

# education

**FROM THE JOURNALS** Edited highlights of weekly research reviews on <https://bit.ly/2PLtl8>

## Anticoagulation in the time of covid

During the covid-19 pandemic, patients on warfarin have struggled to get routine international normalised ratio (INR) checks. In my practice, we have taken the opportunity to review the indications for their anticoagulation and reviewed their options, which usually amounts to deciding between warfarin or a direct oral anticoagulant (DOAC). The risk of osteoporotic fracture with anticoagulant use is one factor in decision making. In this timely study, DOAC use was associated with a lower risk for osteoporotic fractures than warfarin use when prescribed for patients with atrial fibrillation. There was no evidence of a significant difference in osteoporotic fracture risk between the DOACs (apixaban, dabigatran, and rivaroxaban), although the study was only powered to rule out more than a twofold higher or a 50% lower relative risk. There was no difference between men and women. The study was observational, so plenty of scope for confounders.

• *Ann Intern Med* doi:10.7326/M19-3671



rising to 38% after one reminder and 38.2% with two or three reminders. The gains with two reminders are small but significant. In our “new normal” digitally souped-up UK primary care system, sending repeated texts to patients is no problem.

• *JAMA Intern Med* doi:10.1001/jamainternmed.2020.1602

## Minimising infection risk by shortening care schedules: radiotherapy for breast cancer

The covid-19 pandemic has focused attention on delivering shorter treatment schedules to minimise risk of infection for patients and healthcare professionals. This important five year FAST-Forward trial shows that giving shorter fractionation schedules of adjuvant radiotherapy to low risk patients with early breast cancer after surgery is non-inferior in terms of local cancer control and is as safe as an international standard. This FAST-Forward schedule could become preferable to accelerated-partial breast radiotherapy, but long term outcomes and sub-analyses of other accelerated-partial breast radiotherapy trials are awaited.

• *Lancet* doi:10.1016/S0140-6736(20)30932-6

## Lung damage with covid-19

Around 15% of individuals with covid-19 develop severe disease, and 5-6% become critically ill and have a high mortality. But what exactly is the cause of death? In this small, single centre case series of 10 serial postmortem examinations in Germany, the patients' median age was 79 years and SARS-CoV-2 was still detectable in the respiratory tracts of all patients. Diffuse alveolar damage, similar to that seen in SARS and MERS, was the main cause of death, whether the patients had been ventilated or not. Criteria for true myocarditis weren't met, although inflammatory changes in heart and liver were common.

• *JAMA* doi:10.1001/jama.2020.8907

## Flu vaccinations: getting the number of reminders right

By the time we emerge from the covid-19 crisis, it will probably be seasonal flu time—or perhaps they'll overlap. So any research about how to optimise flu vaccination uptake is welcome. This large and well designed randomised controlled trial found that 37.5% of those eligible had a flu vaccination with no reminder,

## Pieces of a giant jigsaw

The lungs of people who die from covid-19 show signs of vascular angiogenesis that are not present in the lungs of people who have died from equally severe influenza virus infection. Progressive respiratory failure is the primary cause of death in covid-19, but relatively little is known about the morphologic and molecular changes that occur in peripheral lungs. This series examined lung tissue from seven people who died from covid-19 compared with seven samples from people who had died from acute respiratory distress syndrome (ARDS) secondary to influenza A (H1N1) and 10 age-matched, uninfected controls. Whether this finding is common, important, or clinically useful remains to be seen.

• *N Engl J Med* doi:10.1056/NEJMoa2015432



Ann Robinson is an NHS GP and health writer and broadcaster

# Covid-19 and cardiovascular disease

Shivali Fulchand

This series signposts clinicians to published guidance on covid-19.

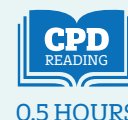
Key recommendations from highlighted guidelines are presented by *The BMJ's* editorial team in abbreviated form.

For full recommendations and details, please see the full version of the guideline

**Guideline: Diagnosis and management of cardiovascular disease during the covid-19 pandemic**

Published by the European Society of Cardiology.

This summary is based on the version published on 21 April 2020 (<https://www.escardio.org/Education/COVID-19-and-Cardiology/ESC-COVID-19-Guidance>)



## Why is the guideline needed?

Based on the evidence so far, cardiovascular risk factors and heart conditions are thought to increase the risk of poor outcomes from covid-19. Covid-19 may also be a risk factor for the development of cardiovascular disease.

