



UmRSA®

High precision three-dimensional measurement in vivo

RadioStereometric Analysis (RSA®) enables accurate 3D measurement in vivo. The UmRSA® system is today's gold standard in clinical trials of new orthopedic implants. RSA Biomedical is the world-wide provider of the complete system for RSA® studies in vivo.

The RSA® Method

RadioStereometric Analysis (RSA®) enables accurate 3D measurements from radiographs. The 3D kinematics of skeletal or implant movements can be determined between repeated examinations. RSA® has a wide range of applications – orthopedics, pediatrics, oral surgery, plastic surgery, oncology, rheumatology, neurosurgery, and hand surgery.

1. Marker Insertion

Spherical, Tantalum Markers (0.5, 0.8, 1.0 mm) are inserted to mark points on the skeleton. The material is biocompatible, well tolerated by the body, and readily observed as a distinct point in the radiograph. In surgery, the UmRSA® Injector™ is used to insert Tantalum Markers into the most appropriate anatomic structure, usually the skeleton.

2. Radiographic Examination

Two x-ray tubes (fixed or mobile) are used for simultaneous exposure of the patient and the UmRSA® Calibration Cage™. The calibration cage enables calculation of the 3D positions of the Tantalum Markers.

3. Measurement

The UmRSA® Digital Measure™ automatically identifies markers and calculates the 3D positions with high precision. Advanced mathematical algorithms enable high-precision, 2D positioning of the marker center, even in cases with low contrast and/or interference from nearby metal objects. Attaching Tantalum Markers to prostheses may be difficult at times. To overcome this, we have developed a method for measurement of non-marked implants.

4. Analysis

Using 3D positions from different examinations, the 3D motions of segments, skeleton, or prostheses can be calculated and presented.

5. Results

This high-precision RSA® method facilitates early conclusions, even in small studies with short-term follow-up and a small sample of patients, thereby enhancing the cost-effectiveness of research and clinical investigations.

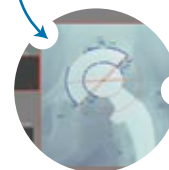
1 Marker insertion



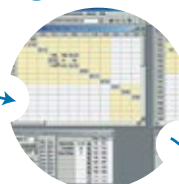
2 Radiographic examination



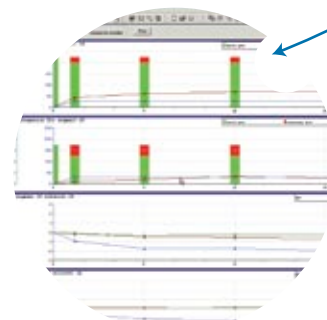
3 Measurement



4 Analysis



5 Results



UmRSA® Products



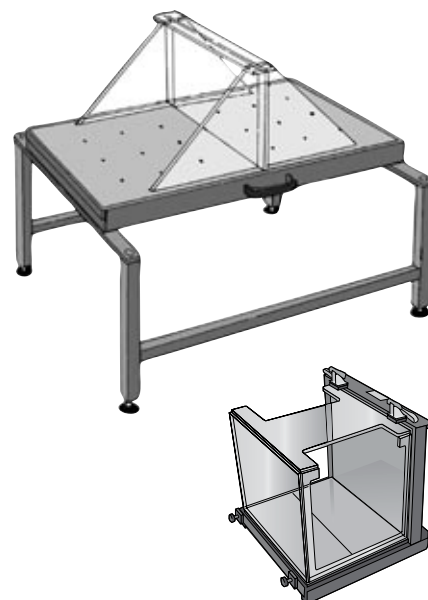
Injectors and Tantalum Markers

RSA Biomedical is the world's foremost provider of Tantalum Markers / Tantalum Beads, and Tantalum Marker Injectors. Our UmRSA® Injector™ and UmRSA® Tantalum Markers™ are well proven, are used in hundreds of RSA® studies, and meet the highest standards of quality in medical research.

