

A Novel Approach to Identify Low Dietary Fibre Intake in Subacute Inpatients

Authors¹: Jenny Wei, Melissa Williams, Raisa Shaikh, Alison Stewart, Susannah King

Acknowledgements:

Lisa Barker²

Students²: Alexandra Di Meo, Benjamin Lai, Chloe Mentiplay, Imtiyaz Ali Mustofa, Ka Pik Katrina Cheung, Maxine Liang, Sunny Yuan, Yang Annabel Lin

Subacute Dietitians¹: Alison Argiriou, Amando Longo, Caitlin Kemp, Erin Stewart, Katherine Weber, Nicole Barna, Shay Occhiuto, Sherry Hsieh

1. Nutrition & Dietetics, Monash Health

2. Department of Nutrition, Dietetics and Food, Monash University

Background & Aim

Constipation has a range of impacts: pain, nausea, urinary retention, prolonged hospital admission, and is associated with a higher risk of developing pressure ulcers.

No current organisational guidelines on Constipation Prevention and Management.

Constipation guidelines recommend as first line treatment: increasing dietary fibre to Adequate Intake (AI) 25–30g or fibre supplements such as psyllium.

Lack of literature on the links between constipation, fibre intake and other key contributors, particularly in subacute inpatients.

Delegate[®]: electronic menu management system, with in-built nutrient analysis to enable intake tracking

Aim: Evaluate Delegate[®] Intake Tracking to quantify fibre intake in subacute patients.

Methods

4 x subacute wards at Kingston Centre & Casey Hospital

Exclusion Criteria: enterally fed, patients with Spinal Injury or Parkinson's Disease or stoma

Data collection completed by 8 x Nutrition & Dietetics Students split into 2 groups of 4

Observed 2 shifts (AM Shift 8-4pm & PM Shift 11-7pm) for 3 days

Patients observed at all meals & mid meals, intake entered into Delegate Intake Tracking

Food from home and supplements manually analysed and added into total fibre intake

Additional data collection from Electronic Medical Record (EMR) over 10 day period:
constipation, faecal loading and medications.



Delegate Intake Tracking

ike

Intake Analysis

Supplements and Feed Requests

◀

Meal Order 1/1

▶

◀

Dinner

🔒

▶

◀

Thursday, November 7, 2024

🔒

▶

Component

Amount Consumed

Factor

Reason

via Service Unit, delivered 07.11.2024 15:18:14

All Components

0

1/8

1/4

1/2

3/4

1/1

1.00

Pumpkin Soup

0

1/8

1/4

1/2

3/4

1/1

1.00

(SmPk) Beef Meatballs & Veg

0

1/8

1/4

1/2

3/4

1/1

1.00

Bread - White

0

1/8

1/4

1/2

3/4

1/1

1.00

Butter

0

1/8

1/4

1/2

3/4

1/1

1.00

Salt

0

1/8

1/4

1/2

3/4

1/1

1.00

Pepper

0

1/8

1/4

1/2

3/4

1/1

1.00

Orange Juice

0

1/8

1/4

1/2

3/4

1/1

1.00

Ice Cream

0

1/8

1/4

1/2

3/4

1/1

1.00

if Intake Components

Nutrient Values Meal

Order	Intake	Nutrient	Unit
	3,724	3,724 Energy	kJ
	27.2	27.2 Protein	g
	49.7	49.7 Fat	g
	0.6	0.6 Saturated Fat	g
	63.9	63.9 Carbohydrate - Calculated	g
	22.3	22.3 Sugars, total	g
	12.1	12.1 Dietary Fibre - Unspecified...	g
	1,268.7	1,268.7 Sodium	mg
	1,630	1,630 Potassium	mg

