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The information in this report was provided by manufacturers and the focused ultrasound research community to the Focused Ultrasound Foundation. The FUS Foundation aims to provide the most accurate information; if you have more current or updated information please send it to: engagement@fusfoundation.org.

# Introduction

# **Breakthrough Treatment**

Focused ultrasound is an early stage, non-invasive therapeutic technology with the potential to transform the treatment of many medical disorders by using ultrasonic energy to target tissue deep in the body without incisions or radiation. Focused ultrasound is the union of two innovative technologies:

- focused ultrasound—which provides the energy to treat tissue deep in the body precisely and noninvasively
- magnetic resonance or ultrasound imaging—which is used to identify and target the tissue to be treated, guide and control the treatment in real time, and confirm the effectiveness of the treatment.

The fundamental principle is analogous to using a magnifying glass to focus beams of sunlight on a single point to burn

All indicators point toward the evolution of this platform technology into a robust medical field, with the pace of research and development, publications, patient treatments and the number of device manufacturers all increasing rapidly in the past few years.

a hole in a leaf. With focused ultrasound, an acoustic lens is used to concentrate multiple intersecting beams of ultrasound on a target deep in the body with extreme precision and accuracy.

Where each of the individual beams passes through the tissue, there is no effect. But, at the focal point, the convergence of the multiple beams of focused ultrasound energy results

in many important biological effects, creating the possibility of treating a variety of medical disorders.

Focused ultrasound treatments can be performed on an outpatient basis, require no incisions, and can result in minimal discomfort and few complications, allowing for rapid recovery.

# Field Expanding Through Research, Development, and Commercialization

Even though focused ultrasound is currently in the early stages of development and adoption, it has the potential to transform the treatment of a variety of serious medical conditions, including neurological disorders, many cancers, cardiovascular disease and endocrine disorders.

All indicators point toward the evolution of this platform technology into a robust medical field, with the pace of research and development, publications, patient treatments and the number of device manufacturers all increasing rapidly in the past few years.

There are focused ultrasound systems currently approved in the U.S. to treat uterine fibroids and the pain from bone metastases. In addition, there are more than 15 applications of the technology approved for commercial use in Europe and other regions of the world. More uses are still undergoing research, with opportunities for patients to participate in clinical trials at leading medical research institutions. And even more potential uses of the technology are in the early stages of technical research.

# Advancing the Technology Through Venture Philanthropy

The Focused Ultrasound Foundation was created to improve the lives of millions of people worldwide by accelerating the development and adoption of focused ultrasound therapies. The Foundation works to clear the path to global adoption by coordinating and funding research and educational activities, fostering collaboration among stakeholders, and building awareness of the technology among patients and professionals. The Foundation is dedicated to ensuring that focused ultrasound finds its place as a mainstream therapy for a range of neurological disorders, cancer and other life-threatening conditions within years, not decades.

Since its establishment in 2006, the Foundation has become the largest non-governmental source of funding for focused ultrasound research.

# **Executive Summary**

# The Field of Focused Ultrasound is Growing

Over the past several years, this technology has evolved from being primarily utilized by a select group of innovators at academic centers to being widely diffused among influential early adopters around the globe. There are currently 28 manufacturers, 225 research sites, and 391 commercial treatment centers worldwide.

More than 8,000 patients were treated commercially or in clinical trials worldwide in 2014. To date, nearly 90,000 patients have undergone focused ultrasound treatment for a range of serious medical conditions. Approved to treat 19 medical conditions in regions around the world, focused ultrasound has been most widely used to treat prostate cancer, followed by uterine fibroids and liver cancer.

# **Clinical and Overall Research Increasing**

Not surprisingly, a majority of clinical research has been conducted around the most widely approved indications—uterine fibroids, prostate cancer, and bone metastases. The top emerging areas of clinical research include neurological disorders, tumors of the pancreas, liver and soft tissue, osteoid osteoma and uterine adenomyosis.

This report presents data to reflect a 33 percent increase in the total number of research sites around the world and an 11 percent increase in the number of sites that have been involved in clinical trials in the past year. This growth is due to the initiation of focused ultrasound research at many new sites as well as the Foundation's identification of more active research sites in Asia.

# **New Areas Emerge in Pre-Clinical Research**

While historically the top three areas for pre-clinical research have been uterine fibroids, liver tumors and prostate cancer, the highest growth areas for this early research are stroke\* and epilepsy, as indicated by the greatest percentage of new research sites. Robust pre-clinical groundwork is essential for translation of focused ultrasound to the clinic—particularly for brain applications. We expect to see a continued rise in pre-clinical and clinical research for a variety of new neurological indications over the coming years.

# **Funding on the Rise**

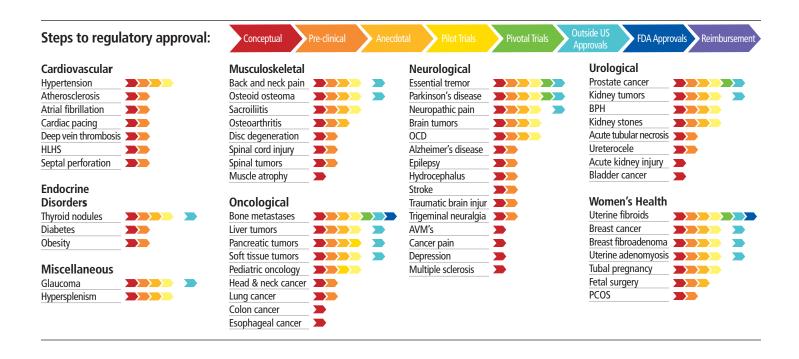
U.S. National Institutes of Health (NIH) funding for focused ultrasound research saw a 48% increase from \$21 million in 2013 to \$31 million in 2014. This boost in government funding may stem from an overall increase in the budget for the NIH, up \$2 billion from 2013 to 2014, as well as increased awareness and interest in the potential of focused ultrasound.

Increased funding of focused ultrasound research by the NIH, the Foundation, and other public and private organizations, has also encouraged more research in the field. Furthermore, the results of this research have been more widely reported in the literature, as indicated by a 25% increase in the number of articles published and over 11,000 citations of focused ultrasound papers within this same time frame.

<sup>\*</sup>Despite this growth, the Foundation's perspective is that the role of focused ultrasound in treating stroke will be eclipsed by other technologies.

# **Executive Summary**

# State of Research and Regulatory Approval by Indications



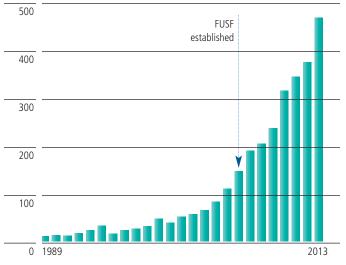
# State of Research and Regulatory Approval by Development Stage

Reimbursement	FDA Approvals	Outside US Approva	S Clinical Trails	Anecdotal	Pre-clinical		Conceptual
Sparse	Bone metastases Uterine fibroids	Back pain Bone metastases Breast cancer Breast fibroadenoma Essential tremor Glaucoma Kidney tumors Liver tumors Neuropathic pain Osteoid osteoma Pancreatic tumors Parkinson's disease Prostate cancer Soft tissue tumors Thyroid nodules Uterine adenomyosis Uterine fibroids	BPH Brain tumors Hypersplenism Hypertension Kidney stones OCD Pediatric oncology Sacroillitis Tubal pregnancy	Fetal surgery Osteoarthritis	Acute tubular necrosis Alzheimer's disease Atherosclerosis Atrial fibrillation Cardiac pacing Deep vein thrombosis Diabetes Disc degeneration Epilepsy Head & neck cancer Hydrocephalus HLHS Lung cancer Obesity PCOS Septal perforation Spinal cord injury Spinal tumors	Stroke Traumatic brain injury Trigeminal neuralgia Ureterocele	Acute kidney injury AVM's Bladder cancer Cancer pain Colon cancer Depression Esophageal cancer Multiple sclerosis Muscle atrophy

# State of the Field

# **FUS Publications**

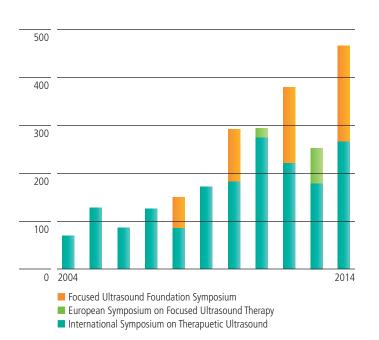
Per year



Source: Data from Medline as of January 2015.

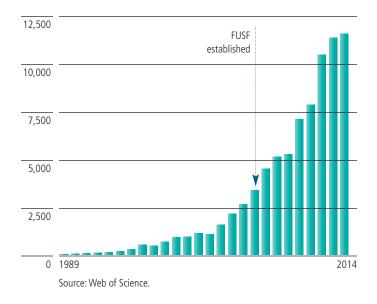
Publications for 2014 are still being indexed by Medline and are not included in this graph.

