PRACTICE POINTER

Assessing fitness for work and writing a "fit note"

David Coggon, Keith T Palmer

MRC Lifecourse Epidemiology Unit, University of Southampton, Southampton, UK

Correspondence to: D Coggon MRC Lifecourse Epidemiology Unit, Southampton General Hospital, Southampton SO16 6YD UK dnc@mrc.soton.ac.uk

Cite this as: *BMJ* 2010;341:c6305
doi: 10.1136/bmj.c6305

This article offers advice on assessing whether patients are ready to return to work after injury or illness and whether job modifications might help them to return

In Great Britain there was a more than sevenfold increase in long term sickness absence for back pain (measured in days of sickness and invalidity benefit payment a year) between the 1950s and the early 1990s[1] at a time when the physical demands of work were generally falling. More recently, mental health problems have rapidly overtaken musculoskeletal disorders as the main reason for incapacity.[2] Doctors are often asked to advise about fitness for work after illness, injury, or surgery. In particular, general practitioners in the United Kingdom are often required to certify sickness absence so that patients can obtain sick pay or social security benefits. The UK government recently introduced a redesigned Statement of Fitness for Work ("fit note"), which replaced the "sick note" used previously. The new form includes an option not previously available: the doctor can indicate that, although patients are not fit for their normal work, they could work if the job were suitably modified. This article explains why and how doctors might support patients in their return to work, how any helpful modifications to work can be identified within the time constraints of a busy clinic, and how advice on a fit note can usefully be framed.

Why should doctors be concerned with their patients' work?

Occupational hazards are an important preventable cause of injury and disease, and identifying patients whose illness is caused or aggravated by work can lead to more effective clinical management. On the other hand, work can be beneficial for patients. Medicine aims not only to prevent and relieve symptoms but also to optimise people's functional capacity. In adults of working age, performance of a productive, rewarding job is important to personal esteem and quality of life. Moreover, evidence is accumulating that as well as providing income, employment can directly promote physical and mental health.

Rates of mortality and morbidity are higher in unemployed than employed people[3-5]; rates of psychiatric illness[6-8] and cardiovascular disease[9] increase after job loss; psychological distress is reduced when unemployed job seekers find re-employment[10-12]; and self esteem and psychological health improve in school leavers securing stable employment.[13] Findings have been mainly observational and thus may be influenced in part by health related selection for work.[14] Nevertheless, a "best evidence synthesis" based largely on a review of systematic reviews concluded that the overall weight of evidence pointed strongly to health benefits from employment.[15]

When treating patients of working age, doctors should therefore always consider the impact of their illness or injury on their capacity to work, and whether optimal timing of a return to work is an important element of their rehabilitation.

Direct evidence that earlier return to work can accelerate recovery from illness or prevent long term incapacity is limited. One systematic review of experimental and observational studies found strong evidence that duration of "work disability" (encompassing a range of related outcomes such as self reported time to return to work, time in receipt of benefits) was reduced when the job was modified, but no consistent evidence for impact on quality of life.[16] A systematic review of workplace rehabilitation for low back pain[17] found only one study that assessed early return to work, and this suggested a reduction in pain and disability at six months. Against this, a systematic review of randomised controlled trials concluded that workplace interventions assisting return to work were not effective in improving health outcomes among workers with musculoskeletal disorders.[18] And although a cohort study of employees absent from work with mental health problems found that earlier return to work was associated with a more favourable course of symptoms, this may have been because clinical improvement enabled a more rapid return to work.[19] Nevertheless, the possibility that optimal timing of a return to work might lead to quicker recovery seems plausible, especially for disorders such as low back pain and acute limb injuries, which systematic reviews of randomised controlled trials have found to benefit from maintained activity[20] or early mobilisation.[21]

What determines fitness for work?

A person need not be fully fit to carry out paid work. Many jobs can be performed adequately by people with temporary or permanent health limitations. Inevitably, however, some circumstances arise in which illness or injury prevents work. Fitness for work depends both on attributes of the patient and on the nature of the job (box 1).