The UK Government guidelines place individuals with chronic heart disease, such as heart failure, in the “clinically vulnerable” group, and therefore should only leave home for essential needs.

## How was the guideline developed?

The guideline was developed by a Europe-wide “group of experts and practitioners” who have cared for patients with cardiovascular conditions and covid-19.

A full list of authors and reviewers of the guidance is available in the guideline, but full details of the guideline methodology, including information on patient and public involvement, are not included.

Competing interests of the guideline authors or reviewers are not stated.

The organisation presents this as a “guidance document” rather than a “guideline,” as recommendations are based on limited evidence, observation, and anecdote.

The guidance remains valid only for the duration of the pandemic, and should not supersede local or national guidance.

## What are the key recommendations?

### Inpatient attendance

- If cardiology assessment or intervention is considered urgent (eg, assessment in the emergency department, ST-elevation myocardial infarction, or pacemaker insertion), care should not be delayed. The patient should be considered positive for covid-19 until proved otherwise and appropriate personal protective equipment measures taken. Full details of the level of protection according to risk status of the patient are provided within the guidance.

### Diagnosis of cardiovascular conditions

- Biomarkers such as cardiac troponin T/I concentrations, B-type natriuretic peptide (BNP), and N-terminal B type (NT-proBNP) may be elevated in covid-19 patients, similar to their rise in other viral pneumonias. Without clinical symptoms or changes on ECG, mild elevations do not need further investigation, as these may be due to pre-existing cardiac conditions or acute illness.
- Marked elevation of cardiac troponin T/I has been shown to indicate poor prognosis in covid-19, which has led to consideration of the biomarker for prognostication. However, this is not currently recommended in practice as evidence is limited.
- No specific changes on ECG have been described for infected

patients, and the ECG diagnostic criteria for cardiac conditions are therefore unchanged.

- Patients with suspected or confirmed covid-19, who are also at risk of cardiogenic shock (eg, large acute myocardial infarction or acute decompensated heart failure) should be identified early, and sepsis and myocarditis should be considered.

### Management

- Patients with chronic coronary syndromes should continue to take aspirin for secondary prevention.
- Treatment for acute heart failure should be the same for all patients, regardless of infection status.
- No changes are recommended to the treatment of hypertension, unless a patient becomes acutely unwell. If a patient with hypertension is hospitalised and tests positive for covid-19, plasma potassium should be monitored. This is because of the increased risk of arrhythmias from hypokalaemia.
- In patients with haemodynamic instability, intravenous amiodarone is the anti-arrhythmic medication of choice. However, there is a risk of QT prolongation if used in combination with hydroxychloroquine or azithromycin, and this should be weighed up with the benefits, if used together.

## Anything else?

- Despite original concerns that angiotensin-converting enzyme inhibitors or angiotensin receptor blockers (ARBs) might increase susceptibility to severe infection, two large studies published this month found this not to be the case. Therefore, these medications should not be discontinued unless the patient acutely deteriorates.
- Current experimental treatments for covid-19 may have cardiac side effects, but these are not fully reported yet. The recommendations within the guideline are based on preliminary information that is rapidly evolving.

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# Is surveillance colonoscopy necessary for all patients with bowel polyps?

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This is one of a series of occasional articles that highlight areas of practice where management lacks convincing supporting evidence. The series adviser is David Tovey, editor in chief, the *Cochrane Library*. This paper is based on a research priority identified and commissioned by the National Institute for Health Research's Health Technology Assessment programme on an important clinical uncertainty. To suggest a topic for this series, please email us at [uncertainties@bmj.com](mailto:uncertainties@bmj.com).



**Bowel cancer affects about 42 000 people in the UK annually with around 16 000 deaths.<sup>1</sup> It can be prevented by removing adenomatous and serrated polyps, the main precursors.<sup>2</sup> Some patients remain at increased risk after polypectomy, and guidelines recommend such patients undergo surveillance by colonoscopy for prevention and early detection of bowel cancer.<sup>3-5</sup>**

In the UK, post-polypectomy surveillance accounts for 20% of colonoscopies, placing great pressure on endoscopy resources.<sup>6</sup> Colonoscopy carries a small risk (<0.5%) of serious complications, including bowel perforation and severe bleeding.<sup>7,8</sup> It is therefore vital to minimise the number of surveillance colonoscopies performed unnecessarily in patients unlikely to develop bowel cancer after polypectomy, while ensuring that patients at increased risk receive surveillance.

