

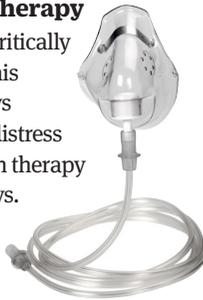
education

FROM THE JOURNALS Edited highlights of weekly research reviews on <https://bit.ly/2PLtl18>

Liberal v conservative oxygen therapy

What's the ideal amount of oxygen for critically ill, mechanically ventilated patients? This study compared death rates over 28 days among patients with acute respiratory distress (ARD) who received conservative oxygen therapy or liberal oxygen therapy over seven days. The trial had to be stopped prematurely because of safety concerns (five mesenteric ischaemic events and tachycardia in the conservative group and none in the liberal group). Of the 201 patients studied, 34.3% in the conservative oxygen group versus 26.5% in the liberal oxygen group had died within a month, and 44% versus 30.4% respectively after three months. There were some design flaws in this study, which was small and hampered by having to stop early. The authors conclude that there's no advantage, or justification, in starting off with a conservative approach.

• *N Engl J Med* doi:10.1056/NEJMoa1916431



Another blow for conservative oxygen therapy

This study is another blow to the use of conservative oxygen therapy, compared with usual oxygen therapy, in critically ill, mechanically ventilated patients. Unlimited oxygen use and the resulting hyperoxaemia have been linked to increased mortality and fewer ventilator-free days in this group of patients. But in this well designed trial, there was no significant difference in the number of ventilator-free days, mortality after three or six months, or overall survival. The data suggest that there may be a benefit for patients with suspected hypoxic-ischaemic encephalopathy, and it is biologically plausible that conservative oxygen therapy reduces the incidence of secondary brain damage after resuscitation from cardiac arrest, say the authors. The results may not apply to people who are less ill, and clinicians may have increased oxygen concentrations at times, causing temporary hyperoxaemia that wasn't recorded. But it seems that conservative oxygen use didn't offer significant advantages in this group.

• *N Engl J Med* doi:10.1056/NEJMoa1903297

When kidney function falls, should the ACEs and ARBs stop?

Here's a useful question. When patients' renal function worsens, should we stop their ramipril? This cohort study looked at whether stopping renin-angiotensin system blockade (RASS), usually ACE inhibitors or ARBs in practice, in people with poor renal function (eGFR <30 mL/

min/1.73 m²) made a difference to all cause mortality, major adverse cardiovascular events, and end stage kidney disease over the subsequent five years. The answer was no; 35.1% of those who stopped their RASS within six months after the eGFR decrease died during the subsequent five years compared with 29.4% of those who stayed on the drug. Kidney disease didn't progress, and there seemed to be cardiovascular benefits among those who kept taking the tablets. The study was observational and susceptible to confounding, and the participants were mostly white, but it was generally well designed and set out to answer a practical and common question.

• *JAMA Intern Med* doi:10.1001/jamainternmed.2020.0193

No smoke without fire

This study of 160 Californian patients with lung injury associated with e-cigarettes or vaping (EVALI), found that 74% were under 35 years old, 46% needed intensive care, and 29% required mechanical ventilation. Of 86 patients interviewed, 83% said that they'd used tetrahydrocannabinol (THC), which often contained vitamin E (VE) or its acetate (VEA). VE and VEA may be responsible for the lung damage, and the public health department which commissioned this study recommends avoiding any vaping or e-cigarette products, especially THC products, until there's more information. This is the first study of its kind in California. Self-reporting of vaping products may be inaccurate, product testing was incomplete, and only half of the patients were interviewed.

• *JAMA Intern Med* doi:10.1001/jamainternmed.2020.0664

Gabapentin for alcohol withdrawal

Previous studies have shown mixed results for the use of gabapentin in alcohol use disorders, but the hypothesis in this small, randomised study of heavy drinkers was that it would work better in people with a history of alcohol withdrawal symptoms. Among the people with high alcohol use disorder symptoms, 41% achieved total abstinence on gabapentin (up to 1200 mg/day) versus 1% on placebo. The number needed to treat (NNT) to prevent relapse was 5.4, and the NNT to achieve abstinence was 7.2. Both groups had nine consultations, and I was surprised that these didn't have more, if any, impact. It's a tricky population to study; the dropout rate was 30% in the gabapentin group and 39% in the placebo group. Alcohol withdrawal symptoms relied on self-reported data.

• *JAMA Intern Med* doi:10.1001/jamainternmed.2020.0249



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When to suspect a non-melanoma skin cancer

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0.5 HOURS

Assessing non-melanocytic skin lesions is a routine part of general practice. The key concern for patient and doctor is often whether the lesion may be a basal cell carcinoma or squamous cell carcinoma, collectively termed non-melanoma skin cancer (NMSC).

This article aims to help primary care clinicians, who may not routinely have access to dermoscopy and biopsy, to identify possible NMSC lesions, which require further specialist assessment or monitoring.

Why is non-melanoma skin cancer on the increase?

Non-melanoma skin cancer is more commonly diagnosed than all other malignancies combined,¹ and the incidence of skin cancer is rising, with rates of NMSC predicted to reach almost 400 000 per year in the UK by 2025.² This is thought to be due to a combination of people living longer, increased exposure to ultraviolet light (UV), and improved data collection and diagnostic tools.^{3,4} Risk factors are summarised in table 1, with the key environmental risk being UV exposure from tan-seeking behaviour and outdoor activities without adequate sun protection.¹² Both basal cell carcinomas and cutaneous squamous cell carcinomas are more common with increasing age, with incidence of cutaneous squamous cell carcinomas peaking at 66 years of age.