A patient's attitudes and expectations can greatly affect capacity for work. Prospective cohort studies of people with various musculoskeletal disorders of the back, arm, or lower limb found that after adjustment for other prognostic variables, the individual's expectations of recovery were a

bmj.com archive
Previous articles in this series
- Managing Parkinson's disease during surgery (*BMJ* 2010;341:c5718)
- Process mapping the patient journey (*BMJ* 2010;341:c4078)
- Communicating in a healthcare setting with people who have hearing loss (*BMJ* 2010;341:c4672)
- Practical management of coagulopathy associated with warfarin (*BMJ* 2010;340:c1813)
- Using the new UK-WHO growth charts (*BMJ* 2010;340:c1140)

Box 1 | Factors determining fitness for work

- Nature and severity of health problem(s)
- Patient's attitudes and expectations
- Physical and mental demands of job
- Potential for work to exacerbate illness
- Safety considerations

major predictor of time taken to return to work.[22 23]

Work can exacerbate illness in many ways. Dermatitis in a nurse, for example, might be worsened by continual hand washing, and depression in a bank employee worsened by a difficult relationship with his or her manager. Aggravation of symptoms does not necessarily mean that an occupational activity should be avoided, but concern is greater if work contributes to and perpetuates an underlying disease process. It might be unwise, for example, for a plumber who was off work because of knee osteoarthritis to return to a job that required prolonged kneeling.

Sometimes, a health problem precludes work because of risks to the safety of the patient or others. This can occur, for example, when a job involves driving and the medical condition or its treatment could materially impair the patient's ability to control a vehicle. In the UK, the Driver and Vehicle Licensing Agency publishes guidance on health requirements for driving.[24]

Assessing fitness for work

Some patients have health problems that make them unfit for any form of employment in the immediate future (such as multiple fractures from a road traffic accident, hemiplegia after a recent stroke). Others are less severely incapacitated, and in forming a view on their potential to work, a doctor needs to consider the nature and demands of their job (which include travel to and from work) and the scope for modifications that might enable them to work despite their limitations. Box 2 lists a few simple questions that may help in such an assessment.

Box 2 | Questions that may be helpful in identifying the need and scope for job modifications

- What is your job, and what tasks does it involve?
- Are there aspects of your job that you would find difficult or impossible because of your health problem(s)?
- If so, are there simple ways in which your job could be changed to overcome these difficulties?
- Is there another job that you would find easier, to which your employer might move you while you are recovering?

Box 3 | Examples of modifications that may help a patient to return to work

Phased return to work
The patient could restart with reduced working hours and build up gradually to normal levels. Working fewer hours each day is usually preferable to fewer days each week

Altered hours
Consider the time of work as well as the number of hours a day—for example, a patient recovering from depression may find early starts especially difficult

Amended duties
Changes in the organisation of work might help: an anxious patient with reduced confidence may benefit from working in a team rather than alone; a secretary with rheumatoid arthritis who found typing difficult could be allocated alternative administrative duties if colleagues were available to share in the work
Changes in job content might help: a patient with back pain may need to avoid prolonged sitting to reduce discomfort; a patient with anxiety or depression may need to avoid tight deadlines; a patient with newly diagnosed insulin dependent diabetes may need to avoid foreign travel temporarily

Workplace adaptation
Changes to seating or other aspects of a work station may be necessary to improve comfort in a patient with back pain
A patient with an arthritic left ankle may need to switch to a car with automatic gears

Completing a fit note

When completing a fit note, the doctor is providing advice to the patient, who may then share it with his or her employer and/or use it as evidence of eligibility for sick pay or social security benefits.

If the patient's health problem precludes all work and is not expected to resolve within the immediately foreseeable future, the Department for Work and Pensions asks that this assessment be recorded and a date specified for review that reflects the anticipated clinical course (up to three months ahead in the first six months of incapacity, but thereafter the review period can be longer or even indefinite, if clinically appropriate). There is no point in early review if the incapacity for work will not improve materially in the short term. Nor is it mandatory to see the patient before completing the note. When a telephone consultation or reports in the patient's clinical record provide the necessary information, the doctor's assessment can be based on these.

If the patient will be incapable of work for a short period (such as after surgery) but should then be able to return directly to his or her normal job, the doctor can indicate that the patient will be unfit for work over the relevant period but that no further assessment is needed thereafter. As a default, the patient would then return to work when the certificate expired. Setting the date for restarting work in the middle rather than at the beginning of a working week may make the transition less daunting for the patient.