Recently updated guidelines in the UK recommend a one-off surveillance colonoscopy at three years in patients deemed at high risk of bowel cancer post-polypectomy (see box of high risk criteria).<sup>3</sup> These updated guidelines incorporate new data on the long term risk of bowel cancer after polypectomy. However, uncertainty remains around the natural history of serrated polyps and diminutive ( $\leq 5$  mm) adenomatous polyps, and whether patients with such polyps require surveillance colonoscopy.

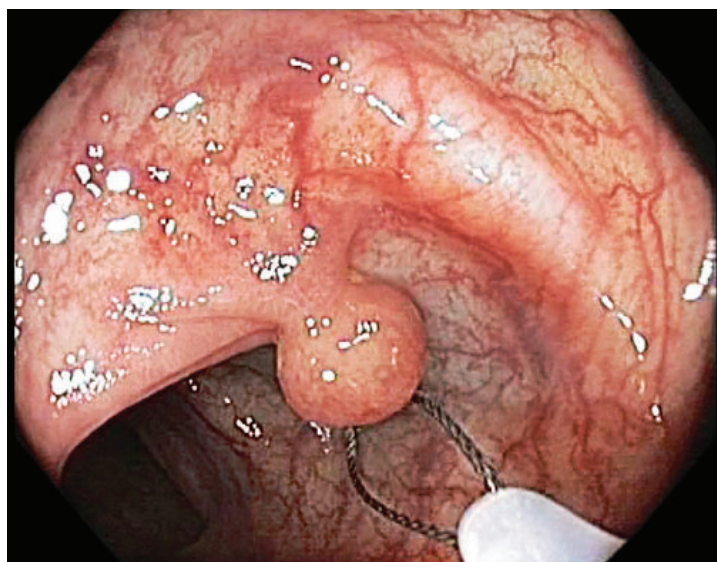
## HOW PATIENTS WERE INVOLVED IN THIS ARTICLE

A patient reviewed this article for *The BMJ*. She shared that patients may have concerns about the risks in having colonoscopies as well as the degree of unpleasantness and discomfort. Patients want to be able to weigh these against the risk of not having surveillance colonoscopies and the possibility of cancer. We amended relevant sections of the article to reflect these concerns and how doctors can involve patients in decision making.

## WHAT YOU NEED TO KNOW

- Surveillance colonoscopy is advised in some patients who have had bowel polyps detected and removed to prevent future development of bowel cancer
- There is a lack of data on long term bowel cancer risk after polypectomy and uncertainty remains regarding whether certain patients with polyps require surveillance (such as those with multiple diminutive ( $\leq 5$  mm) adenomas)
- Surveillance colonoscopy is burdensome on endoscopy services and carries a small risk (<0.5%) of serious complications, including bowel perforation and severe bleeding

Endoscopic view of polypectomy of a hyperplastic polyp in the colon



GASTROLAB/SPL

## High risk criteria for future bowel cancer after polypectomy (2019 UK surveillance guidelines<sup>3</sup>)

- $\geq 2$  adenomas or serrated polyps, at least one of which is "advanced" (adenoma  $\geq 10$  mm diameter or with high grade dysplasia, serrated polyp  $\geq 10$  mm or with dysplasia)
- $\geq 5$  adenomas or serrated polyps



## What is the evidence of uncertainty?

### Data on long term post-polypectomy bowel cancer risk

Four studies estimated post-polypectomy bowel cancer risk in the absence of surveillance and compared it with bowel cancer risk in the general population, which is essential in determining the need for surveillance.<sup>9-12</sup> The evidence ranges from low to moderate quality (see [bmj.com](http://bmj.com) for details). Patients with multiple adenomas or an adenoma with advanced features (such as  $\geq 10$  mm diameter, with tubulovillous or villous histology, or high grade dysplasia) are noted to have a higher bowel cancer risk than the general population after polypectomy.<sup>9-12</sup> In two of the studies, patients with an adenoma with advanced features had a four times greater bowel cancer risk than the general population in the absence of surveillance.<sup>9,10</sup> In contrast, patients with one or two small ( $<10$  mm) adenomas do not seem to be at increased risk of bowel cancer after polypectomy. This is corroborated by three long term studies published in 2020.<sup>13-15</sup>

In the other studies, it is likely that surveillance affected cancer outcomes; however, this is not clear because the intensity of surveillance was often not reported. In addition, small sample sizes and short follow-up periods resulted in imprecise risk estimates.

