

# Outdoor first aid Robert Swingler for Ibex 13/3/2021

## **BMC mountain Medicine Course Hathersage 9-10/6/18**

Day 1 UK Mountain first aid

Day 2 High altitude, Alps and beyond

## **Diploma in Mountain Medicine Course 11-12/6/18**

Day 3 working with youngsters in hills

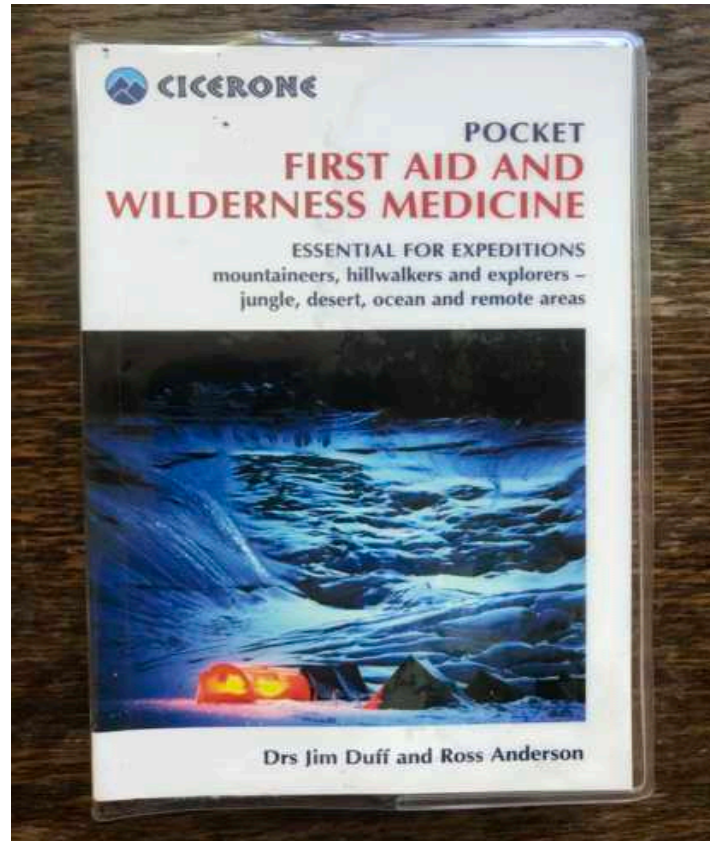
Day 4 Limb injuries

## **British Mountain Medicine Society 13/6/18**

Day 5 Inaugural meeting: 'Surviving the death zone'



# Books



# Telephone numbers

- 999 emergency services  
police, ambulance, mountain rescue, coast guard
- 111 non-urgent NHS number
- 112 emergency services- international
- 101 non-urgent police number

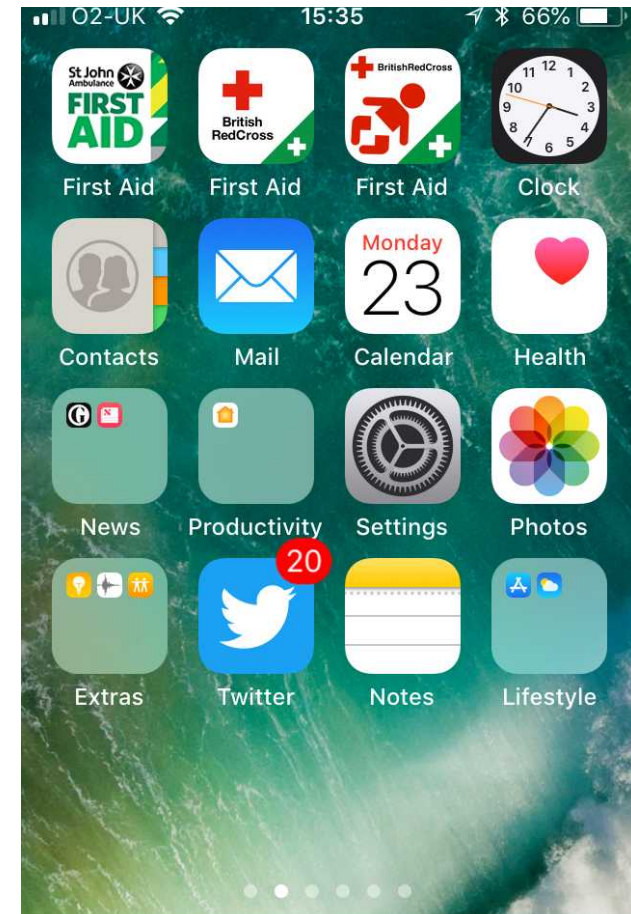
# Web/App resources

## General:

- St John Ambulance
- <http://www.sja.org.uk> courses, videos, app
- [www.redcross.org.uk](http://www.redcross.org.uk) courses, videos, app
- [www.nhs.uk](http://www.nhs.uk) ABCs recovery position video and CPR
- [www.resus.org.uk](http://www.resus.org.uk) resuscitation council