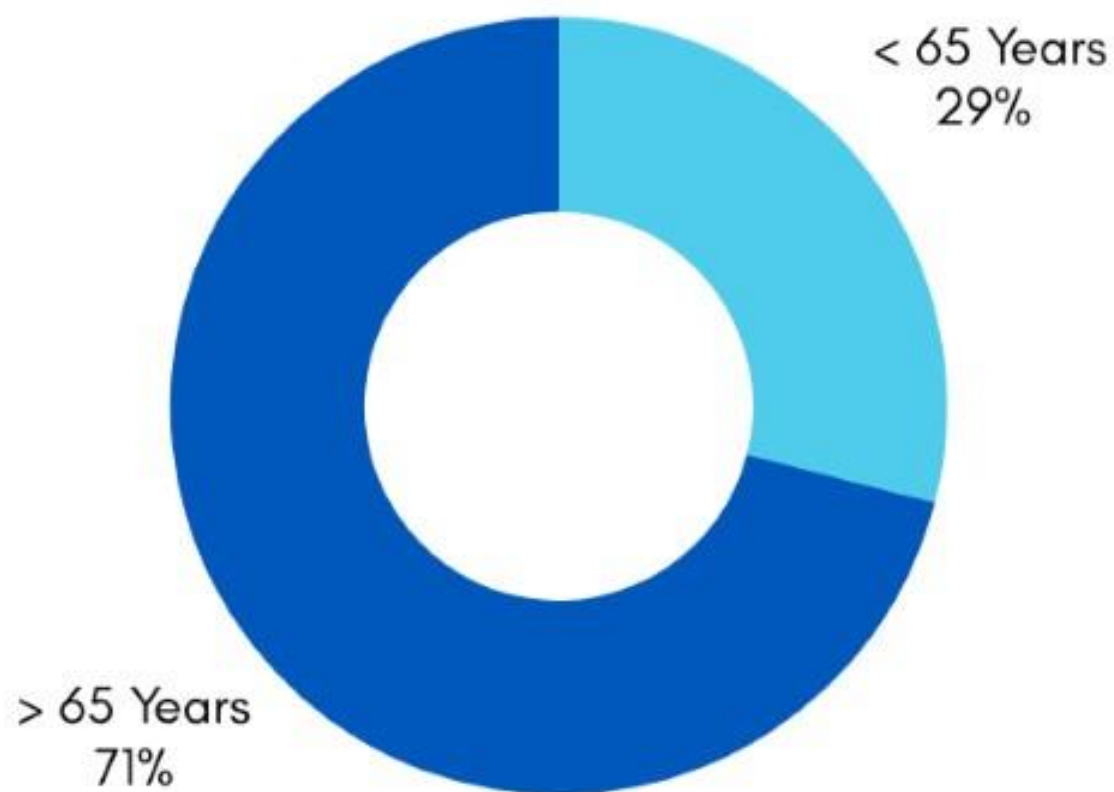
Nutrient Values Day

Order	Intake	Nutrient	Unit
	9,012	7,829 Energy	kJ
	93.6	76.8 Protein	g
	84.7	75.7 Fat	g
	6.3	6.3 Saturated Fat	g
	210.0	176.6 Carbohydrate - Calculated	g
	53.2	53.2 Sugars, total	g
	23.9	23.3 Dietary Fibre - Unspecified...	g
	3,088.2	2,865.8 Sodium	mg
	3,503	3,483 Potassium	mg

