

## Training in endoscopic surgery (European model)

Rudi Campo, MD  
LIFE  
Leuven Institute for Fertility and Embryology  
Leuven - Belgium

European  
**theAcademy** of  
Gynaecological  
Surgery



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## Training Programme in OB & Gyn

1. Diagnostic procedures
  - Colposcopy: 50
  - Hysteroscopy: 25
  - Gynaecological ultrasound examination: 100
  - Laparoscopy 25
2. Gynaecological surgery
  - Adnexal surgery (eg tubal ligation, ectopic pregnancy, ovarian cyst) 30 (at least 10 laparoscopically)
  - Hysterectomy: 40 (abdominal: 15; laparoscopic approach 10, vaginal: 15)
  - Prolapse surgery: 10
  - Breast surgery including cancer: 20



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## Training and accreditation in Laparoscopic Surgery

Challenged by

1. Boundaries of traditional "apprentice – tutor" model
2. Continuous pressure on the cost-efficiency of procedures
3. Ethical objective to limit morbidity and error rate

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### 1. Boundaries of traditional apprentice – tutor model

- Necessity of high volume of surgical procedures.
- Insufficient availability of skilled mentors.
- Time consuming system
- Difficulties in objective assessment of clinical competence on different surgical levels

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### 2. Continuous pressure on the cost – efficiency of procedures

- OR time
- Risk management
- Cost structure for training and methods of credentialing
- Reimbursement policy

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### 3. Ethical objective to limit patient morbidity and error rate

- Because of unacceptable amount of serious (lethal) complications in common laparoscopic procedures within general surgery and gynaecology in the Netherlands the ministry of health performed a major inspection regarding patient safety with a report published in November 2007

Ref: <http://www.igz.nl/publicaties/rapporten/2007/mic>

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## Standardisation of training programs necessary !

To deal with the assurance of patient safety, it seems obvious, but not yet implemented , that future Laparoscopic surgeons should possess objective measurable theoretical knowledge and practical skills, prior to enter in a one to one clinical training – teaching program.

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## Define necessary individual skills prior to one to one training system.

- Basic theoretical knowledge of Anatomy and Surgical principles
- Basic theoretical knowledge of instrumentation and OR functioning.
- Full acquisition of Basic Laparoscopic Psychomotor skills (LPS)
  - Depth appreciation from 2D screen using subtle visual clues
  - Remote handling of instruments without tactile feedback
  - Hands-eyes coordination
  - Fine motor skills
    - Long Instruments
    - Fulcrum effect
- Full acquisition of Laparoscopic Suturing Skills
- Basic practical knowledge of instrumentation and OR functioning.

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## Proficiency testing in Laparoscopic Psychomotor Skills .

Define and validate **in vitro exercises** to train and to test the Laparoscopic Psychomotor Skills (LPS).

- The practical skills refer only to the psychomotoric proficiency for correct camera and instrument handling and isolates it from the surgical expertise.
- Although several devices and methods are available most studies are focussed on the validation of models that recreate operative conditions combining surgical and psychomotor skill evaluation.
- Mainly virtual reality models are proposed for this evaluation but as they are still very expensive a simple and broad implementation is not feasible today.

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## Laparoscopic Skills Training and Testing model (LASTT)

Scientific evidence demonstrates that a simple, cost friendly and reproducible inanimate model (LASTT) containing 3 exercises is suitable for testing and training LPS.

Exercise 1 measures camera navigation,

Exercise 2 measures the hand eyes coordination

Exercise 3 measures bimanual coordination

Feasibility and construct validity of a novel Laparoscopic Skills Testing and Training model (LASTT): Carlos Roger Molinas, Gunter De Win, Ortrun Ritter, Joerg Keckstein, Marc Miserez and Rudi Campo, Gynaecological Surgery, Volume 5, Number 4 / November, 2008.  
A valid model for testing and training Laparoscopic psychomotor skills: Rudi Campo, Cristoph Reising, Yves Van Belle, Joseph Nassif, C. R. Molinas, Gynaecological Surgery, Volume 7, Number 2, 133 -141.

