

ArthroVision®

Measuring with the probe

- ☐ Easy: learning texture
- ☐ Medium: cloth texture
- ☐ Hard: skin texture
- ☐ Test sequence
- ☐ Random sizes

Common settings

- ☐ Probe in left hand
- ☐ Outside view
- ☐ Show result text
- ☐ Indicate camera focus area
- ☐ Indicate camera field of view
- ☐ Show camera center line

Box rotation

- ☐ -90 degrees
- ☐ 0 degrees
- ☐ 90 degrees

Scope and camera control using robot arm

- ☐ Rotate camera only
- ☐ Rotate scope only
- ☐ Button controlled rotation

Abort exercise

0

Exit

Parameter	Value
Time (s)	104.1
Path (mm)	3311.6
Error 1 (mm)	0
Error 2 (mm)	0
	0
	0
	0

ArthroVision®

Virtual reality box trainer  
teaching basic skills  
of arthroscopy

Swemac

# ArthroVision

## Virtual reality box trainer teaching basic skills of arthroscopy

**Arthroscopy is a very common orthopedic procedure, but it is challenging from technical and psychomotor perspectives. In order to perform arthroscopy safely and efficiently, surgeons must become familiar with basic arthroscopy tools and equipment.**

If you never learn how to hold and use your arthroscopic tools and instruments properly, it is unlikely that you will develop excellent performance and once learned the wrong way, it is extremely hard to fix.

The answer is ArthroVision, a virtual reality simulator designed to teach basic arthroscopy skills.



## ArthroVision

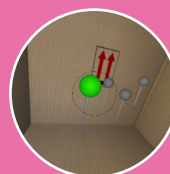
ArthroVision is a virtual reality simulator designed to teach basic arthroscopy skills. It is designed as an arthroscopy box trainer and includes force feedback in order to enhance the experience and training environment to the operator. Each training module offer different options such as different severity and the system measures numerous parameters.

The learning curve may be designed in which the operator starts with simple tasks and finish with more difficult tasks.

ArthroVision is preferably used to train residents and junior surgeons in basic skills of arthroscopy prior to more advanced surgical skills.

## Training Modules

Our objective has been to break down arthroscopy into the requisite elements that can be explained and trained, in the hopes of achieving a safer, more efficient, and higher quality learning experience. As of today, we offer the following training modules:



### Steady Camera and Telescoping

Move the scope from target to target and hold the scope steady while focusing at each target.

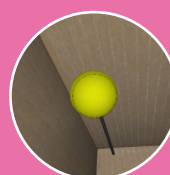
**Parameters:** Time, Path, Path in focus



### Periscoping 1 - Targets in Circle

Rotate the scope around itself at the same time as the position of the scope is held constant.

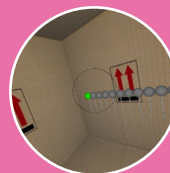
**Parameters:** Time, Path



### Track a Moving Target

Follow a moving target with the scope.

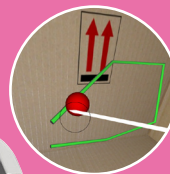
**Parameters:** Time, Time out of focus, Distance deviation, Centering deviation



### Deliberate Linear Scope Motion

Move the scope along a row of targets.

**Parameters:** Time, Path



### Track and Probe a Moving Target

Push a sphere along a track using the probe without touching the track. At the same time use the scope to hold the sphere in focus.

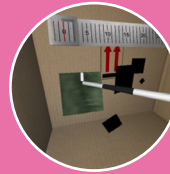
**Parameters:** Time out of focus, Manipulating time out of focus, Time Touching track, Distance and centering deviation



### Periscoping 2 - Scope Around Target

Move the scope around a target while focusing on inner target.

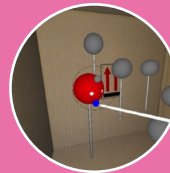
**Parameters:** Time, Path, Telescoping path, XY path, View direction deviation



### Measuring with the Probe

Measure sizes with a probe with a 5 mm long bent tip.

**Parameters:** Time, Path, Size deviation



### Steady Camera, Telescoping and Probing

Focus on a target and hold the scope steady while manipulating the target with the probe.

**Parameters:** Time, Time out of focus, Scope- and probe path, Manipulating time out of focus

# Swemac

Swemac Simulation AB  
Cobolgatan 1 • SE-583 35 Linköping  
Tel +46 (0)13-37 40 30 • [www.swemac.com](http://www.swemac.com)