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To thicken, or not to thicken, that is the question:

Exploring the evidence around the use of thickened fluids with children and young people with oropharyngeal dysphagia

Housekeeping

- Elaine Ashton (RCSLT Host) is on hand to help with any **technical queries**; you can get in touch with her via the **chat button**
- You can send in **questions** to our speakers today by using the **Q&A button**
- This event is being recorded and will be made available on the RCSLT website along with the presentation slides

Housekeeping

- Following the panel discussion there will be time for Q&A
- We will pause in the middle of the webinar to allow you to complete a short survey (5mins) to inform future research in this area
    - This will be available via a QR code
    - Please complete the survey during the webinar if you are a speech and language therapist or paediatrician working in the UK National Health Service

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Speakers

- Alex Stewart, SLT Research Lead, Great Ormond Street Hospital for Children, London
- Rebecca Davidson, Clinical Lead SLT, Developmental Dysphagia, NHS Lanarkshire
- Gillian Welsher, Clinical Lead Paediatric SLT, Newcastle Upon Tyne Hospitals NHS Foundation Trust
- Lucy Jackman, Specialist Paediatric Dietitian, Great Ormond Street Hospital for Children, London
- Morag Andrew, Honorary Clinical Senior Lecturer, Newcastle University, and Consultant Paediatrician, Newcastle Upon Tyne Hospitals NHS Foundation Trust

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Progamme

- Background to webinar
- Overview of the evidence on the use of thickened fluids in children and young people with oropharyngeal dysphagia
- Case presentation and panel discussion
- Opportunity to complete a short survey informing future research
- Q&A

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Background to webinar

- RCSLT position statement
- NIHR HTA commissioned call 24/67:
  - Discontinuing thickened fluids in adults with oropharyngeal dysphagia
- British Academy of Childhood Disability Strategic Research Group PICO development:
  - NIHR HTA commissioned call: The use of thickened fluids in children and young people with oropharyngeal dysphagia
  - Planned application in partnership with RCSLT and national colleagues
- Raising awareness across multidisciplinary teams

Get your phones ready...

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A brief evidence review

Rebecca Davidson, Clinical Lead SLT Developmental Dysphagia, NHS Lanarkshire, Scotland

Alex Stewart, Speech and Language Therapist, Great Ormond Street Hospital for Children, London

The Context

- RCSLT were getting an increasing number of queries regarding the use of thickened fluids with infants, children and young people.
- Dysphagia Clinical Excellence Groups started to cover this topic in more detail as increased scrutiny was taking place.

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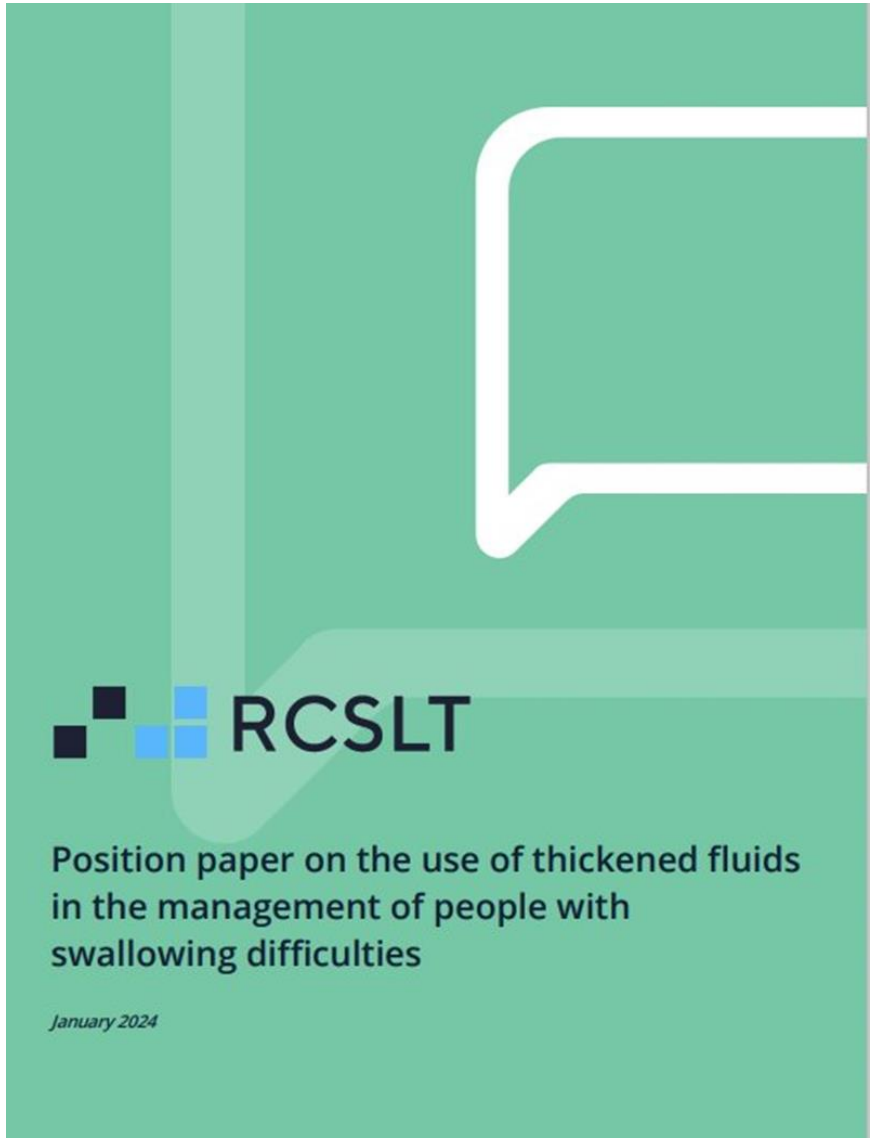
RCSLT Position Paper January 2024



