

Oxford University Hospitals

NHS Foundation Trust



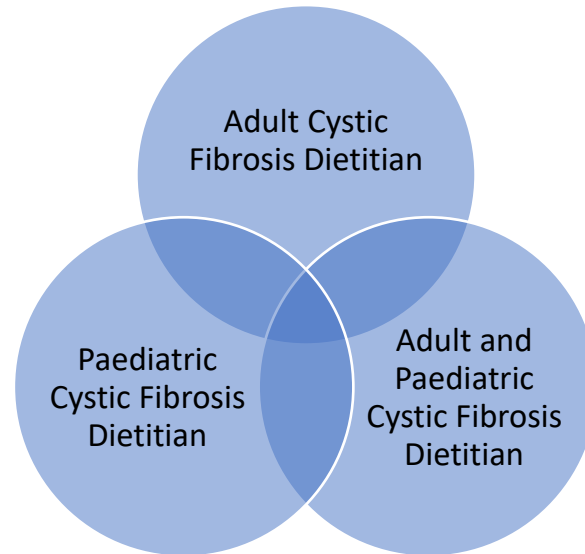
Nutrition through the ages

A case of nutritional management of an adolescent

Gillian Reynolds

Paediatric Cystic Fibrosis Dietitian

Oxford CF Dietetic Team





Paul

12 ½ years old male

IVF

Newborn screening

DF508 CFTR-dele 16-17a (not on CFTR2)

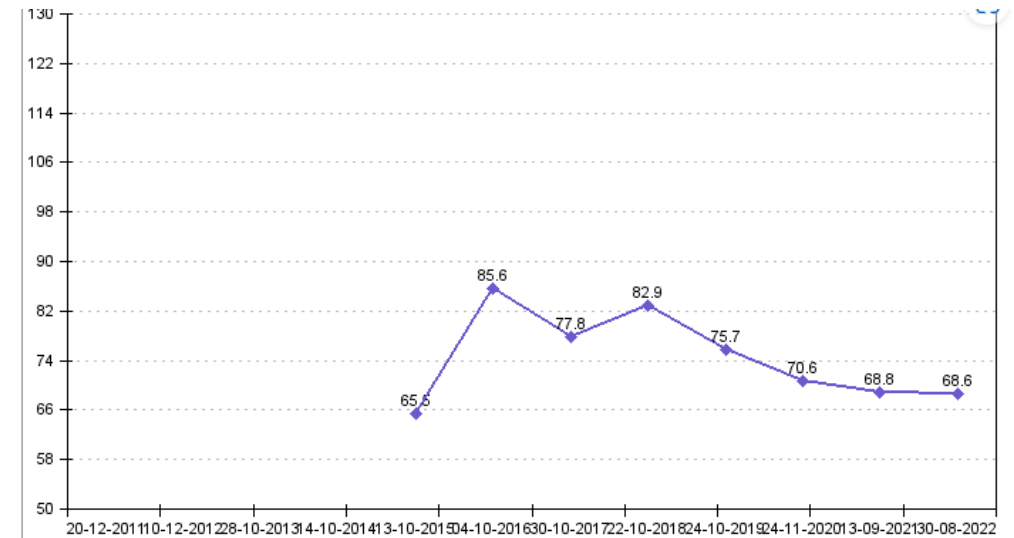
Sweat chloride 118

Pancreatic insufficient

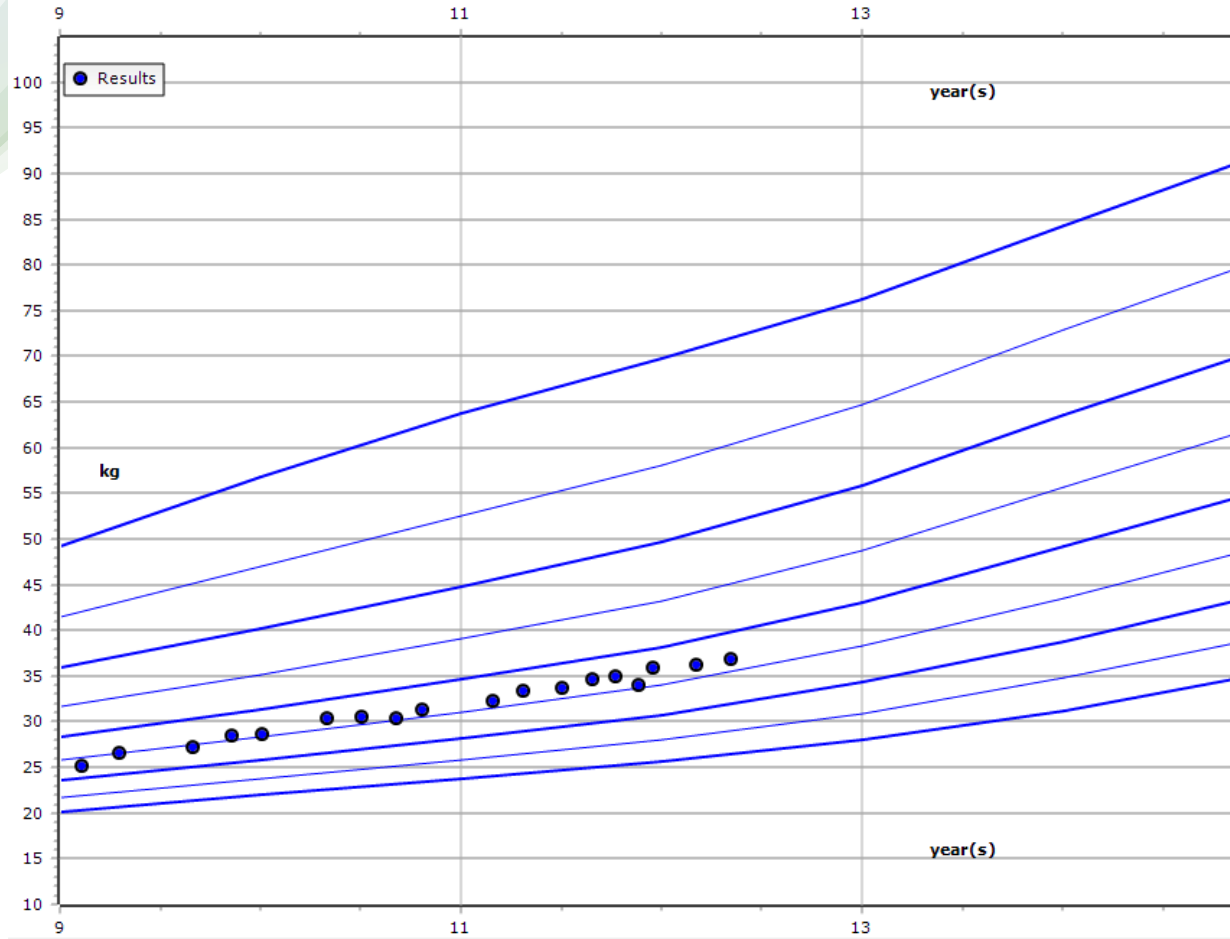
Social lives with parents and younger sibling.

