education

RESEARCH REVIEWS Fortnightly round up from the leading medical journals

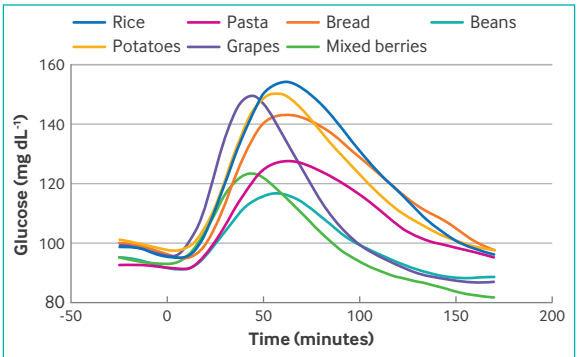
The blood screening paradox

A diagnostic accuracy study of a blood test for colorectal cancer has some promising, if paradoxical, findings. The cell free DNA test had an overall sensitivity of 79.2% for colorectal cancer in a screening population of 45-85 year olds at average risk of colorectal cancer. Specificity was 91.5% for advanced colorectal neoplasia. The test was particularly good at identifying more advanced

stages of colorectal cancer (100% sensitivity for stage II, 82.4% for stage III, and 100% for stage IV), but not so good at detecting advanced pre-cancerous lesions (only 12.5% sensitivity). Modelling studies suggest that replacing colonoscopy or annual FIT screening with cell free DNA blood testing would therefore lead to more colorectal cancer cases and deaths, owing to a fall in detection of pre-cancerous lesions.

The quest for the optimal colorectal cancer screening approach goes on.

JAMA doi:10.1001/jama.2025.7515



Mean continuous glucose monitoring curves of post-prandial glycaemic responses after different meals

Food for thought

Our individual metabolic responses to different food types may influence our risk of developing diabetes and cardiovascular disease. To explore this, researchers used continuous glucose monitoring to measure post-prandial glycaemic responses to various carbohydrate foods in 55 people in California. Glucose levels typically peaked after about an hour and were higher for rice, potatoes, and grapes (see figure). Post-prandial glycaemic responses varied considerably between individuals—a finding that will no doubt be used to try to persuade us all to use continuous glucose monitoring devices. Consuming fibre, protein, or fat before the carbohydrate load reduced the size of the glucose peak compared with when the carbohydrates were eaten on their own.

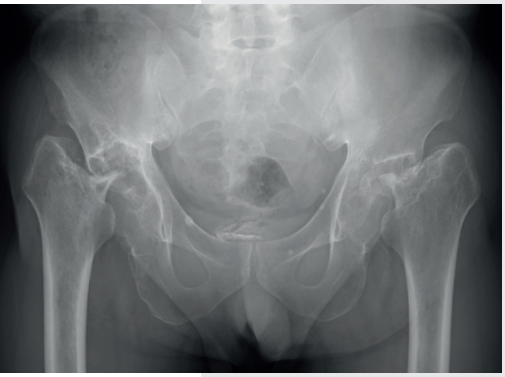
Nature Med doi:10.1038/s41591-025-03719-2

ADAPTED FROM WU Y, ET AL. *NAT MED* 2025. DOI:10.1038/S41591-025-03719-2

Prescribing decisions remain fluid

Crossing off one type of intravenous fluid and replacing it with another was a popular ward round activity back in the day. The publication of a cluster randomised crossover trial in the *New England Journal of Medicine* is likely to infuse new life into the debate about which fluids to prescribe, but there's no easy solution. Hospitals in Canada were allocated to use either lactated Ringer's solution or normal saline for 12 weeks and then switch to the other. Neither fluid came out on top, as they found no significant difference between the two groups in the primary outcome of death or readmission to hospital within 90 days.

N Engl J Med doi:10.1056/NEJMoa2416761



CLINICAL PICTURE

Bilateral hip pain in a patient with alcohol dependence

This man in his 50s presented with a five year history of bilateral hip pain, worse on the right, which had notably deteriorated over the past month, though he remained ambulatory with the assistance of a walking stick. He also had a history of alcohol dependence. Pelvic radiography showed absence of the femoral heads with abnormal articulation at the hips bilaterally (figure). Initial blood tests, including full blood count, urea and electrolytes, alkaline phosphatase, C reactive protein, and thyroid function tests, were within normal limits. Magnetic resonance imaging showed substantial synovitis with joint effusion and bone marrow oedema in the acetabulum and proximal femur bilaterally. He underwent right total hip replacement, but declined left hip replacement because his left sided symptoms were manageable.

Histopathological assessment of bone samples showed avascular necrosis without granulomas. These findings confirmed a diagnosis of

Finerenone and SGLT-2 too?

People with chronic kidney disease, albuminuria, and type 2 diabetes might be able to reduce their risk of progression of kidney disease by taking a combination of a sodium-glucose cotransporter-2 (SGLT-2) inhibitor and finerenone, rather than an SGLT-2 inhibitor alone. The CONFIDENCE study randomised participants to finerenone (a non-steroidal mineralocorticoid receptor antagonist), empagliflozin, or both drugs and measured the change in albumin creatinine ratio at six months. Those who completed the study in the combination treatment group had, on average, more than halved their albumin creatinine ratio, compared with around a 30% reduction in the single drug treatment groups. Hyperkalaemia and a ›30% decline in eGFR at 30 days were more common in the finerenone arms of the study.

N Engl J Med doi:10.1056/NEJMoa2410659

Mechanically ventilated critically ill patients and conservative oxygen therapy

Given the critical condition that patients receiving mechanical ventilation in intensive care units are in, even a small survival benefit from optimising oxygen therapy could result in a lot of lives saved. A large randomised trial conducted across 97 intensive care units in the UK assessed whether conservative oxygen therapy, where mechanically ventilated patients receive the lowest fraction of inspired oxygen possible to maintain their peripheral oxygen saturation at 90%, would reduce mortality at 90 days compared with usual oxygen therapy. The researchers recruited 16 500 participants, aiming to detect an absolute risk reduction of 2.5% or more; however, only a non-statistically significant difference between the two oxygen therapy approaches of 0.7% was found.

JAMA Netw doi:10.1001/jama.2025.9663

Cite this as: *BMJ* 2025;389:r1253

rapidly destructive arthrosis, which is characterised by an unusually aggressive progression of joint destruction. Its pathophysiology is not fully understood. Alcohol and corticosteroids are important risk factors because they may induce adipogenesis, leading to intraosseous hypertension and impaired femoral head blood flow, contributing to osteonecrosis. This patient remains under follow-up and is abstinent having completed an alcohol treatment programme.

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Patient consent obtained.

Cite this as: *BMJ* 2025;389:e082649

MINERVA From the wider world of research

Exercise, physical fitness, and mortality

Although many studies have found that people who exercise are less likely to die prematurely from cardiovascular disease, the obvious conclusion that this is a direct benefit of cardiorespiratory fitness may be wrong. A Swedish study which followed adolescent males for several decades confirms that fitter people experienced lower cardiovascular mortality (*Eur J Prev Cardiol* doi.org/10.1093/eurjpc/zwaf267). The surprise, however, was that mortality from other causes, most commonly drownings, homicides, and car crashes, was reduced by a similar amount.

Lung function and cardiovascular risk

Links between poor lung function and higher cardiovascular risk are partly explained by shared developmental pathways, according to a genetic analysis within the UK Biobank (*Thorax* doi:10.1136/thorax-2024-222474). Specific variants in 12 out of 55 genes known to influence pulmonary development and repair were associated not only with poorer lung function (particularly forced vital capacity) but also with increased cardiovascular morbidity (particularly hypertension).

Transmission of *Clostridioides difficile*

A painstaking study from two intensive care units in Utah, USA, with daily sampling of patient body sites, environmental surfaces, and healthcare personnel's hands, finds that *Clostridioides difficile* persists on environmental surfaces and often evades standard infection control measures (*JAMA Netw Open* doi:10.1001/jamanetworkopen.2025.2787). Nearly 8% of patients carried a strain genetically linked to another patient, although most were non-toxigenic. The lesson is that sampling only from patients substantially underestimates *C difficile* transmission.