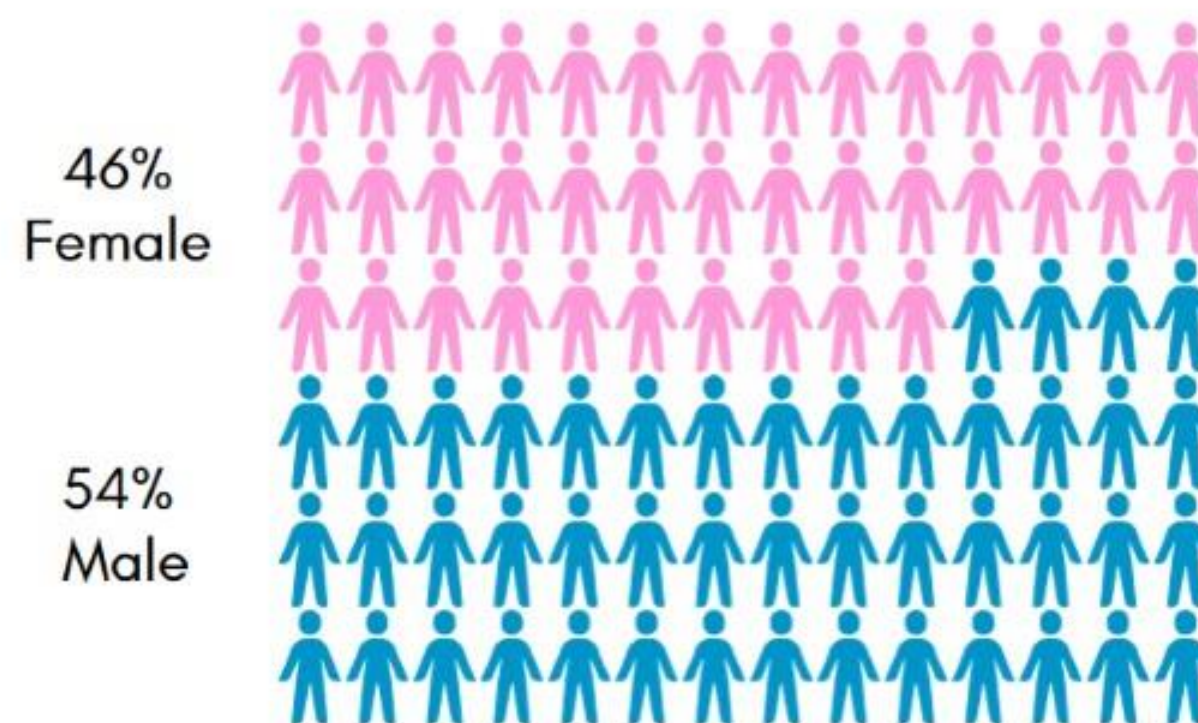
Patient Cohort



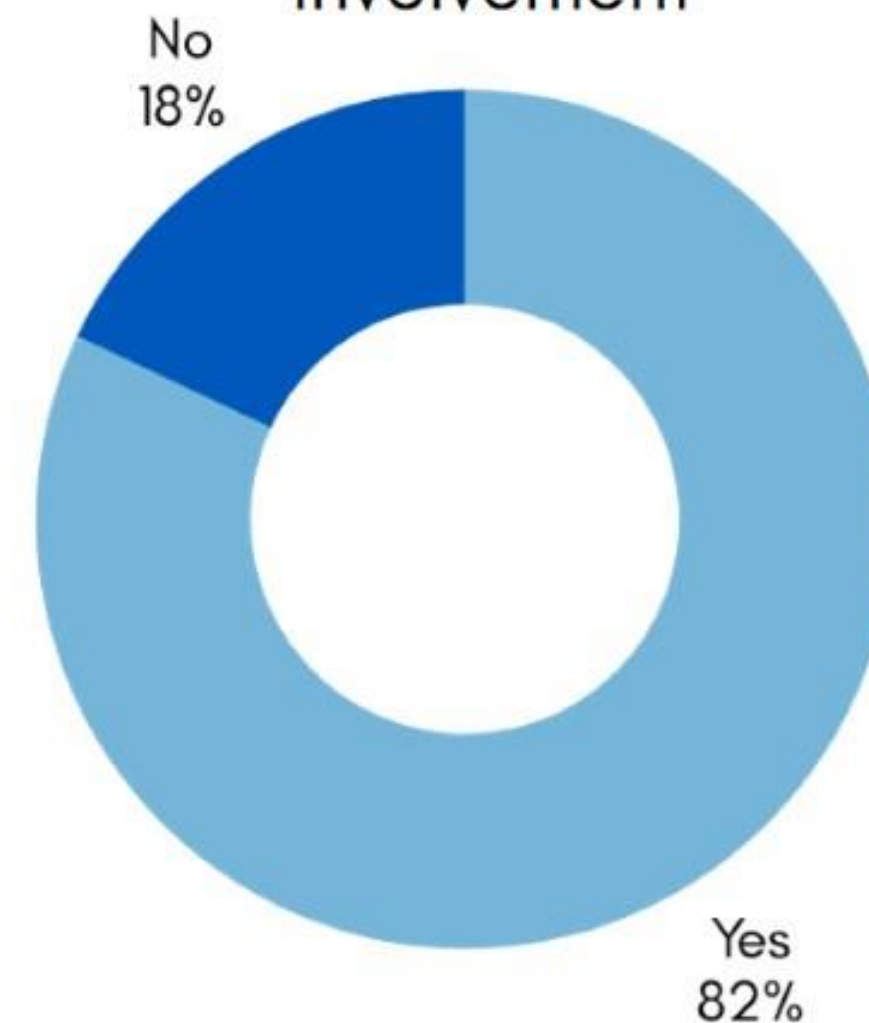
Age



Gender



Dietitian Involvement



Results: Constipation prevalence & medications

Constipated: 20%
(Defined as BNO >3 days or <3 bowel motions per week)

