A Guide for Adults
How to Spot and Talk About Symptoms That Could Mean You’re Malnourished

Poor nutrition and eating problems can put you at risk of being malnourished. Malnutrition threatens your health and your ability to recover from injuries or illnesses. That’s why it is important for you to know what symptoms to look for and when you need to address them.

If you were recently hospitalized, been given directions regarding your diet, or been told you need a bit more nourishment, it is particularly important that you keep, follow, and share this information with those who care for you.

What You Need to Watch For
Since malnutrition may not be immediately apparent, you need to watch for, write down, and talk about any changes you notice in:

- Your appetite
- How much food you eat
- Your bowel habits
- Your weight
- Your daily activity levels
- Swelling in your belly, legs, ankles, and feet

You’re doing OK if you can say: “I feel good. I eat three meals a day and have the energy to do what I want.”

When You Need to Be Concerned
If you notice any of the following warning signs, you need to discuss them with your healthcare provider:

- Sudden loss or decrease in appetite
- Eating less than 75% of a normal meal for more than a week
- Episodes of nausea, vomiting, or diarrhea for more than three days
- Unplanned weight loss greater than 10 pounds
- Decrease in activity level

Schedule an appointment if you find yourself saying:

- "I haven’t wanted to eat anything since I started this new medication..."
- “I’m not finishing my meals like I used to...”
- “My stomach has been upset for days...”
- “My clothes don’t seem to be fitting like they had been...”
- “I don’t have any energy...”

When You’re in Danger from Malnutrition
The following are dangerous signs that you could be malnourished:

- Eating half as much as you normally do for more than a week
- Persistent nausea, vomiting, or diarrhea
- Sudden and rapid weight loss with noticeable muscle and/or fat loss
- Swelling in your feet, ankles, legs, or belly
- Feeling confused or having increased memory loss

Act immediately if you find yourself saying:

- “It’s been over a week and I can hardly eat a bite...”
- “I can’t stop going to the bathroom...”
- “My feet and ankles are swollen...”
- “I can’t concentrate when my family is talking to me...”
Keep Watching and Keep Talking

Don’t take changes in your nutrition for granted. Be aware of what you may have been thinking or saying about how you’ve been eating and how you’ve been feeling. Share your conversations and symptoms with your healthcare provider. **Don’t wait for them to ask!**

You’re at the Highest Risk If...

You need to be constantly watchful for the warning signs of malnutrition if you are 85 years old or older. A number of acute or chronic diseases also put you at a much higher risk. Be sure to talk with your healthcare provider if you suffer from any of the following:

- Injury or Trauma
- Any diseases requiring multiple medications
- Cancer
- Chronic Obstructive Pulmonary Disease (COPD)
- Kidney or Liver Disease
- Gastrointestinal Dysfunctions such as Inflammatory Bowel Disease
- Depression or Dementia

Visit the Malnutrition Solution Center

Take advantage of the valuable information and free resources that can help you, your family members and caregivers identify and understand malnutrition available at nutritioncare.org/malnutrition.

Here you can:

- Learn from the true-life stories of patients who’ve suffered from malnutrition
- Download nutrition tips and helpful posters on spotting malnutrition in children and adults
- Learn about other resources for older adults, including links to local Meals on Wheels programs

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**Tips for Proper Nutrition and Staying Healthy**

- **Eat three balanced meals every day** that include protein and fiber from fruits, vegetables and whole grains
- **Stay hydrated** with fluids (8 cups per day for most adults)
- **Follow your healthcare provider’s or dietitian’s orders** for any diet restrictions including fluids
- **Know your bowel habits** (frequency and consistency)
- **Check your weight** weekly and write it down

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This information is adapted from a video presented by Angela Newton, MBA, RD, and the ASPEN Malnutrition Committee. The video and other resources on malnutrition can be found at nutritioncare.org/malnutrition.
## Self-MNA®
### Mini Nutritional Assessment
**For Adults 65 years of Age and Older**

Complete the screen by filling in the boxes with the appropriate numbers. Total the numbers for the final screening score.

<table>
<thead>
<tr>
<th>Screening</th>
<th>Question</th>
<th>Score Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Has your food intake declined over the past 3 months?</td>
<td>0 = severe decrease in food intake, 1 = moderate decrease in food intake, 2 = no decrease in food intake</td>
</tr>
<tr>
<td></td>
<td><strong>[ENTER ONE NUMBER]</strong></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>How much weight have you lost in the past 3 months?</td>
<td>0 = weight loss greater than 7 pounds, 1 = do not know the amount of weight lost, 2 = weight loss between 2 and 7 pounds, 3 = no weight loss or weight loss less than 2 pounds</td>
</tr>
<tr>
<td></td>
<td><strong>[ENTER ONE NUMBER]</strong></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>How would you describe your current mobility?</td>
<td>0 = unable to get out of a bed, a chair, or a wheelchair without the assistance of another person, 1 = able to get out of bed or a chair, but unable to go out of my home, 2 = able to leave my home</td>
</tr>
<tr>
<td></td>
<td><strong>[ENTER ONE NUMBER]</strong></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>Have you been stressed or severely ill in the past 3 months?</td>
<td>0 = yes, 2 = no</td>
</tr>
<tr>
<td></td>
<td><strong>[ENTER ONE NUMBER]</strong></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>Are you currently experiencing dementia and/or prolonged severe sadness?</td>
<td>0 = yes, severe dementia and/or prolonged severe sadness, 1 = yes, mild dementia, but no prolonged severe sadness, 2 = neither dementia nor prolonged severe sadness</td>
</tr>
<tr>
<td></td>
<td><strong>[ENTER ONE NUMBER]</strong></td>
<td></td>
</tr>
</tbody>
</table>

Please total all of the numbers you entered in the boxes for questions A-E and write the numbers here:
Now, please CHOOSE ONE of the following two questions – F1 or F2 – to answer.

