Supplementary Table S1. Nutrition screening and assessment

Study, year (country)	Study design	n	Population and severity score	Age mean/median, years	Prevalence/incidence rate	Main findings
Dardaine et al.[14] 2001 (France)	Pros obs	116	Mechanically ventilated patients for >24 hours APACHE II: NA SAPS II: 33.9±14.0	76.5±4.7	Prevalence of malnutrition as defined by <10th percentile of a population-specific mid-arm circumference reference: 23.3%	• Malnutrition was not associated with ICU mortality in a univariable analysis: 31% versus 20%, *P*>0.05 • Malnutrition was independently associated with 6-month mortality in a multivariable analysis: Adj OR 3.43 (95% CI 1.11–0.60)[a] • Serum albumin was not independently associated with ICU and 6-month mortality in multivariable analyses: Adj OR 1.61 (95% CI 0.47–5.56) and 1.43 (95% CI 0.51–3.98), respectively
Atalay et al.[6] 2008 (Turkey)[b]	Retro obs	87	Admitted to the ICU, of whom 51.7% were mechanically ventilated APACHE II: 15.7[c] SAPS II: 31.8[c]	73.2±5.5	Prevalence of malnutrition as defined by SGA: 27.6%	• Malnutrition was not associated with mortality in the univariable analysis: 47.5% vs 43.0%, *P*=0.74 • No multivariable analysis was performed
Sheean et al.[7] 2013 (US)	Pros obs	260	Admitted to the ICU for >24 hours APACHE II: 12.0[c] SAPS II: NA	74[c]	Prevalence of malnutrition as defined by SGA and MNA: 23.2% and 34.4%, respectively Prevalence of malnutrition risk as defined by MNA-SF and NRS-2002: 25.8% and 30.5%, respectively	• Malnutrition, defined by the SGA, was associated with a higher risk of hospital mortality/needing hospice care (23.0% vs 4.8%, *P*<0.01), and a lower risk of being discharged home (47.5% vs 76.1%, *P*<0.01) (both only adjusted for APACHE II) • Malnutrition, defined by the MNA, was not associated with a higher risk of hospital mortality/needing hospice care (16.7% vs 6.1%, *P*=0.09), and a lower risk of being discharged home (56.7% vs 76.2%, *P*=0.19) (both only adjusted for APACHE II) • Malnutrition risk, defined by the MNA-SF, was associated with a higher risk of hospital mortality/needing hospice care (21.7% vs 5.3%, *P*=<0.01), but not associated with a lower risk of being discharged home (47.8% vs 76.8%, *P*=0.19) (both only adjusted for APACHE II) • Malnutrition risk, defined by the NRS-2002, was associated with a higher risk of hospital mortality/needing hospice care (19.5% vs 5.8%, *P*=0.03) and a lower risk of being discharged home (53.2% vs 74.9%, *P*=0.01) (both only adjusted for APACHE II) • Malnutrition, defined by the SGA, (*P*=0.11 and 0.08, respectively) and MNA (*P*=0.17 and 0.07, respectively) as

						well as malnutrition risk defined by MNA-SF (*P*=0.06 and 0.06, respectively) and NRS-2002 (*P*=0.23 and 0.08, respectively) was not associated with ICU and hospital LOS (all adjusted for APACHE II)
Tripathy et al.[10] 2014 (India)	Pros obs	109	Admitted to the ICU for >24 hours APACHE II: 19.2±6.5 SAPS II: NA	74.7±8.4	Prevalence of malnutrition risk defined by MUST: 67.9%	• Malnutrition risk was independently associated with 1-year post-discharge mortality in a multivariable analysis: Adj OR 0.01 (95% CI 0.01–0.60)
Shpata et al.[8] 2015 (Albania)	Pros obs	459	Admitted to the ICU for >72 hours APACHE II: 19.0±5.6 SAPS II: NA	74.4±5.9	Prevalence of malnutrition risk defined by NRS-2002 (≥3 points): 71.2%	• Malnutrition risk was independently associated with infection: Adj OR 4.37 (95% CI 2.61–7.31) • Malnutrition risk was independently associated with complications: Adj OR 6.73 (95% CI 4.26–10.62) • Malnutrition risk was independently associated with ICU mortality: Adj OR 2.68 (95% CI 1.72 –4.18) • Malnutrition risk was independently associated with ICU LOS >14 days: Adj OR 5.18 (95% CI 2.43–11.06)
Hsu et al.[15] 2018 (Taiwan)	Pros obs	190	Admitted to medical ICU with APACHE II ≥15, mechanically ventilated for ≥48 hours and on nasogastric tube feeding APACHE II: 15–20 = 14.2% 20–28 = 43.2% ≥28 = 42.6% SAPS II: NA	79.1±7.2	Prevalence of high nutrition risk defined by mNUTRIC (score ≥5): 91.1%	• Every point increment of mNUTRIC score increases days of mechanical ventilation, ICU LOS and hospital LOS by 1.54 days (*P*=0.006), 1.18 days (*P*=0.028) and 1.52 days (*P*=0.046), respectively (all adjusted for gender, BMI, weight loss and poor intake) • Increased mNUTRIC score was associated with increased ICU and hospital mortality: OR 1.71 (95% CI 1.22–2.39, *P*=0.002) and OR 1.64 (95% CI 1.24–2.15, *P*<0.001), respectively (all adjusted for gender, BMI, weight loss, and poor intake) • High nutrition risk patients who achieved ≥80% of: – prescribed calories had lower ICU and hospital mortality: 13.5% vs 25.8% (*P*=0.04) and 23.4% vs 40.3% (*P*=0.02) – prescribed protein had lower hospital mortality: 23.4% vs 40.3% (*P*=0.02)
Kos et al.[11] 2016 (Turkey)	Retro obs	225	Admitted to the ICU, of whom 70.7% were mechanically ventilated APACHE II: NA SAPS II: NA	79 (range 65–100)	Prevalence of malnutrition as defined by CONUT and PNI: 70.3% and 71.6%, respectively	• Malnutrition risk defined by CONUT was not independently associated with ICU mortality in a multivariable analysis: Adj HR 1.30 (95% CI 0.68–2.49) • Malnutrition risk defined by PNI was not independently associated with ICU mortality in a multivariable analysis: Adj HR 0.65 (95% CI 0.41–1.03)
Liu et al.[12] 2020 (Taiwan)	Retro obs	700	Admitted to the ICU with trauma	75.8[c]	Prevalence of major malnutrition risk as defined	• A lower GNRI score was independently associated with hospital mortality in a multivariable analysis: Adj OR 0.97 (95% CI 0.95–0.99)

