education

ART OF MEDICINE

Till death do us part

Recently our intensive care unit was asked to organise two "emergency marriages" in the space of a week.

The legal requirement is that there be an expectation or risk of death within a short time, which permits a hospital chaplain to apply for an emergency marriage licence—that is, an archbishop's special marriage licence for Church of England marriages or a registrar general's licence for civil ceremonies. In other cases a patient may not be expected to recover or to leave hospital but is not in immediate danger of dying, when it is possible for a chaplain to solemnise a marriage in hospital on the authority of a superintendent registrar's certificate, which cannot be issued until seven days after notice has been given to the registrar.

The process legally mandates that the patient is unable to leave hospital but does retain capacity to consent to marriage. Clearly, thought must be given to the effects of sedation, delirium, and other factors associated with critical illness that may interfere with the ability to consent. A letter from a doctor in attendance is required, stating that "the patient is seriously ill, is unlikely to recover, cannot or should not be moved to a place registered for a marriage, and understands the nature of marriage." Also required are a note of authorisation from the hospital management and a letter from the member of the clergy setting out the circumstances of the application. The Hospitals' Chaplaincy Council provides further details on emergency marriage within the NHS.[1]

Doctors and chaplains should exercise caution in approaching emergency marriages in hospital, because of the implications for wills, inheritance, and family harmony and the possibility of diminished capacity. Nonetheless, in critically unwell patients at the end of life the ability to consent may disappear rapidly, and delays in ascertaining wishes concerning marriage may result in emergency marriage becoming unfeasible.

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1 Chaplaincy NHS. Emergency marriages in hospital (England & Wales). www.nhs-chaplaincy-spiritualcare.org.uk/Microsoft%20Word%20-%20Emergency%20marriage%20in%20hospital%20-%20for%20issue%20dec%202011.pdf.

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We welcome contributions to this column via our online editorial office: https://mc.manuscriptcentral.com/bmj

PRACTICE UPDATES

Technology for assessing mobility, falls risk, and frailty

The Quantitative Timed Up and Go (QTUG) uses portable body sensors and a mobile software app to assess mobility, risk of falling, and frailty. Two observational studies have suggested that the accuracy of falls risk assessment is higher with the QTUG when combined with the clinical risk factor assessment. The QTUG costs around £675, with an annual software licence fee of £1500. QTUG could be used in primary, secondary, or social care settings by non-specialists. The manufacturers state that currently QTUG is being used in three NHS trusts.

http://bit.ly/2cQWNmH

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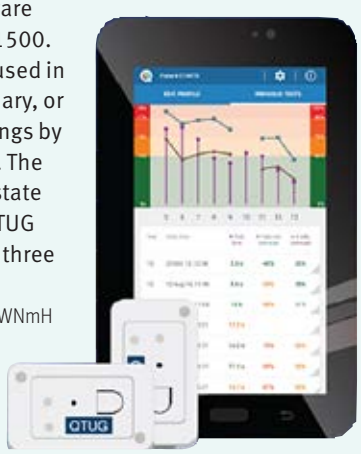

FAST FACT—ACUTE KIDNEY INJURY

Acute kidney injury is seen in 13-18% of hospital admissions and is commonly established at time of arrival to hospital.

The kidneys have many functions, the most important are:

- Filtration—measured by serum creatinine
- Water homeostasis—measured by urine generation.

Previous measures of renal function and urine output are the key features in defining acute kidney injury.

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CLINICAL UPDATES

Gynaecomastia

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CPD/CME
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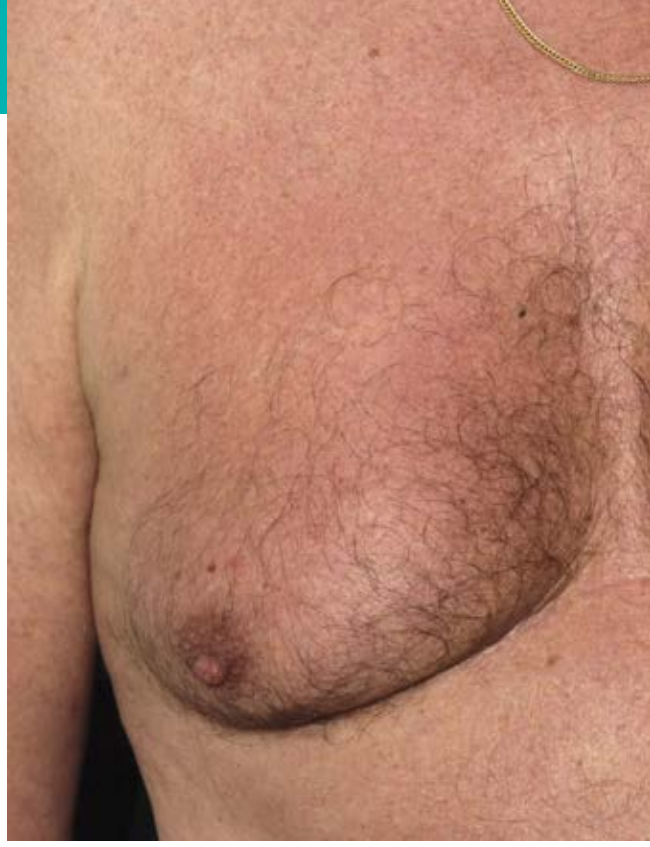
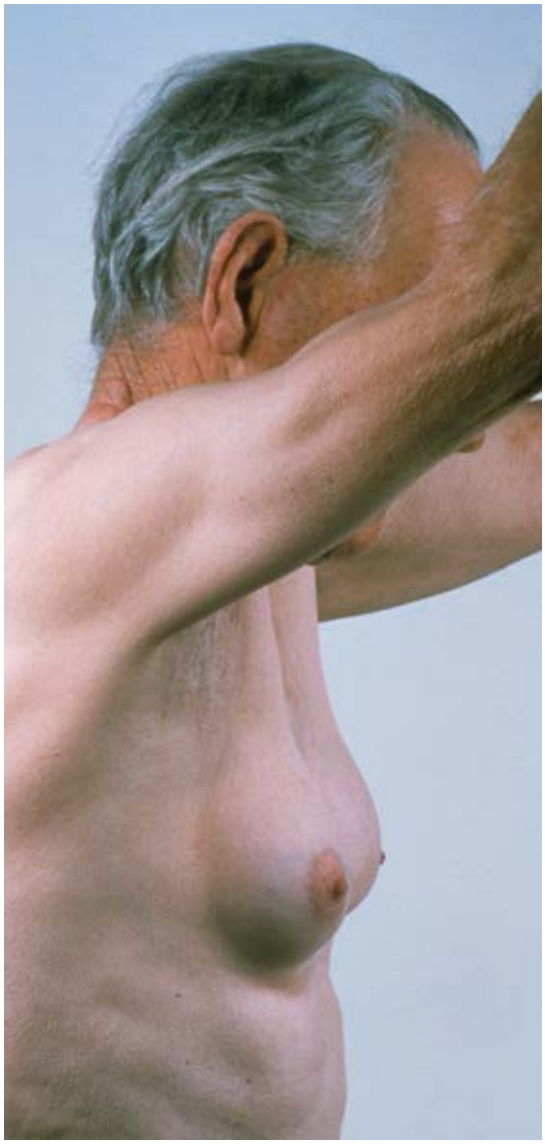