### Question F1

<table>
<thead>
<tr>
<th>Height (feet &amp; inches)</th>
<th>Body Weight (pounds)</th>
<th>Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>4'10”</td>
<td>Less than 91</td>
<td>0</td>
</tr>
<tr>
<td>4'11”</td>
<td>Less than 94</td>
<td>0</td>
</tr>
<tr>
<td>5'0”</td>
<td>Less than 97</td>
<td>0</td>
</tr>
<tr>
<td>5'1”</td>
<td>Less than 100</td>
<td>0</td>
</tr>
<tr>
<td>5'2”</td>
<td>Less than 104</td>
<td>0</td>
</tr>
<tr>
<td>5'3”</td>
<td>Less than 107</td>
<td>0</td>
</tr>
<tr>
<td>5'4”</td>
<td>Less than 110</td>
<td>0</td>
</tr>
<tr>
<td>5'5”</td>
<td>Less than 114</td>
<td>0</td>
</tr>
<tr>
<td>5'6”</td>
<td>Less than 118</td>
<td>0</td>
</tr>
<tr>
<td>5'7”</td>
<td>Less than 121</td>
<td>0</td>
</tr>
<tr>
<td>5'8”</td>
<td>Less than 125</td>
<td>0</td>
</tr>
<tr>
<td>5'9”</td>
<td>Less than 128</td>
<td>0</td>
</tr>
<tr>
<td>5'10”</td>
<td>Less than 132</td>
<td>0</td>
</tr>
<tr>
<td>5'11”</td>
<td>Less than 136</td>
<td>0</td>
</tr>
<tr>
<td>6'0”</td>
<td>Less than 140</td>
<td>0</td>
</tr>
<tr>
<td>6'1”</td>
<td>Less than 144</td>
<td>0</td>
</tr>
<tr>
<td>6'2”</td>
<td>Less than 148</td>
<td>0</td>
</tr>
<tr>
<td>6'3”</td>
<td>Less than 152</td>
<td>0</td>
</tr>
<tr>
<td>6'4”</td>
<td>Less than 156</td>
<td>0</td>
</tr>
<tr>
<td>6'5”</td>
<td>Less than 160</td>
<td>0</td>
</tr>
</tbody>
</table>

**Please refer to the chart on the left and follow these instructions:**

1. Find your height on the left-hand column of the chart.
2. Go across that row and circle the range that your weight falls into.
3. Look to the bottom of the chart to find out what group number (0, 1, 2, or 3) your circled weight range falls into.

**Write the Group Number (0, 1, 2, or 3) here:**

### Question F2

**DO NOT ANSWER QUESTION F2 IF QUESTION F1 IS ALREADY COMPLETED.**

**Measure the circumference of your LEFT calf by following the instructions below:**

1. Loop a tape measure all the way around your calf to measure its size.
2. Record the measurement in cm:
   - If less than 31 cm, enter “0” in the box to the right.
   - If 31 cm or greater, enter “3” in the box to the right.

**Write the sum of questions A-E (from page 1) here:**

**Lastly, calculate the sum of these 2 numbers. This is your SCREENING SCORE:**

**Screening Score (14 points maximum)**

- 12–14 points: Normal nutritional status
- 8–11 points: At risk of malnutrition
- 0–7 points: Malnourished

**Copy your SCREENING SCORE:**

If you score between 0-11, please take this form to a healthcare professional for consultation.
**Self-MNA®**

**Mini Nutritional Assessment**

*Para adultos a partir de 65 años*

<table>
<thead>
<tr>
<th>Cuestionario</th>
<th>Pregunta</th>
<th>Opciones</th>
<th>Puntuación</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A</strong></td>
<td>¿Has disminuido su ingesta de alimentos en los últimos 3 meses?</td>
<td>0 = Disminución importante de la ingesta de alimentos 1 = Disminución moderada de la ingesta de alimentos 2 = Sin disminución de la ingesta de alimentos</td>
<td>0</td>
</tr>
<tr>
<td><strong>B</strong></td>
<td>¿Cuánto peso ha perdido en los últimos 3 meses?</td>
<td>0 = He perdido más de 3 kg 1 = No sé cuánto peso he perdido 2 = He perdido entre 1 y 3 kg 3 = No he perdido peso o he perdido menos de 1 kg</td>
<td>0</td>
</tr>
<tr>
<td><strong>C</strong></td>
<td>¿Cómo describiría su movilidad actual?</td>
<td>0 = No puedo levantarme de la cama, de una silla o de la silla de ruedas sin la ayuda de otra persona 1 = Puedo levantarme de la cama o de una silla, pero no puedo salir de casa 2 = Puedo salir de casa</td>
<td>0</td>
</tr>
<tr>
<td><strong>D</strong></td>
<td>¿Ha estado estresado/a o gravemente enfermo/a en los últimos 3 meses?</td>
<td>0 = Sí 2 = No</td>
<td>0</td>
</tr>
<tr>
<td><strong>E</strong></td>
<td>¿Padece actualmente demencia o una tristeza intensa prolongada?</td>
<td>0 = Sí, demencia grave y/o tristeza intensa prolongada 1 = Sí, demencia leve, pero sin tristeza intensa prolongada 2 = Ni demencia ni tristeza intensa prolongada</td>
<td>0</td>
</tr>
</tbody>
</table>

