



**HACETTEPE  
UNIVERSITY**



# EXPLORING THE SENSORY PROCESSING: A LONGITUDINAL FOLLOW-UP STUDY OF CHILDREN WITH AUTISM

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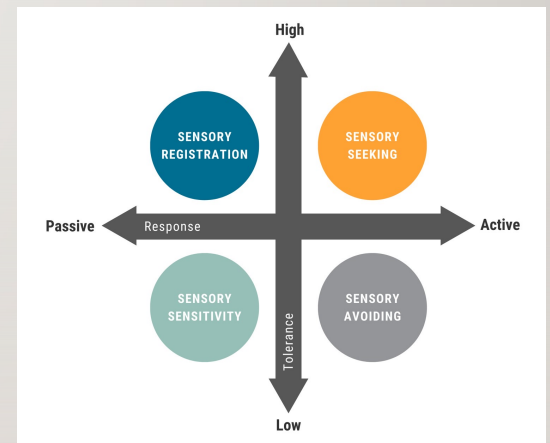
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# INTRODUCTION/BACKGROUND

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- Sensory processing differences are a hallmark of autism, impacting daily functioning and development.
- Dunn's Model of Sensory Processing provides a framework (Low Registration, Sensation Seeking, Sensory Sensitivity, Sensation Avoiding) to understand these differences.
- **The Gap:** While sensory differences in infants and toddlers are well-documented, there is limited evidence on how these patterns evolve during the critical transition to adolescence.



# AIM OF STUDY

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**6.07**  
years  
follow-up

- To explore the longitudinal development of sensory processing skills in autistic individuals.
- To address the stability of sensory features from childhood (T1) to adolescence (T2).
- To identify persistent vs. evolving sensory challenges over a mean follow-up period of 6.07 years.

# METHODOLOGY - PARTICIPANTS

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**Study Design:** Longitudinal, descriptive follow-up study.

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**Sample:** 54 autistic individuals (originally part of a 246-person clinical group).

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**Timeline:**

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**T1 (Childhood):** Age 3–10 years ( $M \pm SD = 6.37 \pm 1.91$ )

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**T2 (Adolescence):** Age 11–18 years ( $M \pm SD = 12.66 \pm 1.60$ )

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**Inclusion:** Confirmed autism diagnosis, literacy in Turkish (for parents), and complete assessment at both time points.

# METHODOLOGY - ASSESSMENT TOOLS

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- **Sensory Profile (SP) - Turkish Version:** Used at T1 for children.
- **Adolescent/Adult Sensory Profile (AASP) - Turkish Version:** Used at T2.
- **Standardization:** All raw scores were converted to a **100-point corrected system** to allow for longitudinal comparison across different versions of the scale.
- **Analysis:** Repeated-measures ANCOVA ( $p < 0.05$ ).



# RESULTS - EVOLUTION OF SENSORY QUADRANTS

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- **General Trend:** Significant changes (improvement) in all sensory quadrants over time ( $p < 0.01$ ).
- **Shift in Performance:**
- **At T1:** Over 50% showed "Much More Than Others" (Definite/Probable differences) across all quadrants.
- **At T2:** Most scores normalized to "Similar to Most People," **except for Sensation Seeking.**
- **Critical Finding:** Autistic adolescents showed "Less Than Most People" in sensation seeking, indicating a potential decrease in active sensory exploration

# RESULTS - SENSORY MODALITIES (TABLE/GRAPH SUGGESTION)

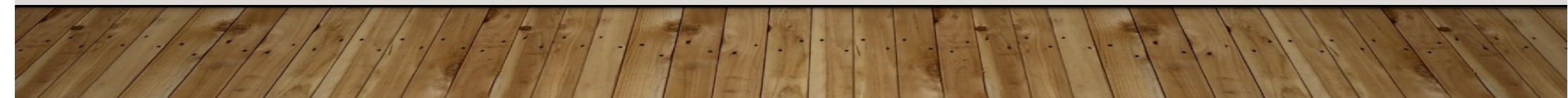
- **Significant Decreases (Improvement):** Visual, Touch, Oral, and Vestibular processing showed significant statistical improvement ( $p < 0.01$ ).
- **Persistent Challenges (No Significant Change):**
- **Auditory Processing:**  $F=1.71$ ,  $p=0.19$
- **Multisensory Processing:**  $F=0.20$ ,  $p=0.65$

Sensory Category	T1 (Childhood)	T2 (Adolescence)	F	P
Visual Processing	69.87	48.77	47.78	$p < .01$ (Sig)
Touch Processing	71.70	46.60	102.27	$p < .01$ (Sig)
Oral/Taste Processing	65.98	50.41	37.81	$p < .01$ (Sig)
Vestibular Processing	74.68	48.10	128.56	$p < .01$ (Sig)
Multisensory Processing	53.80	54.92	.20	$p > .05$ (NS)
Auditory Processing	61.34	57.20	1.71	$p > .05$ (NS)

# DISCUSSION

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- This study is the **first** to focus specifically on the longitudinal sensory profile of autistic adolescents in Turkey.
- **The Sensation Seeking Paradox:** Low scores in adolescence might not mean a lack of need, but rather a lack of active engagement in creating sensory stimuli.
- **Stability of Auditory Issues:** The persistence of auditory and multisensory challenges aligns with international literature, emphasizing their role as core features of the autistic experience.



# CLINICAL IMPLICATIONS FOR OTs

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## **Tailored**

**Interventions:** Sensory processing is not static; ergoterapists must adapt interventions as children transition to adolescence.

## **Focus on**

**Participation:** Instead of forcing sensory input, OTs should encourage adolescents to identify satisfying and non-overwhelming sensory experiences.

**Auditory Support:** Persistent auditory processing challenges necessitate long-term environmental modifications and coping strategies in school and social settings.

# CONCLUSION & FUTURE DIRECTIONS

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- **Conclusion:** While many sensory symptoms appear to "improve" or stabilize by adolescence, auditory and multisensory issues remain persistent.
- **Limitations:** Reliance on caregiver reports rather than direct clinical observation.
- **Future Research:** Need for specific assessment tools designed for autistic adolescents and studies on the impact of socio-demographic factors on sensory evolution.