SPL



SPL

Gynaecomastia is the benign proliferation of glandular breast tissue in men. It is characterised by the presence of a palpable, firm, subareolar gland and ductal tissue (not fat) resulting in breast enlargement.[1 2] Gynaecomastia occurs in 35% of men and is most prevalent between the ages of 50 and 69.[3-7] In pseudogynaecomastia there is a lack of glandular proliferation, with increase in breast size due purely to excess adiposity.[8-11] This article highlights the assessment and treatment of gynaecomastia but does not cover the management of breast cancer in men.

What causes gynaecomastia?

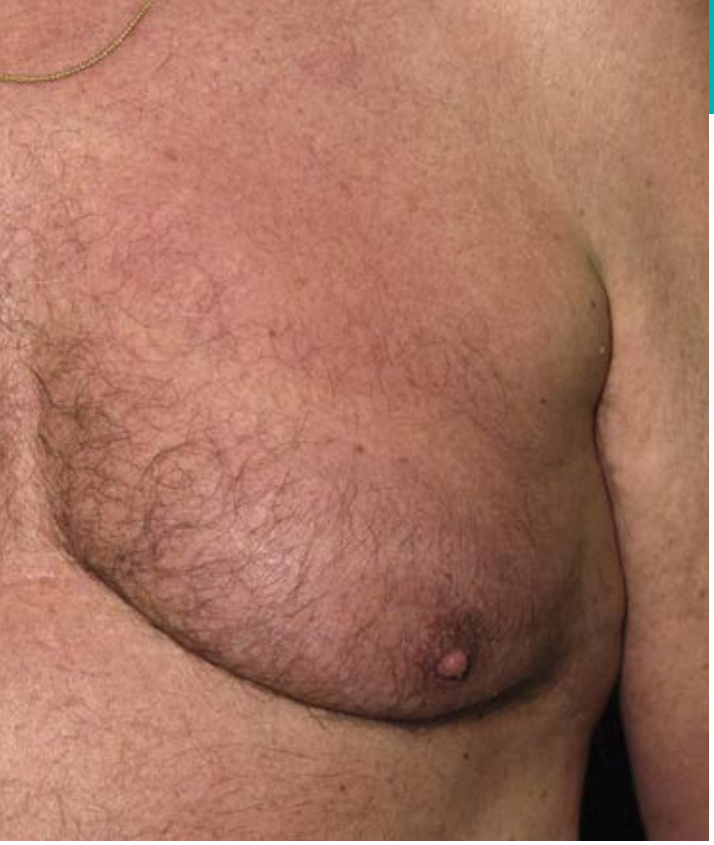
Oestrogens directly stimulate the breast duct development of both sexes, whereas testosterone is a potent inhibitor of breast growth.[12-14] Gynaecomastia occurs predominantly as a result of either an excess of oestrogens or oestrogen precursors or a reduction in androgens or impairment of their actions.[16] The cause of the hormone imbalance can be physiological, drug induced, or disease (boxes 1, 2, and 3).

Who gets gynaecomastia?

Most men with gynaecomastia are asymptomatic and unaware of their excess breast tissue. Gynaecomastia typically occurs as part of normal physiological changes (physiological gynaecomastia) and is often seen in newborns, adolescents, and older men. The condition is strongly correlated with obesity, which is known to cause increased peripheral aromatisation of oestrogen precursors.[4-51]

WHAT YOU NEED TO KNOW

- Gynaecomastia typically results from an imbalance between the level or action of oestrogen and androgen
- Physiological gynaecomastia is common in newborns, adolescents, and older men and most do not require investigation
- Removal of the underlying cause often leads to resolution of gynaecomastia
- Early treatment with tamoxifen (unlicensed) is the most effective medical option in men with symptoms
- Surgery is the only effective treatment option once gynaecomastia becomes fibrotic



Psychological impact of gynaecomastia

Gynaecomastia is associated with poorer general health and body image, social withdrawal, increased mental health issues, low self esteem, low sexual function, and eating disorders such as bulimia nervosa.[8-53] One large single institution study of idiopathic adolescent gynaecomastia highlighted conditions such as adjustment disorder (72.9%), anxiety disorder (16.7%), dysthymia (16.7%), generalised anxiety disorder (4.2%), and social phobia (4.2%).[30]

How is gynaecomastia diagnosed?

The history is typically of slow breast enlargement, which is either bilateral or unilateral.[4 19] Size can vary, from a small amount of extra tissue around the nipples to prominent breasts. The Simon classification is commonly used to grade gynaecomastia into four groups (figure).[54] Breast tenderness and pain around the nipple are common symptoms, owing to proliferation of glandular tissue. Consider malignancy and refer urgently to a breast specialist any man who presents with a suspicious breast mass.[55]

What important areas need to be considered in the history?

Several medical conditions can result in gynaecomastia. Table 1 lists the mechanism of action and clinical features associated with pathological gynaecomastia.