Sume todos los números que ha introducido en las casillas de las preguntas A a la E y anote el resultado aquí:
A continuación, ELIJA UNA de las siguientes preguntas, F1 o F2, y respóndala.

### Pregunta F1

<table>
<thead>
<tr>
<th>Estatura (cm)</th>
<th>Peso (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>147.5 – 150</td>
<td>41.1 – 45.3</td>
</tr>
<tr>
<td>150 – 152.5</td>
<td>42.8 – 47.2</td>
</tr>
<tr>
<td>152.5 – 155</td>
<td>44.2 – 48.7</td>
</tr>
<tr>
<td>155 – 157.5</td>
<td>45.6 – 50.4</td>
</tr>
<tr>
<td>157.5 – 160</td>
<td>47.1 – 52.0</td>
</tr>
<tr>
<td>160 – 162.5</td>
<td>48.6 – 53.7</td>
</tr>
<tr>
<td>162.5 – 165</td>
<td>50.2 – 55.4</td>
</tr>
<tr>
<td>165 – 167.5</td>
<td>51.7 – 57.1</td>
</tr>
<tr>
<td>167.5 – 170</td>
<td>53.3 – 58.8</td>
</tr>
<tr>
<td>170 – 172.5</td>
<td>54.9 – 60.6</td>
</tr>
<tr>
<td>172.5 – 175</td>
<td>56.5 – 62.4</td>
</tr>
<tr>
<td>175 – 177.5</td>
<td>58.2 – 64.2</td>
</tr>
<tr>
<td>177.5 – 180</td>
<td>59.9 – 66.1</td>
</tr>
<tr>
<td>180 – 182.5</td>
<td>61.6 – 67.9</td>
</tr>
<tr>
<td>182.5 – 185</td>
<td>63.3 – 69.8</td>
</tr>
<tr>
<td>185 – 187.5</td>
<td>65.0 – 71.8</td>
</tr>
<tr>
<td>187.5 – 190</td>
<td>66.8 – 73.7</td>
</tr>
<tr>
<td>190 – 192.5</td>
<td>68.6 – 75.7</td>
</tr>
</tbody>
</table>

Consulte la tabla de la izquierda y siga las instrucciones siguientes:

1. Encuentre su estatura en la columna de la izquierda de la tabla.
2. En esa misma fila rodee con un círculo el intervalo de peso en el que se encuentra.
3. Mire en la parte inferior de la tabla el número de grupo (0, 1, 2 o 3) al que corresponde el intervalo de peso que ha marcado.

Anote aqui el número de grupo (0, 1, 2 o 3):

Anote aquí la suma de las preguntas A-E (de la página 1):

Por último, sume estos dos números. Esta es su PUNTUACIÓN FINAL:

### Pregunta F2

NO RESPONDA A LA PREGUNTA F2 SI YA HA RESPONDIDO A LA PREGUNTA F1

Mida la circunferencia de su pantorrilla IZQUIERDA siguiendo las instrucciones siguientes:

1. Coloque una cinta métrica alrededor de la pantorrilla para medir su tamaño.
2. Anote la longitud en centímetros:
   - Si mide menos de 30 centímetros, introduzca "0" en la casilla de la derecha.
   - Si mide 30 centímetros o más, introduzca "3" en la casilla de la derecha.

Anote aquí la suma de las preguntas A-E (de la página 1):

Por último, sume estos dos números:

Puntuación del cuestionario (14 puntos como máximo)

<table>
<thead>
<tr>
<th>Puntuación</th>
<th>Descripción</th>
</tr>
</thead>
<tbody>
<tr>
<td>12–14</td>
<td>Estado nutricional normal</td>
</tr>
<tr>
<td>8–11</td>
<td>Riesgo de desnutrición</td>
</tr>
<tr>
<td>0–7</td>
<td>Desnutrido</td>
</tr>
</tbody>
</table>

Copie su PUNTUACIÓN FINAL:

Si la puntuación está entre 0 y 11, lleve este cuestionario a un profesional sanitario para recibir asesoramiento.
Nutrition Screening as easy as mna

A guide to completing the Mini Nutritional Assessment – Short Form (MNA®-SF)

Screen and intervene.
Nutrition can make a difference.
Introduction

Mini Nutritional Assessment – Short Form (MNA®-SF)
The MNA®-SF is a screening tool to help identify elderly patients who are malnourished or at risk of malnutrition. This User Guide will assist you in completing the MNA®-SF accurately and consistently. It explains each question and how to assign and interpret the score.