# Abstracts Presented at FUS Symposia



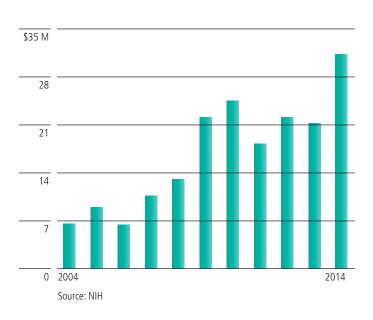
# **FUS** Citations

Per year



# Total Awards for All FUS NIH Research Grants

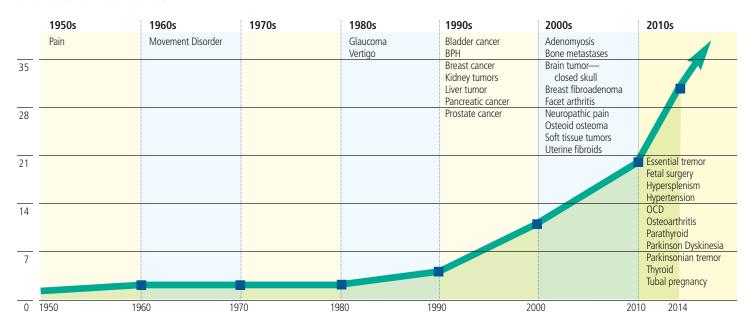
Dollars in millions



# State of the Field

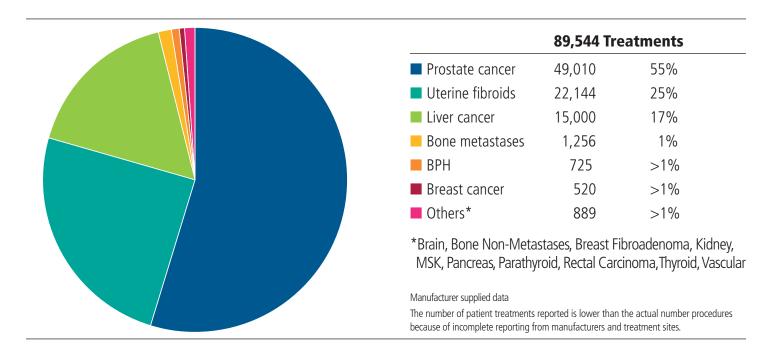
# First in Human Treatments

Clinical trials or commercial treatments



# Treatments by Indication

Up to 2014



# State of the Field

# FUS Approvals by Region and Manufacturer

	North America		Europe		Asia				S.America	
Medical Condition	US FDA		Europe CE Mark	Russia Roszdravnadzor	China CFDA	India cdsco	Japan мнгw	Korea KFDA	Mid East	
Back pain & neck pain			*							
Bone metastases	*	*	**		*	*	*	*	*	
Breast cancer			**	*	*			*		
Breast fibroadenoma			*							
Essential tremor			*							
Glaucoma			*							
Kidney tumors			*	*	*			*		
Liver tumors			*	*	*			*		
Neuropathic pain			*							
Osteoid osteoma			**	*	*			*		
Pancreatic tumors			*		*					
Parkinsonian tremor			*							
Prostate cancer		**	**			**		*		**
Soft tissue tumors			*	*				*		
Thyroid nodules			*							
Uterine adenomyosis			*							
Uterine fibroids	*	**	***	*	**	**	*	**	*	*

# Manfacturers

- 🖈 Chongqing Haifu (ніғи) Medical Technology Co., LTD, *Chongqing, China*
- ★ EDAP TMS S.A., Vaulx-en-Velin, France
- ★ EyeTechCare, Rilieux-la-Pape, France
- ★ InSightec LTD, *Tirat Carmel, Israel*
- ★ Philips Healthcare *Eindhoven, The Netherlands*
- ★ SonaCare Medical, LLC, Charlotte, North Carolina
- Theraclion, Malakoff, France

# Manufacturers

# Manufacturers by Region

■ US guidance ■ MR guidance ■ MR & US guidance ■ Camera Guidance ■ Transducers

# 9

# **North America**

- FUS Instruments Inc.
  Toronto, Canada
- Histosonics, Inc.Ann Arbor, Michigan
- International Cardio Corporation, LLC Minnetonka, Minnesota
- Kona Medical Bellevue, Washington
- Mirabilis Medica Bothell, Washington
- Profound Medical Inc. Toronto, Canada
- SonaCare Medical, LLC Charlotte, North Carolina
- Sonic Concepts Bothell, Washington
- Verasonics Redmond, Washington

# Europe

- Acublate London, UK
- EDAP TMS S.A. Vaulx-en-Velin, France
- EyeTechCare Rillieux-la-Pape, France
- Image Guided Therapy (IGT)
  Pessac, France
- Imasonic Voray-sur-l'Ognon, France
- InSightec LTD
  Tirat Carmel, Israel
- Medsonic LTD Limassol, Cyprus
- Philips Healthcare Eindhoven, The Netherlands
- Slender Medical LTD Herzliya, Isreal
- Supersonic Imagine Aix-en-Provence, France
- Theraclion Malakoff, France

# 8

# Asia

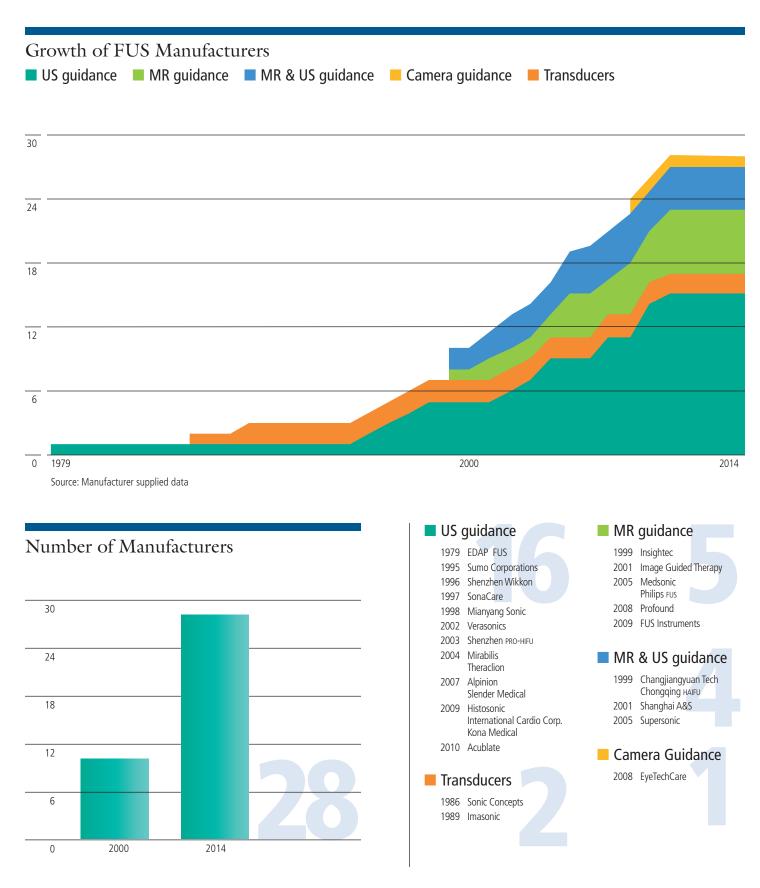
- Alpinion Medical Systems Seoul, Korea
- Changjiangyuan Technology
  Development Co., LTD
  Shenyang, China
- Chongqing Haifu (HIFU)

  Medical Technology Co., LTD

  Chongqing, China
- Mianyang Sonic (SUONIKE)
  Electronic
  Mianyang, China
- Shanghai A&S Co., LTD Shanghai, China
- Shenzhen PRO-HIFU Medical Tech. Co., LTD Shenzhen, China
- Shenzhen Wikkon Shenzhen, China
- Sumo Corporations
  Shanghai, China

Manufacturer Criteria: Ultrasound technology must be 1) therapeutic 2) non-invasive 3) focused 4) image-guided

# Manufacturers

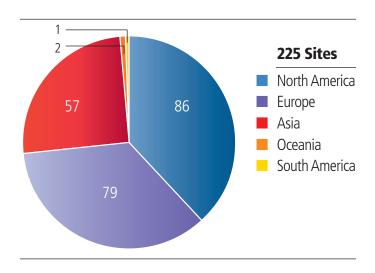


# Research Trends

# Total Research Sites Growth July 2013 to January 2015 250 200 150 50 0 7/13 1/14 7/14 1/15

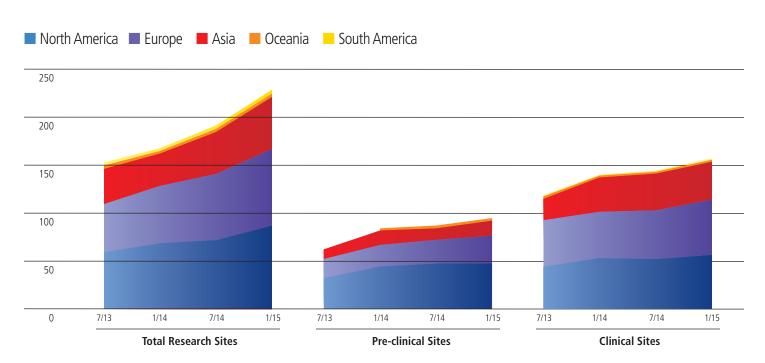
# Total Research Sites by Region

January 2015



# Research Sites Growth by Region

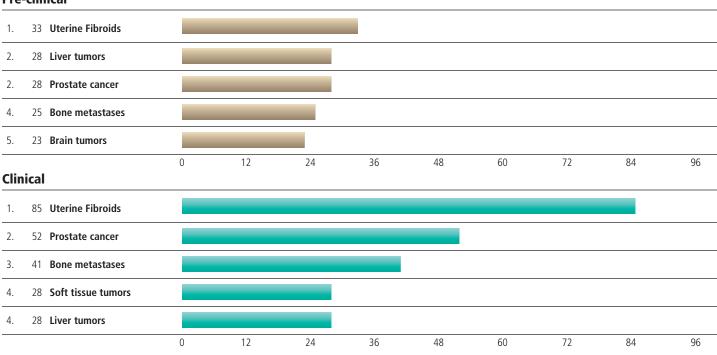
July 2013 to January 2015



# Research Trends

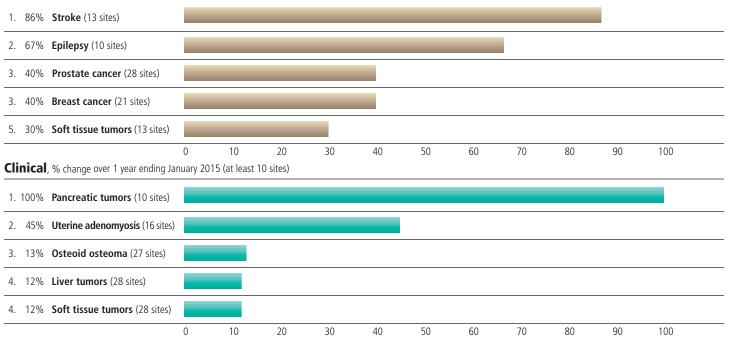
# Leading Indications by Number of Sites

# **Pre-clinical**

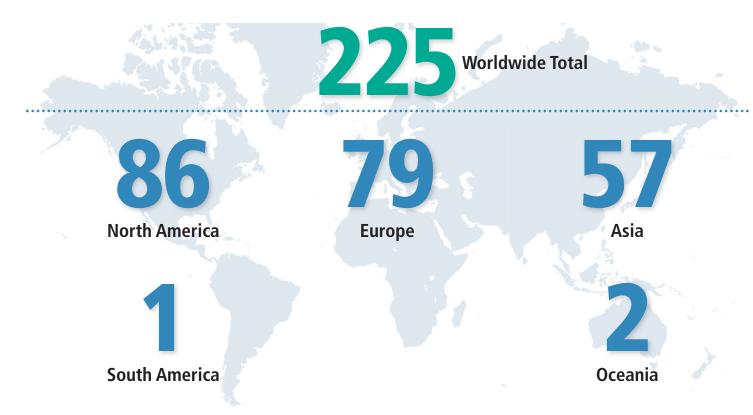


# Emerging Research Indications by Number of Sites

Pre-clinical, % change over 1 year ending January 2015 (at least 10 sites)



# All Research Sites by Region

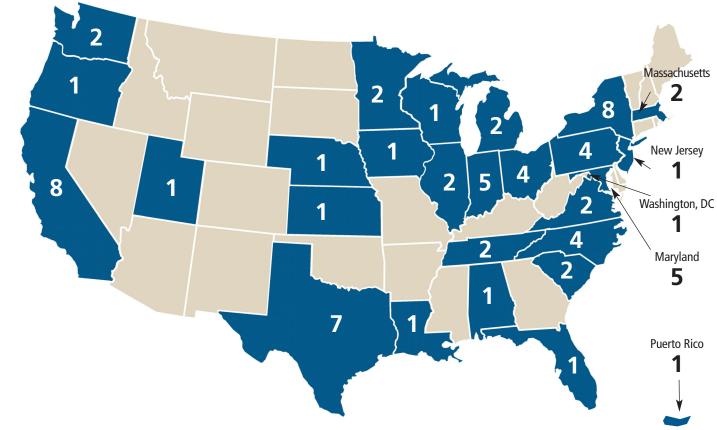


Any FUS research site conducting technical, pre-clinical, or clinical FUS research.

