

# Physical exam basics

Dr. Nancy Mettee



**LOGGERHEAD**  
MARINELIFE CENTER



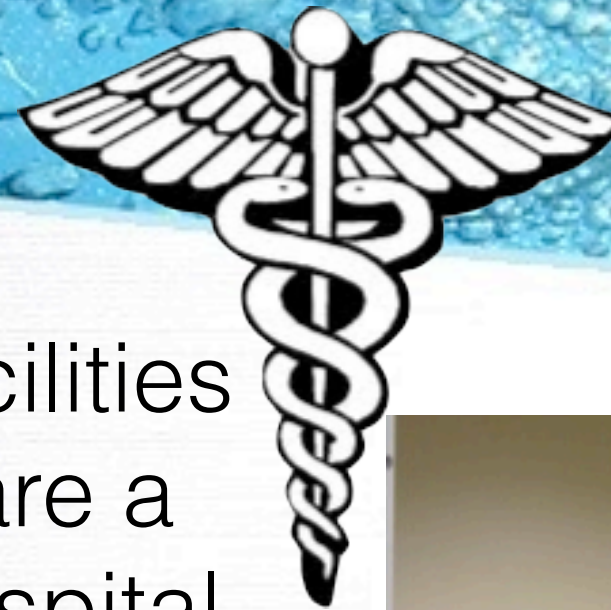




**Our mission: To promote conservation of Florida's coastal ecosystem with a special focus on threatened and endangered sea turtles.**







All medical and surgical facilities are available onsite. We are a state licensed veterinary hospital.



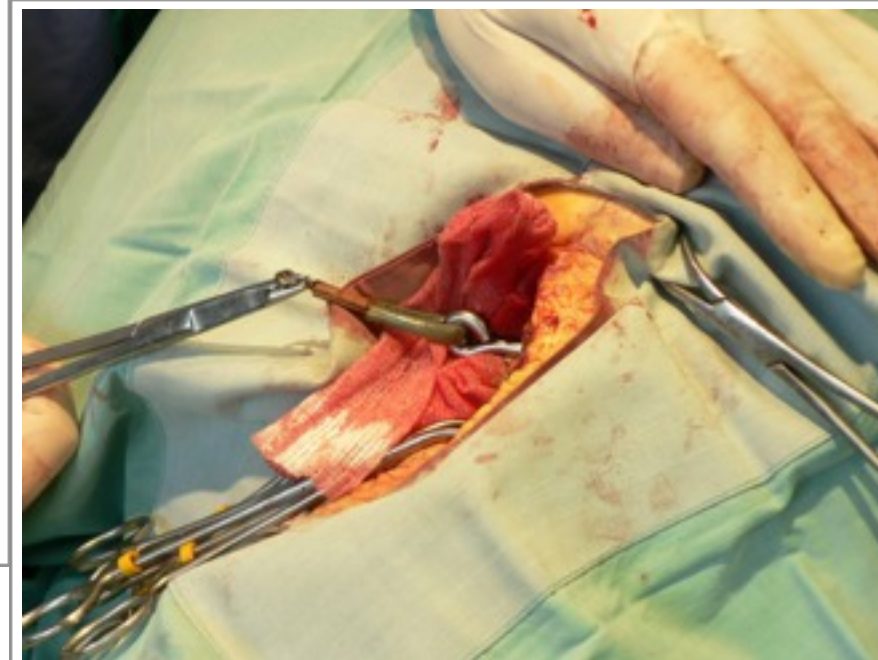




LMC houses a fully functional veterinary hospital with a unique focus on sea turtles. This allows us to dedicate our resources to this class of endangered animals and pioneer medical and surgical techniques to improve rehabilitation efforts worldwide.







Our patients each receive a full diagnostic workup. This includes a thorough physical examination, temperature & weight check, complete blood work, and full body radiographs. This information is then compiled into a diagnosis and plan.