Introduction

While the prevalence of malnutrition in the free living elderly population is relatively low, the risk of malnutrition increases dramatically in the institutionalized and hospitalized elderly.1 The prevalence of malnutrition is even higher in cognitively impaired elderly individuals and is associated with cognitive decline.2

Patients who are malnourished when admitted to the hospital tend to have longer hospital stays, experience more complications, and have greater risks of morbidity and mortality than those whose nutritional state is normal.3

By identifying older persons who are malnourished or at risk of malnutrition either in the hospital or community setting, the MNA®-SF allows clinicians to intervene earlier to provide adequate nutritional support, prevent further deterioration, and improve patient outcomes.4

Mini Nutritional Assessment – Short Form (MNA®-SF)
The MNA®-SF provides a simple and quick method of identifying elderly persons who are at risk for malnutrition, or who are already malnourished. It identifies the risk of malnutrition before severe changes in weight or serum protein levels occur.

The MNA®-SF was developed by Nestlé and leading international geriatricians and remains one of the few validated screening tools for the elderly. It has been well validated in international studies in a variety of settings5-7 and correlates with morbidity and mortality.

In 2009 the MNA®-SF was validated as a stand alone screening tool, based on the full MNA®.8 The MNA®-SF may be completed at regular intervals in the community and in the hospital or long-term care setting. It is recommended to be done annually in the community, and every 3 months in the hospital or long-term care or whenever a change in clinical condition occurs.

Instructions to complete the MNA®-SF

Before beginning the MNA®-SF, please enter the patient’s information on the top of the form:

- **Name** • **Gender** • **Age**
- **Weight (kg)** – To obtain an accurate weight, remove shoes and heavy outer clothing. Use a calibrated and reliable set of scales. Pounds (lbs) must be converted to kilograms (1 lb = 0.45 kg).
- **Height (cm)** – Measure height without shoes using a stadiometer (height gauge). If the patient is bedridden, measure height by demispan, half arm-span, or knee height (see Appendix 2). Inches must be converted to centimeters (1 inch = 2.54 cm).
- **Date of screen**
Identify

The Mini Nutritional Assessment Short Form (MNA®-SF) is an effective tool to help identify patients who are malnourished or at risk of malnutrition.

- **Most validated tool for the elderly**
  - Sensitive and reliable
  - Recommended by national and international organisations
  - Supported by more than 450 published studies

- **Quick and easy to use**
  - Screen in less than 5 minutes
  - Requires no special training
  - No laboratory data needed

- **Effective**
  - Identifies at-risk persons before weight loss occurs

- **Facilitates early intervention**

Intervene

Recommend Nestlé Nutrition supplements to help your patients improve their nutritional status.

Monitor

- **Inexpensive diagnostic tool**
  - The MNA®-SF tool allows standardised, reproducible and reliable determination of nutritional status
  - Use the MNA®-SF regularly to assess your patients’ nutritional status and provide intervention as required
## Screening (MNA®-SF)

Complete the screen by filling in the boxes with the appropriate numbers. Total the numbers for the final screening score.

### Key Points

Ask the patient to answer questions A – F, using the suggestions in the shaded areas. If the patient is unable to answer the question, ask the patient’s caregiver to answer or check the medical record.

<table>
<thead>
<tr>
<th>A</th>
<th>Has food intake declined over the past three months due to loss of appetite, digestive problems, chewing or swallowing difficulties?</th>
<th>Ask patient or caregiver or check the medical record</th>
</tr>
</thead>
<tbody>
<tr>
<td>Score</td>
<td>0 = Severe decrease in food intake</td>
<td>• “Have you eaten less than normal over the past three months?”</td>
</tr>
<tr>
<td></td>
<td>1 = Moderate decrease in food intake</td>
<td>• If so, “is this because of lack of appetite, chewing, or swallowing difficulties?”</td>
</tr>
<tr>
<td></td>
<td>2 = No decrease in food intake</td>
<td>• If yes, “have you eaten much less than before or only a little less?”</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>B</th>
<th>Involuntary weight loss during the last 3 months?</th>
<th>Ask patient / Review medical record</th>
</tr>
</thead>
<tbody>
<tr>
<td>Score</td>
<td>0 = Weight loss greater than 3 kg (6.6 pounds)</td>
<td>• “Have you lost any weight without trying over the last 3 months?”</td>
</tr>
<tr>
<td></td>
<td>1 = Does not know</td>
<td>• “Has your waistband gotten looser?”</td>
</tr>
<tr>
<td></td>
<td>2 = Weight loss between 1 and 3 kg (2.2 and 6.6 pounds)</td>
<td>• “How much weight do you think you have lost? More or less than 3 kg (or 6 pounds)?”</td>
</tr>
<tr>
<td></td>
<td>3 = No weight loss</td>
<td>Though weight loss in the overweight elderly may be appropriate, it may also be due to malnutrition. When the weight loss question is removed, the MNA® loses its sensitivity, so it is important to ask about weight loss even in the overweight.</td>
</tr>
</tbody>
</table>
### C

