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STATISTICAL QUESTION
What is a P value?

Researchers investigated whether rapid rather than standard intravenous rehydration resulted in improved hydration and clinical outcomes when administered to children with gastroenteritis. Treatments were compared in a parallel randomised controlled trial. Children were recruited if aged 3 months to 11 years, had a diagnosis of dehydration secondary to gastroenteritis, had not responded to oral rehydration, and had been prescribed intravenous rehydration. Intervention was rapid (60 mL/kg) or standard (20 mL/kg) rehydration with 0.9% saline over an hour.

The primary outcome was the proportion of children with clinical rehydration, assessed on a validated scale, within two hours of start of treatment. In total, 226 children were recruited, of whom 114 were randomised to rapid and 112 to standard rehydration. The proportion of children rehydrated at two hours was higher in the rapid rehydration group, although the difference was not significant (41/114 (36%) v 33/112 (29.5%); P=0.32).

Which one of the following statements best describes the P value?

a) It is the probability that the null hypothesis is true.
b) It is the probability that the alternative hypothesis is true.
c) It is the probability of obtaining the observed difference in the outcome measure, or a larger one, given that no difference exists between treatments in the population.
d) It is the probability that the observed difference in the outcome measure was due to random chance.

Submitted by Philip Sedgwick
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PICTURE QUIZ
Hip pain in an adolescent after injury while playing football

A 15 year old boy presented to the emergency department with left hip pain that first occurred while playing football. The exact mechanism of injury was unclear, but he thought that he may have "kicked the ground rather than the ball." He was unable to continue playing because of pain on weight bearing, and he was forced to limp from the field with assistance. He arrived at hospital after a couple of hours. His developmental progress and medical history were normal, with no previous hip problems reported.

On examination he was constitutionally well. Tenderness of the left hemipelvis was noted on palpation. He was reluctant to perform any active movement of the hip or bear his weight, and he was unable to perform a straight leg raise. Passive movements (including rotation) caused generalised tenderness, with passive hip extension causing the most discomfort. Examinations of both his back and left knee were unremarkable. Anterioposterior radiography of the pelvis was performed (figure).

1 Given the history, what is the differential diagnosis?
2 What abnormality is seen in the radiograph?
3 What is the anatomical basis for this radiological finding?
4 How would you manage this condition?

Submitted by John T Machin, David R Wordsworth, Senthooran Raja, and Simon Burtt
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ANATOMY QUIZ
Axial computed tomography of a male pelvis in the portal venous phase post-contrast

Identify the structures labelled A-I in this axial computed tomography of a male pelvis in the portal venous phase post-contrast.

Submitted by Rahil H Kassamali and Sumit J Karia
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