### Benefit of surveillance on bowel cancer risk

Few studies have examined the effects of surveillance on post-polypectomy bowel cancer risk.<sup>10-12</sup> In one study, surveillance was associated with a reduction in bowel cancer risk among patients with adenomas  $\geq 10$  mm diameter or with tubulovillous or villous histology or high grade dysplasia, but not among patients with small ( $<10$  mm) tubular adenomas.<sup>10</sup> However, there were few cancers diagnosed, and estimates were imprecise. In our recent, retrospective, population based study in the UK, a single surveillance visit reduced post-polypectomy bowel cancer risk by 40-50% across patients.<sup>12</sup> However, for two thirds of these patients, bowel cancer risk was no higher than in the general population without any surveillance.



**Colonoscopy with an endoscope**

### Knowledge gaps in surveillance guidelines

Recent UK, European, and US surveillance guidelines<sup>3-5</sup> recommend surveillance in patients at high risk in keeping with the available evidence (see table).

For patients with one or two small ( $<10$  mm) adenomas or serrated polyps, UK and European guidelines do not recommend surveillance but encourage participation in national bowel cancer screening programmes, whereas the US guidelines recommend surveillance at an extended interval.

The guidelines consider serrated polyps to carry equivalent risk to adenomas, although there is a lack of data on the longitudinal outcomes of these lesions. Uncertainty also surrounds the natural history and management of diminutive ( $\leq 5$  mm) adenomas, which are being diagnosed more commonly due to improvements in adenoma detection rates and endoscopes.<sup>16</sup> It is possible that we are classifying patients with multiple diminutive adenomas as high risk when these adenomas might be clinically unimportant.

UK, European, and US surveillance recommendations for patients with polyps			
	UK guidelines <sup>3</sup>	European guidelines <sup>4</sup>	US guidelines <sup>5</sup>
1-2 adenomas or serrated polyps $<10$ mm	Return to routine screening*	Return to routine screening†	Surveillance at 7-10 years for adenomas Surveillance at 5-10 years for serrated polyps
3-4 adenomas or serrated polyps $<10$ mm		Surveillance at 3 years for adenomas Return to routine screening for serrated polyps†	Surveillance at 3-5 years
$\geq 5$ adenomas or serrated polyps $<10$ mm	Surveillance at 3 years		Surveillance at 3 years (for 5-10 adenomas / serrated polyps)
Adenoma $\geq 10$ mm or with high grade dysplasia, or serrated polyp $\geq 10$ mm or with any dysplasia	Return to routine screening if total number of adenomas/serrated polyps is 1* Surveillance at 3 years if total number of adenomas/serrated polyps is $\geq 2$	Surveillance at 3 years	Surveillance at 3 years
Adenoma with tubulovillous or villous histology	Return to routine screening*	Surveillance at 3 years	Surveillance at 3 years
$\geq 10$ adenomas	Surveillance at 3 years	Genetic counselling	Surveillance at 1 year (for $>10$ adenomas)

\*Patients should participate in the bowel cancer screening programme (BCSP) when next invited. In England, Northern Ireland, and Wales, the BCSP invites people aged 60-74 years to undergo screening with the faecal immunochemical test (FIT); in Scotland, people aged 50-74 years are invited.

†Patients should participate in their national bowel cancer screening programme 10 years after baseline colonoscopy.

## RECOMMENDATIONS FOR FURTHER RESEARCH

Studies examining long term bowel cancer risk after polypectomy are needed to understand more clearly which patients with polyps require surveillance and how often. Research is especially needed on the risk of bowel cancer after removal of serrated polyps and multiple diminutive adenomas. The role of the faecal immunochemical test (FIT) and other biomarkers in surveillance needs to be examined.