When the doctor believes that the patient is incapable of his or her normal job but might be fit for modified work, the form offers an option to record this and to tick boxes recommending consideration of *(a)* a phased return to work, *(b)* altered hours, *(c)* amended duties, or *(d)* workplace adaptation. These four options are not mutually exclusive, and, if appropriate, more than one can be recommended. It is not essential to use them, but if the patient is recorded as possibly fit for modified work then some form of explanatory comment is required (box 3).

In providing explanatory comments, doctors should be careful to remain within the limits of their knowledge and competence. Nonetheless, it may often be possible and worth while to offer simple advice to the employer. Such advice is best framed in terms of function—in particular, whether there are activities at work that the patient would find difficult or impossible (such as lifting weights heavier than 10 kg, working to tight deadlines, travelling long distances by car). In addition, it may help to highlight aspects of the job that the employer could consider modifying. However, advice that is too prescriptive may be counterproductive. The employer has more detailed knowledge of the workplace than the doctor and is better placed to identify specific modifications that are feasible. Box 4 gives examples of the types of advice that might be given.

In some cases, especially where the employer has an occupational health service, the certifying doctor may include a recommendation for specialised occupational health assessment. This might be helpful, for example, in cases where the patient's job could have contributed to the patient's health problem.

Employers are not obliged to follow doctors' recommendations. In some cases, job modifications may not be practical, in which case the patient will be treated as if he or she is unfit for any form of work. However, systematic review suggests that

Box 4 | Examples of advice for an employer about a patient's function and possible job modifications

"He should avoid lifting weights greater than 10 kg. Might it be possible for him to transfer temporarily to work in customer service?"

"She should avoid prolonged sitting without breaks. Review of her work station might be useful. She will need time off twice a week to attend physiotherapy"

"She cannot currently drive a car. So that she can use public transport it would help if she could start and finish work a little later than normal"

"He should avoid kneeling and squatting"

"She could manage work that does not involve handling customer complaints"

where modifications are feasible they can accelerate return to work.[25]

Allowing for a patient's attitudes and expectations

Attitudes to work attendance vary widely. Not all aspects of work are pleasant, and some people may enjoy a legitimised opportunity for absence, at least in the short term. Conversely, some individuals have a strong sense of duty and pride themselves on never missing a day's work, and others try to minimise their absence because they will later have to catch up on tasks left undone.

Such differences in attitude normally become apparent in the course of a consultation, and if the doctor ignores them, he or she could lose the patient's trust. As with advice to stop smoking or lose weight, a doctor can point out to a patient the advantages to health from being at work, but the information will not always be embraced enthusiastically. A distinction must be drawn between malingering (in which a person falsely claims incapacity) and the more common situation in which, for psychological reasons, a patient is genuinely more incapacitated than another with similar impairment. Doctors should not collude in what they have good reason to believe is malingering. However, they should make due allowance for differences in patients' attitudes when advising on fitness for work. Sometimes, reluctance to return to work stems from an erroneous perception that doing so will exacerbate the health problem or delay its recovery, in which case the doctor may be able to correct the misapprehension.

FURTHER RESOURCES

Department for Work and Pensions. Statement of fitness for work: a guide for general practitioners and other doctors. www.dwp.gov.uk/docs/fitnote-gp-guide.pdf

Healthy Working UK (www.healthyworkinguk.co.uk/)—Website developed with input from the Royal College of General Practitioners, the Faculty of Occupational Medicine, and the Society of Occupational Medicine. Provides training and decision aids to support the management of health and work

E-learning for Healthcare (www.e-lfh.org.uk/projects/healtheworking/index.html)—Part of a programme led by the Department of Health in partnership with the Faculty of Occupational Medicine, the Royal College of General Practitioners, and the Society of Occupational Medicine. Provides six 20-minute interactive training sessions and is accessible by NHS general practitioners as part of the e-GP programme (http://e-lfh.org.uk/projects/egp/index.html). Includes a unit on sickness absence with illustrative case scenarios

Royal College of Surgeons. Get well soon: helping you make a speedy recovery after your surgery (www.rcseng.ac.uk/patient_information/return-to-work)—Guidance on recovery, including return to work, after several common surgical procedures

Royal College of Obstetricians and Gynaecologists. Return to fitness: recovering well. (www.rcog.org.uk/recovering-well)—Guidance on recovery after various common gynaecological procedures, including sections on return to work

Until the end of March 2011, free telephone advice on work and health is available for general practitioners: 0800 022 4233 (England), 0800 019 2211 (Scotland), 0800 107 0900 (Wales). This is a service sponsored by the Department for Work and Pensions and delivered by trained occupational health professionals

Contributors: The two authors jointly wrote this paper, and both contributed to the review of background scientific literature. DC is the guarantor.