## Mountaineering/hillwalking:

- [www.medex.org.uk](http://www.medex.org.uk) travel at high altitude
- [www.thebmc.co.uk](http://www.thebmc.co.uk) medical books, incident forms
- <https://www.mountaineering.scot/> protocol, kit



# First aid courses

## **General.**

- Basic first aid courses are run regularly in most areas around the UK. [St John Ambulance](#), [British Red Cross](#), [NHS Ambulance Service](#) and [St Andrew's First Aid](#) all provide a selection of first aid courses.

## **Mountaineering/hill walking**

- British Mountaineering Council
- Wilderness Medical Training- 'where there is no doctor'

# Outdoor first aid

## Robert Swingler for Ibex

- 1 accident and illness procedure
  - primary survey
  - 'DR ABC' vs
  - 'DR ABCDE'
- 2 scenarios -UK
- 3 kit and medicines



# (Mountaineering Scotland, BMC)

## **Accident and Illness procedure**

- Stay calm
- Take time to assess the situation and decide what to do.
- What should be done immediately to safeguard the group?
- If any one is injured or ill- remember 'DR ABC'
- Consider approach
- Consent if necessary
- Assess and treat injuries
- Make casualties warm and comfortable
- Evacuation

# Primary survey 'DR ABC'

- **D**anger
- **R**esponse
- **A**irway and spine
- **B**reathing
- **C**irculation
- This approach is simple but does not give enough priority to catastrophic bleeding and other factors



# DR <C>ABCDE

(NHS/NICE guidelines for major trauma 2016)

- **Danger** approach if safe, send for help **999/112**
- **Response** 'shout and shake'
- **<Catastrophic bleed>** apply pressure
- **Airway and spine** open, clear and maintain airway
- **Breathing** 'look, listen and feel' CPR if necessary
- **Circulation** **bleeding**, other life threatening injuries
- **Disability** conscious?, able to get off hill?
- **Exposure.** Shelter? External exam

# Outdoor first aid

## Robert Swingler for Ibex

### **1** accident and illness procedure

- 'primary survey'

DR ABC

### **2** scenarios

### **3** kit and medicines

- scenarios

- 1 Unconscious, breathing

- 2 Conscious, possible spinal injury

- 3 unconscious, breathing, possible spinal injury

- 4 unconscious, catastrophic bleed

- 5 unconscious, not breathing

- 6-9 Limb injuries

- 10 exhaustion at high altitude

# Scenario 1 unconscious and breathing

17 yr old girl with history of epilepsy falls to ground and starts shaking

## What did we find?

### (DR ABCDE)

Danger

Response

<catastrophic bleed>

Airway

Breathing

Circulation

Disability

Exposure/External



## What did we do?

(some slides refer to pages from St John's app-in green)

# Scenario 1 unconscious and breathing

17 yr old girl with history of epilepsy falls to ground and starts shaking

## What did we find?

### (DR ABCDE)

Danger: no

Response none

<bleed>no

Airway:**noisy**

Breathing

Circulation

Disability

Exposure/External



## What did we do?

**Protect casualty and  
clear airway**

# Scenario 1 unconscious and breathing

17 yr old girl with history of epilepsy falls to ground and starts shaking

- Danger none
- Response no, shaking
- <C> bleeding no
- **Airway: noisy**
- Breathing
- Circulation
- Disability
- Exposure



02-UK 18:56 37%

Common t... Assessing the situation

**Airway**

When a casualty is unresponsive, their tongue can easily block their airway.

Keep the airway open.

4 / 7



**1** Kneel beside the casualty. Place one hand on their forehead. Gently tilt their head back (don't put your other hand under their neck) so their mouth opens

- 2** Place your index and middle fingertips under the point of their chin. Lift and hold the chin to keep the airway open
- 3** Check for breathing. Look, listen and feel for signs of breathing.