WHAT YOU NEED TO KNOW

- Non-melanoma skin cancer (NMSC) is more commonly diagnosed than all other malignancies combined
- Consider risk factors for NMSC in all patients presenting with non-melanocytic skin lesions
- A typical cutaneous squamous cell carcinoma may be a growing, tender, firm, skin-coloured nodule, sometimes with adherent surface scale, crust, or central ulceration

Assessment of a non-melanocytic skin lesion

Box 1 summarises the procedure for assessment of a non-melanocytic skin lesion.

When should you suspect a cutaneous squamous cell carcinoma?

A typical cutaneous squamous cell carcinoma may be a growing, tender, firm, skin coloured nodule, sometimes with surface adherent scale, crust, or central ulceration. Key characteristics that differentiate cutaneous squamous cell carcinomas from other lesions include ulceration, pain or tenderness, induration (localised hardening and thickening of soft tissue), and presence of a cutaneous horn (fig 1, box 2). A history of growth in size over a period of one to three months is typically described. Cutaneous squamous cell carcinomas tend to have a dull appearance compared with basal cell carcinomas, which have a pearly surface. They can vary in size from a few millimetres to centimetres in diameter.

Table 1 | Risk factors for non-melanoma skin cancer

Risk factor	Questions to ask	Comments
Age		NMSC is more common over the age of 40 years, ⁵ especially in head and neck region.
UV exposure	Occupation Outdoor hobbies Holidays abroad Living abroad Past sunburn Sunbed use Use of SPF or hat	Using a sunbed for 12 minutes per week over a 15 year period is associated with 90% increased risk of cSCC by the age of 55 years. ⁶ Age standardised incidence of cSCC for median use of sunbed was 39.7/100 000 per year, versus 26.6/100 000 for non-use. ⁶
Other environmental exposures	Exposure to: Tar Arsenic Petrol substances Radiotherapy	Exposure to tar, arsenic, and petrol substances may be associated with cSCC, but the specific level of exposure that confers an increased risk is not clear. ⁷
Areas of chronic inflammation	"What was there before the lesion developed?"	cSCC can develop in areas of chronic inflammation such as ulcers, scars, burns, sinus tracts, inflammatory dermatoses, and sites of chronic blistering. ³ BCC can develop at sites of previous trauma and scarring or sebaceous naevi. ⁵
Immunosuppression	Previous solid organ transplants Any other causes of immunosuppression including medications	Incidence of cSCC is 65 times higher in recipients of solid organ transplants than non-recipients ⁸ ; incidence of BCC is 10 times higher in recipients. Chronic lymphocytic leukaemia increases the risk of cSCC by 8.6 times compared with general population. ⁹
Skin type (Fitzpatrick type I and II)	"Do you burn easily in the sun?"	Rates of BCC 10-20 times higher in skin types that burn easily. ¹⁰
Actinic keratosis or intra-epidermal carcinoma (IEC) History of skin cancer	Previous skin cancer Previous lesions	IECs carry a 3-5% lifetime risk of conversion to invasive cSCC. After diagnosis of SCC there is a 50% risk of developing another NMSC at 5 years and a 30% chance of developing another SCC at 5 years ¹¹
Genetic risk factors or family history of cSCC	Family history of skin cancer or genetic conditions with an increased risk of skin cancer	Xeroderma pigmentosum is associated with a 10 000-fold increase in incidence of NMSC by age 20. ⁴ Albinism is associated with NMSC. Gorlin syndrome is an autosomal dominant condition associated with developing large numbers of BCCs, often from a young age. Other features include palmar pits, macrocephaly, and skeletal abnormalities.

UV = ultraviolet light. NMSC = non-melanoma skin cancer. SPF = sun protection factor. cSCC = cutaneous squamous cell carcinoma. BCC = basal cell carcinoma.

Box 1 | Assessing a non-melanocytic skin lesion

- What type of lesion is it?
 - Dome shaped, raised lesion (nodule ≥ 0.5 cm, papule < 0.5 cm)
 - Cyst (under the skin causing a protrusion with overlying skin normal)
 - Plaque (flat topped, raised lesion)?
- Where is it (a high risk site?) and what size is the lesion?
- Is it well defined or poorly defined at the edges?
- What is the appearance of the surface? Such as:
 - Eroded (superficial skin loss)
 - Ulcerated (full thickness epidermal skin loss)
 - Scaly (white adherent scales)
 - Crusted (yellow dried exudate)
- What is the colour? Such as:
 - Pigmented (brown to black)
 - Vascular (red, purple, or black)
 - Translucent and/or shiny (suggestive of basal cell carcinoma)
- What does the surface feel like? Smooth, rough, filiform (finger-like projections)
- Palpate area to assess induration (a palpable, raised, hardened area)
- Stretch the skin to help estimate the extent of tissue involvement. You may be able to detect subtle extension (thickening or texture change) into surrounding tissues, particularly with basal cell carcinomas
- Remove crust or scale with an alcohol swab to reveal the underlying lesion. If it bleeds this is more suggestive of cutaneous squamous cell carcinoma, especially if there is underlying ulceration

Box 2 | Features suggestive of cutaneous squamous cell carcinoma

- Hyperkeratotic plaque with indurated base
- Painful, tender, eroded, or ulcerated lesion
- Rapidly growing lesion over weeks