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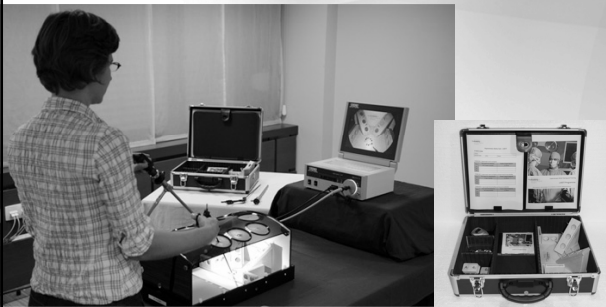
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## The LASTT set up



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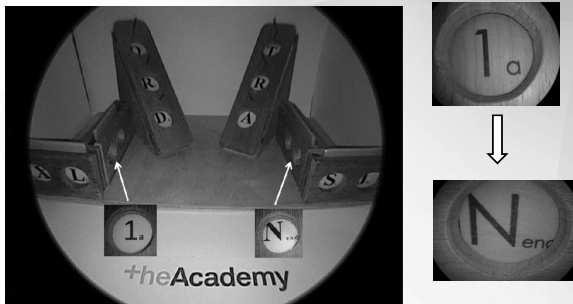
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## Exercise 1 : Camera navigation



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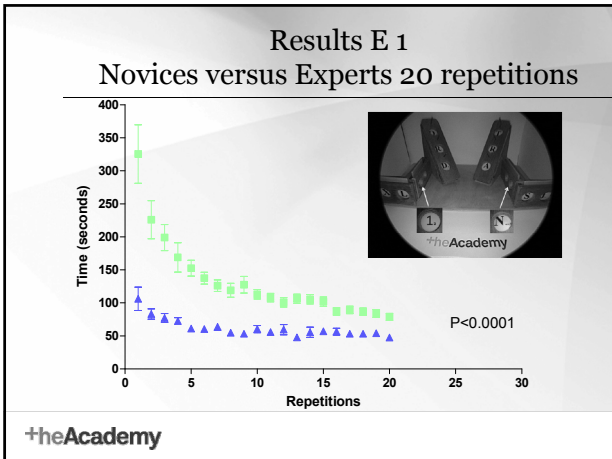
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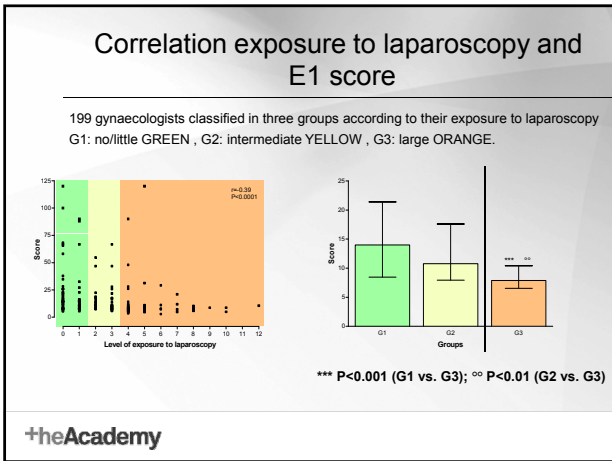
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### Exercise 2 : Hand eyes coordination

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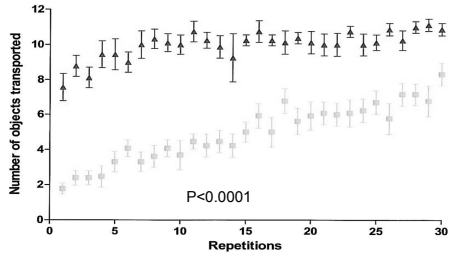
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## Results E 2 Novices versus Experts 30 repetitions



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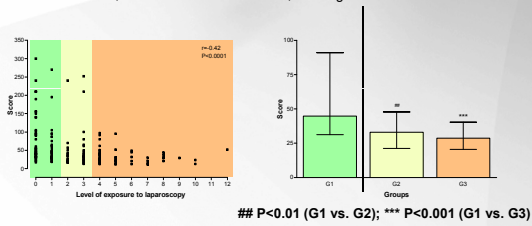
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## Correlation exposure to laparoscopy and E2 score

199 gynaecologists classified in three groups according to their exposure to laparoscopy  
G1: no/little GREEN, G2: intermediate YELLOW, G3: large ORANGE.



