

Under the Microscope

Paediatric Gastroenterology Research Team newsletter
Addenbrooke's Hospital, Cambridge University Hospitals NHS Trust

Newsletter reporter:
Claire Glemas, research
nurse
Design, illustration:
Jen Rose
Guest editor: Denny
Williams, age 10

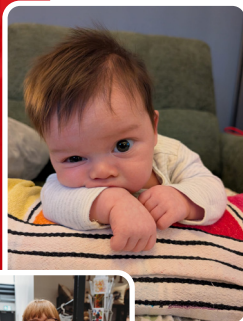
HELLO!

Issue 14 - July 2026

Welcome to issue 14! It's been a busy few months, and we've had lots to celebrate. Huge congratulations to Woojin, who completed his PhD and has now moved to America to begin medical training. We also said goodbye to Eva, who has started an exciting new role in London. We're going to miss them both, but we're so proud of everything they've achieved and can't wait to see where their next adventures take them.



We've also had some lovely personal news. Our pharmacist, Emma, and her husband Jeff have welcomed a beautiful baby boy. Congratulations to you both - we hope you're enjoying every moment of this very special (and probably very sleepless!) time.



Tom recently took to the stage at the Pint of Science festival to share some of the fascinating research happening here. One of our favourite moments came afterwards, when he discovered that someone in the audience had actually taken part in our research seven years ago. That biology student was Fiona, and you can read her story later.



Dr Matt headed to ESPGHAN where he shared our research with international paediatric gastroenterology community.



While on holiday in Rome, research nurse Claire had a little accident - you might have seen her sporting a cast on her broken wrist - beautifully decorated by her daughter Amy! Mend quickly Claire!



Finally, a big thank you to our youngest editor yet. Denny has helped put this edition together, and we think he's done a brilliant job. We hope you enjoy reading it as much as he enjoyed helping to create it.

Young Sparks!

The science of riding a bike!

Did you know that every time you ride your bike, you're using science? It might feel like fun, but your body and your bike work together like an amazing team!

When you pedal, your muscles use energy from the food you've eaten. Your bike turns that energy into movement, helping you zoom along the road. In fact, bikes are one of the most efficient ways to travel because they turn most of your energy into getting you from A to B.

As your wheels spin, they grip the ground using something called friction. Without friction, your tyres would slip and you wouldn't get very far! The faster you go, the more momentum you build up, which actually helps you stay balanced. That's why riding slowly can sometimes feel trickier than riding a little faster.

Cycling uphill is hard work! That's because you're pushing against gravity, the force that pulls everything towards the ground. On windy days, you also have to pedal harder to push through the air.

So next time you jump on your bike, remember you're not just riding, you're carrying out a brilliant science experiment! Keep pedalling, wear your helmet, and enjoy the ride!



Denny's joke

Me and my brother watched movies back-to-back...shame I was the one facing the wall!

Meet our team...



Scan here to see all our newsletters!



MADHU

Hi, I am Madhu, one of the doctors who looks after young people with IBD. My job is to help children with IBD feel better and get back to doing the things they enjoy. The best part of my job is hearing my patients say, 'I forgot what it felt like to feel normal!' After being unwell for so long, getting that feeling back is pretty amazing, and it's why I love what I do. I'm also passionate about IBD research. Research is how we find better treatments and, one day, hopefully understand IBD much better. I help by collecting samples during endoscopies and inviting young people to take part in clinical trials.

When I'm not at work, family life is busy! I have a loving husband, an amazing son, and a cheeky daughter!

I grew up in India in the 1990s. Looking back, I've always found reading long pages really difficult - not ideal when you're studying to be a doctor! And when I started medical school, my professors recognised that I had ADHD. Suddenly, so many things made sense.

These days I work with my brain instead of against it. I still find long journal articles hard to read, so I often listen to podcasts or turn research papers into podcasts using AI. When working, I face a wall to avoid distractions, and have sticky notes everywhere reminding me of all the things my brain forgets. My brain also likes to race ahead, so I sometimes interrupt people before I realise it. It's never because I'm not interested, it's just how my brain works.