Alcohol intake and pancreatic cancer

Alcohol is classified as a group 1 carcinogen, which places it in the same category as tobacco, radiation, and asbestos. Even so, an enormous collaborative study combining data from 30 cohorts across four continents reports modestly positive links between alcohol intake and pancreatic cancer (*Plos Med* doi.org/10.1371/journal.pmed.1004590). A daily alcohol intake of 30-60 g increased the risk of pancreatic cancer by just 15%.

Antihypertensive drugs and risk of dementia

Lowering blood pressure in hypertensive people reduces the risk of cognitive decline. An electronic database study raises the possibility that some types of antihypertensive drug might be more effective than others (*Age Ageing* doi:10.1093/ageing/afaf121). Among two million people followed for six to eight years, those treated with angiotensin receptor blockers were 10% less likely to be diagnosed with dementia than those given angiotensin converting enzyme inhibitors.

Long term outcomes after antenatal corticosteroids

Twenty year follow-up of the offspring of mothers who took part in an Australian trial of repeat doses of antenatal corticosteroids because of threatened premature labour finds no evidence to suggest long term harm or benefit (*Plos Med* doi.org/10.1371/journal.pmed.1004618). Rates of asthma diagnosis, other lung conditions, and other general health conditions were similar among those who had been exposed to corticosteroids and those who had not.

Cite this as: *BMJ* 2025;389:r1246

PRACTICE POINTER

Head injury in older people taking anticoagulants

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CPD READING
0.5 HOURS

When trauma to the head results in a disturbance of normal brain function, the resulting condition is broadly defined as traumatic brain injury (TBI).[1] TBI is a leading cause of injury related death and disability, and can be classified as mild, moderate, or severe (table 1, see bmj.com).[4] Falling from a standing height on level ground is an increasingly common cause of TBI in people aged 65 and older.[5] A comparative cohort study from 2021 analysing 21 681 patients with TBI identified 40% as caused by low energy falls.[6] Older adults now represent more than half of all severely injured patients in the UK national Trauma Audit and Research Network database, a registry that collected more than a million cases between 1990 and 2023.[7]

Anticoagulation and traumatic brain injury

Up to a third of older people who fall are taking prescribed anticoagulants at the time of the incident: either vitamin K antagonists (VKA, such as warfarin) or direct oral anticoagulants (DOACs, such as rivaroxaban, apixaban etc.).[8 9] Pre-injury anticoagulation can exacerbate the clinical impact of TBI. People with traumatic intracranial haemorrhage (accounting for 50% of TBI) in particular can deteriorate rapidly if pre-injury anticoagulation is not detected and managed appropriately.[10 11] A 2012 meta-analysis of 11 studies reported double the odds of death in patients taking warfarin with blunt head trauma, compared with those who had not been taking anticoagulation pre injury.[12] A retrospective study of 1186 patients with traumatic intracranial haemorrhage in 2023 noted similar findings with pre-injury DOAC use (hazard ratio, HR, 1.973, P=0.007).[13]

Decisions on brain imaging and management of anticoagulation are often straightforward in people who suffer TBI from a high energy mechanism (eg, a road traffic collision) or present with a low GCS score. However, people with TBI after a low energy fall are more likely to be older (over 65), less likely to present with severely impaired level of consciousness, and are more likely to be taking medicines that affect haemostasis.[6] Furthermore, specific harms are associated with routine hospital transfer for brain imaging in older people with head injury, such as delirium, infection, deconditioning, and falls.[14] Decisions on when to image and when to stop or reverse anticoagulation can therefore be complex.

WHAT YOU NEED TO KNOW

- Older adults taking direct oral anticoagulants who fall or sustain a head injury with no other adverse risk features have a low rate of adverse events and may not always benefit from referral for computed tomography (CT) brain imaging
- People taking anticoagulants who have mild traumatic brain injury (TBI) and normal CT brain imaging should usually be encouraged to continue treatment. People with moderate to severe TBI should temporarily stop therapeutic dose anticoagulation during initial management and emergency reversal strategies should be considered
- Restarting oral anticoagulation following moderate to severe TBI should be discussed between one and four weeks post injury. Use shared decision making informed by specialty expertise, pathoanatomical lesion, thrombosis/bleeding risk, and patient preferences

When to offer brain imaging

Adults presenting to hospital with any features of a moderate to severe TBI after head injury are usually referred for CT brain imaging within an hour,[15] but imaging can be more considered in people with a normal consciousness level. Several rules can help identify evidence based risk features associated with clinically relevant TBI after head injury (table 2). However, these rules have limited applicability to people using pre-injury anticoagulation, given that they often exclude patients taking anticoagulants, or recommend routine head imaging in this context.

In the absence of a recommended decision rule for anticoagulated patients, concerns regarding "missed" traumatic intracranial haemorrhage and the potential impact of continued anticoagulation encourage high rates of hospital referral for brain imaging, in our clinical experience. Such a broad approach has the potential to cause harm and is unlikely to be an effective use of resources.[19]

What to consider at initial presentation

In addition to clinical risk features for TBI (table 2), clinicians should consider the type and dose of

Table 2 | Decision rules and the clinical features used to guide referral for brain imaging in adults ≥16 with head injury

Rule	NEXUS head CT instrument[16]	New Orleans criteria[17]	Canadian CT head rule[18]
Inclusion criteria (in addition to head injury)	Within 24 hours of injury	GCS 15 LOC Normal neurological examination	GCS 13-15 and any one of: LOC, amnesia to injury event, or witnessed disorientation
Exclusion criteria	Nil	Nil	People prescribed anticoagulation Seizure after injury
Risk features			
Consciousness level	Altered level of alertness*		GCS<15 at 2 hours post injury
Skull fracture	Evidence of a significant skull fracture		Suspected open or depressed skull fracture
			Any sign of basilar skull fracture†
Vomiting	≥1 episodes of vomiting	Vomiting	≥2 episodes of vomiting
Age	≥65	>60	≥65
Amnesia		Persistent anterograde amnesia	Retrograde amnesia to events ≥30 min
Mechanism			Dangerous mechanism‡
External signs of trauma	Scalp haematoma	Visible trauma above the clavicle	
Neurological history or examination findings	Focal neurological deficit	Headache	
	Abnormal behaviour	Seizure	
Coagulopathy	Coagulopathy or use of anticoagulant medication		
Intoxication		Alcohol or drug intoxication	
Outcome	CT recommended if any yes	CT recommended if any yes	CT recommended if any yes

GCS=Glasgow coma scale score
LOC=Loss of consciousness
*Defined as GCS <15, delayed or inappropriate response to external stimuli, excessive somnolence, disorientation to person, place, time, events
†Signs of a basilar skull fracture include haemotympanum, racoon eyes, Battle's sign, cerebrospinal fluid oto/rhinorrhoea
‡Dangerous mechanism includes pedestrian struck by motor vehicle, ejection of occupant from motor vehicle, fall from >3 feet or >5 stairs

anticoagulant used, timing of injury in relation to last anticoagulant dose, pharmacokinetics of the anticoagulant (in the context of individual renal/hepatic function), and whether secondary care interventions are in keeping with any existing individualised advance care plans. These features should provide an estimate of risk based on likely degree of residual anticoagulant effect and help clearly define any goals of care. The best way to estimate any residual DOAC effect is to ascertain the timing of the last dose. In patients with normal renal function, a DOAC effect is unlikely 36 hours or more after the last dose. Any decision to undertake imaging should balance the risks of delayed diagnosis and missed opportunity for intervention against the harms of hospital transfer, admission, and anticoagulant cessation.

Further research is required to identify the patient oriented advantages of brain imaging to exclude TBI in specific patient groups, such as those who require inter-hospital transfer for imaging, those taking DOACs without adverse clinical risk features, and those with care plans precluding advanced intervention.[23]

When to re-image

If the initial CT imaging is normal, repeat imaging in patients taking anticoagulants with head injury is not routinely recommended. A 2021 systematic review and meta-analysis including 12 papers and 5289 patients with minor head injury reported a pooled weighted proportion for delayed traumatic intracranial haemorrhage of 2.43% (95% CI 1.31 to 3.88) and 2.31% (95% CI 1.26 to 3.66) for people using pre-injury DOACs and warfarin, respectively.[24] The authors report a delayed traumatic intracranial haemorrhage rate of 0.4% in patients not using any anticoagulation. The overall crude risk of death from delayed traumatic intracranial haemorrhage in 3051 anticoagulant users with blunt head trauma and an initial normal CT scan was 0.33%.

