

Medical Expert: Technical Skills Competency Expectations for Junior Residents in General Surgery residency at the University of Toronto (Updated July 2015)

It is reasonable to assume that the acquisition of technical proficiencies is a gradual and graduated phenomenon and that all trainees move along a continuum, each at their own pace. However, it is also reasonable to set out some expectations as benchmarks for both faculty and residents to ensure that trainees have achieved the essential technical skills that would allow their matriculation into senior residency.

It is understood that the acquisition of technical skills is only one of many competencies that residents must master in order to progress successfully through residency.

Table 1: (fundamental, intermediate and advanced skills essential to success in the operating room are listed).

Fundamental skills: are those that should be repeatedly practiced and *mastered* outside of the OR before they are demonstrated in the operating room. Residents must make use of the facilities provided to them in the surgical skills lab, laparoscopic simulator or other low fidelity, inanimate models provided in order to develop proficiency in these skills. It is expected that residents will invest independent study time to ensure that they develop competency in these skills. Faculty will expect a certain mastery of these skills within the first 6 months of training.

Intermediate skills: are those that will be practiced and honed in the operating room through deliberate practice. It is expected that trainees will master these intermediate level skills by the completion of the first year of training.

Advanced skills: are continually perfected through senior residency and you should see gradual improvement in these domains over years. If you feel that you are not progressing in these skills, ask for specific feedback.

Table 1 – Technical skills acquired during residency		
Skill	Level	Completed by ...
One handed knot tying	Fundamental	Within 6 months of training
Two handed knot tying	Fundamental	Within 6 months of training
Atraumatic skin opening and closure	Fundamental	Within 6 months of training
Intra-corporeal knot tying	Fundamental	Within 6 months of training
Knowledge of patient, understanding of indication for surgery	Fundamental	Within 6 months of training
Knowledge of anatomy relevant to the operation	Fundamental	Within 6 months of training
Skill	Level	Completed by ...
Use of cautery	Intermediate	By end of first year
Use of forceps, operating with two hands	Intermediate	By end of first year
Gentleness of tissue handling	Intermediate	By end of first year
Laparoscopic camera handling	Intermediate	By end of first year
Skill	Level	Completed by ...
Sharp dissection	Advanced	By end of PGY5 year
Obtaining exposure	Advanced	By end of PGY5 year
Staying in the correct plane	Advanced	By end of PGY5 year
Moving the case along	Advanced	By end of PGY5 year
Efficiency of movements	Advanced	By end of PGY5 year

Note: The Advanced Trauma Life Support (ATLS) course and the Fundamentals of Laparoscopic Surgery (FLS) course should be completed by the end of your PGY1 year.

In Table 2: We have enumerated the operations and procedures that residents should have completed by the end of their **PGY2 year**. The numbers listed should be considered the minimum standard.

Table 2

Operation/Procedure	Minimum Number
Gastroscopy:	
In the Surgical Skills Lab	5
In the endoscopy suite (PGY2 rotation)	50
Colonoscopy:	
In the Surgical Skills Lab	5
In the endoscopy suite (PGY2 rotation)	100
Tracheostomy – percutaneous and open:	
In the Surgical Skills Lab	1
Opening and closing of fascia:	
In the Surgical Skills Lab	3
In the OR	15
Hand sewn bowel anastomosis (part or whole):	
In the Surgical Skills Lab	3
In the OR	3
Stapled bowel anastomosis (part or whole):	
In the Surgical Skills Lab	3
In the OR	2
Insertion of laparoscopic trocars:	
In the Surgical Skills Lab	3
In the OR	15
Fundamental of Laparoscopic Skills course:	
In the Surgical Skills Lab	Aim to complete by the end of PGY2/3
First assistant for major laparotomy	20
Appendectomy	15
Cholecystectomy	15
Repair groin hernia:	
Pediatric	10
Adult	10
Chest tube insertion	10
Central line insertion	5
Breast lumpectomy	5
I+D perianal abscess	5
Mobilization of colon (part or whole)	3