



Pleural Assessment Tools©



UGSTAT
ICC-STAT

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UG-STAT

Ultrasound-Guidance Skills and Tasks Assessment Tool
for pleural diagnosis, thoracentesis and chest tube
insertion*

*Clinical research/validated assessment tool with instructions, quiz and quiz answers applicable to an international audience of health care providers. Designed and developed by Dr. Matthew Salamonsen and team, Brisbane, Australia See: Salamonsen M, McGrath D, Steiler G, et al. Chest 2013

Ultrasound-Guided Thoracentesis Skills and Tasks Assessment Tool (UGSTAT)

Name: _____ Position _____

Assessor Name: _____ Date _____

Prior thoracic US experience: Educational Course Yes No # US performed to date: ____

Instructions

Ensure all equipment is available including US machine, probes and US gel.

Please **read instructions in red** below. **You may repeat instructions and assist with location of the US controls when asked, but Do NOT give any extra prompting or ask additional questions.** If a participant **requires prompting, score zero** for that assessment point.

Educational Item	Score
1. "Please tell me what the following controls on the US machine do: - name each control" (1 point each, target 10 points) <input type="checkbox"/> On/Off <input type="checkbox"/> Depth <input type="checkbox"/> Focus <input type="checkbox"/> Time-gain-Compensation (TGC) <input type="checkbox"/> Freeze <input type="checkbox"/> Overall gain <input type="checkbox"/> Harmonics <input type="checkbox"/> Dynamic range <input type="checkbox"/> Frequency control <input type="checkbox"/> Image capture	Score ____/10
2. "Tell me the name of each of these probes" point to linear and convex probe. (3 points each, target 6 points) <input type="checkbox"/> Linear <input type="checkbox"/> Curved	Score ____/6
3. "What would you do to prepare the US machine for the exam? What probe would you use? How would you position the patient?" (3 points each, target 12 points) <input type="checkbox"/> Patient data <input type="checkbox"/> Presettings <input type="checkbox"/> Probe <input type="checkbox"/> Patient position	Score ____/12
4. "Now start the US exam. You may ask for the location of specific US controls. Describe what you are doing." Uses correct probe grip, orientation and handling. (3 points each, target 6 points) <input type="checkbox"/> Grip <input type="checkbox"/> Orientation and handling	Score ____/6
5. Able to optimize sonographic image. You can assist if required but score zero if assistance is given. (3 points each, target 9 points) <input type="checkbox"/> Depth <input type="checkbox"/> Focus <input type="checkbox"/> Time-Gain-Compensation	Score ____/9
6. "Please show me the liver/spleen (dependent on side), lung, and superior margin of rib" (4 points each, target 12 points). <input type="checkbox"/> Liver or Spleen inferior to effusion <input type="checkbox"/> Lung superior to effusion <input type="checkbox"/> Rib margin	Score ____/12
7. "Show me the area on the chest wall corresponding to the maximal depth of effusion" (target 4 points) <input type="checkbox"/> Identifies site on chest wall corresponding to maximal depth of effusion	Score ____/4
8. "Now measure the distance from skin to effusion and skin to a suitable needle depth" (target 3 points) <input type="checkbox"/> Accurately measures distance to effusion and suitable needle depth	Score ____/3
9. "Would you describe loculations as absent, minor or extensive? Please place your finger on the skin where you would mark to insert the needle" Check the mark to confirm it is at superior border of rib. (4/3/3 points each, target 10 points) <input type="checkbox"/> Correctly indicates absent loculations <input type="checkbox"/> ID correct site on skin for needle insertion <input type="checkbox"/> Site is at top of rib	Score ____/10
10. Ask candidate to complete UGSTAT Quiz questions sheets (1 point each, target 10 points) <input type="checkbox"/> Image 1 <input type="checkbox"/> Image 2 <input type="checkbox"/> Image 3 <input type="checkbox"/> Image 4 <input type="checkbox"/> Image 5 <input type="checkbox"/> Image 6 <input type="checkbox"/> Image 7 <input type="checkbox"/> Image 8 <input type="checkbox"/> Image 9 <input type="checkbox"/> Image 10	Score ____/10
11. Overall performance/fluidity of movement (Score 0 for unsatisfactory, 9 for satisfactory, 18 for excellent - target 18 points) <input type="checkbox"/> Unsatisfactory <input type="checkbox"/> Satisfactory <input type="checkbox"/> Excellent	Score ____/18

