

Table S1. Univariable Gamma model for IMV.

	AME	95% CI		p-Value
BMI, kg/m ²	4.42	-15.25	24.09	0.660
Pre-albumin	-0.28	-1.936	1.379	0.742
PNI	-157	-19.09	15.06	0.861
MNA-SF	-57.23	-146.50	32.05	0.209
CHI, %	-3.74	-9.10	1.617	0.171
Muscular density, Hu	0.83	-9.57	11.22	0.876
SMI, cm ² /BSA	-0.10	-0.93	0.732	0.820

Abbreviations: AME, average marginal effect; CI, confidential interval; IMV, invasive mechanical ventilation; BMI, body mass index; n, number; PNI, Prognostic Nutritional Index; MNA-SF mini nutritional assessment short-form; CHI, creatinine height index; SMI, skeletal muscle index ; BSA, body surface area; n, number.

Table S2. Univariable Gamma model for reintubation.

	AME	95% CI		p-Value
BMI, kg/m ²	1.08	0.96	1.23	0.200
Albumin	1.04	0.91	1.19	0.587
Pre-albumin	0.99	0.99	1.01	0.860
PNI	0.97	0.88	1.07	0.557
MNA-SF	1.30	0.78	2.18	0.314
CHI, %	0.99	0.96	1.01	0.245
Muscular density, Hu	1.06	0.98	1.15	0.154
SMI, cm ² /BSA	0.99	0.99	1.01	0.846

Abbreviations: AME, average marginal effect; CI, confidential interval; IMV, invasive mechanical ventilation; BMI, body mass index; n, number; PNI, Prognostic Nutritional Index; MNA-SF, mini nutritional assessment short-form; CHI, creatinine height index; SMI, skeletal muscle index ; BSA, body surface area; n, number.

Table S3. Univariable Gamma model for overall hospital LOS.

	AME	95% CI		p-Value
BMI, kg/m ²	0.28	-1.06	1.63	0.680
Albumin	-0.28	-1.76	1.19	0.706
Pre-albumin	0.01	-0.10	0.12	0.910
PNI	-0.36	-1.45	0.72	0.510
MNA-SF	-2.52	-6.97	1.94	0.268
CHI, %	-0.16	-0.45	0.12	0.260
Muscular density, Hu	-0.15	-0.82	0.51	0.650
SMI, cm ² /BSA	-0.03	-0.09	0.02	0.213

Abbreviations: AME, average marginal effect; CI, confidential interval; IMV, invasive mechanical ventilation; BMI, body mass index; n, number; PNI, Prognostic Nutritional Index; MNA-SF, mini nutritional assessment short-form; CHI, creatinine height index; SMI, skeletal muscle index ; BSA, body surface area; n, number.

Table S4. Univariable Gamma model for 30-day rejection.

	AME	95% CI		p-Value
BMI, kg/m ²	0.99	0.89	1.10	0.850
Albumin	1.04	0.93	1.16	0.489
Pre-albumin	1.00	0.99	1.01	0.827
PNI	0.99	0.90	1.08	0.734
MNA-SF	0.90	0.61	1.32	0.598
CHI, %	1.01	0.99	1.03	0.445
Muscular density, Hu	0.97	0.91	1.03	0.256
SMI, cm ² /BSA	0.99	0.99	1.00	0.504

Abbreviations: AME, average marginal effect; CI, confidential interval; IMV, invasive mechanical ventilation; BMI, body mass index; n, number; PNI, Prognostic Nutritional Index; MNA-SF, mini nutritional assessment- short-form; CHI, creatinine height index; SMI, skeletal muscle index ; BSA, body surface area; n, number.

Table S5. Main findings.

	Albumin Value	PNI Score	BMI
IMV	(range 30–35 g/L: effect –1.67 h [2.45–0.89], p-value for non-linearity < 0.01)		-
ICU LOS	(range 30–35 g/L: effect –0.84 days [1.23–0.45], p-value for non-linearity < 0.01)	(range 25–40: effect –1.79 days [3.09–0.50], p-value for non-linearity = 0.01)	(range 20.7–27.40 kg/m ² : effect –0.34 days [0.03–0.68], p-value for non-linearity 0.04)

Abbreviations: BMI, body mass index; PNI, Prognostic Nutritional Index; IMV, invasive mechanical ventilation; ICU LOS, intensive care unit long of stay.