12-20 / min

# Scenario 1 unconscious and breathing

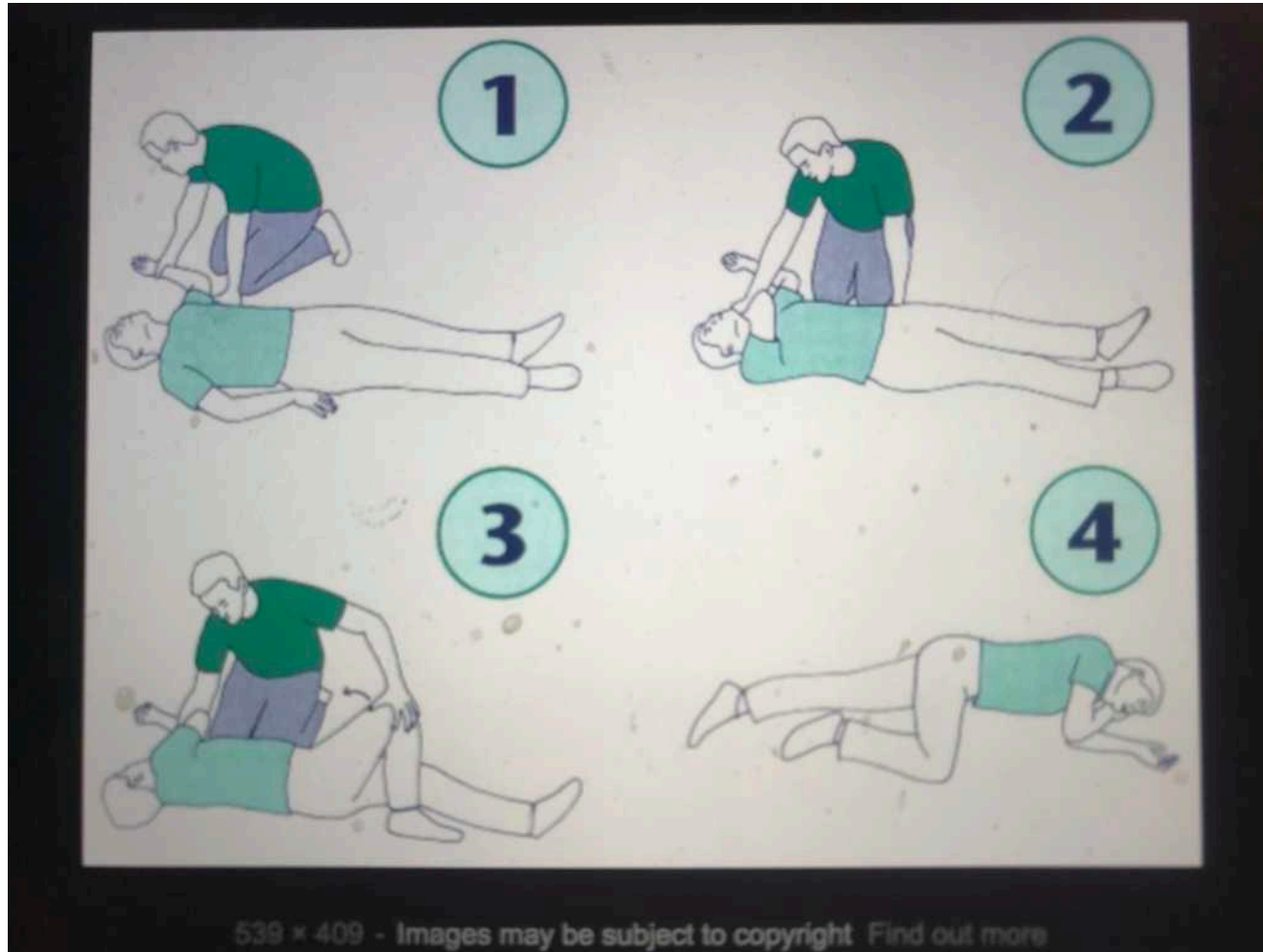
17 yr old girl with history of epilepsy falls to ground and starts shaking

- **What did we find?**
- Danger none
- Response, none,
- <C> bleeding no
- Airway open
- **Breathing:ok** (15/min)
- **Circulation:** (80/min)
- Disability:
- Exposure:



**What did we do?**  
Place casualty in  
recovery position

- 1** Kneel beside the casualty. Remove their spectacles. Straighten their legs
- 2** Place the arm nearest to you at right angles to the casualty's body with the elbow bent and palm facing upwards
- 3** Take the casualty's far arm and place it across their chest so the back of their hand is against their cheek nearest to you





# Scenario 1 unconscious and breathing

17 yr old girl with history of epilepsy falls to ground and starts shaking

- **What did we find?**

- Danger: none
- Response:
- <C> bleeding: no
- Airway: open
- Breathing: fast
- Circulation:  
pulse normal
- **Disability:**
  - Unconscious
- **Exposure:**
  - Warm day