FINAL GRADE

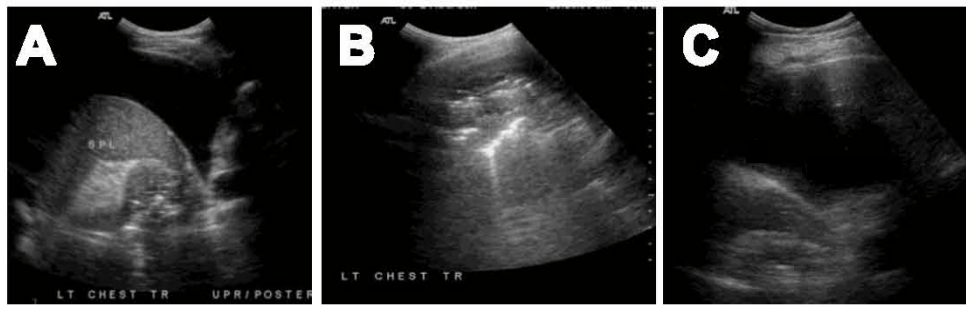
PASS

NEEDS IMPROVEMENT

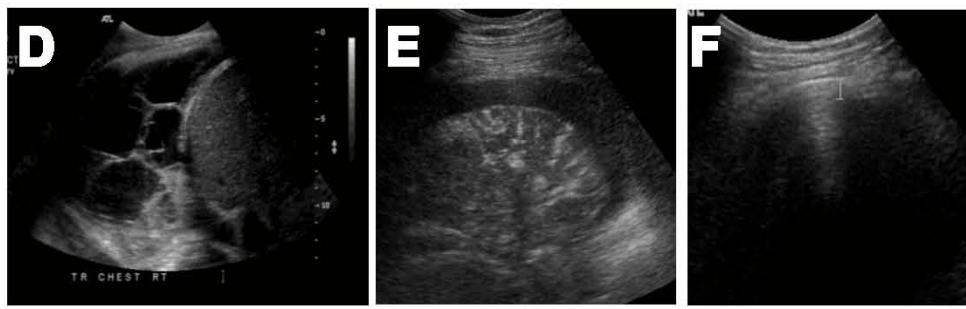
SCORE _____/100

UGSTAT Quiz Questions

Name _____



Only FIVE of these photos have corresponding image descriptions

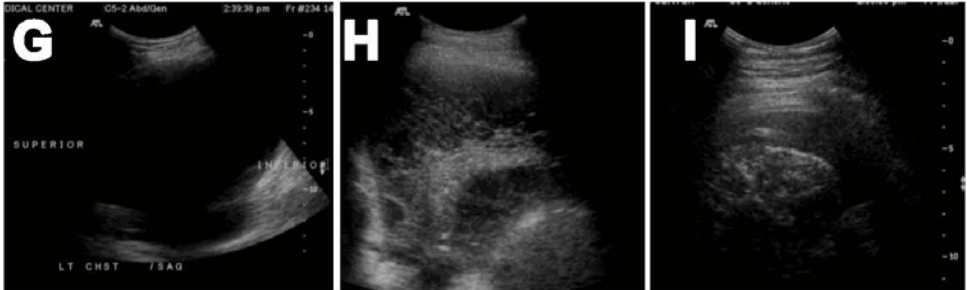


UGSTAT Question 10: Match the sonographic photo (A-F) to the corresponding 5 descriptions (Only one response per description)

