

# Brain development parameters and intelligence in Chilean high school graduates

Ivanovic, Daniza M.

Leiva, Boris P.

Castro, Carmen G.

Olivares, Manuel G.

Jansana, Joan Manuel M.

Castro, Verónica G.

Almagià, Attilo Aldo F.

Toro, Triana D.

Urrutia, María Soledad C.

Miller, Patricio T.

Bosch, Enrique O.

Larraín, Cristián G.

Pérez, Herná

The hypothesis that independently of sex, brain volume (BV) and head circumference (HC) are positively and significantly associated with intellectual quotient (IQ) was examined in a sample of 96 high school graduates of high [Wechsler Intelligence Scale for Adults-Revised (WAIS-R)>120] and low IQ (WAIS-R<100) (1:1), from high and low socioeconomic stratum (SES), and of both sexes (1:1) from the Chile's metropolitan region. Brain development was assessed by magnetic resonance imaging (MRI) and anthropometric measurements were made applying standardized procedures. Results showed that, in general, no significant differences were observed between absolute and adjusted brain parameters by body size. Differences in BV and HC can be more properly attributed to differences in IQ and not to SES both in males and females. Independently of sex, BV was the only brain parameter that contributed to explain IQ variance. These findings confirm the hypothesis that independently of sex, BV and HC are p