How to reverse anticoagulation after TBI

In cases of isolated mild TBI (no abnormality seen on structural imaging), anticoagulation does not usually require emergency reversal. In moderate to severe TBI (abnormality seen on brain imaging), anticoagulation should be stopped and emergency reversal strategies considered to limit any progression of confirmed traumatic intracranial haemorrhage. The method of reversal is dependent on the anticoagulant taken, timing of last dose, and any potential need for urgent surgical intervention.

Vitamin K antagonists (warfarin)

In people using warfarin with confirmed traumatic intracranial haemorrhage, the anticoagulant effect should be reversed urgently using 1000 to 3000 international units of 4 factor prothrombin complex concentrate (4F-PCC), guided by immediate (point-of-care if available) measurement of the international normalised ratio (INR) value.[25-28] Urgent neurosurgical referral is warranted, but delaying care for specialist approval of reversal should be avoided, as time is likely to affect outcome. In a study of 9492 patients with spontaneous anticoagulation associated intracranial haemorrhage, a door-to-treatment (initiation of reversal agent) time of 60 minutes or less was associated with decreased mortality (adjusted OR 0.82, 95% CI 0.69 to 0.99).[29] 4F-PCC has a short half life, so to prevent any delayed effect from circulating warfarin, it should be administered at the same time

Table 3 | Therapeutic dose anticoagulant options and reversal agents

Agent	VKA	LMWH	UFH	Apixaban	Rivaroxaban	Edoxaban	Dabigatran
Mechanism	Oral vitamin K antagonist	Subcutaneous antithrombin III mediated selective inhibition of Xa and IIa	Indirect anti-Xa influence	Oral factor Xa inhibitor	Oral factor Xa inhibitor	Oral factor Xa inhibitor	Oral direct thrombin inhibitor
Plasma half life in normal renal function	20 to 40 h	3 to 5 h	1-2 h	8 to 15 h	7 to 11h	10 to 14h	12 to 17h
Excretion	Hepatic metabolism	Non-saturable renal excretion	Renal	Partial renal excretion	Partial renal excretion	Partial renal excretion	Mainly renal excretion (80%)
Specific test	International normalised ratio (INR)	Anti-Xa level	APTT ratio	Not readily available	Not readily available	Not readily available	Not readily available
Reversal agents	4F-PCC with intravenous vitamin K	Protamine sulphate	Protamine sulphate	4F-PCC OR andexanet alfa*	4F-PCC OR andexanet alfa	4F-PCC	Idarucizumab
Time to reversal from intravenous administration	15 to 30 minutes	Partial reversal achieved over 5-10 minutes	5 to 10 minutes	15 to 30 minutes OR 2 to 5 minutes	15 to 30 minutes OR 2 to 5 minutes	15 to 30 minutes OR 2 to 5 minutes	3 to 5 minutes

VKA=Vitamin K antagonist
LMWH=Low molecular weight heparin
UFH=Unfractionated heparin
4F-PCC=Four factor activated prothrombin complex concentrate
*Given by initial bolus regimen, followed by continuous infusion over 2 hours, dosing impacted by DOAC regimen

as 10 mg intravenous vitamin K. The latter takes 12-14 hours to fully and completely reverse warfarin anticoagulation.

DOAC Xa inhibitors (apixaban, rivaroxaban, edoxaban)
Blood tests measuring the effects of DOAC medications (such as chromogenic assays) are seldom available at short notice in an emergency. The effect of DOACs on conventional coagulation tests are unpredictable and variable. The timing of last dose and renal function can provide reliable information on residual anticoagulation effect. As a general principle, if the last dose was taken less than 24 hours from diagnosis of moderate to severe TBI with confirmed traumatic intracranial haemorrhage, reversal strategies should be considered.

In people using DOAC Factor Xa inhibitors, options to mitigate anticoagulant effect include 4F-PCC and the direct reversal agent andexanet alfa, the latter currently licensed only for reversal of rivaroxaban or apixaban. Comparative data are limited and current guidelines are conflicting. The American Society of Haematology makes conditional recommendations supporting the use of either treatment in life threatening bleeding.[25] The description of life threatening bleeding usually aligns with the definition of major bleeding published by the International Society of Thrombosis and Haemostasis: bleeding in a critical area or organ, and/or causing a fall in haemoglobin level of 20 g/L^{-1} or more, leading to transfusion of two or more units of whole blood or red cells.[30] In a 2021 technology appraisal, NICE did not recommend andexanet alfa for anticoagulation reversal in life threatening intracranial haemorrhage, based on indirect comparison data and estimates of cost effectiveness.[31] A 2022 systematic review and meta-analysis of DOAC reversal agents in intracranial haemorrhage, including 36 studies and 1832 patients, reported no differences in anticoagulation reversal, proportional mortality, or thromboembolic events between 4F-PCC and andexanet alfa.[32] A further open label randomised trial of andexanet versus usual care for Xa inhibitor associated intracranial haemorrhage was published in 2024.[33] This study enrolled 530 patients, of which 11.1% had traumatic intracranial haemorrhage. In the usual care arm, 85.5% received 4F-PCC within three hours of diagnosis. The authors reported an improved primary endpoint of haemostatic efficacy (adjusted difference 13.4%, 95% CI 4.6 to 22.2, P=0.003) with a hematoma increase ≥12.5 mL observed in 11.6% of patients in the andexanet group *v* 19% in the usual care group (-7.4 percentage points difference, 95% CI -13.6 to -1.2). However, they also observed double the rate of thrombotic events with andexanet alfa, in particular ischaemic stroke.

DOAC direct thrombin inhibitors (dabigatran)
People using the direct thrombin inhibitor dabigatran who present with moderate to severe TBI should have the anticoagulant effect reversed using intravenous idarucizumab 5 g. Dabigatran has a longer half life than other DOACs and is mainly excreted by the kidneys. Plasma levels can therefore remain elevated for longer in the event of any renal impairment, which should prompt consideration of reversal even after 24 hours from last dose.

Heparins
Protamine sulphate will reverse unfractionated heparin and partially reverse low molecular weight heparin. Table 3 summarises relevant pharmacokinetic data on each anticoagulant agent along with reversal strategies.

When to stop anticoagulation after TBI

The conventional approach to managing therapeutic dose anticoagulation after TBI differs based on severity and presence of haemorrhage. In any traumatic intracranial haemorrhage, risk of death and disability secondary to worsening bleeding from anticoagulation is usually considered higher than the risk of early thrombotic complications. Anticoagulation is therefore stopped temporarily.

Risk of stroke

Limited evidence is available to guide clinicians on when to stop therapeutic anticoagulation indefinitely. A systematic review and meta-analysis of 18 studies including more than 2 million patients from four countries reported an increased risk of stroke after TBI, compared with controls (pooled hazard ratio 1.86, 95% CI 1.46 to 2.37).[34] Stroke risk was highest in the first four months after injury. Five studies in this review report stroke risk by subtype, with four of the five noting a higher risk of haemorrhagic (rather than ischaemic) stroke. The individual risk varies depending on TBI subtype/severity (ongoing bleeding risk) and the original indication for anticoagulation (thrombosis risk).

Risk of delayed bleeding

In mild TBI cases with normal CT brain imaging, the incidence of delayed intracranial bleeding in anticoagulated patients with a head injury is between 2% and 3% within the first few days.[24] Since the incidence of delayed bleeding is low, and no research has evaluated whether withholding anticoagulation reduces the risk of delayed intracranial bleeding, current practice usually involves continuing anticoagulant medication after mild TBI.

Patients with head injury and normal imaging of the brain should be advised to return to the emergency department if they develop headache, new balance problems, or stroke symptoms, regardless of whether they use anticoagulant medication. Identifying such symptoms in older patients can be challenging because of subtlety or pre-existing cognitive impairment. Counsel patients, carers, and advocates and provide them with written guidance on head injury, to ensure appropriate safety netting.

