A general surgeon is required to have a thorough understanding of normal anatomy and physiology, as well as pathophysiology, investigations, differential diagnosis and surgical and non-surgical management of abdominal wall and retroperitoneal disorders. It is important that general surgeons maintain a current understanding of the most appropriate time and manner of intervention.

The graduating trainee will be able to:
- describe common surgical pathologies of the abdominal wall and retroperitoneum
- identify and recognise the symptoms and signs of these conditions
- describe and select appropriate diagnostic testing
- identify appropriate treatment options, and their indications and contraindications
- diagnose and manage pathological conditions that pertain to the abdominal wall, retroperitoneum and urogenital tract, including referral to other specialists where indicated
- select appropriate investigative tools
- adapt their skill in the context of each patient and each procedure
- identify and manage risk
- recognise the need to refer patients to other professionals
- communicate information to patients (and their family) about procedures, outcomes, and risks associated with surgery in ways that encourage their participation in informed decision making (consent)

Trainees should have thorough knowledge of the normal embryology, anatomy, physiology, and pathology, of:
- abdominal cavity and its walls
- inguinoscrotal region
- external genitalia
- urogenital tract

Trainees who are preparing to sit the Generic and/or Specialty-Specific Basic Science Examination and the Clinical Examination need to refer to the recommended reading list on the RACS website at [www.surgeons.org](http://www.surgeons.org).

For the Fellowship examination, there are no prescribed texts. Trainees are expected to keep abreast of the current literature, including textbooks, journal articles, consensus guidelines and other on-line resources.

If state-based and/or local hospital courses/meetings are available, trainees are strongly advised to avail themselves of these opportunities. This also includes practising procedures on simulation equipment where applicable. Trainees are encouraged to present their research at national and/or regional training days, in order to fulfil the research requirement.

The Generic and Specialty-Specific Basic Science Examination and the Clinical Examination; Fellowship examination (written and viva voce sections); Trainee evaluation forms and logbooks; DOPS and mini-CEX (where applicable).
### Adult groin hernias

- **inguinal**
- **femoral**

**SET1-2 (Early)**
- Describe the anatomy of inguinal region, spermatic cord and testis
- Describe the embryology of testicular descent and processus vaginalis
- Distinguish inguinal from femoral hernias
- Identify signs and symptoms of reducible, irreducible and strangulated hernias
- List management options (non-surgical and surgical):
  - indications
  - contraindications
  - basic procedural details
- Open (mesh) repair of inguinal hernia

**SET3-4 (Mid)**
- Provide an anatomical and pathological classification of groin hernias
- Select and interpret appropriate medical imaging modalities where indicated
- Describe details of common management options, as well as possible risks/complications and how to deal with them, postoperative care
- Management of recurrent hernias
- Open repair of femoral hernias
- Open repair of strangulated and non-strangulated femoral and inguinal hernias
- Laparoscopic inguinal hernia repair

**SET5+ (Late)**

### Paediatric inguinal hernia/congenital hydrocele

**SET1-2 (Early)**
- Explain the anatomy of the inguinoscrotal region and spermatic cord in a child
- Describe/differentiate between normal and abnormal embryology of testicular descent and processus vaginalis
- Discuss signs and symptoms (history) of inguinal hernias in children
- Outline surgical management:
  - indications
  - basic procedural details

**SET3-4 (Mid)**
- Discuss signs and symptoms of inguinal hernias in children
- Describe details of surgical management, including possible risks and complications
- Plan management of acutely irreducible inguinal hernia
- Inguinal herniotomy

**SET5+ (Late)**

### Umbilical/para-umbilical hernia

**SET1-2 (Early)**
- Explain the embryology and anatomy of umbilicus/abdominal wall
- Interpret examination findings of umbilical hernia
- Summarise surgical management:
  - indications
  - basic procedural details
### Umbilical/para-umbilical hernia (continued)

**SET3-4 (Mid)**

- **Anatomy and Pathology**
  - CLINICAL ASSESSMENT
  - INVESTIGATIONS
  - PRINCIPLES OF MANAGEMENT
  - OPERATIVE MANAGEMENT
  - MEDICAL EXPERTISE
  - JUDGEMENT / CLINICAL DECISION MAKING
  - TECHNICAL EXPERTISE

- **Technical Expertise**
  - Repair of umbilical/paraumbilical hernia (with or without mesh)

**SET5+ (Late)**

- **Exomphalos**
  - **SET1-2 (Early)**
    - Explain the embryology and anatomy of gut/umbilicus/abdominal cavity
    - Interpret examination findings
  - **SET3-4 (Mid)**
  - **SET5+ (Late)**
  - **Gastroschisis**
  - **SET1-2 (Early)**
    - Explain the embryology and anatomy of gut/abdominal cavity
    - Interpret examination findings
  - **SET3-4 (Mid)**
  - **SET5+ (Late)**
  - **Incisional/ventral hernias**
  - **SET1-2 (Early)**
    - Describe normal and abnormal abdominal wall anatomy
    - Recognise typical signs and symptoms, in particular with regard to irreducibility and strangulation
    - Select and interpret appropriate medical imaging modalities where indicated
    - Outline management options (non-surgical and surgical):
      - Indications
      - Basic procedural details
  - **SET3-4 (Mid)**
    - Identify/explain etiological factors
    - Provide details of operative management options, possible complications and how to deal with them, postoperative care
  - **SET5+ (Late)**
    - Open repair of irreducible incisional hernia
    - Laparoscopic incisional hernia repair
    - Incisional hernia repair using separation of components
### Abdominal wound dehiscence/burst abdomen

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<thead>
<tr>
<th>SET LEVEL</th>
<th>MEDICAL EXPERTISE</th>
<th>JUDGEMENT / CLINICAL DECISION MAKING</th>
<th>TECHNICAL EXPERTISE</th>
</tr>
</thead>
</table>
| SET 1-2 (Early) | • Identify etiological factors  
• Recognise symptoms and signs  
• Plan and carry out first aid |  |  |
| SET 3-4 (Mid) |  |  |  |
| SET 5+ (Late) |  |  |  |

#### Open abdomen / laparostomy

*See also Trauma Module*

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<th>SET LEVEL</th>
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</thead>
</table>
| SET 1-2 (Early) | • Describe the anatomy of the peritoneal cavity, including peritoneal reflections  
• Define the normal range of intra-abdominal pressure  
• Explain the pathophysiological consequences of raised intra-abdominal pressure  
• Recognise the clinical signs of raised intra-abdominal pressure  
• Describe the technique for measuring intra-abdominal pressure  
• Describe the indications for laparostomy |  |  |
| SET 3-4 (Mid) |  |  |  |
| SET 5+ (Late) |  |  |  |

#### Other abdominal wall hernias

- epigastric  
- Spigelian  
- lumbar

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</thead>
</table>
| SET 1-2 (Early) | • Describe the relevant abdominal wall anatomy  
• Recognise symptoms and examination findings  
• Select and interpret appropriate medical imaging modalities where indicated  
• Explain management options: - indications - basic procedural details  
• Provide details of operative management, possible complications and how to deal with them, postoperative care |  |  |
| SET 3-4 (Mid) |  |  |  |
| SET 5+ (Late) |  |  |  |
### Epididymo-orchitis

*See Emergency Module*

### Testicular torsion

*See Emergency Module*

### Haematocoele

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<td></td>
<td>ANATOMY PHYSIOLOGY PATHOLOGY</td>
<td>CLINICAL ASSESSMENT</td>
<td>INVESTIGATIONS</td>
</tr>
<tr>
<td>SET1-2 (Early)</td>
<td>• Describe normal and abnormal anatomy of testis, spermatic cord</td>
<td>• Recognise symptoms and signs</td>
<td>• Describe role of ultrasound in assessment</td>
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<tr>
<td>SET3-4 (Mid)</td>
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<tr>
<td>SET5+ (Late)</td>
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### Epididymal cyst

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<td>INVESTIGATIONS</td>
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<tr>
<td>SET1-2 (Early)</td>
<td>• Describe normal and abnormal anatomy of testis, epididymis and spermatic cord</td>
<td>• Discuss examination findings</td>
<td>• Select and interpret appropriate medical imaging modalities where indicated</td>
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<tr>
<td>SET3-4 (Mid)</td>
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<td>SET5+ (Late)</td>
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### Adult hydrocele (acquired)

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<td>ANATOMY PHYSIOLOGY PATHOLOGY</td>
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<td>INVESTIGATIONS</td>
</tr>
<tr>
<td>SET1-2 (Early)</td>
<td>• Describe normal and abnormal anatomy of testis and tunica vaginalis</td>
<td>• Identify characteristic examination findings</td>
<td>• Select and interpret appropriate investigation modalities where indicated</td>
</tr>
<tr>
<td>SET3-4 (Mid)</td>
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<td>SET5+ (Late)</td>
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<td>ANATOMY PHYSIOLOGY PATHOLOGY</td>
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<td>INVESTIGATIONS</td>
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<tr>
<td>Mal-descent of the testis</td>
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<tr>
<td>SET1-2 (Early)</td>
<td>· Describe normal and abnormal embryology of testis</td>
<td>· Interpret examination findings</td>
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<td></td>
<td>· Review the anatomy of testis, spermatic cord and inguinoscrotal region</td>
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<tr>
<td>SET3-4 (Mid)</td>
<td>· Describe the pathology and pathological consequences of undescended testis</td>
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<td>· Select and interpret appropriate medical imaging modalities where indicated</td>
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<td>SET5+ (Late)</td>
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<tr>
<td>Varicocele</td>
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<tr>
<td>SET1-2 (Early)</td>
<td>· Describe the anatomy of testis, spermatic cord and inguinoscrotal region</td>
<td>· Interpret examination findings</td>
<td>· Select and interpret appropriate medical imaging modalities where indicated</td>
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<tr>
<td>SET3-4 (Mid)</td>
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<tr>
<td>SET5+ (Late)</td>
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<tr>
<td>Testicular tumours - benign / malignant</td>
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<tr>
<td>SET1-2 (Early)</td>
<td>· Describe the embryology of the testis</td>
<td>· Interpret history and examination findings</td>
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<td></td>
<td>· Differentiate between normal and abnormal anatomy of testis, spermatic cord, inguinoscrotal region and retroperitoneum</td>
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<td></td>
<td>· Describe lymphatic drainage of the testis</td>
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<td>· Review classification and staging of testicular neoplasms</td>
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<td>PHYSIOLOGY</td>
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<td>PATHOLOGY</td>
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<tr>
<td>Testicular tumours - benign / malignant (continued)</td>
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<tr>
<td>SET3-4 (Mid)</td>
<td>• Select and interpret appropriate medical imaging modalities where indicated</td>
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<td>• Identify serum tumour markers</td>
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<td>• Summarise principles of multi-disciplinary management</td>
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<td>• Implement staging procedures</td>
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<td>• Plan multi-disciplinary management</td>
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<td></td>
<td>• Describe details of surgical management</td>
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<td>• Plan follow-up</td>
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<tr>
<td>SET5+ (Late)</td>
<td>• Testicular exploration and/or radical orchidectomy (inguinal approach)</td>
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<td>Vasectomy</td>
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<tr>
<td>SET1-2 (Early)</td>
<td>• Describe the anatomy of scrotum and spermatic cord</td>
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<td>SET3-4 (Mid)</td>
<td>• Interpret pathology tests used in determination of efficacy:</td>
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<td></td>
<td>- histology</td>
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<td>- semen analysis</td>
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<td>SET5+ (Late)</td>
<td>• Explain details of procedure and complications including consent</td>
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<td>• Perform pre- and post-operative counselling</td>
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<td>Nephro-/uretero-/vesico-lithiasis</td>
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<td>See Emergency Module</td>
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<td>Phimosis/ paraphimosis</td>
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<td>See Emergency Module</td>
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## Module Rationale and Objectives

The clinical features of breast disease require early detection, careful investigation and appropriate operative management. This module addresses issues that need to be considered in diagnosing and making decisions about the immediate as well as long-term needs of the patient.

The graduating trainee will be able to:

- describe common surgical pathologies of Breast Diseases
- identify and recognise the symptoms and signs of these conditions
- assess and treat any common breast conditions likely to be encountered in consultative general surgical practice
- describe and select appropriate diagnostic testing
- identify appropriate treatment options, and their indications and contraindications
- recognise which conditions to refer on to a specialised multidisciplinary oncology service
- employ a consultative approach with colleagues and other professionals
- critically appraise new trends in the surgical management of the breast
- select appropriate investigative tools and monitoring techniques in a cost effective manner
- convey bad news to patients in a way that conveys sensitivity to the patient's social, cultural and psychological needs
- communicate information to patients (and their family) about procedures, outcomes, and risks associated with surgery in ways that encourage their participation in informed decision making (consent)

## Anatomy, Physiology, Pathology

Trainees should have thorough knowledge of the normal embryology, anatomy, physiology, and pathology, of:

- breast
- axilla
- lymphatic systems
- pituitary gonadal axis
- steroid hormone biochemistry and molecular biology

## Suggested Reading


Trainees who are preparing to sit the Generic and/or Specialty-Specific Basic Science Examination and the Clinical Examination need to refer to the recommended reading list on the RACS website at [www.surgeons.org](http://www.surgeons.org)


## Learning Opportunities and Methods

Communications Workshops (delivering bad news), Ultrasound workshops, Fine Needle Aspirate workshops – usually held in conjunction with the RACS Annual Scientific Congress and Breast Society Meetings (BreastSurgANZ)

If state-based and/or local hospital courses/meetings are available, trainees are strongly advised to avail themselves of these opportunities. This also includes practising procedures on simulation equipment where applicable. Trainees are encouraged to present their research at national and/or regional training days, in order to fulfil the research requirement.

## How this module will be assessed

The Generic and Specialty-Specific Basic Science Examination and the Clinical Examination; Fellowship examination (written and viva voce sections); Trainee evaluation forms and logbooks; DOPS and mini-CEX (where applicable).
## Benign breast disease

**SET1-2 (Early)**
- Describe anatomy and embryology of the breast
- Review causes of benign breast disease

**SET3-4 (Mid)**
- Review the appropriate use of medical imaging and the strengths and weaknesses of fine needle aspiration versus core biopsy and triple assessment

**SET5+ (Late)**
- Fine needle aspiration
- Punch biopsy
- Core biopsy
- Excisional biopsy

## Indeterminate proliferative lesions

**SET1-2 (Early)**
- Review pathology, e.g.:
  - atypical hyperplasia
  - radial scar
  - lobular cancer in situ

**SET3-4 (Mid)**
- Review the clinical features in the history and the examination findings

**SET5+ (Late)**
- Localised excision biopsy

## Nipple discharge

**SET1-2 (Early)**
- Differentiate between physiological and pathological discharge
- List causes of each

**SET3-4 (Mid)**
- Review appropriate use of imaging

**SET5+ (Late)**
- Microdochectomy
- Central duct excision
### Breast pain

**SET1-2 (Early)**
- Differentiate between causes of breast pain
- Describe mechanisms of breast pain

**SET3-4 (Mid)**
- Review the clinical features in the history and the examination findings, including "cyclical" vs "non-cyclical" pain
- Review the appropriate use of medical imaging
- Exclusion of serious pathology and reassurance
- Describe management options
- Describe a management plan for refractory breast pain

**SET5+ (Late)**
- Review the clinical features in the history and the examination findings, including "cyclical" vs "non-cyclical" pain
- Review the appropriate use of medical imaging
- Exclusion of serious pathology and reassurance
- Describe management options
- Describe a management plan for refractory breast pain
- Review/summarise/discuss:
  - epidemiology, genetics, risk factors, UICC pathologic staging, histological types, molecular biology, genetic testing, oestrogen receptors

### Inflammatory conditions, breast abscess

**SET1-2 (Early)**
- Review the pathophysiological causes and causative mechanisms
- Review the clinical features in the history and the examination findings
- Describe the relevant microbiology

**SET3-4 (Mid)**
- Review the clinical features in the history and the examination findings
- Review the appropriate use of medical imaging and the strengths and weaknesses of fine needle aspiration versus core biopsy and triple assessment
- Carry out/compare the management of abscesses
- Incision and drainage
- Recurrent aspiration

**SET5+ (Late)**
- Appraise Granulomatous mastitis
- Ultrasound guided aspiration
- Describe appropriate follow up in patients with a residual mass following initial therapy
- Excision of central ducts

### Ductal Carcinoma in Situ

**SET1-2 (Early)**
- Review/summarise/discuss the contribution of:
  - epidemiology, genetics, risk factors, UICC pathologic staging, histological types, molecular biology, genetic testing, oestrogen receptors

**SET3-4 (Mid)**
- Review/summarise/discuss:
  - indications and contraindications of breast conservation therapy
  - indications and contraindications of immediate breast reconstruction

**SET5+ (Late)**
- Review/summarise:
  - indications for prophylactic mastectomy
  - indications for SNB in DCIS
### Breast screening

*See also Surgical Oncology Module*

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</table>
| SET 1-2  (Early) | • Outline principles of population screening specifically related to breast cancer  
• Identification and screening of high risk families |                          |                      |
| SET 3-4 (Mid) | • Further assessment of radiological abnormalities  
• Specificity/ sensitivity/ screening intervals  
• Importance of quality assurance of the program |                          | • Surgical management of positive screening findings |
| SET 5+ (Late) | | | |

### Early breast cancer

| SET 1-2 (Early) | • Review/summarise/ discuss the contribution of:  
- epidemiology, genetics, risk factors, UICC pathologic staging, histological types  
- molecular sub typing, molecular biology, genetic testing, oestrogen receptors  
- principles of metastasis, patterns of metastasis – including the local environment of metastases  
- principles of sentinel node mapping and assessment  
- principles of prognosis and prediction of response to treatment | | • Wire localised biopsy |
Early breast cancer (continued)

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</table>
| SET3-4 (Mid) | Review the clinical features in the history and the examination findings | Review the principles of breast screening | Review/summarise:  
- sentinel node mapping with isotope  
- principles and indications of Radiotherapy and its delivery systems  
- principles of systemic adjuvant therapy (cytotoxic, hormonal, biological) and their side effects  
- prognostic estimation  
- indications and contraindications of breast conservation therapy  
- indications and contraindications of immediate breast reconstruction  
- indications for prophylactic mastectomy  
- principles of staging  
- Molecular markers of prognosis  
- Genetic testing and familial syndromes  
- Principles of management of local recurrence  
- Describe the issues in dealing with pregnancy associated breast cancer  
- Recognise the syndrome of axillary lymphadenopathy in the absence of identifiable breast primary | Wide local excision (complete local excision) of breast cancer  
Mastectomy  
Sentinel node biopsy  
Axillary dissection |

| SET5+ (Late) | | | Principles of oncoplastic surgery and breast reconstructive options |

Locally advanced breast cancer

| SET1-2 (Early) | Review/classify/differentiate between/discuss the contribution of:  
- all listed above for early breast cancer  
- principles of metastasis, patterns of metastasis | | Punch biopsy |
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<tr>
<td>Locally advanced breast cancer (continued)</td>
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<td>SET3-4 (Mid)</td>
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<td>• Review the clinical features in the history and the examination findings</td>
<td>• Review: - means of tissue diagnosis - imaging of the breasts - staging tests - use of serum markers</td>
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<td>SET5+ (Late)</td>
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<td>Advanced breast cancer</td>
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<tr>
<td>SET1-2 (Early)</td>
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<td>• Review/classify/ differentiate between/discuss the contribution of: - principles of metastasis, patterns of metastasis – including the local environment of metastases</td>
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<tr>
<td>SET3-4 (Mid)</td>
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<td>• Review the clinical features in the history and the examination findings</td>
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<td>SET5+ (Late)</td>
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<td>Male breast disease</td>
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<tr>
<td>SET1-2 (Early)</td>
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<tr>
<td>SET3-4 (Mid)</td>
<td>• Gynaecomastia, cancer</td>
<td>• History, including drugs, Family History - Clinical examination, Testicular and liver examination for gynaecomastia</td>
<td>• Triple assessment - Consider LFT, testicular markers</td>
</tr>
</tbody>
</table>
### Male breast disease (continued)

**SET5+ (Late)**

<table>
<thead>
<tr>
<th>MEDICAL EXPERTISE</th>
<th>JUDGEMENT / CLINICAL DECISION MAKING</th>
<th>TECHNICAL EXPERTISE</th>
<th>OPERATIVE MANAGEMENT - DOES -</th>
<th>OPERATIVE MANAGEMENT - KNOWS -</th>
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<tbody>
<tr>
<td><strong>ANATOMY</strong></td>
<td><strong>PHYSIOLOGY</strong></td>
<td><strong>PATHOLOGY</strong></td>
<td><strong>CLINICAL ASSESSMENT</strong></td>
<td><strong>INVESTIGATIONS</strong></td>
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<tr>
<td><strong>PRINCIPLES OF</strong></td>
<td><strong>MANAGEMENT</strong></td>
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<td>MANAGEMENT**</td>
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<td><strong>MANAGEMENT - DOES -</strong></td>
<td><strong>MANAGEMENT - KNOWS -</strong></td>
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</tbody>
</table>

#### Multidisciplinary care

*See also Surgical Oncology Module*

**SET1-2 (Early)**

- Review/summarise:
  - principles of post traumatic stress and grieving – individual and family
  - pathophysiology of chemotherapy, hormonal intervention and radiotherapy

**SET3-4 (Mid)**

- Review/compare the management of:
  - delivering bad news
  - principles of management complications and principles of timing of courses: chemotherapy, hormonal intervention and radiotherapy
  - principles of follow-up
  - assessing risk of developing breast cancer
  - family counselling/risk analysis
  - treating menopausal symptoms
  - fertility issues (especially in younger patients)

**SET5+ (Late)**

- Review/compare the management of:
  - delivering bad news
  - principles of management complications and principles of timing of courses: chemotherapy, hormonal intervention and radiotherapy
  - principles of follow-up
  - assessing risk of developing breast cancer
  - family counselling/risk analysis
  - treating menopausal symptoms
  - fertility issues (especially in younger patients)

- Sequencing of treatment:
  - Surgery
  - Radiotherapy
  - Chemotherapy
  - Biological therapy

- Hormonal therapy

- Consensus and conflict resolution

- Communication in a team and sequential follow-up
### Axillary nodes unknown primary

**SET1-2 (Early)**
- Review Lymphatic anatomy, pathology of primary lymphadenopathy and secondary lymphadenopathy
- Review the clinical features in the history and the examination findings of the lymphatic system
- Review:
  - means of tissue diagnosis
  - imaging of the breasts
  - staging tests
  - use of serum markers

**SET3-4 (Mid)**
- Implement/ compare the management:
  - affected axilla
  - affected breast cancer
  - systemic
- Axillary node biopsy
- Axillary dissection
- Wide excision
- Mastectomy

**SET5+ (Late)**
- Axillary node biopsy
- Axillary dissection
- Wide excision
- Mastectomy

### Lymphoedema

*See also Vascular Module*

**SET1-2 (Early)**
- Outline pathological classifications, definitions, predisposing factors, incidence
- Methods of examination
- Describe the strengths and weaknesses of tape measurement, volume displacement, bioimpedence
- Ultrasound to exclude venous occlusion/local recurrence
- Education, avoidance of exacerbating factors

**SET3-4 (Mid)**
- Lymphatic massage, compression garments, multidisciplinary

**SET5+ (Late)**
- Office ultrasound and guided needle biopsy of axillary node
**COLORECTAL**

**Module Rationale and Objectives**

Colorectal problems are a common condition in General Surgery. The individual presenting with colorectal disease is frequently experiencing severe discomfort that impacts on the preoperative decision making and timing of any surgical intervention. This module covers issues relevant to clinical decision making and surgical management, including evidence based interventions in the perioperative period.

