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Transizione: il link misconosciuto del percorso nutrizionale tra l'area critica e il reparto

27 - 29 novembre 2025

Padova Congress
Via Carlo Goldoni 8, Cancelli C - Padova



Improving patient care transitions from the intensive care unit to the ward by learning from everyday practice.

INTENS CRIT CARE NUR 85 (2024) 103797

| | |
|---------------------------------------|---|
| Preparation for ICU discharge | Inform patients in time (not hours before discharge) and multiple times about nearing discharge and upcoming care changes. |
| | Reduce or drop non-essential monitoring, catheters and arterial lines in the ICU in the final days prior discharge to help the patient acclimate to the ward setting. |
| | Make possible fears, questions and expectations regarding discharge discussable with an initial question (e.g., “How do you feel about discharge/ being transferred to the ward?”). |
| | Invite the ward nurse to the ICU prior (at least one day) discharge for patients with complex needs or a prolonged ICU stay. |
| Patient transfer to the ward | Perform transfers with one ICU and one ward nurse (hybrid form). |
| | Simulation (e.g. nurses experiencing the transfer from the patient’s perspective). |
| Handover and installation in the ward | Share information regarding <u>patient mobilization</u> , ADL-assistance and psychosocial care needs. |
| | Discuss the various tasks of the consultative ICU nurse and share contact information. |
| First 24 h in the ward | Screen patients for <u>emotional distress</u> and provide support if needed (e.g., a listening ear, easily accessible consultative ICU nurse). |
| | Apply flexible visiting rules for patients who have been just transferred, especially for those with a prolonged ICU-stay. |
| | Pay sufficient attention to the recovery of patient’s self-reliance to help them regain a sense of control. |

Nutritional gap after transfer from the intensive care unit to a general ward: A retrospective quality assurance study

Australian Critical Care 38 (2025) 101102

Table 2

Energy and protein requirements, intake, and percentage intake of energy and protein requirement (for all and presented by nutritional route).

| | n | Day -1 | n | Day +1 | n | Day +3 |
|---|----|---------------|----|----------------|----|---------------|
| Estimated energy requirement (kcal/kg) | 44 | 19 (15–35) | 48 | 21 (16–35) | 50 | 24 (16–36) |
| Estimated protein requirement (g/kg) | 44 | 1.2 (0.8–2.0) | 48 | 1.2 (0.8–2.0) | 50 | 1.2 (0.8–2.0) |
| Recorded energy intake (kcal/kg) | 45 | 18 (0.3–37) | 24 | 7.3 (1.33–36) | 29 | 11 (0.2–34) |
| Recorded protein intake (g/kg) | 45 | 0.8 (0.0–1.8) | 24 | 0.3 (0.03–1.4) | 28 | 0.5 (0.1–1.4) |
| Energy intake of requirement: $\geq 75\%$ (n, %) | 39 | 24 (62%) | 24 | 4 (17%) | 29 | 3 (10%) |
| Protein intake of requirement: $\geq 75\%$ (n, %) | 39 | 18 (46%) | 24 | 3 (13%) | 28 | 3 (11%) |
| Energy intake (%) of requirement | 39 | 94 (17–192) | 24 | 31 (8–153) | 29 | 42 (1–138) |
| <i>Energy intake (%) of requirement presented by route</i> | | | | | | |
| Parenteral (%) | 2 | 115 (98–131) | 5 | 60 (16–153) | 4 | 58 (8–138) |
| Parenteral—combined (enteral or oral) (%) | 4 | 89 (48–126) | 0 | | 1 | 29 (29–29) |
| Enteral (%) | 14 | 93 (50–177) | 10 | 27 (15–91) | 11 | 42 (15–61) |
| Enteral + oral (%) | 13 | 94 (17–165) | 3 | 33 (22–121) | 5 | 40 (1–110) |
| Oral (%) | 6 | 62 (37–192) | 6 | 20 (8–69) | 8 | 40 (13–99) |
| Protein intake (%) of requirement | 39 | 73 (9–149) | 24 | 28 (4–108) | 28 | 39 (7–103) |
| <i>Protein intake (%) of requirement presented by route</i> | | | | | | |
| Parenteral (%) | 2 | 93 (89–96) | 5 | 44 (13–96) | 4 | 55 (7–91) |
| Parenteral—combined (enteral or oral) (%) | 4 | 63 (38–119) | 0 | | 1 | 26 (26–26) |
| Enteral (%) | 14 | 75 (35–120) | 10 | 24 (8–71) | 11 | 38 (13–60) |
| Enteral + oral (%) | 13 | 77 (9–117) | 3 | 33 (25–108) | 4 | 56 (24–103) |
| Oral (%) | 6 | 38 (14–149) | 6 | 20 (4–69) | 8 | 33 (13–89) |

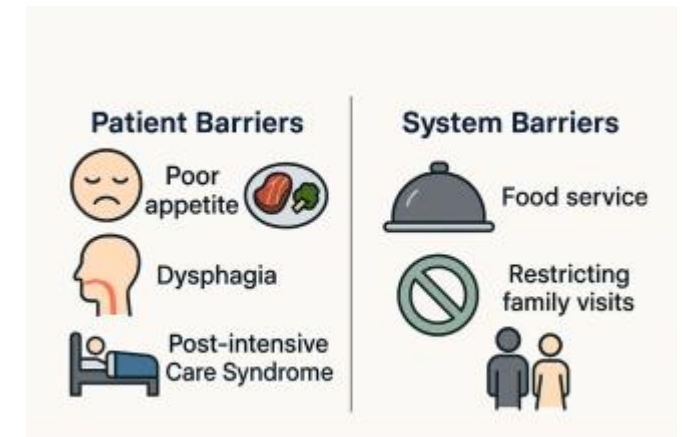
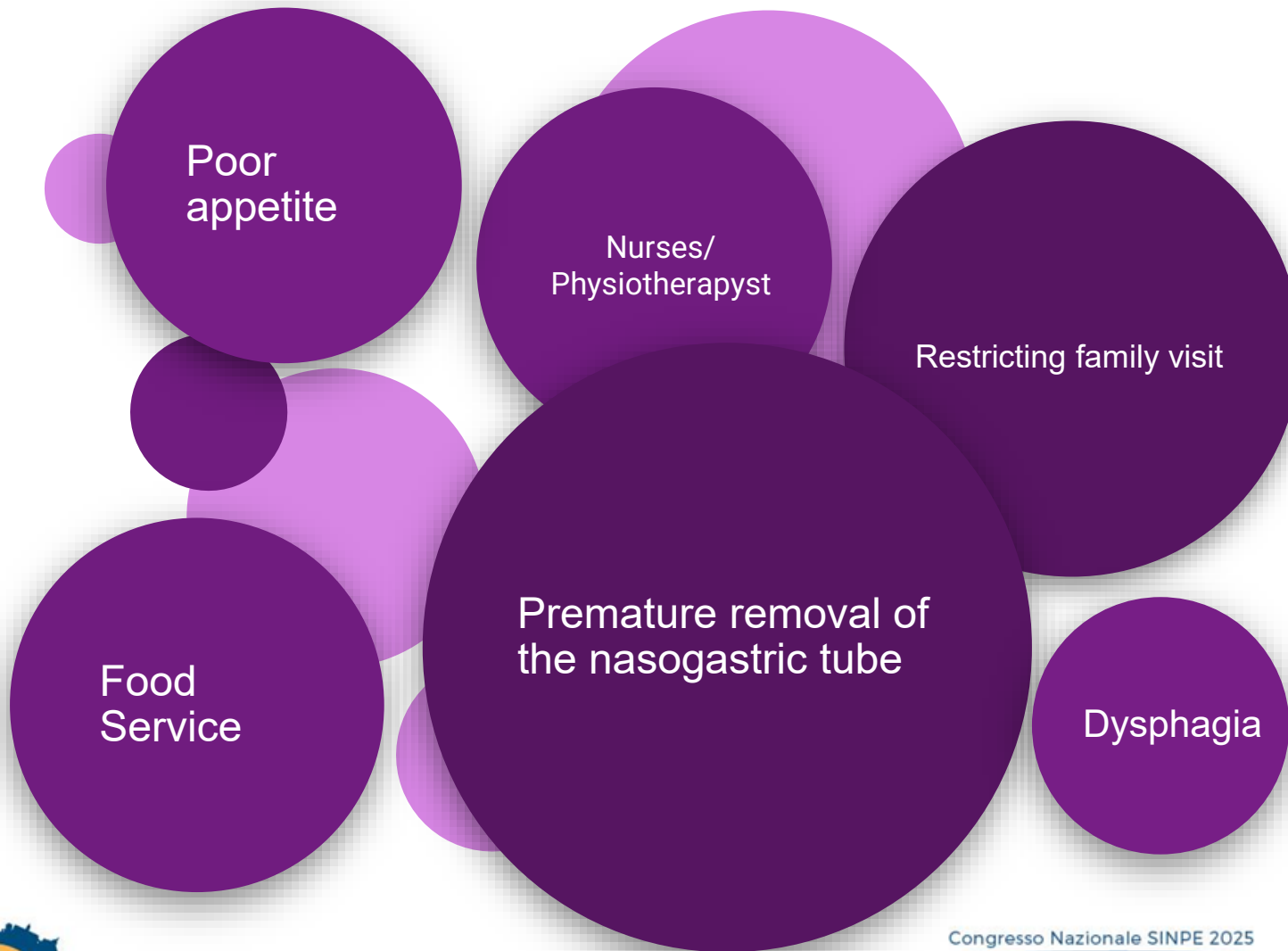
Results for categorial data are presented as n (%) and for continues data as median (min–max).

Few patients had a nutritional plan when transferring from the ICU to a general ward.

