Realists

Company Presentation

Apr 2023

Content

Realists

1. **Who is Realists?**

   Our mission, vision, values, team, history and customers

2. **Why Realists?**

   Some facts, numbers, advantages and testimonials

3. **Our Products and Services**

   Components, features, pathologies, applications, compatibility

4. **How to work with Realists**

   Business models and specifications

Realists is a worldwide operating surgical training provider who offers high-class solutions in the area of spine surgery.

Our **RealSpine Training Systems** are visually and haptically highly realistic.

Together with our scientifically based **Realists Training Concept** they form a perfect unit and make every training session a successful learning experience.

Who is Realists?

Our Vision

As market leader we drive health care education to increase learners' skills and to improve patient outcomes.

Our Mission

We offer individual best-in-class solutions for healthcare education by combining state-of-the-art technology with high-level didactics for a sustainable learning experience in a realistic working environment.

Who is Realists?

Our Corporate Values

Integer

Our relationships are based on honesty, reliability and moral principles. We are fair, we walk our talk and continuously strive for long-term partnerships.
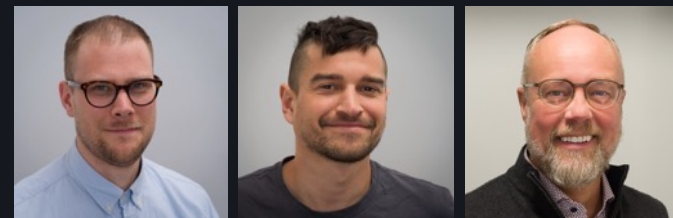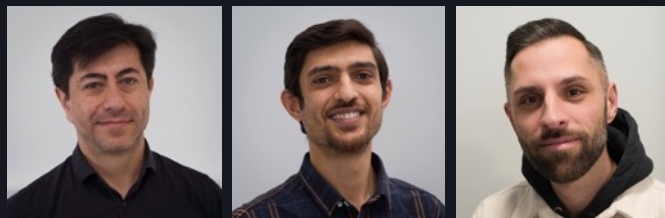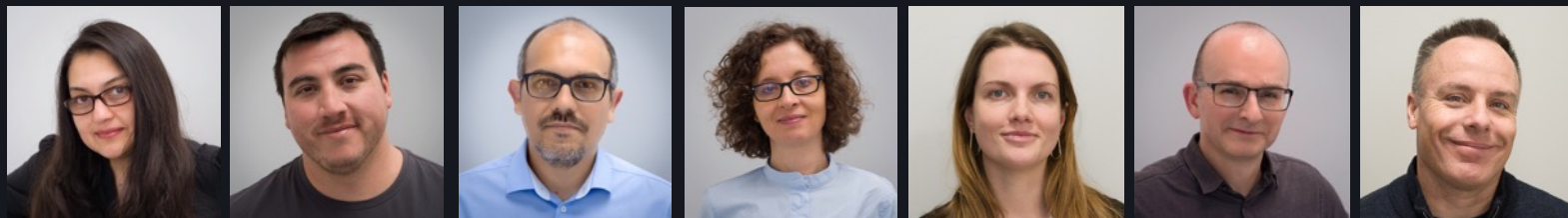
Creative

We want to make things work. On our way to optimal solutions, we think outside the box and leave beaten paths.
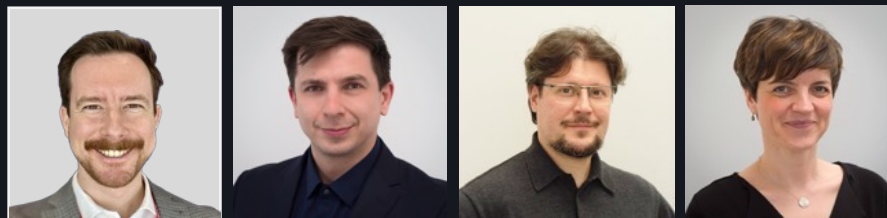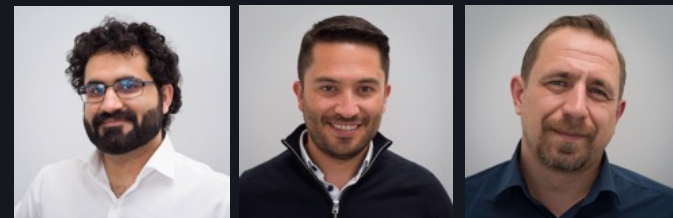
Independent

We trust our educational principles. We serve all partners with the same impartiality.