**Mobility?**

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Bed or chair bound</td>
</tr>
<tr>
<td>1</td>
<td>Able to get out of bed/chair, but does not go out</td>
</tr>
<tr>
<td>2</td>
<td>Goes out</td>
</tr>
</tbody>
</table>

**Ask patient / Review patient’s medical record / Ask caregiver**

- "How would you describe your current mobility?"
  - "Are you able to get out of a bed, a chair, or a wheelchair without the assistance of another person?" – if not, would score 0
  - "Are you able to get out of a bed or a chair, but unable to go out of your home?" – if yes, would score 1
  - "Are you able to leave your home?" – if yes, would score 2

### D

**Has the patient suffered psychological stress or acute disease in the past three months?**

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td>No</td>
</tr>
</tbody>
</table>

**Ask patient / Review patient medical record / Use professional judgment**

- "Have you been stressed recently?"
- "Have you been severely ill recently?"

### E

**Neuropsychological problems?**

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Severe dementia or depression</td>
</tr>
<tr>
<td>1</td>
<td>Mild dementia</td>
</tr>
<tr>
<td>2</td>
<td>No psychological problems</td>
</tr>
</tbody>
</table>

**Review patient medical record / Use professional judgment / Ask patient, nursing staff or caregiver**

- "Do you have dementia?"
- "Have you had prolonged or severe sadness?"

The patient’s caregiver, nursing staff or medical record can provide information about the severity of the patient’s neuropsychological problems (dementia).
Body mass index (BMI)?
(weigh in kg / height in m²)

Score
0 = BMI less than 19
1 = BMI 19 to less than 21
2 = BMI 21 to less than 23
3 = BMI 23 or greater

Determining BMI
BMI is used as an indicator of appropriate weight for height (Appendix 1)

BMI Formula – US units
• \( BM = \frac{\text{Weight in Pounds}}{[\text{Height in inches} \times \text{Height in inches}]} \times 703 \)

BMI Formula – Metric units
• \( BM = \frac{\text{Weight in Kilograms}}{[\text{Height in Meters} \times \text{Height in Meters}]} \)

Before determining BMI, record the patient’s weight and height on the MNA® form.

1. If height has not been measured, please measure using a stadiometer or height gauge (Refer to Appendix 2).
2. If the patient is unable to stand, measure height using indirect methods such as measuring demi-span, arm span, or knee height. (See Appendix 2).
3. Using the BMI chart provided (Appendix 1), locate the patient’s height and weight and determine the BMI.
4. Fill in the appropriate box on the MNA® form to represent the BMI of the patient.
5. To determine BMI for a patient with an amputation, see Appendix 3.

IF BMI IS NOT AVAILABLE, REPLACE QUESTION F1 WITH QUESTION F2.
DO NOT ANSWER QUESTION F2 IF QUESTION F1 IS ALREADY COMPLETED.
F2  Answer only if unable to obtain BMI.

Calf circumference (CC) in cm

0 = CC less than 31
3 = CC 31 or greater

Measuring Calf Circumference

1. The subject should be sitting with the left leg hanging loosely or standing with their weight evenly distributed on both feet.

2. Ask the patient to roll up their trouser leg to uncover the calf.

3. Wrap the tape around the calf at the widest part and note the measurement.

4. Take additional measurements above and below the point to ensure that the first measurement was the largest.

5. An accurate measurement can only be obtained if the tape is at a right angle to the length of the calf.

To measure calf circumference in bed-bound elderly, please refer to Appendix 4

Add the numbers to obtain the screening score.

Screening Score
(Max. 14 points)

12-14 points: Normal nutritional status
8-11 points: At risk of malnutrition
0-7 points: Malnourished

For proposed intervention, please see the algorithm on the next page.

For more information, go to www.mna-elderly.com
**Recommendations for Intervention**

**MNA® Score**

- **Normal Nutritional Status** (12 – 14 points)
- **At Risk of Malnutrition** (8 – 11 points)
- **Malnourished** (0-7 points)

**No Weight Loss**
- **RESCREEN**
  - After acute event or illness
  - Once per year in community dwelling elderly
  - Every 3 months in institutionalized patients
- **MONITOR**
  - Close weight monitoring
  - Rescreen every 3 months
- **TREAT**
  - Nutrition intervention
    - Diet enhancement
    - Oral nutritional supplementation (400 kcal/d)¹
  - Close weight monitoring
  - Further in-depth nutrition assessment

**Weight Loss**
- **TREAT**
  - Nutrition intervention
    - Oral nutritional supplementation (400-600 kcal/d)²
    - Diet enhancement
  - Close weight monitoring
  - Further in-depth nutrition assessment


**Note:** In the elderly, weights and heights are important because they correlate with morbidity and mortality.

Weight and height measurements are often available in the patient record and should be used as a priority. Only when height and/or weight are unavailable, should Calf Circumference (CC) be used instead of BMI.

