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Målsättningen med PRO-CARE är att underlätta arbetet med patientsäkerhet, och samtidigt bereda väg för en bättre vetenskaplig förståelse och vetenskaplig förankring i den verksamhetsförlagda utbildningen för sjuksköterskestudenter. Metodiken som används syftar till att förena högskolans tre primära uppgifter; forskning, utbildning och samverkan.

Under åren som gått har studenter medverkat i flera forskningsprojekt under den Verksamhetsförlagda utbildningen, resultat har återförts till verksamheterna och vetenskapliga artiklar har producerats. Studierna går under benämningen "FUSS" som står för "Forskning, Utbildning och Samverkan i Sjuksköterskeutbildningen".

## Forskning och utveckling FUSS Utbildning VFU Samverkan

## **PRO-CARE**

Patient Reported Outcomes – Clinical Assessment Research and Education

Nummer 42 2015

Manual for translation and cultural adaptation of the Minimal Eating Observation and Nutrition Form – Version II (MEONF-II)



Högskolan Kristianstad

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## Summary

This report describes the procedure for translation and cultural adaptation of the Minimal Eating Observation and Nutrition Form -Version II (MEONF-II) from Swedish or U.K. English for use in other languages and countries, including adaptations from Swedish and U.K. English to other Swedish (e.g., Finland) and English speaking regions (e.g., United States, Canada, Australia), respectively. The prescribed methodology is based on the dual-panel approach for patient-reported rating scales, but modified for clinical assessment tools used by health care professionals. The approach emphasises the importance of achieving conceptual rather than linguistic equivalence, as well as ease and immediacy of the translation. The procedure comprises three main steps: (1) A panel of 3-7 bilingual health care professionals work together to produce a first draft target language version; (2) Review the first draft target language version by a second panel of 3-7 monolingual nurses and/or final year student nurses native in the target language; (3) Clinical field-testing of the new target language version by 15-30 hospital ward nurses/final year student nurses using the MEONF-II with at least five patients each to evaluate its user-friendliness and appropriateness. Following a written report including all major discussions and difficulties experienced by the panels and during field-testing, there is a need for evidence of the equivalence of the translated MEONF-II relative to the original version, before it can be recommended for general implementation into clinical practice. This final step is not covered in any detail here, but only outlined in summary. The procedures described here provide an easy to follow step-by-step practically oriented manual to facilitate the production of high quality translations and adaptations of the MEONF-II into new linguistic and cultural settings. This will ease the process for nurses and others who are interested in implementing the MEONF-II as a means of improving nutritional care for hospital inpatients.

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## Introduction

This document describes the procedure for translation and cultural adaptation of the Minimal Eating Observation and Nutrition Form – Version II (MEONF-II) from Swedish or U.K. English for use in other languages and countries.

## *The Minimal Eating Observation and Nutrition Form – Version II (MEONF-II)*

The MEONF-II is a tool developed for screening of nutritional risk (Vallén et al. 2011; Westergren et al. 2011a, 2011b). It was developed to be used by nurses, as it typically is nurses who conduct initial nutritional screening. The MEONF-II is based on Swedish (SWESPEN 2006) and international (Kondrup et al. 2003; Locher et al. 2007) recommendations for detecting undernutrition risk, including unintentional weight loss, low body mass index (BMI)/short calf circumference and eating difficulties. The included eating difficulties (food intake, chewing/swallowing, energy/appetite) are based on the Minimal Eating Observation Form – version II (MEOF-II) (Westergren et al. 2011b). An additional assessment of the presence of clinical signs of undernutrition is also included. The MEONF-II yields a total score ranging from 0-8, where higher scores indicate higher risk for undernutrition. A score of 0-2 is interpreted as no or low risk for undernutrition, a score of 3-4 is considered a moderate risk, and a score  $\geq 5$  as high risk for undernutrition (Westergren et al. 2009).

The MEONF-II (Appendices 1 and 2) comes with a user manual (Appendices 3 and 4) that includes explanations and brief instructions on how to assess and score the respective items in order to ease and standardize its use. In addition, the MEONF-II links screening results to suggestions for nutritional treatment and care, as well as suggestions for specific interventions linked to deficits with the respective eating difficulties (page 2 of the MEONF-II; Appendices 1 and 2).

Studies have supported the validity of the MEONF-II compared to other nutritional screening instruments (Vallén et al. 2011; Westergren et al. 2011a, 2011b). It has shown a sensitivity of 0.61-0.73, specificity of 0.79-0.88, and an accuracy of 0.68-0.82 compared

to the 18-item Mini Nutritional Assessment (MNA), with values that generally have outperformed those from other similar tools such as the Malnutrition Universal Screening Tool (MUST) and the Nutritional Risk Screening 2002 (NRS 2002) (Vallén et al. 2011; Westergren et al. 2011a, 2011b). The inter- and intrarater agreement (per cent agreement and Gwet's agreement coefficient) for the MEONF-II 2category (no/low risk vs. moderate/high risk) and 3-category (no/low vs. moderate vs. high risk) classifications among hospital nurses have been >0.81. Inter- and intrarater intraclass correlations for the total MEONF-II score have been 0.92 and 0.84, respectively (Westergren et al. 2014). The user-friendliness of the MEONF-II has been shown to be high among registered nurses (Vallén et al. 2011; Westergren et al. 2011a) as well as among student nurses (Westergren et al. 2013). The average time taken to complete a MEONF-II assessment has been 5-12 minutes, with a tendency for student nurses to need somewhat more time (Vallén et al. 2011; Westergren et al. 2011a; Westergren et al. 2013).

### Translation and adaptation procedure

The aim of the translation and adaptation procedure is to produce a target language version of the MEONF-II that is conceptually equivalent to the original Swedish and U.K. English language versions. The new language version should be appropriate for the target country and culture, and use natural and acceptable language and phrasing that is easily read and understood by nursing staff in the target country. In addition, the new target language version will ultimately need to demonstrate performance that is equivalent to the original version before it can be recommended for general clinical use. This latter process is, however, not covered in detail in the current document.

The translation and adaptation procedure is based on the dual-panel methodology originally suggested by Hunt et al. (1991) and later recommended by Swaine-Verdier et al. (2004). The method was originally intended for patient-reported rating scales, and within that context it has been shown to outperform the commonly used forwardbackward translation procedure in terms of user preference and acceptability of the resulting translation (Hagell et al. 2010). The dualpanel methodology emphasises the importance of achieving conceptual rather than linguistic equivalence of the translation. It is not always possible to find a "natural" translation for an item in a new language. When this is the case, a word or a phrase that describes an equivalent concept is sought. Translations also need to be expressed in common everyday language, in order to be acceptable to future users.