If you have a neurodiversity too or sometimes feel like your brain works a bit differently, don't let that stop you from believing in yourself. Everyone's brain is different, and that's okay. I became a doctor, and you can achieve amazing things too. Be yourself - you might be surprised at what you're capable of!

When I get some free time, I love watching films and TV series - especially sci-fi. If it involves time travel, I'm probably watching it!



My fear - rats, geckos, well anything that can jump towards my direction! Surprisingly not spiders- if you need to get rid of a spider - I am your person!



I'm really scared of spiders. Whenever there is one in my house, I have to get someone else in my family to catch it as I'm too scared to go near them!



My favourite drink is vanilla iced matcha. I only discovered it in July last year but it quickly became my favourite and now I have it most days!



This is Tilly!

I enjoy listening to music. My favourite artists are Harry Styles and Taylor Swift, and I have been lucky enough to see them both in concert in London.

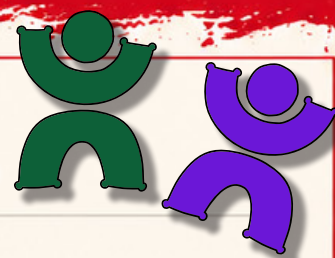
BECKY

Hi! I'm Becky. I work as a healthcare assistant in the IBD Team. I have worked with the team for nearly 2 years now, this is my first job after studying health and social care at college. My job involves ordering blood tests, arranging infusions, organising community nursing team referrals, supporting patients during their infusions on F3 and helping the team with the smooth running of the IBD service.

As a healthcare assistant, one of the main roles is to support the IBD nurses and the nurses in clinic 6 and F3, you may have seen me in clinic or on F3 before taking your observations during your infusions. I also have the very important job of making sure your poo is collected and processed to keep you well!

When I'm not at work I enjoy spending time with my dog Tilly, she is a crazy working cocker spaniel and keeps me very busy! Tilly is 18 months old and we have had her since she was a puppy. She has recently learnt how to spin around in circles and has a cheeky habit of stealing Wotsits from us! I also love going shopping with my friends and my sister and spend most my weekends doing this.

Our research...



(...and interesting research other teams are doing!)

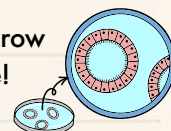
Can gut cells remember?

Hi, I'm Komal, and I wear lots of different hats! In the lab, I'm a senior scientist and lab manager. At home, I'm a mum to twins. And now I'm doing something very exciting too - a PhD! A PhD is a bit like a big science mystery, where you try to answer a question that nobody fully knows the answer to yet.

My mystery is all about the gut, IBD, and one very interesting question: What if the cells in your gut had a memory?



To study this, I use something very special called organoids, tiny models of the gut that we grow in the lab from tiny biopsy samples that some of you give us. They're not real guts, of course! But they are made from real gut cells, so they can help us understand how the gut works.

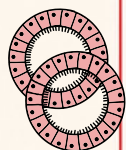


The special thing I am looking at is called epigenetics. That is a very big science word, but the idea is not as scary as it sounds! Inside every cell in our body is DNA. Think of DNA like an instruction book that tells the cell what to do. Epigenetics is a bit like adding sticky notes or highlighter marks to that book. They don't change the words in the book, but they help the cell know which instructions are important.



In my PhD, I am trying to follow the trail of these tiny marks. First, I want to find out whether things that happen early in life can add or change marks on gut cells. Next, I want to see whether the cells keep these marks as they grow or whether some marks can be erased. And finally, I want to discover whether these marks change how the gut cells behave later on.

Gut cells are busy all the time! They meet lots of different signals from the world around them - from friendly bacteria, from food, and sometimes from inflammation when the gut is sore. In the lab, I can give some of these signals to organoids and watch closely to see what happens. It is a bit like asking the mini-guts: "Did this change you?" "Do you remember it?" "Can we change you back?"



