AXS MEDICAL

PRESENTS

3D MODELIZATION

BIOMOD 3S
BIOMOD MI
AND
BIOMOD FB

DMS IMAGING

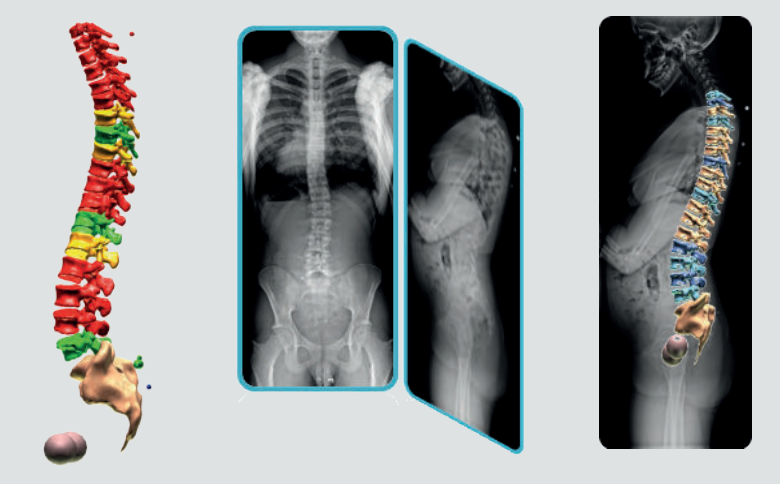
A DIVISION OF THE DMS GROUP

BIOMOD 3S

THE BIOMOD 3S SYSTEM IS AN INNOVATIVE OPTICAL IMAGING TECHNOLOGY combined with an X-ray system that provides a 3D modelization of the spine with patients in a natural standing position.

BIOMOD 3S is used for the evaluation and diagnosis of deforming pathologies of the spine and balance disorders in children and adults.

This solution is compatible with rotational single-source radiology systems.



EXAMINATION

The examination of a patient is performed in a functional standing position. Two optical acquisitions of the back *(only takes a few seconds)*, are coupled with frontal and sagittal radiographs *(stitching, frontal & profile) to obtain the 3D model*. Four radio-opaque markers are positioned on the back *(C7, L5 and EIPS)*.The vertebral column is drawn with the red marker.

ACQUISITION

The optical acquisition of the BIOMOD column is instantaneous and performed during the two radiographic acquisitions *(frontal/ sagittal)*. The optical and radiographic acquisitions of the frontal/profile images are merged to create the 3D model of the column. There is no change to the classic clinical routine for the practitioner or the patient.

RECONSTRUCTION

The station merges optical acquisitions with radiological acquisitions in a few steps, to obtain a 3D model of the spine and back. The steps include:

1) Identification of markers and the position of the spinal line on the optical acquisition

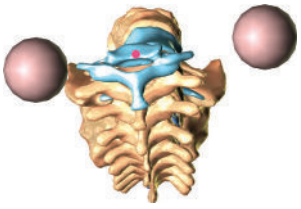
2) Tracing the position of the spine on radiographic acquisition

3) Placement and adjustment of the vertebrae

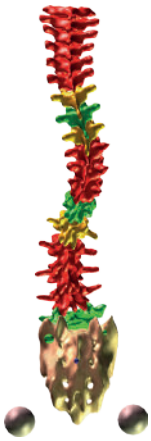
The reconstruction time is about 10 minutes.

ADDED VALUE

▪ 2D frontal and profile parameters *(provides additional information on twists and vertebral rotations compared to conventional 2D parameters measured on radiographs).*



▪ **3D model of the spine and back without additional irradiation.**



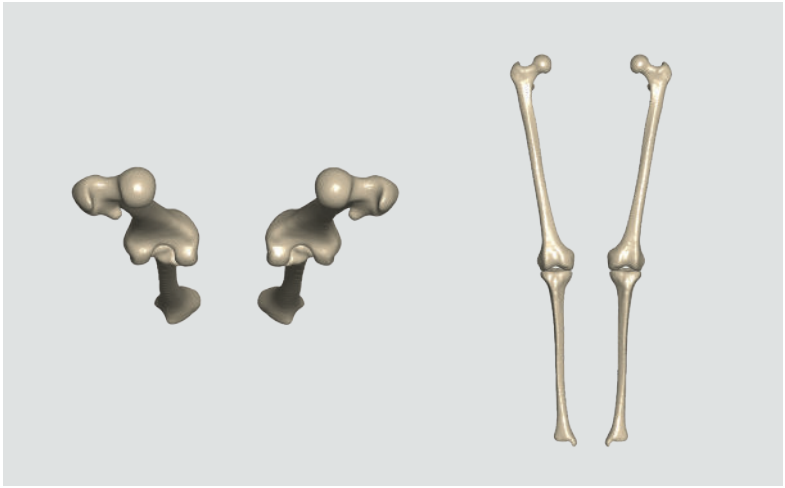
▪ Biomod 3S technology can be integrated into radiology rooms equipped with a system that produces full-spine digital images.