Realistic Medicine/Healthcare

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Benefits, Risks, Alternatives & Nothing

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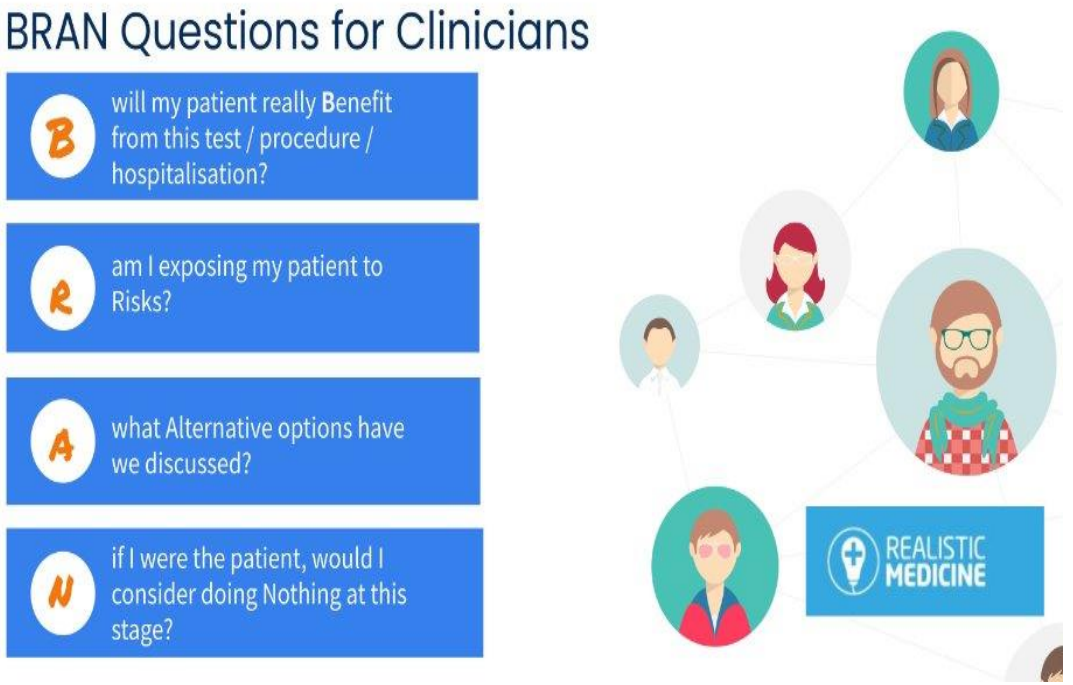
Questions for families

Questions for Clinicians



Do thickened liquids work?