Sustainable

Economic, ecologic and social aspects are the compass for our actions.

Realists

Team

Realists Distribution Network

Brian Marks
Manager US Sales &
Business Development
USA

Globaltech Medical Devices
Mexico

Realists Headquarters
Leipzig, Germany

Stöckli Medical AG
Switzerland

Olviline LLC
Russia

H1 Care Co., Ltd.
South Korea

TOP– Medical Co.
Taiwan

Realists History

Start of research group

First cadaver-free workshop

Foundation of RSTT

Introduction of Spondylolisthesis

New Premises

Exhibitor in major spine congresses

Distribution of RealImaging

Introduction of cervical

Distribution partnerships

First test of technology

First RealSpine instructors course

Realists as new company name

Realists Experience Center

Introduction of RealSpine Lateral

Development of in-Hospital course

Introduction of endoscopic approach

New Business models

Introduction of Spondy Family

2010 2011 2012 2013 2014 2015 2016 2018 2019 2020 2021 2022 2023

Our Customers

Companies

BIEDERMANN MOTECH

DePuy Synthes
COMPANIES OF Johnson&Johnson

Intrinsic THERAPEUTICS

Johnson&Johnson
MEDTECH

joimax
Endoscopic Spine Experts

Medtronic

NuVasive

PHILIPS

RIWOSPINE
A Richard Wolf Company

stryker

StöckliMedical
Persönlich. Kompetent. Innovativ.

ZEISS CARL ZEISS MEDITEC

Associations

AOSPINE

Deutsche Wirbelsäulengesellschaft
DWG

THE EUROPEAN ASSOCIATION
OF NEUROSURGICAL SOCIETIES

EURO SPINE

Hospitals

Bergmannstrost
BG Klinikum Halle

British Hospital

CHARITÉ
UNIVERSITÄTSMEDIZIN BERLIN

HIC
Hospital Internacional
de Colombia

HUG Hôpitaux
Universitaires
Genève

HELIOS Kliniken

Hôpital du Valais
Spital Wallis

HOSPITAL DA LUZ

Kantonsspital
Baselland

Krankenhaus
Rummelsberg

Kuopio
University
Hospital

McGill University
Health Centre

NEURO SPINAL HOSPITAL

ST. JOSEF-STIFT SENDENHORST

St. Marien- und
St. Annastiftskrankenhaus

ST. OLAVS HOSPITAL
TRONDHEIM UNIVERSITY HOSPITAL

UNIKLINIK
KÖLN

Weill Cornell Medicine
Brain & Spine Center

Why choose Realists?

Due to our highly realistic representation of the situs

Skin   Bleeding   Intervertebral disc   Epidural Fat   Dura mater with CSF

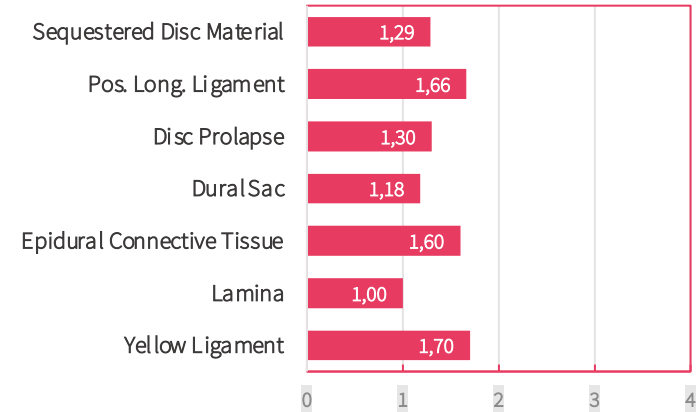Ligamentum Flavum   Lamina   Muscle   Herniated Disc   Posterior longitudinal ligament   Nerve root

Why choose Realists?