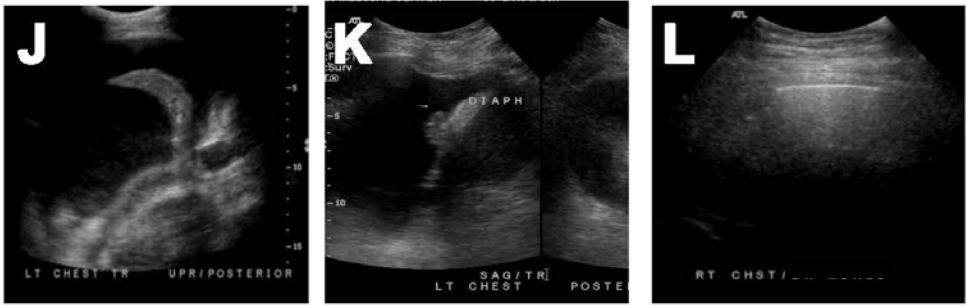
<p style="text-align: center;">_____</p> <p style="text-align: center;">No Response</p>	<p style="text-align: center;">_____</p> <p>1. Complex effusion with hyperechogenic shadows</p>	<p style="text-align: center;">_____</p> <p>2. Multiloculated (complex septated) effusion</p>
<p style="text-align: center;">_____</p> <p>3. Ribs with posterior acoustic shadowing</p>	<p style="text-align: center;">_____</p> <p>4. Anechoic left-sided effusion</p>	<p style="text-align: center;">_____</p> <p>5. Lung consolidation (hepatization)</p>

UGSTAT Quiz Questions

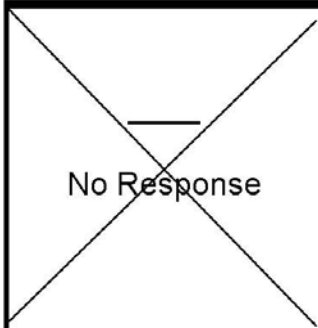
Name _____

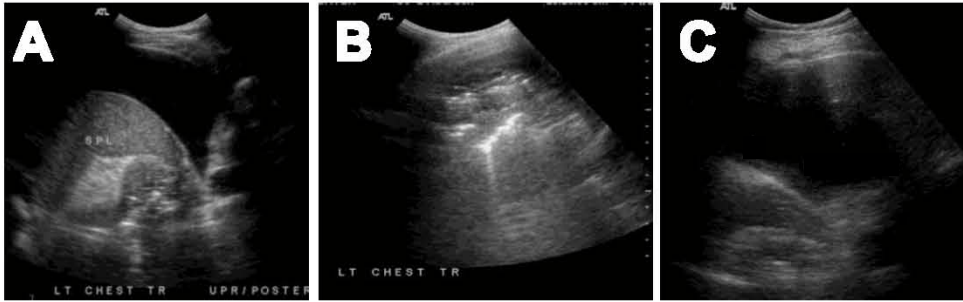


Only FIVE of these photos have corresponding image descriptions

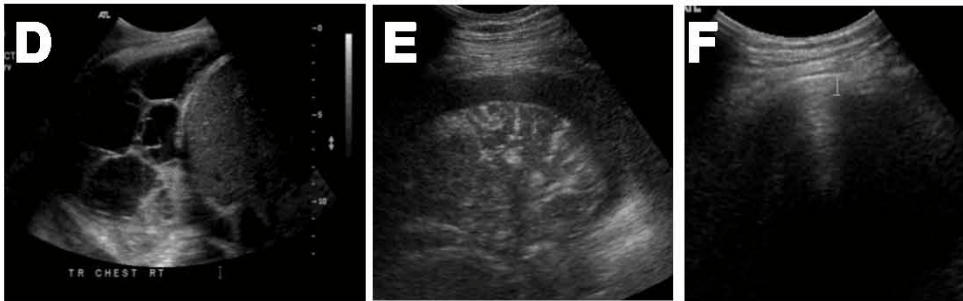


UGSTAT Question 10: Match the sonographic photo (A-F) to the corresponding 5 descriptions (Only one response per description)

 <p>No Response</p>	<p>_____</p> <p>6. Floating lung sign</p>	<p>_____</p> <p>7. Complex non septated effusion</p>
<p>_____</p> <p>8. Diaphragmatic nodules</p>	<p>_____</p> <p>9. Effusion in severely obese person</p>	<p>_____</p> <p>10. Large anechoic effusion</p>