Faecal loading during admission: 35%

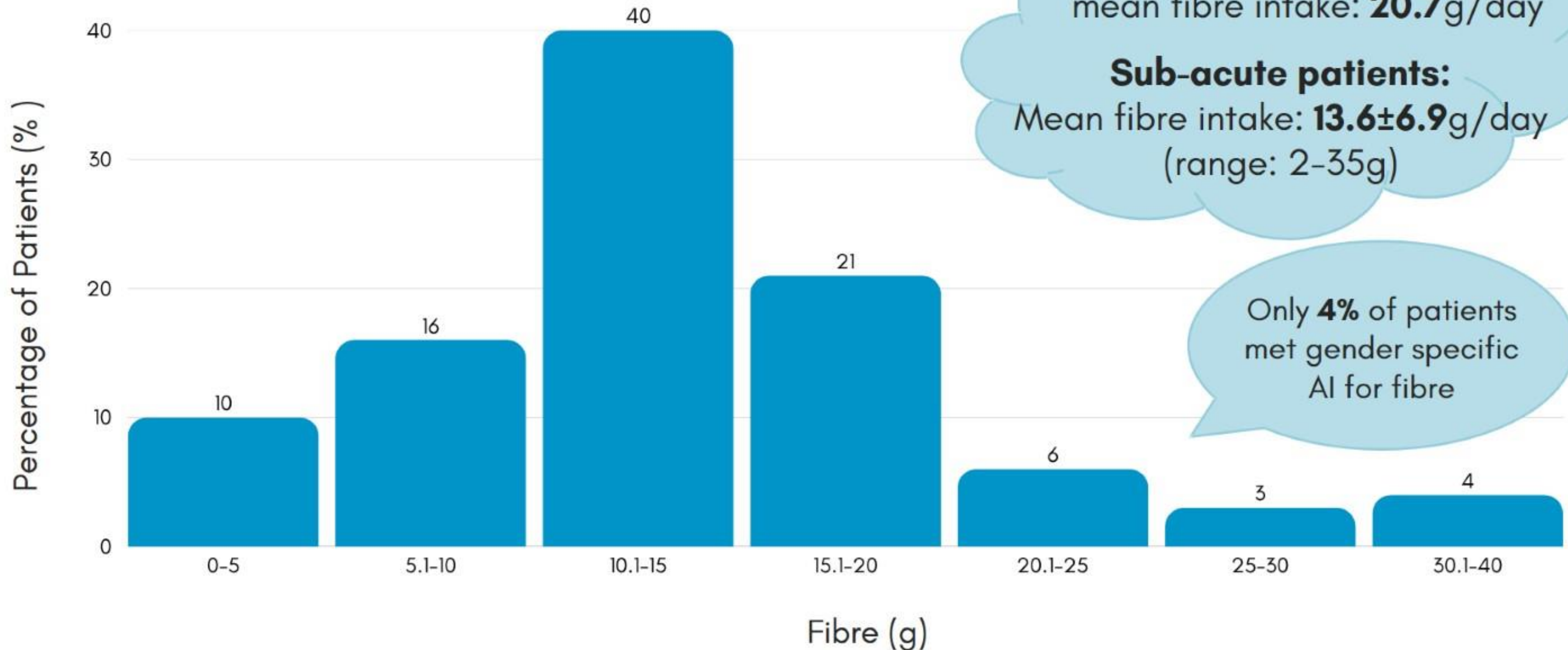
On Aperients: 76%
(Docusate-senna and/or Macrogol)

On Opioid Medications: 38%
(Oxycodone, Tapentadol, Buprenorphine)