Fig 1 | Typical appearance of cutaneous squamous cell carcinoma: an indurated base with dull appearance, surface scale, and ulceration (left) or a keratin horn (right)



Fig 2 | Nodular basal cell carcinoma on the left medial canthus

A cutaneous horn can arise from a cutaneous squamous cell carcinoma or a non-malignant lesion. Clues that the horn is arising from a cutaneous squamous cell carcinoma include pain, induration and erythema at the base, and if the width of the lesion is greater than the height of the horn (fig 1).¹

A common differential is an actinic keratosis. Actinic keratoses are considered precancerous and present as scaly plaques which can have similarities to cutaneous squamous cell carcinoma clinically (see full article on [bmj.com](https://www.bmj.com)), but typically lack the features listed in box 2.² If the history and clinical features do not include rapid growth, tenderness, ulceration or induration, these can be managed in primary care. Based on available evidence, progression from actinic keratosis to cutaneous squamous cell carcinoma appears to be low (less than 1 in 1000 per year during 5 year follow up).¹³

When should you suspect a basal cell carcinoma?

Basal cell carcinomas typically present as a “non-healing” nodule or sore which grows slowly over months to years, remaining otherwise asymptomatic. They are classified based on their clinical presentation into nodular, superficial, morphoeic, and pigmented basal cell carcinoma.¹⁵

Nodular basal cell carcinomas are the most common subtype, accounting for around 50-70% of basal cell carcinomas.¹⁶ They typically have a rolled edge, telangiectasia, and a central depression, with or without erosion or ulceration (fig 2).⁵

Superficial basal cell carcinomas account for about 5% of basal cell carcinomas¹⁶ and typically present as a slow growing scaly pink patch (fig 3).

Morphoeic basal cell carcinoma—A slowly enlarging white scar is suggestive of a morphoeic basal cell carcinoma (fig 4). These can have extensive subclinical spread.

Pigmented basal cell carcinomas account for around 6% of basal cell carcinomas.¹⁷ They present as a brown or black pearly nodule or plaque and therefore can be confused with melanoma (fig 5). If there is any uncertainty, they should be referred urgently to rule this out.

When to refer?

Refer patients with suspected cutaneous squamous cell carcinoma urgently to a dermatologist (to be seen within two weeks). Suspected basal cell carcinomas can generally be referred routinely unless there is concern about squamous cell carcinoma or melanoma. If there is uncertainty between basal cell carcinoma and benign differentials, the patient can be referred routinely for a specialist opinion, or a photograph of the lesion can be sent through a teledermatology service if available. Alternatively, an initial biopsy could be considered in primary care if the lesion is low risk and present on the trunk or limbs. If this is undertaken, a photograph should be taken before the procedure to document the site. In some areas, primary care minor surgery services may be able to perform excisions of low risk nodular basal cell carcinomas, ensuring a clinical margin of 4-5 mm.¹⁸ Referral recommendations for suspicious skin lesions are summarised in table 2.

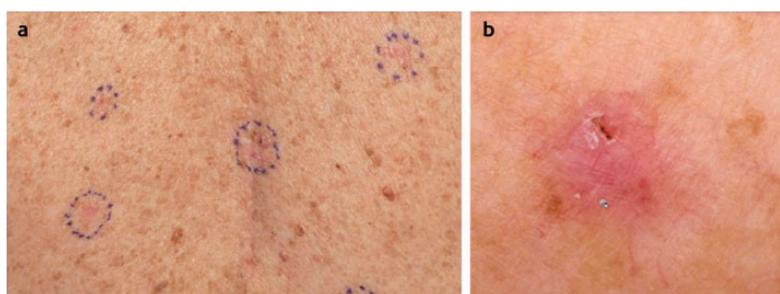


Fig 3 | Superficial basal cell carcinoma on the back (left) with high magnification of a single patch (right)



Fig 4 | Morphoeic basal cell carcinoma below the eye

Fig 5 | Pigmented basal cell carcinoma on the right forehead

Suspected lesion	Action
Cutaneous squamous cell carcinoma	Urgent dermatology review within 2 weeks
Keratoacanthoma	Urgent dermatology review within 2 weeks
Basal cell carcinoma	Routine dermatology referral. Consider review within 2 weeks if there is a particular concern that a delay may have a significant impact on prognosis. ¹⁹ If low risk basal cell carcinoma, consider treatment in primary care if accredited primary care physician is available.
Other lesions of diagnostic uncertainty	If the lesion could be cutaneous squamous cell carcinoma, melanoma, or other skin cancer with malignant potential eg merkel cell carcinoma, refer for urgent review within two weeks. Consider teledermatology opinion for other lesions where there is diagnostic uncertainty.
Actinic keratoses in people who are immunosuppressed, multiple or relapsing lesions, or if red flags develop during observation period	Urgent dermatology review within 2 weeks

HOW PATIENTS WERE INVOLVED IN THE CREATION OF THIS ARTICLE

No patients were involved in the creation of this article.

EDUCATION INTO PRACTICE

- What features of a non-melanocytic skin lesion would alert you to a possible non-melanoma skin cancer (NMSC)?
- Do you offer education regarding UV exposure to your patients with a recent diagnosis of NMSC?
- What other factors are important when assessing a patient's risk of developing NMSC?
- What changes do you advise patients to look out for in a skin lesion that seems benign?

What else might it be?

