

Dealing with head injuries

Recent gybing accidents have highlighted the importance of first aid training for yacht skippers. 2006 was a bad year for gybing. A number of high profile accidents involving severe head injuries were investigated by the Marine Accident Investigation branch and reported in the yachting press.

Unsurprisingly, gybing accidents occur on windy days, so the aftermath is not simply a matter of sitting around and looking up the right page in the first aid manual. The skipper has a multitude of problems to worry about, not least of which may be an unconscious, possibly bleeding, crew member lying across the cockpit.

Apart from the normal bumps and scratches, we rarely practise first aid, so many yacht skippers are decidedly rusty when a crew member is seriously hurt. Breaking the required chain of events into a series of small reminders can help to control the situation and ensure that the necessary treatment is administered.

Immediate first aid in a complex situation can be demanding, but follow the basic principles in a logical order:

- Get the boat under control and ensure the safety of yourself, the crew and anyone injured. If the casualty has been knocked overboard, organise the rescue safely and quickly.
- Identify who is in greatest need of assistance. Look for the casualty who is **unresponsive** and does not react when asked loudly "Are you alright?" They could be unconscious, and possibly not breathing.
- If the casualty is unresponsive **immediately open their airway and check for normal breathing**. Take care not to over extend the neck if there has been a head injury, in case there is a related neck injury. Avoid moving an injured crew at all unless it is to:
 - remove them from danger
 - assess for breathing and/or maintain an open airway
 - perform resuscitation
- Send a **mayday** immediately if the casualty is unconscious, having difficulty breathing or bleeding from the ears. If in doubt call HM Coastguard and ask for urgent medical advice. Use an Urgency Alert and Pan-Pan to get a high priority. The Coastguard will connect you to a doctor for advice and can arrange a helicopter evacuation

or an ambulance to meet the boat. Only use a mobile phone if you have no alternative. Ask the emergency operator for the **Coastguard** who will co-ordinate the helicopter or ambulance, as required.

- With a conscious or semi-conscious head injury patient, **noisy breathing** may indicate a partially obstructed airway. Gently clear any blood, vomit or debris that is visible in the mouth. Be aware that **most preventable deaths in patients with a head injury occur from suffocation caused by an obstructed airway** and that vomiting is likely following a head injury. Hold the head in the open airway position and keep clearing the mouth. Turn the head to do this only if you have to.



- With an unconscious casualty use the **recovery position** if necessary to maintain an open airway and allow any fluids to drain from the mouth. Get help to steady the neck when you turn them if possible.
- If there is a head or facial injury there may be a **neck injury** as well. Stabilise the head into the midline position, with the nose lined up with the navel, if you can. Take as much care of the neck as possible, but remember that the airway takes priority. A casualty will die if they cannot breathe.
- If the casualty is conscious, assess their **level of response** using the AVPU scale. Assess them immediately after the accident and at regular intervals to monitor their condition.

A deteriorating level of response is the single most important sign of a brain injury.

The AVPU Scale

- A** alert, that is responds normally
- V** responds to a simple **voice** command, such as 'open your eyes' or 'squeeze my hand'
- P** responds to **pain**, for example making small movements when pinched
- U** **unresponsive** or unconscious

- Look for wounds or **bleeding** that may need to be bandaged.

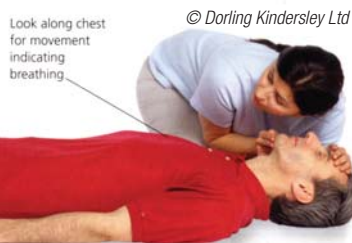
Following the immediate actions, consider the possible types of head injuries that you might be dealing with:

There may be bleeding between the skin and the bones of the skull causing a **bruise**. It may form a large, clearly defined lump due to the lack of soft tissue. This type of bruise is often seen on the forehead and can be treated with a cold compress.

The bleeding from a **scalp wound** can be copious and may initially require a pressure bandage to control it, then further assessment and perhaps stitching in hospital.

A **skull fracture** may be open or closed, as with other fractures. Bandage an **open fracture** but don't apply pressure. Do not remove any bony fragments or touch the wound. Wear clean gloves from the first aid kit if possible.

A depression or deformity of the skull may indicate a **closed fracture**. Look



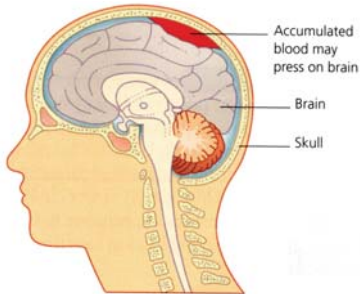
also for blood or watery fluid leaking from the ears or nose, bruising round the eyes or behind one ear. This is an emergency. Maintain the casualty's airway and seek immediate evacuation to hospital.

A **brain injury** may be the result of a direct blow, violent movements of the head or as pressure is exerted on the brain from swelling or bleeding within the skull.

Concussion is a temporary condition caused by shaking of the brain, not a structural injury. It may follow a brief period of impaired consciousness and cause dizziness, nausea, and loss of memory.

However any patient who has had a period of **unconsciousness** requires monitoring until they can be evacuated to hospital because following an apparent recovery they may collapse having developed compression.

Compression is a life-threatening condition caused by swelling or bleeding within the skull putting pressure on the brain. As pressure builds the level of response deteriorates and the casualty may become unconscious.



Other signs that indicate a deteriorating condition include:

- seizures
- vomiting
- pupils that are unequal or unreactive to light
- a slower pulse and breathing rate
- weakness down one side of the face or body
- disorientation or combative behaviour

This is an extreme emergency and surgery is likely to be required.

Remember that all injuries involving bleeding, including an internal bleed, will be more serious if the patient is taking some medications, especially blood-thinning drugs such as **aspirin or warfarin**. This is vital information to pass to the hospital. Also send details of the accident, the casualty's initial level of response and any changes, any other information you have such as medical history, allergies, alcohol consumption and next of kin.