The following recommendations would help improve the quality and usefulness of future research; studies should:

- Be large enough to obtain sufficient case numbers and provide precise estimates
- Have adequate follow-up to assess cancer risk and surveillance benefit (~10-15 years)
- Ensure all study participants have a high quality colonoscopy at baseline
- Compare the risk of bowel cancer among study participants with that in the general population
- Perform analyses in the absence of surveillance to estimate long term outcomes after polypectomy and determine the need for surveillance
- Perform analyses in the presence of surveillance to determine the effectiveness of surveillance

## WHAT PATIENTS NEED TO KNOW

- If you are found to have bowel polyps, a surveillance colonoscopy might be recommended after the polyps have been removed
- These surveillance exams can prevent bowel cancer from developing or detect it at an early stage
- Colonoscopy carries a small risk (<0.5%) of serious complications, including bowel perforation and severe bleeding. The procedure can also be unpleasant or uncomfortable for some patients
- There is some uncertainty around which patients with bowel polyps require surveillance and how often
- Evidence indicates that patients with 1-2 small (<10 mm diameter) polyps do not have a higher risk of bowel cancer than the general population after polyp removal. If this applies to you, your doctor may advise routine bowel cancer screening instead of surveillance colonoscopy. This screening usually involves a stool-based test that can be done at home
- Some patients with large ( $\geq 10$  mm diameter) polyps or polyps with precancerous changes remain at increased risk of bowel cancer after polyp removal and would benefit from surveillance colonoscopy
- Discuss your preferences and concerns about colonoscopy with your GP. If you do not need or wish to undergo surveillance colonoscopy, it is still important that you participate in routine bowel cancer screening and report promptly any symptoms to your GP such as rectal bleeding or blood in the stool, a persistent change in bowel habit (such as looser, more frequent stools), abdominal pain, or unexplained weight loss

## EDUCATION INTO PRACTICE

- What factors will you consider when deciding whether to offer surveillance colonoscopy to patients with bowel polyps?
- How will you communicate the risks and benefits of surveillance colonoscopy to patients?

## Is ongoing research likely to provide relevant evidence?

We searched ISRCTN, ClinicalTrials.gov, and the PROSPERO database to identify ongoing research on post-polypectomy surveillance. We identified the EPoS (European Polyp Surveillance) trials, which have randomised 13 746 patients with one or two adenomas <10 mm diameter to surveillance at five and 10 years, or at 10 years only (EPoS I); and 13 704 patients with three to 10 adenomas or an adenoma  $\geq 10$  mm, with high grade dysplasia, or with villous histology to surveillance at three, five, and 10 years, or at five and 10 years only (EPoS II).<sup>17</sup> Alongside this trial, an observational study will be conducted on people with serrated polyps undergoing surveillance at five and 10 years; bowel cancer risk will be assessed after 10 years (EPoS III).<sup>17</sup> EPoS I and II will help determine optimal surveillance intervals while EPoS III will provide vital data on the long term outcomes of serrated polyps. The FORTE (Five OR Ten Year Colonoscopy for 1-2 Non-advanced Adenomas) trial, similar to EPoS I, is in the planning stages in the US.<sup>18</sup>

## What should we do in the light of the uncertainty?

We recommend following national guidelines when deciding whether a patient with bowel polyps needs surveillance after polypectomy (table). In a resource-limited setting and considering the risks of colonoscopy, surveillance should ideally be reserved for patients at increased risk of bowel cancer after polypectomy compared with the general population.<sup>3</sup>

Patients may have concerns about colonoscopy relating to the unpleasantness or inconvenience of bowel preparation, anticipated discomfort or pain, or embarrassment.<sup>19</sup> Other patients might find a surveillance colonoscopy reassuring and feel protected against bowel cancer.<sup>20</sup> It is important to discuss the risks and benefits of surveillance colonoscopy with patients. Encourage them to voice their wishes, preferences, and concerns, and involve them in decision making.

Encourage patients at low risk of bowel cancer to participate in their national screening programme, which typically involves the stool-based faecal immunochemical test. Advise them to promptly see their GP if they experience symptoms such as rectal bleeding or blood in the stool, a persistent change in bowel habit (such as looser, more frequent stools), abdominal pain, or unexplained weight loss.<sup>21</sup>

Competing interests: None declared.

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Find the full version with references at <http://dx.doi.org/10.1136/bmj.m1706>