Common benign lesions

Benign lesions can also be difficult to distinguish from NMSC. In our urgent skin cancer clinics, commonly seen benign differentials include keratoacanthoma, intradermal naevi, sebaceous hyperplasia, and dermatofibroma. These are described further on bmj.com.

Malignant differentials to consider

Other malignant diagnoses to consider for a non-pigmented skin nodule include Merkel cell carcinoma, atypical fibroxanthoma, and amelanotic melanoma, all of which should be referred urgently to secondary care for management. A key feature of each of these is rapid growth. Merkel cell carcinoma typically presents as a rapidly growing, often painless, firm, pink or red nodule on sun-exposed sites.²² Atypical fibroxanthoma is a spindle-cell tumour, which presents as a red, juicy, often ulcerated nodule, growing over a few months, on the head and neck of sun-damaged individuals.²³ Amelanotic melanoma is a form of melanoma with little or no pigment, presenting as a rapidly growing, red or pink nodule, with or without ulceration. The patient may describe a pigmented lesion previously being present at the site of the lesion.

Scaly plaques

The differential diagnosis for a scaly plaque includes superficial basal cell carcinoma, actinic keratosis, intraepidermal squamous cell carcinoma (also known as Bowen's disease), and common inflammatory causes such as psoriasis, eczema, and tinea infections.

Bowen's disease represents full thickness dysplasia of the skin epidermis (the top of layer of skin), and also presents as a scaly plaque on sun exposed sites (see bmj.com). They tend to be more erythematous, well defined, and larger than actinic keratoses and have a higher risk of progression to cutaneous squamous cell carcinoma (3-5%).¹⁴ Dermoscopy demonstrates surface scales and glomerular vessels in 90% of cases.²⁴

Inflammatory and fungal causes of a scaly plaque tend not to be limited to sun exposed sites of skin, instead presenting with a more typical distribution of the suspected condition (for example, extensor surfaces for psoriasis and flexor surfaces for eczema). They are often itchy. Where there is uncertainty, a trial of topical corticosteroid or topical antifungal can be provided with a follow-up review to check whether the lesion has resolved.

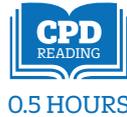
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CLINICAL UPDATES

Management of dependent use of illicit opioids



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Use of illicit opioids, most commonly heroin, has a wide ranging impact on individuals and society.¹ It may lead to dependence, which is best conceptualised using a “chronic disease” model: effective treatments are available, but illness is often characterised by relapses, remissions, and risk of premature death.^{2,3}

Across Europe, four trends are noteworthy: a decline in the use of intravenous heroin, a rise in the use of high potency synthetic opioids (for example, fentanyl), a rise in opioid related deaths, and an increase in the number of long term opioid users aged over 40.⁴ The widely reported “epidemic” of opioid associated deaths in the US and Canada is also of global concern and has been attributed to under-regulated medical prescribing of high potency synthetic opioids and a growth in internet supply chains.⁵⁻⁷ Concurrent use of other substances—for example, alcohol, cocaine, benzodiazepines, neuropathic agents, and novel drugs such as “spice,” increases the risk of adverse outcomes of opioid use in all settings.⁸⁻¹⁰

In this review we describe an evidence based collaborative approach to caring for people who are dependent on illicit opioids (heroin or synthetic opioids that have been obtained illegally, against custom, and used harmfully) and who seek help for their dependence.¹¹⁻¹³

HOW PATIENTS WERE INVOLVED IN THE CREATION OF THIS ARTICLE

Neil Dolan has lived experience of enhanced care for opioid use and works in drug and alcohol services in primary care.

WHAT YOU NEED TO KNOW

- Illicit opioid users have complex needs and require agencies to work collaboratively to help them access healthcare, education, employment, and housing
- Users may have multiple health problems associated with premature disability and mortality
- Adopt a consistent, proactive, and non-judgmental approach in all therapeutic contacts with opioid users to counter stigma and pessimism about effective treatment
- Train patients and carers in the first response to opioid overdose, including the use of naloxone treatment kits
- Length of time in treatment with opioid agonists is the strongest predictor of positive bio-psychosocial outcomes and reduces premature mortality