After ICU discharge, percentage of energy and protein requirements met declined significantly and remained insufficient during the first 3 days at the general ward

The energy requirement after ICU discharge and strategies to improve nutritional adequacy

Clinical Nutrition Open Science 63 (2025)
91–98

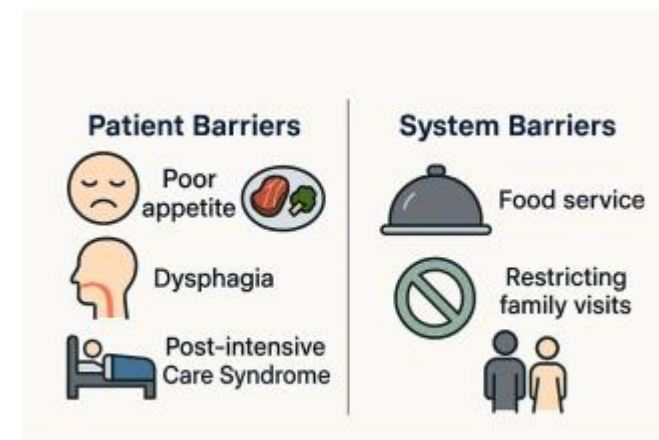


The energy requirement after ICU discharge and strategies to improve nutritional adequacy

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Poor
appetite

Food
Service



Appetite loss and associated factors at 1 year after intensive care unit elder survivors in a secondary analysis of the SMAP-HoPe study

(2023)

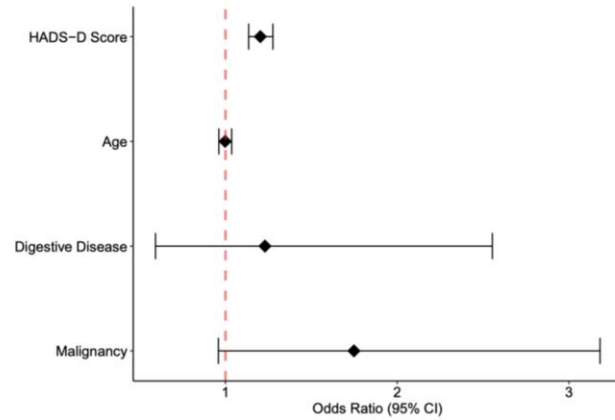


Figure 2. The results of multilevel generalized linear model with binomial family and logit link. Forest plot of odds ratio and 95% confidence intervals for adjusted variables. HADS-D shows the odds ratio for each one-point change in the score. Similarly, the odds ratio for a 1-year change in age is shown. HADS-D, Hospital Anxiety and Depression Scale–Depression.

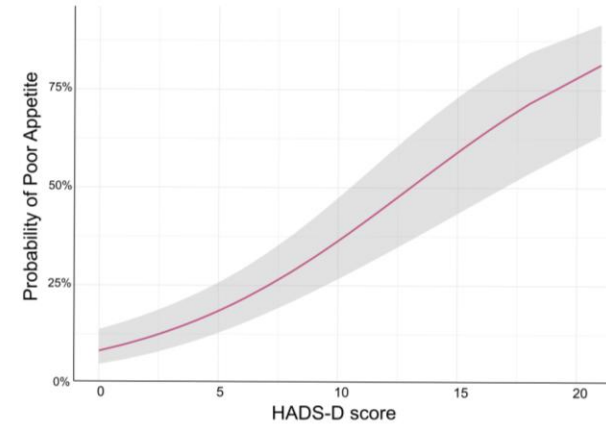


Figure 3. The relationship between severity of depression and risk of poor appetite after adjusting for age, HADS-D score, digestive disease, and malignancy as covariates, using a multilevel generalized linear model with binomial family and logit link. Grey areas show 95% confidence intervals. HADS-D is a subscale of the HADS that assesses depressive symptoms. A high HADS-D score indicates a high number of symptoms. Poor appetite was defined as a SNAQ score < 14. HADS, Hospital Anxiety and Depression Scale; HADS-D, Hospital Anxiety and Depression Scale—Depression subscale.

Evaluation of a Novel Artificial Intelligence System to Monitor and Assess Energy and Macronutrient Intake in Hospitalised Older Patients

Nutrients. 2021 Dec 17;13(12):4539.

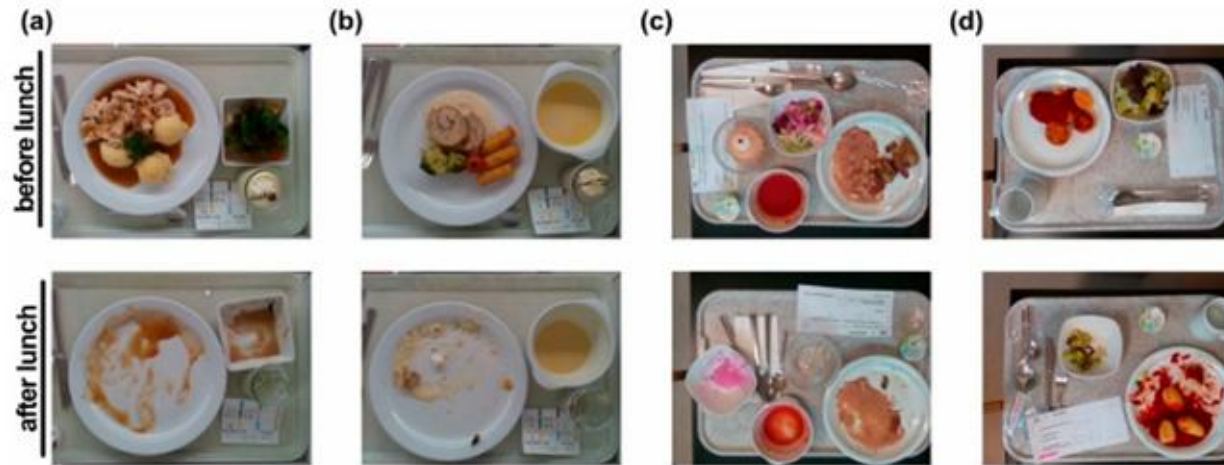


Figure 2. Sample images before and after meal consumption from Geriatrike Klinik St. Gallen (a,b) and from the Bern University Hospital [24] (c,d).

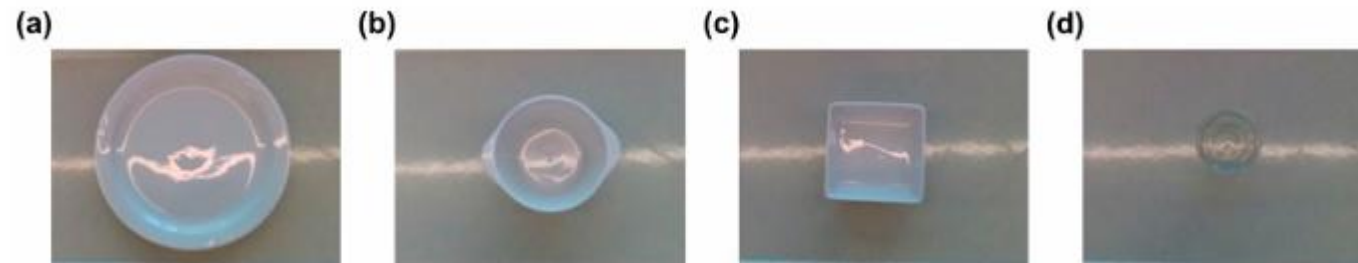


Figure 3. The plates used in the Geriatrike Klinik, St. Gallen: (a) round plate for main course; (b) bowl for soup; (c) square bowl for salad or dessert; (d) glass for dessert.

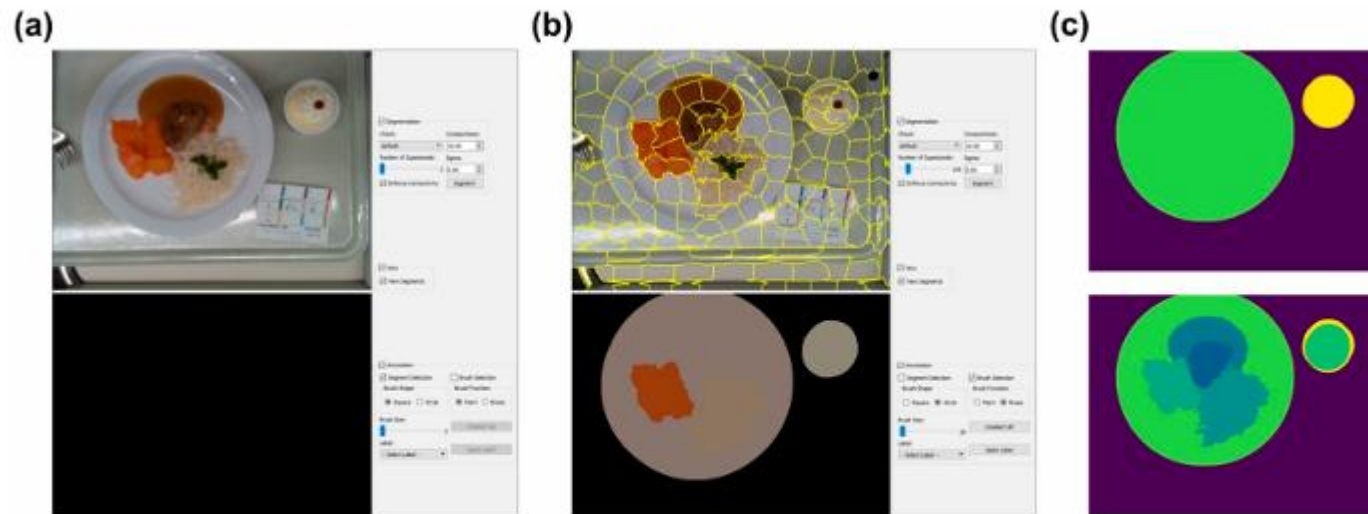


Figure 5. The segmentation tool that was used to provide the ground truth of the segmentation (GT_{seg}): (a) the interface of the segmentation tool; (b) the semi-automatic segmentation; (c) the segmented plates of the images (up) and food types (bottom).