Elimination of aspiration on VFSS

- Down syndrome[1]
- Hypoplastic left heart[2]
- Bronchiolitis[3]
- Otherwise healthy infants[4]

40-89%

1. Jackson et al (2016). "Clinical characteristics of dysphagia in children with Down syndrome." Dysphagia **31**: 663-671.
2. McGrattan, K. E et al. (2017). "Dysphagia in infants with single ventricle anatomy following stage 1 palliation: Physiologic correlates and response to treatment." Congenit Heart Dis **12**(3): 382-388.
3. Khoshoo, V et al.(2001). "Benefits of thickened feeds in previously healthy infants with respiratory syncytial viral bronchiolitis." Pediatric pulmonology **31**(4): 301-302.
4. Sheikh, S et al. (2001). "Chronic aspiration without gastroesophageal reflux as a cause of chronic respiratory symptoms in neurologically normal infants." Chest **120**(4): 1190-1195.

Elimination of laryngeal penetration

Perspect ASHA Spec Interest Groups. 2024 February ; 9(1): 273–281. doi:10.1044/2023_persp-23-00181.

The Effectiveness of Slightly Thick Liquids for Improving Swallowing in Bottle-Fed Children With Aerodigestive Concerns

Renata Mancopes[a], Cheryl J. Hersh[b], Rebecca Baars[b], Vanessa Panes[a], Jessica Sorbo[b], Danielle Sutton[a], Melanie Peladeau-Pigeon[a], Mary S. Fracchia[c], Catriona M. Steele[a,d,e]

No difference in frequency

51% vs 42% volume > trace

Does thickening improve important outcomes?

Enjoyment

Respiratory

Hydration/ nutrition

Respiratory

- Reduced hospitalisation[1]
- Reduced acute respiratory infection[2]
- Reduced neutrophils on BAL[3]
- Reduced parent reported symptoms[4]

- No change/Increase in acute respiratory infection[2,4]
- No difference in antibiotic use[3]
- No difference in chest x-ray changes[3]
- Increase lung inflammation (murine model)[5]

1. Duncan, D. R.et al. (2019). "Feeding Interventions Are Associated With Improved Outcomes in Children With Laryngeal Penetration." J Pediatr Gastroenterol Nutr **68**(2): 218-224.
2. Coon, E. R., et al (2016). "Infant Videofluoroscopic Swallow Study Testing, Swallowing Interventions, and Future Acute Respiratory Illness." Hosp Pediatr **6**(12): 707-713.
3. Duncan, D. R., et al (2024). "Breastfeeding in infants who aspirate may increase risk of pulmonary inflammation." Pediatric pulmonology **59**(3): 600-608.
4. Krummrich, P., et al (2017). "Parent perception of the impact of using thickened fluids in children with dysphagia." Pediatr Pulmonol **52**(11): 1486-1494.
5. Nativ-Zeltzer, N et al (2021). "Inflammatory Effects of Thickened Water on the Lungs in a Murine Model of Recurrent Aspiration." Laryngoscope **131**(6): 1223-1228.

Nutrition/hydration

- Modest increase in volume[1]
- Parent report increase volume[2]

- Safety-efficiency trade off[3, 4]
- Parent report unpalatable in water[2]
- Constipation/ Diarrhoea[5]
- High sodium

1. Krummrich, P. et al (2017). "Parent perception of the impact of using thickened fluids in children with dysphagia." Pediatr Pulmonol **52**(11): 1486-1494.
2. Smith, C. H., et al (2014). "Thickened fluids: investigation of users' experiences and perceptions." Clin Nutr **33**(1): 171-174.
3. McGrattan, K. E., et al (2017). "Dysphagia in infants with single ventricle anatomy following stage 1 palliation: Physiologic correlates and response to treatment." Congenit Heart Dis **12**(3): 382-388.
4. Mancopes, R., et al (2024). "The Effectiveness of Slightly Thick Liquids for Improving Swallowing in Bottle-Fed Children With Aerodigestive Concerns." Perspectives of the ASHA special interest groups **9**(1): 273-281.
5. Abdulezer, A., P et al (2022). "Xanthan- and Rice Cereal-Based Thickeners in Infants: A Multidisciplinary Single-Center Experience." JPGN Reports **3**(2).