Competing interests: Both authors have completed the Unified Competing Interest form at www.icmje.org/coi_disclosure.pdf (available on request from the corresponding author) and declare no support from any organisation for the submitted work; no financial relationships with any organisations that might have an interest in the submitted work in the previous 3 years; no other relationships or activities that could appear to have influenced the submitted work.

Provenance and peer review: Commissioned; externally peer reviewed.

1 Clinical Standards Advisory Group. Epidemiology review: the epidemiology and cost of back pain. HMSO, 1994.
2 Brown J, Hanlon P, Turok I, Webster D, Arnott J, Macdonald EB. Mental health as a reason for claiming incapacity benefit—a comparison of national and local trends. *J Pub Health* 2008;31:74-80.
3 Moser KA, Fox AJ, Jones DR, Goldblatt PO. Unemployment and mortality: further evidence from the OPCS longitudinal study 1971-81. *Lancet* 1986;i:365-7.
4 Morris JK, Cook DG, Shaper AG. Loss of employment and mortality. *BMJ* 1994;308:1135-9.
5 Bartley M, Sacker A, Clarke P. Employment status, employment conditions, and limiting illness: prospective evidence from the British household panel survey 1991-2001. *J Epidemiol Community Health* 2004;58:501-6.
6 Gallo WT, Bradley EH, Siegel M, Kasl SV. Health effects of involuntary job loss among older workers: findings from the health and retirement survey. *J Gerontol* 2000;55B:S131-40.
7 Thomas C, Benzeval M, Stansfield SA. Employment transitions and mental health: an analysis from the British household panel survey. *J Epidemiol Community Health* 2005;59:243-9.
8 Keefe V, Reid P, Ormsby C, Robson B, Purdie G, Baxter J, et al. Serious health events following involuntary job loss in New Zealand meat processing workers. *Int J Epidemiol* 2002;31:1155-61.
9 Gallo WT, Bradley EH, Falba TA, Dubin JA, Cramer LD, Bogardus ST, et al. Involuntary job loss as a risk factor for subsequent myocardial infarction and stroke: findings from the health and retirement survey. *Am J Ind Med* 2004;45:408-16.
10 Ferrie JE, Shipley MJ, Marmot MG, Stansfeld S, Smith GD. Health effects of anticipation of job change and non-employment: longitudinal data from the Whitehall II study. *BMJ* 1995;311:1264-9.
11 Lahelma E. Unemployment and mental well-being: elaboration of the relationship. *Int J Health Services* 1992;22:261-74.
12 Nordenmark M. Non-financial employment motivation and well-being in different labour market situations: a longitudinal study. *Work, Employment and Society* 1999;13:601-20.
13 Banks MH, Jackson PR. Unemployment and risk of minor psychiatric disorder in young people; cross-sectional and longitudinal evidence. *Psychological Medicine* 1982;12:789-98.
14 Martikainen P, Mäki N, Jäntti M. The effects of unemployment on mortality following workplace downsizing and workplace closure: a register-based follow-up study of Finnish men and women during economic boom and recession. *Am J Epidemiol* 2007;165:1070-5.
15 Waddell G, Burton AK. Is work good for your health and well-being? TSO, 2006.
16 Franche R-L, Cullen K, Clarke J, Irvin E, Sinclair S, Frank J, et al. Workplace-based return-to-work interventions: a systematic review of the quantitative literature. *J Occup Rehab* 2005;15:607-31.
17 Williams RM, Westmorland MG, Lin CA, Schmuck G, Creen M. Effectiveness of workplace rehabilitation interventions in the treatment of work-related low back pain: a systematic review. *Disability Rehab* 2007;29:607-24.
18 Van Oostrom SH, Driessen MT, de Vet HCW, Franche RL, Schonstein E, Loisel P, et al. Workplace interventions for preventing work disability. *Cochrane Database Syst Rev* 2009;2:CD006955.
19 Brenninkmeijer V, Houtman I, Blonk R. Depressed and absent from work: predicting prolonged depressive symptomatology among employees. *Occup Med* 2008;58:295-301.
20 Waddell G, Feder G, Lewis M. Systematic reviews of bed rest and advice to stay active for acute low back pain. *Br J Gen Pract* 1997;47:647-52.
21 Nash CE, Mickan SM, Del Mar CB, Glasziou PP. Resting injured limbs delays recovery: a systematic review. *J Fam Pract* 2004;53:706-12.
22 Cole DC, Mondloch MV, Hogg-Johnson S. Listening to injured workers: how recovery expectations predict outcomes—a prospective study. *CMAJ* 2002;166:749-54.
23 Turner JA, Franklin G, Fulton-Kehoe D, Sheppard L, Wickizer TM, Wu R, et al. Worker recovery expectations and fear-avoidance predict work disability in a population-based workers' compensation back pain sample. *Spine* 2006;31:682-9.
24 Driver and Vehicle Licensing Agency. At a glance guide to the current medical standards of fitness to drive. 2010. www.dft.gov.uk/dvla/medical/ataglance.aspx
25 Krause N, Dasinger LK, Neuhauser F. Modified work and return to work: a review of the literature. *J Occup Rehab* 1998;8:113-39.