**Important:** When the Calf Circumference is used to complete the MNA®-SF, do not use the full MNA®. Otherwise, the full MNA® score will be inaccurate due to the Calf Circumference measurement being counted twice – once in the MNA®-SF and again in Question R of the full MNA®.

**Follow-Up**
Rescreen all institutionalized elderly patients every three months and normally nourished elderly patients annually in the community.

Please refer results of assessments and re-assessments to dietitian/doctor and record in medical record.
### MNA® BMI Table for the Elderly (age 65 and above)

<table>
<thead>
<tr>
<th>Weight (pounds)</th>
<th>Height (cm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>45</td>
<td>0 = BMI less than 19</td>
</tr>
<tr>
<td>48</td>
<td>1 = BMI 19 to less than 21</td>
</tr>
<tr>
<td>50</td>
<td>2 = BMI 21 to less than 23</td>
</tr>
<tr>
<td>52</td>
<td>3 = BMI 23 or greater</td>
</tr>
<tr>
<td>54</td>
<td>150</td>
</tr>
<tr>
<td>55</td>
<td>152.5</td>
</tr>
<tr>
<td>57</td>
<td>155</td>
</tr>
<tr>
<td>59</td>
<td>157.5</td>
</tr>
<tr>
<td>61</td>
<td>160</td>
</tr>
<tr>
<td>64</td>
<td>162.5</td>
</tr>
<tr>
<td>66</td>
<td>165</td>
</tr>
<tr>
<td>68</td>
<td>167.5</td>
</tr>
<tr>
<td>70</td>
<td>170</td>
</tr>
<tr>
<td>73</td>
<td>172.5</td>
</tr>
<tr>
<td>75</td>
<td>175</td>
</tr>
<tr>
<td>77</td>
<td>177.5</td>
</tr>
<tr>
<td>80</td>
<td>180</td>
</tr>
<tr>
<td>82</td>
<td>182.5</td>
</tr>
<tr>
<td>84</td>
<td>185</td>
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<td>86</td>
<td>188</td>
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<td>89</td>
<td>190</td>
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<td>195</td>
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<td>93</td>
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<td>95</td>
<td>205</td>
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<td>98</td>
<td>210</td>
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<td>100</td>
<td>215</td>
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<tr>
<td>102</td>
<td>220</td>
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<tr>
<td>105</td>
<td>225</td>
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<tr>
<td>107</td>
<td>230</td>
</tr>
<tr>
<td>109</td>
<td>234</td>
</tr>
<tr>
<td>111</td>
<td>240</td>
</tr>
<tr>
<td>114</td>
<td>245</td>
</tr>
<tr>
<td>117</td>
<td>250</td>
</tr>
</tbody>
</table>

This abbreviated BMI table is provided for your convenience and facilitates completing the MNA®. It is accurate for the MNA®. In some cases, calculating the BMI may yield a more precise BMI determination.
2.1 • Measuring height using a stadiometer

1. Ensure the floor surface is even and firm.
2. Have subject remove shoes and stand up straight with heels together, and with heels, buttocks and shoulders pressed against the stadiometer.
3. Arms should hang freely with palms facing thighs.
4. Take the measurement with the subject standing tall, looking straight ahead with the head upright and not tilted backwards.
5. Make sure the subject’s heels stay flat on the floor.
6. Lower the measure on the stadiometer until it makes contact with the top of the head.
7. Record standing height to the nearest centimeter.

2.2 • Measuring height using demispan

Demispan (half-arm span) is the distance from the midline at the sternal notch to the web between the middle and ring fingers along outstretched arm. Height is then calculated from a standard formula.9

1. Locate and mark the midpoint of the sternal notch with the pen.
2. Ask the patient to place the left arm in a horizontal position.
3. Check that the patient’s arm is horizontal and in line with shoulders.
4. Using the tape measure, measure distance from mark on the midline at the sternal notch to the web between the middle and ring fingers.
5. Check that arm is flat and wrist is straight.
6. Take reading in cm.

Accessed at:

Demispan

Calculate height from the formula below:
Females
Height in cm =
(1.35 x demispan in cm) + 60.1
Males
Height in cm =
(1.40 x demispan in cm) + 57.8

Source:
Reproduced here with the kind permission of BAPEN ( British Association for Parenteral and Enteral Nutrition ) from the ‘MUST’ Explanatory Booklet. For further information see www.bapen.org.uk (http://www.bapen.org.uk/pdfs/must/must_explan.pdf)
2.3 • Measuring height using half arm-span

Half arm-span is the distance from the midline at the sternal notch to the tip of the middle finger. Height is then calculated by doubling the half arm-span.10

1. Locate and mark the edge of the right collar bone (in the sternal notch) with the pen.
2. Ask the patient to place the nondominant arm in a horizontal position.
3. Check that the patient’s arm is horizontal and in line with shoulders.
4. Using the tape measure, measure distance from mark on the midline at the sternal notch to the tip of the middle finger.
5. Check that arm is flat and wrist is straight.
6. Take reading in cm.

Calculate height by multiplying the half arm-span measurement by 2

Half arm-span

Source:
2.4 • Measuring height using knee height

Knee height is one method used to determine stature in the bed- or chair-bound patient and is measured using a sliding knee height caliper. The patient must be able to bend both the knee and the ankle of one leg to 90 degree angles.