# North American and South America

United States

28
States + Wash., DC + PR



86 North America



South America

12
Canada

### **Ontario**

Can-AmHIFU
Lawson Health Research Institute
London Health Sciences Centre
Princess Margaret Hospital
Ryerson University
Sunnybrook Health Sciences Centre
The Hospital for Sick Children

Thunder Bay Regional Research Institute Toronto General Hospital Toronto Western Hospital University of Western Ontario

# Québec

Jewish General Hospital

74
United States

#### **Alabama**

**Urology Centers of Alabama** 

#### **California**

BURL Concepts Inc.

UCLA Ronald Reagan Medical Center

Long Beach Eye Care Associates

Stanford University School of Medicine
University of California at Los Angeles
University of California San Diego
University of California San Francisco
University of California, Davis
City of Hope

### Washington, DC

Children's National Hospital

#### **Florida**

University MRI & Diagnostic Imaging Centers-South

#### Iowa

Iowa State University

#### llinios

University of Illinois at Urbana-Champaign University of Chicago

### **Indiana**

Metropolitan Urology Purdue University—West Lafayette Indiana University Health, University Hospital Indiana University School of Medicine

#### **Kansas**

University of Kansas

#### Louisana

**Tulane University** 

# Massachusetts

Boston University Brigham and Women's Hospital

### Maryland

Johns Hopkins University School of Medicine University of Maryland School of Medicine Walter Reed National Military Medical Center National Institutes of Health Food and Drug Administration

### Michigan

William Beaumont Health Systems University of Michigan

#### Minnesota

Mayo Clinic-Minnesota University of Minnesota

### **New Jersey**

**Artann Laboratories** 

#### Nebraska

University of Nebraska Medical Center

# **New York**

Montefiore Medical Center
Roswell Park Cancer Institute
Winthrop University Hospital
City College of New York
Memorial Sloan-Kettering Cancer Center
New York University
Columbia University
NYP—Weill Cornell Medical Center

### **North Carolina**

Wake Forest University Baptist Medical Center North Carolina State University University of North Carolina Duke University

#### Ohio

Cincinnati Children's Hospital Medical Center University Hospitals of Cleveland Case Medical Center Cleveland Clinic ProMedica Toledo Hospital University of Cincinnati

### Oregon

Oregon Health and Science University

### **Pennsylvania**

Drexel University
Urologic Consultants of Southeastern Pennsylvania
University of Pittsburgh Medical Center
Fox Chase Cancer Center

#### **Puerto Rico**

University of Puerto Rico

### **South Carolina**

Grand Strand Urology Medical University of South Carolina

#### Tennessee

Southeast Urology Network Vanderbilt University

### **Texas**

Urology of San Antonio
University of Texas MD Anderson Cancer Center
University of Houston
MD Anderson Cancer Center
The Methodist Hospital
CHI St. Luke's Health
UT Southwestern

#### Utah

University of Utah

### **Virginia**

Virginia Tech Carilion Reseach Institute University of Virginia

### Washington

Swedish Neurosciences Institute University of Washington

#### Wisconsin

University of Wisconsin Carbone Cancer Center

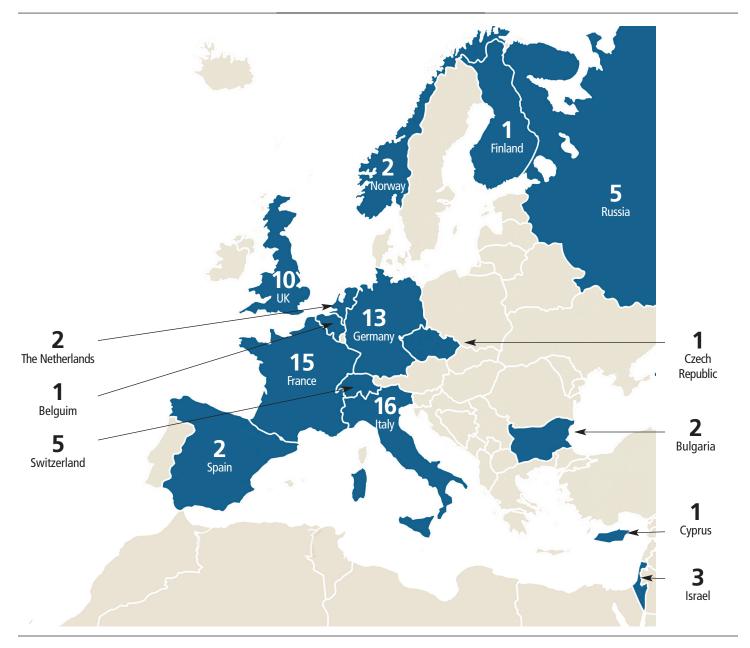
# South America

# Brazil

Instituto do Cancer do Estado de Sao Paulo (ICESP)

Europe

**79**Sites



# By Region

79 Europe

#### **Belgium**

Institut Jules Bordet

#### **Bulgaria**

Pleven Medical University University Hospital of Endocrinology

#### Cyprus

Cyprus University of Technology

#### **Czech Republic**

Thomayer University Hospital

#### **Finland**

VTT Technical Research Centre of Finland

#### **France**

Centre Léon Bérard
сни de Bordeaux - Hôpital du Tondu
сни de Bordeaux - Hôpital Saint-André
сни de Lille - Hôpital Huriez
сни de Toulouse - Hôpital Rangueil
сни de Tours - Hôpital Bretonneau
Hôpital Cochin
Hôpital Pitié-Salpêtrière
Hospices Civils de Lyon
Inserm Lyon
Institut Gustave Roussy
Institut Mutualiste Montsouris
Institut Langevin
University Hospital of Grenoble
University of Nice Sophia Antipolis

#### Germany

Amper Klinik
Brustzentrum Marienhospital Bottrop
Charité Universitätsmedizin Berlin
Fraunhofer Institut IBMT
German Cancer Research Center
Klinikum Fürth
SRH Waldklinikum Gera
Universitätsklinikum Tübingen
University Hospital Frankfurt
University Hospital Schleswig-Holstein
University of Heidelberg
University of Munich
Urologische Universitätsklinik Magdeburg

# Israel

Chaim Sheba Medical Center Rambam Medical Center Technion–Israel Institute of Technology

#### Italy

Azienda Ospedaliera San Paolo Careggi General Hospital Cisanello Hospital of University of Pisa
Clinica oculistica Università—Ospedale oftalmico
European Institute of Oncology
Fondazione ICRCS Ca' Granda Ospedale Maggiore Policlinico
Istituto Ortopedico Rizzoli
Laboratorio di Tecnologie Oncologiche HSR Giglio—
Fondazione Istituto San Raffaele G. Giglio di Cefalù
Niguarda Hospital
Ospedale Generale Regionale "Francis Miulli"
Scuola Superiore Sant'Anna
Università degli Studi di Parma
University of L'Aquila
University of Perugia
University of Rome—La Sapienza
University of Turin

#### **The Netherlands**

Eindhoven University of Technology University Medical Center Utrecht

#### Norway

Norwegian University of Science and Technology The Intervention Centre, Oslo University Hospital Rikshopitalet

#### Russia

Medical Center of Central Bank of Russian Federation
National Medical Surgery Center
N. N. Petrov Research Institute of Oncology
Research Center for Obstetrics, Gynecology and Perinatology
of Russian Ministry of Health and Social Development
Rostov Scientific Research Institute of Oncology

### **Spain**

Hospital Clínico San Carlos Instituto Cartuja de Técnicas Avanzadas en Medicina

#### **Switzerland**

Hôpitaux Universitaires de Genève Kantonsspital Aarau Kantonspital Winterthur University Children's Hospital Zurich University of Geneva

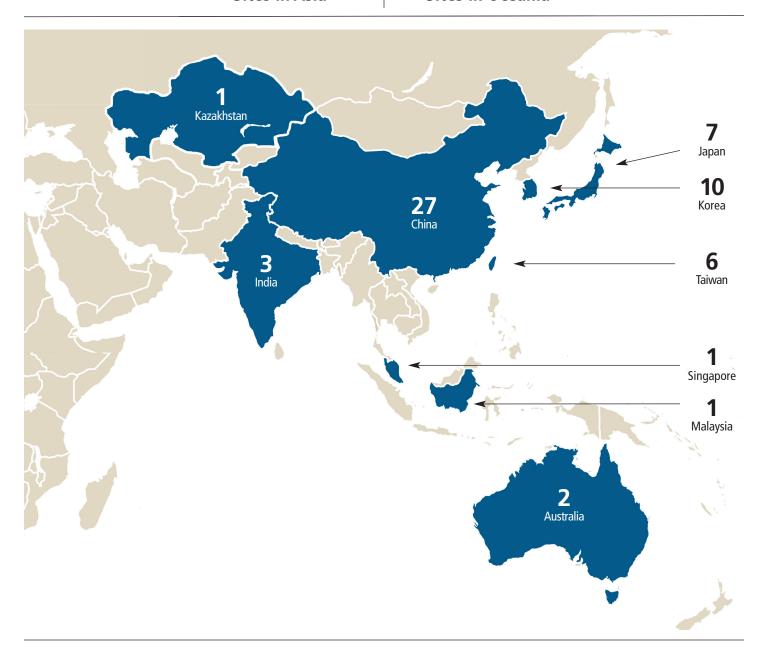
# **United Kingdom**

Basingstoke and North Hampshire Hospital
Churchill Hospital
Imperial College London
Institute for Medical Science and Technology (IMSAT)
St. Guy's and St. Thomas Hospital
St. Mary's Hospital
The Institute of Cancer Research
University of Dundee
University of Hull
University of Oxford