Calibration Cages

RSA Biomedical develops and produces calibration cages for all RSA® applications. We offer different design options in UmRSA® Calibration Cages™, e.g. for hip, knee, spine, shoulder, ankle, foot, and elbow examinations. We can meet customer requests to develop RSA® cage solutions for any application and need.

- Stable – not affected by temperature and humidity
- Complete – delivered with film cassette holders and grids
- Efficient – automatic measurement of images facilitated by lead crosses
- Versatile – adjusted to uniplanar or biplanar setups

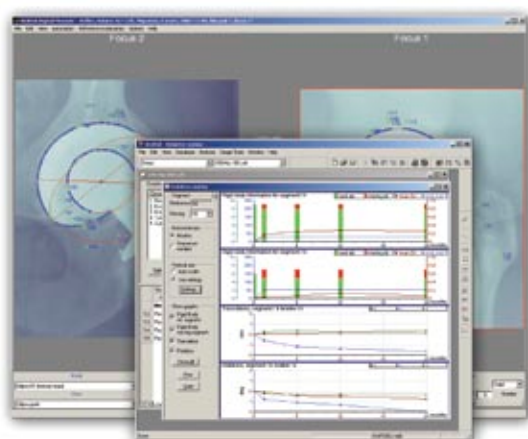


UmRSA® Software 6.0

The UmRSA® Software 6.0 is the complete software system needed to analyze RSA® data. Based on more than a decade of research and proven experience, the UmRSA® Software 6.0, constitutes the state-of-the art in RSA® technology. 3D motion in vivo can be calculated, illustrated, and analyzed efficiently. The system integrates seamlessly with existing analogue or digital x-ray image archiving systems, regardless of vendor.

UmRSA® Software 6.0 is Windows® based and consists of the following modules:

- UmRSA® Digital Measure™
- UmRSA® Analysis™
- UmRSA® DICOM Link™
- UmRSA® Visualization™



UmRSA® Packages

UmRSA® Complete System

RSA Biomedical delivers the complete system of software and hardware to perform RSA® studies.

The UmRSA® Complete System consists of:

Hardware:

- UmRSA® Tantalum Markers™
- UmRSA® Injector™
- UmRSA® Calibration Cage™

UmRSA® Software 6.0:

- UmRSA® Digital Measure™
- UmRSA® Analysis™
- UmRSA® DICOM Link™

Optional choices:

- UmRSA® Scanning software
- Large-format flatbed scanner

UmRSA® Start-up Kit

RSA Biomedical offers a complete set of hardware to produce RSA® data.

The UmRSA® Start-up Kit includes:

- UmRSA® Tantalum Markers™
- UmRSA® Injector™
- UmRSA® Calibration Cage™

This is the hardware you need to start using the RSA® method. As you gain experience you can upgrade to the UmRSA® Complete System, which includes the analysis software.

About RSA Biomedical

RSA Biomedical is a world-wide provider of special products and measurement systems in digital medical imaging. Thousands of hospitals, clinicians, medical researchers, and medical device manufacturers in North America, Europe, Australia, and Asia use our high-performance products. We take pride in our innovative contributions to the advancement of quality and knowledge in many specialized fields of health care.

At RSA Biomedical we design and develop products to be practical, reliable, and cost effective. To achieve this, we collaborate closely with respected clinicians and healthcare professionals, leading hospitals, and corporations serving the healthcare industry. Our focus on customer service and efficient business is strong. We have our own international sales organization and form partnerships with leading international suppliers of medical technology. In certain markets we work in partnership with local suppliers of medical technology.

Visiting address:

RSA Biomedical
Uminova Science Park
Tvistevägen 47
S - 907 36 Umeå
SWEDEN

Postal address:

RSA Biomedical
Box 7972
S - 907 19 Umeå
SWEDEN

Phone: +46 90 15 90 90
Fax: +46 90 15 90 99
E-mail: info@rsabiomedical.com
Internet: www.rsabiomedical.com