- A detailed review of prescription drugs is required as well as consideration of environmental exposures that cause gynaecomastia (box 2).
- In younger men explore the use of illicit drugs and body building supplements. Anabolic androgenic steroids suppress the hypothalamo-pituitary system, resulting in low circulating endogenous testosterone levels, which causes gynaecomastia.[56] Some athletes attempt to overcome hypogonadism by taking human chorionic gonadotrophin[6]; this may be combined with tamoxifen or clomiphene to counteract the increased oestrogen levels caused by human chorionic gonadotrophin, which induces or worsens the gynaecomastia.[57] Several potent

HOW PATIENTS WERE INVOLVED IN CREATING THIS ARTICLE

This article was submitted before we asked authors to involve patients and report any contributions.

Box 1 | Physiological gynaecomastia

Transient neonatal gynaecomastia

This affects up to 90% of neonates as a result of transplacental transfer of maternal oestrogens.

Transient pubertal gynaecomastia

This affects approximately 60% of adolescent males, with a mean onset between 12 and 14 years[19-21] and typically lasting 6-12 months, with spontaneous regression in 90% of cases.[22 23]

Age related gynaecomastia

Gynaecomastia can occur in up to 65% of men aged more than 65 and is likely to relate to reduced testosterone levels and testicular involution.[4 31] Increased obesity in this age group is also likely to have a contributory effect.[32]

Box 2 | Drug induced gynaecomastia[33-36]

Drugs known to cause gynaecomastia

Antiandrogens—bicalutamide, flutamide, finasteride, dutasteride (AA)

Antihypertensive—spironolactone (AA)

Antiretrovirals—protease inhibitors (saquinavir, indinavir, nelfinavir, ritonavir, lopinavir), reverse transcriptase inhibitors (stavudine, zidovudine, lamivudine) (UM)

Environmental exposures—phenothrin (antiparasitical)

Exogenous hormones—oestrogens (EP), prednisone (male teenagers), human chorionic gonadotrophin (E)

Gastrointestinal drugs—H_2 histamine receptor blockers (cimetidine) (AA), proton pump inhibitors (eg, omeprazole) (AA)

Analgesics—opioid drugs (RA)

Antifungals—ketoconazole (prolonged oral use) (AA)

Antihypertensives—calcium channel blockers (amlodipine, diltiazem, felodipine, nifedipine, verapamil) (UM)

Antipsychotics (first generation)—haloperidol (IP), olanzapine, paliperidone (high doses), risperidone (high doses), ziprasidone

Antiretrovirals—efavirenz (UM)

Chemotherapy drugs—methotrexate, alkylating agents—eg, cyclophosphamide, melphalan (AA); carmustine, etoposide, cytarabine, bleomycin, cisplatin (AA), vincristine (AA), procarbazine

Exogenous hormones—androgens (misuse by athletes) (EP)

Cardiovascular drugs—phytoestrogens (soya based products, high quantity) (EP)

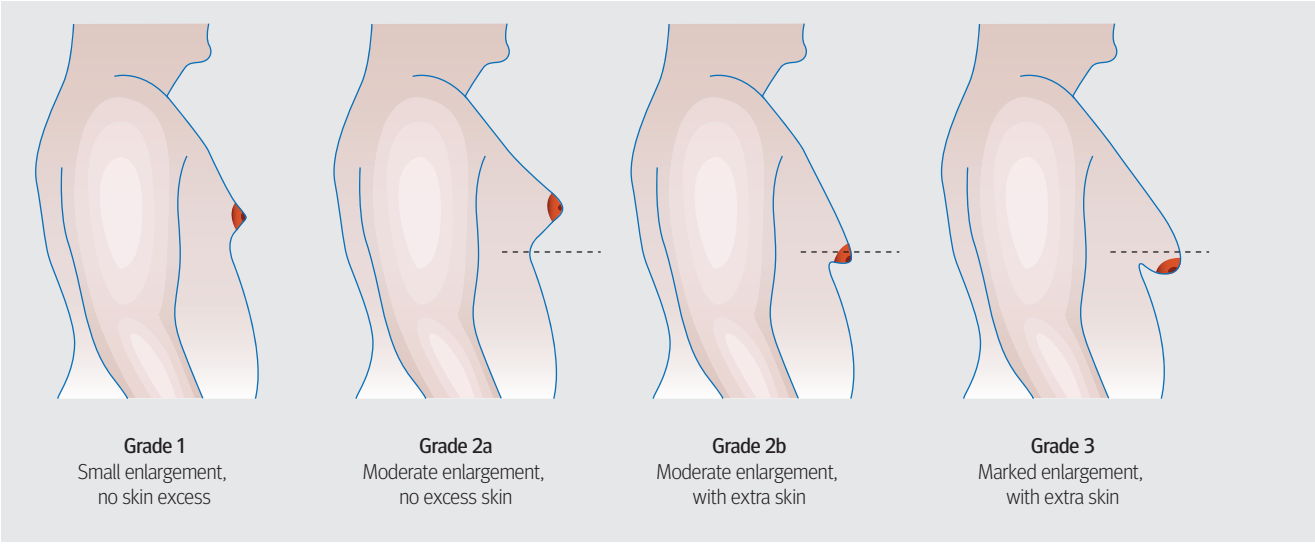
Recreational/illicit substances—marijuana, amphetamines (UM), heroin (UM), methadone (UM), alcohol

Herbals—lavender, tea tree oil, dong quai (female ginseng), *Tribulus terrestris*, soy protein (300 mg/day), *Urtica dioica* (common nettle)

AA=antiandrogenic; RA=reduced androgens; E=oestrogenic; IAM=increased androgen metabolism; ISHBG=increased concentration of sex hormone binding globulin; IP=increased prolactin; UM=unknown mechanism

Box 3 | Pathological causes of gynaecomastia

- Gonadal failure
- Thyroid dysfunction
- Liver cirrhosis
- Renal insufficiency
- Hormone secreting tumours
- Obesity
- Other conditions associated with gynaecomastia



Simon classification of gynaecomastia. Broken line represents the inframammary fold

"designer anabolic steroids," such as dimethazine, methylclostebol, mentabolan, methoxygonadiene, methylepitiostanol, and methylstenbolone are associated with gynaecomastia. These products are also known as prohormones, natural steroids, and testosterone boosters.[58]

- The evidence for marijuana induced gynaecomastia is conflicting, but our clinical experience suggests this is a potential cause of gynaecomastia. However, the mechanism of action is not fully understood.[59-63]

Table 1 | Mechanism of action and clinical features of pathological gynaecomastia