- **What did we do?**

Protection

-

Open airway

Recovery position

- **Keep warm**
- **Urgent evacuation**

# Scenario 2 conscious, possible spinal injury

A 38 yr old male climber falls 5 m

- **What did we find?**
- **Danger: no**
- **Response:**
- 'Are you ok?'
- 'My neck hurts!'
- <C bleed> No
- **Airway: -**
- **Breathing:**
- **Circulation:**
- **Disability:**
- **Exposure:**



- **What did we do:**
- Consider spinal injury
- 'Stay there!'
- Send for help

# Scenario 2 conscious, possible spinal injury

A 38 yr old male climber falls 5 m

## • What did we find?

- **Danger:** no
- **Response:** yes
- <C> No
- **Airway:** - open
- **Breathing:** – normal
- **Circulation:** fast pulse
- **Disability:** alert
- **External:**
  - minor bruises on head
  - cold day



## What did we do?

- Support casualty's head and neck in position found
- Place rolled up fleeces on both sides of neck
- Do not move unless danger
- Do not stop support until emergency services arrive
- Group shelter, warm clothes
- Urgent evacuation

# Scenario 3 Unconscious, breathing, suspected spinal injury

- **What did we find?**
- **Danger: no**
- **Response: none**
- <C> No
- **Airway: - sounds odd**
- **Breathing – abnormal**
- Circulation: fast pulse
- Disability-unconscious
- External- minor bruises on head cold day



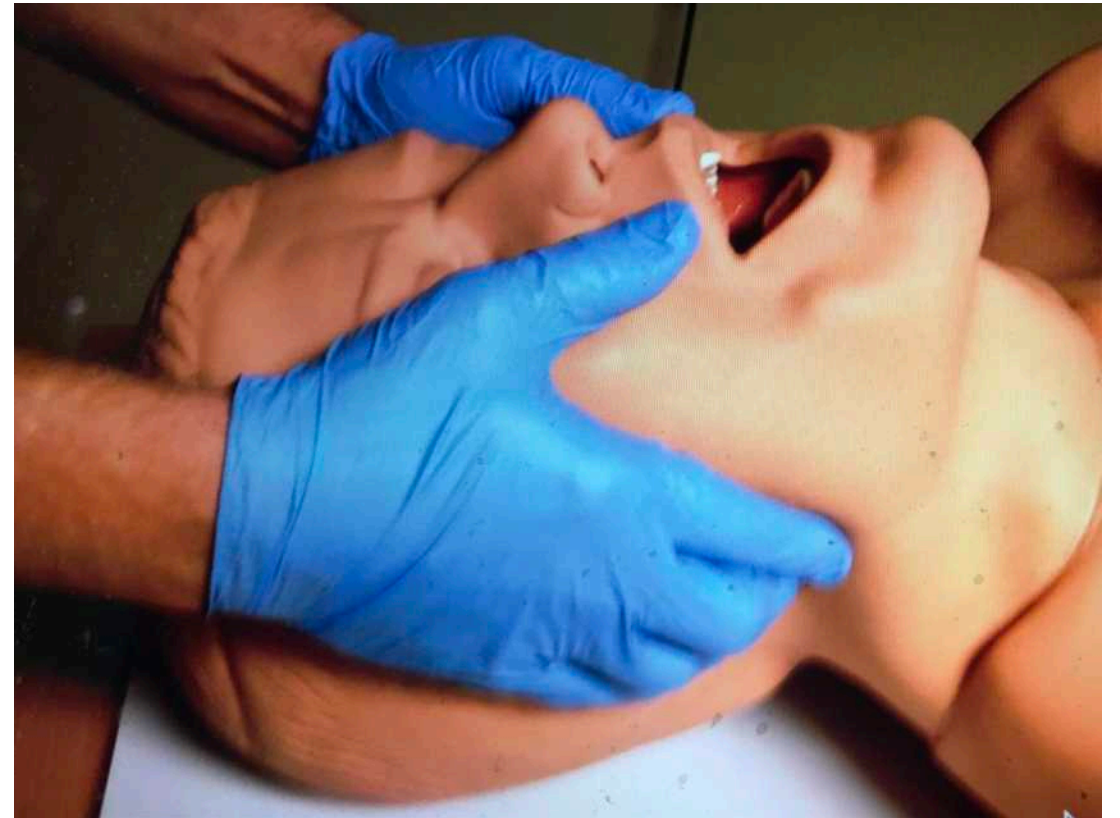
- **What did we do?**
- Treat in position found
- Open the airway using 'jaw thrust' because of possible spinal trauma

# First aid ([www.nhs.uk](http://www.nhs.uk))

- **Airway**
- If you think the person may have a spinal injury, place your hands on either side of their head and use your fingertips to gently lift the angle of the jaw forward and upwards, without moving the head, to open the airway. Take care not to move the casualty's neck. However, opening the airway takes priority over a neck injury. This is known as the **jaw thrust** technique.