Only FIVE of these photos have corresponding image descriptions

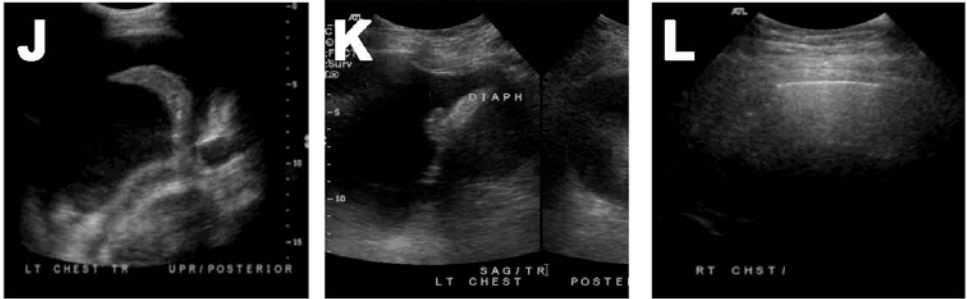


UGSTAT Question 10: Match the sonographic photo (A-F) to the corresponding 5 descriptions (Only one response per description)

<p style="text-align: center;">_____</p> <p style="text-align: center;">No Response</p>	<p style="text-align: center;"><u>B</u></p> <p>1. Complex effusion with hyperechogenic shadows</p>	<p style="text-align: center;"><u>D</u></p> <p>2. Multiloculated (complex septated) effusion</p>
<p style="text-align: center;"><u>F</u></p> <p>3. Ribs with posterior acoustic shadowing</p>	<p style="text-align: center;"><u>A</u></p> <p>4. Anechoic left-sided effusion</p>	<p style="text-align: center;"><u>E</u></p> <p>5. Lung consolidation (hepatization)</p>



Only FIVE of these photos have corresponding image descriptions



UGSTAT Question 10: Match the sonographic photo (A-F) to the corresponding 5 descriptions (Only one response per description)

<p style="text-align: center;"><u> </u> No Response</p>	<p style="text-align: center;"><u> </u> 6. Floating lung sign</p>	<p style="text-align: center;"><u> </u> 7. Complex non septated effusion</p>
<p style="text-align: center;"><u> </u> 8. Diaphragmatic nodules</p>	<p style="text-align: center;"><u> </u> 9. Effusion in severely obese person</p>	<p style="text-align: center;"><u> </u> 10. Large anechoic effusion</p>



Bronchoscopy International is a transnational organization whose members are devoted to bronchoscopy education. Our vision is that patients need not suffer the burden of medical procedure-related training. Our mission is to help physicians become skilled practitioners, and to make bronchoscopy more readily available to patients so that we might defeat the effects of lung disease around the world.

Bronchoscopy International partners with national, regional, and international medical societies to train physicians and their health care teams, donate equipment, and implement learning programs that support the democratization of knowledge. The organization has developed a six part curriculum to enhance cognitive, affective and experiential knowledge and technical skill. With implementation of the Bronchoscopy Education Project, we also offer a uniform curriculum to training centers and educators around the world. The project is officially endorsed by numerous professional medical associations. Learning resources include books and training manuals, instructional videos, patient-centered problem-based exercises, simulation scenarios, and interactive on-site and on-line seminars. Faculty Development Programs are conducted to nurture a cadre of expert educators. To learn more about Bronchoscopy International and our global activities, please go to www.Bronchoscopy.org.



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ICC-STAT

Intercostal Catheter Skills and Tasks Assessment Tool

Clinical research/validated assessment tool with instructions, quiz and quiz answers applicable to an international audience of health care providers.

Scoring Recommendations for ICC-STAT

The goal of the Intercostal Catheter Skills and Tasks Assessment Tool (ICC-STAT©) is to monitor progress along the learning curve from *novice* (Score <60) to *competent* (Score=100). By observing the learner's performance several times each year, instructors are able to ascertain that each of the TEN elements of the tool are addressed satisfactorily*.