Enjoyment of drinking/quality of life

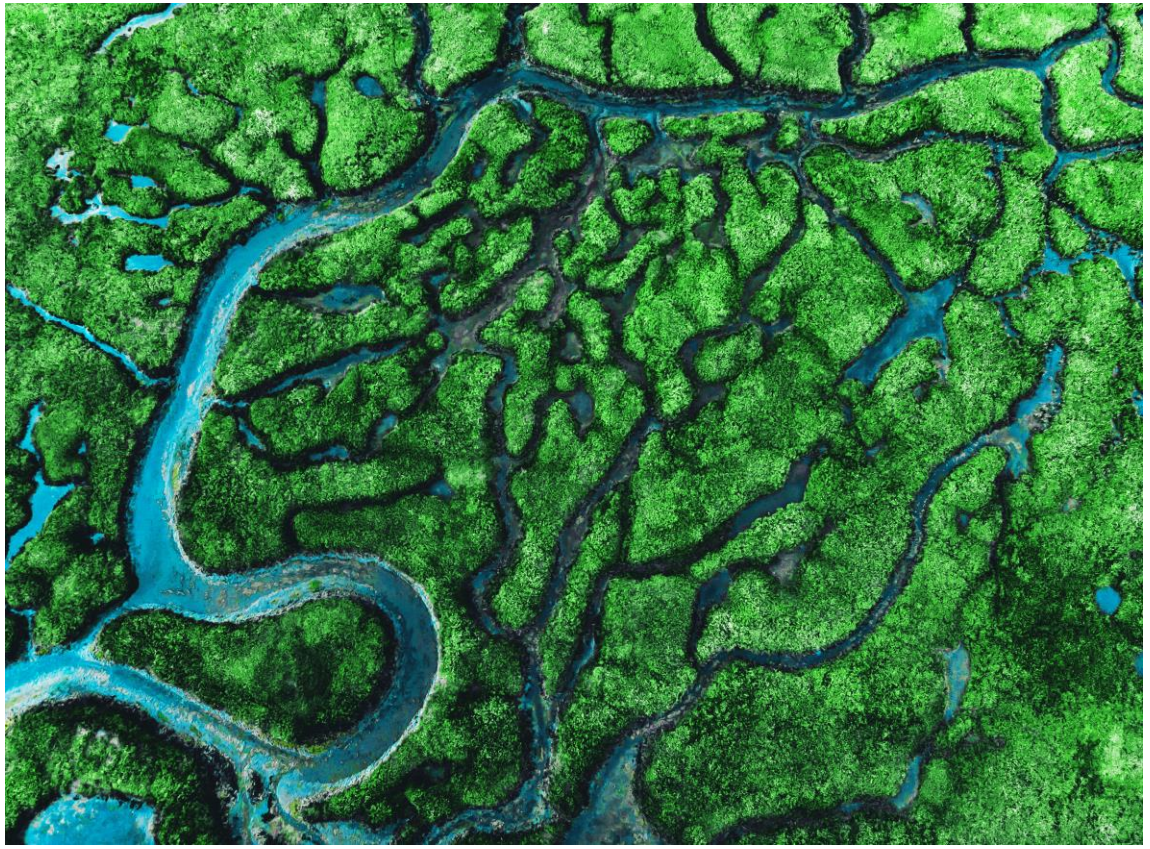
- 40% working well, no negative impact[1]
- Improved sleep[2]
- Improved enjoyment of drinking[2, 3]

- Emotional impact for parents[2]
- Unpalatable[2]

1. Duncan, D. R., et al (2023). "A Prospective Study of Parental Experience with Thickening Feeds for Children with Oropharyngeal Dysphagia and Gastroesophageal Reflux." J Pediatr: 113510.
2. Smith, C. H., et al (2014). "Thickened fluids: investigation of users' experiences and perceptions." Clin Nutr **33**(1): 171-174.
3. Krummrich, P., et al (2017). "Parent perception of the impact of using thickened fluids in children with dysphagia." Pediatr Pulmonol **52**(11): 1486-1494.

Complex intervention

- Variability
  - Thickener type[1]
  - Fluid[1]
  - Temperature[2]
  - Mixing method[3]
  - Time[2]
- Parents change recipe/flow rate[4]



1. Gosa, M. M. and C. K. Choquette (2021). "Effect of commercially available thickening agents on ready-to-feed infant formulas." J Texture Stud **52**(5-6): 612-622.
2. Ng, V., et al (2022). "Thickened Formulas Used for Infants with Dysphagia: Influence of Time and Temperature." Dysphagia **37**(4): 923-932.
3. Rush, O. M., et al (2021). "Effect of mixing method on resulting thickness of infant formula." J Texture Stud **52**(1): 57-70.
4. Duncan, D. R., et al (2023). "A Prospective Study of Parental Experience with Thickening Feeds for Children with Oropharyngeal Dysphagia and Gastroesophageal Reflux." J Pediatr: 113510.