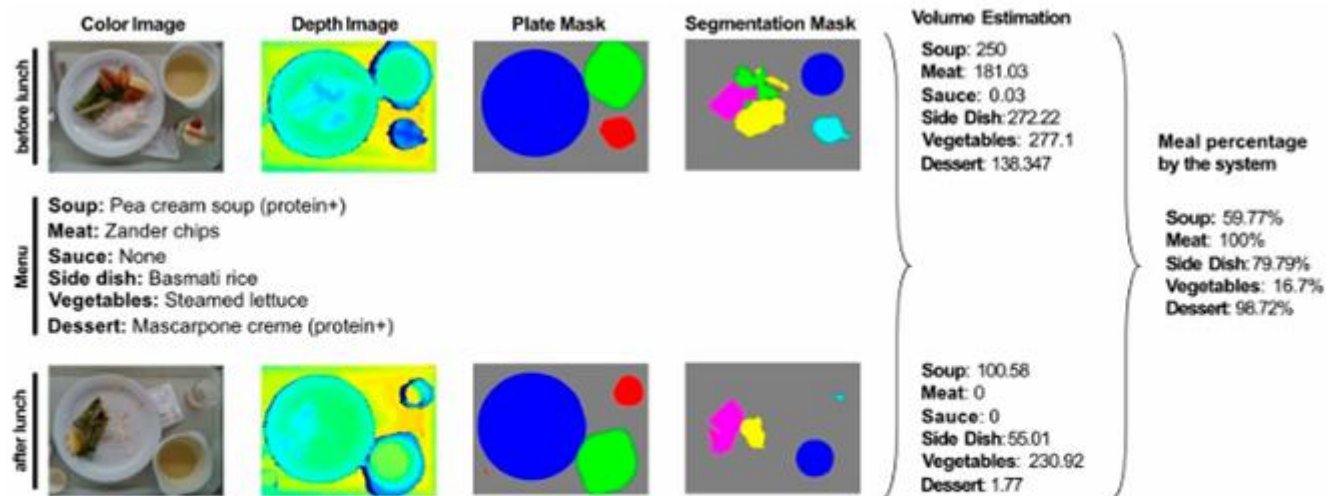


Figure 6. The system receives as input the daily menu, the RGB-D images, and the plate and meal segmentation masks and estimates the volume of each dish before and after consumption.

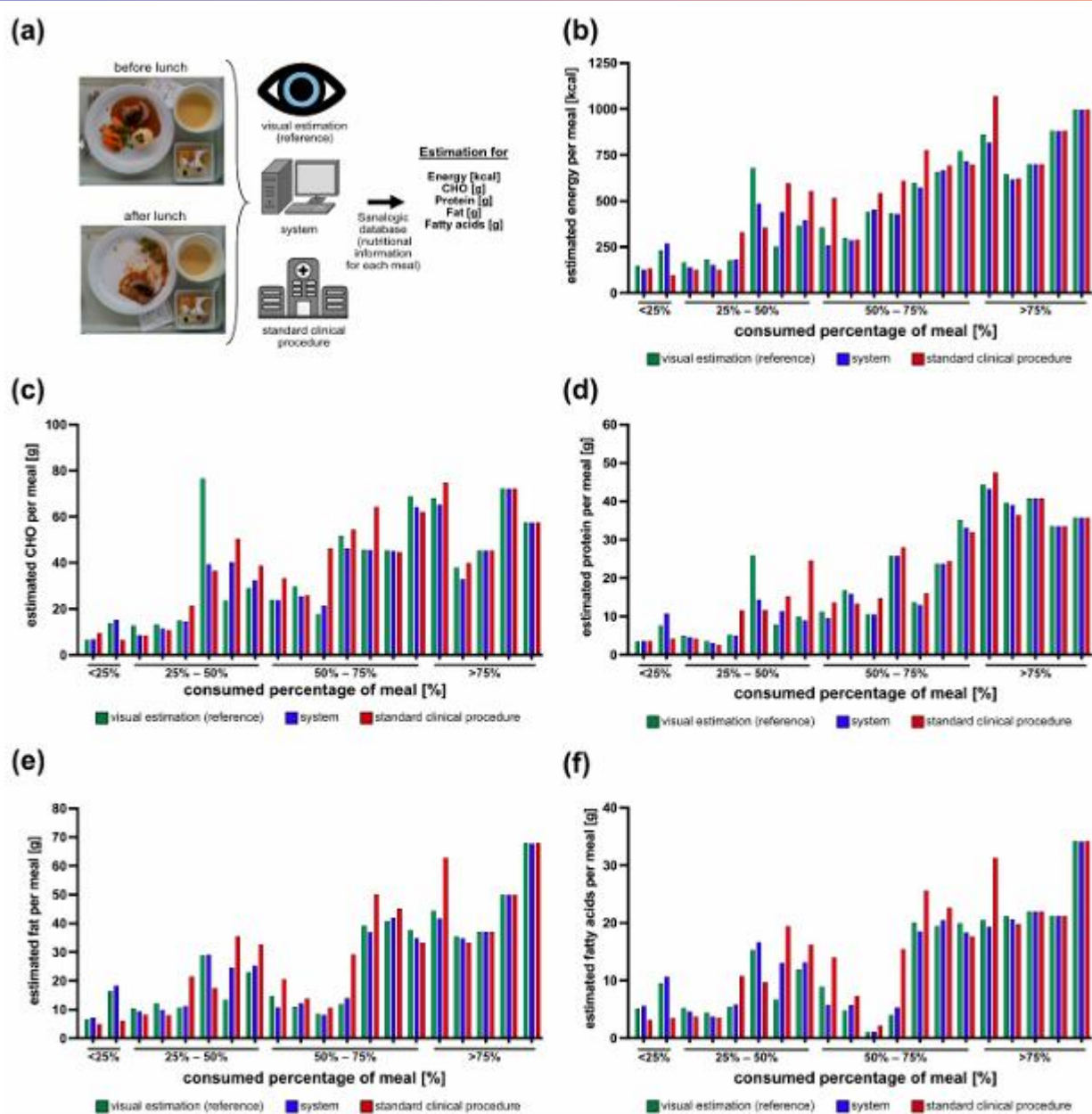
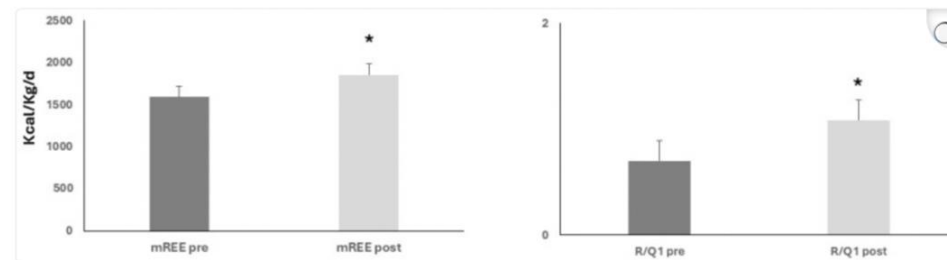


Figure 8. Bar plots for the 20 testing meals ordered by consumed percentage of each meal. (a) Schematic depiction of the workflow. Estimations for the (b) energy (kcal); (c) CHO (g); (d) protein (g); (e) fat (g); (f) fatty acids (g) intake. The green bars indicate the visual estimations of the dietitians and the student (reference), the blue bars indicate the system's estimations, and the red bars the nursing staff following the standard clinical procedure.

Figure 2.



Upon nutritional and rehabilitation interventions, baseline resting energy expenditure (mREE) and respiratory quotient (R/Q1) showed a significant rise; ANOVA, both * $p < 0.05$.

Tips to help with eating problems after Critical Illness

Here are some high protein and energy snack ideas:

- fruit with cream/ custard
- creamy yogurt
- crème caramel
- custard tart or pot
- rice pudding
- trifle
- mousse
- cheesecake
- biscuits
- cakes
- chocolate/cereal bars
- nuts
- pâté
- cheese
- crisps
- savoury biscuits
- bread sticks with humus/dips
- olives
- sandwiches
- small pieces of pizza
- flan
- pork pies
- pasties
- scotch eggs
- salmon/sausage rolls
- pakoras
- Bombay mix
- halva
- bhajis
- spring rolls
- crumpets/muffins
- bagels
- scones
- croissants
- toast
- breakfast cereal

Here are some other tips to help you eat:

- eat whenever you feel hungry– like having cereal at midnight
- try not to drink just before meals as this may fill you up and spoil your appetite
- avoid fizzy drinks as they can make you feel full up
- have ready-made meals in the fridge or freezer which you have either bought or made yourself, and
- a short walk before a meal or some fresh air may help you feel hungry.

What can help me eat when I have a loss of taste or smell?

- Eat when you feel hungry and choose the types of food you feel like you want to eat.
- It may help to rinse your mouth well before eating to keep it fresh, especially if you need to use a nebuliser (a device than helps you breathe in a fine spray of liquid medicine to help your lungs and breathing) or have had oxygen through a mask.
- Sharp, strong or tangy flavours may help to make you feel like eating, so use these flavours in your cooking or as sauces.
- Sugar-free mints or chewing gum may help to get rid of any unpleasant tastes in your mouth.
- Brush your teeth, tongue and gums more often if you find that this helps.

What will help me if food or drinks taste metallic?

- It might help to use plastic cutlery to help reduce the metallic taste in your mouth.
- Try choosing acidic or tangy flavoured food and drink as this may cover up the metallic taste.

What will help me if foods or drinks taste unusually sweet?