## WHAT YOUR PATIENT IS THINKING

# It felt like I was living in a fog



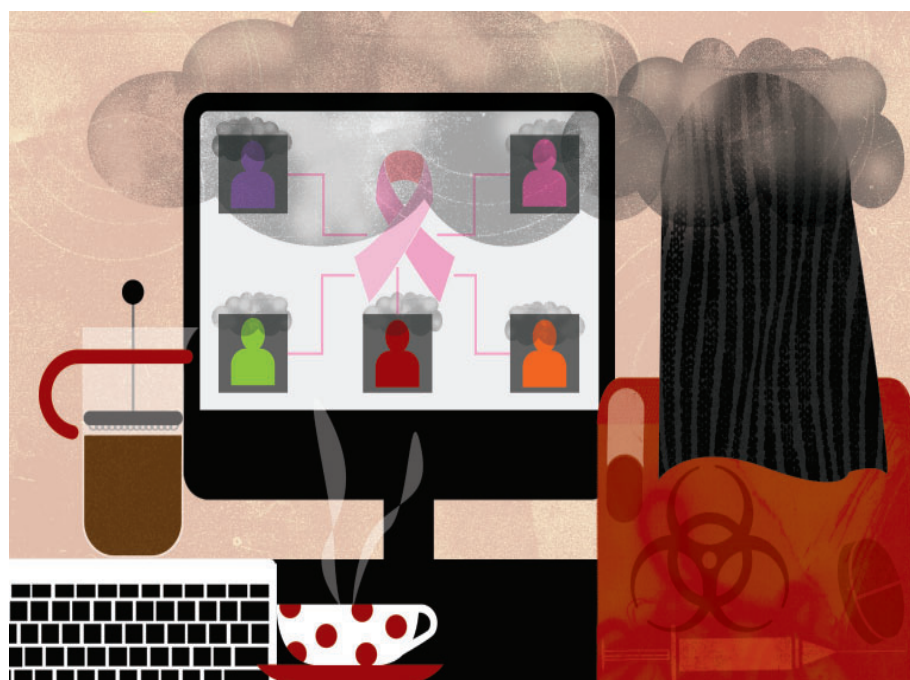
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**Elizabeth Lerner Papautsky** shares the impact that “chemo brain” had on her life and how this unexpected side effect of chemotherapy was the most challenging for her to manage

**A**fter I started chemotherapy, I spent several days feeling like a zombie. As I received more treatments, I was in an ever present haze. Sometimes I couldn't concentrate enough to read or watch television, let alone work. I became over-stimulated in noisy and crowded places. I had difficulty carrying on a conversation with several people at the same time. I tried to manage by doing the more complex tasks in the morning, then focusing on simpler tasks in the afternoon. I also started to avoid public places, including not taking my children to activities and birthday parties. I might have been more prepared for making these sacrifices had I known about “chemo brain” before starting chemotherapy.

### WHAT YOU NEED TO KNOW

- Eliciting and considering the life context, goals, and preferences of patients can help ensure they get information tailored to their needs during chemotherapy
- Discussing chemo brain with patients before treatment can help them to prepare and plan logistically and psychologically, and this should be ongoing throughout treatment
- Suggesting strategies, such as doing more challenging tasks in the morning, can help patients navigate their lives more effectively during treatment



ROSE LLOYD

### I might have been more prepared for making these sacrifices had I known about “chemo brain” before starting chemotherapy

#### Fighting the unknown

Chemo brain, also known as brain fog or chemo related cognitive impairment, was a devastating and debilitating side effect of chemotherapy for me. Before starting treatment for breast cancer, I received chemotherapy education in a face-to-face appointment. At that time I was also given a thick packet of information on what to expect. The side effects covered were primarily physical. They included nausea, fatigue, and hair loss. Cognitive side effects, such as chemo brain, were not mentioned.

Without this information, the fog associated with chemo brain was unexpected. I couldn't manage my expectations of how I was going to function while undergoing treatment or how I would deal with treatment within the context of my life—family, job, goals. And because I wasn't prepared for chemo brain, I fought it. I mourned the loss of having a clear mind. I thought that if I tried harder or drank more coffee maybe it would get better. I even thought that I was imagining it.

#### Managing realistic expectations

I started to look for information about brain fog by googling my symptoms and the side effects of chemotherapy. I looked at websites for people with cancer, and at the latest research in the area regarding side effects of

### EDUCATION IN PRACTICE

- How can you ensure that you inform patients of the cognitive and psychological aspects of treatment, as well as the physical ones?
- How can you create opportunities for patients to discuss their challenges and concerns before, during, and after treatment?
- How could you support a continued conversation with patients throughout treatment on how they are coping and any challenges they are facing?

chemo. Finally, I connected with a community of other women who were undergoing or had undergone chemotherapy for breast cancer. I learnt that, although people might experience chemotherapy in different ways, many will be affected by chemo brain.

I wish my health professionals had created opportunities to discuss the impact of chemotherapy before treatment began, as well as during and after. Just acknowledging chemo brain as a common side effect during and after treatment would have helped. Being able to manage expectations of what I could or could not do while receiving treatment would have allowed me to more effectively plan the life adjustments needed, including taking leave from work and arranging lifts to my treatments. It would have helped me feel more in control of my life and empowered about my care.

