

Magnetic shielding induces early developmental abnormalities in the newt, *Cynops pyrrhogaster*.

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Abstract

Developing larvae of the Japanese newt, *Cynops pyrrhogaster*, were subjected for 5 days to a shielded environment in which the static magnetic field was about 10,000 times weaker (5 nT) than the geomagnetic norm, which ranges between 30 and 60 T at the earth's surface. Larvae from non-cleavage to neurula stages were exposed under shielded or normal (control) conditions and then examined for evidence of developmental abnormalities either 1 day or 20 days after treatment. The magnetic shielding was associated with an increased incidence of somatic defects, especially in larvae that were examined 20 days after shielding. Bi-headedness and intestinal protrusion were observed in magnetically shielded larvae but not in controls. Other abnormalities more frequently observed in shielded larvae were spinal curvature, malformed eyes, and retarded or blocked development. These data are among the first to illustrate the effects of magnetic-field *deprivation* on a developing animal.