The pregnant women did not worry about their food. They simply ate it: chunks of fresh whale meat and pounds of fish. They ate it because they were hungry. They ate it as their mothers had, as their ancestors had, for centuries. They did not know the meat carried an invisible poison that would damage their unborn babies’ brains and disrupt the beating of their hearts.

Today those babies, born on the Danish Faroe Islands in the North Atlantic, are teenagers—and living testaments to mercury poisoning. In two recent papers published in the *Journal of Pediatrics*, Philippe Grandjean, adjunct professor of environmental health at the School of Public Health, has begun unraveling mercury’s toxic effect on their brains.

His results confirm that children appear most at risk in the womb, where mercury seems to deform the brain’s fragile architecture and upset the maturation and migration of brain cells. But Grandjean also found that mercury could threaten children’s nervous systems well into adolescence. “What we are finding out is that mercury is very parallel to lead,” Grandjean says. “Such pollutants are particularly worrisome because, once they’ve done the damage to the developing brain, the child will have to live with that for the rest of his life.”

Grandjean’s work, one of the first prospective studies of mercury-exposed children, began almost 20 years ago. He and colleagues from Europe and Japan identified 1,022 Faroese children who were particularly vulnerable to mercury because their mothers’ diets included pilot whale meat, a traditional—and often highly contaminated—Faroese food. Researchers measured mercury in the pregnant women’s hair before the children’s births; some had up to 50 times more mercury than the average U.S. mother. When the children were seven years old, researchers measured mercury levels in their hair and blood, measured their heart rates, and tested developmental variables like the speed at which their brains responded to auditory signals. The examinations were repeated at age 14.

Grandjean reports that mercury seems to slow the brain’s response to sound. Somewhere along the transmission line—from ear to auditory nerve to brain—the signal is delayed. Some children’s autonomic systems also seem less able to regulate heart-rate variations. The changes seem irreparable, Grandjean says. “At age seven, we saw that the more mercury they were exposed to in the womb, the...
worse they were off in terms of language skills, attention span, motor speed, things like that.” Seven years later, there was no evidence that the children’s bodies had recovered or compensated for the damage. What’s more, the data suggest that as the children matured and began eating mercury-tainted whale meat and other seafood themselves, the brain damage continued—even at relatively low exposure levels. “Our concern is that we are now seeing evidence that the brain’s susceptibility is not just limited to the fetal period,” says Grandjean. “The brain is still vulnerable throughout childhood and into the teenage period. This is an entirely new observation.”

In the United States and other nations, mercury’s harmful effects have been known for years. It is outlawed in thermometers and regulated by environmental agencies; pregnant mothers are warned away from potentially contaminated seafood. Still, mercury hasn’t fueled the same public outcry as lead, a neurotoxin (portrayed in the book and film A Beautiful Mind) discovered as a result of experiments with animals in the late 1950s. La-