

*expertise and resources in*  
**SAN DIEGO** *the hub of medical device development*

**Medical Device Research Services**

Optimize your time and budget with characterized *in vivo* models or tap into **ABSORPTION SYSTEMS** expertise to meet unique study requirements as you progress from proof of concept to safety and effectiveness studies for your medical device.

**Experimental Models and Surgical Support**

**ABSORPTION SYSTEMS** has the resources and expertise to perform a wide range of *in vivo* preclinical tests of medical devices in our San Diego facility with the ultimate goal of helping our clients attain successful 510(k) or PMA submissions. Our USDA-registered, NIH OLAW-assured, and AAALAC-accredited facility is also available for contract vivarium leasing and physician training sessions.

**Key Focus Areas**

- Vascular
- Orthopedic
- Ocular
- Wound Healing
- Gastrointestinal
- Dental

*there is no better choice for*  
**ORTHOPEDIC** *device testing*

Orthopedic devices are generally solid implants or absorbable materials that interface with bone to replace diseased joints, stabilize fractures or osteotomies, and/or stimulate healing. Our experienced staff will consult with you to design an appropriate testing program, taking into account the nature of the device, its component materials, and its intended use.

**Orthopedic Services Overview**

**Critical Size Defect Testing**

**Osteointegration Testing**

**Internal Fixation**

Bone Plating  
Interlocking Nail Systems  
Minimally Invasive Plate Osteosynthesis

**External Fixation**

External Skeletal Fixation Systems  
External Ring Fixation  
Limb Lengthening  
Correction of Angular Limb Deformity

**Joint Replacement**

Cemented Total Hip Replacement  
Uncemented Total Hip Replacement  
Total Knee Replacement

**Regenerative Medicine**

Stem Cell Therapy

**Joint Stabilization**

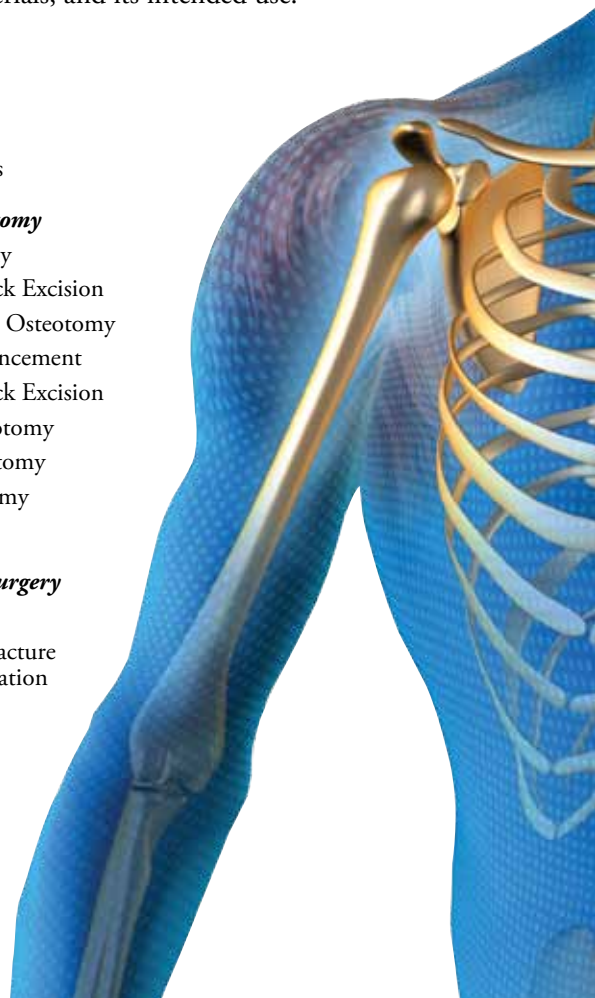
Tightrope Systems  
Bone Anchor Systems  
Toggle Anchor Systems

**Osteotomy and Osteectomy**

Triple Pelvic Osteotomy  
Femoral Head and Neck Excision  
Tibial Plateau Leveling Osteotomy  
Tibial Tuberosity Advancement  
Femoral Head and Neck Excision  
Sliding Humeral Osteotomy  
Dynamic Ulnar Osteotomy  
Sliding Radial Osteotomy  
Limb Sparing

**Minimally Invasive Surgery**

Arthroscopy  
Fluoroscope-guided Fracture  
Reduction and Stabilization



### Diagnostics

- Fluoroscopic Radiography
  - 9800 OEM C-arm
  - 12-inch Image Intensifier

MRI

CT, Micro-CT

Bone Density

Blood Chemistry

Bioanalytical

Biomechanical Testing

### Histopathology

Board Certified Pathologists

Gross Pathology

Paraffin or Plastic Embedding

Hematoxylin and Eosin Staining

Elastin Trichrome Staining

Digital Imaging

Histomorphometry



### Dental Studies

Preclinical testing for dental implants, devices, and materials is often similar to that for orthopedic implants. In addition, one must consider factors unique to the oral cavity including exposure to saliva and the motion and forces of mastication. Working with you, we design a program that utilizes the appropriate species.

*how we bring our*

## **EXPERTISE** *together is what* **SETS US APART**

ABSORPTION SYSTEMS provides a clear advantage with results you can trust. Research managers are dedicated to your project, acting as your personal Data Concierge™ — delivering projects on time and on budget.

#### Overview of Services

- *In Vivo*, GLP and Non-GLP
- Research Protocols
- Model Development
- Feasibility Studies
- Effectiveness and Safety
- Physician Training
- Histopathology
- Bioanalytical Support
- Clinical Chemistry & Hematology
- Biomarkers

Our senior scientists and support staff are experienced with GLP-compliant processes and international regulatory standards such as 510(k)/PMA filings, CE Marking in the European Union, and the Japanese Ministry of Health and Welfare. In addition, on-site interventionalists and veterinarians provide a consultative relationship with regard to your study design and custom model development.



**ABSORPTION**  
**SYSTEMS**

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- 30,000 sq. ft. AAALAC-accredited vivarium
- USDA-registered, and OLAW-assured
- Secure portal 24/7 for FDA-ready reports
- Licensed veterinarians on staff
- State-of-the-art surgical suites
- Fully equipped catheterization lab