10-MINUTE CONSULTATION

Gout

William E Cayley Jr

University of Wisconsin Department of Family Medicine, UW Health Augusta Family Medicine Clinic, 207 West Lincoln, Augusta, Wisconsin, WI 54722, USA

Correspondence to: W E Cayley Jr bcayley@yahoo.com

Cite this as: *BMJ* 2010;341:c6155
doi: 10.1136/bmj.c6155

This is part of a series of occasional articles on common problems in primary care. The *BMJ* welcomes contributions from GPs.

An 84 year old woman presents with pain, redness, and swelling of the left great toe, which makes it difficult for her to walk. She is concerned about possible gout.

What you should cover

Acute gout usually presents as painful inflammation of a single joint. Podagra (inflammation of the first metatarsophalangeal joint) is the most common presentation. Less common presentations include tenosynovitis, bursitis, entrapment neuropathies, and axial gout with back, neck, or radicular pain.[1]

Gouty arthritis is caused by deposits of uric acid crystals in joints. Acute attacks may be triggered by local changes in body temperature or pH; trauma; or articular dehydration. Gout can progress through four clinical stages: asymptomatic hyperuricaemia, acute gout with painful arthropathy, interval gout, and chronic tophaceous gout. The presence of hyperuricaemia alone does not necessarily mean that the patient has gout.[2]

The most important differential diagnosis besides gout to consider for an acutely inflamed joint is septic arthritis, usually associated with joint effusion and positive Gram stain on joint aspirate. Other diagnoses to consider include calcium pyrophosphate dihydrate deposition disease (typically self limited, affecting the knee, and associated with normal uric acid concentrations); rheumatoid, psoriatic, or reactive arthritis; cellulitis, Reiter's syndrome, and sarcoidosis.[3]

Although definitive diagnosis of gout requires presence of uric acid crystals in joint fluid, a clinical diagnosis of crystal arthropathy is reasonable in patients with rapid development of severe pain, swelling, tenderness, and overlying erythema that peaks within six to 12 hours. If monoarticular inflammation and hyperuricaemia are or have been recurrent, a clinical diagnosis of gout is reasonable.[2] The box outlines criteria for the diagnosis of gout on the basis of clinical findings.