The graduating trainee will be able to:

- describe common surgical pathologies including colorectal cancer, diverticular disease, Crohn’s disease, Ulcerative colitis, haemorrhoids, perianal sepsis (abscess, fistula), fissure in ano
- describe and assess the symptoms and signs of these conditions
- describe and select appropriate diagnostic testing
- identify appropriate treatment options, and their indications and contraindications
- take a thorough history from the patient and perform a competent examination
- clearly elicit features in the history and examination that significantly predict perioperative and postoperative outcomes
- order and interpret appropriate investigations
- recognise the most common disorders and differentiate those amenable to operative and non-operative treatment
- plan and manage appropriate surgical, or non-surgical treatment
- demonstrates procedural knowledge and technical skill, including the use and workings of rigid sigmoidoscopy, banding devices, stapling devices, energy sources, laparoscopic and endoscopic equipment and devices
- communicate information to patients (and their family) about procedures, outcomes, and risks associated with surgery in ways that encourage their participation in informed decision making (consent)

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**Anatomy, Physiology, Pathology**

Trainees should have thorough knowledge of the normal embryology, anatomy, physiology, and pathology, of:

- small bowel, colon, and rectum
- anus and anal sphincter
- pelvis

---

**Suggested Reading**


Trainees who are preparing to sit the Generic and/or Specialty-Specific Basic Science Examination and the Clinical Examination need to refer to the recommended reading list on the RACS website at [www.surgeons.org](http://www.surgeons.org).


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**Learning Opportunities and Methods**

If state-based and/or local hospital courses/meetings are available, trainees are strongly advised to avail themselves of these opportunities. This also includes practising procedures on simulation equipment where applicable. Trainees are encouraged to present their research at national and/or regional training days, in order to fulfil the research requirement.

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**How this module will be assessed**

The Generic and Specialty-Specific Basic Science Examination and the Clinical Examination; Fellowship examination (written and viva voce sections); Trainee evaluation forms and logbooks; DOPS and mini-CEX (where applicable).
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<thead>
<tr>
<th>SET LEVEL</th>
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<td>INVESTIGATIONS</td>
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<tr>
<td></td>
<td>Haemorrhoids including external anal skin tags</td>
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<tr>
<td>SET1-2 (Early)</td>
<td>• Describe the anatomy, aetiology and pathophysiology of haemorrhoids</td>
<td>• Perform/discuss the clinical assessment including grading of haemorrhoids</td>
<td>• Appropriateness of further investigations</td>
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<td>SET3-4 (Mid)</td>
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<td>SET5+ (Late)</td>
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<tr>
<td>Fissure in Ano</td>
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<tr>
<td>SET1-2 (Early)</td>
<td>• Describe the anatomy, aetiology and pathophysiology of anal fissures</td>
<td>• Perform/discuss the clinical assessment and differential diagnosis</td>
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<tr>
<td>SET3-4 (Mid)</td>
<td></td>
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<td>• Outline conservative management of anal fissures, including the use of pharmacological agents and contraindications</td>
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<td>SET5+ (Late)</td>
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<tr>
<td>Perianal and Ischiorectal abscess</td>
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<tr>
<td>SET1-2 (Early)</td>
<td>• Describe the anatomy and pathogenesis of perianal abscess</td>
<td>• Perform/discuss the clinical assessment and differential diagnosis</td>
<td>• Microbiological cultures, Select and interpret appropriate imaging modalities where appropriate</td>
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<td>SET3-4 (Mid)</td>
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<td>SET5+ (Late)</td>
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</tbody>
</table>
## Anal Fistulas

### SET 1-2 (Early)
- Describe relevant anatomy, aetiology and pathophysiology including anal fistula classification
- Perform/discuss the clinical assessment and differential diagnosis

### SET 3-4 (Mid)
- Select and interpret results of:
  - Transrectal ultrasound
  - MRI
- Outline:
  - Surgical principles of management of high and low fistulas
  - Use of seton drains
- Describe details of surgical management including for high, low and complex anal fistulas

### SET 5+ (Late)
- Anal fistulotomy
- Use of seton drains
- Surgery for complex or high fistulas
- Use of biological agents
- Advancement flap repair

## Ano-rectal incontinence

### SET 1-2 (Early)
- Describe relevant anatomy, aetiology, and pathophysiology
- Perform/discuss the clinical assessment and differential diagnosis

### SET 3-4 (Mid)
- Select and interpret results of:
  - Colonoscopy
  - Anorectal ultrasound
  - Manometry studies
  - Pudendal nerve latency
- Outline principles of conservative management including biofeedback
- Identify indications for surgery and manage complications
- Nerve stimulation

### SET 5+ (Late)
- Surgical techniques for anal incontinence

## Rectal Prolapse

### SET 1-2 (Early)
- Describe relevant anatomy and pathophysiology
- Perform/discuss the clinical assessment
- Differentiate rectal mucosal prolapse from full thickness prolapse

### SET 3-4 (Mid)
- Select and interpret appropriate imaging modalities
  - Colonoscopy
- Outline principles of surgical management options and patient selection including abdominal and perineal approaches
- Outline principles of management of complications/ change in bowel function post operatively

### SET 5+ (Late)
- Perineal rectosigmoidectomy
- Laparoscopic resection/rectopexy
- Abdominal resection/rectopexy
- Delorme’ s Procedure
### Pruritus ani

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<td>PRINCIPLES OF MANAGEMENT</td>
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<tr>
<td>SET1-2 (Early)</td>
<td></td>
<td>• Describe the underlying causes</td>
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<td>SET3-4 (Mid)</td>
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<td>• Perform/discuss the clinical</td>
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<td>SET5+ (Late)</td>
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<td>assessment and differential diagnosis</td>
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<td>• Interpret skin biopsies</td>
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<td>• Manage the underlying causes using</td>
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<td>• Indicate/implement principles of</td>
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<td>conservative management</td>
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### Colorectal polyps

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<td>SET1-2 (Early)</td>
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<td>- aetiology, pathophysiology and</td>
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<td>genetics of colonic neoplasia</td>
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<td>• Outline molecular sequences</td>
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<td>resulting in colorectal neoplasia</td>
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<td>SET3-4 (Mid)</td>
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<td>• Perform/discuss assessment</td>
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<td>and differential diagnosis of various</td>
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<td>polyps and significance of family</td>
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<td>history</td>
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<td>SET5+ (Late)</td>
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<td>• Select and interpret:</td>
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<td>- colonoscopy</td>
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<td>- imaging modalities</td>
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<td>- histology</td>
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<td>- management of colonic polyps,</td>
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<td>including surveillance and follow-up</td>
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<td>- identify indications for surgery</td>
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<td>and manage complications</td>
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<td>SET3-4 (Mid)</td>
<td></td>
<td>• Outline management of familial</td>
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<td></td>
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<td>cancer syndromes</td>
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<tr>
<td>SET5+ (Late)</td>
<td></td>
<td>• Colonoscopy and polypectomy</td>
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<td>• Open Colectomy, anterior resection</td>
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<td>• Endoscopic tattoo</td>
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<td>• Transanal local excision</td>
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<td>• Total proctocolectomy and ileal</td>
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<td>pouch anal anastomosis</td>
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<td>• Laparoscopic bowel resection</td>
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<td>• Transanal endoscopic microsurgery</td>
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<td>• Advanced colonoscopic polypectomy</td>
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</tbody>
</table>
**Colorectal cancer**

**SET1-2 (Early)**
- Describe:
  - anatomy, aetiology and pathogenesis
  - epidemiology
  - genetic syndromes
  - TNM and Dukes classification systems
- Perform/discuss the clinical assessment
- DRE of rectal lesions

**SET3-4 (Mid)**
- Management of recurrent cancer, including surgical management, endoscopic, irradiation and chemotherapy
- Management of postoperative complications
- Selection of patients for restorative resections
- Management of postoperative complications
- Principles of conservative management

**SET5+ (Late)**
- Outline principles of follow-up
- Principles of TME dissection
- Diagnostic laparoscopy
- Ultralow anterior resections
- Abdominoperineal resection

**Diverticular disease**

**SET1-2 (Early)**
- Describe relevant anatomy and pathophysiology
- Describe Hinchey Classification system.
- Perform/discuss the clinical assessment and differential diagnosis

**SET3-4 (Mid)**
- Identify indications for surgery
- Explain/implement management of complications of diverticular disease; See also Emergency Conditions
- Colonoscopy
- Colectomy (e.g. Sigmoid)
- Hartmann’s procedure

**SET5+ (Late)**
- Laparoscopic bowel resection
<table>
<thead>
<tr>
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<td>CLINICAL ASSESSMENT</td>
<td>INVESTIGATIONS</td>
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<tr>
<td>SET1-2 (Early)</td>
<td>Describe relevant anatomy, aetiology and pathophysiology</td>
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<tr>
<td>SET3-4 (Mid)</td>
<td>Perform/discuss the clinical assessment and differential diagnosis</td>
<td>Select and interpret: - colonoscopy - imaging modalities - relevant haematological and biochemical tests</td>
<td>Outline: - principles of medical management including appropriate pharmacological therapy - management of associated conditions and complications, including toxic mega colon - Identify indications and appropriate surgical therapy</td>
</tr>
<tr>
<td>SET5+ (Late)</td>
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<td></td>
<td>Colonoscopy, including surveillance biopsies</td>
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</tbody>
</table>

**Ulcerative colitis**

**Crohn’s disease**

<p>| SET1-2 (Early) | Describe relevant anatomy, aetiology and pathophysiology | | | | | |
| SET3-4 (Mid) | Perform/discuss the clinical assessment and differential diagnosis | Select and interpret: - colonoscopy - imaging modalities - relevant haematological and biochemical tests | Outline: - principles of medical management including appropriate pharmacological therapy - management of associated conditions and complications - Identify indications and appropriate surgical therapy | Colectomy and ileorectal anastomosis | |
| SET5+ (Late) | | | | | Laparoscopic bowel resection - Surgery for complex fistulae in Crohn’s - Strictureoplasty | |</p>
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<td>Colitis/ Proctocolitis / Proctitis</td>
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<tr>
<td>SET1-2 (Early)</td>
<td>• Describe relevant anatomy, aetiology and pathophysiology</td>
<td>• Perform/discuss the clinical assessment and differential diagnosis</td>
<td>• Select and interpret: - colonoscopy, e.g. C.difficle colitis - imaging modalities - relevant haematological and biochemical tests</td>
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<td>• Describe relevant anatomy and risk factors for ischaemic colitis</td>
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<tr>
<td>SET3-4 (Mid)</td>
<td></td>
<td>• Outline non-operative management of conditions</td>
<td>• Resection (Hartmann's procedure; total colectomy and end ileostomy)</td>
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<tr>
<td>SET5+ (Late)</td>
<td></td>
<td>• Identify indications for surgery and manage complications</td>
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<td>Carcinoma anus/ anal warts/ Perianal malignancies, including Paget’s disease</td>
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<tr>
<td>SET1-2 (Early)</td>
<td>• Describe relevant anatomy, aetiology and pathology including HPV, anal warts, and AIN</td>
<td>• Perform/discuss the clinical assessment and differential diagnosis</td>
<td>• Select and interpret: - biopsy - imaging modalities</td>
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<td>SET5+ (Late)</td>
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Emergency conditions
- haemorrhage
- perforation
- fistulas both internal and external
- ischemia
- trauma and foreign bodies
- complications of surgery
- complications of colonoscopy
- anastomotic dehiscence

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<tr>
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<td>SET1-2 (Early)</td>
<td>Describe risk factors for anastomotic dehiscence</td>
<td>Assessment of acute post surgical complications</td>
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<td>SET3-4 (Mid)</td>
<td>Pathophysiology of colonoscopic perforation and bleeding</td>
<td>Use of interventional radiology</td>
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<td></td>
<td>SET5+ (Late)</td>
<td>Large bowel obstruction/volvulus/pseudo-obstruction</td>
<td>Placement of rectal tube</td>
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</tbody>
</table>

**Large bowel obstruction/volvulus/pseudo-obstruction**

| SET1-2 (Early) | Describe relevant anatomy, aetiology and pathophysiology | Perform/discuss the clinical assessment and differential diagnosis | Select and interpret/discuss: - contrast studies - colonic motility studies - colonoscopy | Outline: - principles of operative and non-operative management - identify indications for surgery | Placement of rectal tube |
| SET3-4 (Mid)   | | | | | |
| SET5+ (Late)   | | | | On table lavage | |

**Operative management**

- Does
- Knows
### Colonic Inertia and Megacolon

**SET 1-2 (Early)**

- Describe relevant anatomy, aetiology and pathophysiology
- Perform/discuss the clinical assessment and differential diagnosis
- Select and interpret/discuss:
  - contrast studies
  - colonic motility studies
  - colonoscopy
- Outline principles of non-operative management
- Describe use of various aperients and other motility agents
- Identify indications for surgery and management of complications

**SET 3-4 (Mid)**

- Colonoscopy
- Colectomy and ileo-rectal anastomosis
- Appendicostomy

**SET 5+ (Late)**

### Irritable bowel syndrome

**SET 1-2 (Early)**

- Describe relevant anatomy, aetiology and pathophysiology
- Perform/discuss the clinical assessment and differential diagnosis
- Select and interpret:
  - appropriate imaging modalities
  - colonoscopy
- Outline principles of management of irritable bowel syndrome

**SET 3-4 (Mid)**

- Colonoscopy

**SET 5+ (Late)**


## Module Title:
EMERGENCY (excluding Trauma and Emergencies defined by other subspecialties)

### Module Rationale and Objectives
By its very nature an emergency situation requires decisive decision making and effective timing of any surgical intervention. This module addresses issues that need to be considered in both decision making and surgical management. The trainee should have expertise in all aspects of the management of General Surgery emergency conditions.

The graduating trainee will be able to:
- describe common acute surgical pathologies of the head and neck, chest, abdomen, and limbs
- identify and recognise the symptoms and signs of these conditions
- describe and select appropriate diagnostic testing
- identify appropriate treatment options, and their indications and contraindications
- efficiently and effectively examine the patient
- order and interpret appropriate investigations
- formulate a differential diagnosis based on investigative findings
- safely and effectively perform appropriate surgical procedures
- communicate information to patients (and their family) about procedures, outcomes, and risks associated with surgery in ways that encourage their participation in informed decision making (consent)
- appreciate the role of other disciplines in emergency care and team-based management

### Anatomy, Physiology, Pathology
Trainees should have thorough knowledge of the normal embryology, anatomy, physiology, and pathology, of:
- head and neck
- the thorax and its contents
- the abdominal cavity and its contents
- the upper and lower limbs

### Suggested Reading
Trainees who are preparing to sit the Generic and/or Specialty-Specific Basic Science Examination and the Clinical Examination need to refer to the recommended reading list on the RACS website at [www.surgeons.org](http://www.surgeons.org).
For the Fellowship examination, there are no prescribed texts. Trainees are expected to keep abreast of the current literature, including textbooks, journal articles, consensus guidelines and other on-line resources.

### Learning Opportunities and Methods
If state-based and/or local hospital courses/meetings are available, trainees are strongly advised to avail themselves of these opportunities. This also includes practising procedures on simulation equipment where applicable. Trainees are encouraged to present their research at national and/or regional training days, in order to fulfil the research requirement.

