MODULE TITLE:	**SKIN & SOFT TISSUE**	**7-Nov-2016**
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REVIEWED BY:	**Alan Saunder (2010) Adrian Anthony, Wendy Brown, Sayed Hassen, Michael Cox, Noel Tait (2013). Andrew Thompson (2016).**	
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 ▪ diagnoses 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 the skin and subcutaneous tissues. In addition, the trainee should know: ▪ 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 Clinical Examinations 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	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 accredited regional training days, in order to fulfil the research requirement.	
How this module will be assessed	The Generic and Clinical Examinations; Fellowship examination (written and viva voce sections); Trainee evaluation forms and logbooks; SEAM (where applicable).	
Assumed Knowledge	▪ Anatomy, histology and physiology of the integument ▪ Anatomy of subcutaneous spaces and structures ▪ Anatomy and physiology of skeletal muscle and associated neuro-lympho-vascular structures ▪ The wound healing process	
Definitions	*Operative Management - Knows:* Trainees are required to be familiar with the indications, benefits and limitations of the procedure; trainees should be able to describe the relevant operative techniques involved in performing the procedure; trainees are encouraged to at least observe and preferably assist in these procedures. *Operative Management - Does:* In addition to the above, trainees must be competent at performing the procedure.	

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Skin cancer ▪ **basal cell carcinoma** ▪ **squamous cell carcinoma** ▪ **intra-epithelial carcinoma** ▪ **Merkel cell tumour** ▪ **Melanoma** *(See also Surgical Oncology Module)*						
Early SET	▪ 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, and potential complications ▪ Non-operative primary treatments		▪ Excision of skin cancer and wound closure using direct suturing
Mid SET			▪ Select and describe relevant staging investigations	▪ Principles of advanced reconstructive techniques ▪ Discuss the indications and principles of managing regional lymph nodes ▪ Discuss possible complications of surgical treatments and how to manage them	▪ Block dissection of regional lymph nodes	▪ Excision of skin cancer and wound closure using: - cutaneous flaps - full-thickness/split skin grafts ▪ Sentinel lymph node biopsy
Benign skin and subcutaneous lesions ▪ **Nevus** ▪ **Solar keratosis** ▪ **Papilloma / wart** ▪ **Seborrheic keratosis** ▪ **Lipoma** ▪ **Sebaceous cyst** ▪ **Ganglion** ▪ **Keloid and hypertrophic scar**						
Early SET	▪ 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 ▪ Principles of excision and closure, including possible complications		▪ Simple excision of lesion ▪ Diathermy ablation/curettage (warts)

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Ingrown toenail						
Early SET	▪ Describe the anatomy of a finger or toe: - digital artery and nerves - nail matrix ▪ Describe the pathogenesis	▪ Identify typical appearance and examination findings ▪ Identify risk factors for complications		▪ Describe preventative measures ▪ Discuss principles and indications of non-surgical and surgical management ▪ Discuss details of surgical management		▪ Nail avulsion ▪ Wedge resection of nail
Mid SET						▪ Zadek's operation
Cellulitis **Soft tissue abscess** **Wound infection**						
Early SET	▪ List likely pathogens ▪ Summarise pathogenesis of cellulitis and abscess formation ▪ Define risk factors for wound infection	▪ Take a history and accurately interpret examination findings ▪ Clinical features and risk factors for necrotising infections	▪ Employ and interpret microbiological investigations as appropriate ▪ Medical imaging modalities where indicated	▪ Discuss principles and indications of non-surgical and surgical management ▪ Discuss details of surgical management		▪ Incision and drainage of abscess ▪ Wound debridement
Synergistic soft tissue infections e.g.: ▪ **Fournier's gangrene** ▪ **gas gangrene** ▪ **necrotising fasciitis, etc.**						
Early SET	▪ Define and describe pathogenic mechanisms ▪ List likely pathogens ▪ Define risk factors ▪ Explain the role in systemic inflammatory response syndrome	▪ Take a history and accurately interpret examination findings ▪ Recognise and identify the critically ill patient	▪ Interpret microbiological investigations as appropriate ▪ Employ and interpret imaging modalities as appropriate	▪ Implement and evaluate response to resuscitation ▪ Discuss principles and indications of non-surgical and surgical management ▪ Organise multidisciplinary approach to management		
Mid SET				▪ Discuss principles of surgical management	▪ Reconstructive techniques	▪ Extensive wound debridement/ amputation ▪ Defunctioning colostomy (as indicated)
Late SET					▪ Advanced reconstructive techniques	
Hidradenitis suppurativa						
Early SET	▪ Discuss pathogenesis and natural history of the condition	▪ Interpret history and examination findings		▪ Discuss principles and indications of non-surgical and surgical management		▪ Incision and drainage
Mid SET				▪ Discuss procedural details of surgical management	▪ Reconstructive techniques where indicated	▪ Excision