This manual prescribes a modification of the original approach, developed for clinical assessment tools that are used by health care professionals rather than as self-report questionnaires. The prescribed procedure should be used for any new translations or cultural adaptations of the MEONF-II. Note that this includes "withinlanguage adaptations", such as adapting the instrument from U.K. English for use in, e.g. the United States or Canada.

The procedure comprises the following main steps:

- Panel 1: Bilingual health care professionals working together to produce a first draft target language version.
- Panel 2: Monolingual nurses and/or final year student nurses (with the target language as their first language) to review the first draft target language version.
- Field-test: 15-30 nurses (varying ages and levels of nursing experience) and final year student nurses at different hospital wards (adult inpatients, mainly older people) use the new target language MEONF-II with at least five patients each to evaluate its user-friendliness and appropriateness.

Below follows a more detailed description of the procedures involved in each step.

### Panel 1

The first panel should comprise up to seven (with a minimum of three) bilingual (target language and Swedish or U.K. English) health care professionals, and is to be led by a local investigator. Preferably, at least half of the panel should represent registered nurses, and a majority of the panel should be native in the target language.

The task of Panel 1 is to work as a team in a group meeting to produce a consensus first draft target language version of the MEONF-II. In

preparation for the group meeting, all panel members (translators) should be informed about the task of the panel, as well as of the purpose, development, and design of the MEONF-II, and be given a copy of the Swedish or U.K. English version (depending on what version they will translate from), including the MEONF-II manual (Appendix 3 and 4). They should also be informed of translation requirements, in particular conceptual equivalence, ease of understanding, and acceptability and unambiguousness of wording. Attention should be paid to avoid localized expressions and to ensure language is generic for the target country. It is important to bear in mind that since the MEONF-II was developed to be used by nurses, this is the target group that the translation should be developed for.

The panel meeting is to be organized in a relaxed atmosphere where no distractions are to be expected, and with refreshments available. The meeting is led by a local investigator together with a representative of the developers of the original MEONF-II. Having the group work with a MEONF-II developer serves the purpose of quality control and availability of first-hand expertise when discussing the purpose and meaning of various aspects of the assessment tool. The local investigator needs command of both languages to be in a position to monitor the whole process, make final decisions and produce a meaningful report. Alternative translations suggested by panel members are to be considered by the whole group. Any difficulties should be discussed within the panel and in view of the intentions of the MEONF-II until agreement is reached. If two or more alternative translations are considered equivalent, these should be left as alternatives for Panel 2 to consider.

The following agenda is recommended, and the meeting can be expected to last for about three to four hours, including short breaks:

- Introductions to get to know one another.
- Group leaders review the purpose of the meeting, emphasising the translation requirements (particularly issues regarding conceptual equivalence and acceptability of wording), as well as the purpose, development and content of the MEONF-II. Basic panel member background information (age, gender, profession, experience, linguistic background) is collected using an anonymous form (Appendix 5).

- The group discusses the MEONF-II item-by-item and sectionby-section (including instructions, response categories, the MEONF-II manual, etc.) until agreement is reached. If alternative wordings are identified and considered equivalent, both should be recorded and forwarded to Panel 2. In case of uncertainties, these should also be documented and forwarded to Panel 2 for consideration. When alternative wordings or uncertainties are identified, these should be reviewed at the end of the session before making a final decision as to whether an unequivocal consensus can be reached. If this is not the case they should be forwarded to Panel 2 for consideration.
- Finally, the whole group reviews the suggested translation for consensus agreement.
- Before closing the meeting, the group is requested to briefly check the translations of other forms (Appendices 5-8) that are to be used in the following stages (Panel 2 and Field-testing) of the MEONF-II translation and adaptation process.

Additional aspects to consider by the local investigator (group leader) include:

- The local investigator should provide translations of other forms (Appendices 5-8) that are to be used in the MEONF-II translation and adaptation process. These are then to be checked, revised and agreed upon by Panel 1 at the end of the group meeting.
- The need for translation of the basic patient data form (Appendix 6) to be used during subsequent field-testing should be investigated in communication with the developers of the original MEONF-II.
- Ensuring that there are enough copies of the source MEONF-II version (Swedish or U.K. English, including the MEONF-II manual) available at the meeting.
- If possible, it is recommended that the group leader (local investigator) has an editable (e.g., in MS Word) version of the Swedish or U.K. English MEONF-II open on a computer and enter all the resulting translations directly into the document, while displaying the screen to the whole group via a projector.

In addition, main discussions should be noted for subsequent documentation of the translation and adaptation process.

• If necessary, additional follow-up of translation difficulties may be undertaken by, e.g. email or telephone after the group meeting. Note, however, that this should be kept to a minimum, and that any such communications should involve the whole group.

### Panel 2

Once Panel 1 has agreed upon the translated version of the MEONF-II, the draft target language version should be submitted to a second panel for review. This panel should consist of up to seven (with a minimum of three) monolingual (in the target language) representatives of future users of the MEONF-II, i.e. nurses and final year student nurses. While it is recognised that monolingual participants may be difficult to identify, it is important that the panel members are typical of nurses speaking the target language, i.e., they should not have excess linguistic knowledge. As far as possible, there should be a balance between genders, ages and extent of professional experience. At least half of the panel should represent registered nurses. Other panel members may include final year student nurses. Other relevant health care professionals may also be considered but only to a limited extent.

The task of Panel 2 is to work as a team in a focus group meeting to review the draft target language MEONF-II version for appropriateness of wording, consider alternative wordings and uncertainties that may have been forwarded by Panel 1, and to suggest any changes they may think will enhance clarity and immediacy. Each item and section of the MEONF-II and the MEONF-II manual should be discussed within the panel until agreement is reached. This process allows a check on whether the appropriate concepts have been captured and if individual items, response categories and instructions are comprehensible and acceptable in content and wording. The group should not have access to the source (Swedish or U.K. English) version, but only the translated target language version of the MEONF-II. This is important because their assessment should not be affected by what they may think the translation should mean; rather, they should consider what it does mean and how it is perceived. In preparation for the focus group meeting, all panel members should be informed about the task of the panel, as well as of the purpose, development, and design of the MEONF-II. While not necessary, they may also be given a copy of the draft target language MEONF-II version (including the MEONF-II manual) to familiarize themselves with in advance.