When to restart anticoagulation after TBI

No consensus exists on the optimal timing for restarting anticoagulation after TBI, and the decision provokes considerable anxiety for patients and clinicians. In a study of 10 782 patients taking warfarin with TBI, restarting anticoagulation during the following year reduced the overall risk of a composite outcome including haemorrhagic or ischaemic stroke, compared with no anticoagulation (relative risk 0.83, 95% CI 0.72 to 0.96).[35] In a registry based study of 4541 Danish patients sustaining traumatic injury on oral anticoagulation, patients who restarted DOAC medication had fewer strokes (HR 0.54, 95% CI 0.35 to 0.82) and deaths (HR 0.55, 95% CI 0.47 to 0.66) at follow-up 90 days post discharge, when compared with those who did not restart therapy.[36]

Restarting prophylactic dose anticoagulation

For people admitted to hospital with moderate to severe TBI, prophylactic dose anticoagulation is usually commenced at between three and seven days in keeping with international guidelines on prevention of hospital acquired thrombosis in neurosurgical patients.[37-40] Limited evidence supports such recommendations, and prophylaxis is often omitted for longer periods in practice.[41]

HOW PATIENTS WERE INVOLVED IN THE CREATION OF THIS ARTICLE

We asked two patient representatives from the charity Thrombosis UK to review this article ahead of submission. They raised several points on use of abbreviations and simplification of language around key messages which were incorporated. The manuscript was also formally peer reviewed by a person using anticoagulation following submission, who suggested early identification and management of potentially modifiable risk factors should feature more prominently in discussions on when to restart anticoagulation. We revised this section significantly to include a hospital inpatient focus on comprehensive geriatric assessment, lifestyle counselling, and rehabilitation.

EDUCATION INTO PRACTICE

- How would you evaluate the anticoagulant effect in an older patient with a head injury who is taking a DOAC medication, and how would you consider reversing the effect?
- What kind of issues would you consider when talking to a person about restarting their anticoagulation after a head injury?

Randomised controlled trials are currently under way to evaluate the benefits of early pharmacological prophylaxis strategies in TBI patients, compared with the current standard of care (table 4, bmj.com).

Restarting therapeutic dose anticoagulation

The decision on when to restart long term therapeutic dose anticoagulation is influenced by the original indication (thrombosis risk), non-modifiable bleeding risk, presence of traumatic intracranial haemorrhage, and surgical management strategy. Shared decisions on anticoagulation are influenced by objective findings, multidisciplinary opinion, and informed discussion with patients. Modifiable bleeding risks (weight, comorbidity, alcohol use) can be reduced through comprehensive geriatric assessment, lifestyle counselling, and rehabilitation.

In the event of early neurosurgical intervention, decisions on anticoagulation are likely to be surgically led and heavily influenced by operative findings. Following this, or in the event of conservative management, decisions on restarting anticoagulation are usually taken between one and four weeks post injury, informed by disease specific risk scores. In the case of atrial fibrillation, thrombosis risk over the following weeks could therefore be quantified using the CHA_2DS_2-VASc/VA scores.[42,43] Anticoagulant bleeding risk can be estimated using a validated risk score (Orbit, Atria, Hasbled).[44]

For patients who are discharged or remain in hospital after moderate to severe TBI, recent evidence suggests a potential net benefit with earlier reintroduction of therapeutic dose anticoagulation.[45]

Competing interests: See bmj.com.

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CPD READING
0.5 HOURS

Nutrition and weight management in pregnancy, and nutrition in children up to 5 years—summary of new 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 bmj.com

Nutrition during pregnancy and in early childhood can have a noticeable short term and long term impact on health of the mother/parent and the child, including complications related to pregnancy and development throughout childhood. Promoting optimal nutrition during pregnancy and early childhood is important to address health inequalities among disadvantaged populations.[1-4] For example, in the UK, the uptake of folic acid supplementation before pregnancy and the rate of breastfeeding are lowest among those living in the most deprived areas and younger parents.[5 6]

This article summarises select recommendations from the new National Institute for Health and Care Excellence (NICE) guideline on maternal and child nutrition: nutrition and weight management in pregnancy, and nutrition in children up to 5 years.[7] This guideline replaces the old NICE guideline on maternal and child nutrition (PH11) and the recommendations on weight management during pregnancy from the NICE guideline on weight management before, during, and after pregnancy (PH27), which have been stood down.

Many sections in the guideline reinforce existing UK government advice, and the NICE guideline aims to improve the uptake of this advice. The guidance is aimed towards all healthcare workers (including midwives, health visitors, general practitioners, and paediatricians) who work with pregnant people and young children.

WHAT YOU NEED TO KNOW

- All healthcare practitioners have a role in improving uptake of vitamin supplements before and during pregnancy, during breastfeeding, and early childhood; supporting breastfeeding and/or safe and appropriate formula feeding; and timely and appropriate introduction of solids
- Exclusive breastfeeding for six months and continued breastfeeding thereafter is recommended, and advice on infant feeding should be evidence based and non-commercial
- Optimal weight gain in pregnancy is uncertain and routine monitoring of weight in pregnancy is not recommended, unless there is a clinical indication such as gestational diabetes or hyperemesis gravidarum, and the focus should be on starting or maintaining healthy eating and physical activity

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 in the full version of this article on bmj.com.

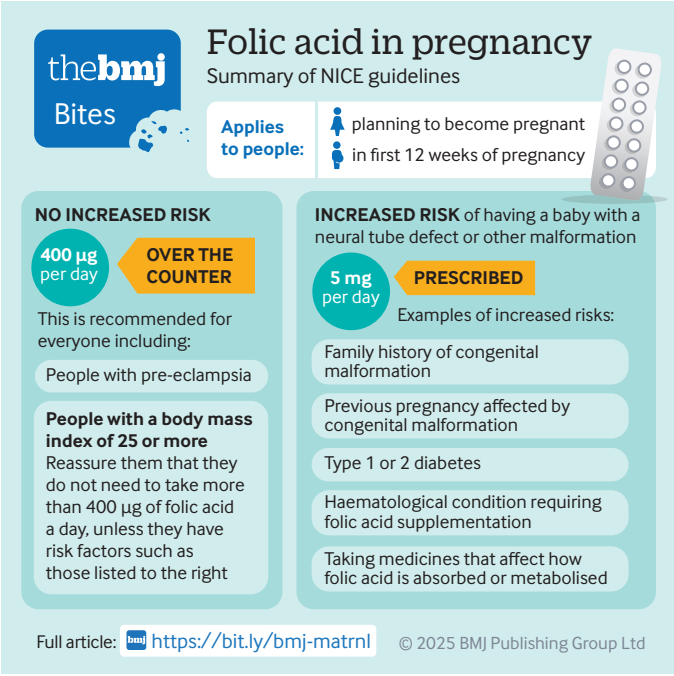
Folic acid and vitamin supplementation

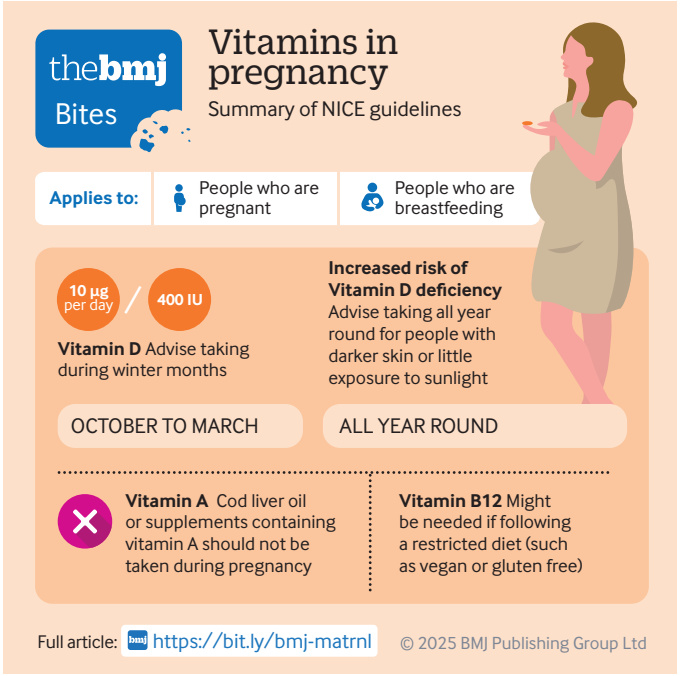
In England, the prevalence of neural tube defects is 12.5 per 10 000 total births.[8] Folic acid supplementation before and for the first 12 weeks of pregnancy is recommended by the UK government to help prevent these defects.[9] However, in a study of 652 880 pregnant women in England, inclusive of both planned and unplanned pregnancies, 73% of women did not take folic acid supplements before pregnancy.[5]

Providing information opportunistically online and in print in different settings can improve uptake, and healthcare professionals can help promote uptake at relevant opportunities, such as at appointments related to contraception, sexual health, pregnancy planning, preconception health, fertility, antenatal care, or postnatal care and child health (for future pregnancies).

