Medicine at Sea

Take 2 paracetamol and call a Doctor…

Dr Helga Weaving

MEDICAL KIT

What goes into a medical kit?

- What is the difference between a medical kit and first aid kit?

- DRUGS!

What do I get?

- Depend on where you are going and with whom and for how long….
- Consider pro rata increase

Good starting point…

- Blue book that was…
- Racing Rules of sailing
- Medications covering most major and some minor problems
  - Cardiac
  - Reflux/gastritis
  - Pain relief etc.

Crew and their ailments…

- Allergies- anaphylaxis
- Major health problems
- Medication
  - Blood thinners

Role of Medic

- Medic:
  - Know where items are in the medical kit
  - List crew health problems
  - Check medicines : full inhalers, epi-pens
  - Know if any allergies
  - Document medical incident: as per regulations

First Aid

- Plasters- buy sailing friendly
- Gauze and bandage
- Fixomull- sticks to wet skin

Drugs

- Over the counter- pharmacy
- Prescription only
  - Ship's Log/record
- Storage consider
  - Heat effects
  - Scheduled (opiates) medication
- Explain the function
  - Ask for a long shelf life

Medicines

- Indicated treatment
- Contra-indications: allergies
- How do you give it
- Dose do you give
- Side effects

Administration

- Oral
- Rectal
- Intra-muscular (IM)
- Intra-venous (IV)

Oral

Pro

- Easy
- Even if fasting

- Con
  - Vomiting
  - Onset 40+ minutes: GIVE EARLY

Rectal

- Pro
  - Quicker onset to oral: 10-15 minutes
  - Can't be vomited
  - Self administered
- Con
  - Ick factor
  - Storage: designed to melt

Intra-venous

- Pro: quicker action/titratable
- Con: specialist skills and equipment

Medications

What is in the kit?

- Familiarize yourself with the medical kit
- When in doubt: Read info leaflet
- Day kit: extra simple painkillers, antacid, anti-histamine, sea-sickness tablets , bandaids

Painkillers: Mild

- Paracetamol 500mg
  - 2 tablets, 4 x day
  - 40 tablets
  - 5 days supply
- Ibuprofen 200mg
  - 2 tablets, 3 x day
  - 40 tablets
  - > 5 days supply

Painkillers: Moderate to severe

- Codeine/paracetamol mixes
- 500mg paracetamol:
  - 30mg codeine (panadeine/codapaine forte)
- S/E: constipation
- Dose: 2 tablets, 4x day
- 2 and half days supply

Painkillers: very severe pain

- Oxycodone (endone) 5mg (20) oral
- Oxycodone 30mg suppositories (Prolodone) (10)
- Morphine 10 mg/ml: IM/IV

Opioids : Side effects

- Nausea/vomiting
- Drowsiness
- Dizziness
- Dose related respiratory depression
- Coma

Dose

- Titrate to pain and sedation
- Assume healthy person, normal weight
- Alter if elderly/low weight
- Can give more – but can’t take it away

Oxycodone 5mg

- Oral opioid
- Reasonable: 5mg to 10mg initially
- 5-15mg every 4-6 hours

Prolodone 30 mg- rectal opiate

- 30mg every 6-8 hours
- Oral/IM preferable

Morphine

- Dose: 10mg/1ml
- IM 5-10mg depending on severity
- Repeat: 2 hourly

Naloxone

- 400mcg vial
- Opioid antagonist: reversal of overdose
- Initially 400mcg
- Should improve within 1 minute
- Can repeat
- Half life 1 hour < half life of opioids
- Observe 2-3 hours afterwards

Cardiac Emergencies

- Aspirin
- Nitrolingual spray (anginine)
  - Indications cardiac chest pain
  - S/E lowers Blood pressure/headache
- Tablets better: shelf life/can be spat out if S/E
- +/- morphine d/w Dr

Eyes

- Chloramphenicol Ointment:
  - no fridgeration
  - corneal abrasions/graze
  - Bacterial eye infections
  - ointment briefly blur vision

  - Can be used for other minor skin infections- coral cuts etc

Antibiotics: each is 1 course

- Ciprofloxacin: 500mg (14)- cat 1
- Cephalexin 500mg (20)
- Extra: Augmentin Duo
- Extra: Doxycycline

Ciprofloxacin

- Good coverage: skin/bone/respiratory/gastrointestinal/urinary /gonorrhea/anthrax
- S/E: colitis, tendonitis, photosensitvity

Cephalexin (Keflex)

- Not if anaphylactic to penicillin (tongue swelling) ok if allergic rash
- Indicated for chest/skin/urinary infections
- 500mg, 6 hourly

Augmentin-duo forte

- Not for penicillin allergy
- Broad spectrum
- 1 tablet twice daily

Doxycycline

- Chest, skin and coral cut infections
- Suitable for penicillin allergic
- 200mg initially then 100mg once daily
- Photosensitivity!