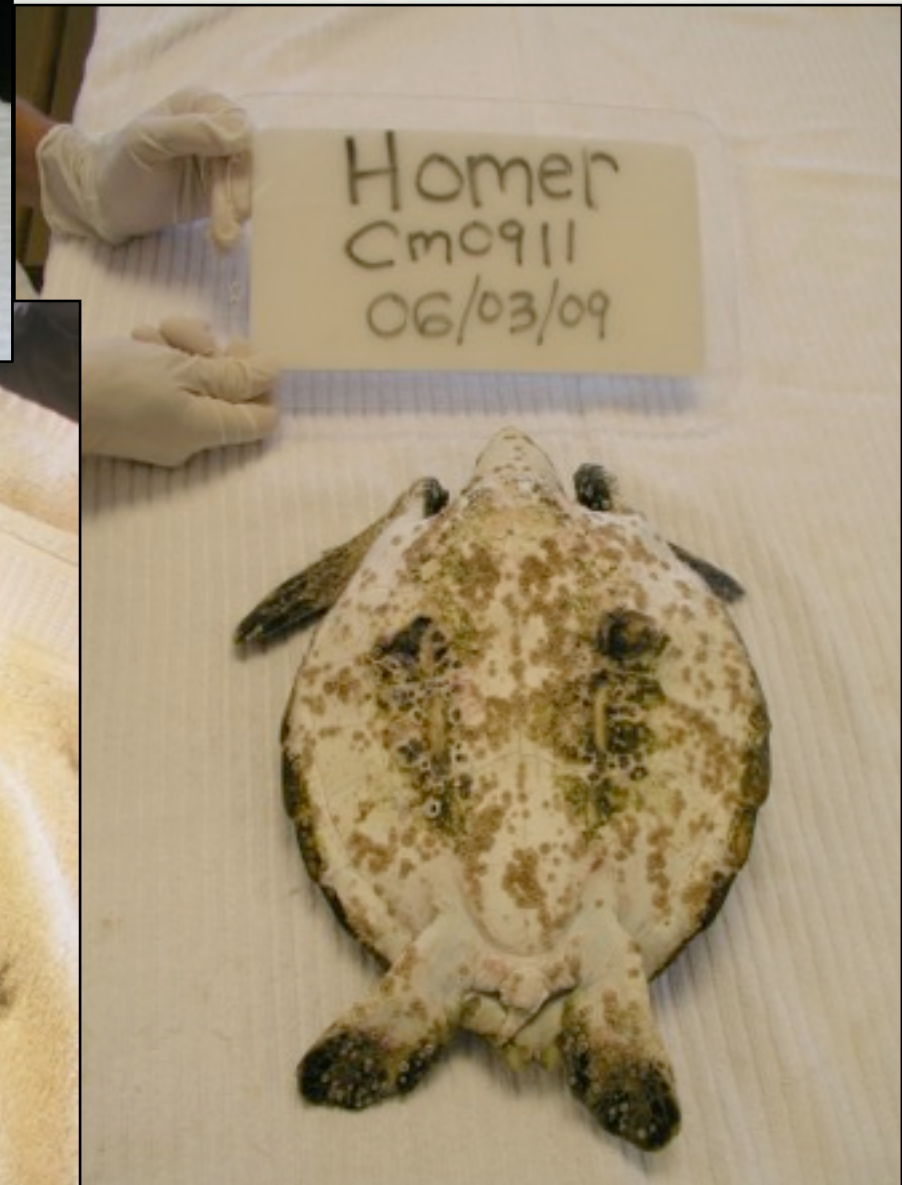


# LMC minimum data base

- ✿ *history (nature of stranding)*
- ✿ *digital photos (3 minimum)*
- ✿ *weight & measurements*
- ✿ *complete physical exam with nutritional assessment*
- ✿ *full body radiographs*
- ✿ *bloodwork (istat, cbc, chemistry panel)*



# Digital photo documentation







# Ophthalmic/Otic

*With natural light and white light  
Includes flourescein dye test for corneal ulceration  
Observe salt gland activity*