### How this module will be assessed
The Generic and Specialty-Specific Basic Science Examination and the Clinical Examination; Fellowship examination (written and viva voce sections); Trainee evaluation forms and logbooks; DOPS and mini-CEX (where applicable).
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**ABDOMINAL**

**Acute Appendicitis**

**SET1-2 (Early)**
- Describe anatomy and embryology including variations
- Describe pathophysiology
- Describe the clinical symptoms and signs
- Outline the appropriate use of and interpret laboratory and imaging

**SET3-4 (Mid)**
- Synthesise strategy for unexpected pathology e.g. carcinoid
- Drainage of appendiceal abscess

**SET5+ (Late)**
- Open appendicectomy
- Laparoscopic appendectomy

**Peritonitis and gastro intestinal bleeding**

*See also Upper GI/HPB, Colorectal, Small Bowel, and Transplantation Modules*

**Abdominal haemorrhage**

- abdominal wall
- intra-peritoneal
- retroperitoneal

**SET1-2 (Early)**
- Describe anatomy
- Describe pathophysiology
- Describe the clinical symptoms and signs
- Outline the appropriate use of and interpret laboratory and imaging
- Describe the management of each condition

**SET3-4 (Mid)**
- Appreciate role of interventional radiology in management
- Drainage and control of retroperitoneal haemorrhage

**SET5+ (Late)**

**Spontaneous bacterial peritonitis**

**SET1-2 (Early)**
- Describe pathophysiology including microbiology
- Describe the clinical symptoms and signs
- Outline the appropriate use of and interpret laboratory and imaging

**SET3-4 (Mid)**
- Describe the management of peritonitis in the presence of liver disease

**SET5+ (Late)**
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<tr>
<td>UROLOGICAL</td>
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<tr>
<td>Urinary retention</td>
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<td>SET1-2 (Early)</td>
<td>Describe appropriate anatomy, aetiology and, patho-physiology of urinary retention</td>
<td>Assess and diagnose urinary retention</td>
<td>Arrange and interpret ultrasound if required</td>
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<td>SET3-4 (Mid)</td>
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<td>SET5+ (Late)</td>
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<td>Phimosis and paraphimosis</td>
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<td>SET1-2 (Early)</td>
<td>Differentiate between normal and abnormal anatomy of penis and foreskin</td>
<td>Identify symptoms and examination findings</td>
<td>Identify the medical indications for circumcision</td>
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<td>SET3-4 (Mid)</td>
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<td>Epididymo-orchitis</td>
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<tr>
<td>SET1-2 (Early)</td>
<td>Explain the etiology/pathogenesis</td>
<td>Recognise symptoms and examination findings</td>
<td>Interpret microbiological investigations (urine M/C/S, etc)</td>
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<td>SET3-4 (Mid)</td>
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<td>Testicular trauma/torsion</td>
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<td>SET1-2 (Early)</td>
<td>• Describe the variations in testicular/epididymal anatomy that may predispose to torsion</td>
<td>• Recognise symptoms and signs</td>
<td>• Describe role of ultrasound in diagnosis</td>
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<td>SET3-4 (Mid)</td>
<td>• Describe the pathology of testicular infarction</td>
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<td>SET5+ (Late)</td>
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<td>Ureteric obstruction including calculi</td>
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<td>• Pyonephrosis</td>
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<td>SET1-2 (Early)</td>
<td>• Describe the aetiology and pathophysiology of ureteric obstruction and sepsis</td>
<td>• Assess and diagnose ureteric obstruction and its causes</td>
<td>• Analyse: - ultrasound - CT scan - urinary cultures - biochemical tests of renal function</td>
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<td>SET3-4 (Mid)</td>
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<td>SET5+ (Late)</td>
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<td>Nephro-/uretero-/vesico-lithiasis</td>
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<tr>
<td>SET1-2 (Early)</td>
<td>• Describe the anatomy of urinary tract • Explain the pathogenesis and pathological consequences of urinary tract calculi</td>
<td>• Identify symptoms and signs of urinary tract stones</td>
<td>• Interpret urine analysis and microbiology • Select and interpret appropriate medical imaging modalities where indicated</td>
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### MEDICAL EXPERTISE

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#### Nephro-/uretero-/vesico-lithiasis (continued)

**SET3-4 (Mid)**
- Explain principles of urinary tract drainage (e.g. stenting, nephrostomy):
  - indications
  - basic procedural details
  - appropriate referral
- Describe management of urosepsis and details of urgent stenting/drainage:
  - indications
  - basic procedural details

**SET5+ (Late)**
- Ureteric stenting
- Cystoscopy and retrograde pylogram

#### GYNAECOLOGY

### Ectopic pregnancy

**SET1-2 (Early)**
- Describe the underlying anatomy and pathophysiology of ectopic pregnancy
- Diagnose and inform patient of differential diagnosis of ectopic pregnancy
- Arrange and interpret:
  - pelvic ultrasound
  - pregnancy tests
- Explain management by injection of chemotherapy agents
- Discuss the principles of management of ectopic pregnancy

**SET3-4 (Mid)**

**SET5+ (Late)**
- Operations for ectopic pregnancy including excision or repair of Fallopian tube

### Ovarian cysts

**SET1-2 (Early)**
- Indicate causes of ovarian cysts
- Differential diagnosis
- Pelvic ultrasound
- Discuss the principles of management of cystic lesions of the ovary
- Ovarian cystectomy
- Oophorectomy

**SET3-4 (Mid)**

**SET5+ (Late)**

### ENT

### Epistaxis

**SET1-2 (Early)**
- Anatomy of nasal cavity
- Determine significance and when to refer
- Appropriate haematology investigations
- Explain/carry out principles of management of epistaxis
- Nasal packing

**SET3-4 (Mid)**

**SET5+ (Late)**
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<td>ANATOMY</td>
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<td>OPERATIVE MANAGEMENT - DOES -</td>
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<td>PATHOLOGY</td>
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<tr>
<td>SET 1-2</td>
<td>Early</td>
<td>• Describe the anatomy and pathophysiology of focal sepsis as it relates to skin, the limbs, solid organs, and body cavities</td>
<td>• Drainage of an abscess of limbs</td>
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<td>• Assess and diagnose focal sepsis</td>
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<td>• Arrange and interpret:</td>
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<td>- CT Scans</td>
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<td>- Ultrasound</td>
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<td>- Plain X Rays</td>
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<td>SET 3-4</td>
<td>(Mid)</td>
<td>• Demonstrate an ability to assess the level of severity of sepsis</td>
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<td>• Demonstrate an ability to provide appropriate resuscitation</td>
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<td>• Demonstrate an understanding of the appropriate choice of antibiotics and their side effects</td>
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<td>• Demonstrate an ability to choose appropriate methods of drainage, either open or image guided percutaneous drainage</td>
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<td>• Demonstrate an understanding of the managements of drainage tubes</td>
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<tr>
<td>SET 5+</td>
<td>(Late)</td>
<td>• Open drainage of abscesses of the abdominal cavity and abdominal solid organs</td>
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<td>Sepsis Syndrome</td>
<td>See also Sepsis Module</td>
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<td>SET 1-2</td>
<td>(Early)</td>
<td>• Describe the pathophysiology of the Sepsis Syndrome</td>
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<td>• Assess and diagnose the Sepsis Syndrome</td>
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<td>SET 3-4</td>
<td>(Mid)</td>
<td>• Demonstrate an understanding and indication in the use of antibiotics, resuscitative fluids, and vasoactive agents</td>
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<td>SET 5+</td>
<td>(Late)</td>
<td>• Gain vascular access for resuscitation</td>
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<td>• Gain access for central line placement</td>
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**Module Rationale and Objectives**

The general surgeon is expected to be able to investigate, assess and manage commonly occurring diseases of the endocrine glands and to be competent in accurately identifying conditions that require surgery, and those which are best treated by other means. They also expected to be able to recognise the need and appropriate time to refer such patients to other professionals.

The graduating trainee will be able to:

- describe common surgical pathologies of thyroid, parathyroid, adrenal, pancreas, and gut endocrine organs
- identify and recognise the symptoms and signs of these conditions
- describe and select appropriate diagnostic testing
- identify appropriate treatment options, and their indications and contraindications
- recognise, assess and treat any common thyroid, parathyroid, adrenal, pancreatic endocrine and neuro-endocrine tumour conditions likely to be encountered in consultative general surgical practice
- recognise which conditions to refer on to a specialised multidisciplinary service
- critically evaluate the advantages and disadvantages of different investigative modalities
- select appropriate investigative tools and monitoring techniques in a cost effective manner
- appropriately adjust the way they communicate with patients to accommodate cultural and linguistic differences
- communicate information to patients (and their family) about procedures, outcomes, and risks associated with surgery in ways that encourage their participation in informed decision making (consent)

Trainees should have thorough knowledge of the normal embryology, anatomy, physiology, and pathology, of:

- embryology
- surgical anatomy
- neuroendocrine system
- branchial arch development
- regional anatomy of neck
- pancreas
- adrenal

**Suggested Reading**

- For the Fellowship examination, the following text is recommended: The Textbook of Endocrine Surgery (ISBN 0721601391), 2nd Edition, by Clark / Duh / Kebebew. Elsevier-Saunders, Philadelphia, 2005. This is an excellent reference textbook on Endocrine Surgery. Trainees are expected to keep abreast of the current literature, including textbooks, journal articles, consensus guidelines and other on-line resources.

**Learning Opportunities and Methods**

If state-based and/or local hospital courses/meetings are available, trainees are strongly advised to avail themselves of these opportunities. This also includes practising procedures on simulation equipment where applicable. Trainees are encouraged to present their research at national and/or regional training days, in order to fulfil the research requirement.

**How this module will be assessed**

The Generic and Specialty-Specific Basic Science Examination and the Clinical Examination; Fellowship examination (written and viva voce sections); Trainee evaluation forms and logbooks; DOPS and mini-CEX (where applicable).
Multinodular goitre, thyroiditis, thyroglossal cyst thyrotoxicosis

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<tr>
<td>SET1-2 (Early)</td>
<td>Normal and abnormal anatomy, embryology histology and the thyroid gland, including Thyroglossal duct cyst</td>
<td>Review the clinical features in the history and the examination findings</td>
<td>Operative management - DOES -</td>
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<td>Natural history and causes of multinodular goitre, including retrosternal and recurrent goitres and thyroiditis, including hashimoto’s and subacute thyroiditis</td>
<td>Describe clinical features of thyroglossal cyst</td>
<td>Operative management - KNOWS -</td>
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<td>Thyrotoxicosis, Graves and Plummers</td>
<td>Review the relevance of:</td>
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<td>Pathophysiology of hypothyroidism and iodine metabolism</td>
<td>- thyroid function (TSH, T4, T3)</td>
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<td>Outline hormonal assays and their pitfalls</td>
<td>- thyroid antibody tests, ESR, CRP</td>
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<td>- imaging (U/S, Nuclear medicine scans, CT)</td>
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<td>- fine needle aspiration cytology +/- repeat FNAC</td>
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<td>- video stroboscopy larynx</td>
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<td>SET3-4 (Mid)</td>
<td>Perform indirect laryngoscopy and/or nasopharyngoscopy</td>
<td>Summarise indications for surgery versus medical therapy versus radioiodine treatment for hypothyroidism</td>
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<td>Describe indications for surgery and preoperative assessment multinodular goitre</td>
<td>Hemithyroidectomy</td>
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<td>Manage postoperative complications including hypocalcemia, thyroid storm, respiratory and tracheal problems, post operative bleeding and infection, recurrent laryngeal nerve palsy, external recurrent nerve palsy</td>
<td>Tracheostomy</td>
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<td>Outline preoperative management hyperthyroid patient</td>
<td>Total Thyroidectomy</td>
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<td>Autotransplant parathyroid</td>
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<td>SET5+ (Late)</td>
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<td>Sternal split</td>
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<td>Re-operative thyroid surgery</td>
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| SET1-2 (Early) | **Thyroid tumours**  
- benign  
- malignant | • Discuss the:  
  - spectrum of sporadic versus MEN I & II syndromes - presentation and natural history  
  - natural history and causes of solitary thyroid nodules  
  - natural history and causes benign and malignant thyroid tumours  
  - histopathological types and sub types of thyroid cancer  
  - inheritance patterns, genetic and molecular implications of various tumour types | • Review the clinical features in the history and the examination findings | • Review the relevance of:  
  - medical imaging (U/S, Nuclear Medicine scans, CT, PET scanning)  
  - fine needle aspiration cytology +/- repeat FNAC | | |
| SET3-4 (Mid) | • Perform indirect laryngoscopy | • Summarise:  
  - indications for surgery for benign tumours  
  - role of hemi-thyroidectomy for microcarcinoma  
  - role of total thyroidectomy for malignancy  
  - role of post operative radioiodine ablation for thyroid cancer  
  - principles of neck dissection for thyroid cancer  
  - manage postoperatively thyroid hormone replacement  
  - manage post operative complications, including bleeding hypocalcemia, thyroid storm, respiratory and tracheal problems, post operative, and infection | • Hemi-thyroidectomy  
• Tracheostomy | • Total thyroidectomy  
• Parathyroid preservation and autotransplantation of parathyroids | |
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<td>PRINCIPLES OF MANAGEMENT</td>
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**Thyroid tumours (continued)**
- benign
- malignant

SET5+ (Late)

**Parathyroid tumours and hyperplasia**

SET1-2 (Early)
- Discuss the:
  - spectrum of sporadic versus MEN I and II syndromes - presentation and natural history
  - pathological spectrum and natural history of primary, secondary and tertiary hyperparathyroidism - including adenoma and hyperplasia and carcinoma
  - detailed understanding abnormal and normal anatomy, embryology histology and physiology of the parathyroids, including calcium homeostasis and parathormone assays

- Review the clinical features in the history and the examination findings

- Importance of biochemical diagnosis
- Carry out serum and urine biochemical diagnosis and exclude other causes of hypercalcemia
- Ultrasound and sestami scans, MRI, CT; their role in preoperative localisation
- Review the relevance of medical imaging (U/S, Nuclear medicine scans, CT)
- Review associated general medical conditions including complications of hyperparathyroidism and chronic renal failure

- Selective lateral lymph node dissection (levels II to V)
- Radical and modified radical neck dissection
- Detailed knowledge (levels I to VII lymph nodes of neck)
- Central compartment node dissection (level VI and VII)
### Parathyroid tumours and hyperplasia (continued)

**SET 3-4 (Mid)**
- Perform indirect laryngoscopy and/or nasophagendoscopy
- Summarise:
  - Indications for conservative versus operative management of hyperparathyroidism
  - Management of hypercalcemia, including malignant hypercalcemia and hypercalcemic crisis
  - Management of postoperative hypocalcemia and hungry bone syndrome
  - Manage the conditions of primary and secondary (renal) hyperparathyroidism
- Complications of surgery – implications of failed parathyroid exploration

**SET 5+ (Late)**
- Unilateral neck exploration minimally invasive (MIP)
- Intraoperative parathormone use
- Reoperative parathyroid surgery
- Cervical thymectomy

### Pancreatic endocrine tumours and hyperplasia, neuro-endocrine tumours

**SET 1-2 (Early)**
- Discuss the:
  - Spectrum of sporadic versus MEN I and II syndromes - presentation and natural history
  - Pathophysiological effects of neuroendocrine hormone excess
  - Pharmacology of somatostatin analogues
- Outline general pathology of neuroendocrine tumours
- Insulinoma, Gastrinoma, Z-E syndrome
- Detailed understanding of normal, abnormal anatomy, histology and pathology of the endocrine pancreas
- Review the clinical features in the history and the examination findings
- Carry out serum and urine biochemical diagnosis
- Review the relevance of:
  - Medical imaging (U/S, CT scanning, selective venous sampling with or without intra arterial calcium infusion) (as localisation studies)
  - Preoperative endoscopy +/- endoscopic ultrasound
- Review general medical associated conditions

**SET 5+ (Late)**
- Parathyroidectomy – open and minimally invasive (MIP)
- Neck exploration + frozen section including excision adenoma, 31/2 gland excision, total parathyroidectomy +/− autotransplantation
Pancreatic endocrine tumours and hyperplasia, neuro-endocrine tumours (continued)

**SET3-4 (Mid)**
- Assessment of a pancreatic mass
- Summarise:
  - principles of preoperative optimisation medical conditions
  - principles of pancreatic surgery – enucleation versus resection
  - intraoperative ultrasound
  - principles of palliation neuroendocrine syndromes (operative, medical, radiological)
- Bowel resection for small bowel tumours (carcinoid)
- Liver biopsy

**SET5+ (Late)**
- Non-anatomical and anatomical liver resection

Adrenal gland functional abnormalities and tumours, and retro peritoneal tumours

**SET1-2 (Early)**
- Normal and abnormal anatomy, embryology, histology and physiology the adrenal gland
- Review the clinical features in the history and the examination findings including those for:
  - Cushing's syndrome
  - Conn's Syndrome
  - Sex Hormone excess
  - Catecholamine excess
- Review:
  - screening tests
  - definitive tests
  - localising tests
- Discuss the principles of stimulation and suppression tests
- Carry out serum and urine biochemical diagnosis
- Review general medical associated conditions
- Adrenalectomy, including open and laparoscopic anterior, posterior, lateral and abdominal

**SET3-4 (Mid)**
- Review the relevance of medical imaging for localising (U/S, CT scanning, selective venous sampling, nuclear medicine, MRI)
- Summarise/ implement:
  - preoperative optimisation/ blockade of medical condition
  - assessment for suitability for laparoscopic approach versus open approach
  - postoperative hormone deficiency syndromes and their management
- Adrenalectomy, including open and laparoscopic anterior, posterior, lateral and abdominal

**SET5+ (Late)**
- Retroperitoneal lymph node dissection and resection of adrenal tumours
## Module Rationale and Objectives

General surgeons need to have a thorough knowledge of infections, tumours and lesions of the head and neck and be able to recognise and treat compromise of the upper airway. Trainees are required to also have a high level of knowledge of investigations, differential diagnosis, potential risks and/or complications and appropriate management strategies.

The graduating trainee will be able to:
- describe common surgical pathologies of deep neck space infections, congenital cysts and sinuses of the head and neck, metabolic and neoplastic conditions of salivary glands, and primary and secondary malignancies presenting in the head and neck
- identify and recognise the symptoms and signs of these conditions
- describe and select appropriate diagnostic testing
- identify appropriate treatment options, and their indications and contraindications
- recognise the symptoms of, accurately diagnose, and manage common problems in the head and neck
- select appropriate investigative tools
- adapt their skill in the context of each patient and each procedure
- identify and manage risk
- recognise the need to refer patients to other professionals, including multidisciplinary teams
- communicate information to patients (and their family) about procedures, outcomes, and risks associated with surgery in ways that encourage their participation in informed decision making (consent)

## Anatomy, Physiology, Pathology

Trainees should have thorough knowledge of the normal embryology, anatomy, physiology, and pathology, of:
- the head (extracranial)
- the neck (upper aero-digestive tract and soft tissues)

## Suggested Reading

Trainees who are preparing to sit the Generic and/or Specialty-Specific Basic Science Examination and the Clinical Examination need to refer to the recommended reading list on the RACS website at [www.surgeons.org](http://www.surgeons.org). For the Fellowship examination, there are no prescribed texts. Trainees are expected to keep abreast of the current literature, including textbooks, journal articles, consensus guidelines and other on-line resources.

## Learning Opportunities and Methods

If state-based and/or local hospital courses/meetings are available, trainees are strongly advised to avail themselves of these opportunities. This also includes practising procedures on simulation equipment where applicable. Trainees are encouraged to present their research at national and/or regional training days, in order to fulfil the research requirement.

## How this module will be assessed

The Generic and Specialty-Specific Basic Science Examination and the Clinical Examination; Fellowship examination (written and viva voce sections); Trainee evaluation forms and logbooks; DOPS and mini-CEX (where applicable).
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<tr>
<td>Upper aero-digestive tract neoplasia</td>
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| SET1-2 (Early) | • Describe anatomy of the upper aerodigestive tract  
• Classify neoplasms of the upper aerodigestive tract  
• Describe biological behaviour including patterns of lymphatic spread  
• Discuss epidemiology and risk factors | • Recognise symptoms and signs  
• Perform a basic oral, oropharyngeal and cervical node examination | • Define the role of laryngopharyngoscopy  
• Assess indications/contraindications of open cervical node biopsy (and complications)  
• Discuss the role of multidisciplinary approach to management | • Cervical lymph node biopsy |
| SET3-4 (Mid) | | | • Review principles of curative/palliative treatment (surgical and non-surgical): indications, procedures, complications  
• Plan and manage maintenance of airways and nutrition | • Open feeding gastrostomy or PEG  
• Tracheostomy |
| SET5+ (Late) | | | |

Salivary gland pathology

**tumour**

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<tr>
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</tbody>
</table>
| SET1-2 (Early) | • Classify neoplasms and biological behaviour  
• Perform focused examination of parotid and submandibular glands | • Perform FNAB  
• Discuss the role of medical imaging | | |
| SET3-4 (Mid) | | | • Describe indications for surgical treatment and possible complications  
• Describe indications for radiotherapy  
• Prescribe medical therapy | • Excision of submandibular gland  
• Parotidectomy |
| SET5+ (Late) | | | |
### Salivary gland pathology
- **SET 1-2 (Early)**
  - Describe pathogenesis and pathological complications
  - Perform focused examination of parotid and submandibular glands

- **SET 3-4 (Mid)**
  - Palpate stone in submandibular duct

- **SET 5+ (Late)**

### Upper airway foreign body/occlusion/trauma
- **SET 1-2 (Early)**
  - Describe upper airway anatomy including vocal cords and upper trachea
  - Diagnose upper airway compromise
  - Interpret plain X-rays of cervical soft tissues

- **SET 3-4 (Mid)**
  - Manage the condition

- **SET 5+ (Late)**
  - Emergency tracheotomy
  - Cricothyroidotomy
  - Extracting foreign body

### Cervical infections lymphadenitis/abscess
- **SET 1-2 (Early)**
  - Describe pathogenesis
  - Describe fascial compartments of the neck
  - Diagnose abscess formation on examination

- **SET 3-4 (Mid)**
  - Describe and interpret appropriate imaging
  - Describe and interpret appropriate microbiology

- **SET 5+ (Late)**
  - Emergency tracheotomy
  - Incision and drainage of cervical abscess
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<tr>
<td>SET1-2 (Early)</td>
<td>• Explain embryological origin</td>
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</tbody>
</table>
| SET3-4 (Mid) | • Formulate differential diagnosis  
• Diagnose on examination | • Describe and interpret appropriate medical imaging | |
| SET5+ (Late) | | • Describe indications and complications of surgical management  
• Manage the condition | |

**Lumps in the neck**  
- carotid body tumour *(See also Vascular Module)*  
- branchial cyst/sinus  
- thyroglossal cyst *(See also Endocrine Module)*  
- pharyngeal pouch

**Parathyroid**  
*See Endocrine Module*

**Head and neck trauma**  
*See Trauma Module*

*See also Skin and Soft Tissue Module*
### Module Rationale and Objectives

Sepsis and other critical conditions require informed and decisive action on the part of the surgeon. This module identifies the key areas in which trainees are expected to have expertise in order to be able to respond promptly and appropriately as the need arises.