			APACHE II: NA SAPS II: NA		by GNRI (score <82): 18.3% Prevalence of malnutrition risk as defined by GNRI (score ≤98): 65.0%	• Major malnutrition risk was associated with a higher risk of hospital mortality in a univariable analysis (26.6% vs 13.1%, *P*=0.012) • Major malnutrition risk was associated with a longer hospital LOS in a univariable analysis (26.5 vs 20.9 days, *P*=0.020)
Yenibertiz et al.[9] 2020 (Turkey)	Retro obs	191	Patients with acute respiratory failure and admitted to the ICU APACHE II: 22.7[c] SAPS II: NA Mechanically ventilated: 49.2%	77[c]	Prevalence of malnutrition-risk as defined by GNRI (score <92): 76.3% NUTRIC, NRS-2002 and OPNI: prevalence was not reported	• Malnutrition risk defined by GNRI was associated with 30-day mortality: Adj OR 0.95 (95% CI 0.90–0.99) • Malnutrition risk defined by NUTRIC was associated with 30-day mortality: Adj OR 1.83 (95% CI 1.35–2.47) • Malnutrition risk defined by NRS-2002 was not associated with 30-day mortality in univariate analysis • Malnutrition risk defined by OPNI was associated with 30-day mortality. No multivariate analysis was performed for OPNI.
Shi et al.[13] 2021 (China)	Retro obs	1250	Patients with acute respiratory failure and admitted to the ICU for >48 hours APACHE II: NA SAPS II: NA	80.9	Prevalence of malnutrition risk as defined by GNRI (score ≤98): 45.9%	• Malnutrition risk was independently associated with higher odds for hospital mortality: Adj OR 1.26 (95% CI 1.07–1.50), and longer hospital LOS (308 vs 249 days, *P*<0.01) • Malnutrition risk was not independently associated with ICU mortality and LOS: 23.0% vs 20.2%, *P*=0.216, and 118 vs 113 days, *P*=0.229, respectively

Adj: adjusted; APACHE II: Acute Physiology and Chronic Health Evaluation II; BMI: body mass index; CONUT: controlling nutritional status index (includes: serum albumin, total cholesterol and total lymphocyte); GNRI: geriatric nutritional risk index (calculated by: –1.489 × albumin [g/dL] + 41.7 × (body weight in kg/ideal body weight in kg);[d] HR: hazard ratio; ICU: intensive care unit; LOS: length of stay; MNA: mini nutrition assessment; MNA-SF: mini nutrition assessment-short form; mNUTRIC: modified NUTrition Risk in Critical ill score; MUST: malnutrition universal screening tool; NA: not applicable; NRS-2002: Nutrition Risk Screening 2002; NUTRIC: NUTrition Risk in Critical ill score; OPNI: Onodera's prognostic nutritional index (10 × serum albumin level [g/dL] + 0.005 × absolute lymphocyte count [/mm^3]); OR: odds ratio; PNI: prognostic nutritional index (includes: albumin and total lymphocyte count); Pros obs: prospective observational study; Retro obs: retrospective observational study; SAPS II: Simplified Acute Physiology Score II; SGA: Subjective Global Assessment

[a] Error in reporting.
[b] Total patients enrolled in the study were 119, in which 87 were admitted to the ICU. Only data on prevalence was reported by reference to the ICU populations, while the rest are based on the total population.
[c] Estimation.
[d] In Liu et al.,[12] the ideal body weight of men = body height in cm – 80 × 0.7, and women = body height in cm – 70 × 0.6.
In Shi et al.,[13] ideal body weight of men = body height in cm – 100 – [(body height in cm – 150)/4], and women = body height in cm – 100 – [(body height in cm – 150)/2.5]
Superscript numbers: Refer to REFERENCES