

# ENDGAMES

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## STATISTICAL QUESTION

### Standard deviation or the standard error of the mean

The effects of a diet with a low glycaemic index during pregnancy on maternal and neonatal morbidity for women at risk of fetal macrosomia (large for gestational age infants) were investigated. A randomised controlled trial was performed. The intervention consisted of a low glycaemic index diet from early pregnancy. The control treatment was no dietary intervention. Participants were women without diabetes, all in their second pregnancy, who had previously delivered an infant weighing greater than 4000 g. In total, 800 women were recruited and randomised to the intervention (n=394) and control treatment (n=406) groups.

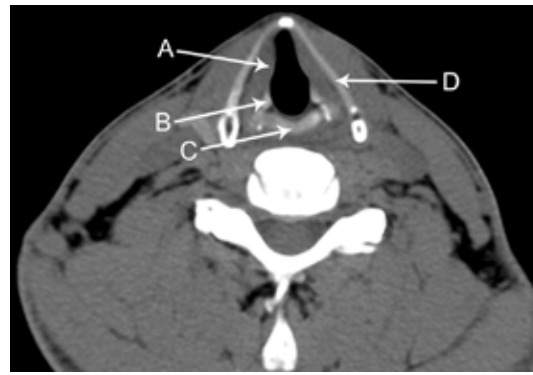
The baseline characteristics for the treatment groups were presented; these included body mass index (BMI) (intervention: mean 26.8 (standard deviation 5.1); control 26.8 (4.8)). The outcome measures included birth weight and gestational weight gain. Of those women allocated to the intervention, 372 provided data at follow-up, compared with 387 of those allocated to the control. A per protocol analysis was performed. Mean birth weight was greater in the intervention group than in the control group, although the difference was not significant (mean 4034 (standard error 26.4) v 4006 (25.3) g; mean difference 28.6 g, 95% confidence interval -45.6 to 102.8; P=0.449). Mean gestational weight gain was significantly less for the intervention arm (12.2 (standard error 0.23) v 13.7 (0.25) kg; mean difference -1.35 kg, -2.45 to -0.24; P=0.01). The researchers concluded that a low glycaemic index diet in pregnancy did not significantly reduce birth weight for large for gestational age infants but it did have a significant effect on reducing gestational weight gain for women at risk of fetal macrosomia.

Which of the following statements, if any, are true?

- The standard deviation of the BMI quantified the variation in measurements at baseline for the sample members allocated to a treatment group
- The standard error of the birth weight quantified the variation in measurements of birth weight in the population
- At baseline, about 66% of sample members had a BMI that was within one standard deviation of the sample mean
- If the sample size increased, the size of the standard error would be expected to decrease

Submitted by Philip Sedgwick

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## ANATOMY QUIZ

### Axial computed tomogram of the glottis

Identify the structures labelled A, B, C, and D in this axial computed tomogram of the glottis.

Submitted by Ming-Hua Zheng and Yong-Ping Chen

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## PICTURE QUIZ

### Headache, flashing lights, and blurred vision

A 35 year old white man presented to eye casualty with a seven day history of severe headache, blurred vision, and flashing lights in both eyes. The severity of his headache was reported as 9/10, and he described it as spreading from his occipital region frontally. It was not worse on waking and he had no focal neurological signs. His medical history included chronic headaches since childhood, with frequent exacerbations of migraine, for which he took sumatriptan. He denied taking ergotamine. The current episode was characterised by the headache being more severe and the visual changes more prolonged than usual. He also had chronic back pain, for which he took daily paracetamol and codeine, was obese, and used continuous positive airways pressure for obstructive sleep apnoea.

Ophthalmic assessment showed visual acuities of 6/12 in both eyes, which corrected to 6/9 with pinhole. Intraocular pressure was 10 mm Hg (reference range 10-21) in both eyes and he had no relative afferent pupillary defect. His anterior segment examination was normal. His blood pressure was 165/117 mm Hg but he could not recall any previous blood pressure readings for comparison. Dilated funduscopy showed abnormal changes in the posterior pole of both eyes (fig 1), which were largely symmetrical. Blood tests were sent for inflammatory markers



and serology requested for possible infectious causes.

His general practitioner was contacted and ambulatory blood pressure monitoring set in place. No acute antihypertensive drugs were started. On review in clinic one week later, his blood pressure was 230/140 mm Hg.

- What is the most likely underlying diagnosis?
- What abnormal retinal changes are seen?
- What is the grading classification for this condition?
- Does this patient need further investigations?
- How should this condition be managed?

Submitted by Andrew Malem and David Farnworth

Patient consent obtained.

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