The graduating trainee will be able to:

- describe common surgical pathologies of sepsis in specific organs or regions
- apply the CCrISP principles to identify and recognise the symptoms and signs of these conditions
- describe and select appropriate diagnostic testing
- identify appropriate treatment options, and their indications and contraindications
- anticipate and aim to prevent the onset of complications
- effectively manage complications of operative procedures and the underlying disease process
- understand the importance of a multidisciplinary approach to the management of critically ill patients
- identify the likely causative factor(s) of a patient's critical illness and implement management accordingly
- prioritise, initiate and coordinate the timely management of critically ill patients
- recognise the importance of effective communication with other professionals and the need for timely referral
- determine the appropriate level of care for the patient
- accurately identify the risks, benefits and mechanisms of action of various treatment modalities and interventions
- select appropriate investigative tools and monitoring techniques
- communicate information to patients (and their family) about procedures, outcomes, and risks associated with surgery in ways that encourage their participation in informed decision making (consent)

### Anatomy, Physiology, Pathology

Trainees should have thorough knowledge of the normal embryology, anatomy, physiology, and pathology, of:

- organ-specific sepsis
- Systemic Inflammatory Response Syndrome (SIRS)/Multiple Organ Dysfunction Syndrome (MODS)
- system specific dysfunction (e.g. renal impairment)
- co-morbidities that may alter management and/or adversely affect outcome

### Suggested Reading


Trainees who are preparing to sit the Generic and/or Specialty-Specific Basic Science Examination and the Clinical Examination need to refer to the recommended reading list on the RACS website at www.surgeons.org

For the Fellowship examination, there are no prescribed texts. Trainees are expected to keep abreast of the current literature, including textbooks, journal articles, consensus guidelines and other on-line resources.

### Learning Opportunities and Methods

Skills courses including RACS CCrISP, EMST courses.

If state-based and/or local hospital courses/meetings are available, trainees are strongly advised to avail themselves of these opportunities. This also includes practising procedures on simulation equipment where applicable. Trainees are encouraged to present their research at national and/or regional training days, in order to fulfil the research requirement.

### How this module will be assessed

The Generic and Specialty-Specific Basic Science Examination and the Clinical Examination; Fellowship examination (written and viva voce sections); Trainee evaluation forms and logbooks; DOPS and mini-CEX (where applicable).
### Critically ill surgical patient e.g.:
- severe pancreatitis, anastomotic leak
- strangulated small bowel
- massive haemorrhage

**SET1-2 (Early)**
- Recognise the spectrum of pathologies responsible for critical illness
- Explain the pathophysiology and consequences of:
  - SIRS
  - MODS
  - Adult Respiratory Distress Syndrome
  - shock
- Identify the patient at risk of becoming critically ill
- Recognise the clinical features of a critically ill patient and life threatening conditions
- Identify and describe the clinical features of the different causes of shock
- Appropriately select and coordinate multimodal assessment as required
- Review and interpret available data

**SET3-4 (Mid)**
- Discuss the procedural details of definitive surgical management where indicated
- Explain the role and indications for advanced organ and system support:
  - cardiovascular
  - respiratory
  - renal

**SET5+ (Late)**
- Establish and maintain emergency airway
- Needle thoracostomy/intercostal chest drain
- Establish definitive emergency vascular access - central and peripheral
- Cricothyroidotomy/tracheostomy

---

### Gangrene/necrotising fasciitis
*See Skin & Soft Tissue Module*

---

### Tetanus

**SET1-2 (Early)**
- Discuss the incidence and describe pathogenesis including microbiology
- Identify the clinical manifestations
- Classify the spectrum of presentation
- Select and interpret blood tests, microbiology and imaging investigations
- Establish the principles of immunisation
- Recognise early signs and describe the management
- Wound debridement

**SET3-4 (Mid)**
- Coordinate multidisciplinary care

**SET5+ (Late)**
### Subphrenic/pelvic/ intra-abdominal abscess

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<td>CLINICAL ASSESSMENT</td>
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</tr>
<tr>
<td>SET1-2 (Early)</td>
<td>Describe the anatomy of abdominal and pelvic cavity</td>
<td>Classify the spectrum of presentation, including the clinical signs of sepsis and clinical presentations pertaining to abscesses in various sites in the abdomen</td>
<td>Select and/or interpret blood tests, microbiology and imaging investigations</td>
</tr>
<tr>
<td>SET3-4 (Mid)</td>
<td>Describe the various forms of abscess</td>
<td>Perform a focused clinical examination</td>
<td>Select and/or interpret diagnostic/ interventional imaging</td>
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<td>SET5+ (Late)</td>
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### Psoas abscess

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<tr>
<td>SET1-2 (Early)</td>
<td>Describe pathogenesis, causative organisms, and related disease</td>
<td>Take an appropriate history and perform a focused examination</td>
<td>Select and/or interpret diagnostic/ interventional imaging</td>
</tr>
<tr>
<td>SET3-4 (Mid)</td>
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<td>Interpret results of microbiological specimens</td>
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<tr>
<td>SET5+ (Late)</td>
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### Intra-abdominal sepsis/peritonitis

*See also Abdominal Wall Module

* See also above: Subphrenic/pelvic/ intra-abdominal abscess

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<td>SET1-2 (Early)</td>
<td>Discuss pathogenesis, causative organisms, and related disease</td>
<td>Perform a focused clinical examination</td>
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<td>Interpret microbiological results</td>
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### The immuno-suppressed patient

**See Transplantation Module**

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<tr>
<td>SET1-2 (Early)</td>
<td>• Discuss the basis of humoral and cellular immunity and the factors that modify this</td>
<td>• Identify the symptoms and signs suggesting sepsis and/or impending decompensation in an immuno-suppressed patient</td>
<td>• Enlist appropriate multidisciplinary input to assist with management</td>
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<tr>
<td>SET3-4 (Mid)</td>
<td>• Discuss the nature and role of operative or non-operative management, where indicated</td>
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<tr>
<td>SET5+ (Late)</td>
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### HIV/AIDS and other atypical infections including TB

**See also above: The immuno-suppressed patient**

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<tr>
<td>SET1-2 (Early)</td>
<td>• Describe the pathophysiology of immune suppression as it relates to HIV/AIDS</td>
<td>• Recognise the spectrum of clinical presentation</td>
<td>• Select appropriate pathology and imaging investigations to identify sepsis in an immuno-suppressed surgical patient</td>
</tr>
<tr>
<td>SET3-4 (Mid)</td>
<td>• Interpret relevant haematological and microbiological tests, such as helper/suppressor cell ratios and viral load</td>
<td>• Indicate the role for medical imaging where indicated</td>
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<tr>
<td>SET5+ (Late)</td>
<td>• Describe and explain the role of universal precautions</td>
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### The splenectomised patient

**See also above: The immuno-suppressed patient**

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<tr>
<td>SET1-2 (Early)</td>
<td>• Discuss the anatomy and physiological role of the spleen</td>
<td>• Perform an abdominal examination to identify splenomegaly</td>
<td>• Prescribe appropriate preventive management for overwhelming post-splenectomy infection (OPSI) following splenectomy</td>
</tr>
<tr>
<td>SET3-4 (Mid)</td>
<td>• Outline the role of the spleen in certain haematological disorders such as hereditary spherocytosis and idiopathic thrombocytopenic purpura</td>
<td>• Select appropriate pathology and imaging investigations prior to elective splenectomy</td>
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<tr>
<td>SET5+ (Late)</td>
<td>• Open elective splenectomy <strong>See also Upper GI/HPB Module</strong></td>
<td>• Laparoscopic elective splenectomy</td>
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</table>
### Nutritional support

**SET1-2 (Early)**
- Describe:
  - components of nutrition and their functions
  - normal fluid, electrolytic and other nutritional requirements
  - specific nutritional demands associated with different pathologies
  - complications associated with nutritional replacement
  - how nutrition influences outcome
- Identify the patient at risk of nutritional deficiencies
- Recognise the symptoms and signs related to nutritional deficiencies
- Identify patients who have specific nutritional requirements
- Select and interpret appropriate laboratory tests to assess nutrition
- Appraise the role of nutritional support in the management of surgical pathologies
- Coordinate multidisciplinary approach to management
- Differentiate the various routes for nutritional support

**SET3-4 (Mid)**
- Select and interpret appropriate laboratory tests to formulate nutritional support
- Explain the indications for TPN and the associated complications
- Monitor response to nutritional support and adjust accordingly
- Describe techniques to establish routes for administering nutrition
- Feeding gastrostomy/jejunostomy (open and endoscopic)
- Vascular access for nutrition

**SET5+ (Late)**

### Other medical system disease

**SET1-2 (Early)**
- Recognise the impact on effective management of surgical patients of comorbidities e.g. cardiac, respiratory, renal, hepatic, endocrine, CNS
- Quantify and classify the risk factors of comorbidities
- Classify the patient according to ASA grading system and be able to accurately determine patient status
- Coordinate multidisciplinary teams

**SET3-4 (Mid)**

**SET5+ (Late)**
### Acute pain control

**SET1-2 (Early)**
- **MEDICAL EXPERTISE**
  - **ANATOMY**
  - **PHYSIOLOGY**
  - **PATHOLOGY**
  - **JUDGEMENT / CLINICAL DECISION MAKING**
  - **TECHNICAL EXPERTISE**
- **CLINICAL ASSESSMENT**
  - **INVESTIGATIONS**
  - **PRINCIPLES OF MANAGEMENT**
- **OPERATIVE MANAGEMENT**
  - **DOES**
- **OPERATIVE MANAGEMENT**
  - **KNOWS**
  
  - **Acute pain control**
  
  - **SET1-2 (Early)**
    - Describe:
      - pathophysiology of acute pain
      - the causes of pain in the surgical patient
      - the effect of pain on various physiological functions
    - Identify the patient likely to have pain
    - Recognise and assess pain using a scoring system
    - Recognise abnormal behaviour in response to pain
    - Select and interpret investigations to determine the cause of pain
    - Implement preventive measures
    - Discuss the role of pain control in patient outcome
    - Liaise with an acute pain service to assist management
    - Prescribe and monitor response to pharmacological agents and adjust accordingly
    - Implement multimodal therapy for pain control
    - Describe complications associated with analgesic therapy
    - Differentiate the preferred route(s) for administering analgesia

  - **SET3-4 (Mid)**
  - **SET5+ (Late)**

**Patients on specific medications: Anticoagulant, Immunomodulators, Oncological agents**

**SET1-2 (Early)**
- **MEDICAL EXPERTISE**
  - **ANATOMY**
  - **PHYSIOLOGY**
  - **PATHOLOGY**
  - **JUDGEMENT / CLINICAL DECISION MAKING**
  - **TECHNICAL EXPERTISE**
- **CLINICAL ASSESSMENT**
  - **INVESTIGATIONS**
  - **PRINCIPLES OF MANAGEMENT**
- **OPERATIVE MANAGEMENT**
  - **DOES**
- **OPERATIVE MANAGEMENT**
  - **KNOWS**
  
  - **Patients on specific medications: Anticoagulant, Immunomodulators, Oncological agents**
  
  - **SET1-2 (Early)**
    - Recognise the impact of various pharmacological agents on different patients
    - Order and interpret appropriate investigations as required
    - Select and adjust surgical practice according to risk
    - Coordinate multidisciplinary teams

  - **SET3-4 (Mid)**
  - **SET5+ (Late)**
**Module Rationale and Objectives**

Skin cancer is increasing in prevalence, and if undiagnosed or untreated can be lethal. Infections of the skin and soft tissue require early identification and prompt management. General surgery trainees are required to become competent in accurately identifying conditions that require surgery, and those which are best treated by other means.

The graduating trainee will be able to:
- describe common surgical pathologies of benign and malignant skin lesions, and the various types of skin and soft tissue infections.
- identify and recognise the symptoms and signs of these conditions
- describe and select appropriate diagnostic testing
- identify appropriate treatment options, and their indications and contraindications
- diagnosis and treat commonly encountered conditions of the skin and soft tissues
- select appropriate investigative tools
- adapt their skill in the context of each patient and each procedure
- identify and manage risk
- recognise the need to refer patients to other professionals
- communicate information to patients (and their family) about procedures, outcomes, and risks associated with surgery in ways that encourage their participation in informed decision making (consent)

**Anatomy, Physiology, Pathology**

Trainees should have thorough knowledge of the normal embryology, anatomy, physiology, and pathology, of:
- regional surgical anatomy of body surfaces
- histology of the skin and appendages
- principles of wound healing and cosmesis

**Suggested Reading**

Trainees who are preparing to sit the Generic and/or Specialty-Specific Basic Science Examination and the Clinical Examination need to refer to the recommended reading list on the RACS website at [www.surgeons.org](http://www.surgeons.org). For the Fellowship examination, there are no prescribed texts. Trainees are expected to keep abreast of the current literature, including textbooks, journal articles, consensus guidelines and other on-line resources.

**Learning Opportunities and Methods**

If state-based and/or local hospital courses/meetings are available, trainees are strongly advised to avail themselves of these opportunities. This also includes practising procedures on simulation equipment where applicable. Trainees are encouraged to present their research at national and/or regional training days, in order to fulfil the research requirement.

**How this module will be assessed**

The Generic and Specialty-Specific Basic Science Examination and the Clinical Examination; Fellowship examination (written and viva voce sections); Trainee evaluation forms and logbooks; DOPS and mini-CEX (where applicable).
### Skin cancer

- basal cell carcinoma
- squamous cell carcinoma
- intra-epithelial carcinoma
- Merkel cell tumour
- Melanoma *(See also Surgical Oncology Module)*

**SET1-2 (Early)**

- Types of skin cancer and their biological behaviour
- Epidemiology/risk factors
- Principles of wound healing
- Principles of cosmesis: Langer’s lines
- Anatomy of cervical, axillary and inguinal lymph node basins

- Perform appropriate physical examination
- Identify typical appearances of specific lesions

- Perform and interpret results of:
  - punch biopsy
  - excision biopsy
- Discuss indications/contraindications of these biopsy methods
- Interpret skin surface microscopy

- Indications for operative treatment, procedural details (including appropriate excision margins), and potential complications
- Non-operative primary treatments e.g. topical/regional/systemic cytotoxics, radiation, etc.
- Appraise the role of adjuvant therapies

**SET3-4 (Mid)**

- Select and describe relevant staging investigations

- Principles of advanced reconstructive techniques e.g. skin graft, pedicle flap, free flap, composite graft
- Discuss the indications and principles of managing regional lymph nodes
- Discuss possible complications of surgical treatments and how to manage them

**SET5+ (Late)**

**Benign skin and subcutaneous lesions**

- Nevus
- Solar keratosis
- Papilloma/wart
- Seborrheic keratosis
- Lipoma
- Sebaceous cyst
- Ganglion
- Keloid and hypertrophic scar

**SET1-2 (Early)**

- Histological features and biological behaviour of specific lesions
- Principles of wound healing
- Principles of cosmesis: Langer’s lines

- Identify the typical appearance and examination findings of specific lesions

- Employ and interpret appropriate ancillary investigations as indicated:
  - skin surface microscopy
  - punch biopsy
  - incision biopsy
  - excision

- Indications for and complications of biopsy or excision
- Indications for non-surgical treatments (e.g. cryotherapy, steroid injection)
- Principles of excision and closure, including possible complications

- Simple excision of lesion
- Diathermy ablation/curettage (warts)
### BENIGN SKIN AND SUBCUTANEOUS LESIONS (CONTINUED)

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<tr>
<td>SET5+ (Late)</td>
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**Ingrown toenail**

**SET1-2 (Early)**
- Describe the anatomy of great toe:
  - digital artery and nerves
  - nail matrix
- Describe the pathogenesis

**SET3-4 (Mid)**

**SET5+ (Late)**

**Cellulitis**

**Soft tissue abscess**

**Wound infection**

**Synergistic soft tissue infections e.g.:**
- Fournier’s gangrene
- Gas gangrene
- Necrotising fasciitis, etc.

<table>
<thead>
<tr>
<th>SET LEVEL</th>
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<tbody>
<tr>
<td>SET1-2 (Early)</td>
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<tr>
<td>SET3-4 (Mid)</td>
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<tr>
<td>SET5+ (Late)</td>
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**SET LEVEL**

**ANATOMY PHYSIOLOGY PATHOLOGY**

**CLINICAL ASSESSMENT**

**INVESTIGATIONS**

**PRINCIPLES OF MANAGEMENT**

**OPERATIVE MANAGEMENT - DOES -**

**OPERATIVE MANAGEMENT - KNOWS -**

**Inguinal hernia**

**SET3-4 (Mid)**

**SET5+ (Late)**

**Ingrown toenail**

**SET1-2 (Early)**
- Describe the anatomy of great toe:
  - digital artery and nerves
  - nail matrix
- Describe the pathogenesis

**SET3-4 (Mid)**

**SET5+ (Late)**

**Cellulitis**

**Soft tissue abscess**

**Wound infection**

**Synergistic soft tissue infections e.g.:**
- Fournier’s gangrene
- Gas gangrene
- Necrotising fasciitis, etc.

**SET1-2 (Early)**
- Describe the anatomy of great toe:
  - digital artery and nerves
  - nail matrix
- Describe the pathogenesis

**SET3-4 (Mid)**

**SET5+ (Late)**

**Benign skin and subcutaneous lesions (continued)**

**SET3-4 (Mid)**

**SET5+ (Late)**

**Ingrown toenail**

**SET1-2 (Early)**
- Describe the anatomy of great toe:
  - digital artery and nerves
  - nail matrix
- Describe the pathogenesis

**SET3-4 (Mid)**

**SET5+ (Late)**

**Cellulitis**

**Soft tissue abscess**

**Wound infection**

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<tr>
<td>SET1-2 (Early)</td>
<td>• Discuss pathogenesis and natural history of the condition</td>
<td>• Discuss procedural details of surgical management, including after-care, possible complications and how to deal with them</td>
<td>• Extensive wound debridement/amputation&lt;br&gt; • Defunctioning colostomy (as indicated) &lt;br&gt; • Reconstructive techniques: split skin grafting, local flap repair, etc.</td>
</tr>
<tr>
<td>SET3-4 (Mid)</td>
<td>• Interpret history and examination findings</td>
<td>• Discuss principles and indications of non-surgical and surgical management</td>
<td>• Incision and drainage &lt;br&gt; • Reconstructive techniques where indicated</td>
</tr>
<tr>
<td>SET5+ (Late)</td>
<td>• Employ use of microbiology, imaging and blood tests</td>
<td>• Discuss procedural details of surgical management, including after-care, possible complications and how to deal with them</td>
<td>• Incision and drainage of hand and finger spaces</td>
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**Synergistic soft tissue infections (continued)**

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<tr>
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<tbody>
<tr>
<td>SET3-4 (Mid)</td>
<td>• Discuss procedural details of surgical management, including after-care, possible complications and how to deal with them</td>
<td>• Extensive wound debridement/amputation&lt;br&gt; • Defunctioning colostomy (as indicated) &lt;br&gt; • Reconstructive techniques: split skin grafting, local flap repair, etc.</td>
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**Hidradenitis suppurativa**

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<tbody>
<tr>
<td>SET1-2 (Early)</td>
<td>• Discuss pathogenesis and natural history of the condition</td>
<td>• Discuss principles and indications of non-surgical and surgical management</td>
<td>• Incision and drainage</td>
</tr>
<tr>
<td>SET3-4 (Mid)</td>
<td>• Interpreting history and examination findings</td>
<td>• Discuss procedural details of surgical management, including after-care, possible complications and how to deal with them</td>
<td>• Excision &lt;br&gt; • Reconstructive techniques where indicated</td>
</tr>
<tr>
<td>SET5+ (Late)</td>
<td>• Recognise implications of deep space infections</td>
<td>• Discuss procedural details of surgical management, including after-care, possible complications and how to deal with them</td>
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**Hand Infections**

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<tbody>
<tr>
<td>SET1-2 (Early)</td>
<td>• Anatomy of hand spaces</td>
<td>• Discuss principles and indications of non-operative and operative management, including antibiotic rationale</td>
<td>• Incision and drainage of hand and finger spaces</td>
</tr>
<tr>
<td>SET3-4 (Mid)</td>
<td>• Interpret history and examination findings&lt;br&gt; • Recognise implications of deep space infections</td>
<td>• Discuss procedural details of surgical management, including after-care, possible complications and how to deal with them</td>
<td></td>
</tr>
<tr>
<td>SET5+ (Late)</td>
<td>• Employ use of microbiology, imaging and blood tests</td>
<td>• Discuss procedural details of surgical management, including after-care, possible complications and how to deal with them</td>
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**Chronic leg ulcer/ pressure ulcers**