In the UK, two strengths of folic acid are available: 400 µg, which is obtained over the counter, and 5 mg, which must be prescribed. The standard daily dose of folic acid is 400 µg, however, people at higher risk of neural tube defects are advised to take a higher dose. Two randomised controlled trials included in the evidence review suggested that 4 mg of folic acid daily reduces the risk of neural tube defects and increases maternal folate levels in women with a previous pregnancy with neural tube defects. Given that folic acid has a wide therapeutic range and is well tolerated, the difference between 4 mg and 5 mg is unlikely to be clinically significant.

- Offer a high dose folic acid supplement (5 mg a day) to anyone who is planning to become pregnant or is in the first 12 weeks of pregnancy if they have an increased risk of having a baby with a neural tube defect or other congenital malformation, for example, if they:
  - (Or their partner) have, or if there is a family history of, a neural tube defect or other congenital malformation





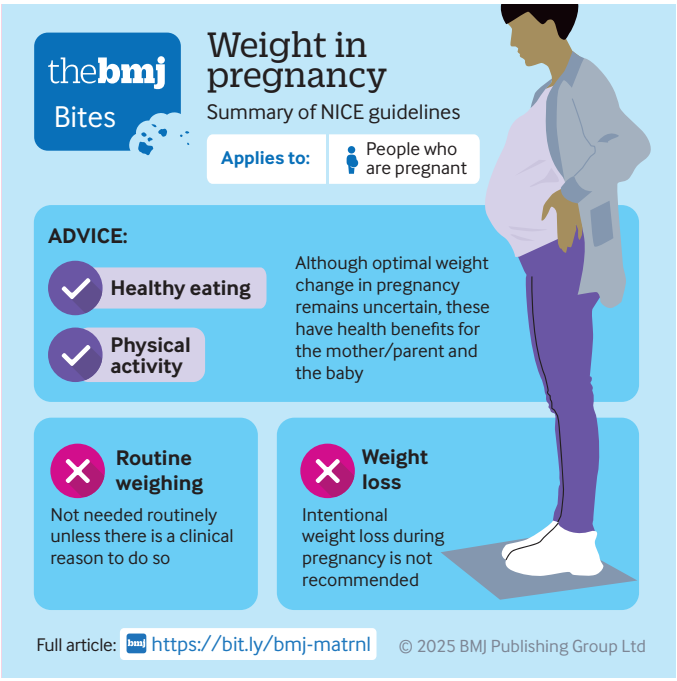
– Have had a previous pregnancy affected by a neural tube defect or other congenital malformation
– Have type 1 or type 2 diabetes
– Have a haematological condition that requires folic acid supplementation, such as sickle cell anaemia or thalassaemia
– Are taking medicines that can affect how folic acid is absorbed or metabolised (eg, people taking anti-epileptic medicines or medicines for HIV).

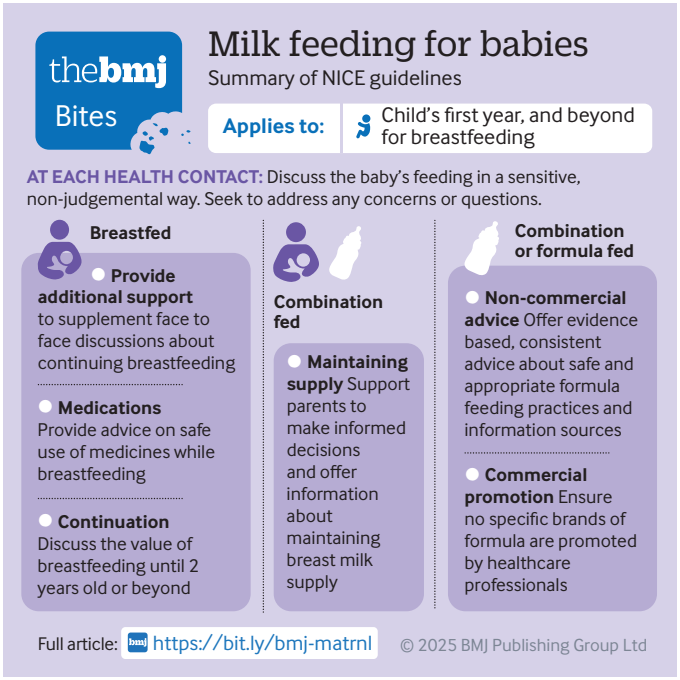
Although individuals with a body mass index (BMI) ≥30 have been previously advised to take a daily high dose folic acid supplement, evidence on high dose folic acid supplementation for those with a BMI ≥25 is limited. Existing recommendations for high dose intake in this population are not supported by robust evidence, and it is likely that the higher incidence of neural tube defects in this group might not be due to folate insufficiency but potentially unrelated metabolic factors.

- Reassure anyone with a BMI of ≥25 who is planning to become pregnant or is in the first 12 weeks of pregnancy that they do not need to take more than 400 µg of folic acid a day, unless they have any of the factors listed in the recommendation above.

About one in three pregnant women in the UK have vitamin D deficiency, which has multiple consequences, including osteoporosis, increased fracture risk, and myalgia.[10] According to the UK Scientific Advisory Committee on Nutrition, the vitamin D reference nutrient intake for pregnant and breastfeeding women, and population groups at higher risk of vitamin D deficiency, is the same as that for the UK general population.[11] Therefore, healthcare professionals should promote vitamin D supplementation, in line with UK government guidance,[12] at various opportunities, such as antenatal or postnatal appointments, vaccination appointments, or baby development checks.

- In line with UK government guidance, advise anyone who is pregnant or breastfeeding about the following:
  – They should take a vitamin D supplement (10 µg or 400 IU a day) between October and March (because the body produces vitamin D from direct sunlight on the skin, and between October and early March, the sun is not strong enough for the body to make enough vitamin D)
  – They should take vitamin D (10 µg or 400 IU a day) throughout the year if they are at increased risk of vitamin D deficiency because they, for example:
    - Have darker skin, such as people of African, African-Caribbean, or South Asian ethnicity, because they might need more sunlight exposure to produce the same amount of vitamin D as people with lighter skin pigmentation or
    - Have little or no exposure to sunshine because they are not often outdoors or usually wear clothes that cover up most of their skin when outdoors
  – If they are eligible for free Healthy Start vitamins (which contain vitamins D, C, and folic acid),[13] that they should take one vitamin tablet a day
  – That during pregnancy, they should not take cod liver oil or any supplements containing vitamin A (retinol); this might include regular (non-pregnancy) multivitamins
- If they are following a restricted diet (eg, a vegan or gluten-free diet), that they might need to add food and drinks with added vitamin B12 to their diet or take a vitamin B12 supplement (see the NHS advice on being vegetarian or vegan and pregnant and the NHS advice on B vitamins.[14,15] Also see the NICE guideline on vitamin B12 deficiency in over 16s for advice about taking vitamin B12 supplements and what to do if vitamin B12 deficiency is suspected or confirmed).[16]
- Advise parents and carers of babies and children under five years to give vitamin supplements in line with UK government recommendations about vitamins for





babies and vitamins for children (table).[17 18] Also advise parents that those eligible for Healthy Start vitamins can receive the free vitamin drops up to their child's fourth birthday (these contain vitamins A, C, and D and are suitable from birth).[13]

Healthy eating, physical activity, and weight management during pregnancy

Evidence included in the evidence review showed that low weight gain in pregnancy is associated with babies being small for gestational age. It also showed that excessive weight gain, particularly in overweight and obese women, is linked to gestational diabetes and babies being born large for gestational age. However, optimal weight change in pregnancy remains uncertain. Moreover, discussions around weight are often perceived as judgemental and sensitive. Therefore, instead of recommending routine weighing during pregnancy, advise people about healthy eating and physical activity, which has health benefits for the mother/parent and the baby. Tailor discussions around healthy eating in pregnancy to reflect individual needs and circumstances.