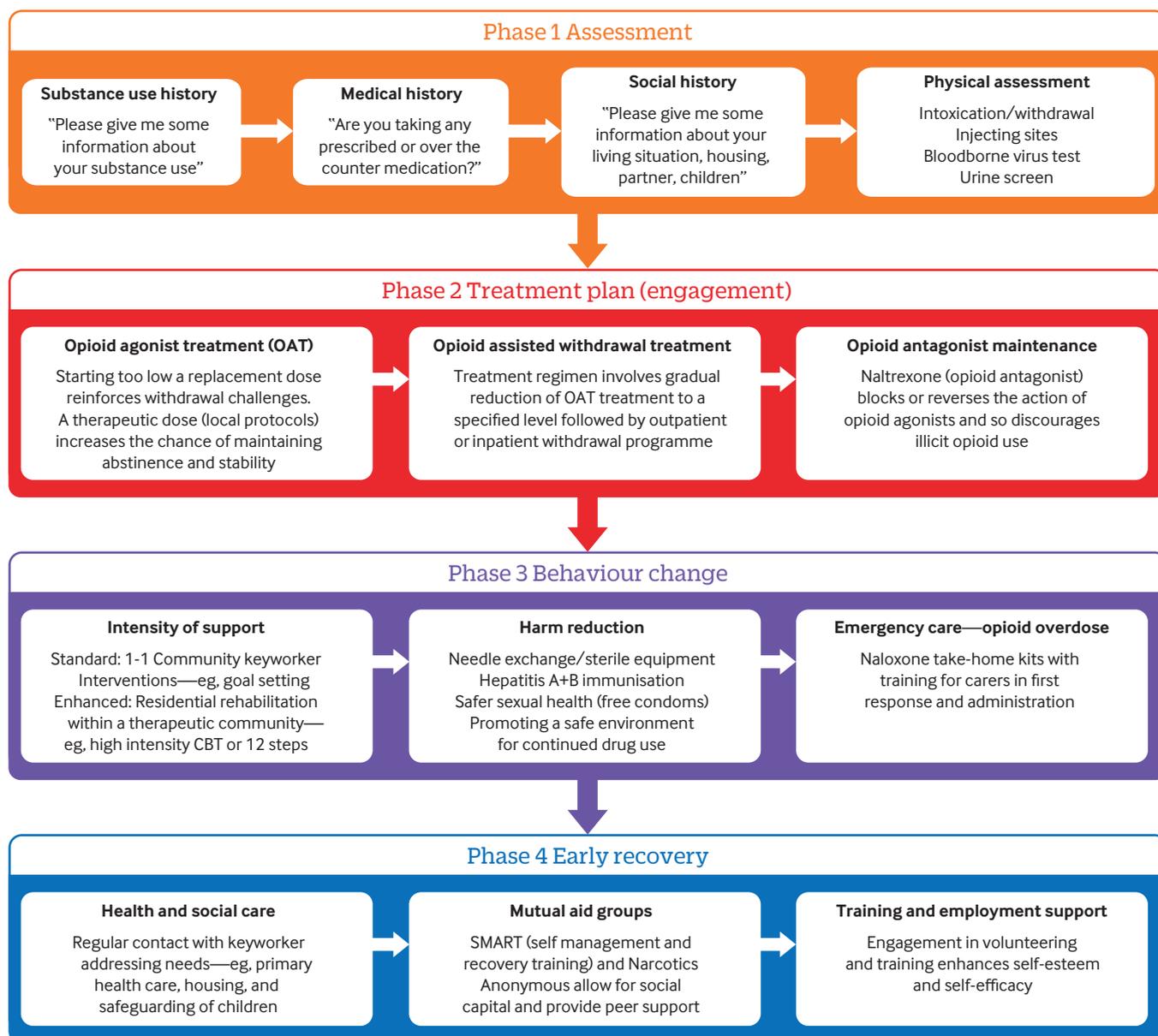
Approach to assessment and management

Our approach consists of four phases: comprehensive assessment, decision making that is shared with the patient, keyworker led psychosocial interventions, and peer led support (“mutual aid”), to minimise harm to the individual and community (figure). Distilling the current evidence base is challenging, particularly for psychosocial interventions, because of the sociopolitical and cultural contexts of illicit opioid use and heterogeneity of study design, interventions, and outcomes.

Box 1 | The ICD-10 diagnostic criteria for opioid dependence (adapted from current guidelines)¹⁴

Opioid dependence does not develop without a period of regular use, although regular use alone may not induce dependence. A definitive diagnosis of dependence should usually be made only if three or more of the diagnostic criteria have been experienced or exhibited concurrently at some time during the previous 12 months:

1. A strong desire or sense of compulsion to take opioids.
2. Difficulties in controlling opioid use behaviours in terms of the onset, termination, or levels of use.
3. A physiological withdrawal state when opioid use has ceased or been reduced, as evidenced by one of the following:
 - a) characteristic withdrawal syndrome (hot/cold sweats, abdominal cramps, etc)
 - b) use of opioids (or closely related substances) with the intention of relieving or avoiding withdrawal symptoms
 - c) evidence of tolerance, such that increased doses of opioids are required to achieve effects originally produced by lower doses.
4. Progressive neglect of alternative pleasures or interests because of opioid use; increased amounts of time spent obtaining opioids or recovering from their effects.
5. Persisting with opioid use despite clear evidence of overtly harmful consequences, such as depressive mood states consequent to periods of heavy substance use, or drug related impairment of cognitive functioning.



A four phase approach to assessment and management

Phase 1: assessment

Patient assessment may take place in a specialist drug and alcohol service, at a general practice clinic as an integrated public health commissioned service, or at general practice during a routine consultation. Assessment enables a GP to gauge the person's level of dependence, advise on interventions to minimise harm, and refer the person onwards to access treatment including psychosocial interventions. The initial assessment is best conducted as a semi-structured consultation to identify nature and pattern of substance use.

Assess whether the person meets the criteria for opioid dependence (box 1). Explore their physical and psychosocial

needs, and those of carers and children.¹⁵⁻¹⁷ Offer a non-judgmental, supportive attitude towards the person to build a trustworthy, respectful, and sustainable therapeutic relationship.¹⁸

History of substance use

- *Tell me why you've come today and what you expect from treatment?* Explore motivating factors, treatment goals, support networks (such as the Drug Rehabilitation Requirement mandated by the UK criminal justice system).

- *Tell me about the drugs that you currently use and how you prefer to take your drugs?* This will help us work out the best care

plan together. Ask about recent opioid use, current symptoms of withdrawal or intoxication, and duration of use. Assess the person's level of opioid dependence and ask about use of other substances and route of administration (injecting drug use, inhalation, sharing of drug equipment).