Criteria for diagnosis of gout on the basis of clinical findings

European League Against Rheumatism (EULAR)[4]

- In acute attacks the rapid development of severe pain, swelling, and tenderness that reaches its maximum within just 6-12 hours, especially with overlying erythema, is highly suggestive of crystal inflammation though not specific for gout
- For typical presentations of gout (such as recurrent podagra with hyperuricaemia) a clinical diagnosis alone is reasonably accurate but not definitive without crystal confirmation

Janssens clinical prediction rule (www.umcn.nl/goutcalc)[5]

Gout is highly unlikely with a total score of ≤4 and is >80% likely with a total score of ≥8:

-Male sex—2.0 points

-Previous arthritis attack reported by the patient—2.0 points

-Onset in <1 day—0.5 point

-Joint redness—1.0 point

-Involvement of first metatarsophalangeal joint—2.5 points

-Hypertension or one or more cardiovascular diseases—1.5 points

-Serum uric acid concentration >350 µmol/l—3.5 points

What you should do

- For a patient with acute podagra ask about onset, course, and severity of pain; presence of other affected joints; fever; precipitating or exacerbating factors; and whether this is a new or recurrent problem.
- Assess for risk factors for gout: older age, male sex, high alcohol use, cardiovascular disease, hypertension, diabetes, thyroid dysfunction, obesity, chronic kidney disease, diuretic treatment, and a current or previous raised serum uric acid concentration. If available, obtain laboratory studies for serum uric acid concentration, blood counts, renal function, and thyroid function.
- If a patient scores ≥8 on the Janssens prediction rule (box) or has podagra and a documented history of gout, it is appropriate to treat empirically without waiting for laboratory results.
- Initial treatment should focus on terminating the acute attack with non-steroidal anti-inflammatory drugs, colchicine, or corticosteroids. Non-steroidal anti-inflammatory drugs, which work faster but can carry risks of gastrointestinal or renal toxicity, should be given at recommended maximum doses. Colchicine, which may be slower to work and carries risks of gastrointestinal upset and diarrhoea, should be given at an initial dose of 1.2 mg, followed by 0.6 mg one hour later, then 0.6 mg three times daily until the attack settles. Oral corticosteroids (such as prednisone 20-40 mg daily for three days then tapered over two weeks) are an option in patients intolerant of non-steroidal anti-inflammatory drugs and colchicine.[2]

USEFUL RESOURCES

For patients

PatientUK (www.patient.co.uk/showdoc/23068747#)

FamilyDoctor.org (http://familydoctor.org/online/famdocen/home/common/pain/disorders/372.html)

BUPA. (http://hcd2.bupa.co.uk/fact_sheets/html/gout.html)

NHS Choices (www.nhs.uk/conditions/Gout/Pages/Introduction.aspx)

For healthcare professionals

EULAR evidence based recommendations for gout. *Ann Rheum Dis* 2006;65:1301-11, 1312-24. (http://ard.bmj.com/content/65/10/1301.long and http://ard.bmj.com/content/65/10/1312.long)

British Society for Rheumatology and British Health Professionals in Rheumatology guideline for the management of gout. *Rheumatology (Oxford)* 2007;46:1372-4. (http://rheumatology.oxfordjournals.org/cgi/content/full/46/8/1372?view=long&pmid=17522099)

Family Medicine Digital Resources Library. Gout—evaluation and treatment. (http://fmdrl.org/2921)

bmj.com archive
Previous articles in this series
- Macromastia (large breasts): request for breast reduction (*BMJ* 2010;341:c5408)
- Hallux valgus (*BMJ* 2010;341:c5130)
- Chalazion (*BMJ* 2010;341:c4044)
- Vitamin B-12 deficiency (*BMJ* 2010;340:c2305)
- Stridor in children (*BMJ* 2010;340:c2193)

- Important ancillary interventions include rest, raising the leg, ice packs for the affected joint, hydration (up to two litres of water a day), and reducing alcohol intake. Stopping or replacing diuretic medications may be helpful.
- Arrange for aspiration of the joint for Gram stain and culture and for assessment for uric acid or calcium pyrophosphate crystals in any of the following cases:
  - -A patient scores ≤4 on the Janssens prediction rule
  - -A joint other than the first metatarsophalangeal is involved
  - -Uric acid concentrations are normal
  - -Other factors raise suspicion of septic arthritis.
- Lifestyle interventions that may help reduce the risk of recurrent gout include weight loss, eating one less portion of meat or fish a day, drinking wine instead of beer, and drinking one glass of skimmed milk daily.[6 7]

Competing interests: None declared
Provenance and peer review: Not commissioned; externally peer reviewed.