# Asia and Oceania

**57**Sites in Asia

Sites in Oceania



# By Region



#### China

307 Hospital of PLA Central Hospital of Shanghai Xuhui District Children's Hospital of Chongqing Medical University Chinese University of Hong Kong **Chongqing Medical University** First Affiliated Hospital of Medical College of Xi'an Jiaotong University First Affiliated Hospital of Zunyi Medical College First Maternal and Child Health Hospital of Shanghai Fundan University Huashan Hospital Fundan University Shanghai Cancer Center HAIFU Hospital Institute of Ultrasonic Engineering in Medicine and Clinical Centre for Tumour Therapy Peking Union Hospital, Chinese Academy of Medical Sciences Peking University First Hospital PLA 301 Hospital Queen Mary Hospital of the University of Hong Kong Shanghai Jiaotong University Shenzhen University Southern Medical University Suining Central Hospital The First Affiliated Hospital of Chongging Medical University The Second Artillery General Hospital of Chinese PLA The Third Xiangya Hospital of Central South University Third Military Medical University Tianjin Medical University **Wuhan University** Xi'an Jiaotong University

#### India

Apollo Specialty Hospital, Chennai Gsl Medical Gollege Jaslok Hospital and Research Centre

#### Japan

Breastopia Namba Hospital Kochi University Hospital Shinsuma General Hospital Tokai University Tokyo Medical University Tokyo Women's Medical Hospital Washokai Sadamoto Hospital

#### Kazakhstan

National Medical Research Center

#### Korea

Asan Medical Center
CHA Bundang Medical Center
Chaum Hospital
Jeju National University
Korea Institute of Science and Technology
Samsung Medical Center
Seoul National University Hospital
The Catholic University of Korea
YUMC Gangnam Severance Hospital
YUMC Severance Hospital

# Malaysia

University of Malaya

# Singapore

Nanyang Technological University

#### **Taiwan**

Chang Gung University National Chiao Tung University National Health Research Institutes National Taiwan University National Tsing Hua University Taipei Medical University Hospital



### Australia

Future Medical Imaging Group Royal Women's Hospital Melbourne

# Research Sites

**92** 

**Worldwide Total** 

North America

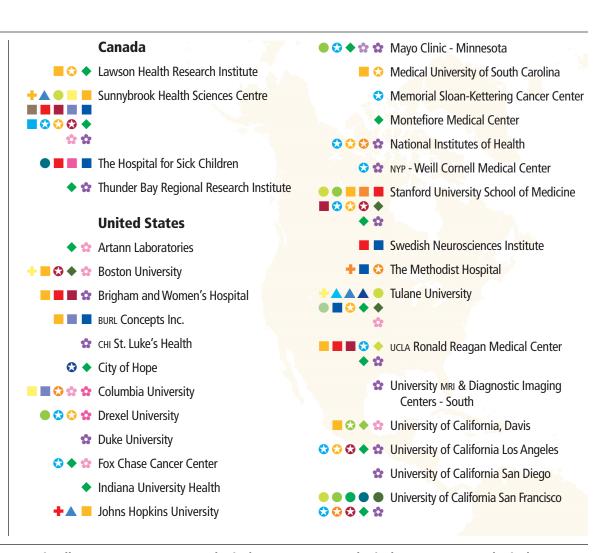
29 Europe 14 Asia

2 Oceania

Any FUS research site conducting animal research.

# Sites by Region





# Cardiovascular

- Atherosclerosis
- Atrial fibrillation
- Deep vein thrombosis
- Hypertension
- + Septal perforation

# Endocrine Disorders

- Diabetes\*
- Obesity
- Thyroid and parathyroid tumors
- Thyroid nodules

# Miscellaneous

★ Glaucoma\*

- Musculoskeletal
- Back and neck pain
- Bone cancer
- Osteoarthritis
- Osteoid osteoma
- Spinal cord injury
- Spinal tumors

# Neurological

- Alzheimer's disease
- Brain tumors
- Cancer pain
- Depression
- Epilepsy
- Essential tremor
- Hydrocephalus
- Neuropathic pain
- Parkinson's disease
- Stroke
- Traumatic brain injury
- Trigeminal neuralgia

# Oncological

- Bone metastases
- Colon cancer
- Esophageal cancer
- Head & Neck Cancer
- Liver tumors
- Lung cancer\*
- Pancreatic tumors
- Pediatric oncology
- Soft tissue tumors

# **Urological**

- Benign prostatic hyperplasia
- Bladder tumors
- Kidney stones
- Kidney tumors
- Prostate cancer
- Ureterocele

- Breast cancer
- Breast fibroadenoma
- Uterine adenomyosis
- Uterine fibroids
- \* Not in this region



# Cardiovascular

- Atherosclerosis
- + Atrial fibrillation
- Deep vein thrombosis
- Hypertension
- + Septal perforation

# **Endocrine Disorders**

- ▲ Diabetes\*
- Obesity
- ▲ Thyroid and parathyroid tumors
- ▲ Thyroid nodules

# Miscellaneous

★ Glaucoma\*

#### ♣ Glaucollia

- Musculoskeletal
- Back and neck pain
- Bone cancer
- Osteoarthritis
- Osteoid osteoma
- Spinal cord injury
- Spinal tumors

# Neurological

- Alzheimer's disease
- Brain tumors
- Cancer pain
- Epilepsy
- Essential tremor
- Hydrocephalus
- Neuropathic pain
- Parkinson's disease
- Stroke
- Traumatic brain injury
- Trigeminal neuralgia

# Oncological

- Bone metastases
- Colon cancer
- Esophageal cancer
- Head & Neck Cancer
- Liver tumors
- Lung cancer\*
- Pancreatic tumors
- Pediatric oncology
- Soft tissue tumors

# Urological

- Benign prostatic hyperplasia
- Bladder tumors
- Kidney stones
- Kidney tumors
- Prostate cancer
- Ureterocele

- Breast cancer
- Breast fibroadenoma
- Uterine adenomyosis
- Uterine fibroids
- \* Not in this region

# Pre-clinical Research Sites by Region

# Europe

#### **Cyprus** Italy Cyprus University of Technology European Institute of Oncology Scuola Superiore Sant'Anna **France** The Netherlands Centre Léon Bérard ♦ University Medical Center Utrecht 🗘 🏗 сни de Bordeaux - Hôpital Saint-André Norway Hôpital Cochin ◆ ☆ The Intervention Centre, Oslo University ★ ◆ Hospices Civils de Lyon Hospital Rikshopitalet 🕂 🗶 🔲 😂 🗘 Inserm Lyon Spain Hospital Clínico San Carlos Institut Langevin Instituto Cartuja de Técnicas University Hospital of Grenoble Avanzadas en Medicina Germany Switzerland ■ ♦ German Cancer Research Center FUS-Center, University of Zurich, Children's Hospital Klinikum Fürth \* Hôpitaux Universitaires de Genéve SRH Waldklinikum Gera University of Geneva University Hospital Frankfurt University of Heidelberg United Kingdom Churchill Hospital University of Munich Institute for Medical Science and Israel Technology ■ ♦ ♦ Chaim Sheba Medical Center Rambam Medical Center St. Mary's Hospital The Institute of Cancer Research

# Cardiovascular

- Atherosclerosis
- Atrial fibrillation
- Deep vein thrombosis\*
- Hypertension\*
- Septal perforation\*

# Endocrine Disorders

- Diabetes\*
- Obesity\*
- Thyroid and parathyroid tumors
- ▲ Thyroid nodules\*

# Miscellaneous

**X** Glaucoma

- Musculoskeletal
- Back and neck pain
- Bone cancer\*
- Osteoarthritis\*
- Osteoid osteoma
- Spinal cord injury\*
- Spinal tumors\*

# Neurological

- Alzheimer's disease
- Brain tumors
- Cancer pain\*
- Depression\*
- Epilepsy
- Essential tremor
- Hydrocephalus\*
- Neuropathic pain\*
- Parkinson's disease\* Stroke
- Traumatic brain injury\*
- Trigeminal neuralgia

# Oncological

- Bone metastases
- Colon cancer\*
- Esophageal cancer\*
- Head & Neck Cancer\*
- Liver tumors
- Lung cancer
- Pancreatic tumors
- Pediatric oncology\*
- Soft tissue tumors

#### Urological

- Benign prostatic hyperplasia\*
- Bladder tumors\*
- Kidney stones\*
- Kidney tumors
- Prostate cancer
- Ureterocele\*

- Breast cancer
- Breast fibroadenoma\*
- Uterine adenomyosis\*
- Uterine fibroids
- \* Not in this region

# Pre-clinical Research Sites by Region

Asia

#### China

- Chongging Medical University
- 🗘 🕸 Fundan University Shanghai **Cancer Center**
- 🗘 🗘 🔷 🏗 HAIFU Hospital
  - 🗘 🖈 Peking Union Hospital, Chinese Academy of Medical Sciences
- PLA 301 Hospital

# India

- Gsl medical college
- Saslok Hospital and Research Centre

# Japan

- Breastopia Namba Hospital
- Kochi University Hospital

# Malaysia

🛨 😂 🌼 University of Malaya

# Republic of Korea

- 🗘 🏗 😘 Chaum Hospital
  - Samsung Medical Center

# Singapore

**■ ○** Nanyang Technological University

# **Taiwan**

Taipei Medical University Hospital

**Oceania** 

# Australia

- 🗘 🗘 🏗 Future Medical Imaging Group
  - 🗘 🖈 🖈 Royal Women's Hospital Melbourne

# Cardiovascular

- Atherosclerosis\*
- Atrial fibrillation\*
- Deep vein thrombosis\*
- Hypertension
- Septal perforation\*

