

# Developmental Trajectories in Angelman Syndrome: From Infancy to Adulthood

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## INTRODUCTION

Angelman Syndrome (AS) is a neurodevelopmental disorder characterized by a unique set of features, including severe developmental delays, speech impairment, movement or balance disorders and distinctive behavioral traits such as laughter and excitability. Caused primarily by the loss of function of the *UBE3A* gene, AS presents significant challenges throughout the lifespan, affecting not only individuals but also their families and caregivers. Understanding the developmental trajectories of individuals with Angelman syndrome from infancy to adulthood can inform better management strategies, support services and therapeutic interventions.

## DESCRIPTION

### Early development: Infancy to toddlerhood

Infants with Angelman syndrome often appear developmentally typical at birth, but by six to twelve months, signs of developmental delay typically become apparent. Parents may notice that their child is not meeting key milestones such as rolling over, sitting up or crawling within the expected timeframes.

Early intervention is crucial. Multidisciplinary approaches involving physical, occupational and speech therapy can help address delays. Therapists often focus on improving gross and fine motor skills, facilitating communication through alternative methods and enhancing social interactions. Early intervention can significantly impact long-term outcomes, as studies suggest that timely therapeutic support can lead to improved motor skills and communication abilities.

Moreover, the importance of parental involvement in early intervention cannot be overstated. Training parents to engage in therapeutic activities can foster an enriching environment that encourages development. This proactive approach not only aids the child's growth but also empowers families to take an active role in their child's care.

### Preschool years: Challenges and opportunities

As children with Angelman syndrome progress into the preschool years, they often face increased challenges. Speech and language development typically remains severely delayed, with many children nonverbal or using limited verbal communication. Instead, Augmentative and Alternative Communication (AAC) systems, including Picture Exchange Communication Systems (PECS) and speech-generating devices, can be invaluable in facilitating communication.

Social skills also become a focus during these years. Children with AS may exhibit a propensity for social interaction, yet their communication difficulties can hinder their ability to form friendships. Structured social skills training programs can help children navigate social situations, providing them with tools to interact with peers more effectively.

Behavioral challenges, such as hyperactivity and seizures, may also emerge during this stage. Addressing these challenges requires a comprehensive approach, including medical management for seizures and behavioral interventions to promote positive behaviors.

### School age: Educational support and inclusion

Entering school marks a pivotal transition for children with Angelman syndrome. Individualized Education Programs (IEPs) become essential for addressing the unique needs of these students. Inclusive education settings, where children with AS learn alongside their peers, can foster social development and enhance learning experiences. Educators trained in special education strategies can tailor their teaching methods to accommodate diverse learning styles.

While academic progress can be limited due to intellectual disability, children with Angelman syndrome often thrive in supportive environments. Emphasis on functional skills, life skills and social integration is crucial. Therapies aimed at enhancing communication—whether through speech therapy or AAC—remain essential during this period.

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Parents and caregivers play a critical role in advocating for appropriate educational services. Collaborating with educators and therapists helps create a supportive network that promotes optimal development. Open communication between home and school is vital in addressing challenges and celebrating successes.

### **Adolescence: Navigating transition and independence**

As children with Angelman syndrome reach adolescence, the focus often shifts toward preparing for greater independence. This period can be challenging due to the onset of puberty and the associated physical and emotional changes. Support systems should include education on self-care, social relationships and vocational skills.

Transition planning becomes essential, with a focus on post-secondary options and community integration. Vocational training programs that emphasize life skills, job readiness and social interaction can enhance employability and independence. Establishing a routine that incorporates leisure activities and community engagement is also important for promoting a fulfilling life.

Behavioral support remains critical during this phase. Adolescents may experience increased anxiety and addressing mental health is essential for overall well-being. Support groups for both adolescents and parents can provide valuable resources and a sense of community.

### **Adulthood: Lifelong support and quality of life**

Entering adulthood presents unique challenges for individuals with Angelman syndrome. Many will continue to require

lifelong support, particularly in areas such as daily living skills, communication and social interactions. Establishing a stable support network is crucial for ensuring quality of life.

Research indicates that adults with AS can lead meaningful lives, engaging in social activities, pursuing hobbies and forming relationships. Community based programs that promote social engagement and skill development can greatly enhance the quality of life for adults with AS.

Furthermore, ongoing medical management remains important as adults may experience health issues related to their condition, including seizures and sleep disturbances. Regular health screenings and collaboration with healthcare providers can help manage these challenges effectively.

The developmental trajectories of individuals with Angelman syndrome span from infancy to adulthood, encompassing a wide range of challenges and opportunities. Understanding these trajectories is crucial for informing therapeutic interventions, educational strategies and support services that cater to the unique needs of individuals with AS.

## **CONCLUSION**

From early intervention to adulthood, a collaborative approach involving families, educators, therapists and healthcare providers is essential. By fostering a supportive environment, we can empower individuals with Angelman syndrome to reach their full potential, enhancing their quality of life and promoting social inclusion. As research advances, ongoing efforts to improve understanding and management of Angelman syndrome will pave the way for a brighter future for individuals affected by this condition.