- *Have you had treatment before for your drug problem? What did or didn't work?*
- *How much are you currently spending and how do you pay for your drugs?* This may uncover criminality, abuse, trafficking, or forced sex work.
- *Have you any concerns about your sexual health? Do you need contraception? Are you planning pregnancy?*

Medical history

• *Are you taking any other medication?*

Do you have any health problems?

Health disorders associated with illicit drug use are summarised in box 2.

• Assess mental health, taking into account the person's current mood and evidence of psychosis or confusion; assess risk of self-harm.

Social history

• *Where/who do you live with?* Inquire about the person's accommodation, whether they have a partner or anyone who can support them, and if they feel safe. Ask whether their partner or other household members use drugs or alcohol.

• *Are there children at home or elsewhere?* Children might be living with a relative or in a statutory care setting ("looked after" or adopted), in which case, ask about contact arrangements to enable sharing of information with other providers of care. Ask the ages and names of the children and explore the impact of drug use on parenting and social functioning (routines for children including school attendance, physical or dental health checks), and safe storage of medication. Discuss safeguarding referral according to identified needs.¹⁷

• *What jobs, training, and education have you done since school?*

• *How are you managing for money?* Ask about employment, benefits, and debt.

• *Are you at risk of harm from anyone?* This might include physical, emotional, or sexual abuse by a family member or intimate partner. Consider use of screening tools, such as HARK.^{24 25}

Routine physical assessment and tests

Observe the person for evidence of opioid use, which might include intoxication and withdrawal symptoms (for example, hot or cold sweats, abdominal cramps).²⁶ Examine injecting sites. Undertake urine or saliva tests for opioids and other substances (according to local protocols) to confirm the presence or absence of drugs before initiating opioid agonist treatment. Offer testing for hepatitis A, B, C, and HIV (pre-testing is not a barrier to immunisation for hepatitis A and B). Further physical assessment may be undertaken based on clinical judgment.

Box 2 | Health disorders and social issues associated with dependent illicit opioid use

Acute physical disorders

- Overdose and fatality
- Acute bloodborne virus infection
- Vascular: acute haemorrhage from arterial access and damage, venous thromboembolism, arterial embolism and aneurysm
- Pulmonary embolus/venous thromboembolism
- Sepsis
- Violent injury/fractures
- Acute asthma



Chronic physical, sexual, and reproductive health disorders

- Multiple comorbidities
- Vascular: recurrent venous thromboembolism, chronic venous ulceration, peripheral vascular disease
- Amputation: secondary to arterial/venous insufficiency, infection, lack of self-care
- Skin: chronic pruritus, wound infections, chronic lower limb ulceration
- Gastrointestinal: chronic constipation, nausea
- Chronic bloodborne virus infection: hepatitis C, B, HIV/AIDS
- Liver disease: bloodborne virus infection associated chronic hepatitis, cirrhosis, hepatocellular carcinoma
- Respiratory disease: early onset chronic obstructive pulmonary disease, uncontrolled asthma, pneumonia, TB¹⁹⁻²¹
- Poor dental health: dental decay, abscesses, extractions
- Sexual and reproductive health: sub-fertility, sexually transmitted infections, low testosterone in men, erectile dysfunction^{22 23}
- Poor pregnancy outcomes: unplanned pregnancy, poor nutrition, lack of periconceptual vitamins, late antenatal booking, missed influenza/pertussis vaccination, premature birth, intrauterine growth retardation, fetal addiction syndromes, maternal death

Mental health

- Depression, anxiety disorder, post-traumatic stress disorder
- Self-injury or suicide
- Severe mental illness: comorbid or substance induced psychoses, personality disorder, delusional disorder, bipolar disorder
- Co-dependence on alcohol and/or other substances

Social issues

- Poverty: chronic disability and impact on employment and household income
- Interrupted education and skills training
- Domestic violence, family breakdown
- Child safeguarding issues: "looked after" children; safeguarding registration; children's access to drugs and accidental overdose; observing drug use behaviours
- Adult safeguarding: exploitation, sex work, vulnerable adults, human trafficking
- Criminality: drug related theft, violence, homicide



EDUCATION INTO PRACTICE

- How might using the chronic condition model of care for patients who use illicit opioids affect how you consult?
- How might you increase patient, carer, and community level uptake of education and training in the management of overdose, including how to administer naloxone?

Phase 2: agreeing a treatment plan

The aim of care is to integrate pharmacological and psychosocial treatments to

- build the person's resilience, health, and wellbeing
- stabilise their environment and
- reduce the risk of relapse to illicit opioid use.²⁷

Identify the person's goals, describe the treatments available, address concerns and expectations, and give them time to consider treatment options. Consider the person's motivation to change. You may wish to apply a transtheoretical model of behaviour change (box 3, bmj.com).²⁹

Drug treatment

Treatment pathways include opioid agonist treatment, opioid assisted withdrawal treatment, and opioid antagonist maintenance. Opioid agonist treatment is considered first line treatment globally. If taking this approach, the prescriber should ascertain the patient's responses to previous medication, the level of physical dependence, opioid tolerance, and their personal preference.³¹⁻³³

Opioid agonist treatment

Calculation and titration of opioid agonist treatment dosage is subject to local protocols, with the aim of assisting the person to stop the use of illicit opioids and safely initiate opioid agonist treatment. Using an adequate and responsive replacement dosage regimen substantially improves outcomes, facilitates recovery, and reduces risk of overdose.³⁴ Conversely, starting at too low a replacement dose reinforces withdrawal challenges and fatalism.³⁵ Drug treatment services usually monitor supervised opioid agonist treatment and pharmacies dispense the drug.³⁶

