

General Health & Safety Protocols
Adult & School Based
Kilimanjaro Trips



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Definitions

- “Expedition Doctor” (**ED**) is a person who is named by the participants or assigned by the organization or tour operator to be responsible for health care

- “Expedition” (**EX**) is any kind of group of people traveling in regions with low (Health) infrastructure, irrespective of the style of traveling or of the target area.

(Trekking, jungle expeditions, high altitude mountaineering etc.), irrespective of the size of the group and how the EX was organized (self-organized or by a tour operator). (**All Kili groups or individuals**)

- “Organization” (**OR**) means any professional person/ organization, which is involved in the realization of the actual trip. (**Kilimanjaro Achievers / Everlasting Tours**)

56 Kilometers to Heaven!

Health & Safety Overview:

Strange as it may sound, Kilimanjaro is perhaps one of the most taken for granted mountains in the world. Despite reliable weather and very straightforward access, illness and injury can occur and are commonplace if the right steps are not taken. Of the 40,000+ visitors Kili attracts each year, between 50 and 75% turn back before reaching the summit. In a 2008 study of 112 Finnish trekkers on the **Marangu route**, it is fair to say that only 53 (59%) made it to either Gilman's Point or Uhuru Peak. What's the primary reason for this? In one word Altitude...

Proper and careful preparation is therefore key to reducing risk and eliminating dangers. It should also be pointed out however that choosing a route like the **Marangu** route that doesn't afford proper pre-acclimatization (what we would regard as proper pre acclimatization is 6 days prior to summit) is asking for serious trouble and accounts for why the failure rate is in fact so high. If the same studies were done on the **Machame/Lemosho** route the results would be very different and of the 100 ascents to date conducted/overseen by the Team the success rate is above 90% on said route – all in fact have summited to date... At this point you are all asking why everyone doesn't do the Machame/Lemosho therefore. Ignorance/time factors/ego and budgets, account for perhaps some of the more common reasons why not...

To this end, it's important that reader understand fully what Kilimanjaro Achievers has attempted to provide in facilitating this opportunity for a group of Second Level Students and their parents and respective teachers. Our approach is holistic in nature and focuses **not on the normal commercial aspects** (such trips don't for example do pre blood work) provided by normal 3rd party tour operators to Kilimanjaro but rather on the '*personal journey*' that each of these people will embark on over their period of preparation. Our success rate to date is reflective of a number of key factors that has included meticulous preparation, route choice on the mountain favoring less traveled routes such as Machame/Lemosho (success rates of 90% upwards) which provide far better success rates. The right African team on the mountain that has the right experience and the right personal approach to ensuring the welfare of the client comes 1st. Better flight choices straight into Africa rather than via Kenya/ the right medical support that can see the 'bigger picture' on the mountain and can pass on that knowledge accordingly...

Altitude presents humans with a host of problems. On Kili the combination of cold, dehydration and (AMS) acute mountain sickness are responsible for turning most people back. Preventing these is the key to climbing the mountain.

Whilst the Marangu and the Rongai approaches see the majority of the traffic, the Machame/Lemosho routes are proving to be an increasingly popular alternative. The reasons for this are simple – the routes not only offers a beautiful trek through a range of stunning habitats, but they also enjoy an ascent profile that allows aspiring summiters plenty of time to acclimatize.

This paper therefore details as follows:

1. The Mountain Lemosho & Machame route overviews.
2. Role distinction.
3. Mountain Health & Safety Protocols.
4. The Lake Louise Scoring System for altitude sickness.
5. Appendices:
 1. Gear support (overall list)
 2. Meds personal & professional.
 3. Nutritional support (synopsis)
 4. 'Buddy Buddy' Systems expectations.
 5. Training & Breathing.

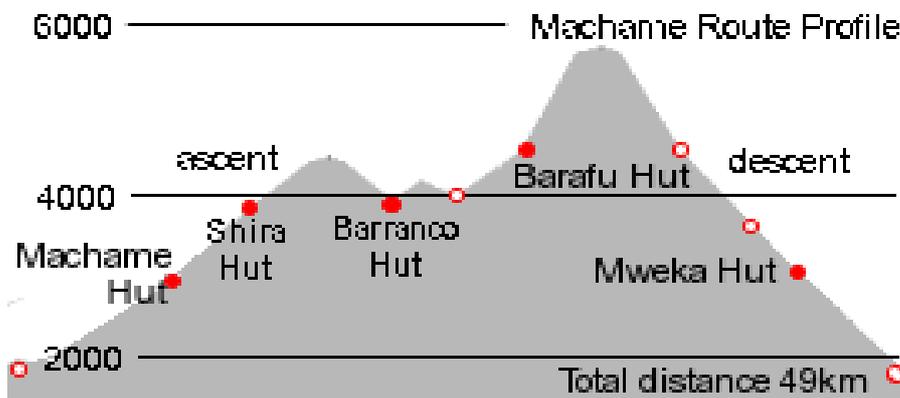
To that end Kilimanjaro Achievers preparatory program focuses on the following aspects.

