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ANTENATAL STRESS AND ANXIETY, EFFECTS ON BEHAVIOURAL AND COGNITIVE OUTCOMES FOR THE CHILD, AND THE ROLE OF THE HPA AXIS

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There is now good evidence from several prospective studies that antenatal maternal stress, anxiety or depression can have long term consequences for the development of the fetus and the child. There can be a wide range of effects and both behavioural and cognitive outcomes can be altered. Such fetal programming is independent of the postnatal environment, although the nature of maternal care may have a modifying influence. The effects are clinically significant; about 15% of behavioural problems such as attention deficit/hyperactivity disorder may be attributable to prenatal stress. Not all children are affected, and those that are can be affected in different ways. Presumably there is an interaction with the genetic predisposition, but this has not yet been studied. There is little agreement about the gestational windows of vulnerability, which are probably different for different outcomes. Also we do not know the nature of the stress which is most harmful, although there is some evidence that stress due to a bad relationship with the partner is damaging, and anxiety has greater influence than depression.

In animal models there is good evidence for the mediating effects of the HPA axis in both mother and fetus. In humans the evidence is less clear. Several studies have found little or no association between anxiety or depression and maternal cortisol in later pregnancy. However we have found an inverse association between amniotic fluid cortisol and child cognitive ability at 17 months, which is only apparent in insecurely attached children.