A systematic review reported a substantial reduction in the risk for all cause and overdose mortality in people dependent on opioids who were undergoing opioid agonist treatments.³⁷ Pooled all cause mortality rates were 11.3 and 36.1 per 1000 person years in and out of methadone treatment (unadjusted out-to-in ratio 3.20, 95% confidence interval 2.65 to 3.86), and were reduced to 4.3 and 9.5 in buprenorphine treatment (2.20, 1.34 to 3.61).³⁷ Retention in opioid agonist treatment is the strongest predictor of positive bio-psychosocial outcomes, with buprenorphine treatment being associated with lower mortality rates than methadone treatment.³⁰ More information about methadone and buprenorphine treatment can be found on bmj.com.

Opioid assisted withdrawal treatment

Withdrawal treatment may be offered if the patient's goal is abstinence from opioids. This regimen involves initial opioid agonist treatment and gradual reduction, followed by an outpatient or inpatient withdrawal programme according to local protocols and tailored to individual circumstances. Lofexidine, an α 2a-adrenergic receptor agonist, may be used to suppress withdrawal symptoms in a patient making a clinically supported, informed decision not to use opioid agonist treatment for withdrawal or with mild dependence.⁴⁰

Opioid antagonist maintenance (naltrexone)

Naltrexone is an opioid antagonist that blocks or reverses the action of opioid agonists and so discourages illicit opioid use. Immediate release naltrexone is cost effective but patients report poor adherence compared with the extended release formulation.⁴¹

Phase 3: support for behaviour change

Psychosocial interventions are widely used to support a change in drug related behaviours, although uptake and availability vary with treatment setting.^{12 42} There are two categories of intervention intensity: "standard" and "enhanced" care. Both care pathways utilise a multiagency, multidisciplinary approach.⁴²

In standard care, interventions offered by a keyworker include motivational interviewing and brief interventions, relapse prevention, goal setting, problem solving, and recovery planning.

Enhanced care should be offered if there is poor response to standard care or for patients with more complex needs. Psychiatric comorbidities in opioid dependent patients far exceed those in the general population, influence outcomes, and should be treated according to guidelines.^{47 48}

Patients with dual diagnoses should be offered integrated mental illness and substance abuse treatments, long term follow-up, and tailored psychosocial interventions.^{49 50}

Harm reduction

Many patients continue to use injected drugs, and progress may be slow. The aim is to support change to healthier behaviours—for example, safer use (inhaled use, avoiding solitary injected use, correct disposal of drug use equipment) and safer sexual health practices. Education, convenient access to sterile drug paraphernalia, and free condoms can reduce the risk of sepsis, transmission of bloodborne virus, and venous thromboembolism. Offer immunisation for hepatitis A and B.^{30 51}

Emergency care for opioid overdose

Offer all patients naloxone "take home" treatment kits and offer carers training in first response and administration.^{50 52} Those at highest risk are younger, male, older with physical/mental health comorbidities, users of injected drugs, or those recently discharged from prison.^{53 54} When an overdose is suspected, administer naloxone (provided in two-dose injection kits) and repeat as necessary while awaiting emergency services.

Phase 4: early recovery

The key principle of early recovery (achievement of better mental, physical, and social wellbeing, including abstinence from the illicit drug) is to promote stability by addressing health and social needs, recognising that the social determinants and bio-psychosocial outcomes of opioid dependence are interdependent.^{11 12}

Competing interests: None declared.

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ENDGAMES

SPOT DIAGNOSIS

A painful swollen hand

A 25 year old man presented with a painful, swollen right hand after a night socialising with friends. He had consumed enough alcohol for him to be unable to recall the mechanism of injury. He had no medical history.

On examination there was swelling extending from the wrist to the metacarpophalangeal joints, which was greater on the ulnar side of his hand and palpation was tender in this region.

He was able to make a fist and extend his fingers and

wrist. No rotational deformity or neurovascular deficit was seen.

No fractures were visible on anteroposterior and lateral radiographs of his hand. An oblique view (fig 1) was requested because he had tenderness around the base of his fifth metacarpal and carpometacarpal joint.

What is the diagnosis?

Submitted by Henry O'Brien and Jayanth Paniker

Patient consent obtained.

Cite this as: *BMJ* 2020;368:m614



Fig 1 | Oblique radiograph of the right hand

If you would like to write a Case Review or Spot Diagnosis for Endgames, please see our author guidelines at <http://bit.ly/29HCBAL> and submit online at <http://bit.ly/29yyGSx>



Fig 2 | Oblique radiograph of right hand with red arrow pointing at hamate fracture

• Punching injuries can cause body of hamate fractures.
 • Request oblique, anteroposterior, and lateral radiographs of the hand if there is tenderness at the ring or little finger carpometacarpal joint because a hamate fracture may only be visible on one of these radiographic views.
 • Subluxation or dislocation of the ring and little finger carpometacarpal joints may require surgical treatment to reduce long term instability and weakness.

LEARNING POINTS

If there is evidence of metacarpal subluxation or dislocation on computed tomography, consider surgical treatment with open reduction and internal fixation.

PATIENT OUTCOME

Computed tomography showed no associated subluxation or dislocation of either the ring or little finger metacarpals, therefore the patient was treated conservatively in a hand cast with a satisfactory result.