## P<0.01 (G1 vs. G2); \*\*\* P<0.001 (G1 vs. G3)

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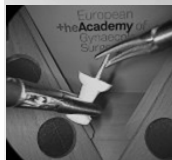
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## Exercise 3 : Bimanual coordination

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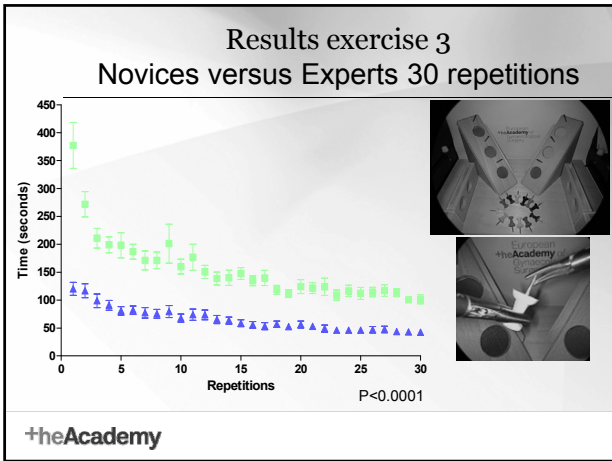
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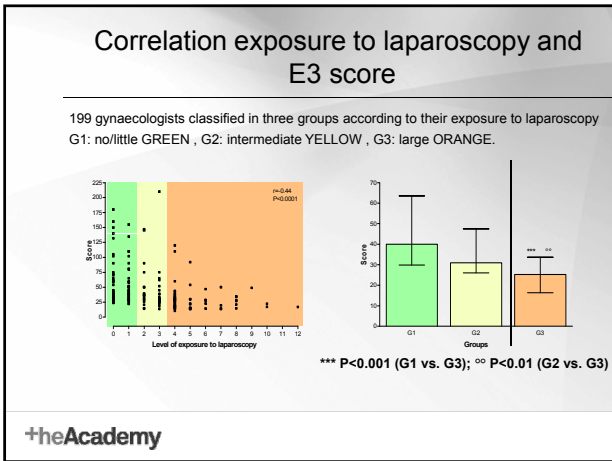
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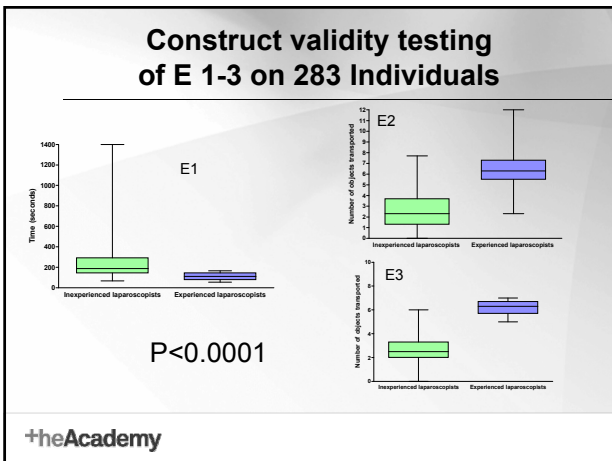
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## LASTT

- The data indicate that systematic repetitions of simple tasks, even without any tutor's feedback have a major impact in the learning process.
- The learning curves demonstrate that the expert scores remain better than novices even after many repetitions, proving the construct validity of the model.
- Major exposure to laparoscopic surgical procedures provides full proficiency in LPS.
- It is estimated that an individual needs around 100 exposures to laparoscopic procedures to achieve the optimal instrument handling skills.

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## LASTT



- LASTT  
Laparoscopic skill training and testing . Training model and Test model.