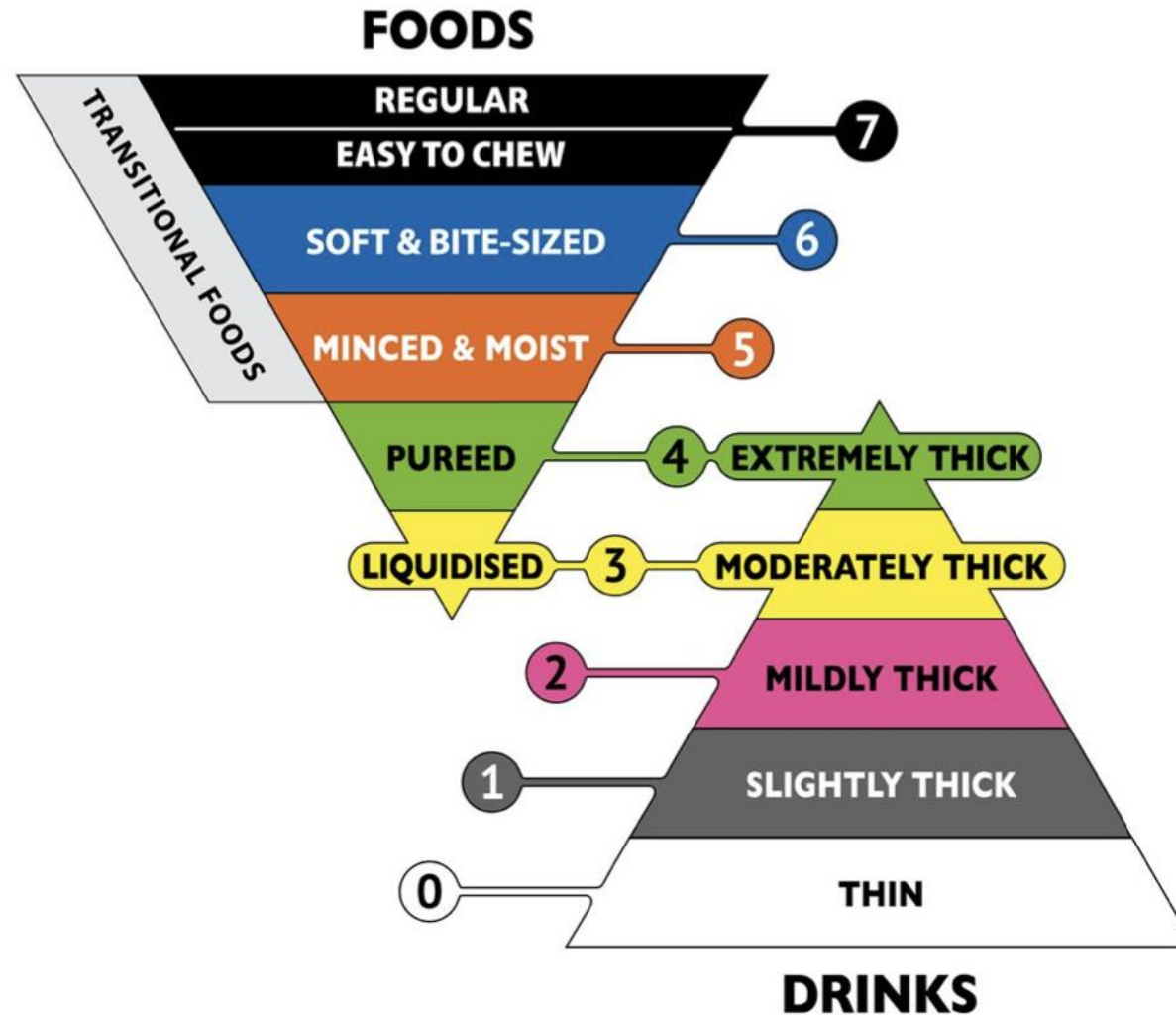
- It may help to choose salty or acidic flavoured foods to stop the sweet taste.
- Cut down on sweet and sugary foods.
- Water down sweet tasting drinks or fruit juices with water or ice.
- Having herbal tea before meals may help.

What can I do if foods or drinks tastes unusually bitter or salty?

- Adding sweet flavours to food or drink, such as sweetener, honey, or sugar may help reduce the salty or bitter taste.
- Drinking herbal tea e.g. ginger/ mint before meals may help.

Restricting family visit

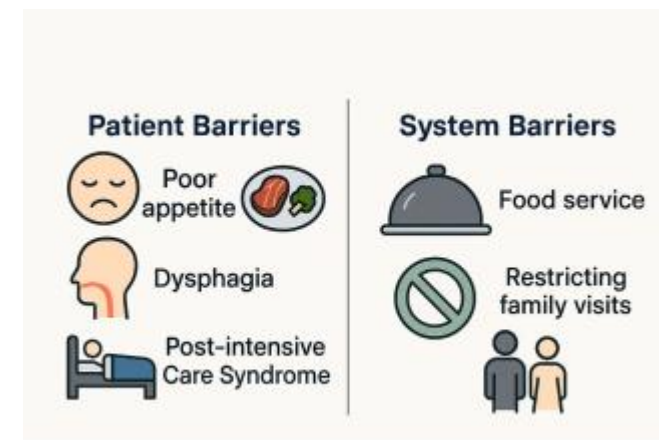
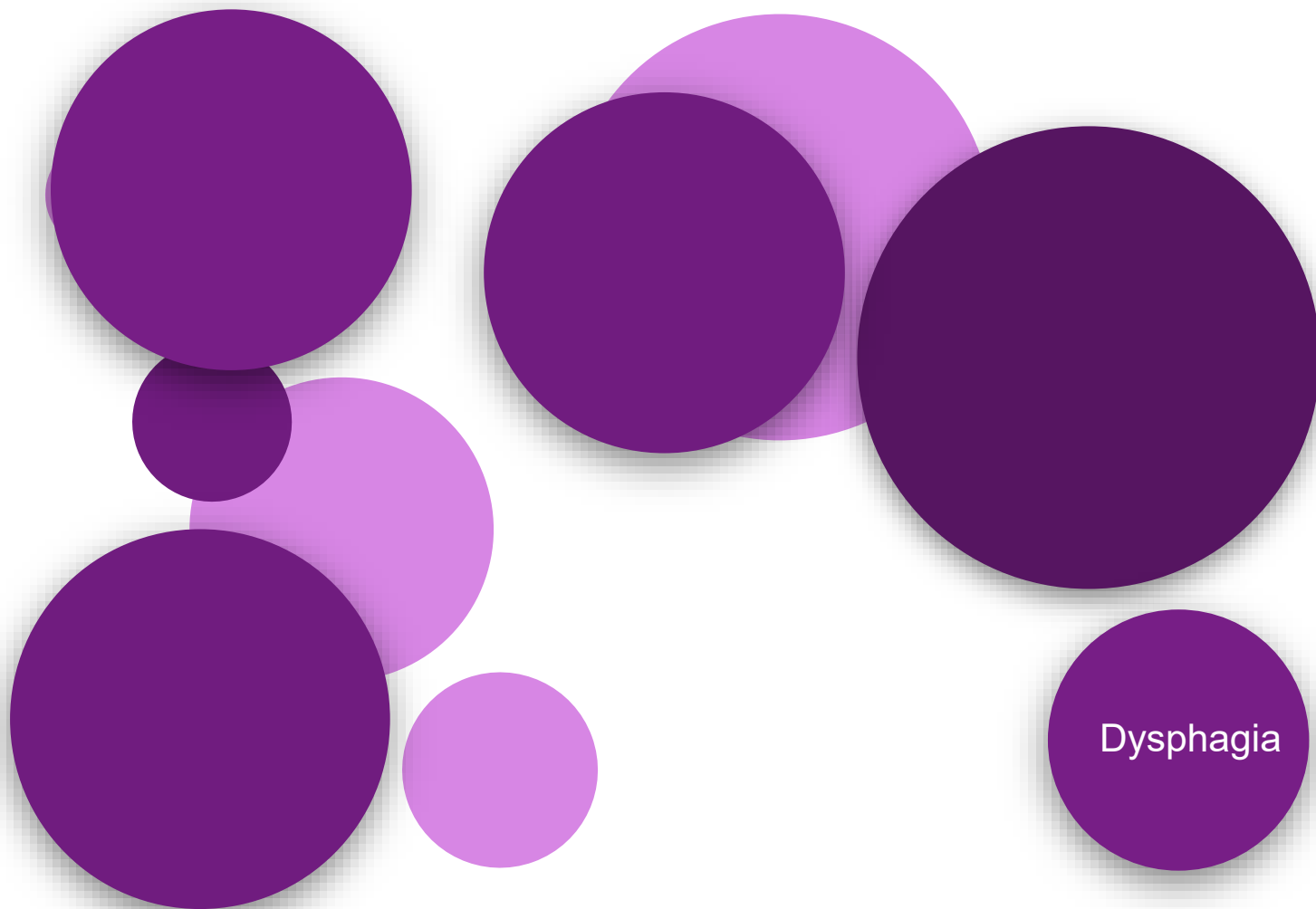
Food textures



Congresso Nazionale SIVPE 2023

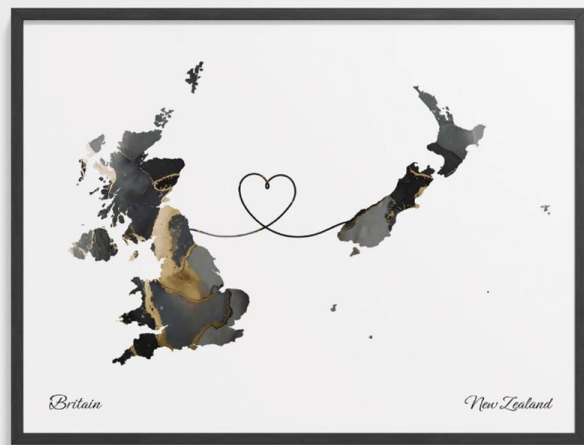
The energy requirement after ICU discharge and strategies to improve nutritional adequacy

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Management of adults with a tracheostomy: An international survey of speech-language pathologists' practice