Clotrimazole cream

- Anti-fungal
  - Athletes foot
  - Jock’s itch

For Gastric problems

- Loperamide (imodium) 2mg pkt (12)
  - Problems:
    - increased duration illness
    - misdiagnosis
- Antacid tablets-(cat 1) Mylanta/Gaviscon etc

For dehydration

- Gastrolyte
- Prevention better
  - Avoid heat stroke
  - Remain hydrated
  - Treat sea-sickness early
  - Hygiene: Wash your hands/use hand gels

Sea sickness

- Avomine or travacalm

- Others:
  - Prochlorperazine (stemetil)
  - scopolamine patches (UK)
  - Promethazine hydrochloride (phenergan) (sedation)
  - Ondansetron wafers

Allergy

- Promethazine 25mg (25) Sedating antihistamine
  - Anti-emetic
  - Consider 10mg and increase amount pro rata
- Adrenaline injections 1:1000 (5)
  - 500mcg (half a vial) IM can be repeated if required

Extras

- Aqua ear or Sofradex ear drops: swimmers ears
- Viscotears eye gel
- Ondansetron wafers: anti-nausea
- Bactroban/mupiricin ointment: antibiotic
- Loratidine (clarytin): non sedating anti-histamine
- Steroid cream: dermatitis
- Kenacomb (combo steroid/anti-fungal/antibacterial) ointment

Sea Sickness… and other sailing ailments


THE WORST THING ABOUT SEA SICKNESS?
IT COMES IN WAVES

Sea sickness

- Principle symptom (nausea)
  - Derived from the Greek work for ship: Naus

Sea Sickness

- Motion sickness: syndrome that occurs in response to real/perceived motion

Sea Sickness

- Physiological form of dizziness
- Motion sickness can be induced in almost all people with sufficient provocation
- Enormous variability in susceptibility

Pathogenesis

- Brain estimates motion and spatial orientation
  - Vestibular clues from labyrinth (ears)
    - Angular motion: semicircular canals
    - Linear/gravitational: otolith organs
  - Visual information
  - Somatosensory clues- proprioception

Hypothesis

- Normal active movements these are congruent
- Sensory conflict between: visual/somatosensory underlies motion sickness
- Anatomical basis not completely understood

Scientifically…

- Connections: central vestibular system brainstem and cerebellum and autonomic/emetic centres in the brain.
- Critical neurotransmitters:
  - Histamine
  - Acetylcholine
  - Norephinephrine
  - GABA

Factors

- Women more susceptible than men
- Children <2 resistant
- Incidence peaks age 12yrs
- Increased: Labyrinthitis/migraine/pregnancy
- Pyscho-social
  - Naval cadet's experiment

Environmental

- Type of motion: low frequency lateral/vertical
  - Maximum 0.2Hz frequency of horizontal translational oscillation…
- Body position: decreased by lying supine
- Food: conflicting data

Clinical presentation

Dizziness

Nausea/Belching

Increased salivation

Warmth

Sweaty/clammy

Malaise

Symptoms tend to subside 36-72 hours after continuous exposure, improve c repeat exposure

Treatment/prevention

- Prevention better than cure
- PRE-LOAD…

Treatment/prevention

- Environmental: Horizon fixed > head fixed
- Shift/Crew management

Medication

- Suppress conflicting neuro- transmitting information
- Less effective in relieving symptoms than prevention

Medication

- Drugs which reduce activity in vestibular nuclei where labyrinth and visual clues are combined
  - Antihistamines
  - Anticholinergic
  - Benzodiazepines

Medication type

- Travacalm
- Prochloperazine
- Promethazine +/- caffeine
- Lorazepam
- Scopolamine patches
- Metoclopramide
- Ondansetron wafers
- Amphetamines: pseudoephedrine
- Caution elderly/glaucoma