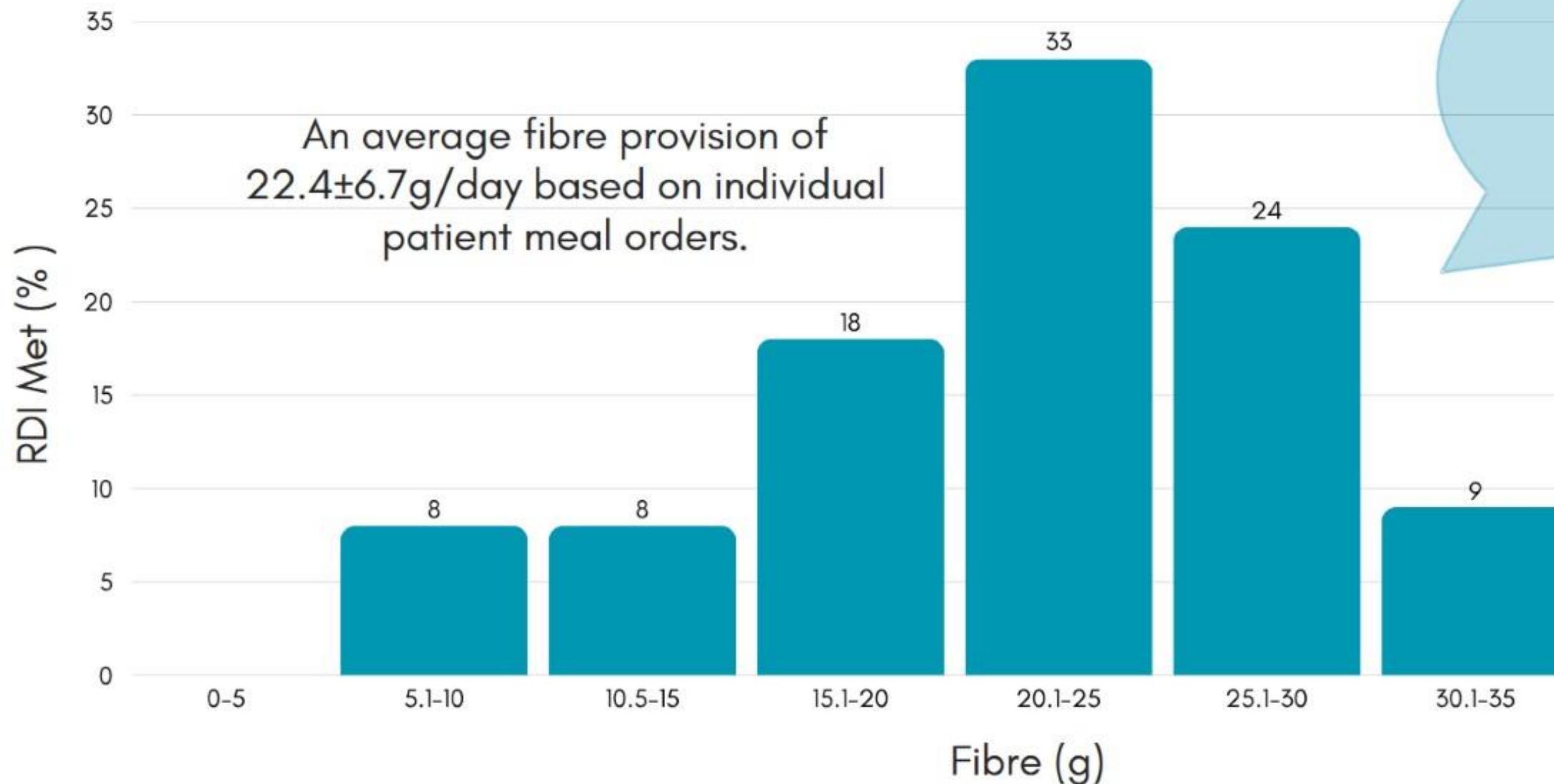
Fibre Intake

Fibre Consumed by Patients

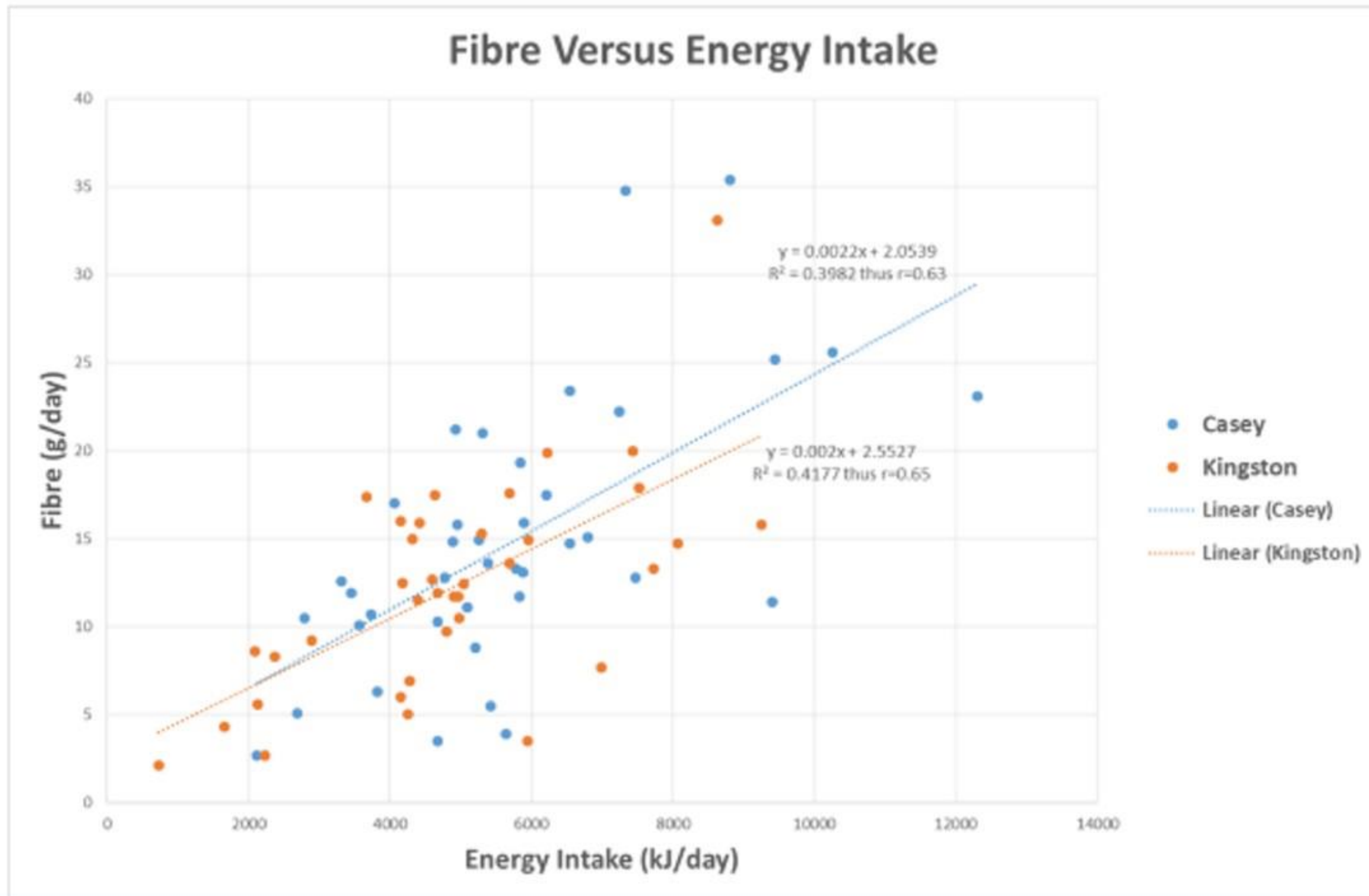


Fibre Content of meals ordered by patients

Fibre Provision in ordered meals



Even If patients consumed 100% of their ordered meals, only **21%** of patients would achieve fibre AI