A study with experts in the field has proven the realism of the RealSpine Training System

Visual validation

Item	Value
Sequestered Disc Material	1,28
2nd Bleeding Point (Diffuse)	1,00
Stop 1st Bleeding Point (Bone Wax)	1,00
1st Bleeding Point (Vertebrae)	1,17
Pos. Long. Ligament	1,64
Disc Prolapse	1,33
Nerve Roots	1,67
Dural Sac	1,17
Epidural Connective Tissue	1,67
Lamina	1,17
Vertebrae 4/5	1,14
Yellow Ligament	1,42

Haptic validation

Item	Value
Sequestered Disc Material	1,29
Pos. Long. Ligament	1,66
Disc Prolapse	1,30
Dural Sac	1,18
Epidural Connective Tissue	1,60
Lamina	1,00
Yellow Ligament	1,70

The experts used a four-point forced choice scale:

1 – Very realistic
2 – Realistic
3 – Less realistic
4 – Very low realistic

Dr. Roger Härtl,
Professor of Neurological Surgery, Weill
Cornell Medicine Center for Comprehensive
Spine Care, New York, USA

"RealSpine is an excellent model for training and education. It feels like operating a real patient - its authentic anatomical structures, the pathologies, the intra-operative bleeding system make it a unique experience for every surgeon."

Why choose Realists?

Because of the advantages we offer manufacturers of medical devices

Realists

Highlight
your product features in life-like operation conditions

Gain more customers
with eye-catching set-ups in congress and events

Lower costs
30% cheaper than comparable surgical training

All inclusive
Preparation, logistics, assessment, consulting
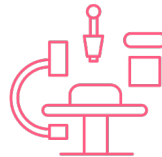
Compatible
with diverse technologies

Where, when and how
the training is needed

Why choose Realists?
Because of the advantages we offer manufacturers of medical devices

Effective training
skills improvement up to 25%*

All inclusive
preparation, logistics, assessment, consulting

Time saving
minimal impact on on-call planning

Standardization
Training on the same patient under the same conditions
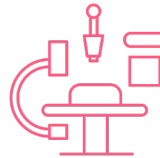
Compatible
with diverse technologies

Lower costs
30% cheaper than comparable surgical training

(*) Fenyöházi E, Jarvers JS, Torres OA, Adermann J, Voigtländer M, Selig C, Schrempf A, Härtl R, Josten C, Bernal Vera LE, Korb W (2018). Realitätsnahe chirurgischeTrainingsumgebungen für die Wirbelsäulenchirurgie. J Neurol Neurochir Psychiatr , 19, 96-102.

RealSpine vs Cadaver Course

RealSpine   **Cadaver Course**

RealSpine		Cadaver Course
Lower Costs	💲	Cost-intensive [1][2][4]
Standardization		Training without pathology [1][4]
Flexibility		Limited training spaces
Realistic Anatomy (Bleeding)		Postmortem Changes [2]
Synthetic materials		Biohazard [2][3]
Available worldwide		Limited Supply [1][2][4]

1. Gilbody, J., Prasthofer, A. W., Ho, K., & Costa, M. L. (2011). The use and effectiveness of cadaveric workshops in higher surgical training: a systematic review. Annals of the Royal College of Surgeons of England, 93(5), 347-52.
2. Ashraf Aziz, M & C McKenzie, James & S Wilson, James & Cowie, Robert & A Ayeni, Sylvanus & Dunn, Barbara. (2002). The human cadaver in the age of biomedical informatics. The Anatomical record. 269. 20-32. 10.1002/ar.10046.
3. Selim Mohamed Elshaer, Noha & Awad Elsayed Mahmoud, Madiha. (2017). Toxic effects of formalin-treated cadaver on medical students, staff members, and workers in the Alexandria Faculty of Medicine. Alexandria Journal of Medicine. 53. 10.1016/j.ajme.2016.11.006.
4. Singh, A., Sharma, R., Sharma, R., & Musmade, D. (2011). Challenges In Cadaver Availability For Learning And Research In Medical Sciences. International Journal of Medical and Clinical Research, 2(2), 67-71. doi:10.9735/0976-5530.2.2.67-71

Realists Training Concept

The Realists Educational Concept has proven a **25%** improvement in surgical **competences** with just **one** hands-on spine training*.

REALISTS TRAINING CONCEPT

CONVENTIONAL SIMULATION BASED TRAININGS

SKILLS
Ability to apply knowledge and use know-how to complete tasks and solve problems.