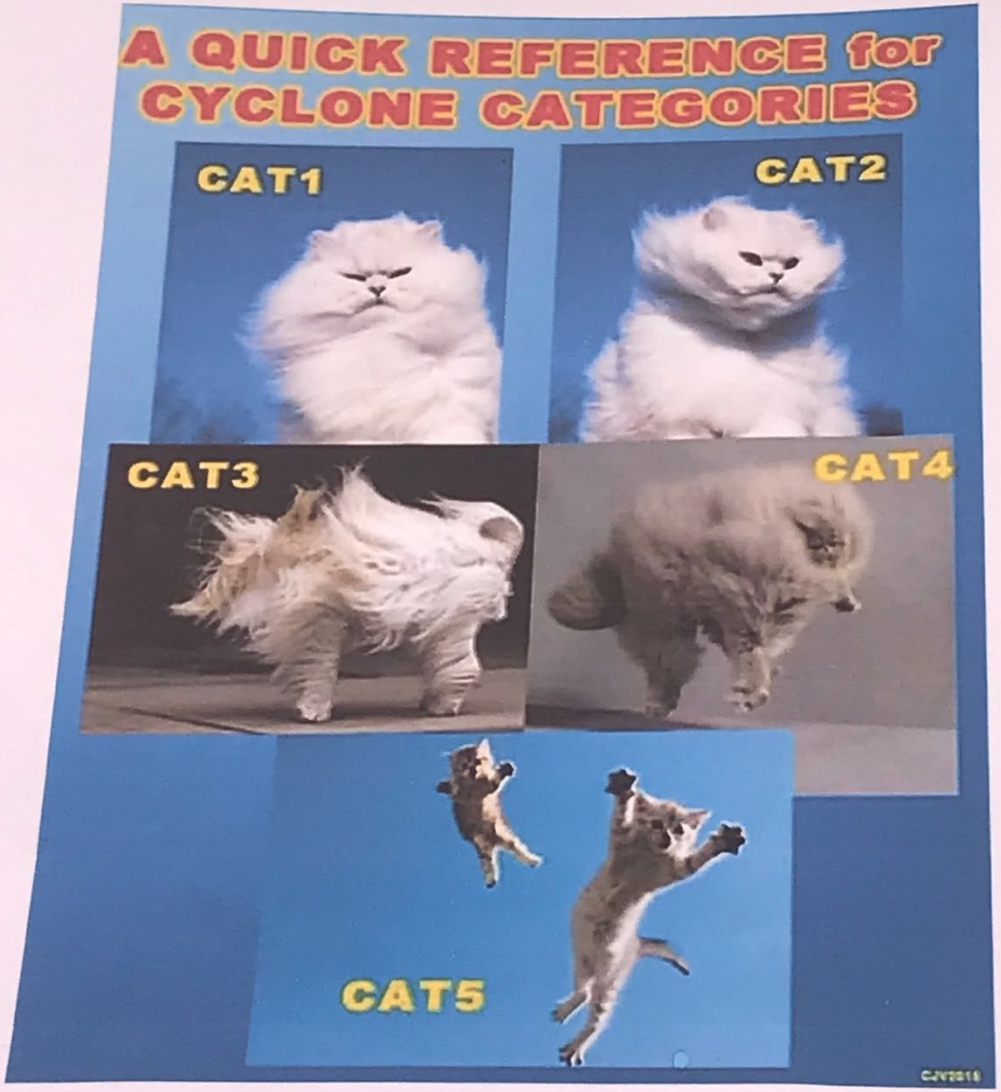
- Standard anti-emetics: relieve nausea, do not prevent motion sickness

Choice of medication

- Patient
- Time frame
- Other factors: sedation
- Caution elderly/glaucoma

Others

- Ginger
- Acupressure: Medical trials nil benefit, ? Individual benefit
- Nicotine deprivation reduces motion sickness


A QUICK REFERENCE for
CYCLONE CATEGORIES
CAT1
CAT2
CAT3
CAT4
CAT5

GUNWALE BUM

Gunwale Bum

- Gunnel Bum
- Barnacle Butt
- Grotty Spotty Yachty Botty

Saltwater dermatitis

- Sitting on wet deck
- Prolonged period in wet weather gear

- Contact skin irritation from salt
- Pressure from sitting
- Secondary skin infection
    - Bacterial- folliculitis (pustules)
    - Fungal (tinea- like nappy rash)

Prevention

- Hygiene- bathing and changing clothes
- Clothing- underwear natural fabrics
- Padding- biking shorts etc
- Creams- sudocrem etc
- Powder- athletes foot powder

Treatment

- Inflammation/dermatitis
- Infection
  - Either bacterial or fungal
  - Or both

Treatment

- Steroid- inflammation- not if infection
- Antibiotic – bacterial
  - Topical- ointment- mupirocin (bactroban)
  - Oral antibiotic course
- Anti-fungal- e.g. clotrimazole/daktarin
- Combination
  - Steroid/anti-fungal
  - Steroid/anti-fungal/antibiotic e.g. kenacomb

Injury Managment

Head injuries

- Common on boats
- Minor-moderate-severe
- More than minor: evacuate them
- On anti-coagulants = CT scan

Minor head injury

- Not knocked out
- Not amnestic
- Not vomiting
- No seizure
- No severe headache
- Alert and orientated

Sprains

- Strapping tape useful
- Ankles: uneven surface gives support > tubigrip/bandage
- Check reaction to tape
- Can use fixomull underneath

Fractures

- Likely sites:
  - Forearm
  - Clavicle (collarbone)
  - Ankle
  - Ribs

  Significant height or force: pelvis/femur/humerus

Treatment

- Pain relief
- Assessment of complications
- Removal of rings
- Elevation

Pain Relief

- Pain tablets/injection
- Immobilization
  - Inflatable splints
  - Splinting using boat equipment

Assessment of complications: fractures & wounds

- Blood vessel:
  - feel the pulse distally
  - Capillary return: press for 5 seconds, brisk < 2 secs return of colour
- Nerve: sensation
- Tendon: movement
- Any compromise: emergency treatment

