VirtaMed ArthroS™
Virtual reality training for knee, shoulder, hip arthroscopy & FAST basic skills

Highest realism
- Anatomically accurate models create the sensation of operating on real patients.
- Bleeding & complications.
- Photo-realistic graphics, virtual fluoroscopy imaging.

Customized training
- Endless variety of training cases and pathologies available for customized curriculum.
- Didactic reading material helps build the foundation, SimProctor™ can guide you through procedures.
- Track record of use in proficiency exams.

Original instruments
- Real surgical tools such as palpation hook, grasper, cutting punch, and shaver.
- Using original tools eases transfer of skills to the OR.
- Unlimited range of motion, free portal placement and selection even during procedure.

Swiss engineering
- Easy switch between knee, shoulder, hip, and FAST.
- Modules can be adjusted and positioned for different surgical skills training.
- Regular software updates.

sales@virtamed.com

Used by:

BROWN UNIVERSITY
UNIVERSITY OF UTAH HEALTH CARE
UMKC
# The VirtaMed orthopedic platform

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<tr>
<th>ArthroS™ FAST</th>
<th>ArthroS™ Shoulder</th>
<th>ArthroS™ Hip</th>
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<tr>
<td><img src="image1.png" alt="Image" /></td>
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## Training goals

- Basic training for general arthroscopy.
- Manipulate objects deliberately, grasp stationary targets.
- Triangulate, handle camera and tools with both dominant and non-dominant hand.
- Access through anterior and posterior portals.
- Use different scope angles: 0, 30 and 70 degrees.

## Training cases included:

### Didactic materials
- General concepts of arthroscopy.

### Training cases
- Image centering; telescoping; horizon control; probe triangulation; and periscoping.

## Training goals

- Basic and advanced training for shoulder arthroscopy.
- Triangulate, handle camera and tools with both dominant and non-dominant hand.
- Navigate and manipulate the joint for visualization.
- Use beach chair and lateral positioning.
- Diagnose and treat numerous pathologies.

## Training cases included:

### Didactic materials
- General concepts of arthroscopy; basic principles of shoulder arthroscopy.

### Basic skills cases
- Guided diagnostic glenohumeral; subacromial; palpation; triangulation; 15 point shoulder examination; and "catch the stars".

### Diagnostic cases
- Unknown cases; superficial rotator cuff tear and calcification; SLAP lesion; Bankart lesion; and healthy shoulder.

### Surgical cases
- Subacromial debridement; subacromial decompression; and loose body removal.

## Training goals

- Basic and advanced training for hip arthroscopy.
- Triangulate, handle camera and tools with both dominant and non-dominant hand.
- Palpate the bony landmarks and use fluoroscopy imaging to locate ideal access points.
- Create your own access portals.
- Joint traction and hip flexion; lateral and supine position.
- Diagnose and treat numerous pathologies.

## Training cases included:

### Basic skills cases
- Guided diagnostics central; triangulation central and peripheral; and "catch the stars".

### Diagnostic cases
- Healthy hip; Labrum rupture; CAM deformity; and cartilage flap on acetabulum.

### Surgical cases
- Loose body removal and CAM decompression.
### Training goals

**Basic and advanced training for knee arthroscopy.**
- Triangulate, handle camera and tools with both dominant and non-dominant hand.
- Navigate and manipulate the joint.
- Recognize important landmarks in the knee.
- Diagnose and treat numerous pathologies.

**Understand the concepts of ACL reconstruction with different complications.**
- Diagnose different kinds of ACL tears.
- Recognize ideal location for drill, guidewire, and graft.
- Perform ACL reconstruction.

**Benefits of modularity**
- One simulator, several medical disciplines.
- Share costs between departments.
- Standardize training across medical disciplines.
- Plug and play: modules are easy to switch.
- Save space.

### Training cases included:

**Didactic materials**
General concepts of arthroscopy; and basic principles of knee arthroscopy.

**Basic skills cases**
Guided diagnostics for knee and menisci; triangulation; “catch the stars”; and guided meniscectomy.

**Diagnostic cases**
Unknown cases; knee tour; flap and meniscus tears; bucket handle tears; parrot beak tear; arthrosis; and loose bodies.

**Surgical cases**
Various meniscectomy; unhappy triad; synovitis; and loose body removal.

**Didactic ACL materials**
Principles of ACL reconstruction; and anatomical concepts.

**Surgical ACL cases**
Guided and unguided ACL reconstruction; and ACL tears and ruptures.

### Modules available:

**VirtaMed PelvicSim™**
IUD placement and embryo transfer using the anatomic pelvic model.

**VirtaMed HystSim™**
Diagnostic & operative hysteroscopy using the anatomic pelvic model.

**VirtaMed UroSim™**
TURB, TURP and laser BPH treatment using the Simbox.
The VirtaMed ArthroS™ has been validated by several studies to make sure it is the most realistic, accurate and helpful tool on the market for arthroscopy training. For example, construct validity studies prove that the simulator recognizes the difference between experts and novices. Through validation studies we also know that simulator training helps, and that the VirtaMed ArthroS™ beats competition in realism.

Simulator training makes a difference, as shown by the ASSET scores of different groups after one training session and again after five training sessions on the VirtaMed ArthroS™ Knee. Although all tested learning was beneficial, training twice a week yielded the highest improvement.

VirtaMed ArthroS™ Shoulder beats the competition: The percentage of evaluation criteria met shows that the ArthroS™ reaches the highest number of good scores.

Robert T. Burks, M.D., Dept. of orthopedic surgery, University of Utah, USA

The ability of the simulator to show a large number of different pathologies, to identify them and to document them distinguishes the VirtaMed ArthroS™ from training on conventional models, but also from training in the operating room or on cadavers where this high number of variability is not present. This is really what makes the VirtaMed ArthroS™ a unique training tool.

James Bogener, M.D., Residency Program Director, University of Missouri—Kansas City, USA

After the initial investment, the VirtaMed ArthroS™ is a tremendous cost saver. Every time the resident uses the simulator instead of cadavers or low-fidelity models, it’s a 200–300 dollar savings for the residency program.