Mechanism of action	Pathological features	Relevant clinical features
Oestrogen:		
Increased secretion by testes/adrenal glands	Neoplasm (Germ cell tumours, human chorionic gonadotrophin secreting tumours	Weight loss, fatigue, testicular swelling
	Familial aromatase insensitivity syndrome	
Increased extraglandular aromatisation of oestrogen precursors	Obesity	
Decreased oestrogen degradation	Liver cirrhosis	Spider naevi, testicular atrophy, ascites, jaundice
Androgen:		
Decreased testicular production	Hypogonadism	Loss of libido, erectile dysfunction, absent or diminished secondary sexual characteristics; testicular volume <12 mL; history of osteoporotic fracture; infertility
	Primary causes: trauma chemotherapy infection; Klinefelter's syndrome	Testicular trauma, masses, maldescent
	Secondary causes: non-functioning pituitary tumour Prolactinoma Kallmann syndrome	Visual field defects, headaches. Symptoms of hypopituitarism Milky discharge from nipple
	Chronic renal failure (suppression of gonadotrophin releasing hormone pulse generator)	Fatigue, fluid overload
Increased sex hormone binding globulin levels—preferentially binds androgen (compared with oestrogen)	Severe hyperthyroidism	Weight loss, tremor, palpitations, heat intolerance
	Liver cirrhosis	Spider naevi, testicular atrophy, ascites, jaundice
Altered androgen metabolism	5 α reductase deficiency; 17 β hydroxysteroid dehydrogenase deficiency	

- Inquire about occupational or unintentional exposure to oestrogens—eg, compounds containing phthalates. These are esters of phthalic acid with antiandrogenic and oestrogenic effects and are found in cosmetics, perfumes, clothing, paints, solvents, insecticides, plasticisers, food, water, and pharmaceutical products.[65 66] Their effects depend on dose and duration of exposure.[37]
- Ask about alcohol consumption, as long term intake of high levels causes increased aromatase activity and increased adrenal production of oestrogen precursors.[67-71] The presence of biologically active phytoestrogenic congeners in alcohol has also been suggested as a potential source of exogenous oestrogens.[34-73] Ask about family history of gynaecomastia and breast problems as 58% of patients with benign persistent pubertal gynaecomastia have a positive family history.[74]

Examination

Calculate body mass index and assess secondary sexual characteristics. Examine the breasts by palpating all areas of the breast tissue (including the nipple) and examine the axilla. Compare and note if enlargement is unilateral or bilateral. Palpable, firm, glandular tissue (>2 cm) in a concentric glandular mass around the nipple areola complex is most consistent with gynaecomastia. Breast tissue less than 2 cm in men is defined as palpable breast tissue, the prevalence of which increases with age and adiposity.[3] Offer urgent referral to a breast specialist if you detect any suspicious breast masses. Offer testicular examination if the history is suggestive of hypogonadism (to measure testicular volume) or if there is any suggestion of a testicular mass. If testicular examination reveals a mass, request urgent ultrasonography and refer to a urologist. Consider Klinefelter's syndrome and Kallmann syndrome[75] in pubertal patients with hypogonadism.

Further investigations

Further investigations are not needed if the patient is within the age limits for physiological gynaecomastia providing the enlargement has occurred gradually, and there are no clinical features of underlying disease. Outside of these age

Clinical classification of gynaecomastia

Newborn gynaecomastia
- A physiological response to high levels of maternal and placental oestrogen transferred in utero
- A secretion can often be expressed

Pubertal gynaecomastia
- A physiological response to the increase in testosterone fuelled by marked increases in growth hormone, insulin-like growth factor 1, follicle stimulating hormone, and luteinising hormone at puberty
- Oestrogen increases threefold, but peaks earlier than testosterone

Adult gynaecomastia (physiological)
- A physiological response to the decrease in free testosterone and the increase in adipose tissue that often accompanies aging
- Testosterone is converted to oestrogen in adipose tissue

Adult gynaecomastia (non-physiological)
- A response to increased oestrogen effect relative to androgen effect from a cause other than aging

Pseudogynaecomastia
- Male breast enlargement entirely due to adipose tissue

groups, if there is no clear underlying drug cause, consider blood tests and further imaging as guided by the history.

Blood tests

Initial blood tests include morning testosterone (9 am),[76] liver function, thyroid function, and renal function. If the testosterone level is low, further investigations should include luteinising hormone, follicle stimulating hormone, oestradiol, sex hormone binding globulin (to allow estimation of free testosterone levels), and prolactin. Referral to endocrinology is recommended in the event of any abnormality. If the history or examination is suggestive of testicular malignancy, check levels of β human chorionic gonadotrophin, α-fetoprotein, and lactate dehydrogenase.

What imaging is required?

Imaging is not required for patients with signs and symptoms typical of gynaecomastia. However, a pragmatic approach is to refer patients where clinical examination is indeterminate or suspicious. This is in keeping with recent US guidelines.[77]

When and who to treat?

Gynaecomastia will be transient in 90% of adolescents presenting to primary care.[22] We advise delaying treatment in adolescents until symptoms have persisted for more than two years[74] and providing reassurance that symptoms persist in only 10%.[22 78] Men with pathological gynaecomastia should be considered for referral to an appropriate specialist for treatment of the underlying cause. Offer alternative treatment to men with gynaecomastia likely to be secondary to drugs. The clinical course of gynaecomastia is proliferation of glandular tissue followed by fibrosis (thickening of tissue). If clinically the breast tissue feels fibrotic then treating the cause or stopping the implicated drug may stop progression but is unlikely to reduce the excess breast tissue. It is not often possible to predict in which patients gynaecomastia will resolve and who will experience progression to the fibrotic stage.