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## LASTT Results

### A. Benchmark Data

Exposure to	LASTT score		
Laparoscopy	excellent	intermediate	minimal
Nul or minimal	27,9%	36,8%	35,3%
Intermediate	46,0%	18,0%	36,0%
Major	76,8%	17,1%	6,1%

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## LASTT Results

### B. Distribution Course Group

LASTT score		
excellent	intermediate	minimal
56,25%	18,75%	25,00%

### C. Your personal score

Exposure to laparoscopy :

(based on your identification data)

Your position in the Benchmark group

Your place in the Benchmark group  
on a scale from 0 to 100

Major

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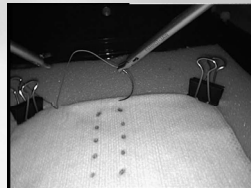
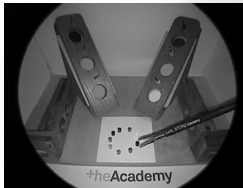
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## Laparoscopic psychomotor skills versus suturing skills ?



Defining a structured training program for acquiring laparoscopic Psychomotor Skills and Suturing Skills  
Carlos Roger Molinas, MD, PhD1,2 and Rudi Campo, MD 1,3 Gynaecological Surgery, Volume 7, Number 4, 427-435

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## Laparoscopic suturing skills

- Study to Evaluate the learning curve of LPS and intracorporeal knot tying.
- 60 gynaecologists with little or no experience in laparoscopy 25-50 years old.
- 3 Laparoscopic exercises
  - LASTT Dominant hand (LPS)
  - LASTT Non-dominant (LPS)
  - Intracorporeal knot-tying
- Each individual is tested for each exercise at start , after training periode LPS and after training ICK

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### 3 different training groups for LASTT

	Training		
	Group 1	Group 2	Group 3
LASTT Dominant hand (LPS)	v	v	-
LASTT Non-dominant (LPS)	v	-	-
Intracorporeal knot-tying	v	v	v

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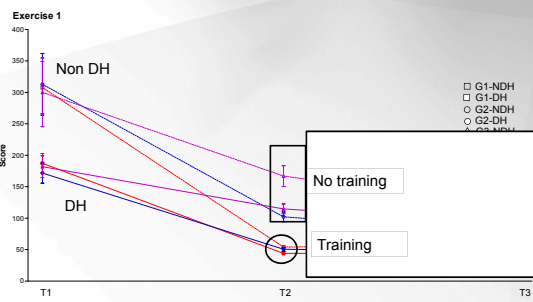
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### Results LPS DH and Non DH Start and after training LPS



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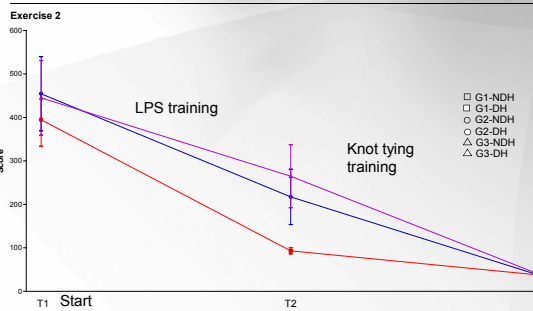
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### Test results knot tying



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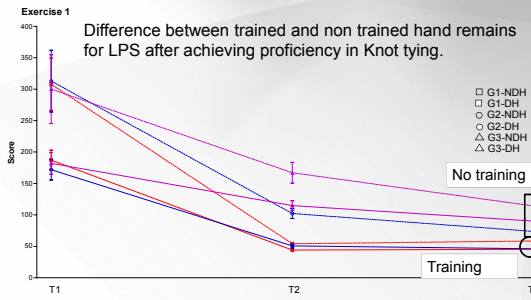
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## Results LPS DH and Non DH



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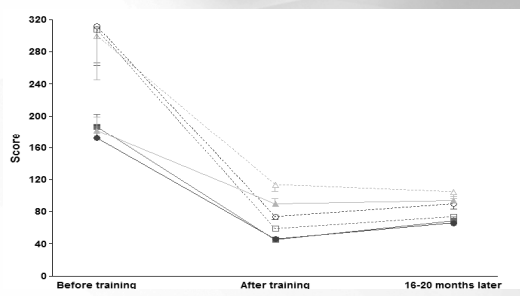
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## Skill retention LPS