The panel meeting is to be organized in a relaxed atmosphere where no distractions are to be expected, and with refreshments available. The local investigator involved in the first panel should also work with Panel 2 to ensure that the original meaning of items and scale structure are maintained. This person should have access to the Swedish or U.K. English source version of the MEONF-II.

The following agenda is recommended, and the meeting can be expected to last for about two hours, including a break if necessary:

- Introductions to get to know one another.
- The local investigator reviews the purpose of the meeting, as well as the purpose, development and content of the MEONF-II. Basic panel member background information (age, gender, profession, experience, linguistic background) is collected using an anonymous form (Appendix 5, translated into the target language).
- The group discusses the MEONF-II item-by-item and sectionby-section (including instructions, response categories, the MEONF-II manual, etc.) and suggest rewording where considered necessary until agreement is reached. In case Panel 1 has identified alternative wordings, these should be reviewed and recommendations should be made as to which version to use. Similarly, in case of uncertainties forwarded by Panel 1, these should also be discussed and resolved by Panel 2.
- Before closing the meeting, the suggested translation is reviewed by the whole group for consensus agreement.

Additional aspects to consider by the local investigator include:

- Ensuring that there are enough copies of the draft target language MEONF-II version (including the MEONF-II manual) available at the meeting.
- If possible, it is recommended that the group leader (local investigator) has an editable (e.g., in MS Word) version of the draft target language MEONF-II version open on a computer and enter all the resulting translation directly into the document, while displaying the screen to the whole group via a projector. In addition, main discussions should be noted for later documentation of the process.
- If necessary, additional follow-up of translation difficulties may be undertaken by, e.g. email or telephone after the group meeting. Note, however, that this should be kept to a minimum, and that any such communications should involve the whole group.

The whole translation procedure (Panels 1 and 2) should be reported in detail (see below) including all major discussions and difficulties experienced by the panels. In particular, any choices and changes made following the review by Panel 2 should be explained. This not only informs the instrument developers but also constitutes a thorough final review and translation quality assurance.

### Field-testing

The target language MEONF-II version resulting from Panels 1 and 2 is then to be field-tested with its intended users in clinical practice as a final check regarding its appropriateness and user-friendliness.

Field-testing should involve 15-30 nurses/student nurses using the new target language MEONF-II version at hospital wards (adult inpatients, mainly older people). The test group may include both nurses and student nurses and should, to the extent possible represent varying genders, ages and levels of nursing experience. If student nurses are included, they should not constitute more than about two thirds of the total group of assessors.

Each participant is provided with the new target language MEONF-II version produced by Panels 1 and 2, and should read its instructions and the accompanying new target language MEONF-II user manual. Following this, a debriefing session with the local investigator should be offered to ensure that participants have understood how to use the MEONF-II and to clarify any uncertainties. Questions and uncertainties from the participants should be documented in order to provide an evidence base for future modifications to the MEONF-II instructions and user manual.

Next, each participant is equipped with a set of target language version MEONF-II scoring sheets to be used with at least five patients each. In addition, basic patient data should be collected (Appendix 6; translated into the target language). Patients should, to the extent possible represent varying ages (within the adult/older range), genders, diagnoses, disabilities and health statuses. Once the participating assessor has conducted the five or more assessments, s/he is required to provide basic personal background information (age, gender, experience) using an anonymous form (Appendix 7; translated into the target language), and to fill out an evaluation form addressing the appropriateness, user-friendliness and usefulness of the target language MEONF-II (Appendix 8; translated into the target language).

### Reporting

A detailed report on the translation procedure is essential, and should be shared with the MEONF-II developers at the conclusion of the translation and adaptation project. The report should explain why changes in form or content were made, why some items, instructions or response categories were difficult to translate, where cultural issues have to be addressed, why (for example) a word cannot be directly translated, and other explanations of why "literal" translations (that may seem obvious to anyone with only an approximate knowledge of the language) are not suitable. "Rough" translations can be used to illustrate these points. Such explanations will be helpful for future use by the instrument developers. Experiences from and summaries of all data collected during the field-testing should also be included or provided separately, e.g. in spreadsheet format.

In addition to constituting a thorough final review and translation quality assurance, the report is an important tool for the users of the translated instrument in the subsequent validation phases. It identifies issues that may need to be tested further during subsequent studies and may help in identifying possible explanations if the tool or specific items should fail to function as expected.

Example report templates are available from the MEONF-II developers (procare@hkr.se), together with database spreadsheet templates for entering participant data from translation Panels 1 and 2, and data collected during field-testing.

## Additional steps

Following translation and adaptation (Panels 1 and 2, and fieldtesting) there is a need for evidence of the equivalence of the translated MEONF-II relative to the original version, before it can be recommended for general implementation into clinical practice.

Although this manual does not cover this essential aspect, the procedure should essentially follow that used in the development and validation of the original Swedish MEONF-II (Vallén et al. 2011; Westergren et al. 2011a, 2011b; Westergren et al. 2013; Westergren et al. 2014). That is, the translated MEONF-II should be tested regarding sensitivity and specificity in relation to the 18-item Mini Nutritional Assessment Short-Form (MNA; Guigoz & Vellas 1999). In addition, it may also be tested in relation to other nutritional screening tools such as the Malnutrition Universal Screening Tool (MUST; Stratton et al. 2004). Furthermore, it is recommended that the association between MEONF-II total scores (and risk categories) and patients' dependence in activities of daily living (as documented using Katz's ADL index; Appendix 5), patient-reported general health, fatigue and depressed mood are documented. Finally, the inter- and intrarater agreement of the MEONF-II total score, as well as its resulting three (no/low vs. moderate vs. high risk) and collapsed two (no/low risk vs. moderate/high risk) risk category classifications should be documented

# Initiating translation and cultural adaptation of a new MEONF-II language version

Investigators interested in translating and adapting the MEONF-II into a new language version should follow the following steps before initiating the work:

- Contact the MEONF-II developmental team at procare@hkr.se
- Review this translation and adaptation manual
- Discuss any issues related to the translation and adaptation process with a representative of the MEONF-II developmental team
- Finalize the local translation and adaptation protocol and timeline together with a representative of the MEONF-II developmental team

