

Under the Microscope

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

Issue 4

March 2023

HELLO!

Welcome to issue 4 of our research newsletter. Christmas seems like a long time ago!

We've settled into our new lab in the Jeffery Cheah building (which we moved into in October), and we've finally finished unpacking everything!



Our Christmas party

In December we held an Investigators Meeting in the beautiful Westminster College in Cambridge for our colleagues across Europe. We work with research groups from lots of places including Italy, Germany and Hungary - it's a really important way for research groups to learn from each other, develop new ideas and share information.



The TRIPP study now has all the approvals it needs to be able to run in Norfolk and Norwich Hospital (NNUH). We were excited to meet the Norwich team when they came to Cambridge in February! You can find out more about Dr Marco Gasparetto on our staff profile page.

We have a new team member! Adam Spruce is spending 3 months with us as part of his PhD program, and we've tested his publishing skills already! He has been working with our guest editor Holly to create the fun activity on the last page of this issue. We hope you love it as much as we do! Thank you Adam and Holly!

Don't forget we'll also use our newsletter to let you know about upcoming families days!

calling all young journalists!

Would you like to write, or draw, or share something for our newsletter?

Or do you have ideas about what we could add? Maybe you would like to interview a member of staff? Or you have a 'Tip of the month' to share? Or maybe you have discovered the best chocolate cake recipe (remember, cooking is science too!). We would love to hear from you.

To share your ideas, scan the QR code or email:

claire.glemas@nhs.net

If you read our newsletter, we'd love to know what you enjoy and what could be better. You can scan this QR code to tell us! (You can ask us to stop sending you our newsletters here too!)

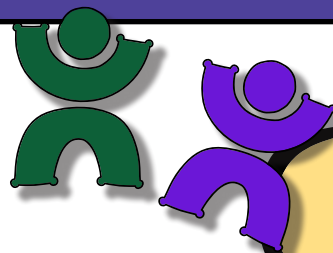


"Research is creating new knowledge"

Neil Armstrong

Newsletter reporter, research nurse Claire Glemas
Design and illustration, Jen Rose (Creative Patient Ltd)
Guest editor, Holly Hall

Meet our team...



This is where you can learn a little more about us and what we do!

CLAIRE

Hi! My name is Claire and I am a paediatric research nurse - many of you will have met me when you were in hospital! I started nursing 6 years before YouTube and the X-Box were released! I've worked in lots of different areas including oncology, NICU and the Neonatal transfer service where I spent a lot of time in the back of an ambulance!

My job as a research nurse combines lots of things I enjoy: including ethics, law, and clinical care. And I love working in complete partnership with you, our young patients and your families.

Research studies are important because they help researchers discover the best way to treat our young people, and find out if a new treatment, like a new drug or diet or medical device (for example, a pacemaker) is safe and effective. They also help us improve our knowledge of a disease process. Our patients are not just small adults - your bodies work in different ways to adult bodies. You undergo many changes as you grow from infancy towards adolescence and adulthood.

I love working on our newsletter alongside Jen Rose, sharing what we are doing in our research world with you.

"I have run 50 half marathons and 13 marathons!"

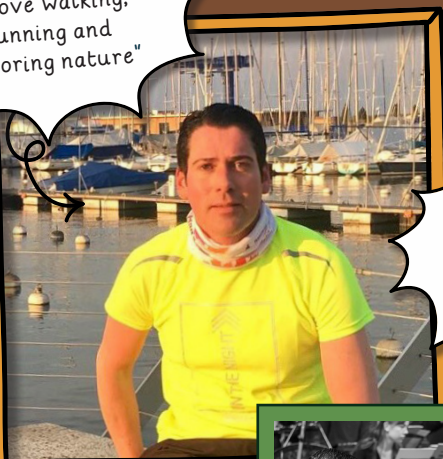
"I hate the feel of cotton wool, and won't touch it unless I have to!"



Riggs and Fred!

"I have 3 children and 2 crazy dogs that keep me busy!"

"I love walking, running and exploring nature"



"I enjoy music and I play the violin in a symphony orchestra!"



MARCO

Hi, my name is Marco and I'm a doctor. I look after children with bowel or liver problems - that makes me a paediatric gastroenterologist.

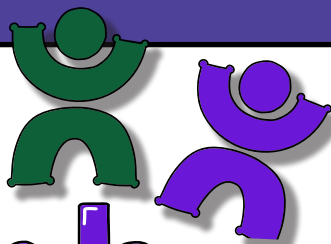
I am originally from Padua, in the North East of Italy, but I moved to the UK ten years ago to complete my studies and my training. I worked at Addenbrooke's Hospital for 6 years and joined Matt's lab to do an interesting research project in inflammatory bowel disease.

Once I had finished clinical and research training, I became a consultant and, more recently, I moved to Norfolk and Norwich Hospital. I now have the opportunity to do more research with Matt's lab and the Cambridge team, while I continue to look after children with gut and liver diagnoses.





Our research..



This is where you can find out more about the studies we are doing!