*See also Vascular Module*

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<tr>
<td>SET1-2 (Early)</td>
<td>• Discuss pathogenesis and aetiological factors&lt;br&gt; • Describe arterial and venous anatomy of the leg</td>
<td>• Use and interpret investigations as indicated e.g.:&lt;br&gt; - punch/incision biopsy&lt;br&gt; - medical imaging&lt;br&gt; - microbiology</td>
<td>• Wound debridement&lt;br&gt; • Split skin grafting</td>
</tr>
<tr>
<td>SET3-4 (Mid)</td>
<td>• Take a history and accurately interpret examination findings&lt;br&gt; • Perform, calculate and interpret Doppler assessment of ankle-brachial index</td>
<td>• Discuss principles and indications of non-surgical and surgical management, including preventive measures</td>
<td></td>
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<tr>
<td>SET5+ (Late)</td>
<td></td>
<td>• Discuss procedural details of surgical management, including after-care, possible complications and how to deal with them</td>
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### Chronic leg ulcer/ pressure ulcers (continued)

*See also Vascular Module*

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- Flap repair (as indicated)

### High risk foot (diabetic/ neuropathic)

*See also Vascular Module*

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</table>

- Anatomy of the foot
- Aetiological factors
- Microbiology: likely pathogens (where relevant)
- Take a history and accurately interpret examination findings
- Use and interpret investigations as indicated e.g.:
  - medical imaging
  - microbiology
  - biochemistry
- Discuss principles and indications of non-surgical and surgical management, including preventive measures
- Incision and drainage of suppuration
- Discuss procedural details of surgical management, including after-care, possible complications and how to deal with them
- Coordinate multi-disciplinary care
- Wound debridement
- Local amputations (e.g. toes, forefoot, below-knee, etc.) where indicated

### Pilonidal sinus/ abscess

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<td>SET5+ (Late)</td>
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</table>

- Describe pathogenesis and aetiology
- Take a history and accurately interpret examination findings
- Employ medical imaging where appropriate
- Discuss principles and indications of non-surgical and surgical management, including preventive measures
- Discuss procedural details of surgical management, including after-care, possible complications and how to deal with them
- Appraise the use of various wound care techniques including vacuum dressings
- Incision and drainage of abscess
- Excision and marsupialisation

- Incision and drainage of abscess
- Excision and primary closure (e.g. Karydakis, Bascom)

- Excision and primary closure (e.g. Karydakis, Bascom)
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<tr>
<td>Hyperhidrosis</td>
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<tr>
<td>SET1-2 (Early)</td>
<td>• Describe the normal physiology and histology of sweat glands</td>
<td>• Obtain a focused history including with respect to location of sweating and possible causes of secondary hyperhidrosis</td>
<td>• Discuss the principles and indications of non-surgical and surgical management</td>
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<td>• Discuss the anatomy of the sympathetic nervous system</td>
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<td>• Explain the pathophysiology of focal/generalised primary/secondary hyperhidrosis</td>
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<tr>
<td>SET3-4 (Mid)</td>
<td>• Discuss the procedural details of surgical management including possible complications</td>
<td></td>
<td>• Endoscopic thoracic sympathectomy</td>
</tr>
<tr>
<td>SET5+ (Late)</td>
<td>• Order and interpret nerve conduction studies</td>
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<tr>
<td>Carpal tunnel syndrome</td>
<td>• Discuss principles and indications of non-surgical and surgical management</td>
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<tr>
<td>SET1-2 (Early)</td>
<td>• Describe anatomy of hand and wrist, with particular reference to median nerve</td>
<td>• Take a history and accurately interpret examination findings</td>
<td>• Discuss procedural details of surgical management, including after-care, possible complications and how to deal with them</td>
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<tr>
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<td>• Define pathogenesis and contributing conditions</td>
<td>• Differentiate between other diagnoses</td>
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<tr>
<td>SET3-4 (Mid)</td>
<td>• Discourage principles and indications of non-surgical and surgical management</td>
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<tr>
<td>SET5+ (Late)</td>
<td>• Request nerve conduction or electromyographic studies where appropriate</td>
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<tr>
<td>Other peripheral nerve entrapments</td>
<td>• Discuss the options and indications for non-surgical and surgical management</td>
<td>• Outline the procedural details of surgical management, including possible complications</td>
<td>• Ulnar neurolysis</td>
</tr>
<tr>
<td>SET1-2 (Early)</td>
<td>• Discuss the regional anatomy of the ulnar nerve and lateral cutaneous nerve of the thigh, as well as their sensory and/or motor functions and points at which they may become entrapped</td>
<td>• Obtain a focused history of the condition</td>
<td>• Exploration of Guyon's canal</td>
</tr>
<tr>
<td></td>
<td>• Perform an examination of the sensory and motor functions of the relevant nerve</td>
<td>• Request nerve conduction or electromyographic studies where appropriate</td>
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<td>SET3-4 (Mid)</td>
<td>• Outline the procedural details of surgical management, including possible complications</td>
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<td>SET5+ (Late)</td>
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### Peripheral nerve injuries

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</table>
| SET1-2 (Early) | • Discuss the regional anatomy, sensory and motor functions of peripheral nerves that are commonly injured  
• Demonstrate understanding of the pathogenetic mechanisms and natural history of nerve injury  
• Obtain a focused history, including the mechanism and circumstances of the injury  
• Perform an examination of the sensory and motor functions of the relevant nerve | • Outline preventive measures for peripheral nerve injuries on the operating table  
• Discuss the principles of primary nerve repair for acute injuries | |
| SET3-4 (Mid) | • Appreciate sites of potential iatrogenic nerve injury (e.g. Accessory nerve, Femoral nerve) | • Discuss precautions taken to avoid or minimise the risk of nerve injury during specific operations | • Acute primary nerve repair |
| SET5+ (Late) | | | |
# SMALL BOWEL

## Module Rationale and Objectives

A general surgeon is required to have a thorough understanding of normal anatomy and physiology, as well as pathophysiology, investigations, differential diagnosis and surgical and non-surgical management of small intestinal disorders. It is important that general surgeons maintain a current understanding of the most appropriate time and manner of intervention.

The graduating trainee will be able to:

- Describe normal & abnormal anatomy of duodenum, jejunum, and ileum
- Describe common surgical pathologies of duodenum, jejunum, and ileum
- Identify and recognise the symptoms and signs of these conditions
- Describe and select appropriate diagnostic testing
- Identify appropriate treatment options, and their indications and contraindications
- Diagnose and manage pathological conditions that pertain to the duodenum, jejunum, and ileum including referral to other specialists where indicated
- Select appropriate investigative tools
- Adapt their skill in the context of each patient and each procedure
- Identify and manage risk
- Recognise the need to refer patients to other professionals
- Convey bad news to patients in a way that conveys sensitivity to the patient’s social, cultural and psychological needs
- Communicate information to patients (and their family) about procedures, outcomes, and risks associated with surgery in ways that encourage their participation in informed decision making (consent)

## Anatomy, Physiology, Pathology

Trainees should have thorough knowledge of the normal embryology, anatomy, physiology, and pathology of:

- Peritoneal cavity
- Small bowel – digestion and absorption; immune and endocrine functions; motility

## Suggested Reading

Trainees who are preparing to sit the Generic and/or Specialty-Specific Basic Science Examination and the Clinical Examination need to refer to the recommended reading list on the RACS website at [www.surgeons.org](http://www.surgeons.org)

For the Fellowship examination, there are no prescribed texts. Trainees are expected to keep abreast of the current literature, including textbooks, journal articles, consensus guidelines and other on-line resources.

## Learning Opportunities and Methods

If state-based and/or local hospital courses/meetings are available, trainees are strongly advised to avail themselves of these opportunities. This also includes practising procedures on simulation equipment where applicable. Trainees are encouraged to present their research at national and/or regional training days, in order to fulfill the research requirement.

## How this module will be assessed

The Generic and Specialty-Specific Basic Science Examination and the Clinical Examination; Fellowship examination (written and viva voce sections); Trainee evaluation forms and logbooks; DOPS and mini-CEX (where applicable).
### Small bowel obstruction (SBO)

**SET1-2 (Early)**
- Describe the embryology and anatomy of the small bowel
- Discuss the aetiologies
- Describe the pathophysiological changes associated with SBO
- Recognise and describe complications

**SET3-4 (Mid)**
- Explain the anatomy of internal herniation
- Diagnose acute postoperative obstruction vs. ileus

**SET5+ (Late)**

**Operative Management - Does -**

- Review the indications and principles of non-operative management
- Define the indications for operative management
- Management of acute postoperative obstruction

**Operative Management - Knows -**

- Laparotomy
- Division of adhesions
- Bowel resection/ bypass
- Laparoscopy for SBO

### Intussusception

**SET1-2 (Early)**
- Discuss the aetiologies
- Describe the pathophysiology

**SET3-4 (Mid)**
- Management of Intussusception

**SET5+ (Late)**
- Small bowel resection

### "Foreign bodies” in the GI tract

**SET1-2 (Early)**
- Describe classification
- Define symptoms and signs and potential complications
- Radiology
- Endoscopy

**SET3-4 (Mid)**
- Define indications for surgical intervention
- Management of foreign bodies
- Gallstone ileus

**SET5+ (Late)**
- Enterotomy and closure
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<td>MANAGEMENT - DOES -</td>
</tr>
<tr>
<td>SET1-2 (Early)</td>
<td>Duodenal adenoma and carcinoma</td>
<td>• Discuss the anatomy of the duodenum</td>
<td>• Endoscopic duodenal stenting</td>
</tr>
<tr>
<td>SET3-4 (Mid)</td>
<td>■ Discuss the anatomy of the duodenum</td>
<td>■ Discuss presentation</td>
<td>■ Duodenal diverticulectomy</td>
</tr>
<tr>
<td>SET5+ (Late)</td>
<td>■ Discuss the natural history of duodenal carcinoma</td>
<td>■ Discuss and interpret modalities for diagnosis and staging</td>
<td>■ Laparoscopic gastrojejunostomy</td>
</tr>
<tr>
<td>SET1-2 (Early)</td>
<td>Duodenal diverticula</td>
<td>■ Discuss the anatomy and complications</td>
<td>■ Open gastrojejunostomy</td>
</tr>
<tr>
<td>SET3-4 (Mid)</td>
<td>■ Discuss the anatomy and complications</td>
<td>■ Discuss the potential complications</td>
<td>■ Duodeno-jejunostomy</td>
</tr>
<tr>
<td>SET5+ (Late)</td>
<td>■ Discuss the anatomy and complications</td>
<td>■ Duodenal diverticulectomy</td>
<td>■ Laparoscopic gastrojejunostomy</td>
</tr>
<tr>
<td>SET1-2 (Early)</td>
<td>Duodenal obstruction</td>
<td>• Discuss the anatomy and embryology of the duodenum</td>
<td>■ Revascularisation</td>
</tr>
<tr>
<td>SET3-4 (Mid)</td>
<td>■ Discuss the anatomy and embryology of the duodenum</td>
<td>■ Discuss the aetiology and management of electrolytic imbalance</td>
<td>■ Revascularisation</td>
</tr>
<tr>
<td>SET5+ (Late)</td>
<td>■ Discuss the anatomy and embryology of the duodenum</td>
<td>■ Open gastrojejunostomy</td>
<td>■ Embolectomy</td>
</tr>
<tr>
<td>SET1-2 (Early)</td>
<td>Small bowel ischaemia</td>
<td>• Discuss the aetiologies</td>
<td></td>
</tr>
<tr>
<td>SET3-4 (Mid)</td>
<td>■ Discuss the aetiologies</td>
<td>■ Assess clinical symptoms and signs</td>
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<tr>
<td>SET5+ (Late)</td>
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<td>■ Assess clinical symptoms and signs</td>
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<td>SET1-2 (Early)</td>
<td>■ Discuss the pathophysiology</td>
<td>■ Discuss and define role of medical imaging, lab investigations, enteroscopy / capsule endoscopy</td>
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<td>SET3-4 (Mid)</td>
<td>■ Discuss the pathophysiology</td>
<td>■ Discuss and define role of medical imaging, lab investigations, enteroscopy / capsule endoscopy</td>
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<td>SET5+ (Late)</td>
<td>■ Discuss the pathophysiology</td>
<td>■ Discuss and define role of medical imaging, lab investigations, enteroscopy / capsule endoscopy</td>
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### Small bowel tumours

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<td>CLINICAL ASSESSMENT</td>
<td>INVESTIGATIONS</td>
</tr>
<tr>
<td>SET1-2 (Early)</td>
<td>• List the types and describe presentation</td>
<td>• Assess the clinical symptoms and signs</td>
<td>• Discuss and interpret the role of: - gastroscopy - colonoscopy - enteroscopy - capsule endoscopy - medical imaging laboratory investigations</td>
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<tr>
<td>SET3-4 (Mid)</td>
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<tr>
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### Small bowel bleeding

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</tr>
<tr>
<td>SET1-2 (Early)</td>
<td>• Describe the aetiology and pathology</td>
<td>• Recognise the clinical presentations • Demonstrate the ability to assess the patient with a massive bleed</td>
<td></td>
</tr>
<tr>
<td>SET3-4 (Mid)</td>
<td></td>
<td>• Define the role and interpretation of: - gastroscopy - colonoscopy - enteroscopy - capsule endoscopy - medical imaging</td>
<td>• Discuss the timing and role of angiographic embolisation</td>
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<tr>
<td>SET5+ (Late)</td>
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### Meckel's diverticulum

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<th>SET LEVEL</th>
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<tbody>
<tr>
<td></td>
<td>ANATOMY PHYSIOLOGY PATHOLOGY</td>
<td>CLINICAL ASSESSMENT</td>
<td>INVESTIGATIONS</td>
</tr>
<tr>
<td>SET1-2 (Early)</td>
<td>• Describe abnormality including the embryology and anatomy</td>
<td>• Recognise the different clinical presentations</td>
<td>• Define the role of medical imaging: - radiology - nuclear</td>
</tr>
<tr>
<td>SET3-4 (Mid)</td>
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<tr>
<td>SET5+ (Late)</td>
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</tbody>
</table>
### Small bowel fistula

**SET 1-2 (Early)**
- Define the pathological abnormalities
- Describe the physiological effects of an enteric fistula at different levels
- Assess the clinical presentation
- Establish the role of medical imaging and laboratory investigations
- Describe the principles of management including:
  - resuscitation
  - fluid and electrolyte management
  - nutrition
  - sepsis control
  - skin control

**SET 3-4 (Mid)**
- Timing of surgery
- Surgical options
- Small bowel resection
- Defunctioning Jenuostomy/Ileostomy

**SET 5+ (Late)**

### Inflammatory conditions of the small bowel

**SET 1-2 (Early)**
- Describe the pathology of Crohn’s disease
- Recognise and differentiate inflammatory bowel disease affecting the small intestine
- Recognise complications of IBD
- Define the role and interpretation of endoscopy and imaging
- Principles of medical management
- Discuss nutritional support
- Indications for surgical intervention

**SET 3-4 (Mid)**
- When to defunction
- Small bowel resection
- Ileocolic resection
- Laparoscopic ileocolic resection
- Laparoscopic assisted small bowel resection
- Strictureplasty

**SET 5+ (Late)**

### Infectious disorders of the small bowel

**SET 1-2 (Early)**
- Describe the microbiology, pathophysiology and pathology
- Differentiate infectious disorders from inflammatory conditions
- Role of laboratory investigations
- Liaison with ID specialist regarding appropriate antibiotic regimen, isolation, etc

**SET 3-4 (Mid)**
- Recognise complications requiring surgical intervention
- Small bowel resection

**SET 5+ (Late)**
### Diverticulosis of the small intestine

**SET 1-2 (Early)**
- Describe the aetiology
- Describe complications
- Recognise significance of diverticulosis in clinical presentation

**SET 3-4 (Mid)**
- Small bowel resection
- Diverticulectomy

**SET 5+ (Late)**

### Malabsorption syndromes

**SET 1-2 (Early)**
- Describe pathologies causing malabsorption
- Nutritional assessment and clinical syndromes
- Laboratory
- Radiological
- Gastroenterological investigations
- Nutritional and metabolic support
- Pharmacological management
- Antibiotic management

**SET 3-4 (Mid)**

**SET 5+ (Late)**

### Short bowel syndromes (including post Bariatric bypass)

See also Sepsis Module (Nutrition)

**SET 1-2 (Early)**
- Describe the anatomy of the gastrointestinal tract
- Describe the functions of the small intestine
- List the causes of short bowel syndrome
- Identify the symptoms and signs
- Outline the basic routine and the essential tests to establish a diagnosis
- Interpret the investigations
- Outline the methods of management
- Discuss nutritional support including vitamin, minerals and essential nutrients via enteral & parenteral routes
- Insertion of a tunnelled central venous line for long-term TPN

**SET 3-4 (Mid)**

**SET 5+ (Late)**

### Radiation enteritis

**SET 1-2 (Early)**
- Define the range of acute and chronic pathologies that follow radiation therapy
- Discuss clinical presentation and complications
- Outline the basic routine and the essential tests to establish a diagnosis
- Discuss nutritional support

**SET 3-4 (Mid)**

**SET 5+ (Late)**
- Discuss indications for surgical intervention
### Small bowel trauma

*See Trauma Module*

### Other small bowel problems including functional bowel disease and slow transit

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<thead>
<tr>
<th>SET Level</th>
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</thead>
</table>
| SET1-2 (Early) | • Describe slow transit  
• Describe features of Munchausen Syndrome | • Transit studies |  |
| SET3-4 (Mid) |  |  |  |
| SET5+ (Late) |  |  |  |

- **SET1-2** (Early)
  - Describe slow transit
  - Describe features of Munchausen Syndrome

- **SET3-4** (Mid)
  - Transit studies

- **SET5+** (Late)
  - Outline the pharmacological, dietary and psychological options in management
# SURGICAL ONCOLOGY

**Module Rationale and Objectives**

A general surgeon is required to have a thorough understanding of surgical oncology. It is important that general surgeons maintain a current understanding of the most appropriate timing and manner of intervention.

The graduating trainee will be able to:

- describe common surgical pathologies of melanoma and soft tissue sarcoma
- identify and recognise the symptoms and signs of these conditions
- describe and select appropriate diagnostic testing
- identify appropriate treatment options, and their indications and contraindications
- diagnose and manage pathological conditions that pertain to surgical oncology including referral to other specialists where indicated
- select appropriate investigative tools
- adapt their skill in the context of each patient and each procedure
- identify and manage risk
- recognise the need to refer patients to other professionals
- communicate information to patients (and their family) about procedures, outcomes, and risks associated with surgery in ways that encourage their participation in informed decision making (consent)

**Anatomy, Physiology, Pathology**

Trainees should have thorough knowledge of the general principles of various aspects of cancer management, including:

- cancer screening
- cancer diagnosis
- cancer staging
- multidisciplinary care
- adjuvant therapies
- cancer follow-up
- palliative care

**Suggested Reading**

Trainees who are preparing to sit the Generic and/or Specialty-Specific Basic Science Examination and the Clinical Examination need to refer to the recommended reading list on the RACS website at [www.surgeons.org](http://www.surgeons.org)

For the Fellowship examination, there are no prescribed texts. Trainees are expected to keep abreast of the current literature, including textbooks, journal articles, consensus guidelines and other on-line resources.

**Learning Opportunities and Methods**

If state-based and/or local hospital courses/meetings are available, trainees are strongly advised to avail themselves of these opportunities. This also includes practising procedures on simulation equipment where applicable. Trainees are encouraged to present their research at national and/or regional training days, in order to fulfil the research requirement.