# Musculoskeletal

*Palpate all limbs for range of motion, swelling, or crepitus*

*Evaluate muscle tone and strength*

*Evaluate carapace and plastron for signs of injury*



# Integumentary



*Scutes cover bone  
Scales cover skin*

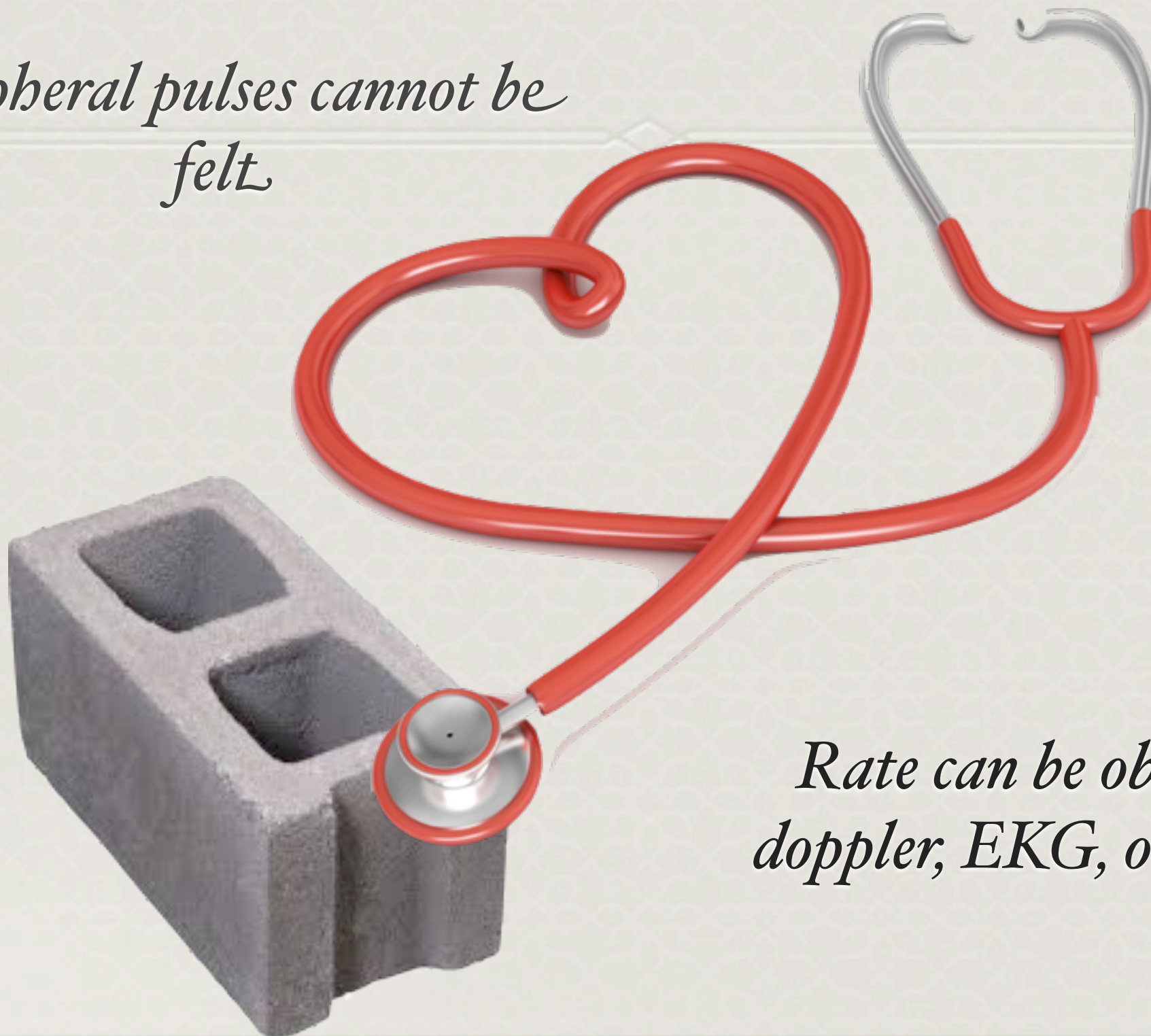
*Skin should be evaluated for  
excessive sloughing, wounds,  
abscesses, and scars*

*The thickness of sea turtle skin  
makes bruising invisible in most  
instances*



# Cardiac

*Peripheral pulses cannot be felt*



*Rate can be obtained via  
doppler, EKG, or ultrasound*



# Respiratory system

*Movement of carapace (up) and plastron (down) needed for full excursion*

*Nares typically have no discharge*

*Audible (gurgling) is atypical*

*Forced expiration followed by rapid inhalation with breath holding - rate will vary*

