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Introduction

The Society of American Gastrointestinal and Endoscopic Surgeons (SAGES) developed the Fundamentals of Endoscopic Surgery™ (FES) program, similarly to the Fundamentals of Laparoscopic Surgery™ (FLS) program, to encourage a standard set of skills in basic endoscopic surgery of the gastrointestinal tract. SAGES believes that learning and applying these fundamental skills will help ensure a minimal standard of care for all patients undergoing endoscopic surgery. The FES Program has been mandated by the American Board of Surgery as a pre-requisite for eligibility for the general surgical board qualifying exam, beginning in the 2017-2018 academic year.

The FES program is a comprehensive, educational and assessment tool designed to teach and evaluate the fundamental knowledge, clinical judgment and technical skills required in the performance of basic gastrointestinal (GI) endoscopic surgery (endoscopy). The educational module consists of a web-based multimedia presentation of didactic content which is available, free-of-charge, at www.fesdidactic.org.

The FES assessment includes two components, a computer-based cognitive assessment and a performance-based manual skills assessment which is performed on a virtual reality simulator, the GI Mentor II or Bronch Mentor, both proprietary pieces of hardware developed by 3D Systems-Simbionix. To learn more about the GI Mentor II please contact your 3D Systems-Simbionix representative. *SAGES does not endorse any specific manufacturer or product in developing any of its training protocols.*

Those who successfully complete both the educational and assessment components will have demonstrated the basic knowledge, judgment and technical skills fundamental to the performance of endoscopic surgery.

FES Assessment Development and Purpose

The **cognitive test** consists of multiple-choice questions, some of which include visuals. It is computer-based and designed to test the understanding and application of the basic fundamentals of GI endoscopy with as much emphasis as possible on clinical judgment or intra-operative decision-making.

The **manual skills test** consists of five simulation exercises that incorporate and represent most of the psychomotor skills necessary for basic endoscopic surgery.

Both components of the test have been carefully designed and examined by experts within the field of endoscopic surgery. Formal review sessions have ensured that the material included in the assessments is relevant to the field of endoscopic surgery and appropriate to the stated purpose of the FES Program. The test questions and tasks have been previously field-tested for efficacy and the FES Test Committee continually reviews their statistical properties. An ongoing research program conducts investigations into the psychometric properties of the assessments and gathers evidence regarding the reasonableness of the decisions and inferences made from the assessment scores.

FES Assessment Description

Test takers are given 90 minutes to complete the cognitive portion of the FES exam which consists of 80 multiple-choice questions administered via Webassessor, an secure online testing website. The manual skills assessment lasts approximately 60 minutes and is comprised of five (5) modules. Both test components may only be administered by an approved FES proctor who has undergone specialized FES proctor training.

FES Eligibility and Test Scheduling

Anyone can view the FES online didactic materials however, only physicians (MD, DO, or MBBS or equivalent) are eligible to take the FES test. Upon completion of the online didactic curriculum, and once in possession of an FES test voucher, participants may schedule their FES Test. The cognitive and manual skills assessments must be taken consecutively at a designated regional Test Center in the U.S., Canada, or at the SAGES Annual Meeting or ACS Annual Clinical Congress.

All test vouchers expire one (1) year from the date of purchase and have the expiration date printed on the upper right hand corner. Tests must be completed by this date as extensions will only be granted in rare and extreme



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circumstances, and must be requested in writing to the FES Program Director and approved by the FES Committee Co-Chairs.

FES Program Purchase Process

1. To purchase the FES program please follow the instructions posted on our website www.fesprogram.org.

To contact the SAGES office:

SAGES FES Program
11300 W. Olympic Blvd. Suite 600
Los Angeles, CA 90064
Phone: 310.437.0544 ext. 139
Fax: 310.437.0585
e-mail: info@fesprogram.org

2. After obtaining your FES test voucher, and completing your review of the didactic materials, test takers may go to www.webassessor.com/SAGES_FES to schedule their exam.
3. At the time of the exam you must present your FES Test Voucher and present a valid form of picture identification. Testing is available by appointment only.
4. Retake Policy – If you fail one or both parts of the assessment, you must retake ONLY the failed portion(s) in order to receive a FES Certificate. Prior to scheduling a retake, any participant who failed one or both parts of the assessment must pay a test re-take fee in the amount of \$125 to the SAGES FES office. Please note the waiting periods below:

1st Retest – 30 days waiting period, from initial test date, before you are eligible to retest

2nd Retest – 30 days waiting period, from previous test date, before you are eligible to retest

If you have attempted to pass the exam on 3 separate occasions, a whole new registration process and payment is required and both parts of the assessment must be taken anew even if one had been passed previously. This fee will not be covered by any grant offered through SAGES and payment must be made prior to scheduling your test appointment.

If you pass the assessment you are not allowed to retest simply to attempt a higher passing score.