Open fracture: bone through skin

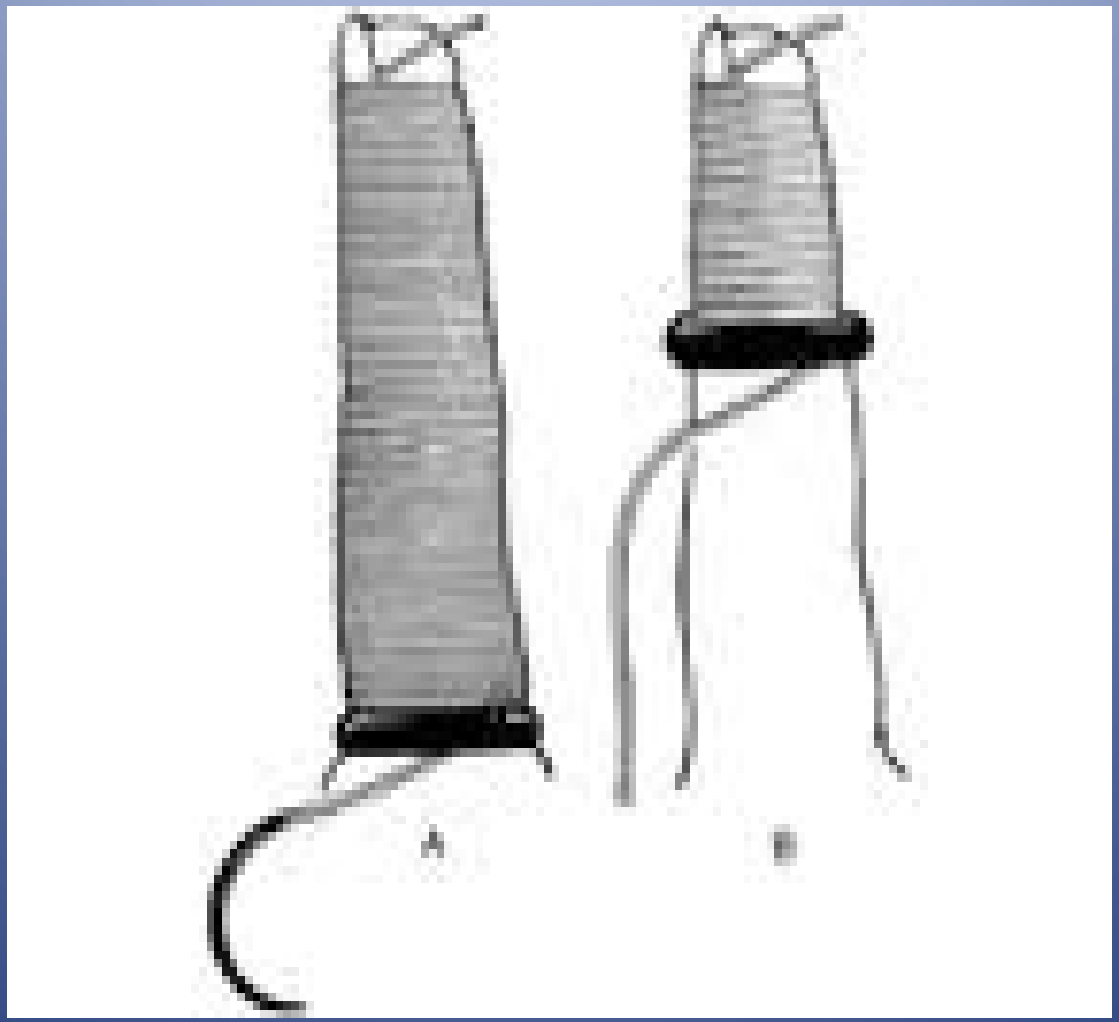
- Antibiotics
- Saline soaked gauze dressing
- Emergency treatment
- Risks: bone infection

Compartment syndrome

- Due to secondary swelling
- Symptoms: Increased pain, tingling, cold
- Later: loss of pulse
- Elevation
- Emergency treatment
- Permanent impairment/disability

Removal of rings

- Best early before any swelling
- Washing up liquid/grease
- String
- Ring cutters (or rig cutters!)


A
B

elevation

- 48hrs
- Arm above heart
- Ankle above hip
- Reduces swelling
- Reduces pain
- Avoids theatre delay
- Reduces risk of compartment syndrome

Treatment of lacerations

- Most important: clean
  - The solution to pollution is dilution
- Water/saline/not neat betadine
- Assessment of complications:
  - include stop bleeding, wound inspection
- Presence of foreign body
  - Remove if visible and easy
  - If felt likely present

Why close a wound?

- Heals more quickly
- Finer scar
- Primary/straight away closure: using something at the time to close the wound
- Secondary/delayed closure

Do nothing!