Quality of evidence

- Valuable but small parent-reported/qualitative studies
- Retrospective designs
- No randomised control trials

- Confounding variables
- Bias

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SWALLOWING AWARENESS DAY | 13 MARCH 2024

Think before you thicken

If you, or someone you care for, use or are considering using thickened fluids to help with drinking or swallowing difficulties you should consider both the benefits and potential drawbacks involved.

Speak to your speech and language therapist before considering making any changes to your drinks.

Swallowing Awareness Day
Have your cake...but can you eat it?

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#SWALLOWAWARE2024

Case presentation

Gillian Welsher, Clinical Lead Paediatric SLT, Newcastle Upon Tyne Hospitals NHS Foundation Trust






Case study patient Z

- Six courses of antibiotics for chest infection age 6 months
- Frequent wet cough and wheeze
- Choking on fluids via bottle and cup
- Reported distress during drinking
- Successful initial introduction of puree
- No other developmental or health concerns

The Newcastle upon Tyne Hospitals NHS Foundation Trust

SLT clinical assessment and management

- Coughing and subsequent eye watering with usual milk feed
- ‘Rattly’ chest post-feed
- No clinical concerns with puree
- Trial of thickened fluids started with symptom improvement
- Parents discontinued quickly as solid intake progressed
- Discharged
- Re-referred age 15 months; 2 chest infections; parents using Stage 1 teat for ongoing cough when drinking

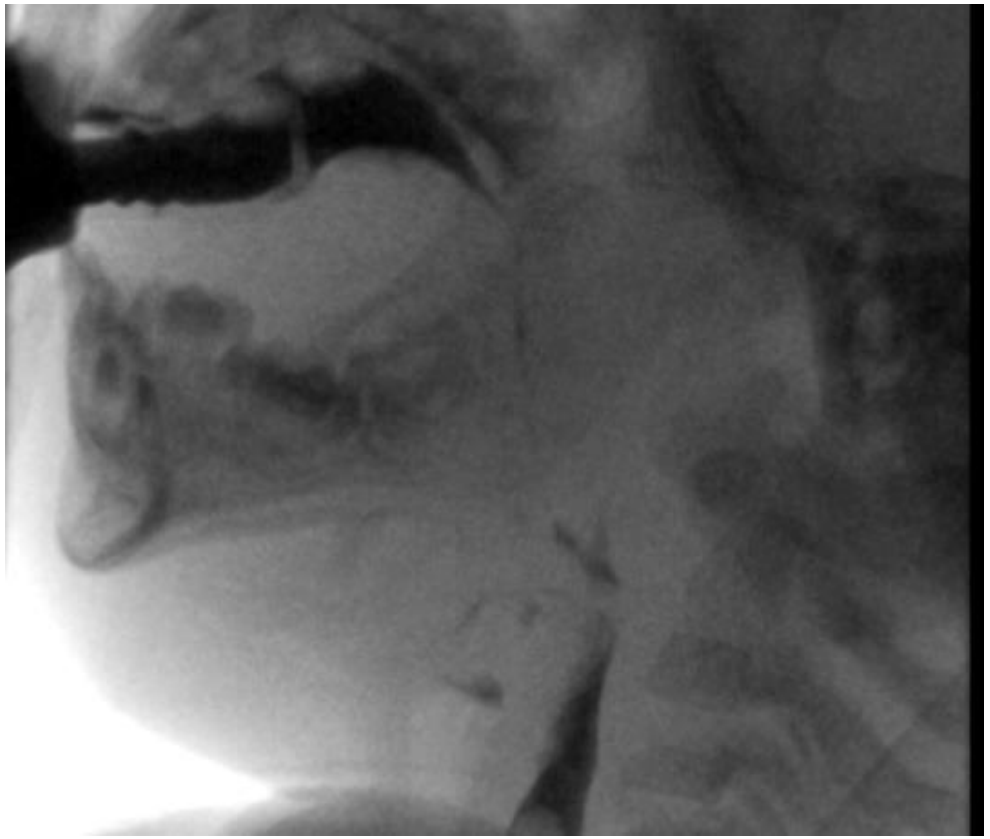
Further investigation

Videofluoroscopy:

- Level 0: One aspiration event; penetration and ejection
- Level 1: Multiple mild penetration (vocal cords) and ejection only
- Level 2: Similar, no deep penetration
- Level 3: Less frequent penetration, some deep
- Level 4 (puree): Normal

Other investigations:

- Two normal chest x-rays
- Normal bronchoscopy except for large tonsils and adenoids



So what happened next?

