U.S. Sailing Association
Safety at Sea
Medical Issues
Medical Issues

- Types of medical issues at sea
- When to prepare for medical problems
- What do to resolve medical issues when cruising or racing
Medical Issues

- Environmental Situations
  (focus on dehydration)
- Wound care & Bandaging
- Splinting & Pain Management
- CPR and AED Operations
- Calling for Assistance
- Medical Supplies

Environmental Situations

Sea sickness or motion sickness
- While not life threatening, can be debilitating to the point that other medical problems can arise
- Prevention is the most effective treatment
- A variety of over the counter medications are available
Environmental Situations

Sea sickness or motion sickness
...is a conflict between your senses
- The natural fluid in your inner ear tells your brain you are in motion while your eyes tells your brain that you are not in motion.
- This conflict can upset the natural balance of the body with unpleasant results.

Environmental Situations

Sea sickness or motion sickness prevention
- Hydrate
- Plenty of rest
- Ginger is a natural preventative
- Wrist bands
- Dramamine, Marizine, Bonine or Scopolamine
- Have to take medication PRIOR to symptoms...they can result in drowsiness
Sun Exposure

- Signs and symptoms of heat exhaustion include
  - Nausea, Vomiting, Headache, fatigue
  - Electrolyte Imbalance, Dehydration
- Rx: Fluid replacement, cooling, shade, evaporative techniques

Heat Stroke

- Totally different Ball game
- High mortality
- True absolute medical emergency
- Defined by alteration of mental status (confusion, disorientation)
- Rx: cooling, shade, evaporative techniques. CRITICAL
Dehydration

- Mild to severe
- Decreases performance
- Prevention is key
- Need to have balanced solutions… not just water water water
- I favor gatorade or poweraid diluted in half from directions.
- alteration of mental status (confusion, disorientation)

Rx: Evacuation CRITICAL

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Dehydration

- When do you know you are better…
  - pee is not bright yellow
  - Tongue does not look like sandpaper
- How much water to have per person? Depends a bit on work
**Sun Burn**

- Apply sun protection lotion of SPF 15-40
- Reapply throughout the day
- Cover up
- Get out of the sun
- Watch for blistersing (I don’t recommend popping blisters)

**Insect Bites**

- Deet
- Reapply throughout the day
- Cover up
- Watch for signs of anaphylaxis
- Consider Benadryl, 25-50 mg (drowsy)
Hypothermia

- The reduction of the body’s core temperature significantly below normal
- Heat loss in the body is 26 times more in water, than in air
- Immersion in water 70 degrees or less
- Can be made worse by overexertion, insufficient water intake or lack of food energy.

### Hypothermia

<table>
<thead>
<tr>
<th>If the water temperature is</th>
<th>Exhaustion or unconsciousness</th>
<th>Expected time of survival</th>
</tr>
</thead>
<tbody>
<tr>
<td>32.5</td>
<td>Under 15 Minutes</td>
<td>Under 15-45 Minutes</td>
</tr>
<tr>
<td>32.5 - 40.0</td>
<td>15 - 30 Minutes</td>
<td>30 - 90 Minutes</td>
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<tr>
<td>40.0 - 50.0</td>
<td>30 - 60 Minutes</td>
<td>1-3 Hours</td>
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<tr>
<td>50.0 - 60.0</td>
<td>1 - 2 Hours</td>
<td>1 - 6 Hours</td>
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<tr>
<td>60.0 - 70.0</td>
<td>2 - 7 Hours</td>
<td>2 - 40 Hours</td>
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<tr>
<td>70.0 - 80.0</td>
<td>3 - 12 Hours</td>
<td>3 Hours-Indefinitely</td>
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<tr>
<td>80.0 and Above</td>
<td>Indefinitely</td>
<td>Indefinitely</td>
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</tbody>
</table>
Hypothermia

Signs and Symptoms
- Shivering
- Slurred speech
- Abnormally slow breathing
- Cold, pale skin
- Loss of coordination