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Cite this as: *BMJ* 2020;369:m923



# Losing weight following diagnosis of type 2 diabetes boosts chance of remission

The study

## Behaviour change, weight loss and remission of Type 2 diabetes: a community-based prospective cohort study

Dambha-Miller H, Day AJ, Strelitz J, et al

*Diabet Med* 2019. doi:10.1111/dme.14122

### Why was this study needed?

Around one in 10 adults over 40 in the UK has been diagnosed with type 2 diabetes. This has been fuelled by the rise in rates of obesity. Diabetes UK estimates that in addition to the 3.8 million adults who have been diagnosed with type 2 diabetes, a further one million have the disease without knowing it. Diabetes and its complications, including kidney failure, loss of sight, and lower limb amputations, cost the NHS £6 billion every year.

Previous studies have shown that remission of

type 2 diabetes, without medication or surgery, is achievable through intensive low calorie diets and behaviour change in those who have lived with diabetes for some years. Many of these studies have also been relatively short.

The present study looked at whether a more moderate approach could achieve remission over the longer term, and whether a window of opportunity exists following diagnosis when weight loss interventions may be both effective and acceptable.

### What did this study do?

This was a prospective cohort study of 867 people, aged 40 to 69, who were newly diagnosed with diabetes. Participants had been enrolled in the ADDITION-Cambridge randomised controlled trial, from 49 GP practices in the east of England between 2002 and 2006. The trial randomised participants into an intervention group, who received additional support, or the control “usual care” group. This

cohort study pooled data from both groups to look at who achieved remission during five years of follow-up.

Participants’ weight, physical activity, diet, and alcohol consumption at baseline and one year were assessed. At five year follow-up, 730 people (84%) had weight and HbA<sub>1c</sub> measures taken. The participants were predominantly white.

### What did it find?

- Diabetes remission, defined as an HbA<sub>1c</sub> level of less than 48 mmol/mol (6.5%) in the absence of any diabetes medication or bariatric surgery, was achieved in 257 participants (30%) at five year follow-up.
- People who lost at least 10% of their body weight in the first year after diagnosis of diabetes were more likely to achieve remission at five years compared with those with stable or increased weight (risk ratio 1.77, 95% confidence interval 1.32 to 2.38).
- Similar trends were observed in those who had more modest weight loss of 5% to 10% over the first year after diagnosis, but this was not statistically significant.
- In the subsequent four years (ie, between the end of the first year and the end of the five year study), achieving at least a 10% weight loss was associated with more than double the chance of remission at five year follow-up (risk ratio 2.43, 95% confidence interval 1.78 to 3.31).

### What does current guidance say on this issue?

Guidelines from the National Institute for Health and Care Excellence (NICE NG28, updated 2019) state that people diagnosed with type 2 diabetes should receive personalised and ongoing dietary advice. This should be integrated within a personalised diabetes management plan that includes other lifestyle modifications, such as losing weight and

becoming more physically active.

The guidelines recommend a target of initial body weight loss of 5% to 10% for overweight adults diagnosed with type 2 diabetes. NICE notes that lesser degrees of weight loss may still be beneficial and that a larger degree of weight loss in the longer term will have advantageous metabolic impact.

Competing interests: *The BMJ* has judged that there are no disqualifying financial ties to commercial companies. Further details of other interests, disclaimers, and permissions can be found on bmj.com

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0.5 HOURS

### What are the implications?

This was a reasonably large cohort study whose findings should be generalisable to wider UK diabetes populations. The findings support the current guidelines around patient education and setting weight loss targets. Healthcare professionals and people newly diagnosed with type 2 diabetes will welcome the finding that relatively achievable weight loss in the first year after diabetes diagnosis or within five years can lead to disease remission.

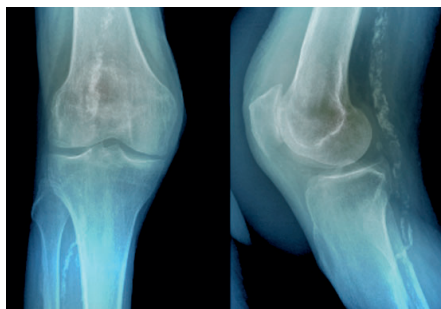
Further studies to confirm findings in more diverse populations, such as black and ethnic minority groups who are at significantly greater risk of developing type 2 diabetes, would be helpful.