# Airway if spine at risk

- If there's no response, leave the casualty in the position they're in and open their airway using **jaw thrust** technique.
- If that does not help use head tilt and recover position
- (airway takes priority over spine)
- ([www.nhs.uk](http://www.nhs.uk))



# Catastrophic bleeding



# Scenario 4 unconscious, catastrophic bleeding possible spinal injury

A 38 yr old male climber falls 5 m

- **What did we find?**
- **Danger: no**
- **Response: none**
- **Catastrophic bleeding**
- Airway:
- Breathing:
- Circulation:
- Disability:
- External:



## What did we do?

- We considered
1. catastrophic bleeding
  2. Poor airway
  3. spine injury

**A 'trilemma'**



# Scenario 4 unconscious, catastrophic bleeding

- **What did we find?**
- **Danger: no**
- **Response: none**
- **Catastrophic bleeding**
- **Airway/spine:**
- **Breathing:**
- **Circulation:**
- **Disability:**
- **External:**



- **What did we do?**

We treated catastrophic bleeding first

by applying pressure  
++++

Only then were we able to assess ABCs

# Scenario 4 unconscious, catastrophic bleeding

- **What did we find?**
- **Danger: no**
- **Response: none**
- ~~Catastrophic bleeding~~
- **Airway/spine: open**
- **Breathing:**
- **Circulation:**
- **Disability:**
- **Exposure/external:**



- **What did we do next?**
- **Danger:** assess risk, spotter, send for help
- **Response:** keep checking
- **<C>-** needs pressure ++++
- **A-**open /support neck
- **B** monitor- resp rate
- **C** monitor pulse
- **Disability:** reassure, keep still
- **E-** check for other injuries
- **Bivi tent, warm loose clothes**
- no food, water
- moisten lips if thirsty
- **Urgent evacuation**

# Scenario 4 unconscious, catastrophic bleeding

- **What did we find?**
- **Danger:** no
- **Response:** none
- ~~Catastrophic bleeding~~
- **Airway/spine:** open
- **Breathing:** >25/min
- **Circulation:** >100 min
- **Cold clammy**
- **Disability:** less alert
- **External:**



## **What did we do?**

**WATCH OUT FOR**

**SHOCK DEVELOPING:**

Cold, clammy sweaty

Less alert

Fast breathing >25/min

Difficulty getting pulse or  
>100/min

Lay person down if possible

Raise legs 12 in / 30 cm

IF unresponsive- check airway

**BE PREPARED TO RESUSCITATE**  
(see next case)

(Duff 2017)

# Scenario 5a unconscious, breathing

67 year old woman who is unwell with chest pain

- **What did we find?**
- **Danger: no**
- **Response:yes**
- **<C>No**
- **Airway: open**
- **Breathing: yes**
- **Circulation: yes**
- **Disability: alert**
- **External: warm day**



- **What did we do:**
- History of angina**
- We considered heart attack**

# Scenario 5a unconscious, breathing

67 year old woman unwell chest pain

- **What did we find?**
- Danger: no
- **Response: yes**
- **<C>No**
- Airway: open
- Breathing: yes
- Circulation: yes
- Disability: alert
- External: warm day



O2-UK 21:37 26%

**Chest pain** Responsive

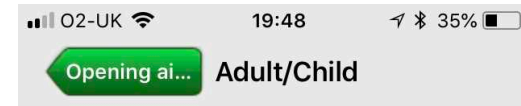
- 2 Dial [999/112](#) for the emergency services 📞. Tell them you suspect a heart attack
- 3 Encourage the casualty to rest
- 4 If the casualty has angina medication, encourage consumption
- 5 If possible, get the casualty to chew 300mg of aspirin
- 6 Monitor the casualty's breathing and be prepared to **resuscitate**.

2 / 2

# Scenario 5b unconscious, not breathing

67 year old woman unwell chest pain

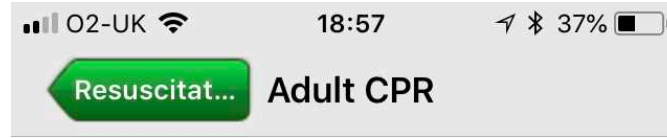
- What did we find?
- Danger: no
- **Response: no**
- **<C>No**
- Airway: open
- **Breathing: no**
- Circulation: ?
- Disability:
- External: warm day



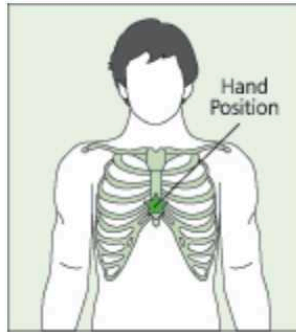
1 Kneel beside the casualty. Place one hand on their forehead. Gently tilt their head back (don't put your other hand under their neck) so their mouth opens



# CARDIAC ARREST.....



Before you start, be aware of the correct hand position.