*Will lift head to breathe, even out of the water*







# Gular pumping

*Normal flushing of water out thru nares*



# Digestive system



*Oral exam*

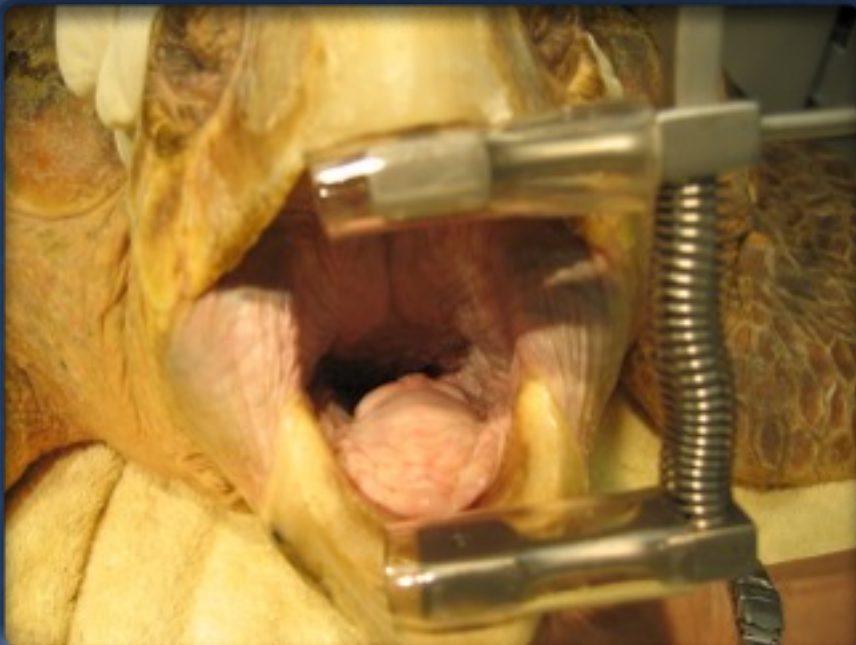


*Cloacal exam*





open the mouth



*Carefully*







# Fecal analysis

*Direct smear, sedimentation, and evaluation for foreign material.*



# Lymphatic system

- ✿ *lack distinct lymph nodes*
- ✿ *lymphatics wrap blood vessels*
- ✿ *lymph may be obtained during blood sampling, seen as clear liquid (will dilute blood sample)*





# Endocrine system

- ✿ *little is known*
- ✿ *few normal blood parameters for comparison*
- ✿ *euthyroid sick?*
- ✿ *endocrine disruptors?*





# Neurologic system



- \*In water exam*
- \*Out of water exams--  
both on back and on  
belly*
- \*Serial exams needed  
to evaluate trends*



# Neurologic exam form

## APPENDIX II NEUROLOGICAL EXAMINATION (ADAPTED FROM CHRISMAN ET AL, JAVMA, 211(8), 1997)

While turtle is in the water					
Observations (Check appropriate box)					
Mentation	Alert <input type="checkbox"/>	Depressed <input type="checkbox"/>	Demented <input type="checkbox"/>	Stuporous <input type="checkbox"/>	Comatose <input type="checkbox"/>
Compulsive circling	None <input type="checkbox"/>	Both directions <input type="checkbox"/>	Left <input type="checkbox"/>	Right <input type="checkbox"/>	
Head posture	Level <input type="checkbox"/>	Tilted Left <input type="checkbox"/>	Turned left <input type="checkbox"/>	Tilted Right <input type="checkbox"/>	Turned Right <input type="checkbox"/>
Head movement	Normal <input type="checkbox"/>	Decreased <input type="checkbox"/>	Absent <input type="checkbox"/>	Uncoord <input type="checkbox"/>	Tremors <input type="checkbox"/>
Body posture	Level <input type="checkbox"/>	Tilted Left <input type="checkbox"/>	Tilted Right <input type="checkbox"/>	Pelvic float <input type="checkbox"/>	

Comments:

Indicate appropriate number; Key: 4-uncoordinated; 3-increased; 2-normal; 0-absent; NE-not evaluated

Visual avoidance		Thoracic limbs				Pelvic limbs	
Left eye		Movement		L	R	L	R
Visual avoidance Right eye		Strength					
General activity							
Righting response							
Tail movement							

Comments:

### While turtle is out of the water in ventral recumbency (Check appropriate box)

Activity while lifted	Increased <input type="checkbox"/>	Normal <input type="checkbox"/>	Reduced <input type="checkbox"/>	Absent <input type="checkbox"/>	
Mentation	Alert <input type="checkbox"/>	Depressed <input type="checkbox"/>	Demented <input type="checkbox"/>	Stuporous <input type="checkbox"/>	Comatose <input type="checkbox"/>
Head posture	Level <input type="checkbox"/>	Tilted Left <input type="checkbox"/>	Turned left <input type="checkbox"/>	Tilted Right <input type="checkbox"/>	Turned Right <input type="checkbox"/>
Head movement	Normal <input type="checkbox"/>	Decreased <input type="checkbox"/>	Absent <input type="checkbox"/>	Uncoordinated <input type="checkbox"/>	Tremors <input type="checkbox"/>