Please note that items 1, 2 and 3, as well as items 8, 9, and 10 should be assessed regardless of the kind of chest tube being inserted. If assessing chest tube insertion skill using the blunt insertion technique, items 4 and 5 should be also be assessed (and items 6 and 7 may be ignored). To assess chest tube insertion skill using the Seldinger technique, items 6 and 7 should be assessed (and items 4 and 5 may be ignored).

The ICC-STAT Quiz© contains one single open question (ICC-STAT© item 10) that requires 20 separate answers. The ICC-STAT Quiz is the same regardless of which chest tube insertion technique is being tested. Its value is scored 20 points.

While instructors and training programs may choose their own achievement scores to determine minimum acceptable levels of competency, we recommend that a final PASS grade be achieved only with a score of 100. This recommendation is consistent with mastery learning educational methodologies for competency-based assessments.

ICC-STAT© is designed for a global audience. Users may modify instructional and testing techniques based on regional needs and variations in practice.

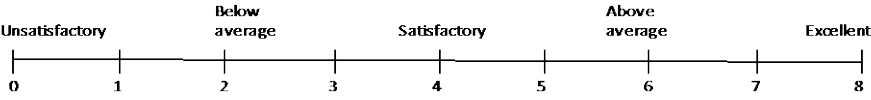
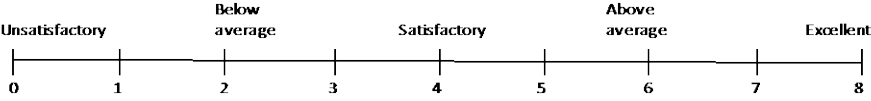
* ICC-STAT© has been validated and results published previously (previously referred to as TUBE-iCOMPT, by M. Salamonsen et al., published in Thorax, March 2014). Elements of the assessment tool were restructured to assure uniformity with other assessments designed and distributed by Bronchoscopy International® faculty. ICC-STAT can also be used in conjunction with The Chest Ultrasound-Guided Thoracentesis assessment tool (UG-STAT) available from www.Bronchoscopy.org.


INTERCOSTAL CATHETER SKILLS AND TASK ASSESSMENT TOOL

Student _____ Training Year _____

Faculty _____ Date _____

 Simulation Workshop Patient-based ScenarioMethod of insertion: Seldinger technique Blunt dissection technique

Educational Item* Items 1-10 scored as per bracketed instructions	Satisfactory Yes/No
1. Patient positioning and site selection (2 points each) <input type="checkbox"/> Time out (patient identification and informed consent <input type="checkbox"/> Patient positioned appropriately <input type="checkbox"/> Identifies triangle of safety using anatomical landmarks <input type="checkbox"/> Describes the benefits of using ultrasound	Yes / No Score____/8
2. Local anesthetic technique (2 points each) <input type="checkbox"/> Aseptic technique <input type="checkbox"/> Adequate volume <input type="checkbox"/> Knows maximum dose <input type="checkbox"/> Needle inserted over superior border of rib <input type="checkbox"/> Needle perpendicular to skin aiming for axial center of chest <input type="checkbox"/> Pleural space aspirated <input type="checkbox"/> Specifically infiltrates parietal pleura and skin <input type="checkbox"/> Notes depth to pleural space	Yes / No Score____/16
3. Local anesthetic: Overall fluidity of movement and skill 	Yes / No Score ____/8
4. Blunt Dissection Technique (3 points each) ** <input type="checkbox"/> Remove trocar from chest tube <input type="checkbox"/> Skin incision <input type="checkbox"/> Blunt dissection through chest wall <input type="checkbox"/> Uses nondominant hand to control forceps at skin <input type="checkbox"/> Punctures pleura <input type="checkbox"/> Assures adequate track size for tube <input type="checkbox"/> Inserts ICC with forceps without excessive force <input type="checkbox"/> Assures all catheter side holes are within pleural cavity and confirms drainage of pleural contents	Yes / No Score____/ 24
5. Blunt dissection: Overall fluidity of movement and skill** 	Yes / No Score ____/8
6. Seldinger Technique (2 points each)*** <input type="checkbox"/> Introducer needle over rib <input type="checkbox"/> Pleural space aspirated <input type="checkbox"/> Insertion of guidewire <input type="checkbox"/> Confirms guidewire moves freely <input type="checkbox"/> Guidewire not kinked or contaminated <input type="checkbox"/> Knows to start again if guidewire resistance is felt <input type="checkbox"/> Skin incision pre-dilatation <input type="checkbox"/> Needle track dilated making sure instruments are inserted in same plane <input type="checkbox"/> Dilators not passed greater than 1 cm past pleura <input type="checkbox"/> Chest tube inserted over wire without excessive force <input type="checkbox"/> Ensures all side-holes of chest tube within pleural cavity <input type="checkbox"/> Confirms drainage of pleural contents	Yes / No Score____/ 24