# CARDIAC ARREST.....



**A Perform 30 chest compressions using both hands:**

- 1** Kneel beside casualty
- 2** Place the heel of one hand on the centre of chest. Do not press on the casualty's ribs, stomach or bottom of breastbone

Place the heel of your other hand on top. Interlock fingers and keep them off the casualty's ribs



- 3** Leaning over the casualty, press straight down to five to six centimetres keeping elbows straight.

Release pressure fully, but do not take hands off chest





# CARDIAC ARREST.....



## **B** Perform two rescue breaths:

**1** Ensure airway is open

**2** Support the casualty's chin with the fingertips of one hand

**3** With the other hand, pinch the soft part of the casualty's nose

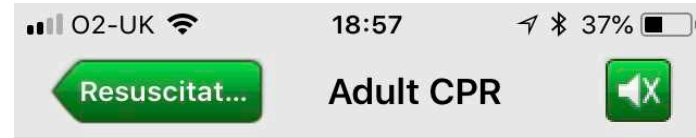
Use a pocket mask if possible

**4** Take a breath. Place your mouth over the casualty's mouth, making a good seal

**5** Breathe steadily into the casualty's mouth for one second. Watch the chest rise



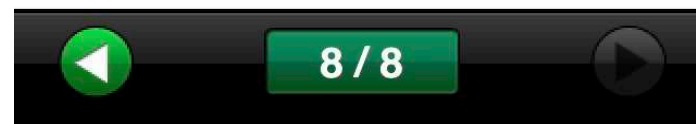
# CARDIAC ARREST.....



**C** Continue giving 30 chest compressions followed by two rescue breaths until one of these things happen:

- Professional help takes over
- The casualty starts to wake up, open their eyes AND breathes normally
- You become exhausted.

**NB** If you are unable, unwilling or untrained to give rescue breaths, you can give chest compressions only.



# limb injuries



# Scenario 6

## 28 yr male fell runner falls and injures leg

- What did we find?
- D Loose boulders
- R Responds
- C No
- A speaking in sentences
- B- normal
- C- graze to head
- D Alert
- External
- bruising and deformity over thigh,
- **Head abrasion, fractured femur**



- What did we do?
- R- reassure & tell patient to keep still
- Dress head,
- pain relief
- Splint leg
- Keep warm, urgent evacuation

# Scenario 7 Walker falls and hurts ankle

- What did we find?
- Danger: none
- Response: 'My ankle hurts'
- <C>- no
- Airway: open
- Breathing`; normal,
- Circulation: normal
- Disability: Alert, painful left ankle
- External:- cold day



- What did we do?
- 'ABCs' monitor
- 'RICE' Red Cross Rest  
Ice – 10 mins  
Comfortable support  
Elevation
- Pain control
- Sam Splint (see kit section)
- Evacuation??



# Splints



# Scenario 8 Broken bone?

Fall onto outstretched hand (FOOSH)

## • What did we find?

- Danger - none
- Response:
  - 'My wrist hurts'
- Airway: ok
- Breathing:ok
- Circulation: ok
- Disability:
  - Pain, bruising, swelling, deformity



## What did we do?

Consider broken bone/bad sprain

- 'RICE' Red Cross
    - Rest
    - Ice – 10 mins
    - Comfortable support (casualty may hold)
    - Elevation
  - Pain control
  - Splint
- NB use compression with caution  
check
- Circulation, sensation,  
Movement, strength**