Comments:

### While turtle is out of the water in ventral recumbency (Check appropriate box)

Indicate appropriate number

Key: 4-uncoordinated; 3-increased; 2-normal; 1-decreased; 0-absent; NE-not evaluated; NA-not applicable

Cranial nerves	L	R	Comments:
I - Olfaction			
II, VII - Menace			
II, III - Pupillary reflex			
III, IV, VI - Strabismus			
V - Jaw tone/strength			
V, VII - Palp reflex			
VIII - Vestibular nistag			
IX, X - Swallowing			
XII - Tongue			

### While turtle is out of the water in dorsal recumbency

Indicate appropriate number

Key: 4-uncoordinated; 3-increased; 2-normal; 1-decreased; 0-absent; NE-not evaluated; NA-not applicable

	Thoracic limbs		Pelvic limbs		
	L	R	L	R	
Movement					Cloaca & Tail
Strength					Cloacal nociception
Tone					Tail movement
Flexor reflex					Tail nociception
Crossed extensor					
Clasp response					
Dermal nociception					
Periosteal nocicep.					
Sensation	L	R	L	R	
Neck					
Scute					

Comments:

Location of lesion(s):





support in water



# Urogenital system

*Urinalysis not effective diagnostic*  
*Most of urogenital tract is inside shell*