Treatment options

Medical

Medical management is associated with a high success rate and avoids surgical intervention, but once fibrosis occurs it is largely ineffective. In the United Kingdom, danazol is licensed for the treatment of gynaecomastia, with response rates of 58-64% reported.[79 80] A six week course is initially recommended, with reassessment of symptoms at eight weeks.[7] Danazol is, however, associated with weight gain, which may exacerbate gynaecomastia and therefore is rarely recommended. Clomiphene has also been used with some reported benefit.[81]

Tamoxifen is the most widely used medical treatment, but it is not licensed for gynaecomastia. Response rates of up to 95% have been reported with tamoxifen (trials of between two and 12 month treatment durations).[82-87] Tamoxifen has been shown to improve breast pain (mastodynia), which is the primary indication for the drug being prescribed, and is more effective when gynaecomastia is less than 4 cm.[85 88] Trial doses vary and there is no clear guidance on treatment dose or duration.[88-91] There are no good data to support treatment beyond nine months, and effects are usually seen after three months. In one longitudinal study of 20 patients receiving a four month course of tamoxifen for pubertal gynaecomastia and followed up for one year after completion of treatment, no statistically significant effect on skeletal maturation was observed.[92]

The most common reported reasons for discontinuation of tamoxifen in one single centre retrospective review of men with breast cancer were thromboembolic events (31%), loss of libido (23%), bone pain (15%), neurocognitive deficits (15%), leg cramps (8%), and ocular events (8%).[95]

Surgery

No trials directly compare outcomes after medical or surgical treatment. Surgery remains the only definitive treatment for late fibrotic gynaecomastia. Referral for surgery is rarely appropriate in the first year of symptoms, and it is not recommended while spontaneous resolution is a possibility. In patients with persistent idiopathic gynaecomastia for more than one year, bypassing conservative treatments in favour of immediate surgical correction may be appropriate.

Surgical treatment aims to restore a normal symmetrical chest contour, reduce displacement of the nipple areolar complex, and correct skin excess. The most commonly used technique involves direct excision of glandular tissue with or without liposuction.[96] Recent studies have also reported success using endoscopic surgical techniques, although long term comparative studies are lacking.[97 98] Complications include recurrence (8%), breast retraction (37%), hypertrophy (14%), hyperaesthesia (14%), and skin redundancy (7%) and asymmetry.[55] Even in studies with high complication rates (53%), patient reported satisfaction rates were 86%.[55] One patient survey study highlighted that 85% of patients had surgery for reasons of self confidence and emotional distress.[99] Only a few had surgery for pain or discomfort. The most common reason for litigation arising from surgery is dissatisfaction with the aesthetic outcome. Therefore provision of appropriate preoperative information and ensuring realistic expectations are essential.

Competing interests: None declared.

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GUIDELINES

Clinical assessment and management of multimorbidity: summary of NICE guidance

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Further information about the guidance, a list of members of the guideline development group, and the supporting evidence statements are in the full version on thebmj.com.

This is an edited version of the paper, full version on thebmj.com

Most people with a chronic condition have one or more other chronic conditions, and multimorbidity is the norm in older people.[1] Multimorbidity matters because it is associated with reduced quality of life, higher mortality, polypharmacy and higher rates of adverse drug events, and high use of unplanned healthcare.[2-5] Those with multimorbidity frequently receive care from both primary care and multiple specialists, who may not be communicating effectively with each other.[6 7] Clinicians cause uncertainty about the balance of benefit and harm of treatments in people with multimorbidity because evidence is largely based on trials of interventions for single conditions, from which people with multimorbidity are often excluded.[8 9] Guidelines derived from such trials may lead to burdensome levels of treatment or unfeasible patterns of healthcare use.[10]

There is increasing recognition that care for some people with multimorbidity needs reorganisation,[11-14] although not everyone with multimorbidity will require additional support. This guideline is intended to provide guidance on the optimum management of people with multimorbidity who need an approach to care that takes account of their multimorbidity because the combination of their conditions or the complexity of their treatments and healthcare appointments significantly affect their life. This guidance is aimed at healthcare professionals in both generalist and specialist settings and summarises the most recent recommendations from the National Institute for Health and Care Excellence (NICE).[15]

There is increasing recognition that care for some people with multimorbidity needs reorganisation

WHAT YOU NEED TO KNOW

For those with multimorbidity

- Guidelines on single health conditions may not be applicable
- Aggressive management of risk factors for future disease is often a major treatment burden and can be inappropriate
- Assess whether patients may benefit from an approach to care that takes account of their multimorbidity
- Consider all conditions and treatments simultaneously
- Easier access to data about the absolute benefit of commonly prescribed treatments is needed

What is multimorbidity?

Multimorbidity is the presence of two or more long term health conditions, which can include:

- Physical and mental health pathologies
- Ongoing conditions such as learning disability
- Symptom complexes such as frailty or chronic pain
- Sensory impairment such as sight or hearing loss
- Alcohol and substance misuse

Recommendations

NICE recommendations are based on systematic reviews of best available evidence and explicit consideration of cost effectiveness. When minimal evidence is available, recommendations are based on the guideline development group's experience and opinion of what constitutes good practice. Evidence levels for the recommendations are given in italic in square brackets.

What is an approach to care that takes account of multimorbidity?

Offer care that is tailored to the person's personal goals and priorities and seeks to address the complexities surrounding the person's multiple conditions and treatments. This might include identifying

- Ways to maximise benefit from existing treatments
- Treatment that could be stopped because of limited benefit
- Treatment and follow-up arrangements with a high burden
- Medicine with a high risk of adverse events such as falls, gastrointestinal bleeding, or acute kidney injury
- Non-pharmacological treatments as possible alternatives to some medicines

- Alternative arrangements for follow-up to coordinate or optimise the number of appointments.

Who might benefit from an approach to care that takes account of multimorbidity?

Consider an approach to care that takes account of multimorbidity at the person's request or if the person

- Finds it difficult to manage treatments or day-to-day activities
- Receives care and support from multiple services, and particularly if the person needs additional services
- Has both long term physical and mental health conditions
- Is frail or prone to falls
- Frequently seeks unplanned or emergency care
- Is prescribed multiple regular medicines.

