

## Are Ultrasounds Causing Autism in Unborn Babies?

By Jennifer Margulis  
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**STARTING THE COURSE**

### ARE ULTRASOUNDS CAUSING AUTISM IN UNBORN BABIES?

Scientists are uncovering disturbing evidence that those sneak peeks at baby could damage a developing brain

By Jennifer Margulis, Ph.D.

Toward the end of one first pregnancy, a doctor ordered an "anatomy" ultrasound because she believed I was having trouble. She wanted to go to her son's class before I could talk to her about it, wanting that the experience of my son's growth realization. To ERIC.

My husband and I sat in the waiting room, fidgeting with anxiety. The scan showed the baby was fine. My mind raced, but when I heard the technician's words about pregnancy that I heard that ultrasound scan had been done to my poor offspring in pending intensive growth restriction (Ivory) that a pediatrician had been recommending to my pregnant wife. The scan revealed my daughter was born, Marlene Wilson, an obstetrician, scientist, and former director of Women and Children's Health at the World Health Organization, wrote: "There is no justification for doctors using routine ultrasound during pregnancy for the management of IVIG."

More women look forward to multiple ultrasounds because they are lulled into the assumption that this technology will catch potential fetal abnormalities—such as heart defects—early so they can be fixed. When doctors tell pregnant women they will only get one or two scans, some women wrongly interpret that as they won't be able to find an abnormality with this baby or anything that the doctor will know that the baby is growing normally. But one study of 121 pregnant women published in *The New England Journal of Medicine* found that an ultrasound scan does not improve fetal outcome. The study, which was conducted by a team of researchers from several European countries, compared pregnant women who received two scans to pregnant women who received one or when some other medical indication suggested an ultrasound was necessary. The results showed no difference in fetal outcomes.

"This practice based trial demonstrates that using low risk pregnant women observational screening does not improve perinatal outcome," the authors conclude. Even when the ultrasound included targeted fetal abnormalities, the fetal survival or death rates were the same in both groups.

What the authors did find, however, was that routine ultrasounds led to more expensive prenatal care, adding to the cost of caring for pregnant women in America each year.

Another study of 214 pregnant women, published in *The Lancet*, showed that the babies of the randomly chosen group of 105 women who received five or more ultrasounds during pregnancy were more likely to experience congenital growth restriction, a rare condition of growth that means the fetus is not developing normally. Some observational growth restriction is a sign of the condition that having multiple ultrasounds can improve for.

Although the American College of Obstetricians and Gynecologists recommends that obstetricians discuss the advantages and disadvantages of having an ultrasound with pregnant patients, ACOG does not explicitly recommend fetal screening. ACOG explains that this scan may reduce fetal mortality rates because women who receive them are receiving prenatal care more frequently than those who do not. But ACOG also specifies that ultrasound has not been proven to be effective in reducing infant mortality or any other risk.

Their policy statement continues: "Screening detects multiple gestations, congenital anomalies, and fetal growth restriction, but does not benefit the fetus. Having this knowledge correctly interpreted. The doctor usually consults with the physician and patient jointly."

The authors of the *Lancet*, obstetrician, Lyle Page, and the obstetrician, William O'Brien, take a similarly conservative stance about ultrasound and do not explicitly recommend it. They note that pregnancy "ultrasonography should be performed only with a valid medical indication." The authors note, "but with the lowest possible exposure setting to gain necessary information."

Yet doctors and other health providers take great exception to these risk pregnant women advice to be screened. In 2014 when Lyle Page, a senior of three from Massachusetts, "This scan, we said, the results program with no medical risk, but it might cause some harm." The one obstetrician comment he gave was, "We might be able to do a quick ultrasound scan, if the doctor's available," she said. "Then you can take a look at your baby."

Through their planning to have a 30-week ultrasound, I can feel that I am not healthy to bring an early ultrasound and take these might be some risk. But when they had the scan, the obstetrician seemed to have a way to get an answer that I was without "it's not a risk, but it's," she smiled, pointing at the lower risk scan. "Have many ultrasounds did you have with that?"

