

NUTRI | LAB™

For nutritional and hydration monitoring



Healthcare intervention strategies are primarily aimed at early identification of clinical prognostic indicators



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Nutrilab™ is a unique, portable, multifunction touch-screen bioimpedance system that allows to monitor patients in a non-invasive, operator-independent method in all clinical conditions from ambulatory, to bedside up to homecare.

Developed for immediate classification of patients' fluids and nutritional status, by detecting bioelectrical parameter alterations (BIVA), **Nutrilab™** enables the assessment of fluid distribution and muscle mass without the "weight" factor as co-predictor.

Test results can be saved in the device memory and subsequently downloaded for further evaluations on the dedicated medical degree software analysis platform, **Bodygram® HBO**.



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Nutrilab™ has been validated for use in nephrology, cardiology, intensive care, clinical nutrition, oncology, pediatrics and geriatrics, and is the most reliable sensor for:

- Early identification of phase angle abnormalities as clinical prognostic indicators;
- Therapy optimization for patients at high risk of events in the short and medium term;
- Simplifies follow-up protocols after hospital discharge.

The **Nutrilab™** system includes validated prognostic indices:

- Malnutrition: Fat-Free Mass Index (FFMI), Fat Mass Index (FMI), Muscle Tissue Quality Index (MQI);
- Sarcopenia: Skeletal Muscle Index (SMI); Appendicular Skeletal Muscle Mass (ASMMI); total Muscle Mass (MMI);
- Survival and prognosis: Phase Angle percentiles and Standardized Phase Angle (SPA);
- Hospitalization: risk of readmission and length of stay for fluid congestion (Hydragram®);

It also includes the main nutritional screening questionnaires (MNA®, Must®, NRS 2002).

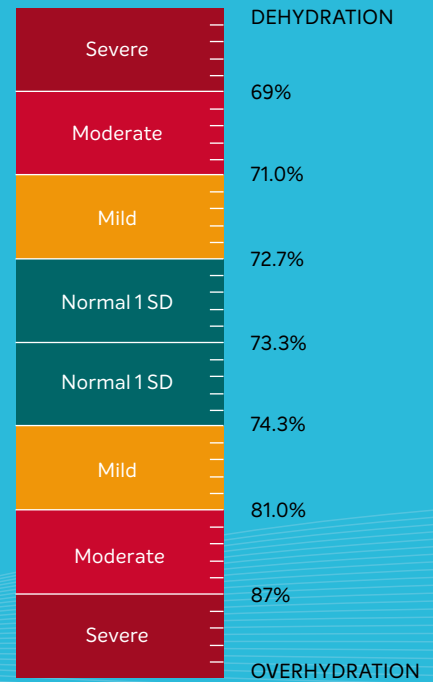
HYDRATION

“Hydration status evaluation is a critical need for hospitalised patients; fluid retention of less than 3–4 litres without apparent oedema, or a moderate level of dehydration is clinically hard to identify without a sufficiently sensitive technique.”¹

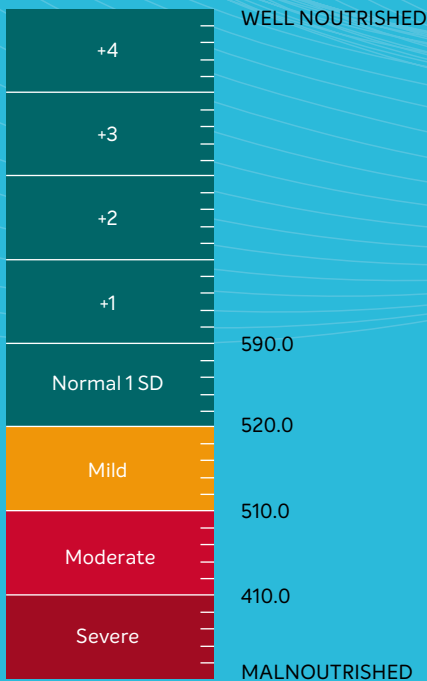
“70% of in-patients suffer from excess fluid retention, with the condition persisting for the entire period of hospitalisation.”²

The **Hydragram**[®] algorithm is the evolved application of bioimpedance vector analysis (BIVA) in clinical practice. With a simple graphic representation, the index identifies the distribution of the body fluids in the lean mass, thanks to a single numbered and colored grading scale whose predictive reliability is unaffected by patient weight, age and body composition models.