# Scenario 9

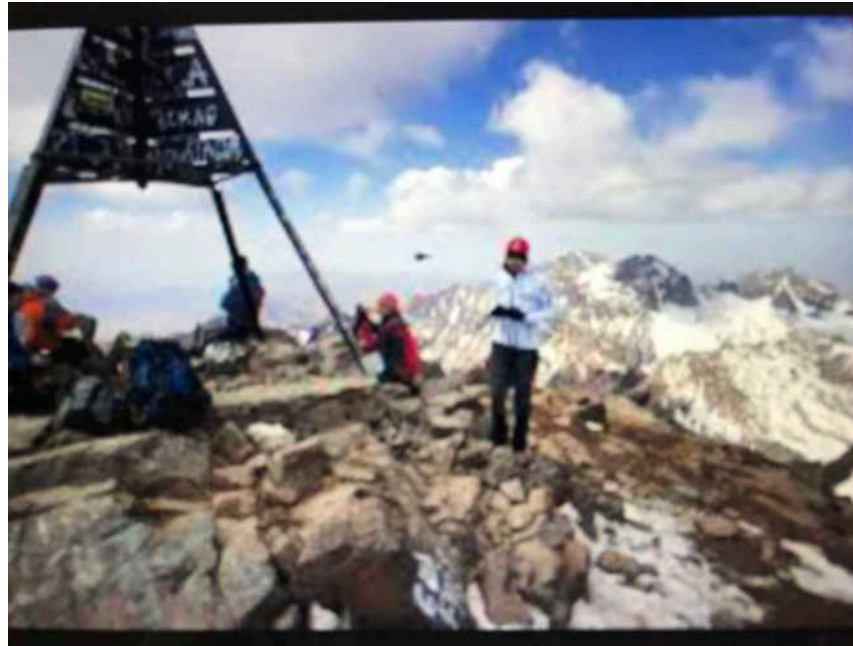
A 28 yr old woman with exhaustion  
on Mt Toubkal (4167m)

- **What did we find?**

- 'grumble,
- mumble,
- bumble'

- **This may lead to:**

- 'fumble' - dropping kit
- 'stumble' - almost falls
- 'tumble' - fall



## What did we do?

Consider

'High Altitude Quintet'

Altitude sickness (>2500 m)

Hypothermia

Dehydration

Low blood sugar

Exhaustion

(Duff 2017)



# Scenario 9

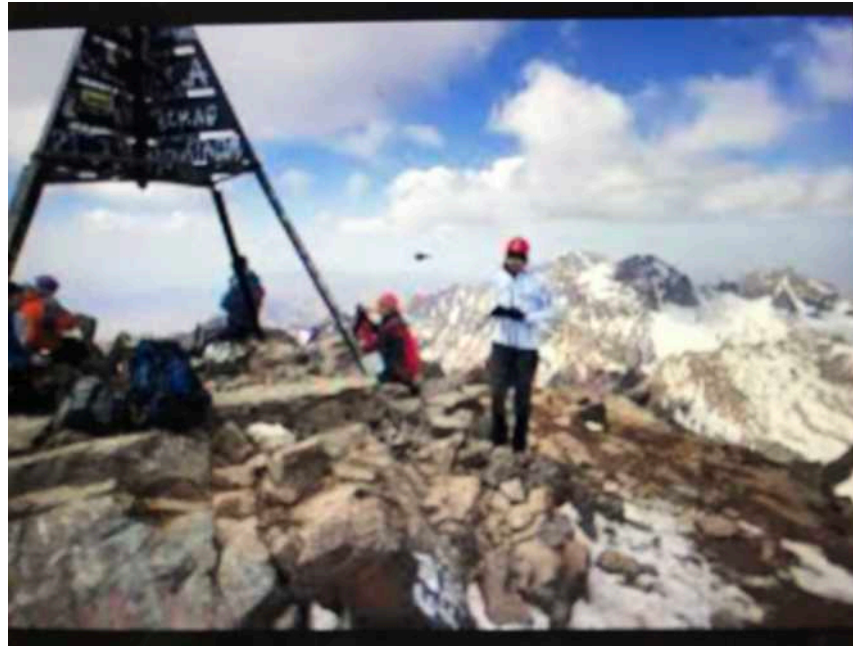
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- **This may lead to:**

- 'fumble' - dropping kit
- 'stumble' - almost falls
- 'tumble' - fall



- **What did we do?**

Reassurance  
Group shelter  
layers  
Hot coffee  
Hand warmers  
Walking poles  
Descent

And see Travel at high altitude

[www.medex.org.uk](http://www.medex.org.uk)

# Evacuation

(Mountaineering Scotland)

## **1 Descend to safety**

How far to safety? what will terrain be like? Are you sure you can carry/support casualty? Will travel make things worse?