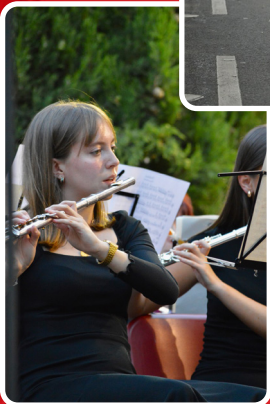
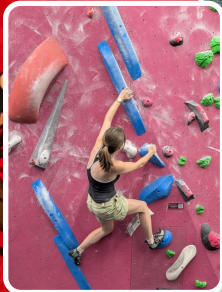
Another exciting part of my PhD is gene editing. This is a special tool scientists can use to carefully add a tiny "tag" to cells. Some tags can make parts of the organoids glow under a special microscope. Glowing organoids may sound like science fiction, but they are very useful! They can help us watch what gut cells are doing in real time, almost like putting a little torch inside the cells so we can follow their behaviour more closely.

Every answer from the mini-guts gives us another clue. It is possible that each child has a different pattern of notes and marks on their gut cells. This might help explain why IBD can be different for each child, and why one treatment may work well for one child but not for another. One day, this could help doctors and scientists find better treatments that are more personal to each patient.

A huge thank you to all the children and families who help with our research. The biopsy samples you give us may be tiny, but they can help us answer really big questions!

 **Thank you!**

A special story



“Hello everyone, I’m Fiona.

I was diagnosed with ulcerative colitis when I was 13 and was looked after by the paediatric gastroenterology team at Addenbrooke’s hospital, just like you. In 2019, I even donated biopsies to help with one of their research studies.

When I first found out I had IBD I found it very scary and hard to adjust to my new routine, especially while I was waiting to find a medication that worked for me. Later, I was diagnosed with anxiety, and the paediatric psychology team helped me. I worried about missing school and falling behind on work, but when me and my parents spoke to my teachers they were able to better support me. Speaking to my friends was also very important. I was honest with them about what I was going through, and they were kind and understanding.

At first, I struggled to see a future where I could do the same things as everyone else. But over the last 8 years I have done lots of cool things. I have travelled abroad, played in an orchestra, ran a half marathon, played football, rock climbed, made a documentary, and fundraised for Crohn’s and Colitis UK. If I had any advice for you, it would be to say yes to every opportunity and don’t let your IBD stop you! Having a flare up can be difficult and sometimes you might feel different to your friends, but you will come out the other side much stronger.

My current challenge is completing my university degree. I always liked science at school and after seeing what happens in hospital and hearing what research teams like this one were doing, I decided I wanted to study Biology. I am currently spending a year working in a lab near Cambridge before I go back up to Sheffield to do my final year. I then hope to become a researcher and help to come up with new treatments for diseases like IBD too.’

Fiona got to spend some time in our lab, where she met the research team and learned more about the work they do to better understand IBD.



Denny's story

Hi, I'm Denny Williams and I was inspired to write about my journey when I read Teddie's story in Issue 13. I actually live near Teddie but we go to different schools so we have never met before. I am also aged 10 and was diagnosed with Crohn's disease in February.



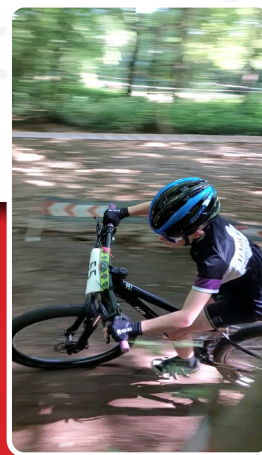
I race bikes and I began fainting after races so mum and dad took me to the doctors before Xmas. My Crohn's was making me very tired and was affecting my racing so in a funny way I am happy the doctors found out what was wrong with me. I have just finished 6 weeks of my milkshake diet. Some days I didn't mind not eating but other days I got upset but as a family we got through each day. My mum, dad and younger brother Dexter even gave up chocolate for 6 weeks. We still have Easter Eggs in the cupboard! I am looking forward to eating again but not sure what to eat first or what my favourite food will be now.

I race bikes for Colchester Rovers Cycle Club and before I was ill I was third in the Eastern region Cyclocross Championship. I also rode 200 miles for Charity in a month and was awarded the East Anglia young fund raiser of the year when I was Eight. Me and dad will definitely do a charity ride again when I am feeling fitter.