Source:

1. Have the subject bend the knee and ankle of one leg at a 90 degree angle while lying supine or sitting on a table with legs hanging off the table.

2. Place the fixed blade of the knee caliper under the heel of the foot in line with the ankle bone. Place the fixed blade of the caliper on the anterior surface of the thigh about 3.0 cm above the patella.

3. Be sure the shaft of the caliper is in line with and parallel to the long bone in the lower leg (tibia) and is over the ankle bone (lateral malleolus). Apply pressure to compress the tissue. Record the measurement to the nearest 0.1 cm.

4. Take two measurements in immediate succession. They should agree within 0.5 cm. Use the average of these two measurements and the patient’s chronological age in the population and gender-specific equations in the table on the right to calculate the subject’s stature.

5. The value calculated from the selected equation is an estimate of the person’s true stature. The 95 percent confidence for this estimate is plus or minus twice the SEE value for each equation.

Using population-specific formula, calculate height from standard formula:

<table>
<thead>
<tr>
<th>Population and Gender group</th>
<th>Equation: Stature (cm) =</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Hispanic white men (U.S.)¹¹ [SEE = 3.74 cm]</td>
<td>78.31 + (1.94 x knee height) – (0.14 x age)</td>
</tr>
<tr>
<td>Non-Hispanic black men (U.S.)¹¹ [SEE = 3.80 cm]</td>
<td>79.69 + (1.85 x knee height) – (0.14 x age)</td>
</tr>
<tr>
<td>Mexican-American men (U.S.)¹¹ [SEE = 3.68 cm]</td>
<td>82.77 + (1.83 x knee height) – (0.16 x age)</td>
</tr>
<tr>
<td>Non-Hispanic white women (U.S.)¹¹ [SEE = 3.98 cm]</td>
<td>82.21 + (1.85 x knee height) – (0.21 x age)</td>
</tr>
<tr>
<td>Non-Hispanic black women (U.S.)¹¹ [SEE = 3.82 cm]</td>
<td>89.58 + (1.61 x knee height) – (0.17 x age)</td>
</tr>
<tr>
<td>Mexican-American women (U.S.)¹¹ [SEE = 3.77 cm]</td>
<td>84.25 + (1.82 x knee height) – (0.26 x age)</td>
</tr>
<tr>
<td>Taiwanese men¹² [SEE = 3.86 cm]</td>
<td>85.10 + (1.73 x knee height) – (0.11 x age)</td>
</tr>
<tr>
<td>Taiwanese women¹² [SEE = 3.79 cm]</td>
<td>91.45 + (1.53 x knee height) – (0.16 x age)</td>
</tr>
<tr>
<td>Elderly Italian men¹³ [SEE = 4.3 cm]</td>
<td>94.87 + (1.58 x knee height) – (0.23 x age) + 4.8</td>
</tr>
<tr>
<td>Elderly Italian women¹³ [SEE = 4.3 cm]</td>
<td>94.87 + (1.58 x knee height) – (0.23 x age)</td>
</tr>
<tr>
<td>French men¹⁴ [SEE = 3.8 cm]</td>
<td>74.7 + (2.07 x knee height) – (0.21 x age)</td>
</tr>
<tr>
<td>French women¹⁴ [SEE = 3.5 cm]</td>
<td>67.00 + (2.2 x knee height) – (0.25 x age)</td>
</tr>
<tr>
<td>Mexican Men¹⁵ [SEE = 3.31 cm]</td>
<td>52.6 + (2.17 x knee height)</td>
</tr>
<tr>
<td>Mexican Women¹⁵ [SEE = 2.99 cm]</td>
<td>73.70 + (1.99 x knee height) – (0.23 x age)</td>
</tr>
<tr>
<td>Filipino Men¹⁶</td>
<td>96.50 + (1.38 x knee height) – (0.08 x age)</td>
</tr>
<tr>
<td>Filipino Women¹⁶</td>
<td>89.63 + (1.53 x knee height) – (0.17 x age)</td>
</tr>
<tr>
<td>Malaysian men¹⁷ [SEE = 3.51 cm]</td>
<td>(1.924 x knee height) + 69.38</td>
</tr>
<tr>
<td>Malaysian women¹⁷ [SEE = 3.40]</td>
<td>(2.225 x knee height) + 50.25</td>
</tr>
</tbody>
</table>

SEE = Standard Error of Estimate¹¹
To determine the BMI for amputees, first determine the patient’s estimated weight including the weight of the missing body part.18,19

- Use a standard reference (see table) to determine the proportion of body weight contributed by an individual body part.
- Subtract the percentage of body weight contributed by the missing body part(s) from 1.0.
- Then, divide the current weight by the difference of 1 minus the percentage of body weight contributed by the missing body part.

Calculate BMI using estimated height and estimated weight.

