Landfill link to birth defects strengthened

Women living near landfills in the United Kingdom are more likely to have smaller babies or babies with congenital defects, according to the largest recorded study of the health effects of living near landfills. Although further research is needed to establish a causal link, the U.K. government is taking the study seriously, according to the country*s deputy chief medical officer.

The study, which was published in August by the *British Medical Journal (Br. Med. J.* **2001**, *323*, 363-368), was conducted by a team led by Paul Elliott of the Small Area Health Statistics Unit (SAHSU) at Imperial College, London. SAHSU researchers surveyed the 8.2 million live births that occurred within a 2-kilometer (km) radius of all 9565 landfill sites that were operational in the United Kingdom between 1982 and 1997 and found that those babies had a 1% higher than expected risk of suffering from congenital abnormalities, such as neural tube and abdominal wall defects. That risk rose to 7% if the landfill contained hazardous waste. The researchers also found a 5% greater risk of low birth weight babies for mothers living within 2 km of a landfill site.

Previous studies have found risks of congenital abnormalities and low birth weight 2-3 times higher than SAHSU*s, but they have suffered from problems such as small sample size, exposure classification, confounding, and reporting bias, according to the new paper*s authors.

"This is an important study, and the government is taking it seriously," said Pat Troop, deputy chief medical officer of the U.K. government. However, he says that the government is not changing its advice to pregnant women. And the government*s expert committee on chemicals toxicity called the findings "inconsistent," in part because there was no evidence that risk increased after landfill sites were opened.

The SAHSU researchers admit that factors such as smoking, drug use, and infections during pregnancy may have influenced the data. Women living near landfills could also be exposed to other contaminants, because landfills are often located on land formerly used for industrial processes or close to current industrial activity. Nonetheless, Lars Yarup, SAHSU*s assistant director, said a 1% risk cannot be dismissed: "There may be a small set of locations with landfills that carry a substantial risk and some that have no risk. We have to try and identify these areas."

Mike Childs, of the nonprofit environmental group Friends of the Earth (FoE), urged the government not to delay action while waiting for further research.

– MARIA BURKE

Burke, M., "Landfill Link to Birth Defects Strengthened," *Environmental Science & Technology*, November 1 (2001).

TABLE 1

Adverse birth outcomes and proximity to landfills

Risks of congenital anomalies, stillbirths, and low and very low birth weight in populations living within 2 km of a landfill site (all waste types) during operation or after closure compared with those in the reference area ($2 km from any site).

	Near landfill (<2 km)		Reference area	
Birth outcome	**Number of cases**	**Rate (per 100,000 births)**	**Number of cases**	**Rate (per 100,000 births)**
Congenital anomalies				
All congenital anomalies	90,272	1550	34,325	1694
Neural tube defects	3508	60	1140	56
Cardiovascular defects	6723	115	2716	134
Hypospadias and epispadias	7363	247	2485	240
Abdominal wall defects	1488	26	448	22
Congenital anomalies (hospital admissions)				
Hypospadias and epispadias	1503	257	536	268
Abdominal wall defects	755	40	227	35
Gastroschisis and exomphalos	467	25	126	19
Stillbirths and birth weight				
Stillbirths	32,271	532	11,200	514
Low birth weight	422,149	7000	137,958	6367
Very low birth weight	62,191	1031	20,858	963

Source: Adapted from *Brit. Med. J.* **2001**, *323* (7309),363-368