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Hand Infections						
Early SET	▪ Anatomy of hand spaces	▪ Interpret history and examination findings ▪ Recognise implications of deep space infections	▪ Employ use of microbiology, imaging and blood tests	▪ Discuss principles and indications of non-operative and operative management, including antibiotic rationale ▪ Plan aftercare including rehabilitation		
Mid SET				▪ Discuss procedural details of surgical management	▪ Incision and drainage of hand and finger spaces	
Chronic leg ulcer / pressure ulcers *See also Vascular Module*						
Early SET	▪ Discuss pathogenesis and aetiological factors ▪ Describe arterial and venous anatomy of the leg	▪ Take a history and accurately interpret examination findings ▪ Perform, calculate and interpret Doppler assessment of ankle-brachial index	▪ Use and interpret investigations as indicated	▪ Discuss principles and indications of non-surgical and surgical management, including preventive measures ▪ Discuss procedural details of surgical management		▪ Wound debridement ▪ Split skin grafting
Late SET					▪ Flap repair (as indicated)	
High risk foot (diabetic / neuropathic) *See also Vascular Module*						
Early SET	▪ 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	▪ Discuss principles and indications of non-surgical and surgical management, including preventive measures		▪ Incision and drainage of suppuration
Mid SET				▪ Discuss procedural details of surgical management ▪ Coordinate multi-disciplinary care	▪ Major limb amputations	▪ Wound debridement ▪ Local amputations
Pilonidal sinus / abscess						
Early SET	▪ 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 ▪ Appraise the use of various wound care techniques including vacuum dressings		▪ Incision and drainage of abscess ▪ Excision and marsupialisation

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Pilonidal sinus/ abscess (continued)						
Mid SET					▪ Surgical management of Pilonidal sinus	▪ Excision and primary closure with or without a flap
Hyperhidrosis						
Early SET	▪ Describe the normal physiology and histology of sweat glands ▪ Discuss the anatomy of the sympathetic nervous system ▪ Explain the pathophysiology of focal/generalised primary/secondary hyperhidrosis	▪ Obtain a focused history including with respect to location of sweating and possible causes of secondary hyperhidrosis		▪ Discuss the principles and indications of non-surgical and surgical management		
Mid SET				▪ Discuss the procedural details of surgical management including possible complications	▪ Endoscopic thoracic sympathectomy ▪ Lumbar sympathectomy	
Carpal tunnel syndrome						
Early SET	▪ Describe anatomy of hand and wrist, with particular reference to median nerve ▪ Define pathogenesis and contributing conditions	▪ Take a history and accurately interpret examination findings ▪ Differentiate between other diagnoses	▪ Order and interpret nerve conduction studies	▪ Discuss principles and indications of non-surgical and surgical management		
Mid SET				▪ Discuss procedural details of surgical management		▪ Carpal tunnel release
Other peripheral nerve entrapments						
Early SET	▪ 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	▪ Obtain a focused history of the condition ▪ Perform an examination of the sensory and motor functions of the relevant nerve	▪ Request nerve conduction or electromyographic studies where appropriate	▪ Discuss the options and indications for non-surgical and surgical management		
Mid SET	▪ Discuss the neuralgia post inguinal hernia repair	▪ Ilioinguinal nerve damage ▪ Genitofemoral nerve damage		▪ Outline the procedural details of surgical management, including possible complications	▪ Ulnar neurolysis ▪ Other neurolysis	
Late SET					▪ Exploration of Guyon's canal ▪ Decompressive surgery for pronator syndrome	

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Peripheral nerve injuries						
Early SET	▪ 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		
Mid SET	▪ Appreciate sites of potential iatrogenic nerve injury				▪ Acute primary nerve repair	