

Enrichment therapy effective among children with autism, study finds

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Children with autism showed significant improvement after six months of simple sensory exercises at home using everyday items such as scents, spoons and sponges, according to UC Irvine neurobiologists.

They found that a treatment known as [environmental enrichment](#) led to notable gains in male subjects between the ages of 3 and 12. Results appear online in *Behavioral Neuroscience*.

Study co-authors Cynthia Woo and Michael Leon randomly assigned 28 boys to one of two groups, balanced for age and [autism](#) severity. For half a year, all subjects participated in standard autism therapies, but those in one group also had daily sensory enrichment exercises.

Parents of these [children](#) were given a kit containing [household products](#) to increase environmental stimulation, including essential-oil fragrances such as apple, lavender, lemon and [vanilla](#). The boys smelled four of these scents a day and listened to classical music each evening.

In addition, the parents conducted twice-daily sessions of four to seven exercises with their children involving different combinations of [sensory stimuli](#) – touch, temperature, sight and movement among them. Each session took 15 to 30 minutes to complete.

After six months of therapy, 42 percent of the children in the enrichment group showed significant improvement in behaviors commonly affected by autism – such as relating to people, having typical

[emotional responses](#) and listening – compared with 7 percent in the standard-care group.

They also scored higher in cognitive function, whereas average scores for the boys in the standard-care group decreased. Moreover, 69 percent of parents in the enrichment group reported improvement, compared with 31 percent of parents in the standard-care group.

"Because parents can give their child sensory enrichment using items typically available in their home, this therapy provides a low-cost option for enhancing their child's progress," said Woo, an assistant project scientist in neurobiology & behavior.

Exposing children to enriched sensory experiences builds upon previous research in other laboratories in which animals exposed to such environments had a great reduction in the behavioral and cognitive symptoms associated with a wide range of neurological disorders, including those resembling autism.

The researchers noted that most current therapies for autism must be started at a very young age to be successful, while the average age in this study was 6.6.

"We believe that sensory enrichment can be an effective therapy for the treatment of autism, particularly among children past the toddler stage," said Leon, a professor of neurobiology & behavior affiliated with UC Irvine's Center for Autism Research & Treatment.

"At the same time, we need to know whether we can optimize the treatment, whether there are subgroups of children for whom it's more effective, whether the therapy works for older or younger children, and whether it can be effective on its own."

He and Woo are now conducting a second, larger randomized clinical trial that includes girls.

"We've observed case studies in which the sensory enrichment therapy was used without any other therapy, and those children were clearly responsive to it," Leon added. "We hope this new treatment will benefit children with autism, their parents and society as a whole."

Provided by University of California, Irvine

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