

**Supplementary Table 1. Charlson comorbidity index (CCI) score**

Comorbidity	Score
Prior myocardial infarction	1
Congestive heart failure	1
Peripheral vascular disease	1
Cerebrovascular disease	1
Dementia	1
Chronic pulmonary disease	1
Rheumatologic disease	1
Peptic ulcer disease	1
Mild liver disease	1
Diabetes	1
Cerebrovascular (hemiplegia) event	2
Moderate-to-severe renal disease	2
Diabetes with chronic complications	2
Cancer without metastases	2
Leukemia	2
Lymphoma	2
Moderate or severe liver disease	3
Metastatic solid tumor	6
Acquired immune-deficiency syndrome (AIDS)	6

The CCI score was calculating using International Classification of Diseases, 9th Revision (ICD-9) codes.

**Supplementary Table 2. Subjective Global Assessment (SGA)**

SGA rating(1-7)

## A. Medical history

## 1. Weight/Weight Change

Weight loss in past 6 months: \_\_\_\_\_ kg, \_\_\_\_\_ %  
\_\_\_\_\_ < 5% \_\_\_\_\_ 5–10% \_\_\_\_\_ > 10%

Weight change in past two weeks:

\_\_\_\_\_ Increase (gain) \_\_\_\_\_ No change (stabilization) \_\_\_\_\_ Decrease (continuous loss)

## 2. Dietary Intake

Overall change: \_\_\_\_\_ No change \_\_\_\_\_ Change (Increase or Decrease)

Duration: \_\_\_\_\_ Weeks

Diet change: \_\_\_\_\_ Suboptimal solid diet (75, 50, 25 intake)

\_\_\_\_\_ Full liquid diet

\_\_\_\_\_ Hypocaloric liquids

\_\_\_\_\_ Starvation

## 3. Gastrointestinal symptoms (persisting daily for 2 weeks)

\_\_\_\_\_ None

\_\_\_\_\_ Vomiting

\_\_\_\_\_ Diarrhea

\_\_\_\_\_ Anorexia

\_\_\_\_\_ Dysphagia/Odynophagia

## 4. Functional Impairment

Overall impairment: \_\_\_\_\_ None (full capacity) \_\_\_\_\_ Mild \_\_\_\_\_ Severe

Duration: \_\_\_\_\_ Weeks

Type: \_\_\_\_\_ Ambulatory (Walking or Wheelchair) \_\_\_\_\_ Bedridden

## 5. Disease state/ comorbidities as related to nutritional needs

Primary diagnosis: \_\_\_\_\_ Comorbidities: \_\_\_\_\_

Metabolic burden : \_\_\_\_\_ No stress \_\_\_\_\_ Minimal \_\_\_\_\_ Moderate \_\_\_\_\_ Severe

## B. Physical Examination (for each trait specify: A=normal, B=mild-moderate, C=severe)

Loss of subcutaneous fat: \_\_\_\_\_(below eye, triceps, chest, biceps)

Muscle wasting: \_\_\_\_\_(Temple, Clavicle, Scapula, Ribs, Quadriceps, Calf, Knee, Interosseous)

Ankle edema \_\_\_\_\_

Sacral edema \_\_\_\_\_

Ascites \_\_\_\_\_ (Hemodialysis-related only)

## C. Overall SGA rating (7 point)

## D. SGA rating

\_\_\_\_\_ A, Well-nourished (6,7)

\_\_\_\_\_ B. Mild–moderately malnourished (3,4,5)

\_\_\_\_\_ C, Severely malnourished (1,2)

**Supplementary Table 3. Example of 7-day dietary research**

Meal	Time	Place	Food	Amount of food intake
Breakfast	8 am	Home	Toast	Bread 2 pieces, Butter 1 teaspoon, Jam 2 spoons
Morning snack	11 am	Home	Kimbap	One line of kimbap
Afternoon meal	12 pm	Restaurant	Pasta, Salad	One serving
Afternoon snack	3 pm	Coffee shop	Muffin	A muffin
Dinner	7 pm	Restaurant	Beef soup	One serving
Evening snack	9 pm	Restaurant	Coke	1 can
			Chicken	A chicken leg and chicken wing

**Supplementary Table 4. Food behavior research**

Questions	0–2 days/week	3–5 days/week	6–7 days/week
1. How many days in a week do you eat three meals a day?	0 points	1 points	2 points
2. How many days in a week do you eat several meals including various nutrients?	0 points	1 points	2 points
3. How many days in a week do you eat fruit?	2 points	1 points	0 points
4. How many days in a week do you drink milk?	0 points	1 points	2 points
5. Do you keep or boil vegetables in water to reduce potassium? How many times?	0 points	1 points	2 points
6. How many days in a week do you eat salted fish, pickle, ham, sausage, or canned food (processed food)?	2 points	1 points	0 points
7. How many days in a week to you eat more than two protein-rich meals in a day?	0 points	1 points	2 points
8. How many sweet or fried foods do you eat a week to keep your calories?			
Sweet food	0 points	1 points	2 points
Fried food	0 points	1 points	2 points
9. Do you remember how much of water you should drink, whenever you drink water?	0 points	1 points	2 points
10. How many times a week do you eat out?	0 points	1 points	2 points

## Supplementary materials

### *Ethics approval*

The Institutional Review Board of Ewha Womans University School of Medicine approved this study (IRB no. 2017-12-023).

The Institutional Review Board of Chung-Ang University School of Medicine approved this study (IRB no. 1612-003-262).

The Institutional Review Board of CHA Bundang Medical Center, CHA University approved this study (IRB no. 2016-11-017).

The Institutional Review Board of Yonsei University School of Medicine approved this study (IRB no. 4-2016-0932).

The Institutional Review Board of SMG-SNU Medical Center approved this study (IRB no. 16-2016-143).

### *Consent for publication*

The authors consent to the publication of the data.