# Fibropapilloma



*-class 1, 2, or 3*  
*-quarantine*  
*-fibropapilloma form*



# In water exam + buoyancy

*Cranial or caudal?*

*Right or left?*

*Central?*

*Can turtle submerge? (Corking)*

*Estimate % of carapace out of water*

*Daily notes to assess trends*





# External parasites/epibionts

*\*note distribution  
(carapace & soft  
tissue?)*

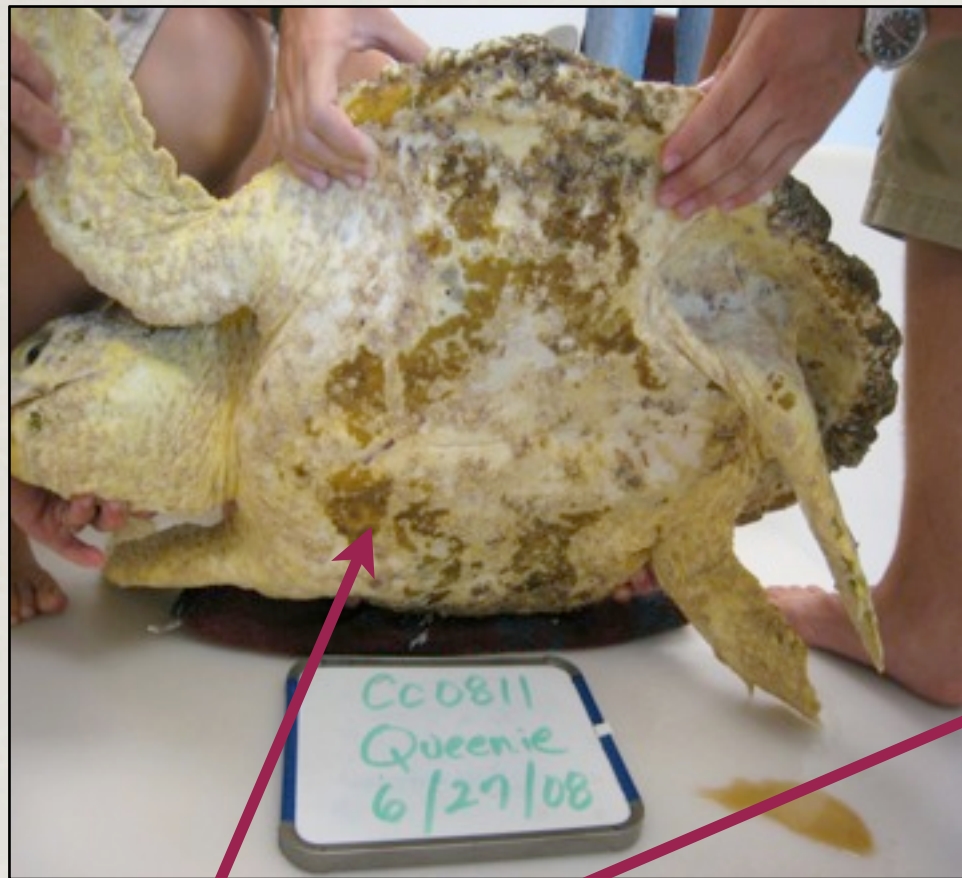
*\*algae*



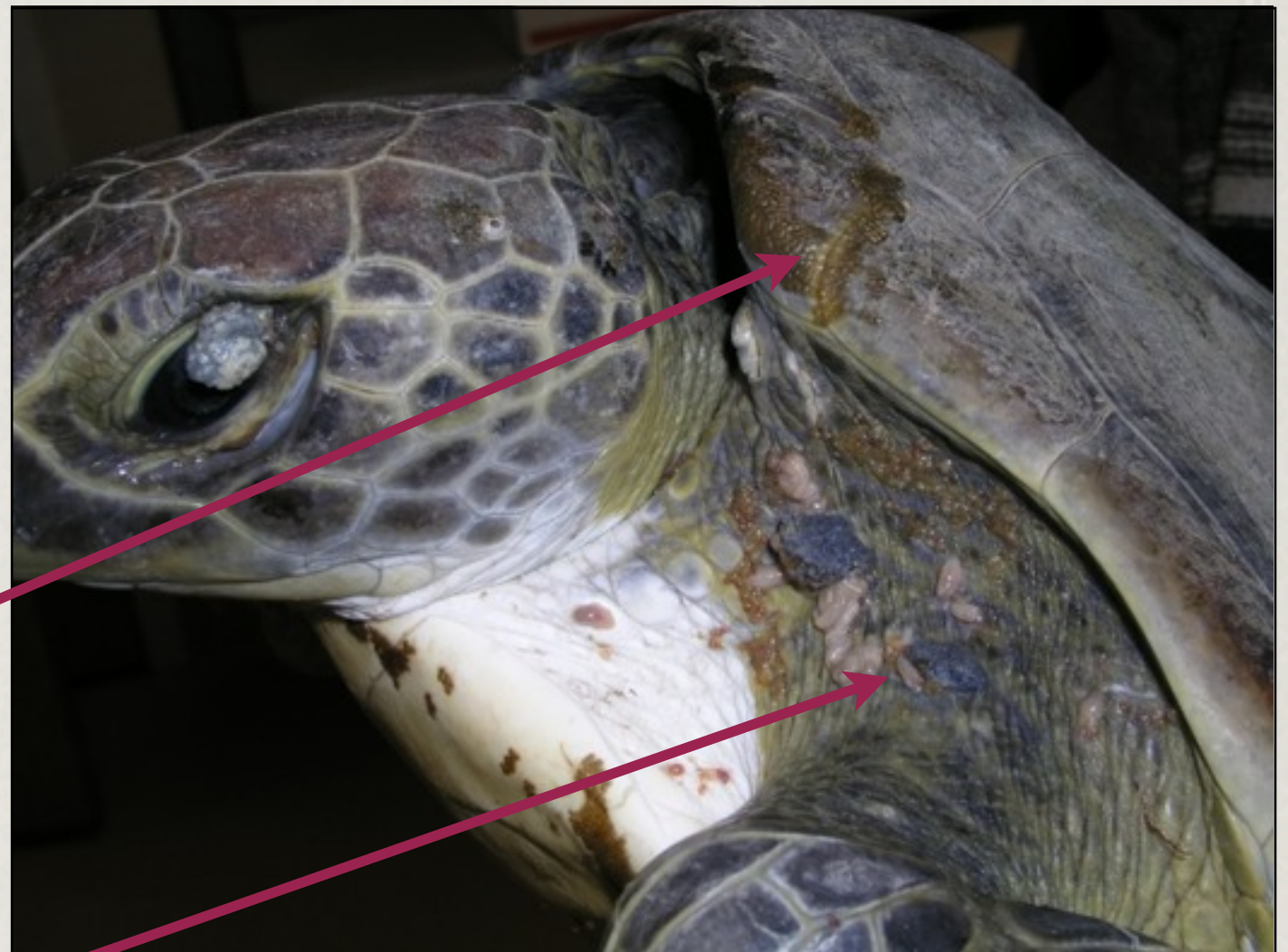


# External parasites

*leeches*



*Eggs*



*Adults*



# External parasites

*barnacles*