# **Endocrine Disorders**

- Diabetes
- Obesity\*
- Thyroid and parathyroid tumors\*
- Thyroid nodules\*

- **X** Glaucoma

- Musculoskeletal
- Back and neck pain
- Bone cancer\*
- Osteoarthritis
- Osteoid osteoma
- Spinal cord injury\*
- Spinal tumors\*

# Miscellaneous

- **Neurological**
- Alzheimer's disease\*
  - Brain tumors\*

  - Cancer pain\*
  - Depression\*
  - Epilepsy\*
  - Essential tremor\*
  - Hydrocephalus\*
  - Neuropathic pain\*
  - Parkinson's disease\*
    - Stroke
    - Traumatic brain injury\*
    - Trigeminal neuralgia\*

# Oncological

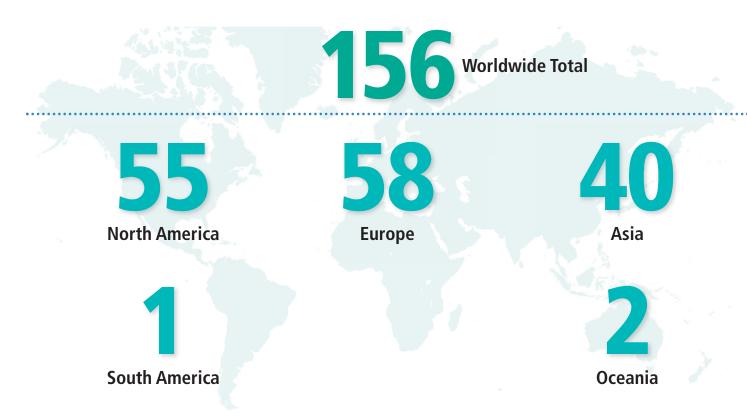
- Bone metastases
- Colon cancer\*
- Esophageal cancer\*
- Head & Neck Cancer\*
- Liver tumors
- Lung cancer\* Pancreatic tumors
- Pediatric oncology \*
- Soft tissue tumors

# Urological

- Benign prostatic hyperplasia
- Bladder tumors
- Kidney stones
- Kidney tumors
- Prostate cancer
- Ureterocele\*

- Breast cancer
- Breast fibroadenoma
- Uterine adenomyosis
- Uterine fibroids
- \* Not in this region

# Clinical Research Sites by Region



Any FUS research site treating patients as part of a clinical study.

# Clinical Research Sites by Region

# 55 North America

### Canada

- Can-AmHIFU
- Jewish General Hospital
- London Health Sciences Centre
- Princess Margaret Hospital
- ■ ② ☆ Sunnybrook Health Sciences Centre
  - Thunder Bay Regional Research Institute
  - 🗘 🏚 Toronto General Hospital
    - Toronto Western Hospital
    - University of Western Ontario

### **United States**

- Artann Laboratories
- • Prigham and Women's Hospital (вwн)
  - 🕏 сні St. Luke's Health
- ■ ② ❖ Children's National Hospital
- ▲ ▲ ● ❖ Cincinnati Children's Hospital ❖ Medical Center
  - ♦ City of Hope
    - Cleveland Clinic
    - Duke University

- Grand Strand Urology
- Indiana University Health, University Hospital
- ◆ ✿ Johns Hopkins University School of Medicine
  - Long Beach Eye Care Associates
- 🔵 호 🔷 🏗 Mayo Clinic Minnesota
  - Memorial Sloan-Kettering Cancer Center
  - Metropolitan Urology
  - Montefiore Medical Center
  - National Institutes of Health
    - New York University
    - NYP Weill Cornell Medical Center
      - Oregon Health and Science University
      - ProMedica Toledo Hospital
      - Southeast Urology Network
- Stanford University
- **○○◆☆** 
  - Swedish Neurosciences Institute
- ▲ ♦ ♦ Tulane University
- UCLA Ronald Reagan Medical Center

### Cardiovascular

Hypertension\*

# **Endocrine Disorders**

- Diabetes
- Obesity
- ▲ Thyroid and parathyroid tumors
- ▲ Thyroid nodules\*

# Miscellaneous

- **X** Glaucoma
- Hypersplenism\*

# Musculoskeletal

- Back and neck pain
- Bone cancer
- Osteoarthritis
- Osteoid osteoma
- Sacroiliitis

# Neurological

- Brain tumors
- Cancer pain
- Cancer pair
- Depression
- Epilepsy
- Essential tremor
- Neuropathic pain
- Obsessive-compulsive
- disorder
- Parkinson's disease
- Stroke\*
- Trigeminal neuralgia\*

# **Oncological**

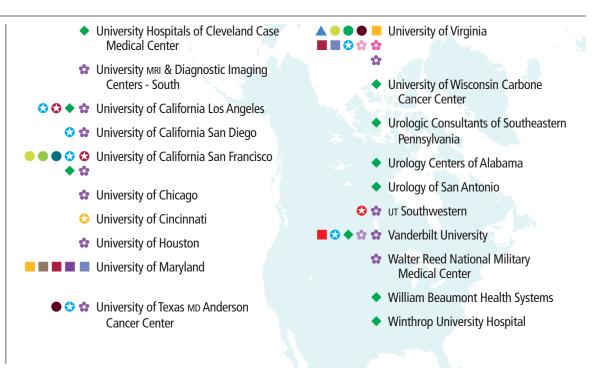
- Bone metastases
- Colon cancer\*
- Liver tumors
- Pancreatic tumors\*
- Pediatric oncology
- Soft tissue tumors

# Urological

- Benign prostatic hyperplasia
- Kidney stones\*
- Kidney tumors
- Prostate cancer

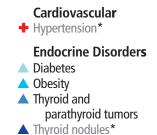
- Breast cancer\*
- Breast fibroadenoma
- Uterine adenomyosis
- Uterine fibroids
  - \* Not in this region

# Clinical Research Sites by Region

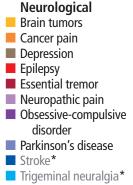


# South America

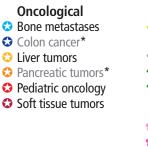
# 













\* Not in this region

# Clinical Research Sites by Region



Europe

# **Belgium**

Institut Jules Bordet

# **Bulgaria**

- Pleven Medical University
- ▲ ▲ st University Hospital of Endocrinology

# **Czech Republic**

Thomayer University Hospital

#### **France**

- 🗘 🗘 🗘 🏗 Centre Léon Bérard
  - сни de Bordeaux Hôpital du Tondu
  - 🗘 сни de Bordeaux Hôpital Saint-André
  - ◆ сни de Lille Hôpital Huriez
  - ◆ сни de Toulouse Hôpital Rangueil
  - 🗘 сни de Tours Hôpital Bretonneau
  - Hôpital Pitié-Salpêtrière
  - Hospices Civils de Lyon
- ۞ ۞ ♦ ☆ Inserm Lyon
  - Institut Gustave Roussy
  - Institut Mutualiste Montsouris
  - University of Nice Sophia Antipolis

# Germany

- Amper Klinik
- 🗘 🕸 🕸 Brustzentrum Marienhospital Bottrop
  - - Klinikum Fürth
    - Universitätsklinikum Tübingen
    - University Hospital Schleswig-Holstein
    - University of Heidelberg
    - Oniversity of Munich
      - Urologische Universitätsklinik Magdeburg

# Israel

🗘 🏚 Chaim Sheba Medical Center

# Italy

- \* Azienda Ospedaliera San Paolo
- 📕 😋 😋 😋 Careggi General Hospital
- **♦** ☆ ☆
- ۞ ♠ ☆ Cisanello Hospital of University of Pisa
  - Clinica oculistica Università -Ospedale oftalmico
- ❖ ❖ ❖ European Institute of Oncology
  - Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico

#### Cardiovascular

Hypertension\*

# **Endocrine Disorders**

- Diabetes
- Obesity
- ▲ Thyroid and parathyroid tumors
- ▲ Thyroid nodules

# Miscellaneous

- **X** Glaucoma
- ★ Hypersplenism\*

# Musculoskeletal

- Back and neck pain
- Bone cancer\*
- Osteoarthritis
- Osteoid osteoma
- Sacroiliitis

# Neurological

- Brain tumors
- Cancer pain
  - Cancer pain
- Depression\*
- Epilepsy\*
- Essential tremor
- Neuropathic pain
- Obsessive-compulsive disorder\*
- Parkinson's disease
- Stroke
- Trigeminal neuralgia

# Oncological

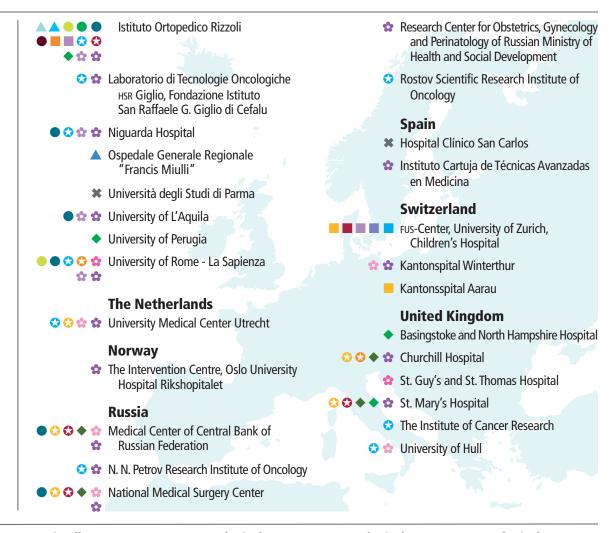
- Bone metastases
- Colon cancer
- Colon cancerColon cancerColon cancerColon cancer
- Pancreatic tumors
- ◆ Pediatric oncology\*
- Soft tissue tumors

# Urological

- Benign prostatic hyperplasia\*
- Kidney stones\*
- Kidney tumors
- Prostate cancer

- Breast cancer
- Breast fibroadenoma
- Uterine adenomyosis
- Uterine fibroids
  - \* Not in this region

# Clinical Research Sites by Region



# Cardiovascular

+ Hypertension\*

#### **Endocrine Disorders**

- Diabetes
- Obesity
- ▲ Thyroid and parathyroid tumors
- ▲ Thyroid nodules

# Miscellaneous

- **X** Glaucoma
- ★ Hypersplenism\*

# Musculoskeletal

- Back and neck pain
- Bone cancer\*
- Bone cancerOsteoarthritis
- Osteoid osteoma
- Sacroiliitis

# Neurological

- Brain tumors
- Cancer pain
- Depression\*
- Epilepsy\*
- Essential tremor
- Neuropathic pain
- Obsessive-compulsive disorder\*
- Parkinson's disease
- Stroke
- Trigeminal neuralgia

