

## **Early word learning skills in toddlers with Down syndrome: An eye-tracking study**

**Jovana Pejovic, Cátia Severino, Marina Vigário & Sónia Frota**

Center of Linguistics, University of Lisbon

Word learning requires mapping sound sequences to a referent. Previous studies suggest that phonotactic frequency is one of the factors that shapes word learning. Typically-developing European Portuguese-learning toddlers, unlike at-risk toddlers, learned new labels of unknown objects only if labels contained high frequency native sound sequences, but not low frequency or illegal sound sequences in their native language. In the current study we focused on toddlers with Down syndrome (DS), a population with largely understudied early word-learning skills. The eye gaze of twelve (mean age 22 months, range 19-35 months, 5 female) European Portuguese-learning toddlers with DS was assessed in a word learning task. The task included a training phase (an object is labeled 6 times, and another object is presented, but unlabeled) and a test phase (both objects presented, while listening to a familiar or unfamiliar label). Labels were C1VC2V disyllabic sequences in 3 conditions: high frequency C1 and C2, low frequency C1 and C2, and an illegal word onset. At the end of the test phase, one control trial was introduced, presenting two known objects side-by-side (e.g., ball, bed) while one is being named. Control items were familiar words for toddlers at 18 months of age. First, a mixed-model analysis (including age as a factor) revealed that DS toddlers show no difference in proportion of looking time (PLT) for the control items before and after naming ( $t=.18$ ,  $p=.8$ ). Additionally, their PLT to the target after naming was not different from chance level ( $t(11)=.9$ ,  $p=.8$ ). Second, a mixed-model analysis on PLT to the target showed no difference between familiar and unfamiliar objects, nor test conditions (all  $t_s < 1.3$ , all  $p_s > .2$ ). The study suggests that, unlike typically-developing toddlers, DS toddlers demonstrate a significant delay in word learning skills, and possibly low sensitivity to phonotactic patterns in their native language.