity predicted a preference for meat/fish, snacks and vegetables (see table 2).

Table 1. Mean (standard deviation) scores for the food preference questionnaire for children with TS and TD controls.

	Typically developing		Tourette syndrome	
	Mean	SD	Mean	SD
Fruit	64.36	13.59	46.44**	18.45
Vegetables	64.86	17.76	50.66*	22.23
Meat/Fish	47.04	11.27	40.69	15.66
Dairy	32.11	6.12	27.06*	7.54
Starches	22.32	4.91	21.59	4.46
Snacks	50.61	6.32	46.69	8.13

* $p < .05$ ** $p < .001$

Table 2. Simple linear regression for tic severity predicting food preference in children with TS.

	B	SE B	β
Meat/Fish	1.27	.488	.485*
Snacks	.658	.254	.484*
Vegetables	1.567	.703	.430*

* $p < .05$ ** $p < .001$

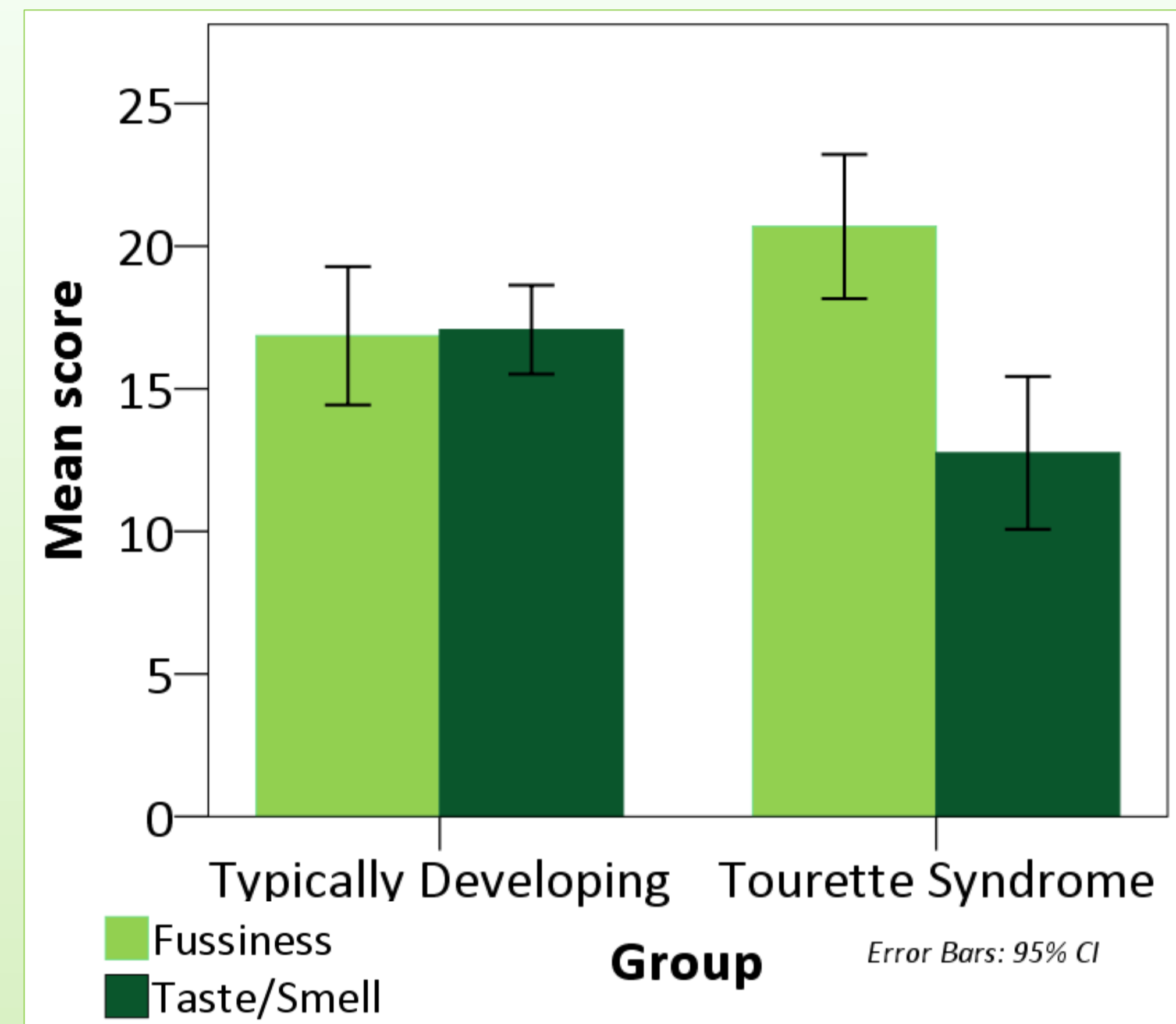


Figure 1. Mean food fussiness and taste/smell scores for children with TS and TD controls.

Discussion

- ❖ Children with TS consume a less nutritious diet than TD controls.
- ❖ Greater sensory sensitivity and increased tic severity were shown to underlie food preferences and/or food selectivity in children with TS.
- ❖ The present findings are parallel to the findings within the ASD literature, whereby food refusal is found to have a sensory basis (Hubbard et al., 2014).
- ❖ It is possible that specific food groups are more difficult to process resulting in increased tic severity influencing preference to certain foods.
- ❖ It is clinically important for future research to understand the origin and nature of these differences in eating behaviours.
- ❖ Reducing fussiness is important for improving consumption of balanced and varied diets, and reducing stress during family mealtimes in children with TS.

References

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