- Thickened fluids re-started
- Further videofluoroscopy; limited study; no aspiration
- Coblation adenotonsillectomy
- Thickener continued: ongoing cough with drinking
- Thickeners weaned after 12 months
- Asthma diagnosis and management; no further chest infections
- Discharged from SLT, still under respiratory paediatrics

Reflections

- This case is real life and real life is messy!
- This started in 2021 before the RCSLT position paper – has that changed anything now?
- How does the videofluoroscopy influence our management?
- How did thickeners help? Could anything else have been considered?
- What is the role of the MDT when we make changes to oral intake?
- What evidence would help guide decision making?

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Panel discussion

Gillian Welsher, Clinical Lead Paediatric SLT, Newcastle Upon Tyne Hospitals NHS Foundation Trust

Alex Stewart, SLT Research Lead, Great Ormond Street Hospital for Children, London

Rebecca Davidson, Clinical Lead SLT, Developmental Dysphagia, NHS Lanarkshire

Lucy Jackman, Specialist Paediatric Dietitian, Great Ormond Street Hospital for Children, London

Morag Andrew, Honorary Clinical Senior Lecturer, Newcastle University, and Consultant Paediatrician, Newcastle Upon Tyne Hospitals NHS Foundation Trust

Building the evidence on thickened fluids

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Health Technology Assessment

The use of thickened fluids in children and young people with oropharyngeal dysphagia

NIHR HTA 2025243 commissioning brief

Patient group: Children and young people with oropharyngeal dysphagia where the initiation of thickened fluids is being considered

Intervention: Thickened fluids. Applicants to define and justify the exact intervention. Other interventions for oropharyngeal dysphagia should continue as usual

Comparator: No thickened fluids. Other interventions for oropharyngeal dysphagia should continue as usual

Important outcomes: Clinically relevant respiratory health outcomes

Other outcomes: physical health; nutritional status; augmentative tube feeding; weight loss; growth; hydration; gastrointestinal symptoms; coughing and choking; quality of life; adherence; adverse events; cost effectiveness; duration and fidelity of use of thickened fluids

https://www.nihr.ac.uk/funding/use-thickened-fluids-children-and-young-people-oropharyngeal-dysphagia/2025243

Informing future research

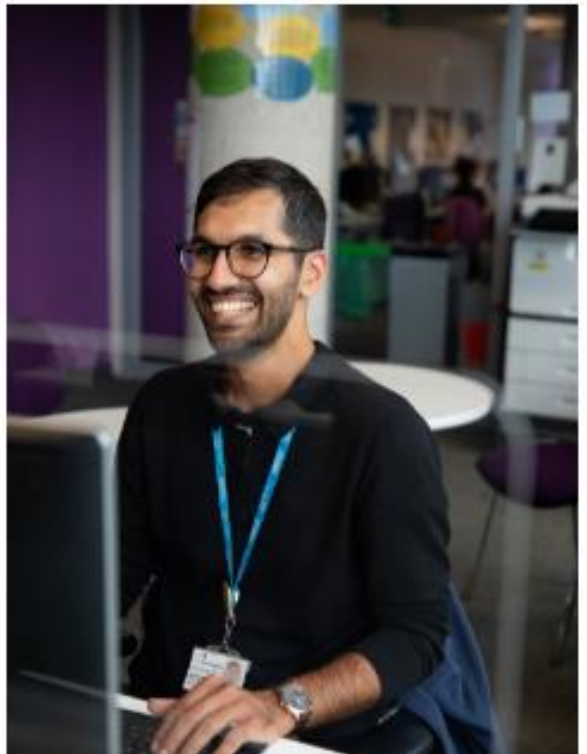
https://newcastlehealth.eu.qualtrics.com/jfe/form/SV_5ylqnDCt6zC2GsC

Questions











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Thank you

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