- Not a simple laceration
- Small <2cm, superficial wounds particularly hands
- Close only if clean and un-infected
- Time frame:
  - <12 hrs, extend to 19 hours
  - Face up to 36 hours from injury

Still clean and dress wound:

non adherant/gauze/fixomull or bandage

Complicated wounds

- Require clean +++
- Betadine/saline soaked gauze dressing
- Antibiotics
- Emergency treatment

Treat: Simple lacerations

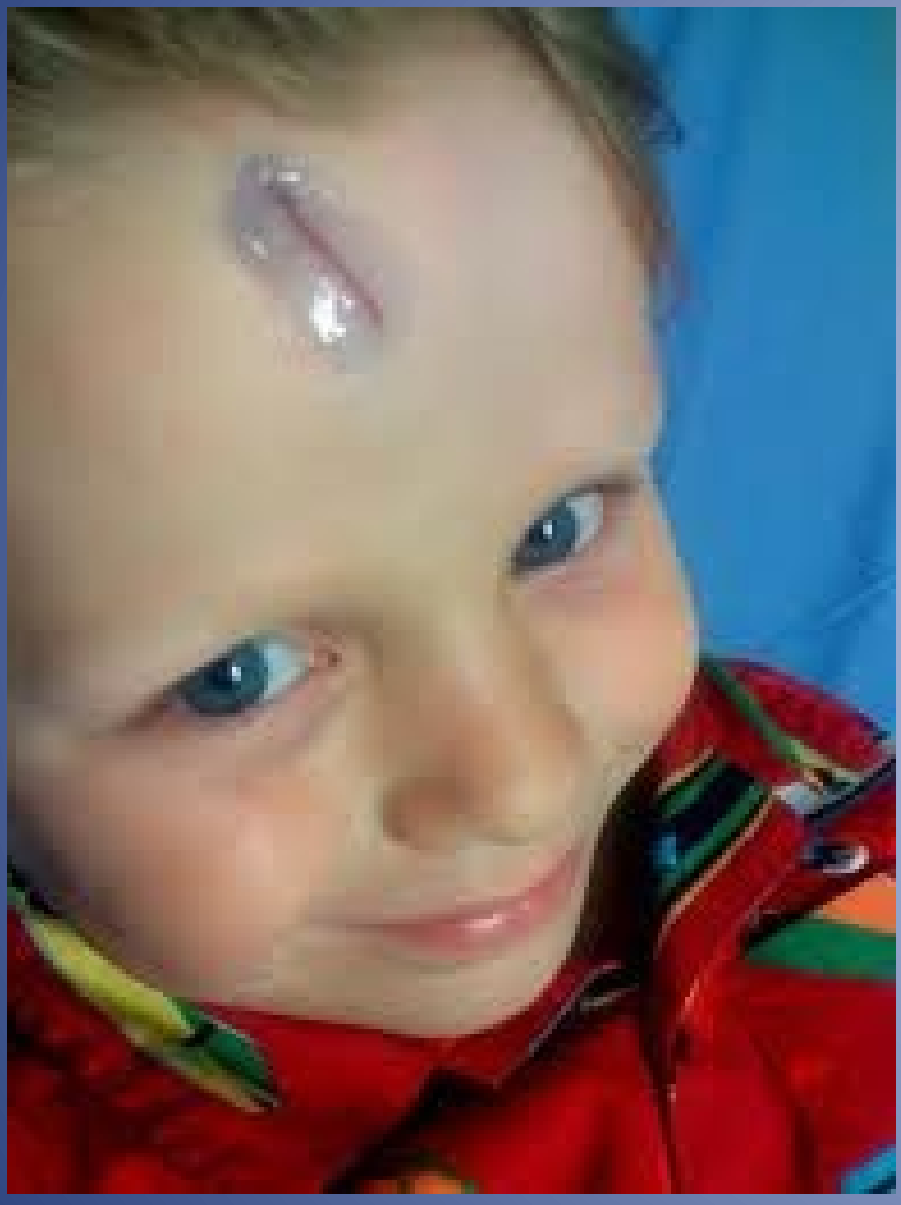
- Superficial
- No complications
- No access to medical care within time frame

Closure options

- Glue
- Steri-strips
- Combination
- Staple
- Suture

Glue

- Topical sterile skin adhesive
- Rapid/Relatively painless
- Barrier function
- Reserved for low tension wounds, needs to be clean and dry
- Avoid eyes!
- Treatment of in-advertant gluing: keep parts moving
- Relatively Expensive/script only
- Shower/wash ok



Steri-strips

- Minimal tension wounds
- Low risk of infection
- Clean, dry, hair and grease free skin
  - Can cut hair if needed, never eyebrows
- Mobile area: likely lift off
- Come off when wet
- Fixomull steri-strips: clean not sterile ok