- Do not routinely offer to weigh people throughout their pregnancy unless there is a clinical reason to do so (eg, gestational diabetes, hyperemesis gravidarum, or thromboprophylaxis).
- Advise people that intentional weight loss during pregnancy is not recommended because of potential adverse effects on the baby.

Infant feeding

The UK Scientific Advisory Committee on Nutrition, Unicef, and the World Health Organization recommend six months of exclusive breastfeeding and continued breastfeeding thereafter through the second year and beyond. This can be facilitated by providing support before and after birth. Qualitative evidence included in the evidence review highlighted that some women felt judged by healthcare professionals and perceived a lack of empathy during discussions about the baby's feeding. The same evidence suggested that individually tailored discussions about infant feeding during healthcare visits can address concerns, support informed decisions, and support continued breastfeeding and/or safe formula feeding (including responsive feeding, correct preparation, and sterilisation), where appropriate.

- At each health contact, discuss the baby's feeding in a sensitive, non-judgemental way. Ask how it is going, whether there are any new or continuing challenges or questions, and seek to address them. See the sections on:
  - Supporting continued breastfeeding and[19]
  - Supporting safe and appropriate formula feeding.[20]

Qualitative evidence included in the evidence review highlighted challenges when breastfeeding (eg, pain, stress, and available support) which can lead to early cessation of exclusive breastfeeding.

- Provide additional support (eg, virtual support groups, phone calls, emails, or text messages, depending on the person's preference) by appropriately trained healthcare professionals or peer supporters to supplement (but not replace) face-to-face discussions about continuing breastfeeding. This could include information about out-of-hours support (such as the National Breastfeeding Helpline) and peer support.
- Offer face-to-face breastfeeding support group sessions (such as breastfeeding cafes or drop-in groups) where appropriately trained healthcare professionals or peer supporters provide people with individualised, practical, emotional, and social support to maintain breastfeeding.

Most commonly used medications can be taken while breastfeeding and there are few absolute contraindications. Resources such as the Drugs in Breastmilk factsheets from the Breastfeeding Network can

Vitamin supplements for babies and children under five years			
Age	**Breastfed**	**Formula fed (500 mL/day or more)**	**Daily dose of vitamin D**
0-6 months	Vitamin D or Healthy Start vitamins if eligible	None (formula is fortified)	8.5-10 µg (340-400 IU)
6-12 months	Vitamins A, C, and D	None (formula is fortified)	8.5-10 µg (340-400 IU)
1-4 years (up to fifth birthday)	Vitamins A, C, and D (note that Healthy Start vitamins are only available up to the child's fourth birthday)	Vitamins A, C, and D (note that formula is not needed from 1 year)	10 µg (400 IU)

be used to obtain advice on safe use of medicines when breastfeeding.[21]

- Use appropriate resources for safe medicine use and prescribing during breastfeeding, such as the UK Drugs in Lactation Advisory Service, to enable continued breastfeeding.

Qualitative evidence included in the evidence review showed that the marketing of infant formula can influence parents' choices, leading to confusion about brand differences and perceptions of quality. Information and advice from healthcare professionals should be independent, non-commercial, and evidence based.

- Commissioners and service providers should ensure that healthcare professionals do not inadvertently promote or advertise infant or follow-on formula by displaying, distributing, or using any materials or equipment produced or donated by infant formula, bottle, and teat manufacturers, including, but not limited to, product samples, leaflets, posters, or charts.

It also showed that parents considering or starting formula feeding often felt unsupported and judged by health care professionals, and support and information was perceived as inconsistent or confusing.

- When discussing babies' feeding, if parents are thinking about introducing formula, support them to make an informed decision and offer information about how to maintain breast milk supply if they are planning to combination feed.
- If parents give formula milk, offer non-commercial, evidence based, consistent advice about safe and appropriate formula feeding practices, and direct them to additional non-commercial, evidence based, consistent sources and advice, such as:
  - NHS Start for Life advice on bottle feeding[22]
  - NHS Start for Life advice on mixed feeding[23]
  - NHS bottle feeding advice[24]
  - Better Health Start for Life and Unicef UK Baby Friendly Initiative Guide to bottle feeding[25]
  - NHS advice on when to introduce beakers and cups[26]
  - Schemes that offer advice and help to buy healthy food and milk (including Healthy Start, depending on eligibility)
- Also see the recommendations on formula feeding in NICE's guideline on postnatal care.[27]

Introducing solid foods (complementary feeding) for babies between six months and one year old

Solid foods should be introduced from around six months of age. Evidence included in the evidence review supports

Box 1 | Information about introducing solid foods (complementary feeding) for babies between six months and one year

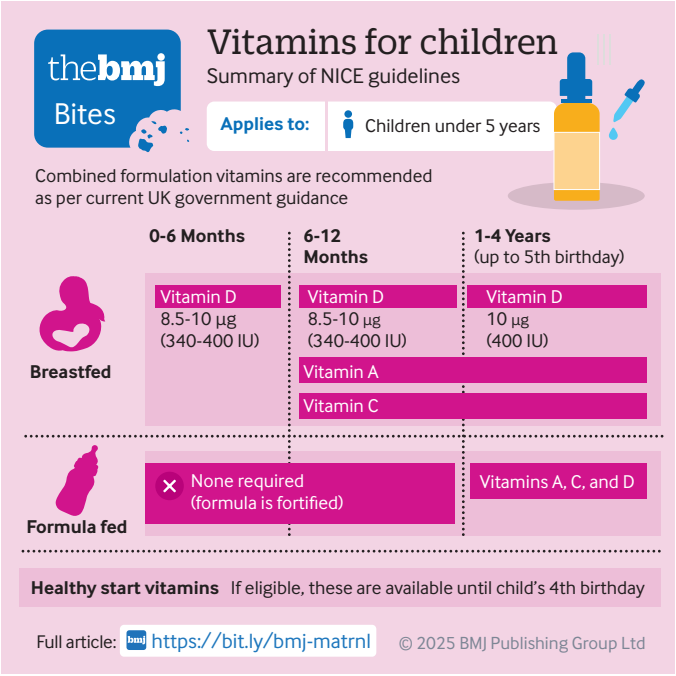
Topics to discuss

- When and how to introduce solid foods, which foods and drinks to introduce, and which to avoid
- The continuing role of breast milk, breastfeeding, and infant formula
- The importance of offering a variety of foods, flavours, and textures (not all sweet)
- The benefits of homemade foods (without adding sugar, salt, or sweetening agents), including nutrition, taste, and texture, and that commercial foods and drinks are not needed to meet nutritional requirements
- Responsive feeding, building up feeding frequency, and increasing the diversity of foods over time
- Introducing cups and beakers alongside solid foods
- Safety, including concerns about gagging and choking, not leaving a baby alone when they are eating or drinking, and safe and appropriate preparation of foods
- Introducing potentially allergenic foods, including egg and peanut products, in small amounts in age-appropriate forms alongside other solid foods, advice and reassurance about why this is important, signs of an allergic reaction, and what to do if symptoms occur
- Concerns such as mess and food waste
- The cost of healthy food and where to get support, including government and local schemes that offer advice and help to buy healthy food and milk (including Healthy Start, depending on eligibility) and income support schemes
- Being aware of potentially misleading information and marketing from commercial baby food companies that conflicts with UK government guidance (eg, age of introduction, hidden sugar content, and snack foods).

Box 2 | Information about healthy eating and drinking for children from 1-5 years

Topics to discuss

- The importance of a balanced and diverse diet, comprising three meals a day, two healthy snacks, and breast milk, water, or milk
- That formula milks are not needed, sweetened drinks should not be given, and fruit juice should be limited (no more than 150 mL per day). In addition, drinks given in cups and bottles with teats should be avoided
- That the UK government dietary recommendations as depicted in the Eatwell Guide apply from around 2 years[29]
- The benefits of homemade food (without adding sugar, salt, or sweetening agents)
- Ensuring that snacks offered between meals are low in sugar and salt (eg, vegetables, fruit, plain (not flavoured) milk, bread, and homemade sandwiches with savoury fillings)
- The importance of families eating together, and how parents and carers can set a good example through their own food choices
- Encouraging children to repeatedly handle and taste a wide range of vegetables and fruit at home and in early years settings
- Avoiding food-based rewards, and instead using, for example, stickers
- Being aware of potentially misleading information and marketing from commercial food companies that conflicts with UK government guidance (eg, hidden sugar content and pre-packaged snack foods)
- Concerns about the cost of healthy food and where to get support, including government schemes that offer advice and help to buy healthy food and milk (including Healthy Start,[30] depending on eligibility), free school meal schemes, local initiatives, and income support schemes



FUTURE RESEARCH

The guideline committee prioritised the following questions for future research:

- What is the clinical and cost effectiveness of digital technologies (eg, social media and online support groups) to increase the uptake of folic acid supplementation before and during the first 12 weeks of pregnancy?
- What is the safest and most effective dose for folic acid supplementation before and during the first 12 weeks of pregnancy for people at a high risk of conceiving a child with a neural tube defect or congenital malformation?
- What dose of vitamin D is appropriate during pregnancy for people with a body mass index that is within the overweight or obesity weight categories?
- What are the facilitators and barriers for safe and appropriate formula feeding in the context of poverty and food insecurity?

