

BPA linked to a common birth defect in boys

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A new study links fetal exposure to a common chemical pollutant, bisphenol A (BPA), to defects of a testicular hormone in newborn boys with undescended testicles. The results, which were presented Monday at The Endocrine Society's 95th Annual Meeting in San Francisco, suggest yet another potential harmful effect of BPA, which is widely used in many plastics, liners of food cans and dental sealants.

"Alone, our study cannot be considered as definitive evidence for an environmental cause of undescended testis," said lead author Patrick Fenichel, MD, PhD, professor and head of reproductive endocrinology at the University Hospital of Nice in France. "But it suggests, for the first time in humans, a link that could contribute to one co-factor of idiopathic [unexplained] undescended testis, the most frequent [congenital malformation](#) in male newborns."

Cryptorchidism, the medical name for undescended testicles, occurs in 2 to 5 percent of full-term male newborns, according to Fenichel. Sometimes the testicles descend on their own within six months after birth. If the condition persists and goes untreated, however, it carries an increased risk in adulthood of decreased fertility and [testicular cancer](#), he said.

Fenichel and his colleagues studied 180 boys born after 34 weeks' gestation between 2003 and 2005. Fifty-two were born with one or two undescended testicles, 26 of whom still had the condition at 3 months of age. The other 128 newborns did not have this birth defect and were matched for pregnancy term, weight and time of birth (the control

group). Using sensitive immunoassays of the infants' umbilical cord blood, the researchers measured the newborns' levels of BPA and insulin-like peptide 3, one of the two testicular hormones that regulate descent of the testicles.

[Testosterone level](#), which also controls fetal testicular descent, did not differ between the groups and was normal in the whole population, according to Fenichel.

The infants with cryptorchidism had significantly lower levels of insulin-like peptide 3, compared with the controls, the authors reported. These infants did not have greatly increased levels of BPA or several other environmental endocrine disruptors that were measured. However, in all 180 infants, the BPA level inversely correlated with the level of insulin-like peptide 3, meaning that the higher the BPA level, the lower the level of this important testicular hormone.

Fenichel speculated that BPA, an estrogenic endocrine disruptor, might repress, as other research has shown for estrogens in rodents, expression of the gene for insulin-like peptide 3. This could be a co-factor in the development of cryptorchidism, he said.

Animal research also has linked fetal BPA exposure to an increased risk of reproductive disorders and other health problems.

Provided by The Endocrine Society

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