

Supplementary Section S2.

Expert Evaluation Checklist Used for Blinded Assessment of AI-Generated PKU Diet Plans

The following checklist was independently completed by three pediatric metabolic dietitians for each AI-generated diet plan. The checklist was developed according to current PKU dietary guidelines and the Nutrition Care Process (NCP) framework of the Academy of Nutrition and Dietetics. Each item was scored using a five-point Likert scale.

Score	Interpretation
1	Strongly inappropriate
2	Mostly inappropriate
3	Partially appropriate
4	Mostly appropriate
5	Fully appropriate

Reviewer Information

Diet code: _____

Case number: _____

Reviewer code: _____

Pregnancy: ☐ No ☐ Yes

A. Clinical Appropriateness

Item	1	2	3	4	5
A1. Phenylalanine restriction is appropriate	☐	☐	☐	☐	☐
A2. Natural protein allowance is appropriate	☐	☐	☐	☐	☐
A3. A phenylalanine-free amino acid formula is recommended	☐	☐	☐	☐	☐
A4. Medical formula is appropriately distributed across meals	☐	☐	☐	☐	☐
A5. Energy requirement is appropriate	☐	☐	☐	☐	☐
A6. Suitable for long-term dietary management	☐	☐	☐	☐	☐
A7. The recommended phenylalanine-free amino acid formula is available in Türkiye	☐	☐	☐	☐	☐

B. Food Selection

Item	1	2	3	4	5
B1. Low-protein specialty products are included	☐	☐	☐	☐	☐
B2. Selection of low-protein products is appropriate	☐	☐	☐	☐	☐
B3. High-phenylalanine foods are appropriately excluded	☐	☐	☐	☐	☐
B4. Adequate vegetable variety is provided	☐	☐	☐	☐	☐
B5. Adequate fruit variety is provided	☐	☐	☐	☐	☐
B6. Sufficient low-protein foods are included	☐	☐	☐	☐	☐
B7. Portion sizes are age-appropriate	☐	☐	☐	☐	☐
B8. Food choices are compatible with Turkish dietary habits	☐	☐	☐	☐	☐
B9. Food choices are sustainable in daily practice	☐	☐	☐	☐	☐
B10. Recommended low-protein products are available in Türkiye	☐	☐	☐	☐	☐

C. Meal and Macro–Micronutrient Balance

Item	1	2	3	4	5
C1. Vitamin and mineral adequacy is achieved	☐	☐	☐	☐	☐
C2. Fat and carbohydrate balance is appropriate	☐	☐	☐	☐	☐
C3. Dietary fiber intake is appropriate	☐	☐	☐	☐	☐
C4. Meal distribution is appropriate	☐	☐	☐	☐	☐

D. Applicability

Item	1	2	3	4	5
D1. The meal plan is understandable for families	☐	☐	☐	☐	☐
D2. The meal plan is practical for daily use	☐	☐	☐	☐	☐
D3. The dietary plan is clinically safe	☐	☐	☐	☐	☐
D4. Recommended low-protein products are readily accessible in Türkiye	☐	☐	☐	☐	☐

Optional Reviewer Comments

Note: Domain-specific scores were calculated as the mean of the item scores within each domain.
The overall expert score was calculated as the mean of all 25 checklist item scores.