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## Appendices

- 1. MEONF-II, Swedish version
- 2. MEONF-II, U.K. English version
- 3. MEONF-II user manual, Swedish version
- 4. MEONF-II user manual, U.K. English version
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### Appendix 1

ME	ONF-II, Swedish versior	1		
	Ange lämplig poäng i ru	torna till höger i enlighet n	ned manualen.	POÄNG
1	Har ofrivillig viktförlust	t (oavsett tid & omfattning)	Ja, viktförlust = 2	
			Ingen viktförlust = 0	
			Vet ej = 2	
2a	BMI är mindre än 20 (69	år eller yngre)	BMI = vikt (kg) / längd i	
	BMI är mindre än 22 (70		kvadrat (m <sup>2</sup> )	
		as, mät vadomkrets (2b)		
	0, ,	Har lågt BMI <i>eller</i> liten /		
2b	Vadomkretsen är mindr	e än 31 centimeter	kort vadomkrets = 1	
			Annars = $0$	
	Ätproblem			
3	Matintag			
	_ ~	bra sittställning vid måltid	En/flera svårigheter = 1	
	Svårt att hantera mat	8	Inga svårigheter = 0	
	Svårt att transportera		ingu svurigheter o	
4	Sväljning/mun			
•	Svårt att tugga		En/flera svårigheter = 1	
	Svårt att hantera mat	en i munnen	Inga svårigheter = 0	
	Svårt att svälia	en i munnen	iliga svaligheter = 0	
5	Energi/Aptit			
5	$\square$ Äter mindre än <sup>3</sup> / <sub>4</sub> av	convorad mat	Ett/flera problem = 2	
	Nedsatt ork att fullföl		Inga problem = 0	
		ja en nel martiù	inga problem = 0	
	🔄 Nedsatt aptit			
6	Kliniska tecken indikera	n att night fän um dannäning		
0	föreligger. Bedöm t.ex. kr		Kliniska tecken	
	underhudsfett, muskelma		indikerar risk = 1	
		kroppen), blodprover (t.ex.	Annars = $0$	
	S-Albumin).	kroppen), biouprover (t.ex.	Alliars = $0$	
		rna 1-6 till en totalpoäng	SUMMA:	
		Tha 1-6 thi en totalpoang	SUMMA:	
	(min = 0, max = 8)	0		
DIC	K FÖR UNDERNÄRING			
	)-2 poäng = ingen/låg risk	∐ 3-4 poang = måttlig risk	5 poäng eller mer = h	og risk
	I-TOLKNING	69 år eller yngre	70 år eller äldre	
_	Jndervikt	BMI <20	BMI <22	
	Normalvikt	BMI 20-24.9	BMI 22-26.9	
	Övervikt	BMI 25-29.9	BMI 27-31.9	
	Fetma	BMI 30-39.9	BMI 32-41.9	
	Svår/sjuklig fetma	BMI >40	BMI >42	
Kor	nmentarer:			

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- Behandla underliggande tillstånd och ge hjälp och råd om födoval, ätande och att dricka när så behövs.
- Dokumentera riskkategori (Ingen eller låg/Måttlig/Hög risk)
- Dokumentera kostbehov och följ lokala riktlinjer

Huvudmoment i ätprocessen	Specifika åtgärder – kopplade	Generella åtgärder
	till huvudmoment i	kopplade till
	ätprocessen	ätprocessen
Matintag	Anpassa bestick, glas, mugg.	Assistans / Matning.
• Upprätthålla bra sittställning vid	Konsultera sjukgymnast,	
måltid	arbetsterapeut.	Träning.
• Hantera maten på tallriken		
Transportera maten till munnen		Artificiell nutrition.
Sväljning/mun	Konsistensanpassa.	
• Tugga	Specifika sväljningstekniker	Anpassa måltidsmiljön
Hantera maten i munnen	och huvudpositioneringar.	(t.ex. skapa en lugn
• Svälja	Konsultera person kunnig i	miljö).
,	dysfagi (vanligen logoped),	
	dietist,	Reducera
	tandhygienist/tandläkare.	distraherande
Energi/aptit	Kosttillägg/näringsdryck.	moment.
• Äter mindre än ¾ av serverad mat	Energität kost.	
<ul> <li>Nedsatt ork att fullfölja en hel</li> </ul>	Planera andra aktiviteter så	Samtal och
måltid	att ork finns att äta.	information.
• Nedsatt aptit	Konsultera dietist.	

Fetma: Dokumentera förekomst av övervikt/fetma. Kontrollera underliggande orsaker innan behandling sätts in. Konsultera dietist.

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### MEONF-II U.K. English version