# Dry Dock

*All patients dry dock first night*





# Radiographs

*Three standard views*





# Blood-work

*Collect into lithium heparin (green tops) and make slides.*





# Nutritional assessment: emaciated





# Nutritional assessment: emaciated





# Nutritional analysis : thin



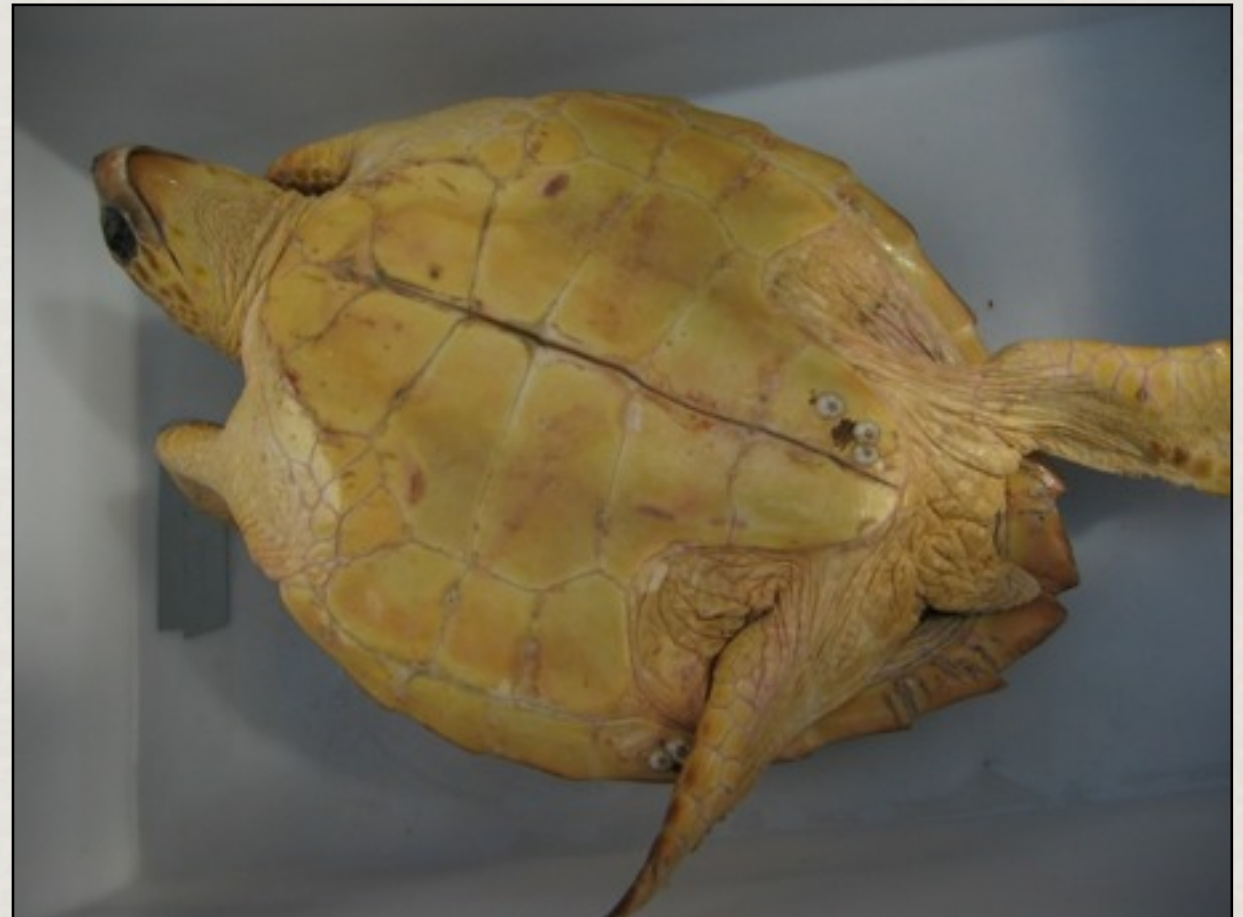


# Nutritional assessment: thin





# Nutritional assessment: good





# Nutritional analysis : good





# Nutritional analysis: robust





# nutritional assessment robust





# Nutritional analysis: skeletal deformity







Thank you