# ENDGAMES

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## STATISTICAL QUESTION

### Measuring the detriment of treatment: number needed to harm

Researchers investigated the efficacy and safety of nicotine patches in pregnant women who smoked. A randomised placebo controlled trial was performed. The intervention consisted of the administration of 16 hour nicotine patches until the time of delivery. Participants were pregnant women over 18 years who smoked at least five cigarettes a day and whose babies were between 12 and 20 weeks' gestation. In total, 402 women were recruited from 23 maternity wards throughout France and randomly allocated to the intervention (n=203) or placebo patches (n=199).

The primary outcome measures were achievement of complete abstinence until delivery, and birth weight. The proportion of women who achieved complete abstinence was higher in the nicotine patch group than in the placebo group, although the difference was not significant (5.5% (n=11) *v* 5.1% (n=10); P=0.87). The mean birth weight was higher in the nicotine patch group, although the difference was not significant (3065 (standard error 44 g) *v* 3015 g (44 g); P=0.41). The incidence of serious adverse events (including stillbirth, late miscarriage, and newborn death at birth) was similar between the treatment groups. Non-serious adverse reactions, mainly affecting the skin, were more common in the nicotine patch group than in the placebo patch group. In particular, skin reactions at the patch site were reported by 23 (11.33%) women in the intervention group compared with 8 (4.02%) in the placebo patch group (number needed to harm 13.7; 95% confidence interval 8.0 to 46.1). It was concluded that the nicotine patch did not increase the smoking cessation rate or birth weight, although it increased the frequency of non-serious adverse reactions, mainly those affecting the skin.

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

a) It is estimated that, on average, for every 13.7 pregnant women who used nicotine patches one would experience an adverse event (skin reaction at patch site)

b) The magnitude of the statistic number needed to harm depends only on the absolute difference between treatment groups in risk of the adverse event

c) The smaller the value of the number needed to harm, the less likely the intervention was to cause the adverse event (skin reaction at patch site) when compared with placebo patches

d) The number need to harm was significant at the 5% level of significance.

Submitted by Philip Sedgwick

Cite this as: *BMJ* 2015;350:h2763

## CASE REVIEW

### A limp with an unusual cause

A 41 year old Ghanaian man resident in the United Kingdom presented with a five hour history of pain and swelling of the right ankle, left wrist, and right middle finger. He felt generally unwell but had no other specific symptoms on systemic inquiry. He had just returned from a two week visit to Ghana. There was no medical history of note, he was taking no regular drugs, and he had no known drug allergies. The appropriate travel prophylaxis had been adhered to. He had had unprotected intercourse with a new female partner about 10 days ago.

On examination, his temperature was 37.8°C. There was evidence of synovitis (joint swelling, redness, tenderness, and reduced range of movement) of the right ankle, left wrist, and the proximal interphalangeal joint of the middle finger of his right hand. Initial investigations confirmed that his neutrophil count, C reactive protein concentration, and erythrocyte sedimentation rate were raised. Radiographs of the affected joints showed soft tissue swelling but were otherwise normal.

The pain did not ease with oral non-steroidal anti-inflammatory drugs and he was admitted to hospital.

1 What is the differential diagnosis?

2 What is the most likely diagnosis and why?

3 What further investigations are necessary?

4 What are the treatment options?

Submitted by Rebecca Metcalfe, Michael Reed, and Andrew Winter

Patient consent obtained.

Cite this as: *BMJ* 2015;350:h1985

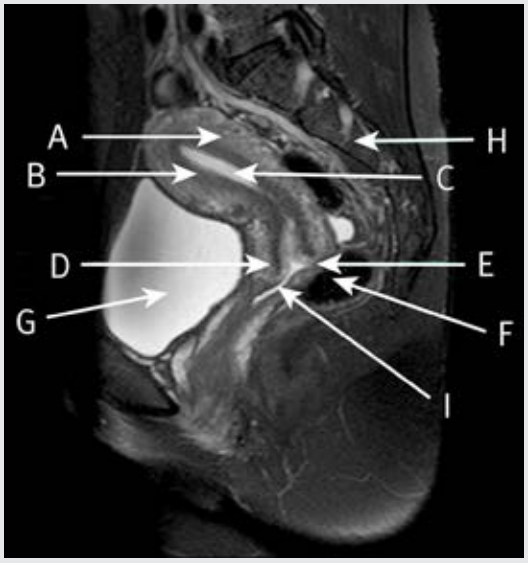
## ANATOMY QUIZ

### Sagittal T2 weighted magnetic resonance image of the female pelvis

Identify the structures labelled A, B, C, D, E, F, G, H, and I in this sagittal image from a magnetic resonance study of the female pelvis.

Submitted by Ke-Hua Pan and Ming-Hua Zheng

Cite this as: *BMJ* 2015;350:h1611




## CONTRIBUTIONS

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## ANSWERS TO ENDGAMES, p 35

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### ANATOMY QUIZ

**Sagittal T2 weighted magnetic resonance image of the female pelvis**

A: Outer myometrium
B: Inner myometrium or junctional zone
C: Endometrium and intraluminal secretions
D: Cervix
E: Posterior fornix of the vagina
F: Rectum
G: Bladder
H: Sacrum
I: Vagina

### STATISTICAL QUESTION

**Measuring the detriment of treatment: number needed to harm**

Statements *b* and *d* are true, whereas *a* and *c* are false.

### CASE REVIEW

**A limp with an unusual cause**

1 The main differential diagnosis is between polyarticular septic arthritis and reactive arthritis. Other possibilities include seronegative inflammatory arthritis, connective tissue disorder, and polyarticular gout.
2 Septic arthritis as a result of disseminated *N gonorrhoeae* infection is the most likely diagnosis because of the abrupt onset of arthritis and systemic illness shortly after sexual intercourse with a new partner.
3 Initial investigations include blood tests (white blood cell count, C reactive protein, erythrocyte sedimentation rate, blood cultures), radiography of the affected joints, and aspiration of synovial fluid from the affected joints for analysis (Gram stain, microscopy, and culture). Nucleic acid amplification tests should be performed on genital, pharyngeal, or rectal samples (guided by sexual history) to look for gonococcal and chlamydial DNA.
4 Gonococcal septic arthritis is treated with a seven day course of antibiotics. Current UK guidelines recommend an intravenous third generation cephalosporin (such as ceftriaxone), with a switch to oral therapy once there is clinical improvement and organism sensitivities are known. Sexual contacts should be sought and tested (partner notification).