FOCUS ON...

discovering treatments

(using our organoids!) by Ellie Slater



Do you remember learning about organoids, the mini guts we make from the biopsies our patients give us? These mini guts look and work just like our own guts, so they're really useful in our research!

genes carry information that is passed on from our parents and make us the way we are!

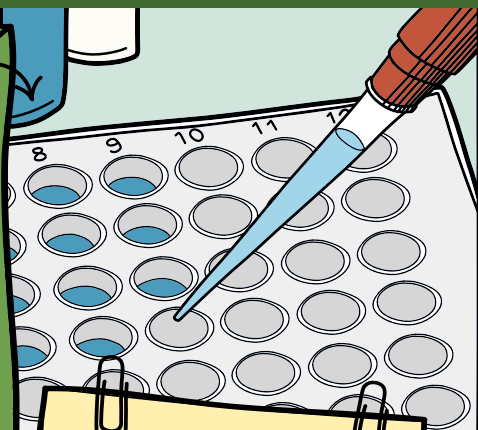
the **environment** means all the things that can put a strain on our bodies

IBD is complex! We don't know exactly what causes it, but it's probably lots of things, including our **genes**, the **environment** and the tiny microbes in our gut. We do know that for some patients, standard treatments work and they feel better, but then their symptoms come back over time. In other words, their response to the treatments can change.

We also know that **patients can** respond differently to the same drugs. This is why it's important to choose treatments carefully for each individual patient. And this is where organoids are really useful!

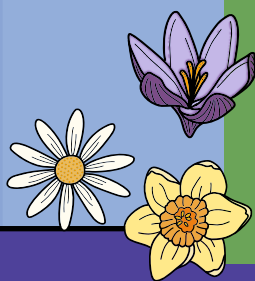
Clever computers helped us choose some treatments that were already being used for other diseases. We want to see if these drugs **help reduce inflammation in the gut** - this might be very useful in IBD!

We can divide a patient's organoid up and put it into a special plate that has 96 separate wells (tiny test tubes!) in it. We then treat them all with something called interferon-gamma (IFN γ) - this mimics what it's like in your gut when you have IBD. Then, we can put different amounts and different combinations of treatments in each well, and see how the bits of organoid respond (will they grow, or become inflamed?). We use fluorescent molecules and microscopes to do this. We are hoping that these experiments will help us find new treatments **that improve the symptoms of IBD**.

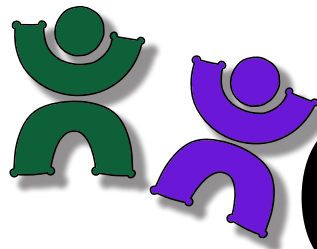


Organoids made from your biopsies are similar to your gut. But different patients' guts aren't the same, so organoids made from different patients' biopsies aren't the same either! Which means the organoids are super useful in helping us understand **why patients respond differently to the same drug**

It also means the organoids might be very useful in helping us **choose the best treatment and doses for individual patients**. In fact, other labs have been trying this in other diseases, and the results are looking promising!



Time to play!



Let's have some fun!

WORD JUMBLE

challenge!

What are these crazy words?!

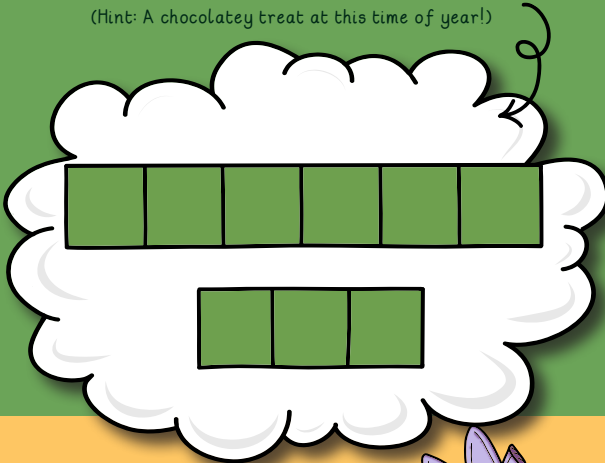


Actually, they're all words you might find in this newsletter. But they've all been mixed up!

Can you put them back in the right order? (when you have, write them in the boxes underneath)

When you have all the answers, use the letters in the green boxes to find the secret words...

(Hint: A chocolatey treat at this time of year!)



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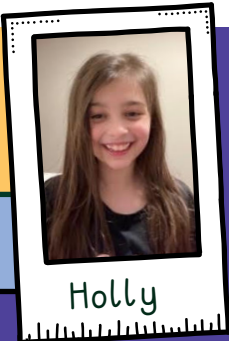
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And finally...

...a message from our guest editor!



Holly

"Hi, I'm Holly and I've been a patient at Addenbrooke's Hospital for 6 years. In my experience, the best part of the hospital is the nurses and doctors, who are amazing. When I grow up I want to be a play specialist because they are so fun and make people laugh. My favourite hobbies are athletics, because I love running, and drama, because I have so much fun playing another character, especially a funny one!"