Clinical

- Average 1 x oral ABX per year
- March 2018 LCI 7.27 (normal) and March 2021 normal
- December 2020 CT Essentially normal lungs
- October 2022 Bronchoscopy
- One course Iv's November 2022
- CGM 2021 6% above 7.8mmol
- Kaftrio March 2022



UK WHO/UK Weight-For-Age, 9-18 Years, Boy



Weight history

Anthropometry

Year	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Age	1.1	2.1	2.9	3.9	4.9	5.9	6.9	7.9	8.9	10	10.8	11.8
Weight	9.16	11.1	13.1	14.6	16.4	18	20.5	22.5	25.35	28.7	31.4	34.9
Weight centile	-	15	25	20	15	22	23	20	24	28	32	35
BMI	-	15.6	15.9	15.8	15	14.3	14.3	14	14.3	14.4	14.3	14.6
BMI centile	-	25	40	64	32	16	15	8	11	9	5	4

Anthropometry

Year	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Age	1.1	2.1	2.9	3.9	4.9	5.9	6.9	7.9	8.9	10	10.8	11.8
Weight	9.16	11.1	13.1	14.6	16.4	18	20.5	22.5	25.35	28.7	31.4	34.9
Weight centile	-	15	25	20	15	22	23	20	24	28	32	35
Height	-	84.3	90.9	96	104.5	112	119.8	127	133.2	141	148	154.5
Height centile	-	25	9	6	18	25	38	50	52	50-75	80	85
BMI	-	15.6	15.9	15.8	15	14.3	14.3	14	14.3	14.4	14.3	14.6
BMI centile	-	25	40	64	32	16	15	8	11	9	5	4



Timeline/Intervention

- Nutritional supplements November 2018 Food fortification and using Procal powder
- 2020 Age 10 Food fortification, Procal powder. Further advice on snacks gold top milk, peanut butter
- 2021 Age 11 Variable eating pattern depending on activities, School toilets!
- 2022 Age 12 CGM (libreview) indeterminate. Due to start secondary.
- November 2022 Not having breakfast taking Kaftrio Secondary school. School plan. BIA.
- Requirements: Age 12 EAR 2250kcal Based on weight 2120kcal
- Food diary 1800-2200kcal



- January 2023 Tiredness and pale, declining Hb but within normal range. Dietary iron advice
- March 2023 good weight gain, BIA completed. Increased iron and protein intake
- Weight gain at each clinic but height increases more!!
- May 2023 Iron deficiency anaemia (low HB, iron and ferritin), screen for coeliac. Weight 37.25kg (32nd) 160.1cm (88th) BMI 2nd centile

BIA Tanita 780 MC

- **% Fat**

- Total 15.7% fat
- Distribution: 26.6% Right arm
- 25.7% Left arm
- 20.8% Left leg
- 20.4% right leg

- **% Muscle**

- Total 79.8%
- Distribution: 1.2kg arm Right and left arm
- 4.3kg leg Right
- 4.5kg leg Left

- **% Water**

- Total 61.8%

- **% Fat**

- Total 13.3% fat Fat Mass 4.9kg (Healthy range body fat Tanita 12-22%)
- Distribution: 23.4% Right arm
- 22.7% Left arm
- 17.9 % Left leg
- 17.9% right leg
- Trunk 1.9kg

- **% Muscle**

- Total 82.1%
- Distribution: 1.3kg arm Right and left 1.4kg arm
- 4.8kg leg Right
- 4.9kg leg Left
- Trunk 17.8kg

- **% Water**

- Total 63.6%
- Phase Angle 5.3

Next steps?
Thoughts?
Questions?

- High nutritional requirements for growth and development
- Very low BMI
- BIA
- Minimal effect of Kaftrio
- Nutritional support