Example: 80 year old man, amputation of the left lower leg, 1.72 m, 58 kg

1. Estimated body weight: Current body weight ÷ (1 - proportion for the missing leg)
   
   \[ 58 \text{ (kg)} ÷ [1 - 0.059] = 58 \text{ (kg)} ÷ 0.941 = 61.6 \text{ kg} \]

2. Calculate BMI:
   Estimated body weight / body height (m)^2
   
   \[ 61.6 ÷ [1.72 \times 1.72] = 20.8 \]

Weight of selected body components

It is necessary to account for the missing body component(s) when estimating IBW.

Table: Percent of Body Weight Contributed by Specific Body Parts

<table>
<thead>
<tr>
<th>Body Part</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trunk w/o limbs</td>
<td>50.0</td>
</tr>
<tr>
<td>Hand</td>
<td>0.7</td>
</tr>
<tr>
<td>Forearm with hand</td>
<td>2.3</td>
</tr>
<tr>
<td>Forearm without hand</td>
<td>1.6</td>
</tr>
<tr>
<td>Upper arm</td>
<td>2.7</td>
</tr>
<tr>
<td>Entire arm</td>
<td>5.0</td>
</tr>
<tr>
<td>Foot</td>
<td>1.5</td>
</tr>
<tr>
<td>Lower leg with foot</td>
<td>5.9</td>
</tr>
<tr>
<td>Lower leg without foot</td>
<td>4.4</td>
</tr>
<tr>
<td>Thigh</td>
<td>10.1</td>
</tr>
<tr>
<td>Entire leg</td>
<td>16.0</td>
</tr>
</tbody>
</table>

References cited:
1. The subject should be sitting with the left leg hanging loosely or standing with their weight evenly distributed on both feet.

2. Ask the patient to roll up the trouser leg to uncover to calf.

3. Wrap the tape around the calf at the widest part and note the measurement.

4. Take additional measurements above and below the point to ensure that the first measurement was the largest.

5. An accurate measurement can only be obtained if the tape is at a right angle to the length of the calf, and should be recorded to the nearest 0.1 cm.

Measuring Calf Circumference in bed-bound persons

1. Have the person being measured lie in supine position with the left knee bent at 90° angle.

2. Slip a loop of the tape measure around the left calf until largest diameter is located.

3. Pull tape so it is just snug but not so tight that tissue is compressed.

4. Read and accurately record measurement to the nearest 0.1 cm. Repeated measurements should agree within 0.5 cm.
References


Screen and intervene. Nutrition can make a difference.
ASK ABOUT YOUR NUTRITION

Good Nutrition Can Help You Prevent Infections, Heal Faster, Feel Stronger

ARE YOU OR YOUR LOVED ONE EXPERIENCING ANY OF THESE?

- Unplanned Weight Loss
- Loss of Appetite
- Not Able to Eat or Only Able to Eat Small Amounts
- Feeling Weak or Tired
- Swelling or Fluid Accumulation

TALK TO YOUR HEALTHCARE PROVIDER

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Una Buena Nutrición, Puede Ayudar A Prevenir
Infecciones, Sanar Más Rápido y Sentirse Más Fuerte

¿UDS. O SUS SERES QUERIDOS HAN EXPERIMENTADO ESTO?

- Ha Bajado de Peso sin Planificarlo
- Ha Perdido el Apetito
- No Puede Comer o Solo Puede Comer Pocas Cantidades
- Se Siente Débil o Cansado
- Esta Hinchado o Esta Reteniendo Líquidos

HABLE CON SU PROVEEDOR DE ATENCIÓN MÉDICA

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询问您的营养状况
好的营养能帮助您预防感染，加速愈合和增强体制

您或您的家人有这些症状吗？

无原因的体重减轻
食欲不振
无法进食或进食量很少
感觉虚弱或乏力
肿胀或浮肿

请告知您的健康保健医务人员

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好的營養能幫助你預防感染，加速愈合和增強體質

您或您的家人有這些症狀嗎？

無原因的體重減輕
食欲不振
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感覺虛弱或乏力
腫脹或浮腫

請告知您的健康保健醫務人員

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FACT 1: Malnourished individuals can come in all sizes
- 715,000 U.S. adults aged 65+ are underweight
- 1 in 3 U.S. adults aged 65+ are overweight
- You can be underweight or overweight and still malnourished

FACT 2: Malnutrition affects all groups of people
- 9 million older adults can’t afford nutritious food
- 1 in 4 adults aged 65+ either reduces meal sizes or skips meals
- 16% of independent older adults are at high risk for malnutrition
- Up to 60% of older adults in health care settings are malnourished

FACT 3: Malnutrition can come from a number of factors
- Chronic conditions
- Limited income
- Trouble swallowing/chewing
- Poor dental health
- Changing taste buds
- Living alone
- Medication side effects
- Poor appetite
- Restricted diets
- Lack of mobility
- Depression
- Dementia
- Gastrointestinal disorders

FACT 4: You can’t always prevent or treat malnutrition by just eating more
- Adjust your diet to get all the nutrients your body needs
- Exercise to build muscle and improve strength
- Consult a Registered Dietitian Nutritionist
- Consider using an oral nutritional supplement

FACT 5: Malnutrition has many warning signs
- Muscle weakness
- Fatigue
- Increased illness or infection
- Feeling irritable or depressed
- Unplanned weight loss
- Decreased appetite

Learn more: ncoa.org/NutritionTools