I am looking forward to the doctors making me better so I can get back to cycling and training every day. My consultant Kimberley said she wanted a photo of me when I next get podium in a cycle race. I will be proud of myself if I can do that again.

Never give up on your dreams. From **Denny x**

(This is Denny doing the thing he loves the most! Can you see his first podium place since his diagnosis...)



You can see more of what Denny has been up to on Instagram: **denny_thecyclist**

(You could ask your grown up to show you!)

» Over to you...

A space to share your news, talents
and things to celebrate!

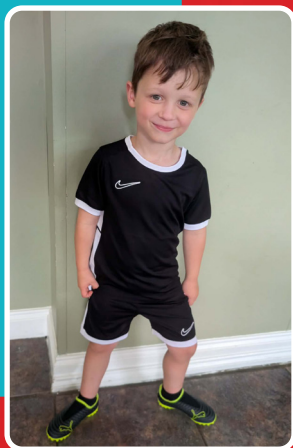
'Hello my name is **Verity** and I am 8 years old.

I was diagnosed with Crohn's disease in April. Shortly after I was lucky to discover the My WALK IT challenge and take the opportunity to raise money for Crohn's and Colitis UK. For the challenge, you could walk 5 km, 10 km, 15 km, half a marathon (21 km) or a whole marathon (42 km) during the month of June. I really wanted to challenge myself with the whole marathon - and I successfully completed 42.45 in 29 days! I walked little and often, and had a couple of days off for a break, but made up for it with extra long walks on other days. I enjoyed the walks, which I completed with different family members (including my dog, Ted!) and loved seeing lots of wildlife along the way. I wanted to do this challenge to raise money for a charity which is now very important to me, and because it sounded like a lot of fun (which it was!). Because I raised over £100 I look forward to receiving a medal soon in the post. I am already researching future charity ideas to raise money and awareness for IBD - I've spotted a skipping challenge in August!



Arthur got his first medal for being part of his first ever football team, so he needed the kit and football boots to look the part!

Well done Arthur!



Since being diagnosed, **Greyson** has always been pretty anxious about leaving the house. However, after developing an interest in ice hockey, he has been travelling on the train to support Peterborough Phantoms every Sunday. Amazing! This is Greyson and his mum at the Peterborough Phantoms award night.



Holly has been on a school trip to France and Belgium, and paddle boarding at Felixstowe beach. She's performed in a dance show and has been helping backstage with the Year 7's drama production. She's going to school and out all the time with her friends!

Holly, we're always so inspired by you!

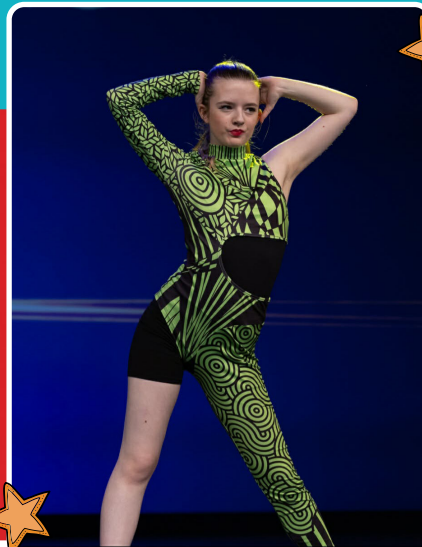


April tells us about her amazing adventure:

'In the May half term my family and I walked 3 days of the south west coast path (around 40 miles!) in aid of CICRA. We walked from Minehead to Combe Martin and stayed in bed and breakfasts on the way. I found it really hard because we had to walk a lot of hours each day, it was very hot, and at some points there wasn't any shade but the landscape was amazing. I most enjoyed the views, the family time, and of course the snacks. I felt so proud when I finished the walking each day but especially at the end. I felt amazing that I could contribute to helping children with IBD like me. I raised over £800.'



Hi all, **Phoebe** here. I have been really busy lately with my dance shows being in The musical Chicago and to top it off I danced in Disneyland Paris as part of Disney performing arts programme which was just magical. Dreams do come true!



