Large heads in autism

Statement by Martha R. Herbert, M.D., Ph.D.
Massachusetts General Hospital

Multiple researchers have now found that children with autism tend to have heads that are larger than normal. A number of researchers have also found that head size increases after birth. When you look at the brains of these children with large heads using an MRI scan, they usually look normal to the unaided eye. Yet they have autism.

At the current time, we do not understand the relationship of the large brains to the autism in these children. We do not even know very much about what has changed in the brains to make them larger than average. Large brains of this kind have not been found before in other disorders. This is a new frontier for medicine.

It is intriguing that the brain volume increase occurs after birth. We do not know at this time when the changes start, or what they are at the cellular level. However, when a change occurs after birth, one suspects that environmental factors play at least some role. It is also important to remember that environmental influences start even before birth, because the environment affects the child in the womb. Foods, medicines, chemicals, stress hormones and so forth all can have an impact on the fetus. All of these things and more can affect the infant as well.

Many environmental factors interact with the child's individual genetic vulnerabilities to create outcomes. It is not easy to sort out all the influences. It is important to keep an open mind about what may be causing these big brains, and to allow research on all possibilities to proceed.