BIOMOD MI

BIOMOD MI IS A MEDICAL SYSTEM THAT OFFERS A 3D MODEL OF LOWER LIMBS IN A FUNCTIONAL STANDING POSITION.

The non-invasive optical BIOMOD technology, couples two standard frontal and sagittal radiographs with optical acquisitions of the lower limbs to obtain a 3D model.

BIOMOD MI is a module of the BIOMOD platform that also includes the FB and the 3S module.



EXAMINATION

The Biomod MI provides access to a 3D visualization of bone structure and offers a complete 3D evaluation of the lower limbs in a functional upright position. It provides a better understanding of bone misalignment and rotations/torsions. With the Biomod MI, it is possible to obtain better accuracy* of the automatically calculated clinical parameters, and save time* throughout the patient's journey, from diagnosis to post-operative follow-up.

ACQUISITION

Optical images
X-ray images

RECONSTRUCTION

The software merges optical acquisitions with radiological acquisitions in a few steps to obtain a 3D model of the lower limbs according to the following characteristics: radio-opaque marker tracking, anatomical landmark identification and clinical exploitation.

CLINICAL PARAMETERS

LENGTHS	▪ Femoral head diameter ▪ Femoral axis length ▪ Length tibia axis ▪ Total length
TORSIONS / ROTATIONS	▪ Femoral torsion ▪ Femoro-tibial rotation
KNEE PARAMETERS	▪ Varus/Valgus ▪ Flessum/Recurvatum ▪ Angle HKS ▪ Mechanical femoral angle ▪ Anatomical femoral angle ▪ Mechanical tibial angle
HIP PARAMETER	▪ Femoral offset
ADDED VALUE	

Non-medical claim

BIOMOD FB

BIOMOD FB IS A DEVICE FOR ANALYZING POSTURE AND BALANCE.

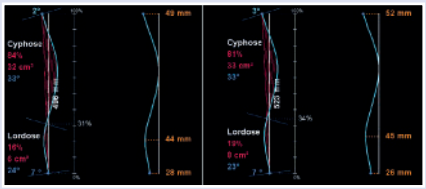
This solution provides almost instant access to the clinical parameters used to monitor dorsopathies, characterization of lower limb deformities and posture disorders.

FEATURES

- 3D characterization of the entire body
- Objective measurements and calculations of clinical parameters
- Morphometric report
- Comparison and history of changes in clinical parameters
- Educational and interactive, documents for the patient file

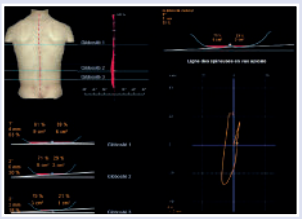
SETTINGS

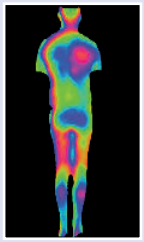
- Objective quantitative measurements of static and posture under load
- Whole body mapping (level lines and concavities)
- Deviations and imbalances (pelvis, shoulders)
- Back and lumbar arrows
- Deformations of the lower limbs



CLINICAL PARAMETERS

- Follow-up of scoliosis / kyphosis, sagittal balance disorders and degenerative spine
- Monitoring and study of standing posture
- Evaluation and monitoring of rehabilitation programs and orthopaedic treatments
- Pre- and post-processing comparison tool
- Visualization of correction effects on the patient's morphology





CONTRIBUTION

- **Contribution to the reduction of patients' exposure to medical irradiation (up to -50% use of ionizing radiation)**
- Assistance in diagnosis and decision-making *(quantified results and recognized data)*
- Monitoring the effectiveness of treatment *(visualization of the evolution, patient adherence)*
- Monitoring of rehabilitation programs *(patient file with quantified and verifiable progress)*
- Improved communication with the patient *(visualization of the patient's back, treatment results for complete adherence to the protocol)*
- Modern assessment tool *(innovative technological contribution to clinical practice. Minimal physical contact with the patient)*

3D MODELIZATION : MADE IN FRANCE INNOVATION

DMS IMAGING

HEADQUATERS › 393 rue Charles Lindbergh – 34130 Mauguio – FRANCE
FACTORY › Parc Scientifique G. Besse – 175 Allée Von Neumann – 30035 Nîmes Cedex 01 – FRANCE
PHONE › +33 4 66 29 09 07 – **FAX ›** +33 4 67 50 49 09 – www.dms-imaging.com

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