

The age factor in stuttering

Ehud Yairi, Ph.D. University of Illinois

Age is among the strongest risk factors for stuttering with several important implications. Although the disorder begins within a wide age-range, current robust evidence indicates that, for a very large proportion of cases, it erupts during the preschool period. Data obtained at the University of Illinois Stuttering Research Program revealed that for 65% of the child participants, stuttering onset occurred prior to age 3; the figure rose to 85% by 3 1/2 years of age (Yairi & Ambrose, 2005). Leaving room for some sampling errors, children past age 4 face a relatively low risk for stuttering. From clinical considerations, these statistics call for greater emphasis on preparing clinicians for working with early childhood stuttering.

Age brings out other factors. The fact that the critical age for stuttering onset parallels the age span when significant rapid developments occur in the anatomy of the speech system, as well as in complex language and articulatory skills, invites speculations that interferences in these maturational processes contribute to stuttering; hence the possibility of relations among stuttering, language, and articulation. Although our own data (Watkins, Yairi, & Ambrose, 1999), and those of our colleagues from Germany (Rommel et. al., 1999), show that the language skills of children who stutter, as a group, meet or exceed norms, we suspect that there are differences in the ways in which they process language. One research priority consequent to information about age at onset is experimental manipulation of similarities and/or differences in language processing and production between children who stutter near the onset of the disorder and normally fluent children, particularly in terms of the nature of linguistic knowledge and the time course of knowledge activation. Varied responses to semantic and phonological distracters, slower reaction time, and/or alternative activation paths may reveal differences in language processing. One of the intriguing questions is: does age at stuttering onset – prior to,

or after, a certain point in language development – underlie distinct subtypes of the disorder? Currently, scientists in several laboratories are pursuing such issues.

Brain imaging studies of children should also enhance understanding of this issue. Our team members, Chang, Erickson, and Ambrose (2005) successfully obtained high resolution structural MRI data from stuttering and control children ages 8-13. Initial results indicate significant group differences in white and grey matter volume in brain areas involved in integrating sensory and motor aspects of speech. Testing younger children closer to onset should advance our knowledge.

Evidence is also accumulating that age at onset may bear a relation to genetic factors, in particular, it appears there may be a trend for persistent stuttering to have a slightly later onset than recovered stuttering (Yairi & Ambrose, 2005). As the Illinois team continues to uncover possible interactions among different genetic loci (Cox, et al., 2005), the age factor should become more clear.

Age is also a risk factor in regard to children's awareness of disfluent speech. The belief that preschoolers who stutter lack in such awareness played a major role in theories and developmental models of the disorder. For many years, clinicians' assumption that awareness would trigger strong emotions (e.g., anxiety) in children was the main reason for shunning direct speech therapy for preschoolers. Whereas some three-year olds are either clearly, or appear to be, aware of stuttering, available experimental data show a very large increase in awareness between ages 4 and 5, including normally fluent children (Ambrose & Yairi, 1994; Ezrati, Platzky, & Yairi, 2001). This information would seem to justify direct intervention techniques as well as provide clues for the timing of intervention and should be considered in counseling of parents and teachers about reactions of normally fluent children to their stuttering peers.

Finally, important information about persistent stuttering may be uncovered by studying upper age groups — people who have stuttered for many years into advanced ages. Perhaps they exhibit

more pronounced characteristics that reveal differences not easily identifiable in the typical child or young adult who stutters.

Indeed, our team's members are currently pursuing structural brain imaging studies of aged people who stutter.

All of the above serve to highlight the role of age in the onset and development of stuttering, in subtype differentiation, and in treatment strategies. Knowledge is accumulating at a rapid pace but much remains to be learned.

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