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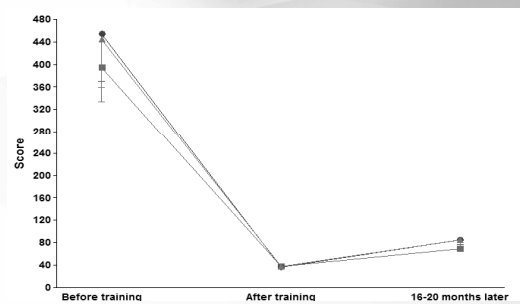
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## Suturing Skill retention ?



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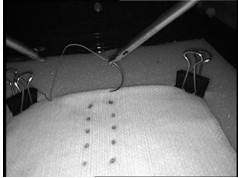
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## How to acquire proficiency in Laparoscopic suturing?

Students with Green code at LASTT certification test achieve proficiency in an intensive 3 day Laparoscopic suturing course



A to Z Laparoscopic Suturing Course  
<http://www.theacademyhouse.org>

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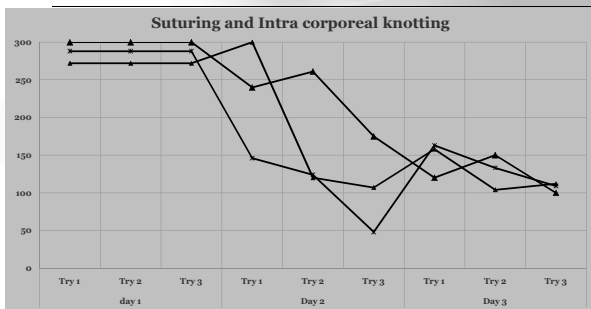
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## Learning curve at 3 day Laparoscopic suturing course



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Measure objectively the necessary individual skills prior to in OR training.

### ESGE-Academy official Licence in Laparoscopic Surgery

#### Practical tests

- LASTT : Construct, Face and Content validity proven for Laparoscopic Psychomotor skills (LPS)
- SUTT: Laparoscopic Suturing Skills test.

#### Theoretical tests

- Basic theoretical knowledge of surgical principles
- Basic theoretical and practical knowledge of instrumentation and OR functioning.

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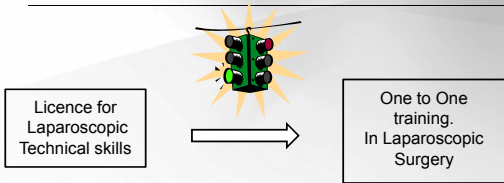
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## Training and accreditation in Laparoscopic surgery



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## Laparoscopic Skills : ESGE approach

### • Laparoscopic Surgical Skills

- ESGE 1
- ESGE 2
- ESGE 3
- ESGE 4

### • Laparoscopic Technical Skills

- Level 1
- Level 2
- Level 3

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## Laparoscopic Surgical Skills : ESGE classification

### ESGE 1

- Diagnostic laparoscopy
- Sterilization
- Needle aspiration of simple cysts
- Ovarian biopsy

### ESGE 3

- Hysterectomy
- Myomectomy
- Treatment of incontinence
- Surgery for severe endometriosis
- Extensive adhesiolysis including bowel and ureter
- Repair of simple intestinal or bladder injuries

### ESGE 2

- salpingotomies for ectopic pregnancy
- salpingectomies
- salpingo-oophorectomies
- ovarian cystectomies
- adhesiolysis, including moderate bowel adhesions
- treatments of mild or moderate endometriosis – salpingostomy and salpingo-ovariolysis

### ESGE 4

- Major surgery like rectovaginal, oncology, intestinal surgery, urogynaecology, oncology

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## Laparoscopic Technical Skills : ESGE License

- 3 levels

	LASTT	SUTT	Activity	Theoretical
Basic skills	NO RED	No qualification	0 - <50	1
Advanced skills	max one oranje	NO red	50 - 200	2
Expert skills	ALL GREEN	ALL green	> 200	3

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## Laparoscopic Technical Skills : ESGE License

### Activity profile

The total amount of laparoscopic procedures as assistant or primary surgeon

The nature of the procedures is not important only the total amount.

