

HBO

HOSPITAL BODYGRAM®

Medical software
designed for advanced
body composition
analysis in clinical
and hospital settings



S c i e n c e i n b o d y c o m p o s i t i o n



AKERN

HBO | HOSPITAL BODYGRAM®



Reliable and clinically relevant results for body composition analysis in clinical settings

BODYGRAM® HBO is a software application developed for the analysis and interpretation of **bioimpedance data obtained with AKERN® analyzers**. The software allows you to acquire, process, and archive bioimpedance tests, transforming bioelectrical data into clinically useful information for assessing body composition and monitoring patients over time.



The scientific and technological progress of AKERN® in clinical practice

With over **45 years of research** and development, more than **5,000 scientific publications**, and a consolidated presence on the international market, AKERN® represents a benchmark in body composition analysis.

Designed for clinical practice



CLINICALLY VALIDATED ALGORITHMS

Body composition assessment models validated against reference techniques (isotopic, MRI, CT, DXA) and developed based on over 45 years of scientific research.



BIAVECTOR®

Bivariate normal distribution of the bioelectrical impedance vector based on updated and validated data on large cohorts of reference populations (adult and geriatric).



MULTI-USER MANAGEMENT

Different levels of interaction (Administrator, Superuser, User, Reader)



GDPR

GDPR compliance



Features included

BIAVECTOR® NOMOGRAM

Through the Biavector®, AKERN® was the first company in the world to integrate the BIVA (Bioelectrical Impedance Vector Analysis) analysis already in 1995, which allows an immediate interpretation of the nutritional and hydration status of the subject based on the bioelectrical properties of the tissues.

By relying exclusively on the electrical properties of tissues and normalizing the values for the subject's height, the vector analysis does not depend on anthropometric predictive equations, reducing the risk of estimation errors typical of traditional BIA.

In the HBO Advanced configuration, the Biavector® is updated with new reference ellipses based on a database of almost **4500 healthy subjects (18–65 years)**, more representative of the contemporary population than the previous model.

The software includes ellipses specific to the geriatric population (published in 2025), improving the sensitivity in identifying nutritional alterations and hydration status of the older patients up to 90 years old.

EVALUATION OF MALNUTRITION

According to GLIM criteria, Bodygram HBO allows you to screen and monitor your nutritional status through:

- **Malnutrition Risk Index** for the assessment of the risk of malnutrition;
- **ASMMI** with three equations differentiated by age and validation with DEXA for the evaluation of appendicular muscle mass;
- **Nutrigran®**, a validated prognostic scale for the identification of malnourished oncological patients.

EVALUATION OF SARCOPENIA

Following the EWGSOP-2 and GLIM guidelines, the software allows screening and monitoring of sarcopenia, evaluating:

- **HGS – Hand Grip Strength** for the functional evaluation of muscle strength;
- **ASMMI, FFMI, SMMI** analysis for the quantitative and qualitative assessment of muscle mass.

EVALUATION OF SARCOPENIC OBESITY

Bodygram® HBO allows screening and monitoring of sarcopenic obesity, combining muscle mass and fat mass parameters according to ESPEN, EASO, and SOGLI guidelines. It includes:

- **Disease Risk Index** for the estimation of metabolic risk;
- **HGS – Hand Grip Strength Test** for evaluating muscle strength;
- Combined analysis of **FM, SMM, ASMM** to distinguish between obesity and sarcopenic obesity.

HYDRATION EVALUATION

Bodygram® HBO allows a complete assessment of the patient's hydration status through:

- **Hydragram®**, scale for classifying the subject based on hydration status;
- new predictive equations for TBW, ECW, ICW parameters;
- **Overhydration (OH)** – specific algorithm for the estimation of excess extracellular fluids.

Specific features



WORKING MODE EXCLUSIVELY OFFLINE

BODYGRAM® HBO it works offline through the Desktop application (Windows only) to meet specific confidentiality, and control needs often required by public hospitals.



AUTOMATIC DATABASE IMPORT

BODYGRAM® HBO Automatically import database from previous versions without data loss.



SCIENTIFIC UPDATE

BODYGRAM® HBO is a recently updated platform that guarantees professionals an analysis tool that is always in line with the progress of clinical research.



GDPR COMPLIANCE

BODYGRAM® HBO manages patients' personal and sensitive data in compliance with EU Regulation 2016/679 GDPR.



CUSTOMIZABLE REPORTING

BODYGRAM® HBO allows you to customize reports, selecting the most relevant elements to best guide the patient through their journey. There are also reports dedicated to analyzing specific pathological conditions (malnutrition, sarcopenia, etc.).



CE MEDICAL DEVICE

BODYGRAM® HBO is a Class I medical software with CE marking.

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EU202603180EN©Akern2026

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AKERN Science in body composition