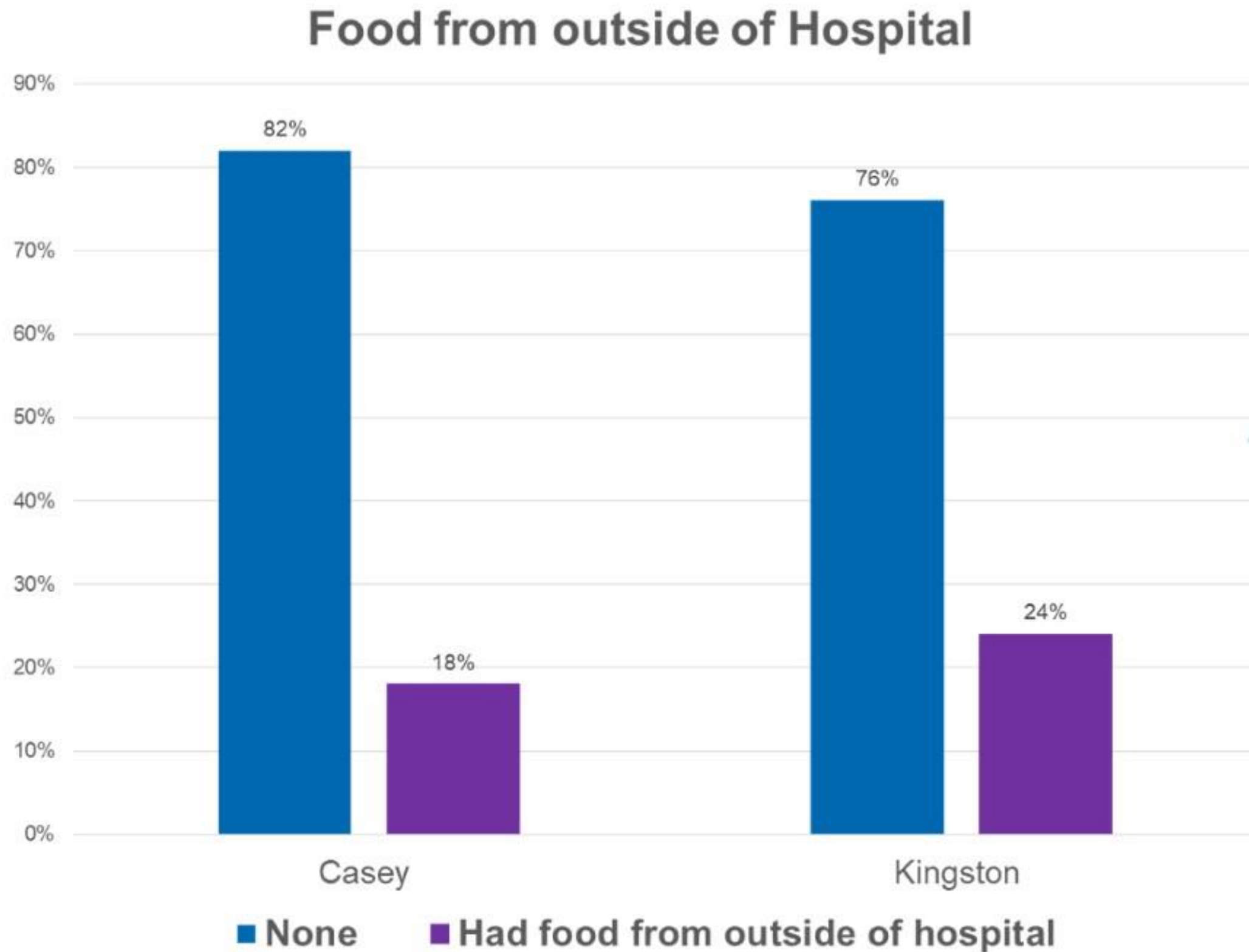


Energy and fibre intake: $r=0.61$, $p<0.0001$

Low overall food intake (mean energy intake: 5.3 ± 2.3 MJ/day; protein 57 ± 28 g/day)

=> Key driver of low fibre intake

Contribution of food from outside the hospital



Despite **20%** of patients consuming food not provided by the hospital Food Service, such foods contributed minimally, making up only **8%** of the total fibre intake

Food from outside of Hospital

- Fruit
- Cheese, yoghurt
- Biscuits
- Fast food (KFC®, McDonalds®)

Conclusion

Fibre intake is inadequate in the majority of subacute patients.

=> Key driver: Low overall food intake.

'Delegate® Intake Tracking' is a feasible and practical method to assess fibre intake.

Future Directions:

- Meal ordering support to encourage selection of fibre-rich options and/or Fibre-containing oral nutrition supplements (ONS)
- Optimise medical management to prevent constipation and faecal loading:
 - Fibre (e.g. psyllium) supplementation
 - Aperient regimen optimisation