### Timing of myocardial infarction

An early morning peak in the incidence of ST-segment elevation myocardial infarction is well known, even if the reasons for it are obscure. A registry study from Singapore finds that timing has an influence on long term outcomes. People whose symptoms began in the evening or during the night were roughly 50% more likely to require hospitalisation for heart failure in the year following the infarction (*Am Heart J* doi:10.1016/j.ahj.2020.03.011). Duration of ischaemia before treatment may be the explanation.

### Diabetes and osteoarthritis



Reports of a positive association between diabetes and osteoarthritis are hard to interpret because being overweight or obese strongly increases the risk of both conditions. A systematic review that identified 31 studies with a total of nearly 300 000 participants reckons that if body mass index is taken into account, there's little evidence that diabetes is a cause of osteoarthritis (*RMD Open* doi:10.1136/rmdopen-2019-001030). Comparing participants who had diabetes with participants who did not, an increased risk of arthritis was found only in cross sectional studies— not in case-control or cohort studies.

### Migraine and dementia

That the vascular component of migraine might render sufferers at increased risk of cognitive decline and dementia has been a longstanding concern. Data from the Atherosclerosis Risk in Communities study are reassuring (*Headache* doi:10.1111/head.13794). Among 12 000 participants followed up for 21 years, the cumulative incidence of dementia was no higher among migraineurs than in those with no migraine history.

### Spotting fraudulent images

A lot has been written about the replication crisis and the underlying reasons why so much irreproducible data get published. Some of it is down to poor study design and inadequate sample size. Some of it is probably honest error. But there's also a substantial amount of fraud. *Nature* has a profile of the Dutch microbiologist, Elizabeth Bik (above, [www.nature.com/articles/d41586-020-01363-z](http://www.nature.com/articles/d41586-020-01363-z)), whose savant skills in spotting duplicated and doctored images have shown that around 4% of published biomedical research papers contain problematic figures (*Am Soc Microbiol* doi:10.1128/mBio.00809-16). Readers can try spotting these doubtful images for themselves if they search for #imageforensics on Twitter.



### Pyelonephritis in children



Children with pyelonephritis are usually given antibiotics for at least two weeks. The findings of a retrospective case note review suggest that this may be unnecessarily long. Outcomes among nearly 800 children aged 6 months to 18 years who received short courses of antibiotics (<10 days) were no different from those who received longer courses (≥10 days) (*JAMA Netw Open* doi:10.1001/jamanetworkopen.2020.3951). Mind you, the duration of antibiotic treatment was determined by the clinicians looking after the children, so it's possible that those who were treated with shorter courses were less severely ill.

### Early puberty and diabetes

Younger age at menarche, a reliable indicator of pubertal timing in girls, is associated with higher risk of type 2 diabetes later in life. A Swedish study of 30 000 men whose growth

rates had been measured in adolescence finds that something similar is true for men. Early puberty as judged by age at peak height velocity was associated with a small increase in risk of subsequent development of type 2 diabetes (*Diabetologia* doi:10.1007/s00125-020-05121-8). Body weight and fat content are known to influence the timing of puberty but the association remained after adjustment for pre-pubertal body mass index.

### Treating Guillain-Barré syndrome

Randomised trials have shown that both intravenous immunoglobulin and plasma exchange are effective treatments for people severely affected by Guillain-Barré syndrome. A head-to-head trial more than 20 years ago found little to choose between the two. However, a large retrospective study from the US finds that patients who underwent plasma exchange spent a week longer in hospital and were two to three times more likely to die than those who received immunoglobulin (*Muscle Nerve* doi:10.1002/mus.26831). Of course, these treatments weren't allocated at random, but the findings were hardly altered by adjustment for potential confounders using a propensity score.

### Covid-19 strategy in Norway

So far, the Norwegian response to the current pandemic has been strikingly successful in minimising infections and deaths. A case study in *NEJM Catalyst* identifies early testing (particularly of people arriving from places where the disease was prevalent), rapid mobilisation of microbiological laboratories, and a coherent and consistent national strategy as crucial interventions. Minerva doesn't want to diminish Norway's achievement in any way, but she did think that its widely dispersed population, and the fact that it has only one city with more than a million inhabitants might also have contributed (<https://catalyst.nejm.org/doi/full/10.1056/CAT.20.0120>).

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