The oblique radiograph shows a body of hamate fracture (fig 2, arrow). Two per cent of carpal bone fractures are reported to be hamate fractures. Fractures of the hook of hamate are more common than body of hamate fractures. The hook of hamate is a bony projection and is at risk of fracture with direct compression. Body of hamate fractures are typically sustained following crush or axial loading (eg, punching) but this patient could not recall the mechanism. If radiographs show a body of hamate fracture, arrange a computed tomography scan to assess for displacement or articular surface incongruity at the ring and little finger carpometacarpal joints because subluxation or dislocation of these joints can cause instability and reduced grip strength if untreated. Cast immobilisation is the usual management if there is no evidence of metacarpal subluxation or dislocation, with good results reported.

A painful swollen hand

SPOT DIAGNOSIS

What is the diagnosis?

answers



You can record CPD points for reading any article. We suggest half an hour to read and reflect on each.

0.5 HOURS



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Bilateral infiltrative optic neuropathy associated with glioblastoma

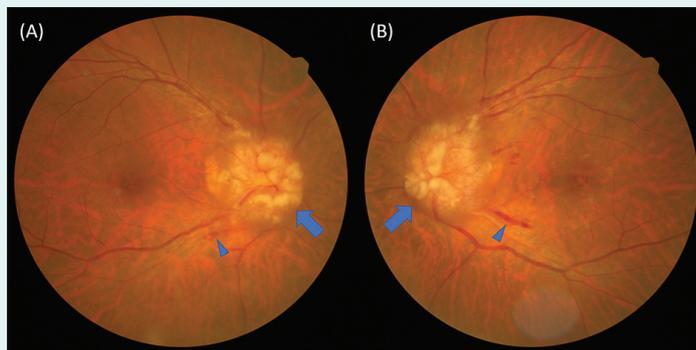
This is a fundus picture of bilateral infiltrative optic neuropathy in a 62 year old man.

He presented with blurred vision in both eyes for several weeks. Four months earlier, he was diagnosed with bilateral frontal lobe glioblastoma (WHO grade IV). On examination, visual acuity was 20/400 (6/120) in the right eye and 20/200 (6/60) in the left eye.

The picture shows papilloedema with irregular,

white, nodulous elevations of the optic disc (arrow) and nearby retinal haemorrhage (arrow head) in the right (panel A) and left (panel B) eyes.

Magnetic resonance imaging of the brain showed nodulous changes on the optic nerves bilaterally. Although a biopsy of the optic nerve was considered unlikely, and glioblastoma infiltration was the most likely diagnosis.



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Patient consent obtained.

Cite this as: *BMJ* 2020;368:m846

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Dietary creatine

Creatine is central to the energy metabolism of muscle, and weight lifters and body builders often take creatine supplements in the belief that they will enhance muscle mass and strength. Creatine also has a critical role in brain bioenergetics, and small studies have hinted that dietary supplements might protect against depression. Data from a large nutritional survey are compatible with the idea. Among 20 000 participants, the prevalence of depression was almost twice as high in those in the lowest quarter of the distribution of creatine intake compared with those in the highest quarter (*Transl Psych* doi:10.1038/s41398-020-0741-x).



Antibiotics or surgery for appendicitis?

Randomised trials have shown that antibiotics are a safe and effective way to treat non-perforated appendicitis. Antibiotics probably carry a lower risk of complications than surgery, but this has to be set against a 20% risk of recurrence of appendicitis in the following year. A seven year follow up of more than 400 people who took part in a trial in Finland finds that long term patient satisfaction and quality of life were no different in those receiving antibiotic treatment compared with those who underwent open appendectomy (*JAMA Surg* doi:10.1001/jamasurg.2019.6028). Only the group in whom initial treatment with antibiotics failed and who went on to require surgery had lower satisfaction scores.

Androgens after major trauma

A longitudinal investigation of steroid metabolism in 60 men who survived major trauma found that the catabolic response to injury was accompanied by an immediate and sustained fall in serum levels of androgens and androgen precursors (*J Clin Endocrinol Metabol* doi:10.1210/clinem/dgz302). Recovery of androgen production took several months and coincided with a switch from catabolism to anabolism, as reflected by recovery of muscle mass and a decrease in nitrogen loss. The findings raise the question of whether

this hormonal response is beneficial or maladaptive. Might intervention with androgens improve outcomes?

Snow and myocardial infarction

A study from British Columbia, where the weather in winter ranges from mild near the Pacific coast to seriously harsh in the mountain regions, finds that rates of myocardial infarction increase by a third after a recent heavy snowfall (*Am J Epidemiol* doi:10.1093/aje/kwaa029). The risk was particularly high on days when the temperature was warm, and the investigators speculate that the snow might have been wetter and heavier, and shovelling it more strenuous. Or perhaps people are more inclined to get out and clear snow on warmer days.

Cite this as: *BMJ* 2020;368:m990



Skiing helmets

A trauma centre in North America reports that among 700 skiers and snowboarders treated there between 2010 and 2018, those who had been wearing helmets had higher scores for injury severity than those not wearing helmets (*J Trauma Acute Care Surg* doi:10.1097/TA.0000000000002447). Does this mean that helmets don't offer much protection? No, it's an example of the difficulty of interpreting numbers of cases when the size of population at risk is unknown. Missing from these data are the skiers whose helmet protected them so well that no visit to a trauma centre was needed.