2024

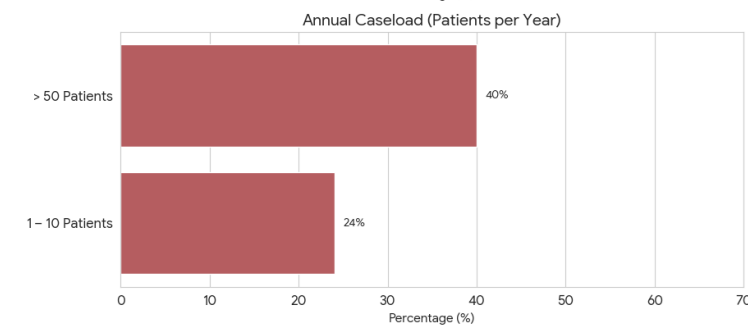
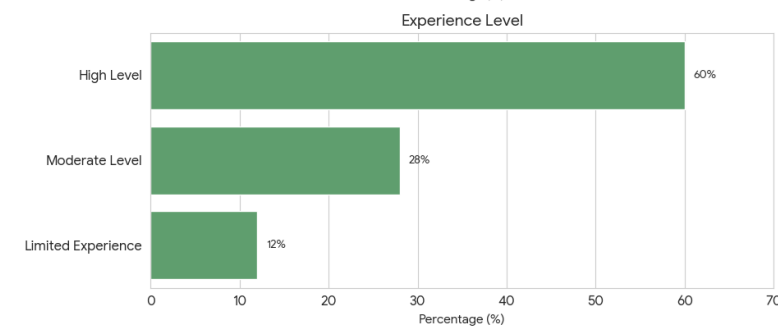
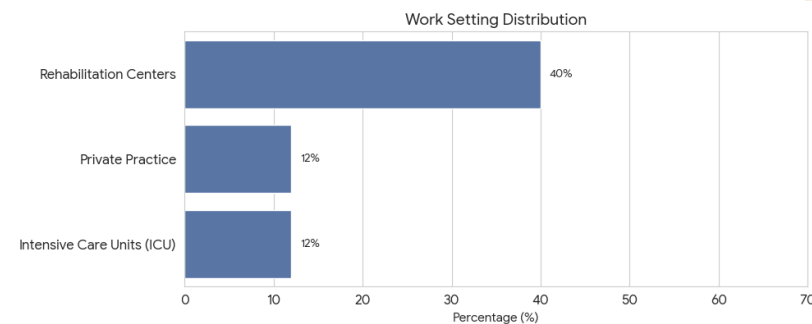
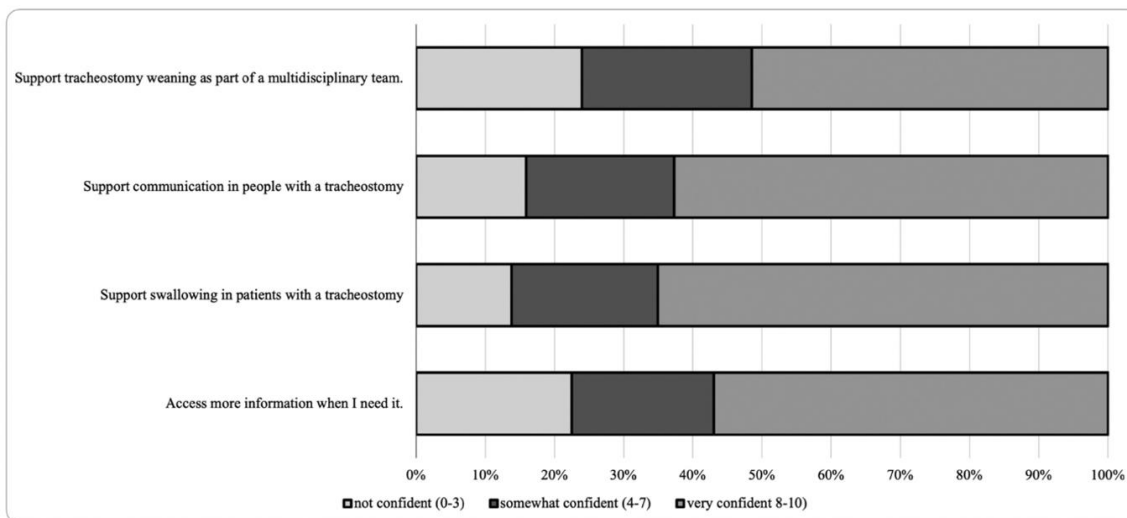


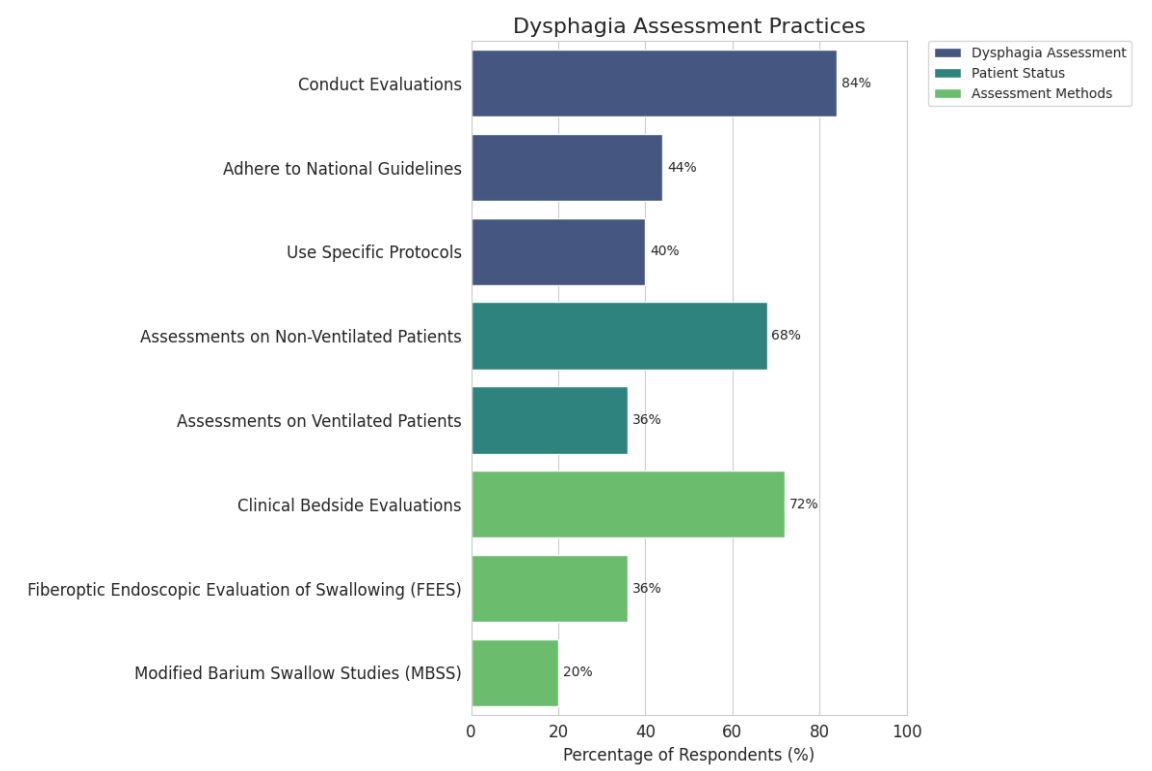
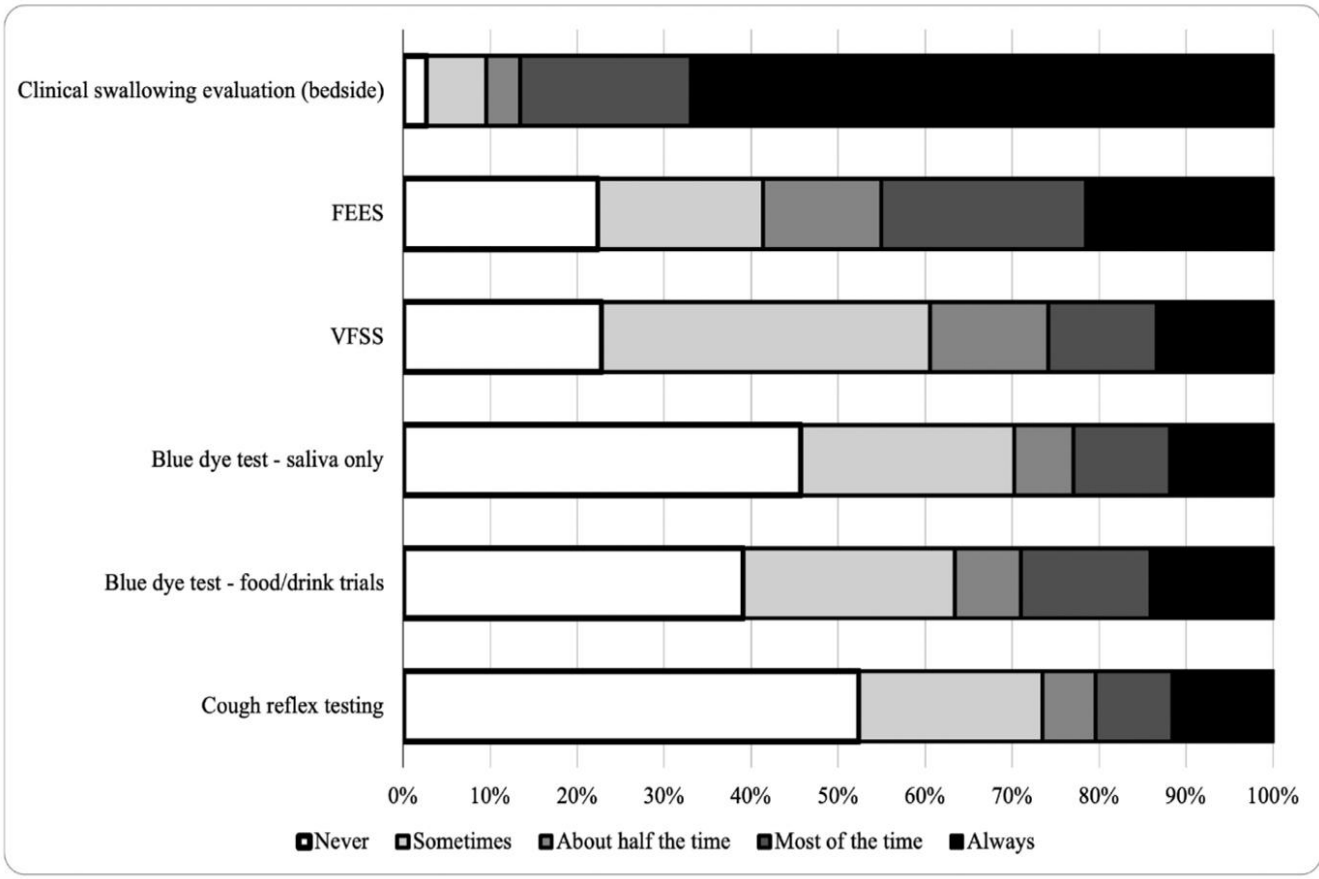
The Role of Speech-Language Pathologists in Tracheostomy Management: A National survey on Current Practices in Italy.