+

KNOWLEDGE
Theoretical and/or factual knowledge contributing to the development of competencies.

+

ATTITUDE
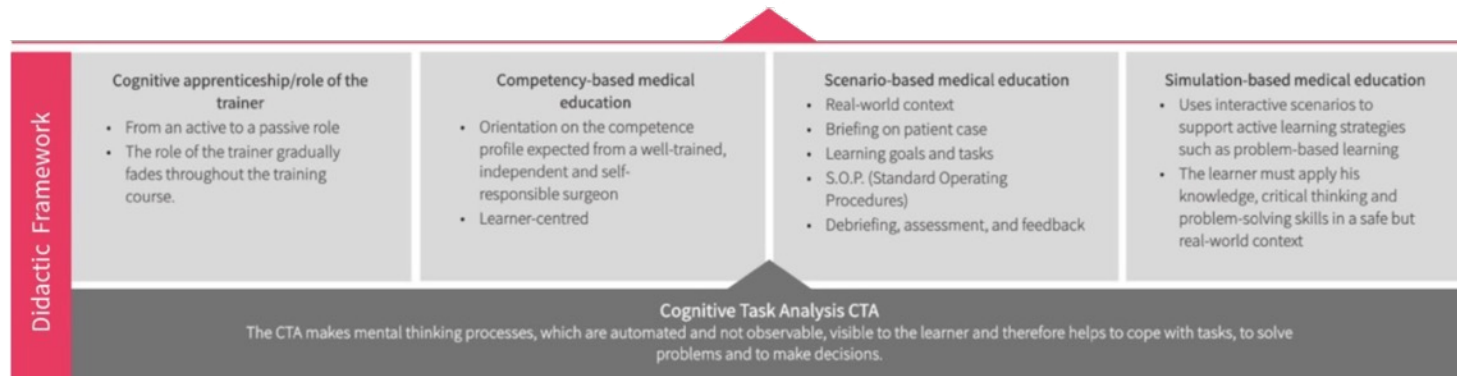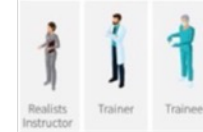Decision making on the occurrence of complications.

=

COMPETENCES
A combination of observable or measurable skills, knowledge and attitude that is necessary to perform a specific task.
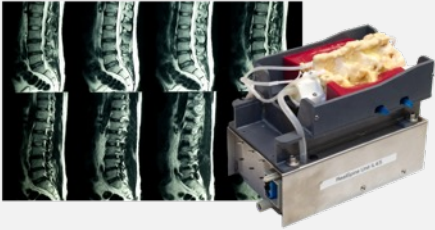
*Fenyöházi E, Jarvers JS, Torres OA, Adermann J, Voigtländer M, Selig C, Schrempf A, Härtl R, Josten C, Bernal Vera LE, Korb W (2018). Realitätsnahe chirurgischeTrainingsumgebungen für die Wirbelsäulenchirurgie. J Neurol Neurochir Psychiatr , 19, 96-102.
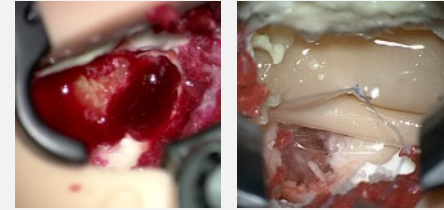
Realists Training Concept

Realists Instructor Trainer Trainee

Realists Training Concept

1 Trainee preparation
Online preparation tool

2 Trainer instruction
The Realists Instructor explains the educational concept and use of the training system to the trainer

3 Briefing course concept
The Realists Instructor explains to the trainees the Realists training concept

4 Briefing
Trainer introduces the "RealSpine Patient" who will be treated during the training course

5 Master presentation
Trainer operates one Realists module and shows all participants the surgical procedure

6 Training
Under the supervision of a trainer, the trainees operate a Realists module

7 Feedback
Trainer gives feedback on the performance of the trainees

Didactic Framework

Cognitive apprenticeship/role of the trainer
- From an active to a passive role
- The role of the trainer gradually fades throughout the training course.