# Oncological

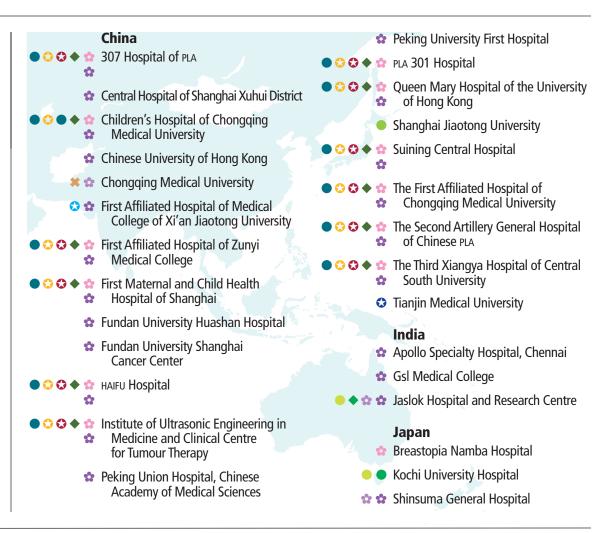
- Bone metastases
- Colon cancer
- Colon cancer
   ∴
   Liver tumors
- Pancreatic tumors
- Pediatric oncology\*
- Soft tissue tumors

# Urological

- Benign prostatic hyperplasia\*
- Kidney stones\*
- Kidney tumors
- Prostate cancer

- Breast cancer
- Breast fibroadenoma
- Uterine adenomyosis
- Uterine fibroids
- \* Not in this region

# Clinical Research Sites by Region



# Cardiovascular

Hypertension

#### **Endocrine Disorders**

- Diabetes\*
- Obesity\*
- ▲ Thyroid and parathyroid tumors\*
- ▲ Thyroid nodules\*

# Miscellaneous

- **X** Glaucoma
- Hypersplenism

# Musculoskeletal

- Back and neck pain
- Bone cancer
- Osteoarthritis
- Osteoid osteoma
- Sacroiliitis\*

# Neurological

- Brain tumors\*
- Cancer pain
- Depression\*
- Epilepsy\*
- Essential tremor
- Neuropathic pain\*
- Obsessive-compulsive
- disorder Parkinson's disease
- Stroke
- Trigeminal neuralgia\*

# Oncological

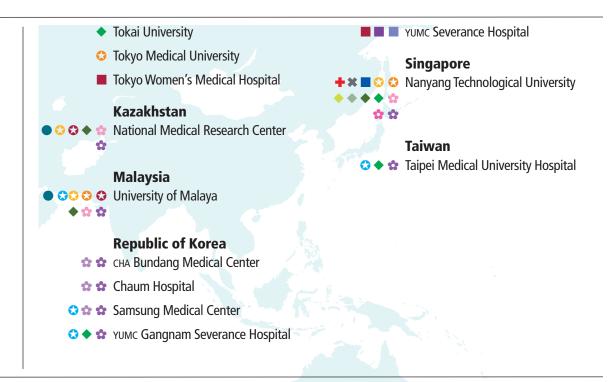
- Bone metastases
- Colon cancer Liver tumors
- Pancreatic tumors
- Pediatric oncology\*
- Soft tissue tumors

# **Urological**

- Benign prostatic hyperplasia
- Kidney stones
- Kidney tumors
- Prostate cancer

- Breast cancer
- Breast fibroadenoma
- Uterine adenomyosis
- Uterine fibroids
- \* Not in this region

# Clinical Research Sites by Region



Oceania

# Australia ■ ② ۞ ☆ Future Medical Imaging Group

Royal Women's Hospital Melbourne

Cardiovascular
Hypertension
Endocrine Disorders

▲ Diabetes\*
 ▲ Obesity\*
 ▲ Thyroid and parathyroid tumors\*
 ▲ Thyroid nodules\*

Miscellaneous

Glaucoma

Hypersplenism

Musculoskeleta

Musculoskeletal

Back and neck pain

Bone cancer

Osteoarthritis

Osteoid osteoma

Sacroiliitis\*

Neurological
Brain tumors\*
Cancer pain
Depression\*
Epilepsy\*
Essential tremor
Neuropathic pain\*
Obsessive-compulsive disorder
Parkinson's disease
Stroke
Trigeminal neuralgia\*

Oncological

Bone metastases

Colon cancer

Liver tumors

Pediatric oncology\*
Soft tissue tumors

Urological◆ Benign prostatic hyperplasia

◆ Kidney stones

◆ Kidney tumors

Prostate cancer

Women's Health

Breast cancer

Breast fibroadenomaUterine adenomyosis

Uterine fibroids

\* Not in this region

# Commercial Treatment

# Commercial Treatment Sites by Indications and Regions

# **North America**

- 6 Bone metastases
- 1 Breast cancer
- ◆ 1 Kidney tumors
- 1 Liver tumors
- 1 Osteoid osteoma
- ◆ 15 Prostate cancer
- 1 Soft tissue tumors
- 15 Uterine tibroids

# Europe

- 14 Bone metastases
- 14 Breast cancer
- 2 10 Breast fibroadenoma
- 3 Essential tremor
- ◆ 14 Kidney tumors
- 14 Liver Tumors
- 2 Neuropathic pain
- 14 Osteoid osteoma
- 3 Parkinson's tremor
- 154 Prostate cancer
- 14 Soft tissue tumors
- 2 Thyroid nodules
- 1 Trigeminal neuralgia
- **43** Uterine fibroids

# Asia

- 2 Bone metastases
- \$\frac{1}{2}\$ 89 Breast cancer
- 88 Kidney tumors
- 38 Liver tumors
- 88 Osteoid osteoma
- 26 Prostate cancer
- 2 91 Soft tissue tumors
- 113 Uterine fibroids

# **South America**

- 7 Prostate cancer
- 1 Uterine fibroids

# **Africa**

1 Prostate cancer

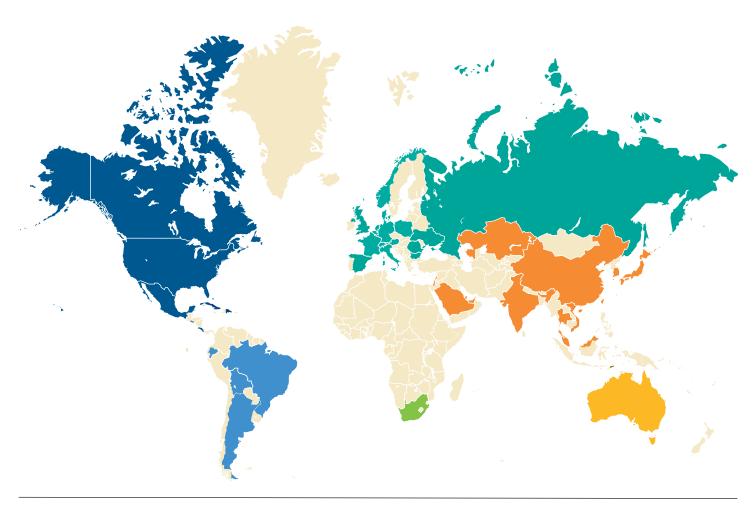
# **Oceania**

2 Uterine fibroids

Any site with a focused ultrasound system and regulatory approval from the respective country and currently providing treatments.

# Commercial Treatment

# Commercial Treatment Sites by Country



Any site with a focused ultrasound system and regulatory approval from the respective country and currently providing treatments.

### North America

- 1 Bahamas
- 1 Bermuda
- 7 Canada
- 1 Costa Rica
- 1 Cuba
- 2 Dominican Republic
- 1 Grand Cayman
- 4 Mexico
- 14 United States

# South America

- 1 Argentina
- 1 Bolivia
- 3 Brazil
- 3 Ecuador

# Europe

- 4 Austria
- 2 Belgium
- 2 Bulgaria
- 1 Denmark
- i Deninark
- 38 France
- 50 Germany
- 2 Israel
- 32 Italy
- 1 Monaco
- 4 The Netherlands
- 1 Norway
- 3 Poland
- 2 Romania

### 27 Russia

- 6 Spain
- 9 Switzerland
- 1 Ukraine
- 25 United Kingdom

# Asia

- 83 China
- 11 India
- 12 Japan
- 1 Kazakhstan
- 2 Kingdom of Saudi Arabia
- 1 Lebanon
- 1 Malaysia

- 1 Qatar
- 6 Republic of Korea
- 1 Singapore
- 16 Taiwan
- 1 Thailand
- 1 United Arab Emirates
- 1 Vietnam

# Oceania

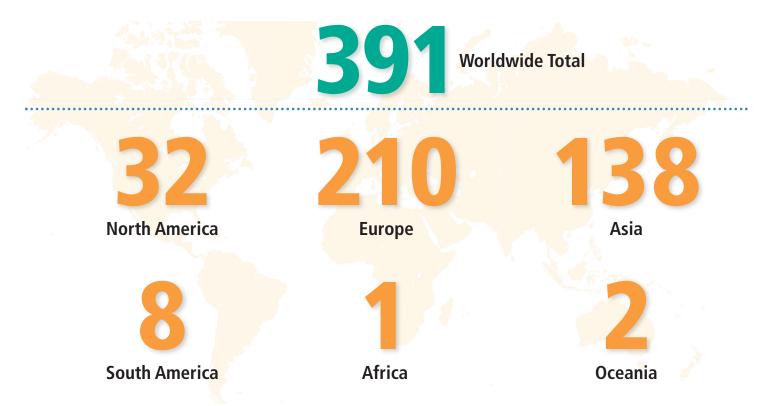
2 Australia

# Africa

1 South Africa

# Commercial Treatment

# Commercial Treatment Sites by Region



Any site with a focused ultrasound system and regulatory approval from the respective country and currently providing treatments.