But as I returned when I was researching my book, *The Business of Baby*, there is mounting evidence that overexposure to sound waves—or perhaps exposure to sound waves at a critical time during fetal development—is to blame for the astronomical rise in neurological disorders among America's children.

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In 2010, Paolo Dalz, M.D., a neuroscientist at the University of Medicine, found that pregnant women who reported the use of an ultrasound scan to experience fetal growth restriction in the brain. He said that it could be due to the sound waves that the fetus will undergo ultrasounds might have on brain development and migration. In that sense, rather than simply that a smaller percentage of cells migrate into the upper cortical layers of the mouse brain and a larger percentage to the lower layers and white matter. At that instance to publish these results because

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### Talking Points

- ❖ Ultrasounds do not improve fetal outcome, but researchers did find “that routine ultrasounds led to more expensive prenatal care, adding more than \$1 billion to the cost of caring for pregnant women in America each year.” (47)
- ❖ The American College of Obstetricians and Gynecologists (ACOG) recommends “that obstetricians discuss the advantages and disadvantages of having an ultrasound with pregnant patients.” The ACOG does not explicitly recommend ultrasound screenings. The screenings can be useful in identifying fetuses “incompatible with life,” but that ultrasound has “not been proven to be effective for reducing infant mortality in any other way.” (47)
- ❖ Research by Pasko Rakic, M.D., a neuroscientist at Yale University School of Medicine, in 2006 found that prenatal exposure to ultrasound waves changed the behavior of neurons in the developing brains of mice. Rakic and his team noticed that “a smaller percentage of cells migrated to the upper cortical layers of the mouse brain and a larger percentage to the lower layers and white matter.” (47) While this altered neuron activity was not fully understood, Rakic did conclude that “all nonmedical use of ultrasound on pregnant women should be avoided. ‘We should be using the same care with ultrasound as with X-rays,’ Rakic cautioned.” (47)
- ❖ Another neurologist, the endowed chair at the University of Louisville in Kentucky, Manuel Casanova, agrees. He contends that “ultrasound exposure is the main environmental factor contributing to the exponential rise in autism.” (48)
- ❖ Dr. Casanova, in a search to isolate the differences between autistic and non-autistic brains, finding variations in the ways neurons work together (“minicolumns”) as well as cell migration to the cortex. Casanova uses the analogy of a shower curtain keeping water in the bathtub. If the migration of the cells doesn’t happen in the correct relationship, the information from the “minicolumns” will “suffuse out to surrounding cells, causing a chain reaction that can result in seizures [a symptom suffered by at least one third of autistic individuals by the time they reach puberty.]” (49) (For a more full discussion of the scientific explanation, see pgs. 48-49)

- ❖ The cells most affected by ultrasound waves— stem cells in the brain that divide and migrate. Therefore, Casanova hypothesizes that ultrasound exposure may trigger cells to divide and migrate when they're not supposed to.
- ❖ Margulis tells us that 1 in 88 children in American have been diagnosed on the autism spectrum, and various other industrialized countries are seeing similar increases. The one thing these countries all seem to have in common is the use of ultrasound in routine prenatal care.

**Resources**

Full references for each article are available at <http://pathwaystofamilywellness.org/references.html>

Exploring the possibilities of ultrasound causing autism - <http://www.ultrasound-autism.org/>

An informational and support site on declining ultrasounds - <http://www.declineultrasound.org/>

Did you know you can search previous Pathways articles by exact word or phrase? Here's "autism" and the many results -

<http://pathwaystofamilywellness.org/Search.html?ordering=&searchphrase=exact&searchword=autism>

Dr. Jeanne Ohm "Common Obstetrical Procedures and Their Link to Autism." *Pathways* 21, Spring 2009. Web.

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ACOG's guidelines for use of ultrasound during pregnancy state, "Ultrasonography is safe for the fetus when used appropriately and when medical information about a pregnancy is needed; however, ultrasound energy delivered to the fetus cannot be assumed to be completely innocuous. Diagnostic levels of ultrasonography can produce physical effects, such as mechanical vibrations (referred to as cavitation), or an increase in tissue temperature under laboratory conditions." <http://www.guideline.gov/content.aspx?id=14180>