Establish what is important

Encourage people with multimorbidity to clarify what is important to them, including their personal goals, values, and priorities. These may include

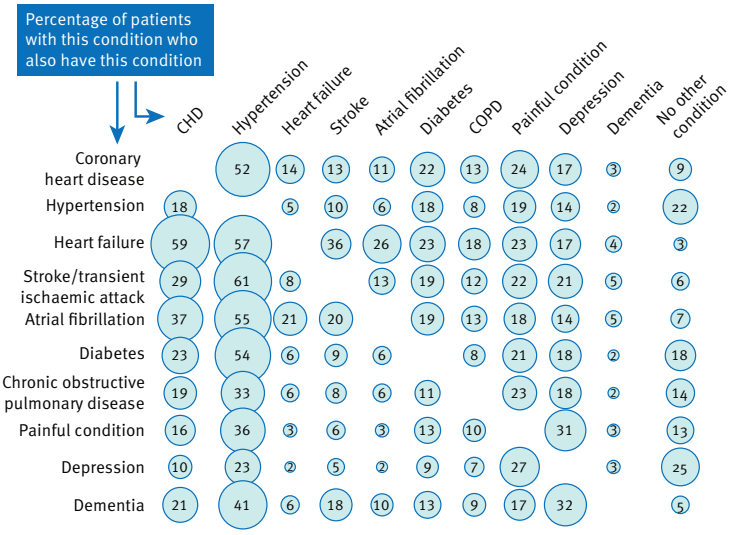
- Maintaining their independence
- Paid or voluntary work, taking part in social activities, and playing an active part in family life
- Preventing specific adverse outcomes (such as stroke)
- Reducing harms from medicines
- Reducing treatment burden
- Lengthening life.

Establish disease and treatment burden

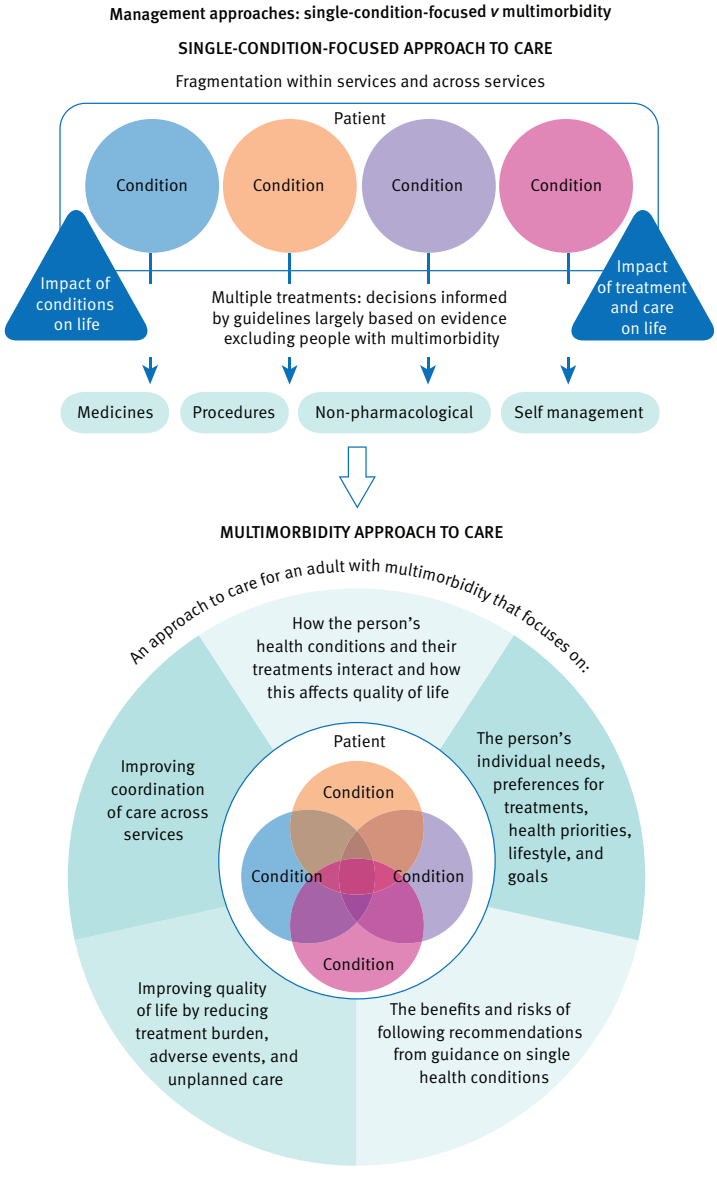
- Ask people about how their health problems affect their day-to-day life. Include a discussion of
  - Mental health
  - How disease burden affects their wellbeing
  - How their health problems interact and how this affects quality of life.
- Ask people about how their treatment burden affects their day-to-day life. Include a discussion of
  - The number, type, and location of of healthcare appointments
  - The number and type of medicines they are taking and how often
  - Any harms from medicines
  - Non-pharmacological treatments such as diets, exercise programmes, and psychological treatments
  - Any effects of treatment on their mental health or wellbeing.

Review medicines and other treatments

- Ask people if treatments intended to relieve symptoms are providing benefits or causing harms. If appropriate
  - Discuss reducing or stopping the treatment
  - Plan a review to monitor effects of any changes made and decide whether any further changes to treatments are needed (including restarting a treatment).
- When reviewing medicines and optimising treatment, think about any medicines or non-pharmacological



Comorbidity of 10 common conditions among UK primary care patients[1]



Approaches to care: single-condition-focused *v* multimorbidity

treatments that might be started as well as those that might be stopped.
- Think carefully about the risks and benefits for people with multimorbidity of individual preventive treatments recommended in guidance for single health conditions. Discuss changes to treatments that aim to offer prognostic benefit with people, taking into account
  - Their views on the likely benefits and harms from individual treatments
  - What is important to them in terms of personal goals and priorities.
- Tell people who have been taking bisphosphonate for osteoporosis for at least three years that there is no consistent evidence of
  - Further benefit from continuing bisphosphonate
  - Harms from stopping bisphosphonate after three years of treatment
- Discuss stopping bisphosphonate after three years and include patient choice, fracture risk, and life expectancy in the discussion.

HOW PATIENTS WERE INVOLVED IN THE CREATION OF THIS ARTICLE

Committee members involved in this guideline included lay members who contributed to the formulation of the recommendations summarised here. Patient organisations were among the registered stakeholders who were consulted at both scoping and development stages.