### Commercial Treatment Sites by Region

32
North America

### **Bahamas**

Doctors Hospital

### Bermuda

King Edward VII Memorial Hospital

### Canada

- Can-Am ніғи
- Don Mills Surgical Unit
- Les Cours Medical Centre
- Maples Surgical Center
- Sunnybrook Health Sciences Centre
- Thunder Bay Regional Research Institute
- University of Western Ontario

### **Costa Rica**

Hospital CIMA San Jose

### Cuba

● 🗘 � ♦ 🏚 Hospital Medical Surgical Research Center

### **Dominican Republic**

- Center for Advanced Medicine
- Clinica Union Medica

### **Grand Cayman**

Chrissie Tomlinson Hospital

### Mexico

- Centro Médico Puerta de Hierro
- Hospital Galenia
- Medica Sur Tlalpan
- San Javier Hospital Marina

### **United States**

- Brigham and Women's Hospital
- City of Hope
- Duke Health Center at Southpoint
- Focused Ultrasound Northwest
- Fox Chase Cancer Center
- Mayo Clinic Minnesota
- Memorial Sloan-Kettering Cancer Center
- Riverside Methodist Hospital
- Stanford University Medical Center
  - 🕸 UCLA Ronald Reagan Medical Center
  - University MRI & Diagnostic Imaging Centers South
  - University of California San Diego
- university of California San Francisco
- 🗘 🏩 University of Virginia

**Endocrine Disorders** 

▲ Thyroid nodules\*

Musculoskeletal

Osteoid osteoma

Neurological

Essential tremor\*

Neuropathic pain\*Parkinson's disease\*

■ Trigeminal neuralgia\*

Oncological

Bone metastases

Liver tumors

Soft tissue tumors

Urological

Kidney tumors

Prostate cancer

Women's Health

Breast cancer\*

Breast fibroadenoma\*

Uterine fibroids

# Commercial Treatment Sites by Region



### **Argentina**

Centro de Urologia

### **Bolivia**

 Centro de urología avanzada de la Clínica Incor

### **Brazil**

- Centro de Prostata San Paulo
- Hospital Ac Camargo de São Paulo
- Instituto do Cancer do Estado de Sao Paulo

### **Ecuador**

- Hospital Carlos Andrade Marin
- Hospital IESS
- Hospital Policia Nacional Guayaqui

### **Endocrine Disorders** ▲ Thyroid nodules\*

# Musculoskeletal

Osteoid osteoma\*

### Neurological

Essential tremor\* ■ Neuropathic pain\*

Parkinson's disease\* ■ Trigeminal neuralgia\*

### Oncological

Bone metastases\*

Liver tumors\*

Soft tissue tumors\*

### Urological

◆ Kidney tumors\*

Prostate cancer

### Women's Health

Breast cancer\*

Breast fibroadenoma\*

Uterine fibroids

# Commercial Treatment Sites by Region



#### **Austria**

- Allgemeines Krankenhaus der Stadt Wien
- Krankenhaus der Barmherzigen Brüder Wien
- ◆ TILAK Unternehmen Gesundheit
- Oniversity of Vienna

### **Belgium**

- Algemeen Ziekenhuis Middelheim
- Institut Jules Bordet

### **Bulgaria**

- Saint Marina Hospital
  - University Hospital of Endocrinology

### **Denmark**

Aarhus University Hospital

#### France

- American Hospital of Paris
- Centre Hospitalier de Chambéry
- Centre Hospitalier de Saintonge
- ◆ Centre Hospitalier Nord de Marseille сни
- Centre Hospitalier Saint Joseph Saint Luc
- Centre Hospitalier Universitaire de Caen
- ◆ сни de Bordeaux Hôpital du Tondu
- 🕸 сни de Bordeaux Hôpital Saint-André
- ◆ сни de Guadeloupe Hôpital les Abymes
- 💠 🔷 сни de Lille Hôpital Huriez
  - ◆ сни de Limoges Hôpital Dupuytren
  - ◆ сни de Nancy Hôpital de Brabois
  - сни de Nice Hôpital Pasteur
  - сни de Reims Hôpital Robert Debré

- ◆ сни de Rennes Hopital Pontchaillou
- ◆ сни de Rouen Hôpital Charles Nicolle
- ◆ сни de Strasbourg Hôpital Civil
- ◆ сни de Toulouse Hôpital Rangueil
- 🔷 🕸 сни de Tours Hôpital Bretonneau
  - Clinique Beau Soleil
  - Clinique Chirurgicale du Pre
  - Clinique Clement Devron
  - Clinique du Palais
  - Clinique Saint Georges
  - Clinique Saint-Michel
  - Clinique urologique Nantes Atlantis
  - Groupe Hospitalier Diaconesses Croix Saint-Simon
  - Hôpital Edouard Herriot
  - Hôpital Foch
  - Hôpital Jeanne de Flandre
  - Hôpital Pitié-Salpêtrière
  - Hôpital privé La Louvière
  - Hopitaux Civils de Colmar Hopital Pasteur
  - Institut Mutualiste Montsouris
  - Polyclinique Bordeaux Nord Aquitaine
  - Polyclinique du Parc Rambot
- Polyclinique Jean Villar
- 🛕 🛊 SELAS du Nedon

#### Germany

- Agaplesion Diakonieklinikum Hamburg
- Universitat Freiburg
- Amper Klinik

### Endocrine Disorders

▲ Thyroid nodules

### Musculoskeletal

Osteoid osteoma

### Neurological

Essential tremor

Neuropathic painParkinson's disease

Trigeminal neuralgia

### Oncological

- Bone metastases
- Liver tumors
- Soft tissue tumors

### Urological

- Kidney tumors
- Prostate cancer

### Women's Health

- Breast cancer
- Breast fibroadenoma
- Uterine fibroids
- \* Not in this region

# Commercial Treatment Sites by Region

- Asklepios Kliniken Weißenfels-Hohen mölsen GmbH
- Asklepios Klinik Uckermark
- Asklepios Paulinen Klinik
- # Brustzentrum Marienhospital Bottrop
- Charité Universitätsmedizin Berlin
  - Diagnoseklinik Stephansplatz
  - Diakonie-Klinikum Stuttgart
  - ◆ DRK-Seepark Klinik Debstredt GmbH
  - ◆ Ev. Jung-Stilling-Krankenhaus
  - Ev. Krankenhaus Göttingen-Weende e.V.
  - Franziskus-Krankenhaus
  - Gemeinschaftspraxis für urologie
  - ◆ GmbH Urologische Ambulanz
  - GPR Gesundheits-und Pfegezentrum Russelsheim gGmbH-Klinikum
- A : HELIOS Klinik Schkeuditz
  - Katholisches Klinikum Essen GmbH
  - Klinik für Prostata-Therapie GmbH
  - Universität Regensburg
  - Klinikum Fürth
  - Klinikum Itzehoe
  - ♦ Klinikum Konstanz
  - Klinikum Nürnberg
  - Krankenhaus Dresden-Friedrichstadt
  - Krankenhaus Nordwest
- Marien-Hospital Marl
- Marienhospital
  - Marienhospital Arnsberg GmbH
  - Paracelsus Klinik Golzheim

- Paracelsus Klinik Reichenbach GmbH
- Radiologische Gemeinschaftspraxis
- Rotkreuzklinikum München
- Sankt Katharinen Krankenhaus
- St. Antonius-Hospital
- St. Barbara Hospital
- St. Elisabethen-Krankenhaus der Katharina-Kasper gGmbH
- St. Elisabeth-Krankenhaus Köln-Hohenlind
- St. Elisabeth-Krankenhaus Leipzig
- St. Josefs Hospital GmbH
- Staedtisches Klinikum München
- Theresienkrankenhaus Mannheim
- Universitätsklinikum Aachen
- Universitätsklinikum Bonn
- University Medical Center Lubeck
- University of Cologne
- University of Munich
- Urologennetz Region Düsseldorf
- Urologische Universitätsklinik Heidelberg

### Israel

- 🗘 🏚 Chaim Sheba Medical Center
- Rambam Medical Center

### Italy

- Alliance Medical, Italy
- Azienda Ospedaliera 'Di Venere -Giovanni XXIII
- Azienda Ospedaliera A. Cardarelli
- Azienda Ospedaliera S. Maria degli Angeli

#### **Endocrine Disorders**

Thyroid nodules

### Musculoskeletal

Osteoid osteoma

### Neurological

Essential tremor

Neuropathic painParkinson's disease

Trigeminal neuralgia

### Oncological

- Bone metastases
- Liver tumors
- Soft tissue tumors

### Urological

- Kidney tumors
- Prostate cancer

### Women's Health

- Breast cancer
- Breast fibroadenoma
- Uterine fibroids
- \* Not in this region

### Commercial Treatment Sites by Region

- Careggi General Hospital Casa di Cura Abano Terme Casa di Cura Columbus 🗘 🗘 🔷 😭 Cisanello Hospital of University of Pisa CROB IRCCS Rionero 🖜 🗘 💠 😭 European Institute of Oncology Foligno Hospital เพา Divisione Canistro INI Divisione Grottaferrata Laboratorio di Tecnologie Oncologiche HSR Giglio, Fondazione Istituto San Raffaele G. Giglio di Cefalu Niguarda Hospital Nuova Villa Claudia Ospedale Cardinal Massaia di Asti Ospedale Misericordia e Dolce di Prato Ospedale di Massa Ospedale di Nocera Inferiore Umberto I Ospedale San Bartolomeo di Sarzana Ospedale San Giovanni Bosco Ospedale San Raffaele Giglio di Cefalu Ospedale Sant' Anna di Como P.O. di Castellanza P.O. di Este Policlinico Gemelli Rome American Hospital Sora Cancer Centre
- University of L'Aquila
- University of Perugia
- 💠 🕏 University of Rome La Sapienza

#### Monaco

Centre Hospitalier Grace de Monaco

#### The Netherlands

- Amphia Ziekenhuis
- Franciscus Ziekenhuis
- University Medical Center Utrecht
- Zaans Medisch Centrum

### **Norway**

The Intervention Centre, Oslo University Hospital Rikshopitalet

### **Poland**

- ESKULAP Hospital
- ♦ HIFU Clinic Warsaw
- Szpital Pro-Familia

### Romania

- DTL Medica
- ۞ � ♦ # HIFU Terramed Conformal Centre

### Russia

- center of Family Planning & Reproduction
- Central Bank Medical Center
- ❖ ❖ Central Institute of Traumatology and ❖ Orthopedics
  - City Hospital No. 2
  - Clinical Diagnostis Center Zdorovie