<p>7. Seldinger technique: Overall fluidity of movement and skill***</p> 	<p>Yes / No Score ___/8</p>
<p>8. Drain connection, Suturing, and Dressing techniques</p> <p><input type="checkbox"/> Attaches tube to drain or clamps/turns off 3-way tap <input type="checkbox"/> Uses non-absorbable suture <input type="checkbox"/> Secures and anchors chest tube <input type="checkbox"/> Chest tube not compressed <input type="checkbox"/> Sutures are tight (chest tube does not loosen with movement) <input type="checkbox"/> Applies appropriate dressing to tube insertion site <input type="checkbox"/> Secures or tapes junction of ICC to drain tube <input type="checkbox"/> Applies tape to secure chest tube/drain tube to patient</p>	<p>Yes / No Score___/ 8</p>
<p>9. Post-procedure Checks (2 points each)</p> <p><input type="checkbox"/> Confirms pleural placement (fluid fluctuation/swing in drainage device) <input type="checkbox"/> Examines drainage device for fluid or air leak <input type="checkbox"/> Orders chest x-ray <input type="checkbox"/> Considers ongoing analgesia</p>	<p>Yes / No Score___/ 8</p>
<p>10. ICC-STAT Quiz</p>	<p>Yes / No Score___/20</p>

* Each of the 10 items contains elements required by ACGME (patient care, medical knowledge, practice-based learning and improvement, interpersonal communication skills, professionalism, and systems-based practice).

** Use items 4 and 5 if assessing Blunt insertion technique (ignore items 6 and 7).

*** Use items 6 and 7 if assessing Seldinger technique (ignore items 4 and 5).

FINAL GRADE PASS_____ FAIL_____ **SCORE** _____/100

§

ICC-STAT Quiz (20 points)

INSTRUCTIONS: Please list TWENTY major items that should be reviewed during the “time out” prior to inserting an intercostal catheter.

1. _____

11. _____

2. _____

12. _____

3. _____

13. _____

4. _____

14. _____

5. _____

15. _____

6. _____

16. _____

7. _____

17. _____

8. _____

18. _____

9. _____

19. _____

10. _____

20. _____

SCORE (# OF CORRECT ANSWERS) _____/20

ICC-STAT Quiz Answers (20 points)

The following TWENTY major items (listed here in alphabetical order) should be reviewed during a “time out” prior to inserting an intercostal catheter.

1. Assure equipment is available in case of complications
2. Assure intravenous access
3. Assure that oximetry is available
4. Assure that sharps precautions are adequate
5. Assure that systemic blood pressure monitoring is available
6. Assure that universal precautions are respected
7. Confirm correct patient (chart, self-declared name, name badge)
8. Confirm correct place
9. Confirm correct procedure
10. Confirm correct time
11. Confirm that a procedural assistant is present
12. Confirm that informed consent was obtained
13. Confirm pleural ultrasound results (if applicable)
14. Confirm the chest tube insertion site (side and anatomical location)
15. Review chest radiographic studies
16. Review coagulation studies
17. Review the patient’s medication list
18. Review premedication/sedation plan for the procedure
19. Review chest tube insertion, drainage, and sampling procedural plan
20. Review results of clinical examination and note any changes