2025



Figure 2. Respondents' perception of their confidence in their knowledge (0 = not confident; 10 = very confident).





FEES: Flexible endoscopic evaluation of swallowing; VFSS: video fluoroscopic swallow study.



Validation of the Italian Version of the Functional Oral Intake Scale (FOIS-It) Against Fiberoptic Endoscopic Evaluation of Swallowing and Nutritional Status

Tabella 5. Functional Oral Intake Scale (FOIS)

FOIS - It

Nutrizione enterale/parenterale (Livelli 1-3)

- 1 Nessuna assunzione di alimenti per via orale
- 2 Nutrizione per via enterale/parenterale con minime quantità assunte per via orale
- 3 Nutrizione enterale/parenterale con regolari quantità assunte per via orale

Nutrizione orale completa (Livelli 4-5)

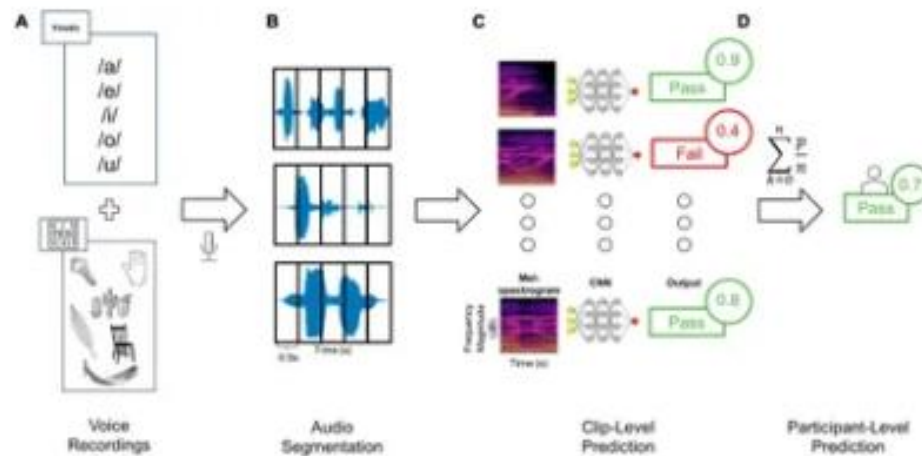
- 4 Nutrizione orale completa con cibi di una sola consistenza
- 5 Nutrizione orale completa con cibi diversi a diversa consistenza in cui viene richiesta una preparazione specifica
- 6 Nutrizione orale completa con cibi senza la necessità di preparazione specifica, con esclusione di alcuni cibi o liquidi
- 7 Nutrizione orale completa senza restrizioni



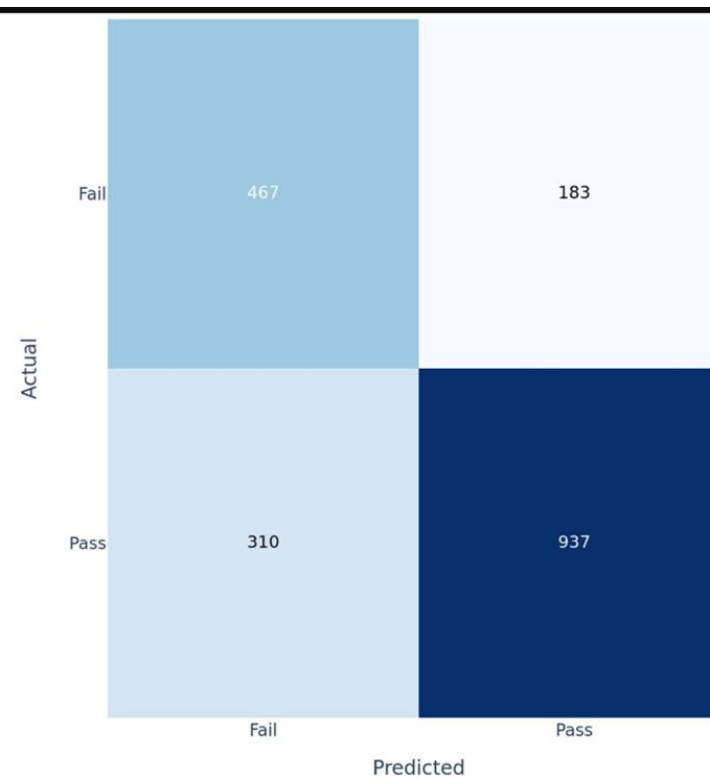
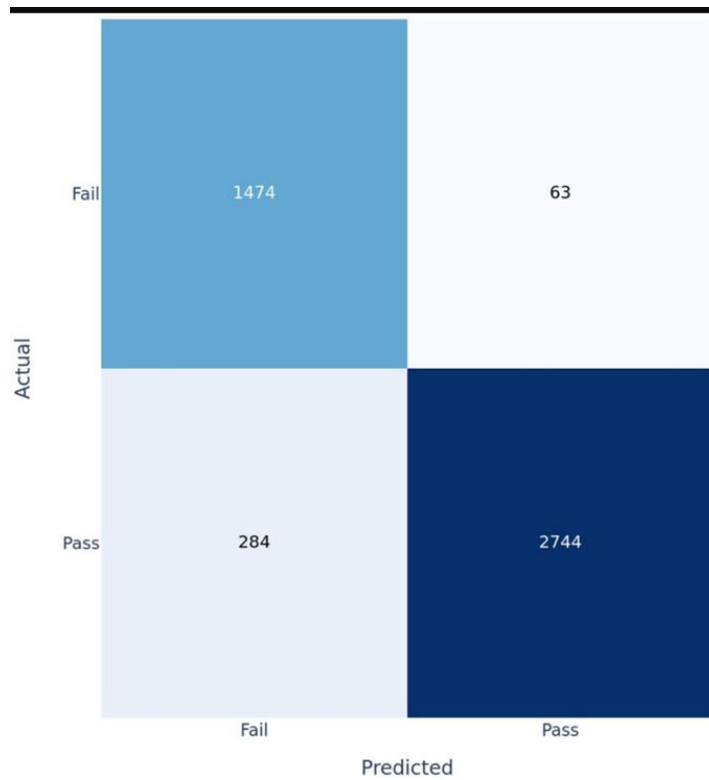
Machine-learning assisted swallowing assessment: a deep learning-based quality improvement tool to screen for post-stroke dysphagia

Front Neurosci. 2023

Figure 1



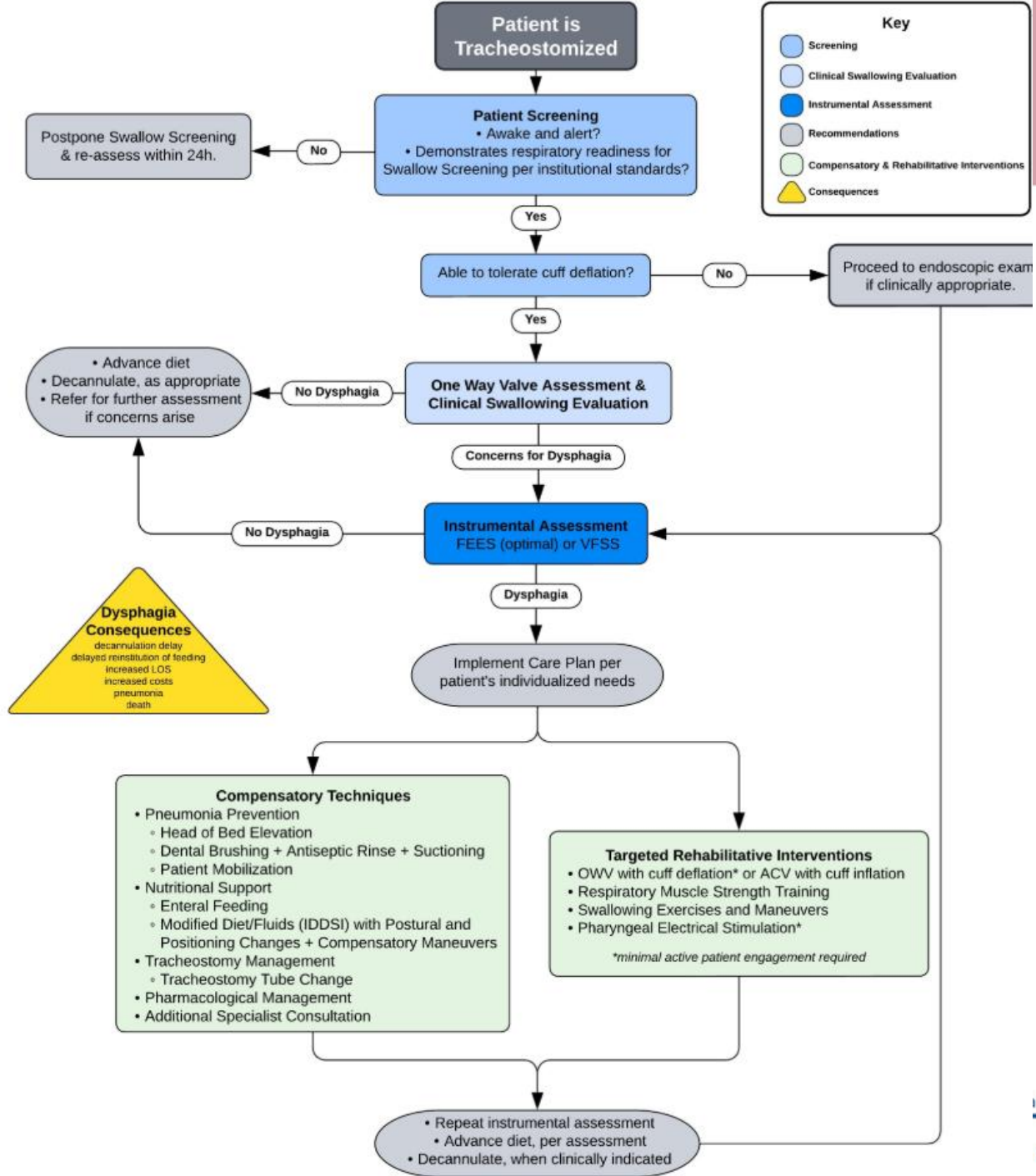
This study is the first to demonstrate the feasibility of applying deep learning to classify vocalizations to detect post-stroke dysphagia.