Competency-based medical education
- Orientation on the competence profile expected from a well-trained, independent and self-responsible surgeon
- Learner-centred

Scenario-based medical education
- Real-world context
- Briefing on patient case
- Learning goals and tasks
- S.O.P. (Standard Operating Procedures)
- Debriefing, assessment, and feedback

Simulation-based medical education
- Uses interactive scenarios to support active learning strategies such as problem-based learning
- The learner must apply his knowledge, critical thinking and problem-solving skills in a safe but real-world context

Cognitive Task Analysis CTA
The CTA makes mental thinking processes, which are automated and not observable, visible to the learner and therefore helps to cope with tasks, to solve problems and to make decisions.
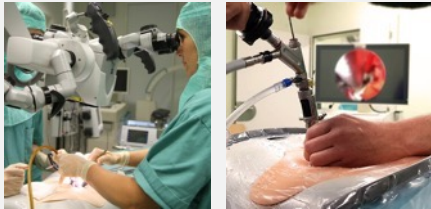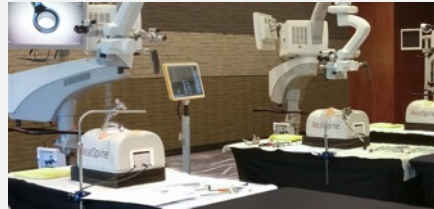
What makes RealSpine unique?

7 different models developed from actual patients

Highly realistic anatomy representation
(incl. bleeding and CSF)

Compatible with different visualization systems

Training anywhere, anytime

Compatible with multiple surgical technologies

RealSpine by Realists

Set up and components

System base

1

Lifelike anatomical
interchangeable cartridge

2

Cover with skin

3

Blood pressure controller

4

Our Portfolio

Complete solutions for spine surgery training

RealSpine

Basic MISS
- For a basic decompression of the lumbar spine
- Endoscopic / microscopic approaches

Advanced MISS
- For advanced decompression of the lumbar spine
- Endoscopic / microscopic approaches

Spondy X
- For Lumbar pedicle screw fixation
- Compatible with X-ray, surgical navigation and robotics

Spondy
- For decompression and stabilization of the lumbar spine
- Compatible with surgical navigation and robotics

SI
- For sacroiliac joint fusion
- Compatible with X-ray and surgical navigation

Lateral
- For lateral lumbar spine surgery
- ATP and Transpsoas approach

Myelopathy
- For decompression and stabilization of the cervical spine
- Compatible with surgical navigation and robotics

RealImaging
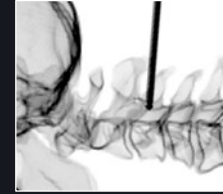
Radiation-free fluoroscopy
- Radiation-free X-ray simulation for surgical training with Realists products.
- Movement of instruments and implants in real-time
- Compatible with all instruments needed for a surgical procedure
- Portable, flexible and adaptable to any space.

Realists VR
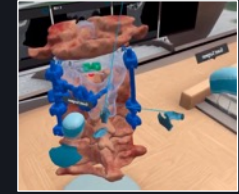
Pre- and post-op in virtual reality
- Complement your hands-on RealSpine training with a pre- and post-operative case study setup in virtual reality.
- 3D paintable anatomical models, 3D segmented patients, DICOM viewer, sample procedures, measurements, videos and more.
- Single or online multiuser sessions

What model of RealSpine is right for you?
Technical Compatibility

Procedures	Basic MISS	Advanced MISS	Spondy X	Spondy	Lateral	Myelopathy
Incision	◐	●	●	●	●	●
Flavectomy / Laminectomy	●	●		●		
Laminoplasty						●
Unilateral Decompression						●
Bilateral Decompression	●	●		●		●
Sequestrectomy	●	●				
Discectomy	◐	●		●	●	
Facetectomy	●	●		●		●
Fusion (Screw Fixation)			●	●	●	●
ATP/Transpsoas Approach					●	
Dura Closure		●		●		●
Bleeding Management		●		●		●

Haptic Feedback
◐ Basic
● Advanced

What model of RealSpine is right for you?
Technical Compatibility

Compatible Technologies	Basic MISS	Advanced MISS	Spondy X	Spondy	Lateral	Myelopathy
RealImaging						
External Navigation			●	●	●	●
Cages (TLIF/PLIF)	◑	●		●		
Cages (LLIF)					●	
Drilling	●	●		●		●
Pedicle Screws (Fusion)			●	●	●	●
Lateral Mass Screws (Fusion)						●
Dura Suture		●		●		●
Water Irrigation		●				
X-Ray			●		●	
Robotics			●	●		
Bleeding Management		●		●		●

