

- Iodine insufficiency can impact thyroid function and child neurodevelopment (1).
- There is no national monitoring system or iodine prophylaxis in the UK (2).
- The main iodine sources in the UK are dairy products and seafood (3).

Cow's Milk



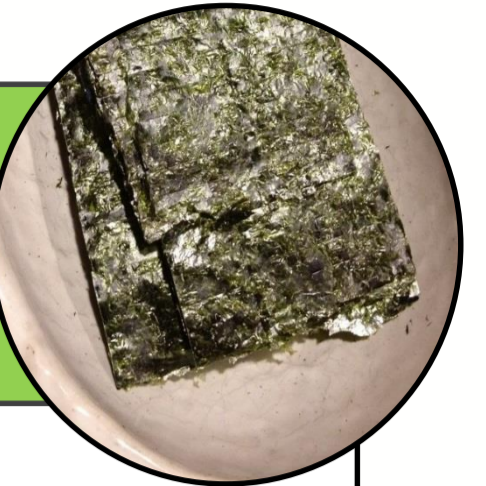
- **25–30** µg/100mL
- Seasonal variation: higher in winter

Sea Fish



- **~170** µg/100g
- Higher in white fish than oily fish

Seaweed



- Species-specific
- Highly variable: **16-8165** µg/g

Aim of the study:

To assess the impact of the food matrix of three different iodine rich foods (milk, fish, and seaweed) on iodine bioavailability.