**How this module will be assessed**

The Generic and Specialty-Specific Basic Science Examination and the Clinical Examination; Fellowship examination (written and viva voce sections); Trainee evaluation forms and logbooks; DOPS and mini-CEX (where applicable).
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<td>PHYSIOLOGY PATHOLOGY</td>
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### Fundamentals of cancer biology

**SET1-2 (Early)**
- Describe aetiology and epidemiology
- Describe mechanisms of metastasis
- Understand local versus systemic manifestations of malignant disease
- Appreciate order of investigations to diagnose malignant disease
- Appreciate principles of treatment modalities for cancer:
  - surgery
  - chemotherapy
  - radiotherapy
  - immunotherapy
  - genetic

**SET3-4 (Mid)**

**SET5+ (Late)**

### Principles of screening for malignancy

**SET1-2 (Early)**
- **SET3-4 (Mid)**
- **SET5+ (Late)**

- Issues in population screening
- Discuss screening results with patients/families
- Describe subsequent pathology of investigation following screening
- Interpretation of results:
  - false positives
  - false negatives

### Familial cancer syndromes including:
- FAP
- HNPCC
- BRCA1,2
- Li Fraumeni
- Neurofibromatosis
- MEN syndrome

**SET1-2 (Early)**
- **SET3-4 (Mid)**
- **SET5+ (Late)**

- Understand molecular basis
- Ability to take a family history
- Recognise possible familial cancer syndromes
- Principles of genetic counselling and testing
- Principles of risk management
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**Carcinoma including breast, colon, oesophageal, gastric, pancreatic, skin, thyroid**

**SET1-2 (Early)**
- Outline molecular biology including:
  - tumour biology and molecular markers
  - immunobiology
  - dendritic cell biology
  - chemotherapy
  - radiotherapy
  - serum markers

**SET3-4 (Mid)**
- Discuss clinical staging
- Discuss appropriate imaging investigations to enhance staging
- Systemic chemotherapy
- Regional chemotherapy:
  - portal
  - intrahepatic
- Regional radiotherapy:
  - external beam
  - Yttrium implants
- Vaccine options and delivery thereof
- Regional nodes:
  - sentinel node mapping and biopsy
- Regional lymphadenectomy:
  - axilla
  - inguinal
- Radical lymphadenectomy

**SET5+ (Late)**

**Melanoma**

**SET1-2 (Early)**
- Describe pathology of premalignant lesions
- Understand and describe Clarke's levels
- Describe clinical features of premalignant lesions
- Describe clinical features of malignant melanoma

**SET3-4 (Mid)**
- Principles of excisional biopsy, wide excision, closure of defect
- Follow-up of melanoma patients
- Options for systemic therapy
- Sentinel node biopsy
- Appropriate resection +/- skin grafting
- Radical lymphadenectomy

**SET5+ (Late)**
- Superficial inguinal lymph node dissection

**Sarcoma**

**SET1-2 (Early)**
- Describe aetiology, including:
  - familial syndromes
  - radiation induced
- Differential diagnosis of soft tissue tumours including:
  - desmoids
  - fibromatoses
### Sarcoma (continued)

**SET3-4 (Mid)**
- Imaging
- Staging
- Principles of biopsy including:
  - type
  - placement

**SET5+ (Late)**
- Recognise possibility of Soft Tissue Sarcoma (STS)
- Formulating a plan for diagnosis and treatment
- Principles of sarcoma function - preserving wide excision and RT
- Limb sacrifice and reconstruction

### Metastatic disease unknown primary

**SET1-2 (Early)**
- Knowledge of mode of spread and likely anatomical distribution of metastases of various primary tumours.
- Understanding of probability of potential primary sites based on location of metastases and patient symptomatology
- Understanding of order of investigations and diagnostic yield of investigations to elucidate primary site.
- Principles of active treatment versus palliative intent.

**SET3-4 (Mid)**
- Role of systemic chemotherapy

**SET5+ (Late)**
- Role of palliative resection/surgery.
- Open biopsy

### Lymphatic malignancies

**SET1-2 (Early)**
- Describe anatomy of lymphatic basins and related structures
- Differential diagnosis of lymphadenopathy
- Role of FNA/ core/ excisional biopsy
- Lymph node excision and specimen handling

**SET3-4 (Mid)**

**SET5+ (Late)**
- Laparoscopic biopsy

### Vascular access

*See also Vascular Module*

**SET1-2 (Early)**
- Describe anatomy of subclavian and internal jugular veins
- Recognise choice of most appropriate site
- Recognise risks and complications
- Describe options for long-term vascular access
- Insertion of subcutaneous venous access port/ Hickman catheter
- Management of complications

**SET3-4 (Mid)**

**SET5+ (Late)**
### Malignant ascites/pleural effusions
- Mesothelioma
- Pseudomyxoma
- Peritoneal malignancy

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<tbody>
<tr>
<td>SET1-2 (Early)</td>
<td>- Describe pathophysiology of ascites and effusions</td>
<td>- Review the clinical features in the history and the examination findings</td>
<td>- Formulate a step-wise progression of techniques for management</td>
</tr>
<tr>
<td>SET3-4 (Mid)</td>
<td>- Role of hyperthermic intraperitoneal chemotherapy</td>
<td></td>
<td>- Denver shunt</td>
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<tr>
<td>SET5+ (Late)</td>
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### Principles of adjuvant therapy for malignant disease

### Principles of follow-up for malignant disease

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<tr>
<td>SET1-2 (Early)</td>
<td>- Describe general principles that are common to the management of various solid tumours</td>
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<td>- Describe specific issues with common cancers</td>
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<tr>
<td>SET3-4 (Mid)</td>
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<td>SET5+ (Late)</td>
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### Multidisciplinary care

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<tbody>
<tr>
<td>SET1-2 (Early)</td>
<td>- Review the clinical features in the history and the examination findings</td>
<td>- Review principles of post traumatic stress</td>
<td>- Review/compare the management of:</td>
</tr>
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<td>- Identify features of grieving for patient and family</td>
<td></td>
<td>- delivering bad news</td>
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<td>- principles of management of complications</td>
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</tbody>
</table>
### Multidisciplinary care (continued)

**SET3-4 (Mid)**

- Review/compare the management of:
  - principles of timing of courses: chemotherapy, hormonal intervention, and radiotherapy
  - principles of follow-up
  - treating menopausal symptoms
- Sequencing of treatment:
  - surgery
  - radiotherapy
  - chemotherapy, biological therapy
  - hormonal therapy
- Consensus and conflict resolution
- Communication in a team and sequential follow-up

**SET5+ (Late)**

### Palliative care and pain management

**SET1-2 (Early)**

- Describe pathophysiology of pain
- Illustrate pain pathways
- Review the clinical features in the history and the examination findings

**SET3-4 (Mid)**

- Review the clinical tests, laboratory tests, and medical imaging techniques

**SET5+ (Late)**

- Formulate a step-wise progression of techniques for pain management
  - Venous access
  - PEG
## Module Rationale and Objectives

A general surgeon is expected to have an understanding of the anatomy, physiology, pathophysiology, investigations and differential diagnosis of organ failure. The surgeon should maintain a current understanding of indications for the provision of and the procedures of organ transplantation to overcome organ failure (in particular, liver, kidney, pancreas and small bowel). The general surgeon should be capable of participating in multi-organ donation. The general surgeon should also be prepared for and capable of caring for the characteristic complications of organ transplantation that includes serious sepsis and malignancy.

The graduating trainee will be able to:

- describe the causes, risk factors for, and effects of organ failure
- identify and recognise the symptoms and signs of the diseases that lead to organ failure and of the development of organ failure
- describe and select appropriate investigations, diagnostic strategies and describe the diagnostic tests that may be required
- identify appropriate treatment options, and their indications and contraindications
- diagnose and manage pathological conditions that lead to liver failure, renal failure, diabetes and intestinal failure and be able to provide management, advice and referral for transplantation where indicated
- advise on the appropriate investigative procedures
- remain current with respect to the care of the patient with incipient or established organ failure
- refer patient for consultation with appropriate other professions
- communicate information to patients (and their family) about transplantation procedures, risks, and benefits of the necessary further treatment and procedures in ways that encourage their participation in informed decision making (consent)

## Anatomy, Physiology, Pathology

Trainees should have thorough knowledge of the normal embryology, anatomy, physiology, and pathological processes that lead to:

- liver failure
- renal failure
- intestinal failure
- diabetes mellitus

## Suggested Reading

Trainees who are preparing to sit the Generic and/or Specialty-Specific Basic Science Examination and the Clinical Examination need to refer to the recommended reading list on the RACS website at www.surgeons.org

For the Fellowship examination, the following text is recommended: Transplantation Surgery (ISBN: 9780702021466), by J.L. Forsythe. Trainees are expected to keep abreast of the current literature, including textbooks, journal articles, consensus guidelines and other on-line resources.

## Learning Opportunities and Methods

If state-based and/or local hospital courses/meetings are available, trainees are strongly advised to avail themselves of these opportunities. This also includes practising procedures on simulation equipment where applicable. Trainees are encouraged to present their research at national and/or regional training days, in order to fulfil the research requirement.

## How this module will be assessed

The Generic and Specialty-Specific Basic Science Examination and the Clinical Examination; Fellowship examination (written and viva voce sections); Trainee evaluation forms and logbooks; DOPS and mini-CEX (where applicable).
## Renal failure

- **acute**
- **chronic**

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</thead>
</table>
| SET1-2 (Early) | **ANATOMY**
| | **PHYSIOLOGY**
| | **PATHOLOGY**
| | **CLINICAL ASSESSMENT** | **INVESTIGATIONS** | **PRINCIPLES OF MANAGEMENT** |
| | | | |
| Describe the anatomy of the kidney and urinary tract | Identify the symptoms and signs: - acute - chronic | Outline the basic routine and the essential tests to identify: - cause - effects - associated diseases | Outline the methods of management: - acute - chronic | Placement of venous dialysis catheter |
| Describe the function of the kidney | | | |
| Describe the causes and prevention of renal failure | | | |

| SET3-4 (Mid) |
| Describe the symptoms and signs: - acute - chronic | Identify the symptoms and signs: - acute - chronic | Outline the methods of management: - acute - chronic | Placement of peritoneal dialysis catheter |

| SET5+ (Late) |
| Review the implications of operating on patients with renal failure | Vascular access and peritoneal dialysis: - indications - contraindications - procedural requirements - complications | Outline the contraindications to renal transplantation | |
| |

### Acute rejection following renal transplantation

| SET1-2 (Early) | **ANATOMY**
| | **PHYSIOLOGY**
| | **PATHOLOGY**
| | **CLINICAL ASSESSMENT** | **INVESTIGATIONS** | **PRINCIPLES OF MANAGEMENT** |
| | | | |
| Describe: - immunology of HLA matching - cytotoxic cross match - immunosuppression - process of rejection | Identify the symptoms and signs | Identify the essential tests to identify the rejection episode | Outline methods of management of acute rejection including: - indications - contraindications - investigations - treatment options | Placement of central line |

| SET3-4 (Mid) |
| Describe the symptoms and signs: - acute - chronic | Identify the symptoms and signs: - acute - chronic | Outline the methods of management: - acute - chronic | Placement of central line |

| SET5+ (Late) |
| Describe the likely treatment measures required to monitor the progress of the treatment of rejection | | | |

### Principles of Management - Does -

- Placement of venous dialysis catheter
- Placement of peritoneal dialysis catheter
- Multi-organ donation
- Kidney donation: - live - open - laparoscopic
- Renal transplantation
- AV fistula and management of complications; See also Vascular Module

### Principles of Management - Knows -

- Renal biopsy and complications
- Transplant nephrectomy
### Tertiary hyperpara-thyroidism

*See also Endocrine Module*

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<tr>
<td>SET1-2 (Early)</td>
<td>• Describe:  - onset of hyperpara-thyroidism in renal failure  - consequences</td>
<td>• Identify the symptoms and signs</td>
<td>• Identify:  - indications  - contraindications  - complications of parathyroidectomy</td>
</tr>
<tr>
<td>SET3-4 (Mid)</td>
<td>• Describe the prevention of hyperpara-thyroidism</td>
<td>• Outline the essential tests to prove the nature of the hyperpara-thyroidism</td>
<td>• Parathyroidectomy associated with renal failure</td>
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<tr>
<td>SET5+ (Late)</td>
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### Brain death/ deceased cardiac donor (DCD)

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</table>
| SET1-2 (Early) | • Describe the likely sequences that lead to the development of brain death | • Identify the criteria for brain death and how these criteria are completed | • Outline the management of the identified donor and the organs to ensure primary function of the transplanted organs  
• Consenting issues  
• Describe the process of organ preservation and evaluation of the quality of preservation |
| SET3-4 (Mid) | | | • Operation of multi-organ donation |
| SET5+ (Late) | | | |
### Malignancy in transplantation

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<tr>
<td>SET1-2 (Early)</td>
<td>• Describe the underlying disorders that predispose transplant recipients to multiple malignancies</td>
<td>• Identify the symptoms and signs</td>
<td>• Outline the appropriate screening tests to identify likely malignancies in transplant recipients</td>
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<tr>
<td>SET3-4 (Mid)</td>
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<tr>
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### Liver failure

**• acute • chronic**

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<tr>
<td>SET1-2 (Early)</td>
<td>• Describe the anatomy of the liver and biliary tract</td>
<td>• Identify the symptoms and signs</td>
<td>• Outline the routine investigations of causes and status of liver failure</td>
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<td></td>
<td>• Describe the functions of the liver</td>
<td>• acute</td>
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<td>• Describe the causes and prevention of liver failure</td>
<td>• chronic</td>
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<tr>
<td></td>
<td>• Describe the pathophysiology of ascites and portal hypertension</td>
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<tr>
<td>SET3-4 (Mid)</td>
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<tr>
<th>OPERATIVE MANAGEMENT - DOES -</th>
<th>OPERATIVE MANAGEMENT - KNOWS -</th>
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<td>• Identify procedures that could require a referral for specialist support</td>
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</table>
### Postoperative jaundice (following liver transplantation)

**SET 1-2 (Early)**
- Describe the etiology

**SET 3-4 (Mid)**
- Describe the symptoms, signs, and causes
- Outline the essential tests to identify the causes of postoperative jaundice

**SET 5+ (Late)**
- Various approaches to surgical access of the biliary tree
- Describe the indications for re-transplantation

### Pancreatic endocrine failure

**SET 1-2 (Early)**
- Describe:
  - anatomy
  - functions of islets of Langerhans
  - causes and prevention of diabetes mellitus
- Identify the symptoms and signs of diabetes mellitus and its end organ complications

**SET 3-4 (Mid)**
- Outline:
  - basic routine and essential tests to identify the cause of diabetes mellitus
  - long-term effects of insulin dependent diabetes mellitus
  - Interpret the investigations

**SET 5+ (Late)**
- Outline the methods of management:
  - advanced complications
  - renal failure
- Indications and contraindications for pancreas transplantation

### Short bowel syndrome

*See also Small Bowel Module*

**SET 1-2 (Early)**
- Describe the anatomy of the gastrointestinal tract
- Describe the functions of the small intestine
- List the causes of short bowel syndrome
- Identify the symptoms and signs

**SET 3-4 (Mid)**
- Outline the basic routine and the essential tests to establish a diagnosis
- Interpret the investigations

**SET 5+ (Late)**
- Insertion of a Hickman line for long-term TPN
- Multi-organ donation
### Short bowel syndrome (continued)

*See also Small Bowel Module*

**SET3-4 (Mid)**
- Outline the methods of management
- Discuss nutritional support including vitamin, minerals and essential nutrients
- Discuss the role of enzymatic replacement therapy
- Indications and contraindications for small bowel transplantation

**SET5+ (Late)**
- Multi-organ donation

### Peritoneal catheter induced peritonitis

**SET1-2 (Early)**
- Describe circumstances precipitating peritonitis and likely organisms of infection
- Identify the symptoms and signs
- Outline the basic routine and the essential tests to establish a diagnosis
- Interpret the investigations

**SET3-4 (Mid)**

**SET5+ (Late)**

### Operating on the immunosuppressed/post transplantation patient

**SET1-2 (Early)**
- Describe processes of immuno-compromise in transplant recipients

**SET3-4 (Mid)**
- Outline pre-operative preparation for operations on transplants recipients
- Outline principals of management in operations on immuno-compromised patients

**SET5+ (Late)**
The general surgeon is frequently the first specialist that a trauma patient comes in contact with and will be an integral part of the Trauma Team. By their very nature, these patients require attention from a competent and confident practitioner. It is therefore imperative that during training all trainees have sufficient knowledge and experience to be able to fulfil this role.

The graduating trainee will be able to:

- understand the mechanisms of injury and the patterns of injury that may result
- describe common surgical pathologies that will result from trauma
- describe the pathophysiology as it relates to all aspects of shock, acute brain injury, respiratory failure, sepsis, renal failure, multi organ failure, and burns
- identify and recognise the symptoms and signs of these conditions
- describe and select appropriate diagnostic testing
- identify appropriate treatment options, and their indications and contraindications
- participate in a trauma team
- safely and effectively assess and resuscitate the injured patient
- lead a trauma resuscitation team
- implement the principles of EMST/ATLS and CCrISP
- initiate relevant investigations, diagnose major and minor injuries, and institute appropriate surgical and supportive treatment
- approach and carry out procedures with due attention to safety of the patient, self, and others
- adapt skills in the context of each patient - procedure - context
- effectively manage the care of patients with trauma, including multiple system trauma
- identify and manage risk in an environment of complexity and uncertainty
- appropriately adjust the way they communicate with patients to accommodate cultural and linguistic differences
- work in collaboration with members of an interdisciplinary team where appropriate
- recognise the need to refer patients to other professionals
- understand the need for early initiation of rehabilitation
- effectively use resources to balance patient care and systemic demands
- apply a wide range of information to prioritise needs and demands
- maintain accurate records
- consistently apply ethical principles
- acknowledge their own limitations
- communicate information to patients (and their family) about procedures, outcomes, and risks associated with surgery in ways that encourage their participation in informed decision making (consent)
- in acute circumstances, the consenting process may require conforming to state legislation
- communication and collaboration with other surgical specialties
- clear understanding of the potential disaster, humanitarian and military responsibilities of general surgeon

continued over...
**MODULE TITLE:** TRAUMA

**DEVELOPED BY:** Zsolt Balogh, Peter Danne, Daryl Wall, Graeme Campbell, Philip Truskett (reviewed and commented by Frank Plani)

<table>
<thead>
<tr>
<th>Anatomy, Physiology, Pathology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trainees should have thorough knowledge of the normal embryology, anatomy, physiology, and pathology, of:</td>
</tr>
<tr>
<td>• head and neck</td>
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<td>• spine</td>
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<td>• limbs</td>
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<td>• thorax</td>
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<td>• abdomen</td>
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<td>• pelvis</td>
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</table>

**Suggested Reading**

Trainees who are preparing to sit the Generic and/or Specialty-Specific Basic Science Examination and the Clinical Examination need to refer to the recommended reading list on the RACS website at [www.surgeons.org](http://www.surgeons.org).

For the Fellowship examination, the following text is recommended: Trauma (ISBN: 9780071469128), 4th edition, by D. Feliciano, K. Mattox, and E. Moore. Trainees are expected to keep abreast of the current literature, including textbooks, journal articles, consensus guidelines and other on-line resources.

**Learning Opportunities and Methods**

Trainees will have completed the requirements of the EMST program. Participation in the EMST Refresher course will be encouraged.

It is recommended that trainees participate in the Definitive Surgical Trauma Care (DSTC) Course, which is available in most regions and New Zealand. The course is available for trainees in the last two (2) years of training.

If state-based and/or local hospital courses/meetings are available, trainees are strongly advised to avail themselves of these opportunities. This also includes practising procedures on simulation equipment where applicable. Trainees are encouraged to present their research at national and/or regional training days, in order to fulfil the research requirement.

