E006 - Sex specific permanent effect of early postnatal genistein administration on nitrenergic and vasopressinergic systems

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We analyzed anxiety levels and related neuronal circuits in mice directly fed with either vehicle, Estradiol (E2) or GEN from birth (P0) to P8. Behavioral tests were conducted at P60. Coronal serial sections were collected from P90 mice and processed for immunohistochemistry against nNOS and vasopressin (AVP).

The GEN treatment had a dichotomic effect on sexes: anxiolitic on females while anxiogenic on males. Concurrently nNOS and AVP+ cell density in many hypothalamic nuclei was affected. Interestingly only few of those effects were mimicked by E2 treatment suggesting that GEN may act trough different intracellular pathways.

These results raise concerns about the possible long-term effects of the widespread use of soy-based food and especially of prewaening supplements in livestock, as pigs which are frequently affected by hypo-fertility problems. Similar concerns could involve the use of soy-based formulas for babies.