## **2 Find shelter**

don't waste time unless you are sure you can find shelter

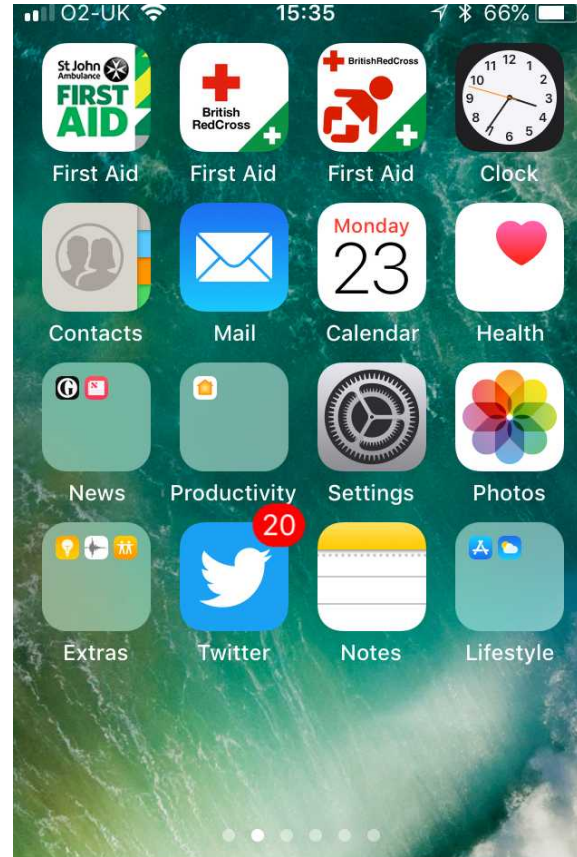
## **3 Staying put**

Group shelter, will your situation be resolved by staying where you are?

**4 Seeking help** remember a rescue team may not arrive for hours

# Seeking help

- If you have a mobile/cell 'phone  
Try to have details to hand before phoning to conserve battery life  
use BMC form
- If there is no coverage try another location
- Check who else has phone and coverage with battery life
- Register for 999 txt service



# Seeking Help

- Phone 999/112 and ask for POLICE and MOUNTAIN RESCUE
- When connected provide:
  - A) location of incident (grid reference, map sheet number, name of mountain area and description of terrain].
  - B) number and names of people in the party and their condition
  - C) any injuries and names of casualties
- If you do not know where you are the 'What3words' app can localize to 3m square (if your 'phone is working).

# Seeking help on foot

- Take details- write them down if possible
- If possible, leave at least one person with casualty
- If possible, send two or more for help
- Make the casualty's location easily seen by search parties
- Use emergency signal for alerting other parties or directing a mountain rescue team to your location
- **Six blasts on whistle or six torch flashes repeated every minute**



# Goals

- 1 accident and illness procedure
  - 'primary survey'
  - DR ABC
- 2 scenarios
- 3 **kit and medicines**
  - 'Lifesytems' and
  - 'minimalist'

# Basic Kit – Mountaineering Scotland

<https://www.mountaineering.scot/>

## What is in the Lifesystems kit?

- Preparation
- Instruments/tools
- Dressings
- Bandages/tapes
- Medicines



# Preparation

- Primary care leaflet
- Gauze swabs 5cmx5cm x 5
- Alcohol swabs x3
- Vinyl gloves





# Instruments and tools

- Scissors
- Tweezers
- Not included but may be useful:
- Knife
- Multitool,
- Trauma shears
- Resuscitation face shield
- Tick hook



# Dressings

- Plasters
- Wound dressing
- 5x5cm
  
- One small dressing/eyepad
- Adhesive dressing strip



# Bandages and tapes

- **Crepe 5cm x 4.5 m**
- **Micropore tape 1.25 cm x 5m**
  
- Not included but may be useful:
- Cotton wool balls
- Triangular calico
- Zinc oxide tape 1.25 cm x 5m



# Medicines

- **Pain**

Paracetamol 500 mg (maximum 4000mg /day)

Ibuprofen 200 mg (max 2400 mg a day)

Not included but may be useful:

Codeine 30 mg with the other pain killers

Aspirin x1 300 mg (for suspected heart attack)

- **Sore spots-** Vaseline/Sudacrem/antiseptic cream
- **Allergy -** Antihistamines
- **Diarrhoea-** Loperamide
- **Vomiting** -prochlorperazine 'Buccastem' 3mg
- **Indigestion** – Gaviscon
- **Sun burn** -Aloe Vera
- **Cough** - throat lozenges
- **Own medicines**



# Kit – for minimalists

- **Group shelter**-bivy/bothy tent
- **Multitool**- leatherman, scissors, tweezers
- **Dressings**- plasters, pads, steristrips
- tampons, superglue
- **Bandages**- zinc oxide tape cling film duct tape , vert wrap
- **Pain killers**- Paracetamol/Ibuprofen
- **Accident report** (BMC)



# Summary

- 1 accident and illness procedure
  - 'primary survey'
  - DR ABC
- 2 scenarios
- 3 kit and medicines

# How dangerous are climbing and hill walking?

Schoffl 2010 (severity of injuries not defined)

# Prevention is better than cure

- Scottish Mountaineering accidents (Bob Sharp 2007)
- Poor navigation 23%
- Bad planning 18%
- Poor kit 11%