### Theoretical exam

1. Basic Anatomy, Laparoscopic instrumentation, notion of hardware
2. OR organisation, Full hardware instrumentation functioning, complication management
3. Retroperitoneal anatomy, full OR organization and complication management.

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## Laparoscopic Surgical Skill : ESGE accreditation

Laparoscopic surgeon Level	Laparoscopic Technical Skills	Level procedures	Amount First surgeon	duration	Training and education
1	Basic	ESGE 1	20	Life time	Sutt course
2	Advanced	ESGE 2	50	5 year	Animal or cadaver
3	Expert	ESGE 3	50	5 year	Instructor, publication
4	Master	ESGE 4	40	LIFE time	Instructor publication Life surgery

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**Make In-House Training Accessible to Everyone:  
The Laparoscopic Training Station acc. to the European  
Academy Gynecological Surgery (EAGS)**



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**LASTT package for in house training  
and testing**



- Package for in house training with manual, cd rom and acces to Academy data base for in house testing .
- Sturing and extensive training model is in last phase of developement.

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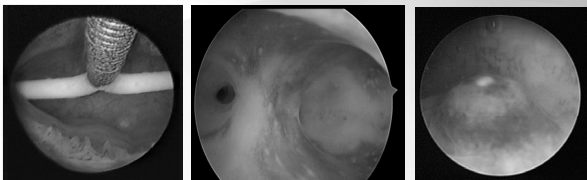
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**What happenes with Hysteroscopy ?**



Hysteroscopic skills are different from laparoscopic ones and the development of a model to messure psychomotor skills has taken more time than expected.

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23/04/2008

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## HYSTT psychomotor skills



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## HYSTT in preparation



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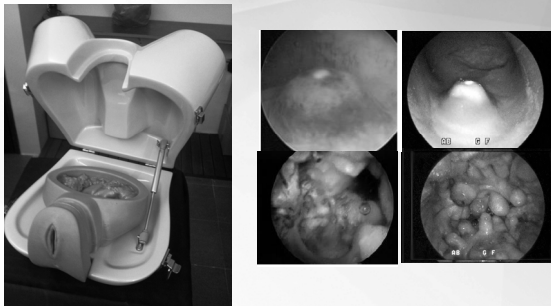
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## HYSTT



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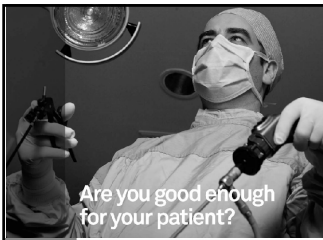
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**Are you good enough for your patient?**

Assessment and Certification of Laparoscopic Psychomotor Skills with LASTIT method

The European Academy of Gynaecological Surgery organizes training and certification for Laparoscopic Psychomotor Skills using the LASTIT method. Go to: [www.theacademyhouse.org](http://www.theacademyhouse.org) for the list of workshops and venues. Online subscription possible.

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T +32(0)432029 - [www.theacademyhouse.org](http://www.theacademyhouse.org)

**Take Home message**

EBCOG ESGE and EAGS have officially stated that it is necessary to evaluate the individual on his or her technical skills prior to enter the in OR training.

Every teaching hospital has to provide a simple in vitro training lab to acquire the LPS and suturing skills for their residents and surgeons.

More info on [www.theacademyhouse.org](http://www.theacademyhouse.org)

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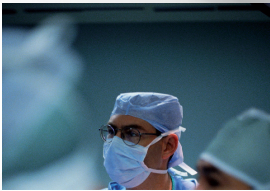
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Endoscopy Courses 2008

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**More info on the training programmes in laparoscopic surgery**

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[www.theacademyhouse.org](http://www.theacademyhouse.org)

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