Haptic Feedback
◑ Basic
● Advanced

RealImaging

Radiation-free X-ray simulation for surgical training with RealSpine.
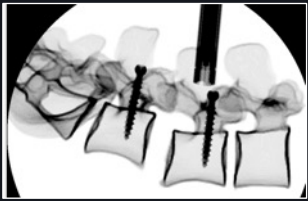
Real-time image-guided navigation of instruments, implants, screws, and more.
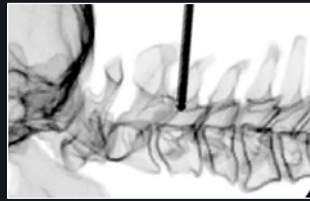
Accurate simulation (less than 0.5mm deviation).
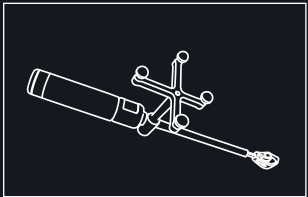
Compatible with all surgical instruments

Portable and flexible. Adaptable to any space. Use it anywhere.

Realists Reference Pointer

Realists' standard solution for precise guidance

• Guidance for precise positioning of instruments and implants

• Reference marker for position control

Part of the RealImaging package

Use of Real Surgical Instruments

Use your own instruments and see them in RealImaging.

Instrument Adaptation Process

For new instruments with which RealImaging is not yet compatible:

1. Provide instruments to Realists.

2. Realists to customize RealImaging and create instrument specific trackers

3. Return of instruments incl. trackers (trackers belong to the customer)
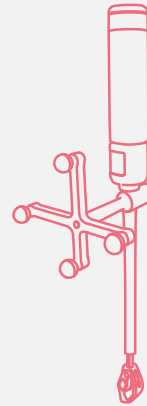
Tracker Production

Production of trackers for instruments with which RealImaging is already compatible.

One-time investment
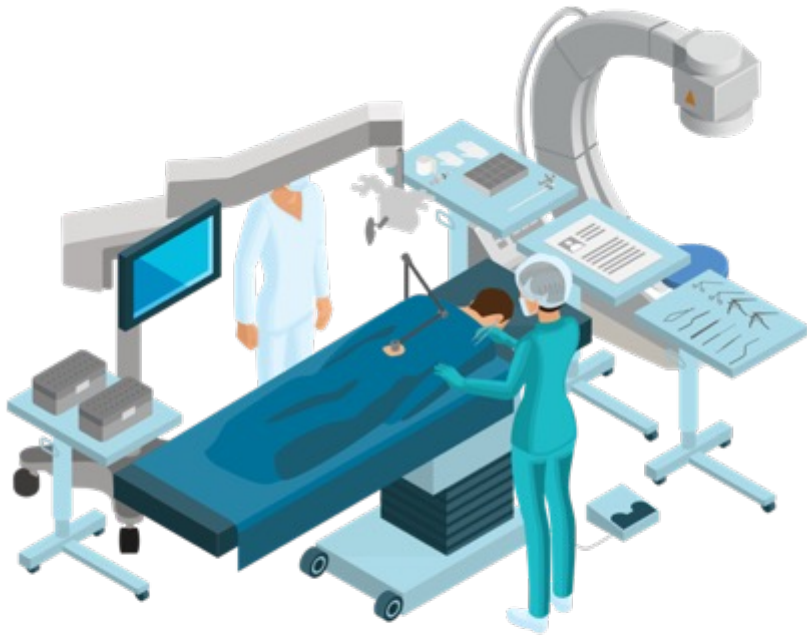
https://vimeo.com/441976473

Surgery in the Operation Room
Medical team + Medical equipment + patient

Surgical Training with Realists
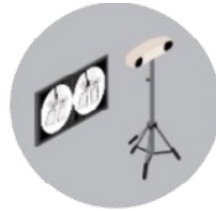Medical team + Medical equipment + RealSpine

Realists Training Setup

Surgery in the Operation Room
Medical team + Medical equipment + patient

Surgical Training with Realists
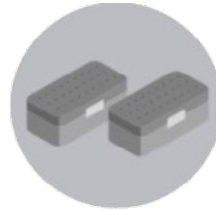Medical team + Medical equipment + RealSpine