Responsibilities of Assessment Participants

Assessment participants must not subvert or attempt to subvert the assessment process. The assessment materials are the property of SAGES and no reproduction or distribution of the materials is permitted. Participants must not engage in or encourage irregular test behavior such as, but not limited to, copying, printing, memorizing, reproducing and/or distributing assessment materials, possessing unauthorized communication devices or seeking unauthorized help from others during the assessment and/or falsifying information on registration forms. Participants must follow directions given at the administration site and refrain from interfering with the performance of other participants. If there is evidence that irregular behavior has occurred, the reporting of scores may be delayed or retracted pending further investigation.



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Preparation for the Assessments

The FES educational modules, available at www.fesdidactic.org, are an excellent resource for the material included in the assessments as they have been prepared as such and comprehensively cover the basic fundamental knowledge, judgment and technical skills required in endoscopic surgery. The didactic materials provides 12 modules of basic information on flexible endoscopy of the gastrointestinal tract:

Technology	Lower GI Anatomy, Pathology, and Complications
Patient Preparation	Didactic ERCP
Sedation and Analgesia	Hemostasis
Upper Gastrointestinal Endoscopy	Tissue Removal
Lower Gastrointestinal Endoscopy	Enteral Access
Performing Lower GI Procedures	Endoscopic Therapies

References and recommended readings are listed as part of the online educational material for those wishing to study further.

The Cognitive Assessment

Content The questions for the cognitive assessment are based on the following major subject areas deemed applicable to the practice of endoscopy:

1. Endoscope Technology and Equipment
2. Patient Preparation
3. Anesthesia, Moderate Sedation, Monitoring and Recovery
4. General Gastrointestinal Endoscopy
5. Endoscopic Therapies

While the content outline shown above is parallel to that used for the educational module, the two are considered to be independent of each other. The assessment will include questions related to the content outline that are deemed important for the practice of endoscopic surgery whether or not they have been thoroughly covered in the didactic educational program.

The assessment's focus is on subjects considered unique to endoscopy rather than on subjects normally encountered during open surgical training. Questions are designed to test the understanding and application of the basic fundamentals of endoscopy with as much emphasis as possible on clinical judgment and/or intraoperative decision-making.

Format The cognitive assessment consists of objectively scored single multiple-choice questions. For each question you are to select the one best alternative response based on the information given. There may be more than one response that fits the question but each question has only **one** best answer. The cognitive assessment is administered by computer in designated testing centers, SAGES and ACS Annual meetings, or at your site by an FES test proctor.

Time Considerations You will have 90 minutes to complete the cognitive test, allowing most examinees to answer all the questions without running out of time.

Scoring Procedures Answers to each question are scored as correct or incorrect by the computer and results for the total test are transmitted to the SAGES office for evaluation. The passing score is based upon obtaining a recommended level of proficiency on the assessment. The required level of proficiency is determined by the FES committee based on psychometric evaluation of the assessment and on data from prescribed standard-setting studies. As several forms of the cognitive assessment may be used, statistical procedures ensure that the level of performance needed to pass the different forms are equivalent.

Inclusion of Non-Scored Questions Some questions may be included in the cognitive assessment to improve the assessment process and to provide data for verifying the measurement properties of the assessments. Such questions are not counted in determining scores.



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Manual Skills Assessment

Content The manual skills assessment consists of five simulation exercises that are non-procedure specific and assess the technical and psychomotor skills that are uniquely required in endoscopic surgery.

Format The exercises are performed using a Virtual Reality simulator that includes an optical system and instrumentation similar to those used in the endoscopy suite. The simulator models, instructions and instrumentation are standardized across the testing sites.

Time Considerations The five exercises are timed individually, allowing for a maximum of 10 minutes per task. While the actual time required for each exercise varies according to its difficulty, a maximum time limit is instituted for each exercise. Given this maximum limit and the instructions required between exercises, the manual skills assessment will take approximately a maximum of 60 minutes.

Scoring The manual skills score is based on both efficiency and precision. Each of the tasks is scored according to a formula that takes time and error into account. The final passing score is determined by performance on each individual task.

Score Reporting

Typically, score reports will be issued approximately three to four weeks after of the testing date. The FES score report indicates your cognitive and manual skills scores, states the passing scores for each assessment and indicates which assessments you passed and/or failed. Both assessments must be successfully passed prior to receiving the FES Certificate of Completion.

Review of Scores Scoring for the exam is computer generated and then sent to the FES office for input into our database and certificate generation. For both assessments, the records of failed assessments are automatically reviewed prior to notification. Normal handling provides for several scoring checks and inaccuracy is extremely remote. Assessment appeals must be filed with the FES office in writing within six months of receiving the score.

FES Testing and FES Test Centers

Because FES is a standardized and validated high-stakes exam a trained FES proctor must be present to administer the exam and it must be given on an approved 3D Systems-Simbionix virtual reality simulator. Currently, FES Testing is available at regional FES Test Centers, the SAGES Annual Meeting, the ACS Clinical Congress and specially designated FES testing events. For a list of current FES Test Centers please visit www.fesprogram.org.

Continuing Medical Education (CME)

We are no longer offering CME credits for the FES exam and apologize for any inconvenience this may cause.