**How this module will be assessed**

The Generic and Specialty-Specific Basic Science Examination and the Clinical Examination; Fellowship examination (written and viva voce sections); Trainee evaluation forms and logbooks; DOPS and mini-CEX (where applicable).
<table>
<thead>
<tr>
<th>SET LEVEL</th>
<th>MEDICAL EXPERTISE</th>
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<th>TECHNICAL EXPERTISE</th>
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<tbody>
<tr>
<td></td>
<td>ANATOMY PHYSIOLOGY PATHOLOGY</td>
<td>CLINICAL ASSESSMENT</td>
<td>INVESTIGATIONS</td>
</tr>
<tr>
<td>Initial trauma management</td>
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<tr>
<td>SET1-2 (Early)</td>
<td>• Recognition/ anticipation of immediately and potentially life threatening situations based on injury mechanism, anatomical location and patient physiology</td>
<td>• Primary and Secondary survey according to EMST</td>
<td>• Accurate indication and interpretation of: - plain x-rays - FAST - CT - ABGs</td>
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<tr>
<td>SET3-4 (Mid)</td>
<td></td>
<td>• Team leader role • Ability to triage trauma patients presenting simultaneously • Decision on transport and definitive treatment priorities • Indications and initiation of massive transfusion protocol</td>
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<tr>
<td>SET5+ (Late)</td>
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<tr>
<td>Ongoing ICU management</td>
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<tr>
<td>SET1-2 (Early)</td>
<td>• Relevant anatomy and physiology of the vital organ systems • Definition and Pathophysiology of traumatic shock, ischaemia reperfusion injury, post injury SIRS, sepsis and MOF</td>
<td>• Perform Tertiary survey • Ability to perform focused assessment of the organ systems based on clinical examination, vital parameters, laboratory data and the required level of organ support</td>
<td>• Interpretation of daily routine chest x-ray • Ability to indicate and interpret focused imaging required based on clinical assessment</td>
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<tr>
<td>SET3-4 (Mid)</td>
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<td>SET5+ (Late)</td>
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</table>

TRUMA
### Daily ward management

**SET 1-2 (Early)**
- Relevant anatomy and physiology of the vital organ systems
- Ability to perform daily focused assessment for the management of post injury/postoperative patients
- Recognise the need for other specialty involvement
- Daily examinations (laboratory, imaging, etc.) based on the patient condition
- Ability to perform plans for rehabilitation and discharge/follow-up
- Attention to prevention of common post injury complications (dvt, pe, malnutrition, pressure ulcers, pneumonia, uti)
- Principles of wound/drain care
- Chest tube removal

**SET 3-4 (Mid)**
- Orchestrating multiple treating team for the patient benefit

**SET 5+ (Late)**

### Skin/Soft Tissues

**SET 1-2 (Early)**
- Relevant anatomy and physiology
- Wound healing
- Pathophysiology of burns
- Primary and secondary brain injury
- Assessment and description of wounds (type, depth, contamination, foreign body)
- Body cavity penetration
- Distal neuro-vascular assessment
- Viability assessment of soft tissues
- Burn assessment (mechanism, degree, depth, patient condition)
- Relevant investigations for foreign bodies and body cavity penetration; See also abdomen, chest
- Detailed wound assessment during exploration
- Management priorities of acute traumatic wounds depending on mechanism, location and contamination
- Initial management principles of severe burns
- Anticipation and recognition of wound complications
- Wound debridement, foreign body removal (use of image intensifier), wound closure or open management based on the nature of the soft tissue injury
- Advanced soft tissue management decisions: identifying the need for specialist involvement (plastic, microsurgery)
- Wound management in specific areas (face, hand, genitalia)
- Escharotomy, skin grafting
- Wound management in specific areas (face, hand, genitalia)
- Wound management with topical negative pressure
- Open abdomen management
- Simple local rotational flaps
<table>
<thead>
<tr>
<th>SET LEVEL</th>
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<th>TECHNICAL EXPERTISE</th>
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<tbody>
<tr>
<td>ANATOMY PHYSIOLOGY PATHOLOGY</td>
<td>CLINICAL ASSESSMENT</td>
<td>INVESTIGATIONS</td>
<td>PRINCIPLES OF MANAGEMENT</td>
</tr>
<tr>
<td><strong>Head/Brain</strong></td>
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<tr>
<td>SET1-2 (Early)</td>
<td>• The relevant anatomy and physiology of the CNS</td>
<td>• Detailed neurological assessment and documentation of trauma patients</td>
<td>• The initial management of potential head injured patient</td>
</tr>
<tr>
<td></td>
<td>• The pathophysiology of increased intracranial pressure</td>
<td>• The recognition of typical presentations (extradural haematoma, spinal cord compression syndromes)</td>
<td>• The recognition of raised ICP</td>
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<td>• Basic Indications and interpretation of neurotrauma imaging</td>
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<td>• Priorities and timeframes of intervention</td>
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<td>• Recognition the need of specialist involvement (neurosurgery, ophthalmology etc.)</td>
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<tr>
<td>SET3-4 (Mid)</td>
<td>• Decision making about priorities of head injury in polytrauma scenario</td>
<td>• Definitive wound management of head/face/orbit wounds</td>
<td>• Control of severe maxilla-facial bleeding</td>
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<tr>
<td>SET5+ (Late)</td>
<td>• Ongoing management principles of brain injury</td>
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<tr>
<td>Face/Neck</td>
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<tr>
<td>SET1-2 (Early)</td>
<td>• Anatomy regions of the neck</td>
<td>• Clinical assessment of the face (nerves, eyes, orifices) and the neck (description of wounds in relation of zones)</td>
<td>• Indication and interpretation of x-ray, CT, angiography, endoscopy, contrast studies depending the zone of injury and patient condition</td>
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<tr>
<td></td>
<td>• Describe Zones I, II and III of the neck</td>
<td>• Recognition of signs of vascular, airway, nerve, pharyngeal/oesophageal injury</td>
<td>• The indications for surgical exploration</td>
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<td>• Ability to perform safe log-roll and immobilization</td>
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<td>• Involvement of other subspecialty surgeons</td>
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<td></td>
<td>• Pathophysiology of primary and secondary cord injury</td>
<td>• Maintenance of spinal precautions</td>
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<td></td>
<td>• Common spine injury patterns</td>
<td>• Detailed peripheral neurological exam, level determination and documentation</td>
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<td>• The need and priorities for imaging depending on the patient condition</td>
<td>• The ability to ‘clear the spine’ safely in straightforward scenarios</td>
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<td>• The advantages and limitations of imaging tests</td>
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<td>• Application of spine immobilisation devices</td>
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<tr>
<td>SET3-4 (Mid)</td>
<td>• Selective management strategy based on the zone of injury</td>
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<td>• Surgical exploration of Zone II</td>
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<td>• Surgical airway</td>
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<tr>
<td>SET5+ (Late)</td>
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<td>• Access and vascular control in Zone I and III</td>
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<tr>
<td>Spine</td>
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<tr>
<td>SET1-2 (Early)</td>
<td>• Anatomy and physiology of spine and spinal cord</td>
<td>• Ability to perform safe log-roll and immobilization</td>
<td>• The need and priorities for imaging depending on the patient condition</td>
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<td>• Application of spine immobilisation devices</td>
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<td>ANATOMY</td>
<td>PHYSIOLOGY</td>
<td>PATHOLOGY</td>
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<tr>
<td>Spine (continued)</td>
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<tr>
<td>SET3-4 (Mid)</td>
<td>• Decision on transfer and the management priorities of spine injuries in polytrauma scenario</td>
<td>• Application of tongs</td>
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<tr>
<td>SET5+ (Late)</td>
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<tr>
<td>Chest</td>
<td>• Anatomy and Physiology of thoracic wall and thoracic organs</td>
<td>• Prioritisation of chest injuries in polytrauma scenario</td>
<td>• Diaphragmatic repair from the abdomen</td>
</tr>
<tr>
<td>SET1-2 (Early)</td>
<td>• The pathophysiology of immediately and potentially life threatening conditions in the chest</td>
<td>• Decision on advanced imaging, timing of aortic tear management</td>
<td>• Pericardial window</td>
</tr>
<tr>
<td>SET3-4 (Mid)</td>
<td>• Regions of the chest for clinical practice</td>
<td>• Selective management of penetrating chest trauma</td>
<td>• Vascular control in the chest (Aorta, hilum, major arteries and veins)</td>
</tr>
<tr>
<td>SET5+ (Late)</td>
<td>• Focused clinical examination of the chest/torso for a blunt and penetrating trauma patient</td>
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<td>• Periclavicular approaches for the thoracic outlet</td>
</tr>
<tr>
<td>Abdomen</td>
<td>• Interpretation of chest x-ray (recognition of life threatening conditions)</td>
<td></td>
<td>• Repair of simple cardiac wounds</td>
</tr>
<tr>
<td>SET1-2 (Early)</td>
<td>• Indication for further imaging</td>
<td>• Indications and timing of trauma laparotomy</td>
<td>• Thoracoscopy, thoracotomy</td>
</tr>
<tr>
<td>SET3-4 (Mid)</td>
<td>• Clear understanding of penetrating chest trauma workup</td>
<td>• Decision making in isolated blunt and penetrating abdominal trauma</td>
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<td>• Recognising the need for urgent lifesaving interventions (decompression, chest tube insertion), Indicating the need for thoracotomy</td>
<td>• Indications and limitations of local wound exploration and laparoscopy in penetrating trauma</td>
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<tr>
<td>SET5+ (Late)</td>
<td>• Involving cardiothoracic surgery as required</td>
<td>• Local wound exploration (the limitations of)</td>
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<td><strong>Abdomen (continued)</strong></td>
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<td><strong>SET3-4 (Mid)</strong></td>
<td>ANATOMY</td>
<td>CLINICAL ASSESSMENT</td>
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| **Pelvis** | | | |
| **SET1-2 (Early)** | | | |
| | • Knowledge of relevant pelvic musculo-skeletal and visceral anatomy and physiology | • Pelvic examination, leg length, springing, deformity, perineal examination, rectal examination | • Pelvic x-ray interpretation | • Pelvic CT interpretation (injury to the posterior and anterior ring, contrast blush, pelvic organ injuries) | • Recognition and initiation of the management of hemodynamically unstable pelvic fracture patients | • Application of pelvic binder | • Decision making on the need and priorities of techniques at the basic column (left) | • Urethrogram, cystogram |
| | • Basic classification of pelvic fractures | • Neuro-vascular assessment | • Indications and interpretation of urethrogram, cystogram and pelvic angiography | • The role of abdominal clearance, pelvic binding, packing, external and internal fixation and angiography | • Pelvic packing | • Priorities in associated abdominal injuries and polytrauma | • Urethrogram, cystogram |
| | | | | • Open pelvic fracture management | • Arterial access in the groin |

<p>| <strong>SET3-4 (Mid)</strong> | | | | | | |
| | | | | | | |
| <strong>SET5+ (Late)</strong> | | | | | | |</p>
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<tbody>
<tr>
<td>SET 1-2</td>
<td>ANATOMY PHYSIOLOGY PATHOLOGY</td>
<td>CLINICAL ASSESSMENT</td>
<td>INVESTIGATIONS</td>
</tr>
</tbody>
</table>
| Set1-2 (Early) | • Relevant anatomy of extremities  
• The pathophysiology of limb threatening injuries  
• Grading of open fractures | • Basic trauma focused musculo-skeletal assessment including the neurovascular status  
• Recognition of hard and soft signs of vascular injuries  
• Ankle Brachial Index | • The indication, timing and interpretation of skeletal radiology | • Initiation of the management of limb threatening injuries (washout, realignment, splinting, dressing, haemorrhage control)  
• Tetanus and antibiotic prophylaxis  
• Early involvement other specialties | • Realignment  
• Splinting  
• Washout and debridement of open wounds |
| Set3-4 (Mid) | | | | | |
| Set5+ (Late) | | | | | |
**Module Title:** UPPER GI & HPB  
**Developed By:** Chris Christophi, Mark Smithers  
**Reviewed By:** Tom Wilson, Michael Donovan  
**Module Rationale and Objectives**

A general surgeon is required to have a thorough understanding of normal anatomy and physiology, as well as pathophysiology, investigations, differential diagnosis and surgical and non-surgical management of abdominal disorders. It is important that general surgeons maintain a current understanding of the most appropriate time and manner of intervention. It is also important that they keep abreast of the most current developments in investigative and surgical procedures.

The graduating trainee will be able to:
- describe common surgical pathologies of the foregut and associated structures
- identify and recognise the symptoms and signs of these conditions
- describe and select appropriate diagnostic testing
- identify appropriate treatment options, and their indications and contraindications
- diagnose and manage pathological conditions that pertain to the foregut
- effectively manages patients
- maintains skills and learns new skills
- analyses their own clinical performance for consistent improvement
- recognise the need to refer patients to other professionals
- communicate information to patients (and their family) about procedures, outcomes, and risks associated with surgery in ways that encourage their participation in informed decision making (consent)

**Anatomy, Physiology, Pathology**

Trainees should have thorough knowledge of the normal embryology, anatomy, physiology and pathology, of:
- foregut

**Suggested Reading**

Trainees who are preparing to sit the Generic and/or Specialty-Specific Basic Science Examination and the Clinical Examination need to refer to the recommended reading list on the RACS website at [www.surgeons.org](http://www.surgeons.org). For the Fellowship examination, there are no prescribed texts. Trainees are expected to keep abreast of the current literature, including textbooks, journal articles, consensus guidelines and other on-line resources.

**Learning Opportunities and Methods**

If state-based and/or local hospital courses/meetings are available, trainees are strongly advised to avail themselves of these opportunities. This also includes practising procedures on simulation equipment where applicable. Trainees are encouraged to present their research at national and/or regional training days, in order to fulfil the research requirement.

**How this module will be assessed**

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<tbody>
<tr>
<td>SET 5+</td>
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<td>Laparoscopic/ open</td>
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<td>fundoplication</td>
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**OESOPHAGUS**

**Gastro-oesophageal reflux (GOR) disease**

**SET1-2 (Early)**
- Describe embryology, anatomy, and physiology of the oesophagus
- Describe manometric associations

**SET3-4 (Mid)**
- Describe complications including stricture, respiratory symptoms and Barrett’s

**SET5+ (Late)**

**Oesophageal strictures:**
- Peptic and corrosive strictures
- Schatzki ring and webs

**SET1-2 (Early)**
- Describe the lesion and aetiology when known
- Assess the clinical symptoms

**SET3-4 (Mid)**
- Analyse the role of gastroscopy and barium swallow
- Implement the principles of non-operative, endoscopic and operative management

**SET5+ (Late)**

**Oesophageal malignancies**

**SET1-2 (Early)**
- Describe the aetiology and pathology
- Identify prognostic factors
- Recognise the clinical presentations
- Examine and assess the clinical staging
- Medical assessment
- Define the role of gastroscopy
- Define the role of radiological investigations
- Outline the multi-disciplinary approach to management including:
  - resection techniques
  - chemotherapy
  - radiotherapy

**SET3-4 (Mid)**
- Define the methods of palliation
- Patient and family counselling
- Outline management of the post-resection functional problems
- Endoscopic diagnosis and assessment
- Feeding jejunostomy
- Resection/reconstruction options
- Palliative stenting
- Laparoscopic staging
### Other tumours

**SET1-2 (Early)**
- Describe other benign tumours of the oesophagus, e.g. leiomyoma
- Recognise the clinical presentations
- Define the role of gastroscopy and medical imaging
- Define the management of these tumours

**SET3-4 (Mid)**

**SET5+ (Late)**

### Motility disorders

**SET1-2 (Early)**
- Define the pathological abnormalities
- Describe the clinical presentation
- Describe the role of gastroscopy, barium swallow, and manometry
- Describe the principles of management of the relevant conditions

**SET3-4 (Mid)**

**SET5+ (Late)**

### Oesophageal varices

**SET1-2 (Early)**
- Knowledge of the aetiology and associated pathology
- Differentiate the clinical features of a variceal bleeding from other causes of upper GI bleeding
- Define the extent of underlying liver disease
- Outline the various forms of treatment:
  - Endoscopic assessment and therapies
  - Radiological stenting
  - Operative shunts
  - Management of the underlying liver disease
- Endoscopic assessment

**SET3-4 (Mid)**

**SET5+ (Late)**

### Oesophageal foreign bodies

**SET1-2 (Early)**
- Define the pathological abnormalities
- Assess the clinical presentation
- Differentiate the role of gastroscopy and medical imaging
- Define the endoscopic therapies and the management of complications (perforation)
- Endoscopic assessment and removal

**SET3-4 (Mid)**

**SET5+ (Late)**
<table>
<thead>
<tr>
<th>SET LEVEL</th>
<th>MEDICAL EXPERTISE</th>
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<td>- KNOWS -</td>
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</table>

**Oesophageal perforation**

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<thead>
<tr>
<th>SET</th>
<th>(Early)</th>
<th>(Mid)</th>
<th>(Late)</th>
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</thead>
<tbody>
<tr>
<td><strong>SET1-2</strong></td>
<td>Describe the aetiology and associated pathology</td>
<td>Describe the clinical presentation</td>
<td>Define the principles of therapy: options to treat the injury management of the associated sepsis</td>
</tr>
<tr>
<td><strong>SET3-4</strong></td>
<td>Outline assessment of appropriate transfer to specialist centre</td>
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<tr>
<td><strong>SET5+</strong> (Late)</td>
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</table>

**STOMACH**

**Peptic ulcers (gastric and duodenal)**

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<thead>
<tr>
<th>SET</th>
<th>(Early)</th>
<th>(Mid)</th>
<th>(Late)</th>
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</thead>
<tbody>
<tr>
<td><strong>SET1-2</strong></td>
<td>Describe embryology, anatomy, and physiology of the stomach and duodenum (foregut component) Describe the pathophysiology of benign peptic ulcer disease Recognise and review the complications: - bleeding - perforation - stricture</td>
<td>Describe and differentiate the clinical symptoms and signs Outline assessment of patients with complications</td>
<td>Define the role of gastroscopy: - elective - emergency Investigations relevant to Helicobacter Pylori</td>
</tr>
<tr>
<td><strong>SET3-4</strong></td>
<td>Summarise the principles of management of complications: - bleeding - perforation - stricture</td>
<td></td>
<td>Define the medical management of uncomplicated peptic ulcers, including Helicobacter eradication Define the techniques used to treat bleeding peptic ulcers</td>
</tr>
<tr>
<td><strong>SET5+</strong> (Late)</td>
<td></td>
<td></td>
<td>Techniques of endoscopic haemostasis</td>
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</tbody>
</table>

**Gastric carcinoma**

<table>
<thead>
<tr>
<th>SET</th>
<th>(Early)</th>
<th>(Mid)</th>
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</thead>
<tbody>
<tr>
<td><strong>SET1-2</strong></td>
<td>Describe pathophysiology and the pathological staging Describe and differentiate the clinical symptoms and signs of gastric carcinoma and other upper GI conditions</td>
<td>Define the role of gastroscopy, imaging, and staging laparoscopy in the assessment</td>
<td>Outline the multi-disciplinary management</td>
</tr>
<tr>
<td><strong>SET3-4</strong></td>
<td>Describe the role of palliative surgical procedures Patient and family counselling</td>
<td>Endoscopic and laparoscopic staging Gastro-enterostomy Feeding jejunostomy</td>
<td>Total gastrectomy and oesopa-gastrectomy Radical distal gastrectomy</td>
</tr>
</tbody>
</table>
### Gastric carcinoma (continued)

**SET5+ (Late)**

**Other gastric tumours e.g. GIST**  
*See also Surgical Oncology Module*

<table>
<thead>
<tr>
<th>SET LEVEL</th>
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<td>ANATOMY PHYSIOLOGY PATHOLOGY</td>
<td>CLINICAL ASSESSMENT</td>
<td>INVESTIGATIONS</td>
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<tr>
<td>SET1-2 (Early)</td>
<td>Describe the pathology</td>
<td>Define the clinical symptoms and signs</td>
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</tr>
<tr>
<td>SET3-4 (Mid)</td>
<td>Outline the role of gastroscopy and medical imaging</td>
<td>Describe the principles of management</td>
<td></td>
</tr>
<tr>
<td>SET5+ (Late)</td>
<td>Endoscopic assessment</td>
<td>Local gastric resection or distal gastrectomy</td>
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</table>

### HEPATIC

**Primary liver malignancy**  
- HCC  
- cholangiocarcinoma  
- others

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<tr>
<th>SET LEVEL</th>
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<td>INVESTIGATIONS</td>
</tr>
<tr>
<td>SET1-2 (Early)</td>
<td>Describe the embryology, anatomy, and physiology of the liver</td>
<td>Describe the clinical presentation</td>
<td>Define the role of medical imaging and laboratory investigations</td>
</tr>
</tbody>
</table>
| SET3-4 (Mid) | Establish the operability of the lesion | Determine the degree of hepatic dysfunction | Patient and family counselling | Describe and evaluate the various methods of treatment:  
  - surgical resection  
  - ablative techniques  
  - chemotherapy  
  - radiation therapies | Laparoscopic evaluation |          |
| SET5+ (Late) |          |          |          |          |          |          |

### Liver metastases

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<tr>
<th>SET LEVEL</th>
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<td>ANATOMY PHYSIOLOGY PATHOLOGY</td>
<td>CLINICAL ASSESSMENT</td>
<td>INVESTIGATIONS</td>
</tr>
<tr>
<td>SET1-2 (Early)</td>
<td>Describe the pathology and staging</td>
<td>Demonstrate the clinical assessment of the patient with suspected liver metastasis</td>
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<tr>
<td>SET LEVEL</td>
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<td>Liver metastases (continued)</td>
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<td>SET3-4 (Mid)</td>
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<td></td>
<td>• Outline the role of staging techniques including:</td>
<td>• Patient and family counselling</td>
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<td></td>
<td>- imaging</td>
<td>• Outline the multi-disciplinary approach to treatment:</td>
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<td></td>
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<td>- laparoscopy</td>
<td>- surgical resection</td>
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<td>• Determine factors for operability</td>
<td>- local ablative therapies</td>
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<td>- chemotherapy</td>
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<td>- principles of follow-up</td>
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<td>• Hepatic artery directed therapies</td>
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<td>SET5+ (Late)</td>
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<td>• Assessment of resectability at open operation</td>
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<td>Incidental liver lesions</td>
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<tr>
<td>• adenoma</td>
<td>• Differentiate between the various pathologies</td>
<td>• Principles of hepatic mobilisation, localisation of the tumour and dissection of the liver</td>
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<tr>
<td>• FNH</td>
<td>• Describe the natural history of each entity</td>
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<td>• haemangioma</td>
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<td>• non-parasitic cysts</td>
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<td>SET1-2 (Early)</td>
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<td>• Describe the clinical presentation and assessment</td>
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<td>SET3-4 (Mid)</td>
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<td>• Outline the role and characteristics of imaging</td>
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<td>• Outline indications for biopsy</td>
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<td>• Differentiate which investigations to organise</td>
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<td>SET5+ (Late)</td>
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<tr>
<td>Liver infections</td>
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<tr>
<td>• abscess pyogenic</td>
<td>• Describe the aetiology and pathological features including microbiology</td>
<td>• Principles of mobilisation and localisation of the tumours</td>
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<tr>
<td>• parasitic</td>
<td>• Describe the clinical symptoms and signs</td>
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<td>• others</td>
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<td>• Define the role of medical imaging and laboratory investigations</td>
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<td>SET5+ (Late)</td>
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</tbody>
</table>
### Portal Hypertension (including ascites)