1	ase tick the appropriate b	oxes on the left and		structions	SCORI
	Unintentional weight los		Weight loss = 2		
	amount of loss and of whet	ther recent or	No weight loss = 0		
	occurred over time)		Don't know = 2		
2a	<b>BMI</b> is less than 20 (69		BMI = weight (kg)/h	eight	
	<b>BMI</b> is less than 22 (70		squared (m <sup>2</sup> )		
	If height/weight cannot b				
	measure calf circumferen	ice (2b)	Low BMI or small cal	f	
			circumference = 1		
2b	<b>Calf circumference</b> is	less than 31	Otherwise = 0		
	centimetres				
3	Eating difficulties				
	Food intake				
	Difficulty maintaining	good sitting	One/more difficultie	s = 1	
	position during meals		No difficulty = 0		
	Difficulty manipulating	food on plate			
	Difficulty conveying for	od to mouth			
ł	Swallowing/mouth				
	Difficulty chewing		One/more difficultie	s = 1	· ~ (
	Difficulty coping with f	ood in mouth	No difficulty = $0$		3(O)/
	Difficulty swallowing			104	
5	Energy/appetite				
	Eats less than <sup>3</sup> / <sub>4</sub> of foo	d served	One/more problems	= 2	
	Lacks energy to comple		No problems = 0		
	Poor appetite				
5	Clinical signs indicate risk	of undernutrition.			
	Assess e.g., body shape, sul		Clinical signs indicat	e risk = 1	
	muscle mass, grip strength		Otherwise = 0		
	retention), blood tests (e.g				
		to a total score (mir	n = 0, max = 8	TOTAL	
	Julii Ubsel vauolis 1-0 lii				
	Sum observations 1-0 m			SCORE:	
	Sum observations 1-0 m	CO V		SCORE:	
RIS				SCORE:	
_	K OF UNDERNUTRITION	1150 V			high ris
_		3-4 points = mode		score:	high ris
_	K OF UNDERNUTRITION	1150 V			high ris
	K OF UNDERNUTRITION 0-2 points = no/low risk	3-4 points = mode	erate risk 🗌 5 poir	nts or more =	high ris
	K OF UNDERNUTRITION 0-2 points = no/low risk	3-4 points = mode 69 years or youn	erate risk 5 poir <i>ger: 70 yea</i>	nts or more =	high ris
( BMI	K OF UNDERNUTRITION 0-2 points = no/low risk INTERPRETATION Jnderweight	3-4 points = mode 69 years or youn BMI <20	erate risk 5 poir ger: 70 yea BMI <2	nts or more = rs or older: 22	high ris
	K OF UNDERNUTRITION 0-2 points = no/low risk INTERPRETATION Jnderweight Normal	3-4 points = mode 69 years or youn BMI <20 BMI 20-24.9	erate risk 5 poir ger: 70 yea BMI <2 BMI 22	nts or more = rs or older: 22 2-26.9	high ris
	K OF UNDERNUTRITION D-2 points = no/low risk INTERPRETATION Jnderweight Normal Dverweight	3-4 points = mode 69 years or youn BMI <20 BMI 20-24.9 BMI 25-29.9	erate risk 5 poir ger: 70 yea BMI <2 BMI 22 BMI 22	nts or more = rs or older: 22 2-26.9 7-31.9	high ris
	K OF UNDERNUTRITION D-2 points = no/low risk INTERPRETATION Jnderweight Normal Dverweight Dbesity	69 years or youn BMI <20 BMI 20-24.9 BMI 25-29.9 BMI 30-39.9	erate risk 5 poir ger: 70 yea BMI <2 BMI 22 BMI 22 BMI 32	nts or more = rs or older: 22 2-26.9 7-31.9 2-41.9	high ris
	K OF UNDERNUTRITION D-2 points = no/low risk INTERPRETATION Jnderweight Normal Dverweight	3-4 points = mode 69 years or youn BMI <20 BMI 20-24.9 BMI 25-29.9	erate risk 5 poir ger: 70 yea BMI <2 BMI 22 BMI 22	nts or more = rs or older: 22 2-26.9 7-31.9 2-41.9	high ris
	K OF UNDERNUTRITION D-2 points = no/low risk INTERPRETATION Jnderweight Normal Dverweight Dbesity Severe/morbid obesity	69 years or youn BMI <20 BMI 20-24.9 BMI 25-29.9 BMI 30-39.9	erate risk 5 poir ger: 70 yea BMI <2 BMI 22 BMI 22 BMI 32	nts or more = rs or older: 22 2-26.9 7-31.9 2-41.9	high ris
	K OF UNDERNUTRITION D-2 points = no/low risk INTERPRETATION Jnderweight Normal Dverweight Dbesity	69 years or youn BMI <20 BMI 20-24.9 BMI 25-29.9 BMI 30-39.9	erate risk 5 poir ger: 70 yea BMI <2 BMI 22 BMI 22 BMI 32	nts or more = rs or older: 22 2-26.9 7-31.9 2-41.9	high ris
	K OF UNDERNUTRITION D-2 points = no/low risk INTERPRETATION Jnderweight Normal Dverweight Dbesity Severe/morbid obesity	69 years or youn BMI <20 BMI 20-24.9 BMI 25-29.9 BMI 30-39.9	erate risk 5 poir ger: 70 yea BMI <2 BMI 22 BMI 22 BMI 32	nts or more = rs or older: 22 2-26.9 7-31.9 2-41.9	high ris
<b>BM</b>	K OF UNDERNUTRITION D-2 points = no/low risk INTERPRETATION Jnderweight Normal Dverweight Dbesity Severe/morbid obesity	69 years or youn BMI <20 BMI 20-24.9 BMI 25-29.9 BMI 30-39.9	erate risk 5 poir ger: 70 yea BMI <2 BMI 22 BMI 22 BMI 32	nts or more = rs or older: 22 2-26.9 7-31.9 2-41.9	high ris