Realists Training Concept
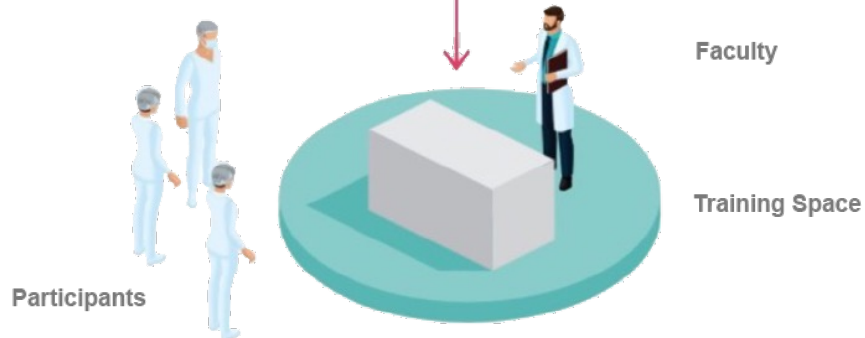
In-Hospital Training with RealSpine (example)

Mix –Bilateral decompression, TLIF and fixation with pedicle screws

Training for 6 participants
1 Group – 4 hours
2 Workstations
2 Trainers/Faculty
1 Certified RealSpine Instructor
3 participants per Workstation
3 participants share 1 module

Spinal Canal Stenosis   Spondylolisthesis

Support of Marketing Activities

You can highlight your product features with our Realists training systems for the spine. All RealSpine models are designed to be compatible with a wide variety of common medical devices and can be easily inserted with implants and screws. This makes them perfect for your next product event, whether as a webinar or in a live demonstration.

Dr. med. Andreas Korge
Head Physician, Spine Centre
Schön Klinik Munich, Germany

"The RealSpine Trainer is a brilliant simulation module for surgical interventions on the spine. With realistic representation of the intraoperative situs or the paravertebral and intraspinal anatomy, minimally invasive disc, decompression and fusion operations can be simulated. Defined pathologies (herniated disc, mono- and bilateral spinal stenosis, etc.) are available to both the prospective and established surgeon for minimally invasive surgery. The management of complications (dural lesion) can be trained. Realistic haptics and the use of correct surgical instruments provide an advantage over virtual reality simulations. Working with the RealSpine Training System helps to reduce intraoperative learning curves. Its use is not restricted to an actual operating environment but is guaranteed at any location."

Realists Recycling Program
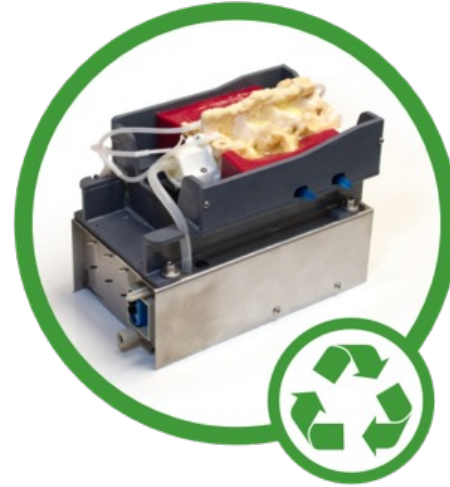
By returning the anatomical cartridges, we are able to **recycle** up to **83%** of their plastic components used during the training and **reuse** all other parts. **The Realists Recycling Program is instrumental in reducing our environmental footprint.**

All-in-One

Spine surgical training – far beyond the ordinary

Surgical Instruments
Basic surgical instrument set

Surgical Equipment
Suction devices, surgical drills and other disposable surgical supplies

Realists Visualization
2D full-HD camera incl. LED illumination for visualization of the situs and co-observation

Real**ists**

Realists Training Concept
Didactic concept for efficient learning and best possible training outcomes

Training Support Services
Support in the organization and implementation of the training on site or remotely

Logistic Services
Providing global access to top-notch spine surgery training

Our R&D team is operating at full capacity!

Realists

in
Realists Training Technologies GmbH

Instagram
realists_realspine

f
Realists GmbH

Twitter
@RealSpine

vimeo
Realists GmbH