Methods

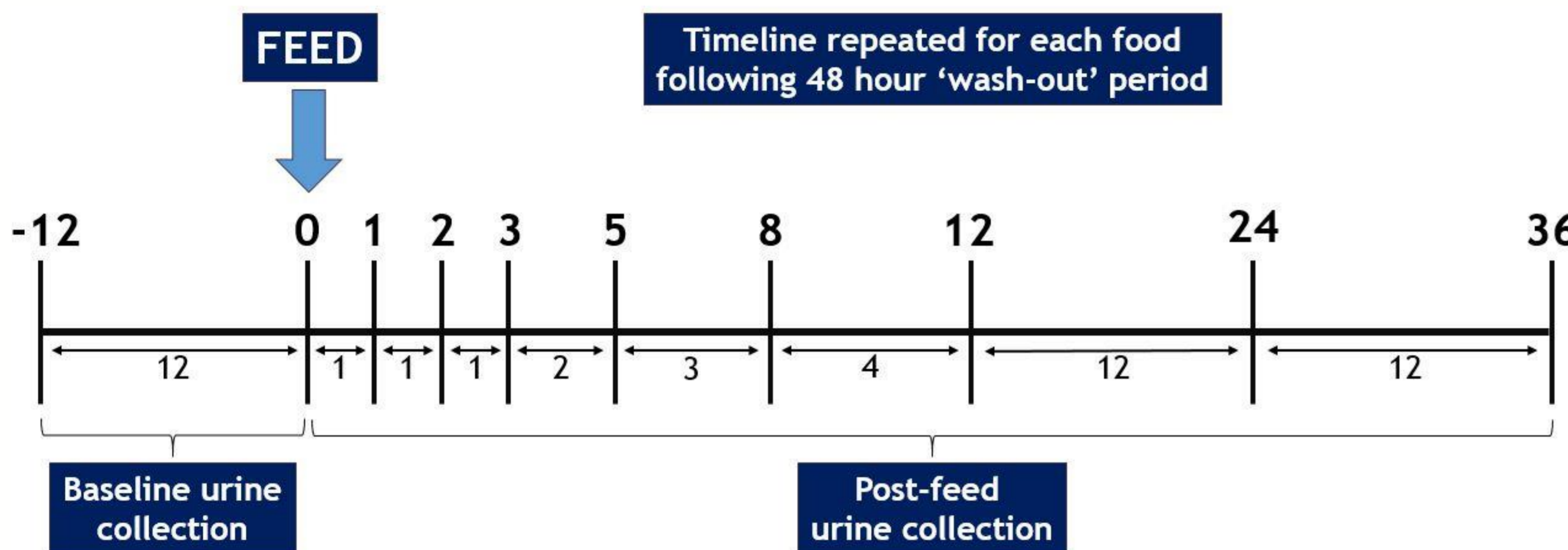
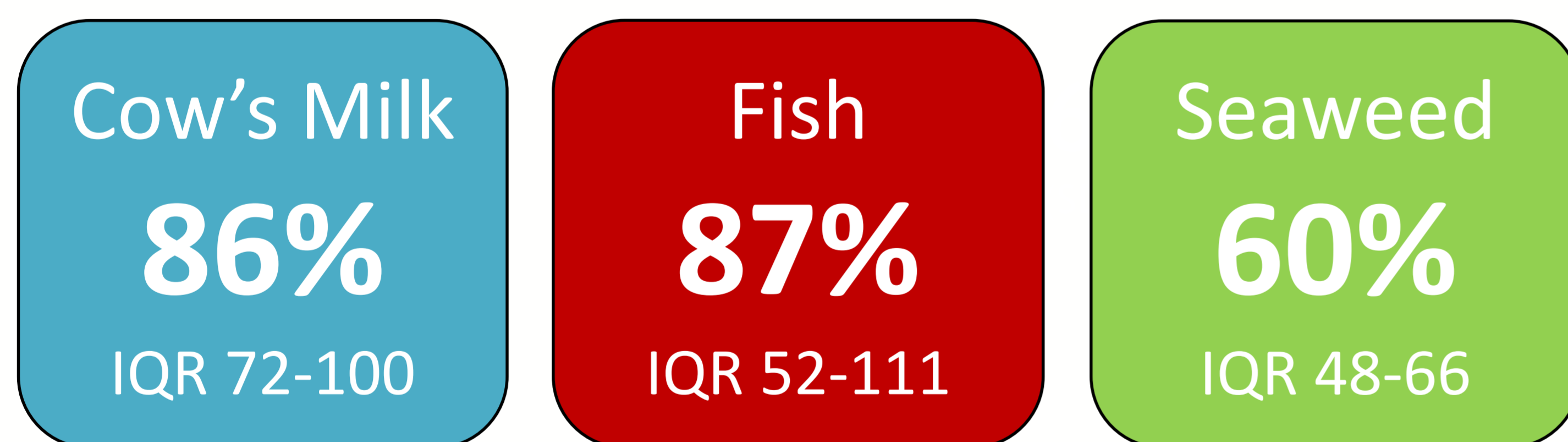


Figure 1. Study timeline.

- Participants (n=11, 6 ♂, 5 ♀) were recruited to a crossover trial.
- Participants followed a **low-iodine diet** during the study as well as for 60 hours prior to study commencement.
- All participants completed each of the three study arms - milk, fish, and seaweed.
- Each feed provided **~140µg** of iodine.
- Urine was collected in timed fractions during the 12 hours preceding, and 36 hours following each feed.

Results

After 36 hours, the cumulated proportion of iodine excreted in urine were:



- **Statistically significant difference** not detected between the three study arms (one-way repeated measures ANOVA, p = 0.08) (n=11).
- This is potentially due to the high variability in iodine excretion between participants.