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Headsbess:       O         • Hospital -       O         once/week       O         • Long-term care       I         facilities - every 3       I         months       I         • Home care -       I         annually       I	3-4 points Moderate risk Document fluid/dietary intake for 2-3 ays ive nutritional drink or equivalent, oossibly energy diet. Interventions for eating difficulties see below) f improvement or adequate intake: oo cause for concern; If no mprovement: cause for concern – ollow local policy and/or refer to ietician	<ul> <li>5 points or more High risk</li> <li>Referral to dietician, nutrition team and follow local policy</li> <li>Improve nutritional intake through e.g. fortified food, oral nutritional supplements (consult dietician)</li> <li>Interventions for eating difficulties (see below)</li> <li>Follow up, update care plan</li> </ul>
H	assess & update care plan ospital – once/week and at discharge ng term care facilities – at least monthly ome care – at least every 2-3 months	ngion
needed. • Document risk category (No o		s, eating and drinking when
<ul> <li>Treat underlying condition an needed.</li> <li>Document risk category (No o</li> <li>Document dietarv needs and f</li> </ul>	r low/Moderate/High risk) ollow local guidelines Specific interventions	General interventions
<ul> <li>Treat underlying condition an needed.</li> <li>Document risk category (No o Document dietary needs and f</li> <li>Main steps in eating process</li> </ul>	r low/Moderate/High risk) ollow local guidelines  Specific interventions Linked to main steps in eating process	General interventions Linked to eating process
<ul> <li>Treat underlying condition an needed.</li> <li>Document risk category (No o Document dietary needs and f</li> <li>Main steps in eating process</li> <li>Food intake</li> </ul>	r low/Moderate/High risk) ollow local guidelines  Specific interventions Linked to main steps in eating process Adapt cutlery, glass, mug.	General interventions
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Treat underlying condition an needed.     Document risk category (No o Document dietarv needs and f Main steps in eating process Food intake Maintaining good sitting position during meals	r low/Moderate/High risk) ollow local guidelines Specific interventions Linked to main steps in eating process Adapt cutlery, glass, mug. n Consult physiotherapist,	General interventions         Linked to eating process         Assistance.         Feeding.
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<ul> <li>Treat underlying condition an needed.</li> <li>Document risk category (No o Document dietarv needs and for Document dietarv needs and for Main steps in eating process</li> <li>Food intake</li> <li>Maintaining good sitting position during meals</li> <li>Manipulating food on plate</li> <li>Conveying food to mouth Swallowing/mouth</li> </ul>	r low/Moderate/High risk) ollow local guidelines Specific interventions Linked to main steps in eating process Adapt cutlery, glass, mug. Consult physiotherapist, occupational therapist. Adapt consistency.	General interventions         Linked to eating process         Assistance.         Feeding.
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<ul> <li>Treat underlying condition an needed.</li> <li>Document risk category (No o Document dietarv needs and for Document dietarv needs and for the second seco</li></ul>	r low/Moderate/High risk) ollow local guidelines Specific interventions Linked to main steps in eating process Adapt cutlery, glass, mug. Consult physiotherapist, occupational therapist. Adapt consistency. Specific swallowing techniques and head positions. Consult dysphagia expertise	General interventions         Linked to eating process         Assistance.         Feeding.         Training.         Artificial nutrition.         Adapt mealtime         environment (e.g.,
<ul> <li>Treat underlying condition an needed.</li> <li>Document risk category (No o Document dietarv needs and for Document dietarv needs and for the second seco</li></ul>	r low/Moderate/High risk) ollow local guidelines Specific interventions Linked to main steps in eating process Adapt cutlery, glass, mug. Consult physiotherapist, occupational therapist. Adapt consistency. Specific swallowing techniques and head positions. Consult dysphagia expertise (usually speech therapist),	General interventions         Linked to eating process         Assistance.         Feeding.         Training.         Artificial nutrition.         Adapt mealtime         environment (e.g.,         create a calm
<ul> <li>Treat underlying condition an needed.</li> <li>Document risk category (No o Document dietarv needs and for Document dietarv needs and for the second seco</li></ul>	r low/Moderate/High risk) ollow local guidelines Specific interventions Linked to main steps in eating process Adapt cutlery, glass, mug. Consult physiotherapist, occupational therapist. Adapt consistency. Specific swallowing techniques and head positions. Consult dysphagia expertise (usually speech therapist), dietician, dental	General interventions         Linked to eating process         Assistance.         Feeding.         Training.         Artificial nutrition.         Adapt mealtime         environment (e.g.,
<ul> <li>Treat underlying condition an needed.</li> <li>Document risk category (No o Document dietarv needs and for Document dietarv needs and for the second secon</li></ul>	r low/Moderate/High risk) ollow local guidelines Specific interventions Linked to main steps in eating process Adapt cutlery, glass, mug. Consult physiotherapist, occupational therapist. Adapt consistency. Specific swallowing techniques and head positions. Consult dysphagia expertise (usually speech therapist), dietician, dental hygienist/dentist.	General interventions         Linked to eating process         Assistance.         Feeding.         Training.         Artificial nutrition.         Adapt mealtime         environment (e.g.,         create a calm
<ul> <li>Treat underlying condition an needed.</li> <li>Document risk category (No o Document dietarv needs and for Document dietarverse dietar</li></ul>	r low/Moderate/High risk) ollow local guidelines Specific interventions Linked to main steps in eating process Adapt cutlery, glass, mug. Consult physiotherapist, occupational therapist. Adapt consistency. Specific swallowing techniques and head positions. Consult dysphagia expertise (usually speech therapist), dietician, dental	General interventions         Linked to eating process         Assistance.         Feeding.         Training.         Artificial nutrition.         Adapt mealtime         environment (e.g.,         create a calm         environment).         Reduce distractions.
<ul> <li>Treat underlying condition an needed.</li> <li>Document risk category (No o Document dietarv needs and for Document dietarverse dieta</li></ul>	r low/Moderate/High risk) ollow local guidelines Specific interventions Linked to main steps in eating process Adapt cutlery, glass, mug. Consult physiotherapist, occupational therapist. Adapt consistency. Specific swallowing techniques and head positions. Consult dysphagia expertise (usually speech therapist), dietician, dental hygienist/dentist. Dietary supplement. Fortified food.	General interventions         Linked to eating process         Assistance.         Feeding.         Training.         Artificial nutrition.         Adapt mealtime         environment (e.g.,         create a calm         environment).
<ul> <li>Treat underlying condition an needed.</li> <li>Document risk category (No o Document dietarv needs and for Document dietarv needs and for the second secon</li></ul>	r low/Moderate/High risk) ollow local guidelines Specific interventions Linked to main steps in eating process Adapt cutlery, glass, mug. Consult physiotherapist, occupational therapist. Adapt consistency. Specific swallowing techniques and head positions. Consult dysphagia expertise (usually speech therapist), dietician, dental hygienist/dentist. Dietary supplement. Fortified food.	General interventions         Linked to eating process         Assistance.         Feeding.         Training.         Artificial nutrition.         Adapt mealtime         environment (e.g.,         create a calm         environment).         Reduce distractions.

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#### **MEONF-II user manual, Swedish version**

Bedömning av näringstillstånd: I första hand ska patienten/den boende vägas och mätas på morgonen, före frukost. Patienten/den boende bör endast vara iklädd underkläder. Om detta inte är möjligt kan uppgift om längd och vikt hämtas från journalen eller genom att fråga personen. Information om vikten ska dokumenteras minst veckovis (på sjukhus) eller månadsvis (särskilda boenden).

1. Ofrivillig viktförlust (oavsett tid & omfattning). Fråga dels patienten och granska även dokumentationen avseende viktutvecklingen. Fråga om han/hon märkt att kläderna börjat sitta löst, om ringar eller klockan verkar sitta löst. Fråga också om han/hon avsiktligt försökt gå ner i vikt.

**2a. BMI** räknas ut utifrån formeln: vikt (kg)/längd i kvadrat (m<sup>2</sup>). Om inte längd och/eller vikt kan erhållas som grund för att beräkna BMI – mät istället vadomkrets.

**2b. Vadomkrets** mäts i centimeter. Mät vaden på det bredaste stället. Mät även över och under den bredaste punkten, för att säkerställa att den första mätningen gav det största måttet.