Management of swallowing disorders in ICU patients - A multinational expert opinion

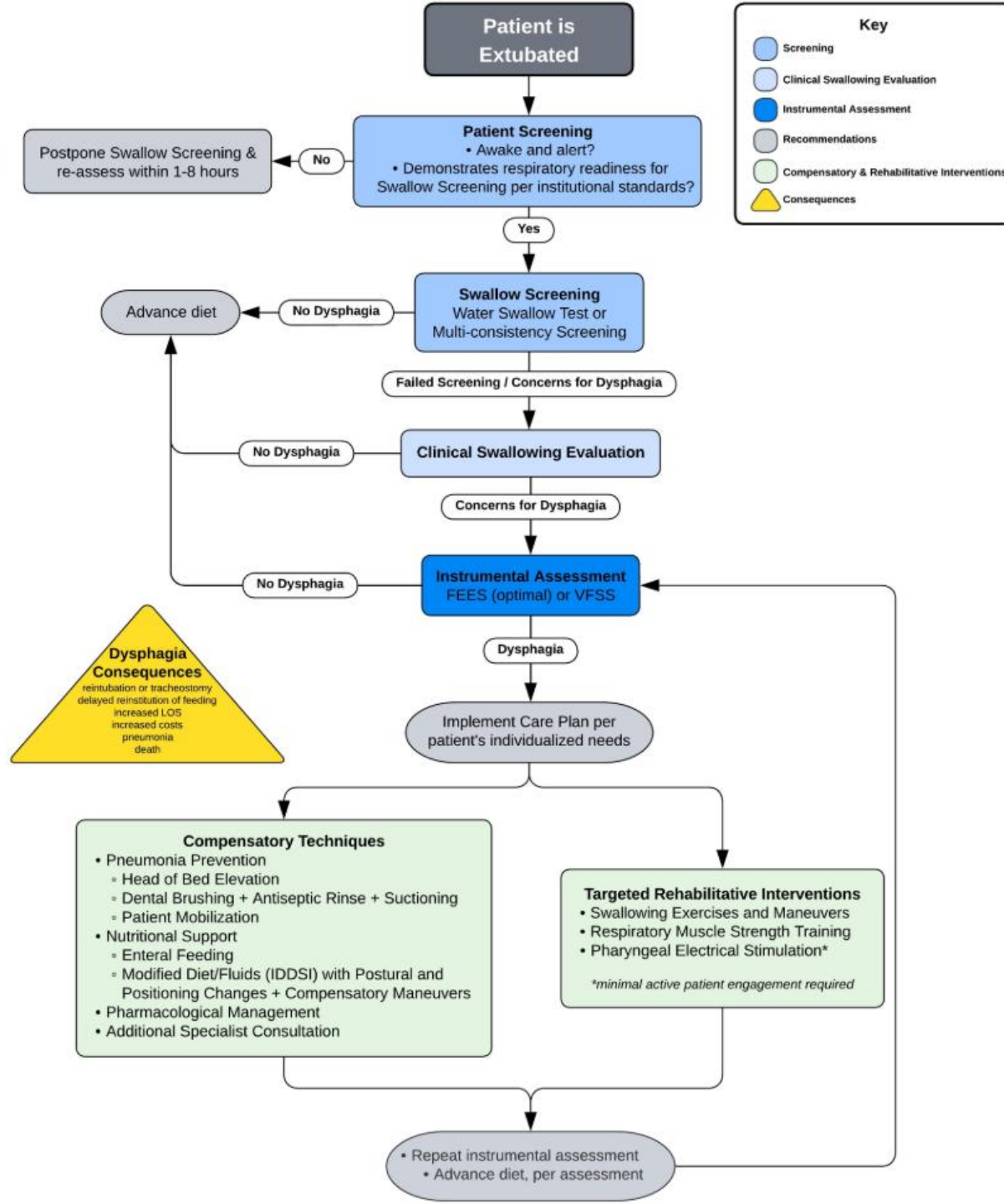
Journal of Critical Care

Volume 79, February 2024, 154447



Continuous screening of consciousness, delirium, sedation, cognition and medical stability





Management of swallowing disorders in ICU patients

- A multinational expert opinion

Journal of Critical Care

Volume 79, February 2024, 154447



Empowering recovery: A scoping review of post-ICU exercise rehabilitation success factors and challenges

S. Surve et al.

Clinical Epidemiology and Global Health 36 (2025) 102174

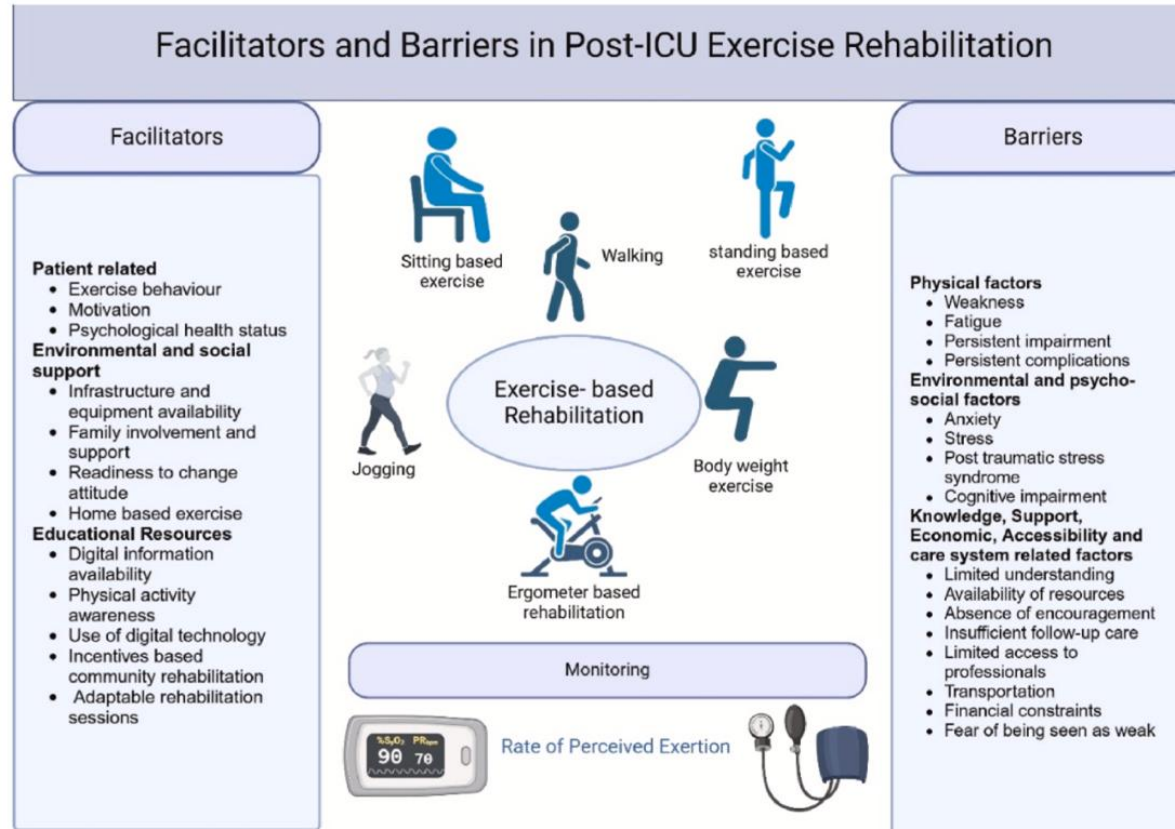


Fig. 2. Mapping of facilitators and barriers in post-ICU exercise-based rehabilitation.

Good Practice Statement 1

All patients admitted to the ICU should be assessed and screened daily for suitability to receive physical rehabilitation and/or mobilisation. The initial screening should occur as early as possible after admission to ICU, within 24 hours if feasible.

Good Practice Statement 2

Each hospital should have a dedicated physical rehabilitation / mobilisation program in ICU which includes clinical champions, stakeholders (e.g. management, executive), education, equipment (e.g. tilt tables) and appropriate governance arrangements. Governance arrangements should include ongoing quality evaluation, regular review, budget allocation, risk management and clear reporting frameworks including reporting to hospital executive.

Good Practice Statement 3

Strategies should be implemented to optimise the management of pain, sedation, delirium, communication and sleep, to minimise their effects as barriers to physical rehabilitation and/or mobilisation in patients receiving invasive mechanical ventilation.

Good Practice Statement 4

ICU environments should be designed to facilitate physical rehabilitation / mobilisation including adequate space to safely perform mobilisation and store rehabilitation equipment.

Good Practice Statement 5

For patients receiving invasive mechanical ventilation in the intensive care unit, goal setting for improving physical function with physical rehabilitation and/or mobilisation should be discussed with the multidisciplinary team and the patient or their family, if possible. This should include both short- and long-term goals for physical rehabilitation and/or mobilisation noting that patients report difficulty in engaging in early goal setting due to their limited understanding of the recovery process.