An ode to fixomull

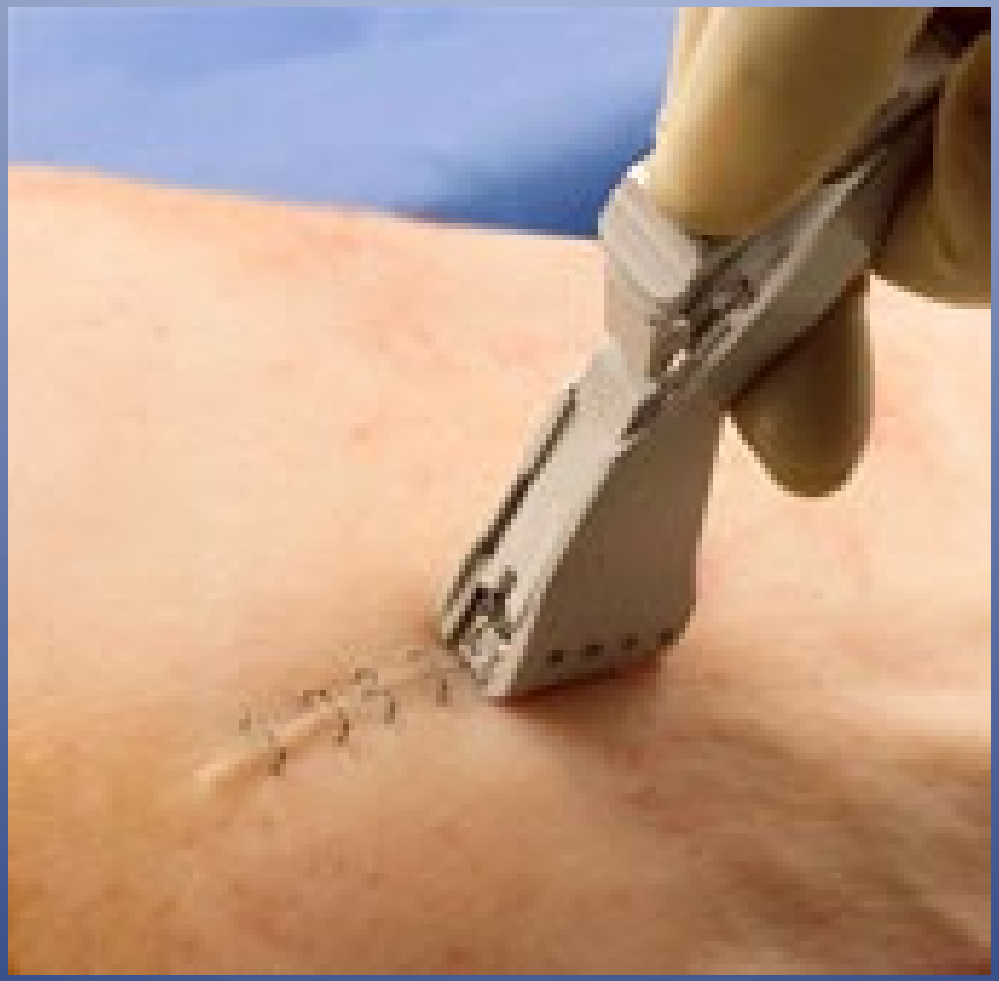
- Stays on when wet
- Remove with oil
- Unstick with sunscreen
- Also: Fabric plasters/bandaids