**SET 1-2 (Early)**
- Describe the aetiology and pathophysiology
- Describe the classification of:
  - acute liver disease
  - chronic liver disease
  - complications

**SET 3-4 (Mid)**

**SET 5+ (Late)**

### Hepatic Trauma

*See also Trauma Module*

**SET 1-2 (Early)**
- Describe aetiology and the patterns of injury
- Define the subsequent complications of blunt and penetrating trauma
- Define the natural history of each type of injury

**SET 3-4 (Mid)**

**SET 5+ (Late)**
### BILIARY

#### Gallstone disease

**SET1-2 (Early)**
- Describe the aetiology of biliary stone disease and the complications:
  - CBD stones
  - cholangitis
  - pancreatitis
  - empyema
  - mucocele
  - biliary fistulae
  - bile duct injuries

- Describe and differentiate the clinical features and signs
- Define the role of medical imaging and laboratory investigations

**SET3-4 (Mid)**
- Understanding of the role, limitations and complications of endoscopic retrograde cholangiopancreatography
- Describe and evaluate the management, including all complications:
  - CBD stones
  - cholangitis
  - pancreatitis
  - empyema
  - mucocele
  - biliary fistulae
  - intra-operative bile duct injury

- Describe and evaluate the management, including all complications:
  - DOES -
    - CBD stones
    - cholangitis
    - pancreatitis
    - empyema
    - mucocele
    - biliary fistulae
    - intra-operative bile duct injury
  - KNOWS -

**SET5+ (Late)**
- Laparoscopic cholecystectomy for uncomplicated and complicated disease, including performance of operative cholangiography
- Open exploration of the common bile duct
- Laparoscopic transcystic exploration of the common bile duct
- Open cholecystectomy including techniques for the “difficult” gall bladder

#### Gall bladder polyp

**SET1-2 (Early)**
- Describe the aetiology and the pathology
- Describe the natural history of the causes
- Describe the symptoms and signs
- Define the role of imaging

**SET3-4 (Mid)**
- Describe the principles of management:
  - non-operative
  - operative
  - Laparoscopic cholecystectomy

**SET5+ (Late)**
### Gallbladder carcinoma/ cholangiocarcinoma

**SET 1-2 (Early)**
- Describe the pathology and staging
- Describe and differentiate the clinical features and signs
- Define the role of medical imaging and laboratory investigations

**SET 3-4 (Mid)**
- Patient and family counselling
- Describe the assessment and management
- Define the role of resection
- Outline the mechanism of palliation of jaundice when present:
  - endoscopic
  - radiological
  - operative

**SET 5+ (Late)**
- Laparoscopic assessment

### Benign biliary strictures/bile duct injuries

**SET 1-2 (Early)**
- Describe the aetiology of benign biliary strictures
- Describe the mechanism for bile duct injuries
- Describe the classification of bile duct injuries
- Describe and differentiate the clinical symptoms and signs

**SET 3-4 (Mid)**
- Define the role of imaging and laboratory investigations
- Describe the assessment and management of injuries and stricture:
  - endoscopic
  - radiological
  - operative
- Describe the outcomes
- Outline the role of follow-up
- Roux-en-Y choledocho-jejunostomy

**SET 5+ (Late)**

### Operative bile duct injuries

**SET 1-2 (Early)**
- Define the risk factors for injury
- Describe the clinical features of an injury in the post operative period
- Define the role of medical imaging and laboratory investigations in the post operative period
- Describe the assessment and management of a bile duct injury recognised:
  - intra-operative
  - post operative

**SET 3-4 (Mid)**
- Intra-operative
  - recognition
  - call for help or drain and refer
- Postoperative
  - recognition
  - laparoscopic or open drainage and refer

**SET 5+ (Late)**
### Operative bile duct injuries (continued)

**SET5+ (Late)**

---

### Choledochal cysts

**SET1-2 (Early)**

**SET3-4 (Mid)**
- Describe the pathology and the classification
- Define the role of imaging and laboratory investigations
- Define the principles of management

**SET5+ (Late)**

---

### Pancreatic

**Acute pancreatitis**

**SET1-2 (Early)**
- Describe the embryology, anatomy, and physiology of the exocrine pancreas
- Define the aetiology
- Define the pathophysiology of the changes associated with acute pancreatitis
- Describe and explain the pathology of the complications
- Define the clinical symptoms and signs
- Define the risk stratification
- Define the indicators of severity
- Describe the principles of management of the acute episode

**SET3-4 (Mid)**
- Define the role of imaging in diagnosis, staging, severity, and assessment of complications
- Define the assessment and treatment of the complications:
  - general
  - pancreas specific
- Operative recognition of acute pancreatitis

**SET5+ (Late)**
- Open cysto-gastrostomy
- Open necrosectomy

---

### Chronic pancreatitis

**SET1-2 (Early)**
- Define the aetiology

**SET3-4 (Mid)**
- Describe the pathophysiology of the changes associated with chronic pancreatitis
- Define the clinical symptoms and signs
- Define the role of imaging and laboratory investigations for diagnosis and assessment
- Describe the principles of management including:
  - general constitutional problems
  - pancreas specific problems

**SET5+ (Late)**

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<tr>
<td>Periampullary and ductal pancreatic carcinoma</td>
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<tr>
<td>SET1-2 (Early)</td>
<td>• Describe the pathology and staging</td>
<td>• Define the clinical symptoms and signs</td>
<td>• Define the role of imaging, laboratory investigations, laparoscopy, and biopsy in diagnosis, assessment, and staging</td>
</tr>
<tr>
<td>SET3-4 (Mid)</td>
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</table>

Other pancreatic tumours including:  
• endocrine tumours  
• incidental tumours  
See also Endocrine Module  
SET1-2 (Early) | • Describe the pathology and staging | • Define the clinical symptoms and signs | • Define the role of imaging and laboratory investigations |
| SET3-4 (Mid) | | | • Define the principles of resection |
| SET5+ (Late) | | | |

Pancreatic-duodenal trauma  
See also Trauma Module  
SET1-2 (Early) | • Describe the patterns of injury | | |
| SET3-4 (Mid) | • Define the classification for duodenal and pancreatic trauma | • Define the clinical findings and assessment in suspected pancreatico-duodenal trauma | • Define the principles of:  
  - assessment  
  - non-operative management  
  - operative assessment and management | • Assess the extent of injury at laparotomy  
• Damage control  
• Laparotomy  
• Techniques for repair of a duodenal injury |
| SET5+ (Late) | | | • Distal pancreatectomy |

ERCP complications  
SET1-2 (Early) | | | | | |

UPPER GI & HPB
### ERCP complications (continued)

<table>
<thead>
<tr>
<th>SET 1-2 (Early)</th>
<th>SET3-4 (Mid)</th>
<th>SET5+ (Late)</th>
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<tr>
<td><strong>Spleen and haemopoietic system</strong></td>
<td><strong>Splenic trauma</strong></td>
<td><strong>ITP/other indications for splenectomy</strong></td>
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<tr>
<td><strong>Trauma splenectomy</strong></td>
<td><strong>Splenorrhaphy</strong></td>
<td><strong>Laparoscopic splenectomy</strong></td>
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</tbody>
</table>

### Spleen and haemopoietic system

**Splenic trauma**

- Describe the embryology, anatomy, and physiology of the spleen
- Describe the patterns and classification of injury
- Describe the complications of splenectomy

**ITP/other indications for splenectomy**

- Describe the pathophysiology of ITP
- Describe the indications for elective splenectomy

### Massive spleen

- Describe the causes (infective vs. non-infective)
- Describe the clinical features
- Describe the indications for splenectomy
- Splenectomy for massive spleen
### Lymph nodes including lymphoma

**SET1-2 (Early)**
- Describe the aetiology and associated pathologies causing lymphadenopathy
- Describe the clinical symptoms and signs
- Define the role of medical imaging and laboratory investigations
- Define the role of cytology
- Describe the principle of pre-operative assessment
- Define the role of lymph node biopsy
- Open node biopsy; - cervical - axillary - femoral

**SET3-4 (Mid)**
- Open abdominal nodal biopsy

**SET5+ (Late)**
- Laparoscopic abdominal nodal biopsy  
  See also Surgical Oncology Module

### MORBID OBESITY

**SET1-2 (Early)**
- Describe the pathophysiology
- Describe the classification of obesity
- Describe the long term natural history
- Define the role of laboratory investigations and imaging specific to the morbidly obese patient undergoing any surgical procedure
- Gastric band deflation

**SET3-4 (Mid)**
- Describe the management of a morbidly obese patient undergoing a surgical procedure
- Describe the management of a patient who is to have an anti-obesity operation
- Describe the principles for selection of a patient for obesity surgery
- Recognise short and long term complications of anti-obesity surgery
- Recognition and immediate management of bolus obstruction and acute slippage in gastric band patients

**SET5+ (Late)**
- Operations available for obesity
The general surgeon is expected to be able to assess and manage commonly occurring vascular diseases that can occur as a single entity, or as a co-morbidity or complication associated with other diseases. They also expected to be able to recognise the need and appropriate time to refer such patients to other professionals.

The graduating trainee will be able to:
- describe common surgical pathologies of atherosclerosis, acute ischaemia and reperfusion injury, aneurysmal disease, systemic complications of diabetic disease, venous insufficiency, and thrombosis
- identify and recognise the symptoms and signs of these conditions
- describe and select appropriate diagnostic testing
- identify appropriate treatment options, and their indications and contraindications
- recognise, assess and treat any common vascular conditions likely to be encountered in consultative general surgical practice
- dissect and expose the abdominal aorta and all major peripheral blood vessels
- select appropriate investigative tools and monitoring techniques in a cost-effective and useful manner recognising risks and complications of their use
- appraise and interpret investigative imaging against patient’s needs
- understand risks and benefits of common vascular medications
- recognise which conditions to refer on to a specialised vascular service
- acknowledge their own limitations
- communicate information to patients (and their family) about procedures, outcomes, and risks associated with surgery in ways that encourage their participation in informed decision making (consent)

Trainees should have thorough knowledge of the normal embryology, anatomy, physiology, and pathology, of:
- arterial
- venous
- lymphatic systems

Trainees who are preparing to sit the Generic and/or Specialty-Specific Basic Science Examination and the Clinical Examination need to refer to the recommended reading list on the RACS website at [www.surgeons.org](http://www.surgeons.org)

For the Fellowship examination, there are no prescribed texts. Trainees are expected to keep abreast of the current literature, including textbooks, journal articles, consensus guidelines and other on-line resources.

If state-based and/or local hospital courses/meetings are available, trainees are strongly advised to avail themselves of these opportunities. This also includes practising procedures on simulation equipment where applicable. Trainees are encouraged to present their research at national and/or regional training days, in order to fulfil the research requirement.

The Generic and Specialty-Specific Basic Science Examination and the Clinical Examination; Fellowship examination (written and viva voce sections); Trainee evaluation forms and logbooks; DOPS and mini-CEX (where applicable).
<table>
<thead>
<tr>
<th>SET LEVEL</th>
<th>MEDICAL EXPERTISE</th>
<th>JUDGEMENT / CLINICAL DECISION MAKING</th>
<th>TECHNICAL EXPERTISE</th>
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<td>ANATOMY</td>
<td>CLINICAL ASSESSMENT</td>
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<td>PHYSIOLOGY</td>
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<td>PATHOLOGY</td>
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<tr>
<td>Acute ischaemia</td>
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<tr>
<td>SET1-2 (Early)</td>
<td>• Outline causes and local and systemic effects</td>
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<td></td>
<td>• Outline mechanisms of trauma that lead to vascular injury and/or haemorrhage</td>
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<td>• Review the clinical features in the history and the examination findings</td>
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<td>• Identify the medical conditions that contribute to or arise from vascular disease</td>
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<td></td>
<td>• Review the relevance of non-invasive and invasive imaging</td>
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<td></td>
<td>• Implement emergency treatment, e.g. heparin infusion</td>
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<td>• Fasciotomy</td>
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<tr>
<td>SET3-4 (Mid)</td>
<td>• Formulate multimodality therapy including:</td>
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<td>- surgical treatment</td>
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<td>• Recognise indications and complications of thrombolysis</td>
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<td>• Embolectomy:</td>
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<td>SET5+ (Late)</td>
<td>• Fasciotomy</td>
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<td>- upper limb</td>
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<td>Peripheral vascular disease (chronic)</td>
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<td>SET1-2 (Early)</td>
<td>• Outline causes and local and systemic effects</td>
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<td>• Review the clinical features in the history and the examination findings including ABPI</td>
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<td>• Identify the medical conditions that contribute to or arise from vascular disease</td>
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<td></td>
<td>• Appreciate relative roles of non-invasive versus invasive imaging</td>
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<td>• Review appropriate investigations to plan risk factor management</td>
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<td>• Advocate correction of personal risk factors of lifestyle change to improve results of all treatment</td>
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<td>• Arteriotomy closure</td>
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<td>SET3-4 (Mid)</td>
<td>• Formulate multimodality therapy including:</td>
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<td>- surgical treatment</td>
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<td>• Recognise indications for conservative versus interventional treatment</td>
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<td>• Differentiate between radiological and surgical options and discuss their limitations</td>
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<td></td>
<td>• Dissection and isolation of vessels in the groin</td>
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<td>• Arterial anastomosis</td>
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<td>• Below knee amputation</td>
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<td></td>
<td>• Above knee amputation</td>
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<td></td>
<td>• Peripheral vascular reconstruction/ bypass procedures</td>
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<td>SET LEVEL</td>
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<td>SET LEVEL</td>
<td>ANATOMY PHYSIOLOGY PATHOLOGY</td>
<td>CLINICAL ASSESSMENT</td>
<td>INVESTIGATIONS</td>
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<tr>
<td>Aneurysmal disease</td>
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<tr>
<td>SET1-2 (Early)</td>
<td>• Recognise the common sites of aneurysmal disease</td>
<td>• Identify and recognise the symptoms, signs, and differential diagnoses of ruptured intra abdominal aneurysm</td>
<td>• Review the relevance of non-invasive and invasive imaging</td>
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<td></td>
<td>• Outline pathological basis of abdominal aortic aneurysmal disease</td>
<td>• Assess for presence of peripheral aneurysm</td>
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<td></td>
<td>• Review pathophysiological sequelae of aneurysmal disease</td>
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<td>• Differentiate between true and false aneurysm</td>
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<td>SET3-4 (Mid)</td>
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<td>SET5+ (Late)</td>
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<tr>
<td>Diabetic vascular disease</td>
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<tr>
<td>SET1-2 (Early)</td>
<td>• Outline the pathophysiological effects of diabetes on the vascular system and the foot</td>
<td>• Review the clinical presentation of diabetic foot disease including: - ulceration - digital gangrene - sepsis</td>
<td>• Review the relevance of non-invasive and invasive imaging</td>
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<td>• Review the application and limitation of ABPI in diabetic disease</td>
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<td>SET3-4 (Mid)</td>
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ARterial, VEnous & LympHatic Systems
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<th>SET LEVEL</th>
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<th>TECHNICAL EXPERTISE</th>
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<td></td>
<td>ANATOMY PHYSIOLOGY PATHOLOGY</td>
<td>CLINICAL ASSESSMENT</td>
<td>INVESTIGATIONS</td>
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<tr>
<td>Vascular access</td>
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<tr>
<td>SET1-2 (Early)</td>
<td>• Outline the anatomy of vessels used for vascular access</td>
<td>• Evaluate access site suitability</td>
<td>• Assess clinical tests for adequacy of blood supply and describe the place of imaging</td>
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<tr>
<td>SET3-4 (Mid)</td>
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<td>SET5+ (Late)</td>
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Venous disease (including varicose veins)

| SET1-2 (Early) | • Outline the underlying causes | • Review the clinical features in the history and the examination findings | • Discuss the role of duplex in assessing venous disease | • List and evaluate the modalities available for treatment of varicose veins | • Arterio venous graft access techniques |
| SET3-4 (Mid) | • Define the pathophysiology of venous ulceration | • Appreciate the limitations of clinical assessment | | • Discuss the role of compression therapy in venous disease | |
| SET5+ (Late) | | | | • Review various operative techniques | |

Thrombo-embolic disease (DVT and PE)

| SET1-2 (Early) | • Outline pathophysiology | • Review the clinical features of lower limb DVT | • Review the place of medical imaging and relevant laboratory investigations | • Evaluate methods of thrombopro-phylaxis and risk assessment of DVT formation | • Arterio venous graft access techniques |
| SET3-4 (Mid) | • Summarise the cause of hypercoagulable states | • Describe presentation of axillary vein thrombosis | | • Describe: emergency treatment indications for anticoagulation and thrombolysis | |
| SET5+ (Late) | | | | • Evaluate the role of radiological intervention and surgery for DVT | |
### Thrombo-embolic disease (DVT and PE) (continued)

**SET3-4 (Mid)**

**SET5+ (Late)**

### Superficial thrombophlebitis

<table>
<thead>
<tr>
<th>SET LEVEL</th>
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<th>TECHNICAL EXPERTISE</th>
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<tbody>
<tr>
<td>SET1-2 (Early)</td>
<td>• Outline pathophysiology</td>
<td>• Review the clinical features of lower limb SVT</td>
<td>• Review the place of medical imaging and relevant laboratory investigations</td>
</tr>
<tr>
<td>SET3-4 (Mid)</td>
<td>• Summarise the cause of hypercoagulable states</td>
<td>• Discuss management options</td>
<td>• High saphenous ligations</td>
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<tr>
<td>SET5+ (Late)</td>
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### Mesenteric ischaemia

- **acute**
- **chronic**

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<tbody>
<tr>
<td>SET1-2 (Early)</td>
<td>• Outline relevant embryology, anatomy, and pathophysiology</td>
<td>• Differentiate the clinical features of acute and chronic mesenteric ischaemia</td>
<td>• Review laboratory investigations and place of medical imaging</td>
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<tr>
<td>SET3-4 (Mid)</td>
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<td>• Review the:</td>
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<td>- importance of early recognition</td>
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<td>- recognition of associated medical conditions</td>
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<td>- medical and surgical therapy options</td>
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<tr>
<td>SET5+ (Late)</td>
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<td></td>
<td>• Laparotomy</td>
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<td>• Resection of nonviable bowel</td>
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### Thoracic outlet syndrome

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<tbody>
<tr>
<td>SET1-2 (Early)</td>
<td>• Describe relevant embryology and anatomy</td>
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<tr>
<td>SET3-4 (Mid)</td>
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<td></td>
<td>• Interpret multimodality investigations</td>
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<td>SET5+ (Late)</td>
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<td>• Discuss the principles of management</td>
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</table>

### Role of secondary laparotomy

- Mesenteric embolectomy/ revascularisation procedures
### Vascular trauma

**SET1-2 (Early)**
- Describe the anatomy of vessels most vulnerable to trauma, including iatrogenic

**SET3-4 (Mid)**
- Recognise common patterns of vascular injury, e.g. catheter site
- Differentiate hard and soft signs of vascular injury

**SET5+ (Late)**
- Interpret relevant investigations
- Recognise relevance or timing of investigations versus immediate surgery

- Outline methods of vascular repair
- Describe an approach to stab injuries to neck
- Appraise approaches to and management of thoracic injuries including widened mediastinum

### Lymphatic disease

**SET1-2 (Early)**
- Delineate normal anatomy, embryology, and function

**SET3-4 (Mid)**
- Identify the etiology and pathogenesis of lymphodema and lymphocele
- Assessment and differential diagnosis of the swollen limb

**SET5+ (Late)**
- Describe conservative management options and prevention; **See also Breast Module**
- Manage complications of lymphatic disease

### Variant anatomy and non-anatomical reconstruction

**SET1-2 (Early)**
- Describe common vascular anomalies and their surgical relevance

**SET3-4 (Mid)**
- Explain the surgical implications of non-anatomic reconstruction