**3-5. Ätproblem** (3-5 nedan): Bedömningen görs i första hand genom att patienten/den boende observeras under en måltid. Om det ej är möjligt kan den göras genom intervju av patient/boende. Om en person har hjälpmedel/hjälp för att kunna äta, anges det att personen har problem (vid kommentarer). T.ex. om personen har gelékost p.g.a. sväljningssvårigheter anges att det föreligger sväljningssvårigheter, även om dessa ej är påtagliga eftersom kosten har konsistensanpassats.

#### 3. Matintag

3. Matintag	
Upprätthålla bra	Sitter självständigt och kan röra sig fritt.
sittställning vid	
måltid	
Hantera maten på	Använder båda händerna, endast enstaka spill, har ej pet-emot-kant eller
tallriken	speciella bestick, använder traditionella bestick (inte sked till kött och potatis),
	delar själv maten och brer smörgås, ställer ifrån sig glas/kopp själv.
Transportera maten	Samordnar armar/bål/huvud när maten förs till munnen, behöver inte haklapp,
till munnen	hittar munnen utan problem, endast enstaka spill, ingen anpassning av redskap
	t.ex. mugg, sugrör.
4. Sväljning/mun	
Tugga	Både "upp och ner" och roterande/malande tuggrörelser. Matens konsistens är
	inte anpassad. Kan bita av maten, drar inte av den. Förlorar inte mat ur munnen
	under tuggning.
Hantera maten i	Maten förflyttas smidigt bakåt i munnen. Det finns ingen mat kvar i munnen efter
munnen	måltiden. Kan prata mellan tuggorna.
Svälja	Ingen hosta under måltid som uppfattas som felsväljning. Smidig
	sväljningsrörelse när maten är färdigtuggad. Ingen paus eller extra
	koncentration innan sväljningen. Efter sväljningen är munnen i stort sätt tom.
5. Energi/aptit	
Äter mindre än ¾ av	Det förutsätts att portionen som serveras anpassats till personens behov (mängd
serverad mat	och innehåll). Har ej sondmat/dropp till följd av otillräckligt matintag.
Nedsatt ork att	Måltiden avbryts för att personen inte orkar fortsätta (avbryts ej p.g.a.
fullfölja en hel måltid	mättnadskänsla).
Nedsatt aptit	Fråga i första hand personen själv; i andra hand, gör en egen skattning. Aptiten
	nu jämförs med hur hans/hennes aptit vanligen är.

6. Kliniska tecken. Indikera att risk för undernäring föreligger. Bedöm t.ex. kroppskonstitution, underhudsfett, muskelmassa, handgreppsstyrka, ödem (vätskeansamling i kroppen), blodprover (t.ex. S-Albumin)

**Totalpoäng:** Notera att ofrivillig viktminskning ger 2 poäng liksom nedsatt energi/aptit. Detta eftersom det är känt att de är starkt förknippade med undernäring. **Tolkning av MEONF-II totalpoäng:** 

0-2 Poäng = Ingen eller låg risk för undernäring

3-4 Poäng = Måttlig risk för undernäring

5 poäng eller mer = Hög risk för undernäring

När den initiala bedömningen är genomförd gå vidare med planering av åtgärder!

Högt BMI: (övervikt/fetma) utgör ej en del i bedömningen av risk för undernäring. Var observant på att även en person med övervikt/fetma kan ha risk för undernäring som kräver intervention.

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### MEONF-II user manual, U.K. English version

Assessment of nutritional status: The patient/resident should be weighed and measured, preferably first thing in the morning, before breakfast. The patient/resident should only be wearing light clothing. If this is not possible, information about height and weight can be obtained from the patient chart or by asking the person. Information about weight should be recorded at least weekly (in hospital) or monthly (in long-term care).

 Unintentional weight loss (regardless of amount of loss and of whether recent or occurred over time). Ask the patient and also review documentation relating to weight history. Ask whether rings, watch, or clothes are beginning to fit loosely. Also ask whether the person is intentionally trying to lose weight.
 BMI is calculated according to the following formula: weight (kg)/height squared (m<sup>2</sup>). If height and/or weight cannot be obtained to calculate BMI – measure calf circumference instead.

**2b. Calf circumference is** measured in centimeters. Measure the calf at the widest point. Also measure above and below the widest point, to ensure that the first measurement was the largest.

**Eating difficulties** (items 3-5 below): The patient/resident should preferably be assessed by observing the individual during a meal. If this is not possible the assessment may be carried out by interviewing the patient/resident. If a person has assistive devices/assistance to be able to eat, note that the person has special needs (under "Comments"). For example, if the person has a soft diet due to swallowing difficulties, state that swallowing difficulties are present, even if they are not evident since the consistency of the diet was modified.

### 3. Food intake

5. FOOU IIItake	
Maintaining good	Sits independently and with unrestricted mobility
sitting position	
during meals	
Manipulating food on	Uses both hands, only spills occasionally, does not have plate with inner lip or
plate	special cutlery, uses traditional flatware (not a spoon for meat and potatoes),
	cuts food and butters bread, puts down glass unassisted
Conveying food to	Coordinates arms/trunk/head when food is conveyed to mouth, does not need a
mouth	bib, finds mouth without problems, only spills occasionally, no adapted
	equipment such as mug or straw
4. Swallowing/mouth	
Chewing	Both "up and down" and rotating/grinding chewing movements. No modification
	of food consistency. Able to bite off pieces of food, does not rip them off. Food
	does not fall from mouth while chewing.
Coping with food in	Food is moved to back of mouth without problems. No food remains in mouth
mouth	after meals. Able to talk between bites.
Swallowing	No coughing during meals that may be attributed to aspiration. Smooth
	swallowing movement when food is completely chewed. No delay or
	concentrated effort before swallowing. Mouth essentially empty after
	swallowing.
5. Energy/appetite	
Eats less than 3/4 of	It is assumed that portion size is adapted to individual needs (quantity and
food served	content). Patient does not have feeding tube/IV due to inadequate food intake.
Lacks energy to	Meal is interrupted due to lack of energy to continue (not due to satiety).
complete an entire	

meal
Poor appetite
If possible, ask directly; if not, make an assessment. Appetite should be
compared with the person's usual appetite.

6. Clinical signs. Indicate risk of undernutrition. Assess e.g. body shape, subcutaneous fat, muscle mass, grip strength, oedema (fluid retention), blood tests (e.g. serum albumin)

Total score. Note that unintentional weight loss gives 2 points, as do problems related to

Energy/appetite, as it is known that they are strongly associated with undernutrition.

