Fetal study highlights impact of stress on male fertility

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Exposure to a combination of excess stress hormones and chemicals while in the womb could affect a man's fertility in later life, a study suggests.

Researchers looked at the effect of stress hormones - glucocorticoids - combined with a common chemical used in glues, paints and plastics. They found that the combination strikingly increased the likelihood of reproductive birth defects.

These include cryptorchidism, when the testes fail to drop, and hypospadias, when the urinary tract is wrongly aligned. The conditions are the most common birth defects in male babies.

Researchers from the University of Edinburgh and Medical Research Council believe the findings could help explain why rates of babies born with these problems are increasing.

Dr Mandy Drake, at the University of Edinburgh's Centre for Cardiovascular Science, said: "What the study shows is that it is not simply a case of one factor in isolation contributing to abnormalities in male development but a combination of both lifestyle and environmental factors, which together have a greater impact.

"In most studies reproductive disorders are only seen after abnormally high levels of exposure to chemicals, which most humans are not exposed to. Our study suggests that additional exposure to stress, which

is a part of everyday life, may increase the risk of these disorders and could mean that lower levels of chemicals are required to cause adverse affects."

The study looked at male fetal development in rats. It found that while exposure to the chemical compound dibutyl phthalate - present in products including glues, paints and plastics - had some effects on reproductive development, this was significantly increased with simultaneous exposure to stress hormones.

The stress hormones had no effect on male fetal development on their own, although raised levels led to lower birth weights.

The study, published in the journal *Endocrinology*, was carried out in collaboration with the Medical Research Council Human Reproductive Sciences Unit based at the University of Edinburgh. It follows studies which found that between eight and 12 weeks into pregnancy is a crucial period for male reproductive development.

During this timeframe, testosterone is produced which affects development of male reproductive organs and fertility in later life.

Source: University of Edinburgh