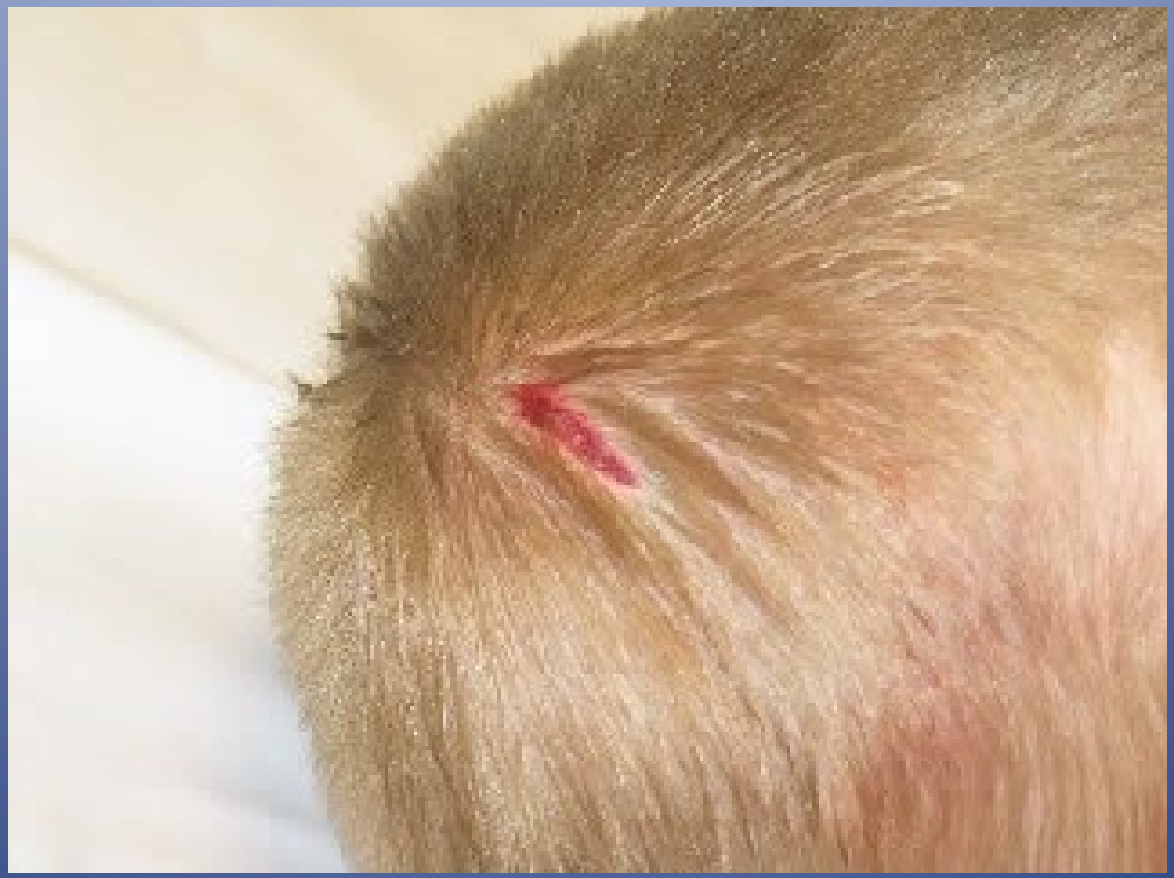
Combination glue/steri-strips

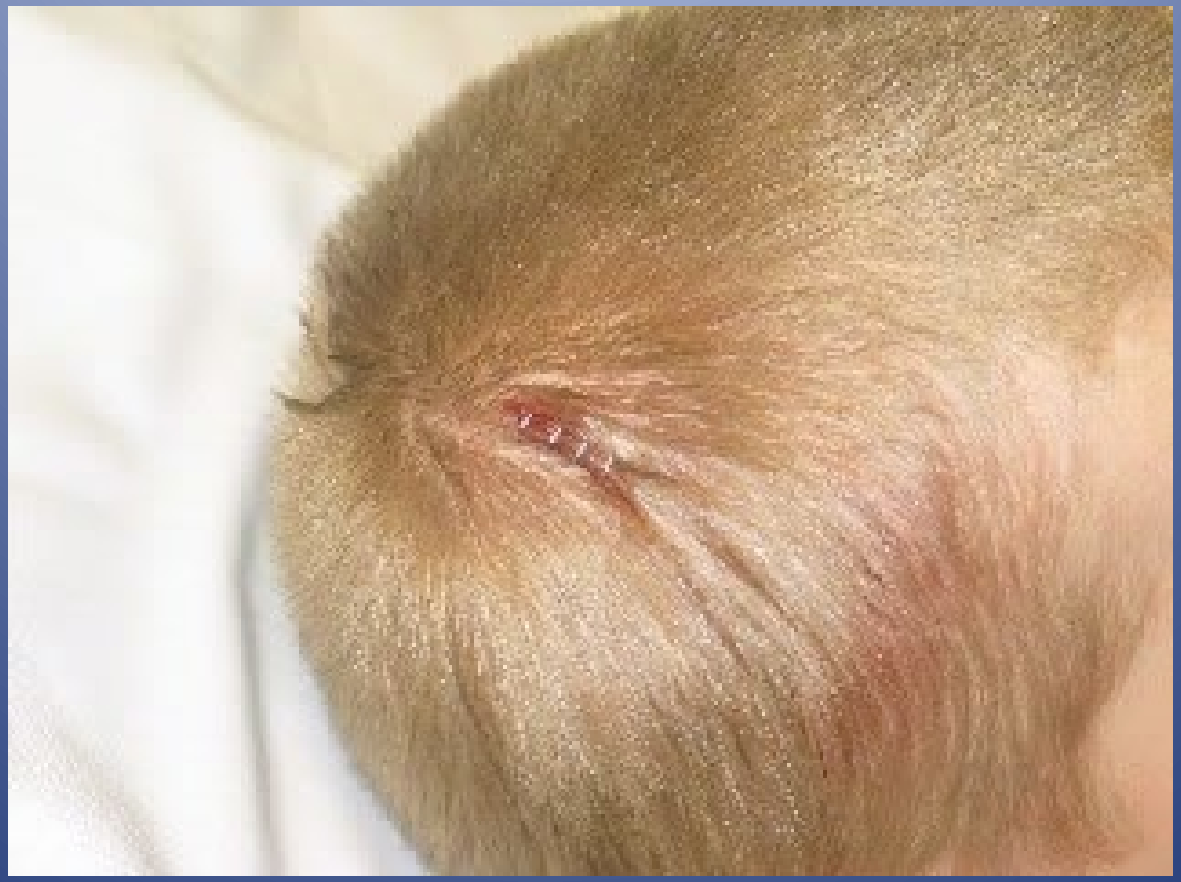
- Good for moderate tension wounds

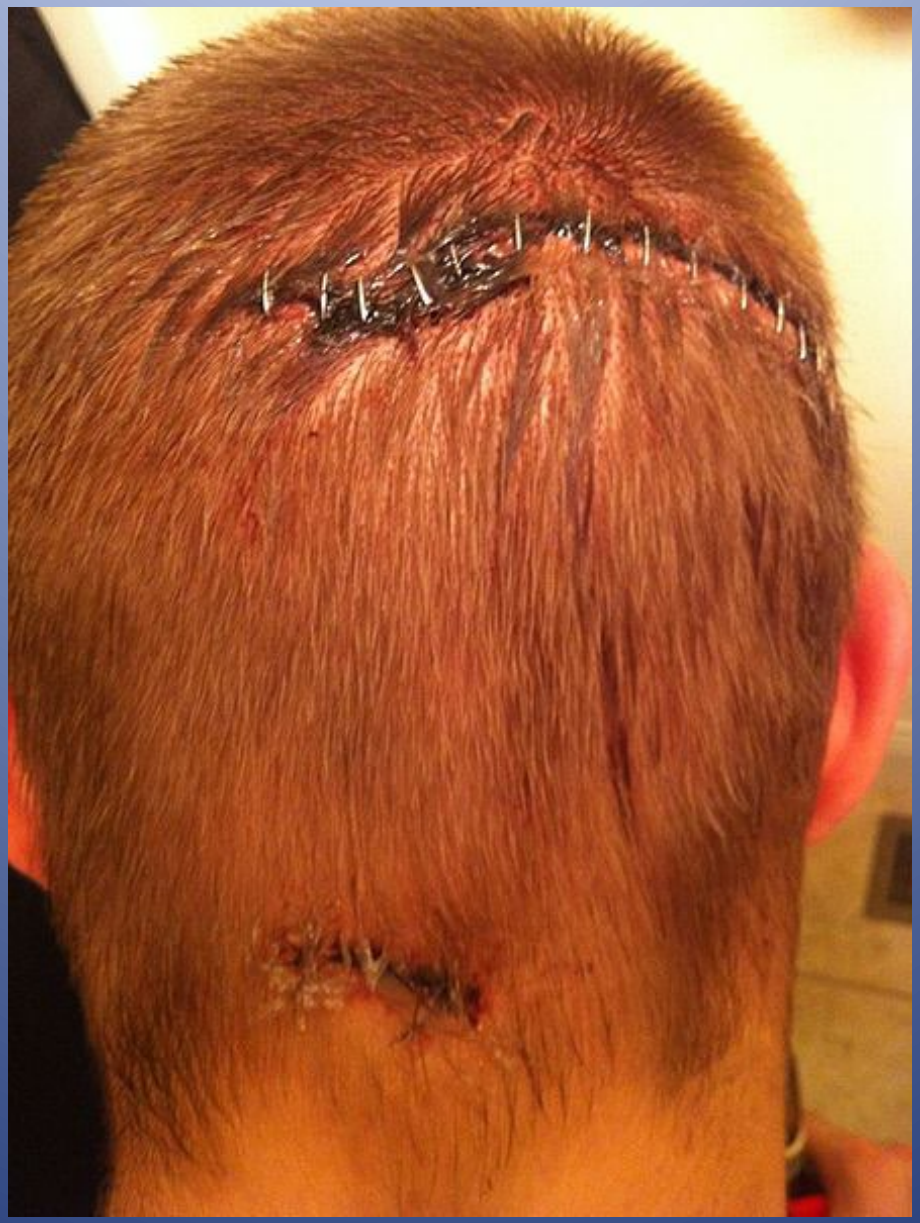
Stapler

- Not as meticulous as sutures
- Less painful than sutures
- Easy
- Great for scalp lacerations
- Do not need to shave hair
- Not face/hands
- Alternative: If hair long enough: hair knots and glue









sutures

- Deep or irregular lacerations
- Lacerations on hands/feet and over joints
- Not difficult but learned skill
- More equipment
- Local anaesthetic infiltration

Removal

- Stapler: removal device
- Sutures: cut and pull
- Face 5 days
- Rest 10 days
- Large joints <14 days

Follow up

- Get medical advice where able
- Wound review on return

Equipment

- Instruments:
  - Stapling kit/wound glue

  Approx $30

  Please put name/yacht/quantities

IM injections

- Check correct medication: if able 2 person
- Check expiry
- Wash hands/use hand-gel: gloves
- Open vial
- Drawing it up
- Administration
- Disposal: needlestick

IM injections

- Clean: alco wipe/equivalent
- Site:
  - Buttock: upper outer quadrant
  - Arm: upper outer
  - **Thigh outer middle third: preferable**

Hygiene

- Hygiene
  - Personal
  - Boat

  - Soap &water, Alcohol hand gel/sanitisers

Scenario

- How do you manage a seriously unwell or injured person
- Team Boat/Team Person
- Team leader/s and roles
- Communications- verbal, radio/phone, written
  - Clear and calm
  - Close the loop

Link to Summary for Pharmacists

- https://ww2.health.wa.gov.au/Articles/S_T/Supply-of-medicines-to-ships-and-vessels

Questions?

Practical Session:
Injections/Stapler/Glue


RF 16
Safe and
Happy Sailing