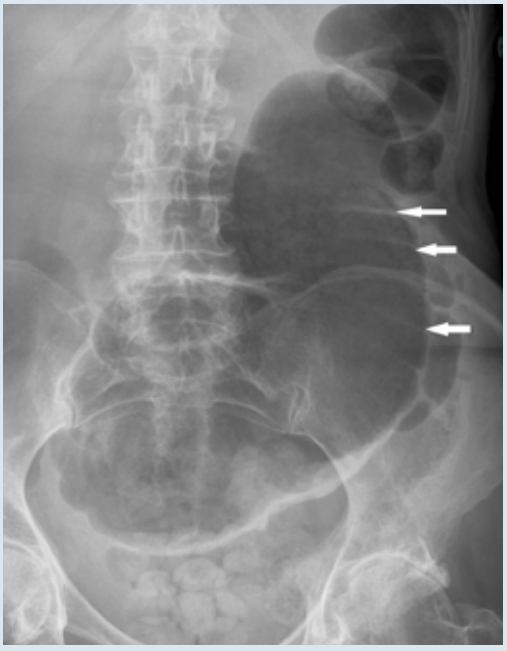
1 Ning TC, Keenan RT. Unusual clinical presentations of gout. *Curr Opin Rheumatol* 2010;22:181-7.
2 Jordan KM, Cameron JS, Snaith M, Zhang W, Doherty M, Seckl J, et al. British Society for Rheumatology and British Health Professionals in Rheumatology guideline for the management of gout. *Rheumatology (Oxford)* 2007;46:1372-4.
3 Eggebeen AT. Gout: an update. *Am Fam Physician* 2007;76:801-8. www.aafp.org/afp/2007/0915/p801.html
4 Zhang W, Doherty M, Pascual E, Bardin T, Barskova V, Conaghan P, et al. EULAR evidence based recommendations for gout. Part I: diagnosis. Report of a task force of the Standing Committee for International Clinical Studies Including Therapeutics (ESCISIT). *Ann Rheum Dis* 2006;65:1301-11. http://ard.bmj.com/content/65/10/1301.long.
5 Janssens HJ, Fransen J, van de Lisdonk EH, van Riel PL, van Weel C, Janssen M. A diagnostic rule for acute gouty arthritis in primary care without joint fluid analysis. *Arch Intern Med* 2010;170:1120-6. http://archinte.ama-assn.org/cgi/content/full/170/13/1120.
6 Oliver JE, Silman AJ. What epidemiology has told us about risk factors and aetiopathogenesis in rheumatic diseases. *Arthritis Res Ther* 2009;11:223.
7 Choi HK. A prescription for lifestyle change in patients with hyperuricemia and gout. *Curr Opin Rheumatol* 2010;22:165-72.

Accepted: 18 October 2010

ANSWERS TO ENDGAMES, p 1225. For long answers go to the Education channel on bmj.com

PICTURE QUIZ A woman with a distended abdomen

1 The plain radiograph shows a markedly dilated loop of large bowel with its axis running from the right lower quadrant and visible haustra.
2 The primary differential diagnosis to consider is a caecal volvulus. A redundant caecal loop may sometimes be confused with a sigmoid volvulus and differentiating between the two may be difficult with plain radiography. There are two types of caecal volvulus with a further variant called a caecal bascule.
3 Plain radiography is the first line investigation for any patient presenting with symptoms and signs of bowel obstruction. However, the findings are sometimes non-specific and the classic findings are not always present, so a definitive diagnosis of caecal volvulus is not often reached on initial evaluation. Further tests to confirm the diagnosis are computed tomography of the abdomen and pelvis or a single contrast barium enema, although this last test requires a patient with no symptoms or signs of peritonism and with the wide availability of computed tomography is rarely performed now.
4 Surgery is the mainstay of treatment in suitable patients, but in those who have no signs of peritonism or are unfit for surgery, reduction using a water soluble contrast enema or colonoscopic decompression can be attempted.



Plain radiograph of the abdomen showing a markedly dilated loop of large bowel with its axis running from the right lower quadrant and visible haustra (arrows)

STATISTICAL QUESTION
z scores

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

ON EXAMINATION QUIZ
Renal colic in general practice

Answer C is correct.