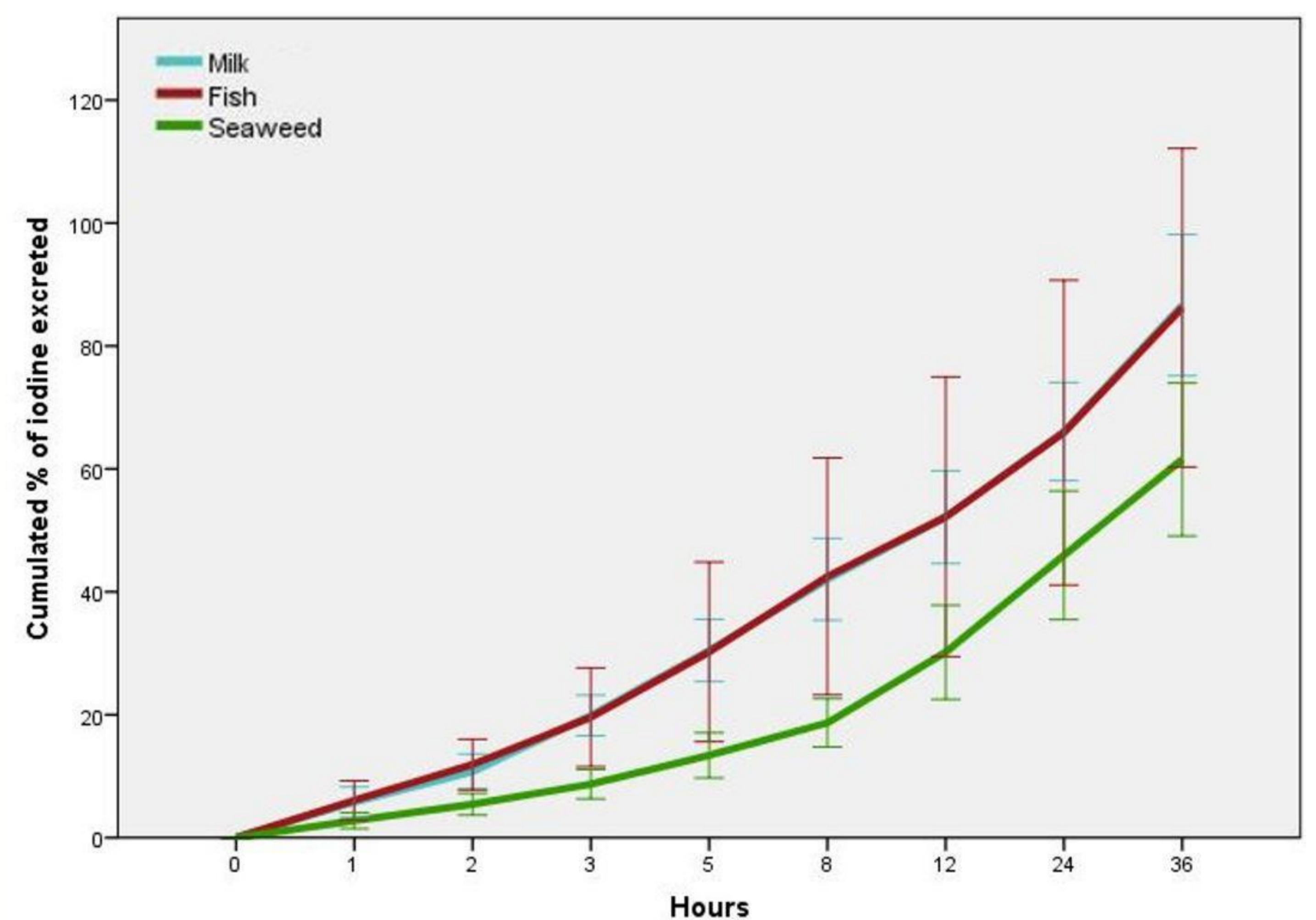


Figure 2. Cumulated percentage of iodine dose excreted (as % of iodine ingested).

Conclusions

- There was no significant difference in urinary iodine excretion 36 hours post-feed between the three arms.
- Although there is no statistical difference between excreted iodine from milk, fish, and seaweed, when similar doses of iodine are consumed, all three foods offer options for increasing dietary iodine intake.
- Despite concerns over exposure to high iodine levels in seaweed (4), these data suggest that the entire dose of iodine in seaweed is not absorbed, which may reduce the potential risk of toxicity.