Confusion altered mental status = CRITICAL

Hypothermia

Treatment
- Remove the victim from the water
- Place the patient below deck
- Remove wet clothing and dry patient
- Sleeping bag and watch cap
- Active Rewarming (buddy up, water bottle) if confusion, not warming up

Importance of serial exams
**Hypothermia**

Treatment
- Avoid alcohol or hot liquids
- Provide warm fluids only
- A gradual warming is best
- Do not rub to re-warm
- Check body temperature

**Wound Care & Bandaging**
- Abrasions
- Lacerations
  - Puncture Wounds
  - Avulsions
- Amputations
Wounds & Bandaging

- Steady direct pressure against the wound site is the best treatment to control the bleeding
- Irrigation
- Elevation of the wound site above the heart can substantially aid in bleeding control
- Tourniquet is utilized only as a last resort and must be monitored (only use as attempt at saving life…time duration of time on, you have hours)
- All bleeding stops

Splinting & Pain Management

Assess the area to be splinted
Dress any wounds before splinting
Splint the extremity in the position where it is
Do not reduce dislocations (well…maybe)
Splinting & Pain Management

Colles’ Bent Fork

Splinting options
Sam splint, winch handle, compartment door, Sail tape
Support the effected limb
elevate
Assess pulses before and after splinting
ICE
Splinting & Pain Management

Naproxen Sodium  Ibuprofen
Aleve  Advil
Naprosyn  Motrin
Anaprox  Nuprin
Aspirin  Tylenol

(I like ibuprofen for pain. Over the counter is 200 mg…can take 2 or 4 tablets every 6 hours)

CPR & AED Operations

- The ABC’s
  - Airway (Heimlich)
  - Breathing
  - Circulation
Cardio Pulmonary Resuscitation

- American Heart Association recommends a compression-ventilation ratio (30:2).
- Deep and fast compressions
- After one minute of C.P.R. assess pulse
- Automated External Defibrillator (AED)

AED
Automated External Defibrillator (useful to shock someone out of an abnormal heart rhythm if that has caused arrest)

Philips, Physio Control, Medtronic, Welch-Allen, ZOLL

Pads, Batteries, Case

$1195.00 to $3158.00
Calling for assistance

- Contact USCG on VHF 16, or SSB 2182 kHz
- CYC Fleet Surgeon will **not** be available on the Mackinaw
- Cell Phone coverage questionable, consider signal booster for cell phone

Calling for assistance

Affix a note to the patient detailing
- Medical Problem
- When problem occurred
- Treatments preformed and results
- Medications: Dose and Time
- Medical history (heart? Allergies?)
- Contact information for patient
Additional medical considerations

- Unconsciousness = Bad, especially head wounds, patient needs to be closely monitored and unless brief with return to normal consciousness, evacuation

- Special medical needs of the crew need to be considered ahead of the event. (allergies, diabetes and insulin/glucose, seizure)

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Additional medical considerations

- Consider a general medical form for the crew *(this should be a must)*
- Pertinent medical issues listed
- Sealed in an envelope, kept in the navigation station *(privacy)*
- Returned at the completion of the voyage
Choose a first aid kit that is designed for boats carrying up to 10 people, where professional care or evacuation is 24 to 48 hours away that contains plenty of basic supplies.

Check medical supplies annually for completeness and restock missing items.
Check expiration dates, especially analgesics.
Discard damaged or open supplies.
Medical Supplies

- Cost $40.00 to $700.00
- Weigh 3.5 lbs to 70 lbs
- Hard or soft case
- Based upon the amount of time until medical intervention

Medical Issues

- Plan for medical situations before they happen
- Take a first aid and a CPR class
- Check medical supplies when preparing boat in the spring and before event
- Know when and how to reach out for help
Safety at Sea References

www.landfallnavigation.com
http://westpacmarine.com/samples/hypothermia_chart.asp
http://www.landfallnavigation.com/sfa05.html
http://www.boatsafe.com/nauticalknowhow/hypothermia.htm
http://www.goddesscruise.com/SeaSick.htm