Identifying people for an approach to care that takes account of multimorbidity

In primary care:

- Consider using a validated tool such as eFI, PEONY, or QAdmissions to identify adults with multimorbidity who are at risk of adverse events such as unplanned hospital admission or admission to care homes
- Use an approach that takes account of multimorbidity for people of any age with multimorbidity who are prescribed ≥15 regular medicines because they are likely to be at higher risk of adverse events and drug interactions
- Consider an approach that takes account of multimorbidity for people of any age with multimorbidity who
  - Are prescribed 10-14 regular medicines
  - Are prescribed <10 regular medicines but are at particular risk of adverse events
- In primary and community care settings consider assessing frailty in adults with multimorbidity using one of the following:
  - An informal assessment of gait speed (such as time taken to answer the door or to walk from the waiting room)
  - Self reported health status (that is, "How would you rate your health status on a scale from 0 to 10?" with scores of ≤6 indicating frailty)
  - A formal assessment of gait speed, with >5 seconds to walk 4 metres indicating frailty
  - The PRISMA-7 questionnaire, with scores of ≥3 indicating frailty

GUIDELINES INTO PRACTICE

Consider

- Routinely asking yourself if a person consulting you needs an approach to care that accounts for their multimorbidity because of high impact of their conditions or their care on their life
- Combining appointments that may previously have been conducted separately
- Using screening tools such as the STOPP/START tool in older people to identify medicine related safety concerns and any medications that people may benefit from but aren't currently taking
- A planned, regular review with selected people with multimorbidity to plan care and anticipate needs
- Taking advantage of electronic care records where available to facilitate communication between healthcare professionals involved in the care of a patient
- Seeking support to interpret treatment effectiveness data and apply this to people with multimorbidity
- The health literacy of patients and adapt communication about care and treatment options to each person's needs

- When reviewing medicines and other treatments, use the database of treatment effects to find information on
  - The effectiveness of treatments
  - The duration of treatment trials
  - The populations included in treatment trials.

Record an individualised management plan

- Develop and agree an individualised management plan with the person. Agree what will be recorded and what actions will be taken. These could include
  - Starting, stopping, or changing medicines and non-pharmacological treatments
  - Prioritising healthcare appointments
  - Anticipating possible changes to health and wellbeing
  - Assigning responsibility for coordination of care and ensuring this is communicated to other healthcare professionals and services
  - Other areas the person considers important to them
  - Arranging a follow-up and review of decisions made.
- Share copies of the management plan in an accessible format with the person and (with the person's permission) other people involved in care (including healthcare professionals, a partner, family members, and carers).

Implementation

The recommendations within this guideline are intended to support better care without requiring a substantial increase in resource. The guideline development group expects that implementing these recommendations may require a reorganisation in the way care is delivered. There is limited evidence on the effectiveness of different models or formats of care for people with multimorbidity.

Competing interests: We declare interests based on NICE's policy on conflicts of interests. Full details on thebmj.com

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If you would like to write a Case Review for inclusion in the Endgames section please see our updated author guidelines at http://bit.ly/29HCBAL and submit via our online editorial office at http://bit.ly/29yyGSx

SPOT DIAGNOSIS

Jaw pain

A 67 year old man presented with a 3-4 month history of mild discomfort in his right jaw, which had suddenly worsened. He was unable to open his mouth fully. He had no history of trauma and he was known to have a history of cirrhosis.

What does the plain radiograph show?

Submitted by H L Adams and D C Howlett

Patient consent obtained.

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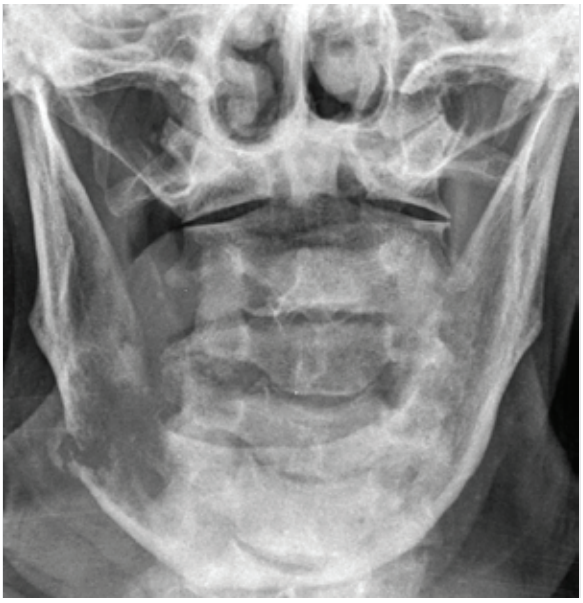
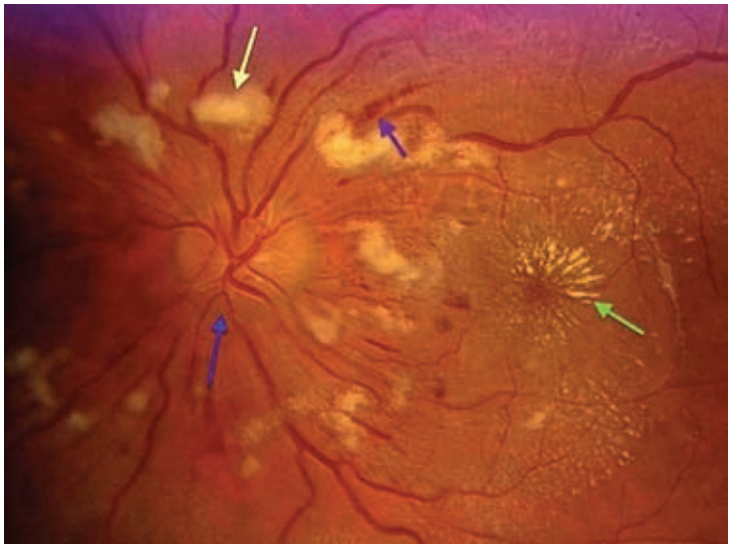




SPOT DIAGNOSIS

A bilateral macular star and optic disc oedema

A 25 year old African man presented with reduced vision and headache lasting three hours. His blood pressure was 228/132 mm Hg (normal: ‹140/90 mm Hg). Best corrected visual acuity was 20/80 in the right eye and 20/120 in the left eye (normal: 20/20).

Colour fundus photography of right eye, revealed retinal haemorrhages (purple arrow), cotton wool spots (yellow arrow), hard exudates forming a macular star (green arrow), and swelling of optic disc (blue arrow).

Based on the history and retinal findings, what is the diagnosis?

Submitted by Inês Leal and David Cordeiro Sousa

Patient consent obtained.