### Interpretation of MEONF-II total scores

0-2 points = No or Low risk of undernutrition

3-4 points = Moderate risk of undernutrition

5 points or more = High risk of undernutrition

When the initial assessment is carried out, proceed by planning interventions!

High BMI (overweight/obesity) is not part of the assessment of risk for undernutrition. Please note, however, that overweight/ob

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### Translation and adaptation panel member background information

Panel 1	D Panel 2
Gender:	□ Female □ Male
Age:	years
Profession:	<ul> <li>Registered nurse</li> <li>Final year student nurse</li> <li>Nurse assistant/Health care assistant/Nursing auxiliary</li> <li>Dietician</li> <li>Physician; specialty:</li></ul>
Clinical expe	erience in profession:years
Current prin	erience in profession:years mary practice setting:
Current spe	cialty:
Experience	in current specialty/primary practice setting: years
First (native	e) spoken language:  U.K. English Swedish Other:
Second społ	<pre>xen language:     U.K. English     Swedish     Other:</pre>

Appendix 6

### Patient data form

Gender: 🗖 Female 🗖 N	Male
Age: years	
Height: feetinche	s <b>OR</b> m cm
Weight: stones p	ounds <b>OR</b> kg
Number of days since admiss	ion to hospital (including today): days
Main reason for hospital admission	<ul> <li>Respiratory disease</li> <li>Cardiovascular disease</li> <li>Endocrine disease: Diabetes</li> <li>Haematological disease</li> <li>Dermatological disease</li> <li>Infection</li> <li>Gastrointestinal disease</li> <li>Neurological disease</li> <li>Kidney disease</li> <li>Orthopaedic</li> <li>Mental health problems</li> <li>Rheumatologic disease</li> <li>Trauma</li> <li>Urinary tract problems</li> <li>Ear, nose and throat disease</li> <li>Other:</li> </ul>
(Ask patient:) In general, wo ☐ Excellent ☐ Very goo	

### Katz' Index of Independence in Activities of Daily Living

**Instructions:** For each area of functioning listed below, tick the description that applies. (The word "assistance" means supervision, direction, or personal assistance.)

<b>BATHING</b> – either sponge bath, tub b	<u> </u>	<i>r shower:</i> Receives assistance in	_	Dessions essistence in
Receives no assistance (gets in and out of tub by self if tub is usual means of bathing)		bathing only one part of the body (such as back or a leg)		Receives assistance in bathing more than one part of the body (or not bathed)
<b>DRESSING</b> – gets clothes from closets fasteners (including braces, if worn):	and	drawers; including underclothes,	out	er garments, and using
Gets clothes and gets completely dressed without assistance		Gets clothes and gets dressed without assistance except for assistance in tying shoes		Receives assistance in getting clothes or in getting dressed, or stays partly or completely undressed
<b>TOILETING</b> – going to the "toilet room	m" fo	• bowel and urine elimination, cle	eani	ing self after elimination, and
arranging clothes: Goes to "toilet room," cleans self, and arranges clothes without assistance (may use object for support such as cane, walker, or wheelchair and may manage night bedpan or commode, emptying same		Receives assistance in going to "toilet room" or in cleaning self or in arranging clothes after elimination or in use of night bedpan or commode		Doesn't go to room termed "toilet" for the elimination process
in morning)			Τ	
TRANSFER: Moves in and out of bed as well as in and out of chair without assistance (may be using object for support such as cane or walker)		Moves in and out of bed or chair with assistance		Doesn't get out of bed
CONTINENCE: Controls urination and bowel movement completely by self		Has occasional "accidents" (		Supervision helps keep urine or bowel control, catheter is used, or is incontinent
<ul><li>FEEDING:</li><li>Feeds self without assistance</li></ul>		Feeds self except for getting assistance in cutting meat or buttering bread		Receives assistance in feeding or is fed partly or completely by using tubes or intravenous fluids

### Field-test assessor background information

Gender:	Female	Male
Age:	years	
Profession:	Curre Curre Exper	ed nurse al experience in nursing:years nt specialty:
Do you have	No Yes, exp 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	perience with nutritional assessments? erience using ( <i>tick all that apply</i> ) The Body Mass Index (MBI) The Mini Nutritional Assessment (MNA; 18 items) The Mini Nutritional Assessment Short-Form (MNA-SF; 6 items) The Malnutrition Universal Screening Tool (MUST) The Subjective Global Assessment (SGA) The Patient-Generated Subjective Global Assessment (PG-SGA) The Nutritional Risk Screening 2002 (NRS 2002) Other:
Have you h	D No	aining in nutrition and/or nutritional assessments?
Do you have	e a special int D No D Yes	terest in nutrition and/or nutritional assessments?
Do you have workplace?		oonsibility for nutrition and/or nutritional assessments at

NoYes

### User evaluation of the MEONF-II

Were the MEONF-II instructions (manual) easy to understand? Yes No; comments:	
	•
Were the MEONF-II items:	
Easy to understand?	
TYes	
No; comments:	
Easy to score?	\
Relevant?	
□ No; comments:	
Were the proposals for action in the MEONF-II (page 2 of the MEONF-II form):	
were the proposals for action in the MEONI-II (page 2 of the MEONI-II for inj.	
Easy to understand?	
No; comments:	
Relevant?	
No; comments:	
	••
Appropriate?	
□ Yes	
□ No; comments:	
· · · · · · · · · · · · · · · · · · ·	

Does the MEONF-II appear to be a useful tool for routine clinical use?
□ Very useful □ Quite useful □ Not very useful □ Not at all useful
Comments:
How does the MEONF-II compare to other nutritional tools that you are familiar with for identification of potential nutritional problems?
<ul> <li>More useful</li> <li>Equally useful</li> <li>Less useful</li> <li>Not experienced with other tools</li> </ul>
Comments:
How helpful do you find the information from the MEONF-II towards providing good care compared to other nutritional tools that you are familiar with?
<ul> <li>More helpful</li> <li>Equally helpful</li> <li>Less helpful</li> <li>Less helpful</li> </ul>
Comments:
What is your impression of the value of using the MEONF-II as an aid for education concerning nutrition?
concerning nutrition:
Very valuable   Quite valuable   Not very valuable   Not at all valuable
Comments:
Suggestions for modification(s) of the MEONF-II due to potential ambiguities, linguistic problems, etc.:

**Other comments:**