GUIDELINES INTO PRACTICE

- How do you encourage patients to access vitamins in your practice?
- Do you know where your local evidence based, non-commercial infant feeding services are and could you involve them in providing infant feeding support?

initiating discussions about this earlier on, with advice provided through antenatal or postnatal appointments, or online in group sessions by healthcare workers who discuss child nutrition.

- When discussing and giving advice on introducing solid foods, discuss the topics in box 1 and:
  - Provide independent, non-commercial, evidence based information in line with current UK government advice, and use printed or online resources (eg, Start for Life materials) to complement and reinforce the discussions
  - Take into account the family's circumstances and living conditions
  - Be culturally sensitive.

Healthy eating and drinking for children from 1-5 years

Healthy eating and drinking for young children is important for growth, development, and establishing lifelong healthy habits. Qualitative evidence highlighted that parents often find information conflicting and misleading but value evidence based resources. Healthy eating can be improved through personalised discussions and practical support, accessible resources, financial support schemes, and building parents' skills and confidence via group sessions.

- When discussing healthy eating and drinking with families, discuss the topics in box 2 and:
  - Provide independent, non-commercial, evidence based information in line with current UK government advice, and use printed or online resources (eg, Start for Life Feeding at 12 months and over)[28] to complement and reinforce the discussions
  - Take into account the family's circumstances and living conditions
  - Recognise that for some families, healthy eating could be the goal over a longer period of time
  - Be culturally sensitive.

Implementation

Key areas of implementation are improving healthcare practitioner awareness, utilising a combined clinical public health approach, and incorporating consistent advice into everyday practice. A whole systems approach to improve uptake of interventions should include high quality and highly visible information delivered in various formats to counteract contradictory messaging and misinformation. This could include strategies for non-commercially funded dissemination of information via social media, informative videos, and posters in health care settings.

However, multiple barriers to implement these recommendations in practice might be present. A shortage of trained personnel and lack of awareness of up to date, evidence based resources and guidelines could risk misinformation, or could contribute to overmedicalisation and overdiagnosis.[31] Training for providers is important to maintain skill and competencies, though outside the guideline's scope.

Identifying high risk groups, for example, people experiencing food insecurity, reduced health literacy, or other barriers to care affecting personal activation, and offering personalised approaches to ensure access to advice and uptake of appropriate interventions is important, though can be resource intensive.

Allocation of time for, and documentation of, discussions can be a challenge,[32] but education delivered consistently by all professionals supports health and might impact lifestyle choices. This could involve using effective communication tools including online options, practice templates, and signposting to suitable resources and recognised services utilising consistent and evidence based, non-commercial approaches to information on vitamin supplementation and nutritional advice.

Competing interests: None declared.

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EDITORIAL

Nutrition in pregnancy and the early years

Balancing evidence with everyday implementation

The National Institute for Health and Care Excellence (NICE) has published new UK guidelines on maternal and child nutrition,[1] at a time of growing recognition of the critical role of early life nutrition in long term health outcomes.[2 3] Optimal nutrition during pregnancy and early childhood has lasting effects on growth, development, and future health for both mother and her offspring.[4] The guidelines, summarised in a linked *BMJ* education article,[5] provide a comprehensive framework for healthcare professionals, aiming to improve nutrition during pregnancy and in children under 5 years by making recommendations related to vitamin supplementation, healthy weight in pregnancy, and optimal feeding practices in early childhood.

One challenge with the updated guidelines is the considerable responsibility placed on families—potentially exacerbating inequalities. Specifically, calls for homemade meals and reductions in processed food consumption are unrealistic for many families facing economic hardship or time constraints. These practical challenges risk reinforcing, rather than alleviating, health inequalities. In addition, many of the recommendations target population level public health goals, such as vitamin supplementation and fostering a healthier eating environment, rather than interventions that healthcare professionals can implement. Without a supportive policy, the balance for families and care providers between ideal evidence based care and feasibility has not been realised.

Persisting workforce shortages are a serious problem. The promotion of healthy eating in pregnancy and early childhood is an important goal, but with mounting pressure on health and education systems,[3] multidisciplinary coordination is constrained.

For guidelines to be actionable policy must address the reality faced by families

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Early years settings also present an opportunity to promote healthy eating and foster a positive relationship with food, and, accordingly, national guidelines exist to support these goals.[8] A case study published in 2024 assessed food procurement in 20 schools and early years settings across Yorkshire, England. It reviewed literature, policies, and menus and interviewed 16 stakeholders working in early years nutrition. The case study found that, despite nutrition being part of the curriculum, a lack of leadership and limited funding prevented good nutrition in these settings, exacerbated by workforce shortages, weak governance, and lack of political will for improvement.[9]

From September 2025, the statutory welfare requirements for the early years foundation stage (encompassing all children in England from birth to 5 year olds) are expected to include nutrition guidance.[8] If this guidance is adequately funded and supported, it should facilitate the implementation of the NICE recommendations related to food provisions.

Overcoming challenges to implementation

To maximise uptake of the NICE guidelines, there should be a public health programme, including health promotion and education, with a secure and adequately funded health visiting workforce, structural public health interventions, such as universally available supplements free on request, and free healthy food in early years settings. Although difficult to achieve and standardise in practice, successful outcomes can be obtained, as demonstrated by a UK case study where obesity prevalence among children in reception fell by 7-11% after the introduction of universal free school meals across four London boroughs.[11]

Many of the NICE recommendations align with international guidance from the World Health Organization (WHO) and Unicef, including guidelines on exclusive breastfeeding and healthy weight gain.[12] Regular infant weighing and guidance on complementary and healthy feeding are also widely applicable, though monitoring standards vary across countries.[13 14] NICE recommendations on folic acid supplementation both before conception and throughout pregnancy, and vitamin D supplementation during and after pregnancy, broadly align with WHO's recommendation for multiple micronutrient supplementation.[15] Despite strong evidence,[16] nearly 75% of women in the UK do not take folic acid preconceptionally and nearly half of pregnancies are unplanned,[17 18] highlighting a missed opportunity for public health intervention.

Although the NICE guidelines provide clear recommendations on vitamin supplementation tailored to women and children in the UK, meaningful improvements in early years nutrition requires more than guidance. For the NICE guidelines to be equitable, actionable, and impactful, they must be supported by broader structural reform and policy changes that reflect the everyday realities of families in the UK.

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EDITORIAL

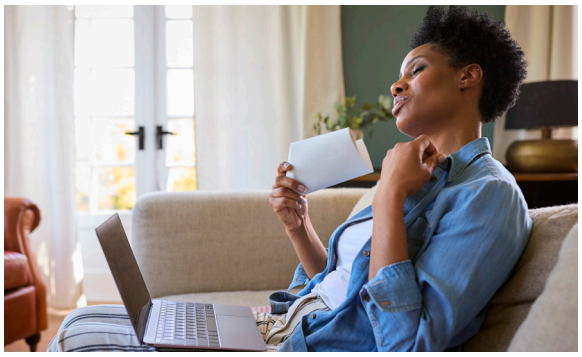
Menopause NICE guidelines are missing nuance

Treatment requires a personalised approach

When women reach the menopause, they can face difficulties in accessing good advice about management of their symptoms. To tackle the lack of a consistent approach to care, the first National Institute for Health and Care Excellence (NICE) guideline on identifying and managing menopause was published in 2015, and updated in 2024.[1] The overall conclusion remains that for most people with symptoms that arise from a lack of oestrogen, such as flushes and sweats, the benefits of hormone replacement therapy (HRT) outweigh the risks.