Good Practice Statement 6

Where possible, for patients receiving invasive mechanical ventilation in intensive care, discuss preferences for physical rehabilitation with the patient and/or surrogate decision maker including discussion about potential risks and benefits.



Good Practice Statement 6

Where possible, for patients receiving invasive mechanical ventilation in intensive care, discuss preferences for physical rehabilitation with the patient and/or surrogate decision maker including discussion about potential risks and benefits.

Good Practice Statement 7

Physical rehabilitation and/or mobilisation in patients receiving invasive mechanical ventilation should include multidisciplinary engagement including ICU physiotherapists, registered nursing and medical staff.

Good Practice Statement 8

Discuss criteria for the safe implementation of physical rehabilitation and/or mobilisation for each patient receiving invasive mechanical ventilation with the multidisciplinary team, including respiratory and haemodynamic goals of care identifying that those receiving the most intensive level of physical rehabilitation and/or mobilisation may be at increased risk of adverse events.

Good Practice Statement 9

A medical officer with advanced airway skills should be available on site when an intubated patient is being mobilised away from the bed space.

Good Practice Statement 10

Monitor for safety (adverse) events during physical rehabilitation and/or mobilisation of patients receiving invasive mechanical ventilation in the ICU. Any safety (adverse) events should be documented and the plan for future physical rehabilitation and/or mobilisation should be re-evaluated.

Good Practice Statement 11

Provide education and training to key stakeholders on physical rehabilitation and/or mobilisation of patients receiving invasive mechanical ventilation in the ICU. This includes, but is not limited to, knowledge of precautions and contraindications, safe mobilisation techniques, strength assessment, functional training, use of specific equipment to facilitate safe physical rehabilitation and/or mobilisation and simulation training.

Nurses/
Physiotherapist

Good Practice Statement 12

The minimum human resources for safely ambulating the patient requiring invasive ventilation away from the bed space should be three staff members, one of whom is experienced and will act as team leader. The actual number of staff will be based on an initial assessment of the patient prior to rehabilitation and/or mobilisation. Management of an artificial airway should be discussed with the medical team in advance of the intervention. The team should pre-brief to determine the intended mobility goal, general precautions & specific precautions related to the individual, and review safety plans.

Good Practice Statement 13

We recommend adherence to the Australian Commission on Safety and Quality in Health Care's standard for infection prevention while implementing physical rehabilitation and/or mobilisation.

Good Practice Statement 14

We recommend that every ICU has a documented policy, procedure or protocol for physical rehabilitation and/or mobilisation for patients receiving invasive mechanical ventilation.

Wearable devices for patient monitoring in the intensive care unit.

Intensive Care Med Exp. 2025

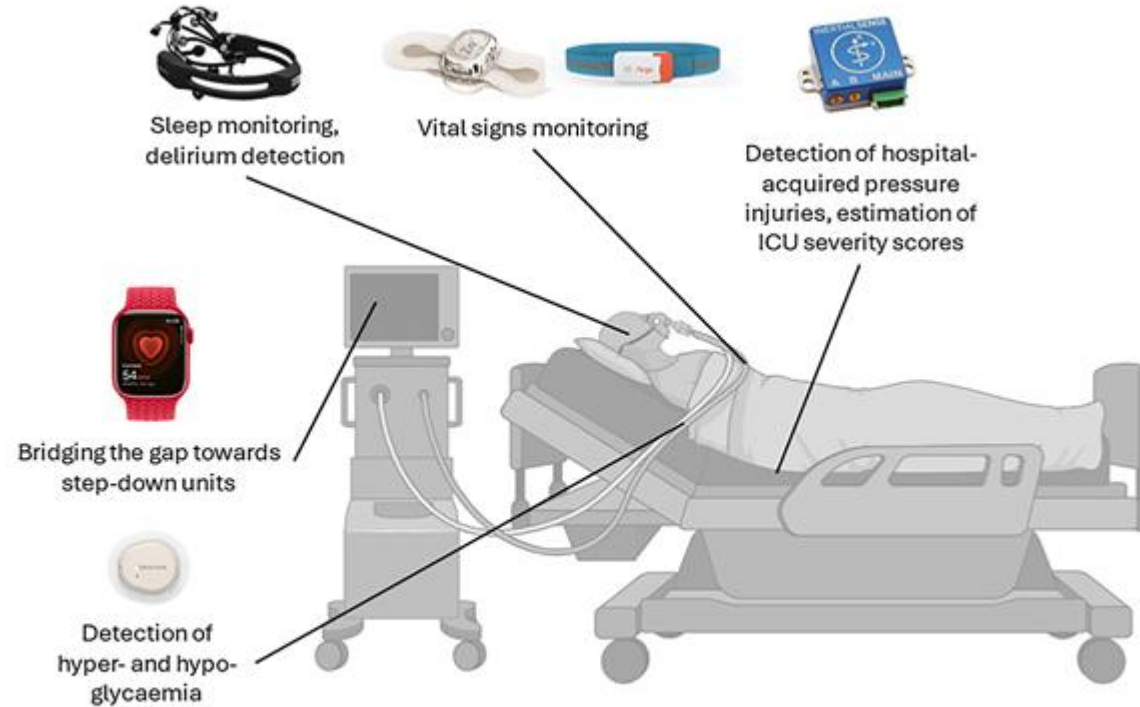
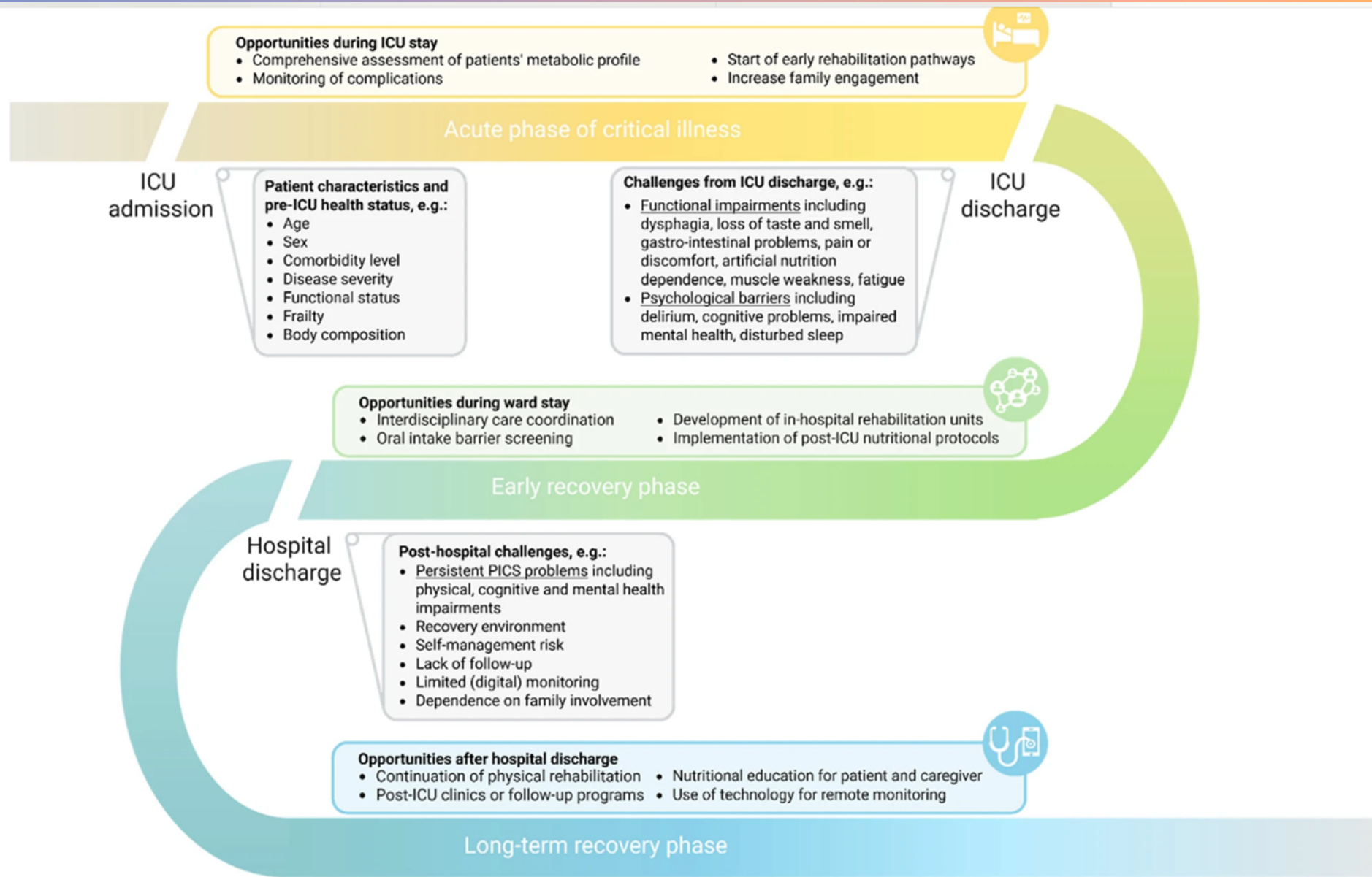


Fig. 1 Use of wearable devices in the ICU: applications and technologies used. Vital signs monitoring: cardiac and respiratory monitor; sleep monitoring and delirium detection: wearable EEG; detection of hyper- and hypoglycemia: continuous glucose monitor; detection of hospital-acquired pressure injuries and estimation of ICU severity scores: inertial measurement units; bridging the gap towards step down units: low-cost devices

Angelucci A, Greco M, Cecconi M, Aliverti A. Wearable devices for patient monitoring in the intensive care unit. Intensive Care Med Exp. 2025 Feb 27;13(1):26. doi: 10.1186/s40635-025-00738-8.



Grazie per l'attenzione

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