# Endocrine Disorders ▲ Thyroid nodules

### Musculoskeletal

Osteoid osteoma

### Neurological

Essential tremor

Neuropathic painParkinson's disease

■ Trigeminal neuralgia

### Oncological

- Bone metastases
- Liver tumors
- Soft tissue tumors

### Urological

- Kidney tumors
- Prostate cancer

### Women's Health

- Breast cancer
- Breast fibroadenoma
- Uterine fibroids
- \* Not in this region

### Commercial Treatment Sites by Region

- Ekaterinburg Regional Hospital N1/Ural Medical University Central Ural Region
- Far Eastern Federal University
- Gazprom Medical Centre, Omsk West Siberia Region
- Hospital of Veterans of War
- Main Military Clinical Burdenko's Hospital
- ♦ ♦ Medical Center of Central Bank of Russian Federation
  - Military Medical Academy St. Petersburg
  - Moniki
  - Moscow City Clinical Hospital Botkin
  - Moscow Regional Rehabilitation Center of Roszdrav
  - N. N. Petrov Research Institute of Oncology
- 😯 💠 🍁 National Medical Surgery Center
  - ♦ NII of Urology
  - Orenbourg Oncology Center
  - Russian Ministry of Health and Social Development
  - Rostov Scientific Research Institute of Oncology
  - Russian Railways Hospital Central Siberia
  - Samara Oncoly Centre
  - Saratov City Medical Academy
  - St. Petersburg Oncology Dispanser
  - The I.M. Sechenov Moscow Medical Academy
  - Ufa Oncology Center

### **Spain**

- Clínica Virgen Blanca S.A.
- Hospital Gral. Universitario Gregorio Maranon
- Instituto Cartuja de Tecnicas Avanzadas en Medicina
  - Policlínica San Antonio
- 🕽 🔹 ResoFus Centre Medic Alomar
- ۞ ❖ ◆ ☆ University Hospital Mutua de Terrassa

#### Switzerland

- Center for Ultrasound Functional
  Neurosurgery
  - ◆ сни de Genêve
  - ◆ CHUV de Lausanne
  - 🗘 🏗 Clinique De Montchoisi
    - ◆ Clinique Generale Beaulieu
  - Fus-Center, University of Zurich, Children's Hospital
    - Hopital de Zone de Nyon
    - 🗘 🕸 Kantonspital Winterthur
      - Universitatsspital Nord

### Ukraine

### **United Kingdom**

- Basingstoke and North Hampshire Hospital
- вмі Goring Hall Hospital
- вмі The Hampshire Clinic
- вмі The Kings Oak Hospital

### Endocrine Disorders

Thyroid nodules

### Musculoskeletal

Osteoid osteoma

### Neurological

Essential tremor

Neuropathic painParkinson's disease

Trigeminal neuralgia

### Oncological

- Bone metastases
- Liver tumors
- Soft tissue tumors

### Urological

- Kidney tumors
- Prostate cancer

### Women's Health

- Breast cancer
- **\$** Breast fibroadenoma
- Uterine fibroids
- \* Not in this region

# Commercial Treatment Sites by Region



Any site with a focused ultrasound system and regulatory approval from the respective country and currently providing treatments.

Soft tissue tumors

Parkinson's disease

Trigeminal neuralgia

Thyroid nodules

Musculoskeletal

Osteoid osteoma

Uterine fibroids

# Commercial Treatment Sites by Region

138

Asia

### **China**

• • • •

**☆** Commerial treatment centers **☆** for six indications

307 Hospital of PLA

Affiliated Hospital of Armed Police's Medical College Affiliated Hospital of Chuanbei Medical College Affiliated Hospital of Qinghai Medical College Affiliated Hospital of Xinxiang Medical College Baoji Maternal and Child Health Hospital

**Beijing Cancer Hospital** 

**Beijing Hospital** 

Chengdu Shuangnan Hospital

Children's Hospital of Chongqing Medical University Chongqing Three Gorges Central HospitalCity Hospital

of Bincheng District in Binzhou City

Dalian Friendship Hospital

Daxian People's Hospital Dengfeng People's Hospital

First Affiliated Hospital of Guangxi Medical University
First Affiliated Hospital of Kunming Medical University
First Affiliated Hospital of Zunyi Medical College

First Maternal and Child Health Hospital of Shanghai

Fujian Provincial Hospital

Fuling Center Hospital of Chongging

Fundan University Shanghai Cancer Center

Guangzhou First Municipal People's Hospital

Guantao People's Hospital of Hebei

наги Hospital

Haifu Hospital of Tangshan Transportation Group Co. Ltd

Haikou Municipal Hospital

Huabei Oil Field General Hospital Group

Huainan Eastern Hospital

**Huanggang Center Hospital** 

Hubei Maternal and Child Health Hospital

Institute of Ultrasonic Engineering in Medicine and Clinical Centre for Tumour Therapy

Jiangmen Wuyi Traditional Chinese Medicine Hospital

Jiangsu Armed Police Corps Hospital

Jiangsu Cancer Hospital

Jilin Center Hospital

Jiugang Hospital

Jiujiang Maternal and Child Health Hospital

Jixi People's Hospital

Kaixian People's Hospital

Lianyungang Orient Hospital

Liaoning Fushun Cancer Hospital

Luoyang Center Hospital

Maternal and Child Health Hospital of Yubei District

Nanshi Hospital

No. 91 Central Hospital of the Liberation Army

Nong Ken Hospital

Obstetric Hospital of Changchun

People's Hospital of Hunan Province

People's Hospital of Nanchuan District

People's Hospital of Xingtai

PLA 301 Hospital (General Hospital of the People's

Liberation Army)

Queen Mary Hospital of the University of Hong Kong

Shaanxi Maternal and Child Health Hospital

Shandong Cancer Hospital

Shandong Guangrao Traditional Chinese Medicine Hospital

Shandong Qianfoshan Hospital

Shanxi Traditional Chinese Medicine Hospital

Shenzhen Maternal and Child Health Center Hospital

Suining Central Hospital

Suining Hospital of Traditional Chinese Medicine

Sun Yat-Sen University Cancer Center

The 452nd PLA Hospital

The Daging Oil Field General Hospital Group

The First Affiliated Hospital of Chongqing Medical University

### **Endocrine Disorders**

Thyroid nodules\*

### Musculoskeletal

Osteoid osteoma

### Neurological

Essential tremor\*

■ Neuropathic pain\*

Parkinson's disease\*
Trigeminal neuralgia\*

### Oncological

- Bone metastases
- Liver tumors
- Soft tissue tumors

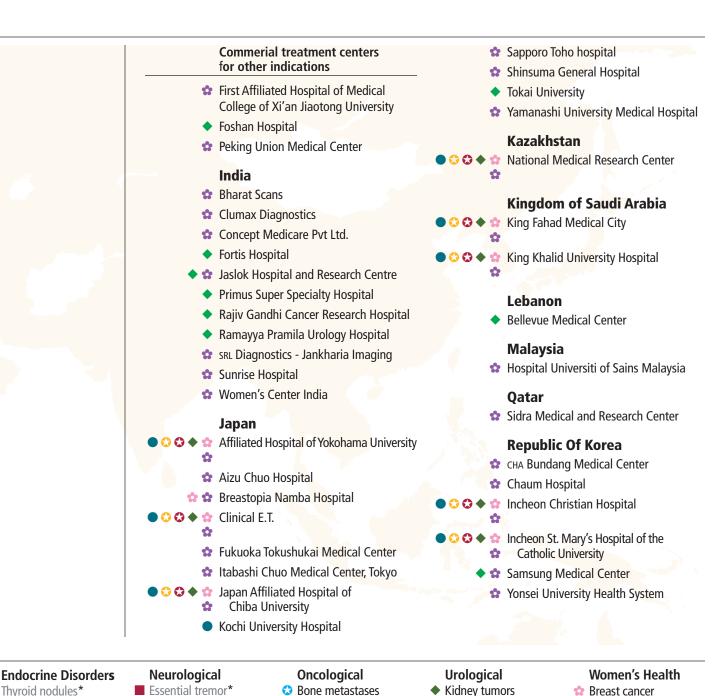
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Liver tumors

Soft tissue tumors

Neuropathic pain\*

Parkinson's disease\*

Trigeminal neuralgia\*

Thyroid nodules\*

Osteoid osteoma

Musculoskeletal

Prostate cancer

Breast fibroadenoma\*

Uterine fibroids

# Commercial Treatment Sites by Region

### Singapore

\* KK Women and Children's Hospital

### **Taiwan**

- Cardinal Tien Hospital
  - Chang Gung Memorial Hospital (Chiayi)
  - **Chang Gung Memorial Hospital** (Keelung)
  - Chang Gung Memorial Hospital (Linkou)
  - Chang Gung Memorial Hospital (Taipei)
  - Changhua Christian Hospital
  - China Medical University Beigang Hospital
  - China Medical University Hospital
  - E-Da Hospital
  - Kaoshiung Veterans General Hospital
  - Mackay Memorial Hospital

- New Taipei City Hospital Banciao Branch
- New Taipei City Hospital Sanchong Branch
- Taichung Veterans General Hospital
- ◆ Taipei Medical University Hospital
  - Tung's Taichung MetroHarbor Hospital

### **Thailand**

Samitivej Sukhumvit Hospital

### **United Arab Emirates**

Al Zahra Hospital

### **Vietnam**

Bao Son Hospital

# **Oceania**

### **Australia**

- Future Medical Imaging Group (FMIG)
- The Royal Women's Hospital Melbourne



### **South Africa**

**Netcare Christiaan Barnard** Memorial Hospital

# **Endocrine Disorders**

Thyroid nodules\*

# Musculoskeletal

Osteoid osteoma

### Neurological

Essential tremor\*

■ Neuropathic pain\* Parkinson's disease\*

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### Oncological

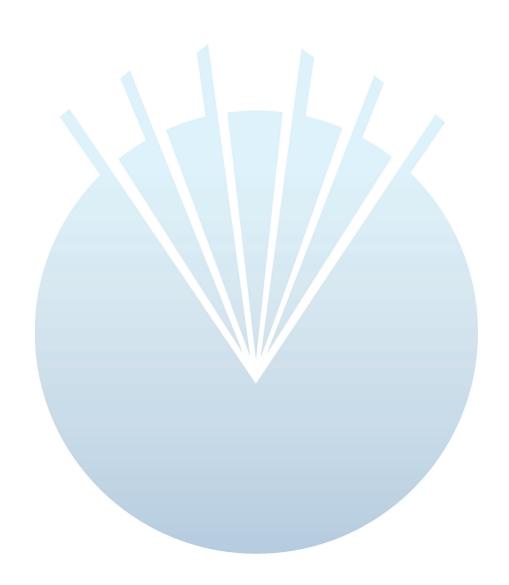
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The information in this report was provided by manufacturers and the focused ultrasound research community to the Focused Ultrasound Foundation. The FUS Foundation aims to provide the most accurate information; if you have more current or updated information please send it to: engagement@fusfoundation.org.