The update provides more guidance on the impact of different regimens and routes of administration on the long term effect of HRT, particularly for conditions such as venous thrombosis, cardiovascular disease, and breast and endometrial cancers. A welcome update is the incorporation of cognitive behavioural therapy (CBT) as an alternative for those who cannot or do not want to use HRT for vasomotor symptoms, depressive symptoms, or sleep problems. The evidence is currently strongest for people with a history of breast cancer for whom HRT is usually discouraged.[2 3]

Clinicians value NICE guidelines for their objective consideration of the body of evidence rather than individual studies. However, current clinical practice is increasingly shaped by social media and advocacy, often based on anecdote instead of robust evidence. As a result, women's expectations for certain treatments can outpace the established evidence base, making it essential for NICE guidance to remain responsive to these evolving influences while maintaining its commitment to rigorous, evidence driven recommendations. An example is the widespread use of high dose oestrogen—for which there is a lack of evidence on safety and effectiveness. With growing public interest in menopause treatments, often led by celebrities, many women now believe that higher oestrogen doses are essential for successful treatment even though there is little evidence for efficacy or safety compared with standard doses. This was outside the guideline's original scope, but we urge NICE to start considering current matters that are of considerable importance to women and their healthcare professionals.



There is a lack of evidence for use of high dose oestrogen despite growing public interest

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Oversimplification

Another area of importance is the type of progestogen used in HRT. Many women are convinced that progesterone is safer than synthetic progestogens and has no adverse effects because it is structurally the same as the ovarian hormone. Both progesterone and synthetic progestogens are used in HRT to prevent thickening of the endometrium caused by oestrogen. Both can have side effects. However, progesterone may differ from some synthetic progestogens in its effects. Combined HRT increases risk of breast cancer compared with no HRT or oestrogen used alone. Some studies suggest, however, that combined HRT containing natural (or body identical) progesterone could have a lower risk of breast cancer than HRT containing synthetic progestogen.[4-6] The guideline discusses this but considers the evidence strong enough to conclude only that the risk of breast cancer is increased by all combined HRT. It does not acknowledge the possibility that progestogen type might affect risk.

Although the NICE guideline updates are carefully undertaken, the current recommendations present a more simplified and cautious perspective than the evidence might warrant. Some of the recommendations reflect public health considerations rather than the individual clinical needs of menopausal people. An example is the role of HRT in primary and secondary prevention of cardiovascular disease. NICE guidelines advise against this. Controversy arises because strong evidence exists that HRT initiated around the time of natural menopause may reduce the incidence of this leading cause of death in women.[10-14] Much of the debate is around the statistical analysis of the data: US statisticians analyse it using different methods from those in the UK. NICE guideline users might be unaware of this when considering HRT for menopausal symptoms, and it would be helpful for patients and clinicians to understand that any potential cardiovascular benefit is uncertain and contingent on factors such as age, regimen, and proximity to menopause onset.

In our extensive experience of menopause care, women appreciate open, informed discussions about what is both known and unknown, and they understand the concept of uncertainty. Future guideline recommendations should explicitly acknowledge areas of uncertainty in the data and reflect current clinical questions rather than focusing only on public health and statistical analysis.

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WHAT YOUR PATIENT IS THINKING

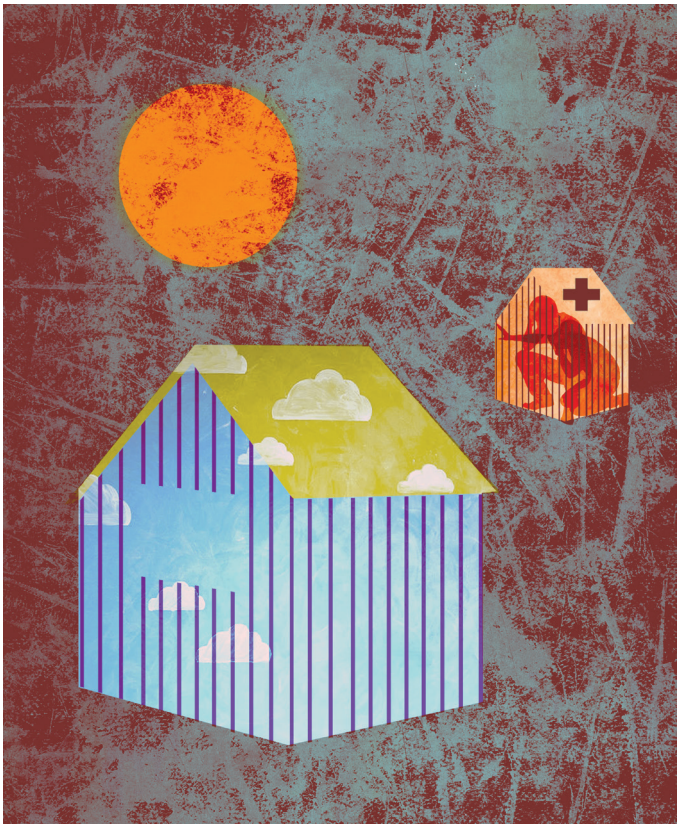
Living in a prison with no bars

Raymond Kay

describes living with agoraphobia and how he might be better supported in healthcare settings

CPD READING

0.5 HOURS



PRIYA SUNDRAM

I first experienced agoraphobia more than 40 years ago, when I had a choking sensation that led me to feeling dizzy. Everything around me seemed unreal and I had a desperate need to get home. One symptom triggered another until I was in a full blown anxiety attack. I had experienced some of the symptoms of a panic attack before, but this one felt different. In the years since my diagnosis, many situations (for example, trying to step out of my physical or emotional comfort zone) have led to this outcome.

Agoraphobia feels like living in a prison with no bars. I am constantly having to explain why I can't do things as others can, and no one seems to understand what I am saying. Dealing with the loneliness and isolation is the hardest part. I have no control over the fear and it gets worse and worse until I am facing complete panic. This comes with muscle cramps which make me feel I can't move, exacerbating the fear and symptoms. Many people don't realise how powerful the brain can be in producing physical sensations.

Impact of fear

Stepping into a hospital or healthcare setting is very challenging. Being alone in a busy area is my greatest trigger, and makes me feel I have no escape. Just being there pushes me out of my comfort zone, and that's before you factor in the uncertainty and anxiety around being unwell.

I was recently taken to hospital because of a kidney infection. I was asked to have a scan, and said I was willing to try this on the condition that if I felt anxious during the process and called for help, I would be taken out of the scanner straight away. During the scan I began to feel the start of an anxiety attack. I called for help, but I was told that the scan was going to take longer. While still in the machine I experienced distressing flashbacks, and by the time I got out I was having a full blown panic attack. I wish I had been given the opportunity to have a conversation with those doing the scan before I was in the machine. I could have explained how I needed them to respond if I needed the scan to stop.

Instead, they started to physically restrain me by holding my arms, which led my anxiety to escalate to a level I had never experienced before. It felt like no one knew how to deal with a panic attack or how they could enable me to manage it. The next day the doctor in charge came and apologised for what took place. Having this acknowledgment really helped me to have a conversation about what happened, and what could be done to ensure staff were more aware of how they could help if this happened again.

Helping someone cope

I would like healthcare professionals to know that being in a healthcare setting can be very challenging for some people. My experience makes me worry that I might be restrained again during a panic attack. I find feeling alone or isolated to be very distressing, and simply knowing there is someone around can help me feel more able to cope. It would be helpful to have a named health professional who knew of my agoraphobia, with whom I could share what might make my experience easier. Knowing where I could access a space in the hospital that felt safe would enable me to manage my agoraphobia symptoms.

I want others to know that agoraphobia is so much more than a fear of open spaces. I wish people had a better understanding of how to support individuals with the condition. With the correct help, support, and treatment a better quality of life and coping mechanisms can be achieved.

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Cite this as: *BMJ* 2025;390:r1112

WHAT YOU NEED TO KNOW

- Agoraphobia can be hugely debilitating
- Attending a healthcare setting can be very challenging for some people who have the condition
- Helping patients feel they are not alone can enable them to manage the symptoms

EDUCATION IN PRACTICE

- What support could you give a patient experiencing agoraphobia in a healthcare setting?
- When could you have a conversation with a patient experiencing agoraphobia about what might trigger it?