Gaby is our most regular regular here! And she's been busy again! This is her on holiday in Lanzarote where she visited Fire Mountains, walked on the sea bed 'sea trek' and then helped the pilots on the way home!



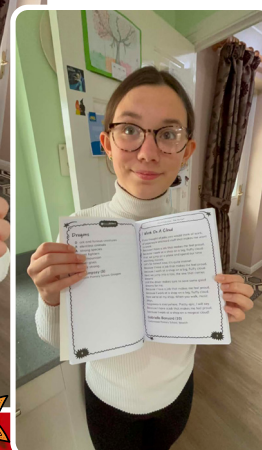
She also won a national school poetry competition which means her poem has been published in a book called 'I have a dream 2026', a copy of which will remain in the British Library forever!

Well done Gaby!



Emily has completed her stage 10 swimming badge! As part of this she had to swim a mile (64 lengths) on 3 occasions. We're super proud of her, showing her crohn's is not going to affect her doing the things her sisters manage!

Well done Emily!



»Time to play!

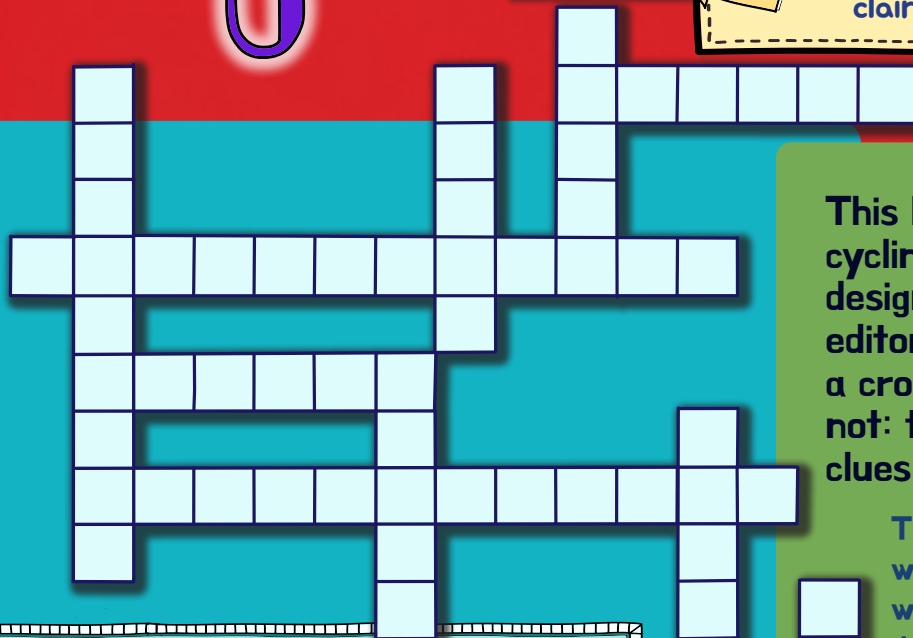


calling all young journalists!

Would you like to write, or draw, or share something for our newsletter? Or tell us what you'd like to see in the newsletter! We'd love to hear from you.

We'd also love to know what you enjoy about our newsletter, and what could be better (You can ask us to stop sending you our newsletters here too). Your feedback is super important to us.

To get in touch, scan this QR code or email: claire.glemas@nhs.net



Tip: try starting with a word that is the only one with that number of letters...

This brilliant cycling-themed puzzle, designed by our guest editor Denny, looks like a crossword, but it's not: there are no tricky clues to work out!

The objective is to work out where each word fits across and down the puzzle.

Tip: if answers have two words there are **no spaces** between the words in the puzzle

5 letter words:

gears ☐
chain ☐
Giant ☐

6 letter words:

helmet ☐
racing ☐
brakes ☐
pedals ☐

7 letter words:

Wiggins ☐

8 letter words:

skinsuit ☐
olympics ☐
puncture ☐

9 letter words:

velodrome ☐

10 letter words:

Laura Trott ☐
cyclocross ☐

12 letter words:

Tour de France ☐
mountain bike ☐
yellow jersey ☐

Would you like to be our guest editor and help create a future newsletter? Let us know:

claire.glemas@nhs.net