Cite this as: *BMJ* 2016;354:i4797

answers

SPOT DIAGNOSIS

Jaw pain

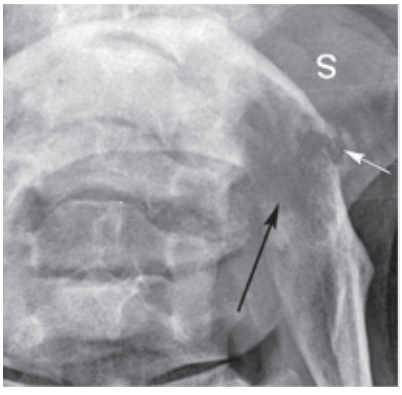
Anteroposterior radiograph of facial bones showing pathological fracture (white arrow) in right mandible, secondary to destructive lesion (black arrow), with a large amount of soft tissue swelling (S).

SPOT DIAGNOSIS

A bilateral macular star and optic disc oedema

Hypertensive retinopathy due to malignant hypertension.

Bilateral fundoscopy revealed haemorrhages in all retinal quadrants, cotton wool spots, swelling of the optic disc, and hard exudates that had formed a "macular star."



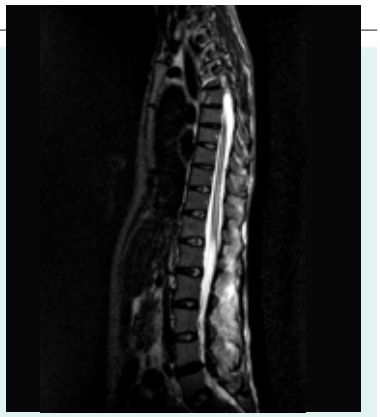
Atypical presentation of spinal cord infarction after a pulseless electrical activity arrest

A 43 year old woman had a pulseless electrical activity arrest. Spontaneous circulation returned after cardiopulmonary resuscitation was performed for 10 minutes. Subsequent examination showed bilateral, lower limb flaccid paralysis. No sensory deficit was present. Magnetic resonance imaging confirmed central thoracic cord hyperintensity between levels T8 and T12 (figure). Most cases of spinal cord infarction (SCI) are idiopathic or vascular in nature. About 3.6% are caused by hypotension, and a handful of cases cite cardiac arrest as the root cause. This case highlights post-arrest SCI caused by systemic hypotension. Patients with clinical signs of peripheral neurological deficit should undergo imaging to aid diagnosis

Laura Hayes (lkhayes@doctors.org.uk), Rainu Bawa, Jan Coebergh, consultant neurologist, ASPH, St Peter's Hospital, Chertsey KT16 0PZ, UK

Patient consent obtained.

Cite this as: *BMJ* 2016;353:i2936



Intuition and sick young children

SPL

Acute respiratory conditions continue to drive up paediatric admissions, many of which last less than 48 hours. A qualitative study of staff in an emergency department in Bristol looked at how various clinicians approached the assessment of children under 5 presenting with respiratory symptoms (*Emerg Med J* doi:10.1136/emermed-2015-205211). Junior staff, especially doctors, were more risk adverse, relying heavily on guidelines, set admission criteria, clinical theory, and second opinions. The authors suggest that we need to look at new ways to foster rapid intuition in juniors, while maintaining safety.

FRISCy SWEDEHEART

FRISC was a randomised Scandinavian trial to prospectively determine whether percutaneous coronary intervention was the best strategy for non-ST elevation myocardial infarction (NSTEMI). The newly published 15 year results confirm that it is (*Lancet* doi:10.1016/S0140-6736(16)31276-4). Meanwhile, SWEDEHEART has been collecting observational data from all Swedish centres carrying out percutaneous coronary intervention, and these show that the earlier percutaneous coronary intervention is done for NSTEMI, the better the associated outcomes (*Eur Heart J* doi:10.1093/ehjqcco/qcw044 qcw044).

Keeping in touch with your subjects

English monarchs used to keep in touch with their subjects by visiting local dignitaries across the realm in conspicuous displays of majestic consumption. Nowadays you can keep in touch with your trial subjects—or rather participants—by simpler means (*Clin Trials* doi:10.1177/1740774516665596). In a 45 site trial of creatine treatment for Parkinson's disease, study leaders answered more than 110 questions from study participants and caregivers by teleconference. Levels of satisfaction were high.

Less sex after myocardial infarction

The VIRGO study was designed to look at all facets of myocardial infarction in younger US patients (mean age 49), and despite its name these included sexual activity. Specific inquiry showed a high prevalence of sexual disorders after myocardial infarction (*JAMA Cardiol* doi:10.1001/jamacardio.2016.2362), although more than 90% of those who were sexually active at baseline had resumed by one year. Women were more likely than men to experience loss of libido and physical problems with sex.

Conflicts and cancer guidelines

The National Comprehensive Cancer Network (NCCN) guidelines are highly influential in US oncology, often adjudicating on the use of extremely expensive new drugs. A cross sectional study looked at financial conflicts of interest in physician members of the NCCN guideline committees for lung, breast, prostate, and colorectal cancer as of the end of 2014 (*JAMA Oncol* doi:10.1001/jamaoncol.2016.2710). Of 125 guideline authors, 108 (86%) had at least one reported financial conflict of interest. Personal payments in money or kind averaged around $10 000 (£7550), and institutional research payments averaged more than $250 000.

Antipsychotics in pregnancy

The use of antipsychotic drugs during pregnancy has about doubled during the past decade, but little is known about their safety for the developing fetus. Reassuring observational data come from a Medicaid cohort of more than 1.3 million women over a 10 year period, of whom nearly 10 000 filled in a prescription for an antipsychotic in the first trimester (*JAMA Psychiatry* doi:10.1001/jamapsychiatry.2016.1520). No meaningful difference was found in risk for congenital malformations overall or cardiac malformations in particular. There was a small additional risk in the subgroup taking risperidone, which just reached statistical significance.

I'm not so think as you drunk I am

A study from Wales sought to discover how people judge their degree of drunkenness according to the levels of intoxication around them (*BMC Public Health* doi:10.1186/s12889-016-3469-z). The authors measured breath alcohol levels in 1862 people (mean age 27 years; 62% men) in drinking environments, and concluded that people base judgments on their level of intoxication on that of others of the same sex around them, not on their actual levels of intoxication. As having sober people around them makes them more realistic, the authors suggest that this should be encouraged. Reader, should you ever chance to be sober late in the evening, it is your duty to visit a pub to discourage consumption by others.

Cite this as: *BMJ* 2016;354:i5020