Anthropometric and Endocrine Differences Exist Between Children Conceived after the Transfer of a Fresh or Thawed Embryo Compared to Normally Conceived Controls

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Aim: To determine whether anthropometric or endocrine characteristics differ in IVF children, conceived via fresh or thawed embryo transfer, compared to naturally conceived controls.

Method: Healthy pre-pubertal children (3.5-11 years) born at term after a singleton pregnancy were evaluated. Naturally conceived controls (CON; n = 94) were compared to IVF children conceived via the transfer of a fresh (IVF2; n = 72) or thawed (IVF1; n = 43) embryo. Anthropometric characteristics and body composition (DEXA) were assessed, and fasting hormones measured. All anthropometric data were standardised (SD scores) and adjusted for parental size. Data were analysed by linear regression and mixed model ANOVA with appropriate covariates. All data are reported as means ± SEM.

Results: IVF1 children were lighter at birth (p < 0.001) than CON and IVF2. After adjustment for parental size, IVF1 children were taller (p < 0.05) than both CON and IVF2 contemporaries. Although no differences in corrected BMI were evident, IVF2 children had lower (p < 0.05) percent body fat compared to CON but not IVF1 children. All hormones were positively (p < 0.05) correlated with height and percent fat. No differences were found in glucose or insulin concentrations. IGF-I was higher (p < 0.05) in IVF1 than the other two groups. In contrast, IGF-II was higher (p < 0.05) and IGFBP3 lower (p < 0.01) in the IVF1 children compared to CON, and CON and IVF2 children, respectively.

Conclusion: Subtle differences exist between IVF1 and IVF2 children, in addition to those identified between IVF and CON children. The underlying mechanisms involved are yet to be elucidated and are the focus of continued research.

Implementing a program to assess lifestyle & promote healthy change - The FAST study (Fertility Assessment and Advice Targeting Lifestyle Choices and Behaviours)

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Aim: Lifestyle factors including age, smoking, weight, psychological stress, caffeine and alcohol consumption, are associated with adverse effects on reproductive health. Lifestyle modification is likely to improve reproductive and general health outcomes. However, knowledge alone is seldom enough to effect lifestyle change. The aim of this study was to evaluate the usefulness of a program, in a fertility setting, assessing couples current lifestyle practice and offering support to implement healthy change.

Method: A comprehensive lifestyle assessment was performed on 23 couples using Motivational Interviewing techniques. Lifestyle changes were recommended as appropriate, and a report of the assessment and recommendations was given to the couple, their fertility specialist and General Practitioner. A study nurse provided ongoing support and repeated the assessment after 4 months. Ethics approval was granted from The Children, Youth & Women's Health Service Human Research Ethics Committee.

Results: Forty three of the 46 participants reported adverse lifestyle behaviours and changes were recommended. All accepted the advice to some extent and instituted change, including increased exercise, improved diet, decreasing alcohol and caffeine intake, decreasing or ceasing smoking and ceasing recreational drugs.

Conclusion: This study suggests that an individualised assessment for our fertility patients, with ongoing support to