Hydragram[®]



Nutrigram[®]



NUTRITION

“More than 40% of hospitalised patients suffer from either undernutrition or overnutrition.”³

The nutritional status of 67% of in-patients worsens during their stay in hospital.”³

Nutrigram[®] is a clinically validated protein/energy malnutrition evaluation algorithm. It provides an immediate creatinine height index based on body cell mass (BCM).

Nutrigram[®] is independent from body weight and body composition models. The result is standardised in relation to the patient’s height and classified using the vector impedance technique in four intervals. Colour graphics allow simple and immediate identification of altered states of energy and/or protein malnutrition.

Certifications



All **AKERN®** devices hold a certificate from the European notified body under **Medical Device Directive (93/42/EEC)** and are compliant to the **ISO 13485** quality system standard for medical device producers.



NUTRI | LAB™

**CE Medical Device
CLASS IIA**

| BODYGRAM®

**CE Medical Device
CLASS I**

Nutrilab™ is suitable from pediatric to elderly patients and is not contraindicated for use in patients with implantable cardioverter defibrillators or pacemakers, or in pregnant women.

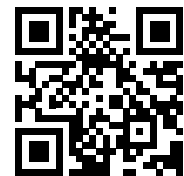
MODEL	PRODUCT CATALOGUE NO.	DESCRIPTION
NUTRILAB™	00NUTRILAB	Phase sensitive bioelectrical impedance analyser with hydration and nutrition monitor for detailed BIVA and 3C total body analysis. Includes Bodygram® HBO software analysis licence. Supplied with one tetrapolar cable set for total body measurement, battery charger, circuit tester, carrying case, operator manuals, 1 pouch of compatible electrodes.
BIATRODES™ ELECTRODES	OELB100	Disposable single-use low impedance electrode certified for bioimpedance analysis. 1 pouch of electrodes = 100 units (25 tests)
BIVATRODES™ ELECTRODES	OELBIVA	Disposable single-use low impedance electrode, pre-spaced, certified for bioimpedance analysis, highly repeatable. 1 pouch of electrodes = 36 units (18 tests)

Only the use of compliant, single-use electrodes, branded **AKERN®**, guarantee the certified performance of all **AKERN®** sensors, validated in over 3000 publications since over 40 years.

Bibliographic references

1. Lukaski HC., Evolution of bioimpedance: a circuitous journey from estimation of physiological function to assessment of body composition and a return to clinical research. *Eur J Clin Nutr.* 2013 Jan;67 DOI: 10.1038/ejcn.2012.149
2. Basso F et al., Fluid management in the intensive care unit: bioelectrical impedance vector analysis as a tool to assess hydration status and optimal fluid balance in critically ill patients. *Blood Purif.* 2013;36(3-4):192-9. doi: 10.1159/000356366.
3. Lucchin L., Malnutrizione ospedaliera in Italia. Da Gentile MG. *Obesità, anoressia, bulimia nervosa, malnutrizione ospedaliera. Aggiornamenti in nutrizione clinica e patologie correlate.* 17 Mattioli 1885 Eds. Fidenza 2009:223-32 ISBN:8862610963

Distributor:



AKERN S.r.l.

Head office: Via Lisbona, 32/34 • 50065 Pontassieve (Florence) • Italy

Registered office: Via Campodavella, 1 • 56122 Pisa • Italy

Tel. +39 055 8315658

www.akern.com



EU202312120EN@Akern2023



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Science in body composition