1. **Physiology** No matter how fit you are if your blood profile presents issues that go unaddressed your chances of summiting Kilimanjaro are less than 20% (full blood assessment of key mitigating factors has been provided therefore: iron/ferritin/transferrin/hemoglobin/white cell count/Vitamin B12/other dietary factors such as Cholesterol) Those that require follow up bloods are requested that they are screened again prior to departure and a careful monitoring is provided to assess how well the person is responding through training/ general wellbeing/supplement support.
2. **Dietary & Fitness** ensuring that the body is prepared in terms of the 12 week program that comes prior: supporting the immune system/addressing shortfalls in things like vitamin & mineral deficiencies/weight management/ metabolic rate. Nutritional support & advice on counteracting any blood deficiencies have been carefully addressed on a group by group and individual basis... Nutritional concerns for the mountain have been addressed in the appendix section (See sample advice). Training for Kili has been addressed over a 12 week preparation program that focused/focuses on things like building a cardio base/increasing VO2 max/ functional fitness for hill work/breathing/pole work.
3. **Psychological & Team Building** Working especially with younger people requires that Kilimanjaro Achievers get to know the profile of each of the people climbing - age/gender regardless. To assist a 'Buddy Buddy' system has been adopted.
4. **Gear** A full list has been provided. All EX (participants) persons are personally responsible to ensure that their gear meets the health and safety standards laid out for summit on the Kili expedition. NB Nobody will be allowed to summit if their gear is considered substandard or they are ill equipped to do so and the EX/Kilimanjaro Achievers will insist that they remain at base camp. Gear will be checked on the compulsory sessions and upon arrival in Africa

The Machame Route:

Machame Route profile:

- [1] Machame Gate 3000m
- [2] Shira Camp 3840m
- [3] Barranco Camp 3950m
- [5] Karanga Camp 4200m
- [6] Barafu Camp 4600m
- [7] Uhuru Peak 5895m



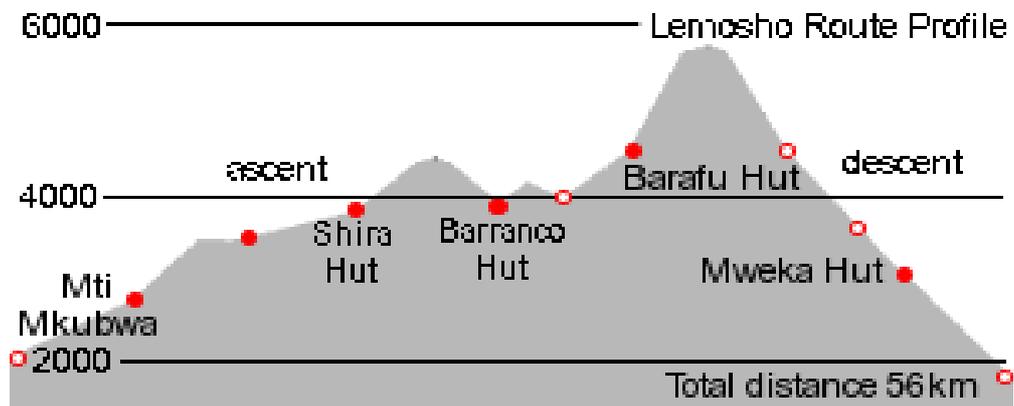
Narrative Descriptive

1. **Day 1:** Leave Arusha at 0830am for Machame Gate (1800m/5905ft) to Machame camp (3000m/9840ft)
2. **Day 2:** Machame Camp (3000m/9840ft) to Shira Camp (3840m/12600ft) Although considered to be the easiest day on the Machame Route, this day includes several uphill sections.
3. **Day 3:** Shira Camp (3840m/12600ft) to Barranco Camp (3950m/12960ft). Although this up and down day ends with an elevation gain of only 110m, by early afternoon you will have climbed 690m before beginning your descent to Barranco Camp – this day is crucial for acclimatization.
4. **Day 4:** Barranco Camp (3950m/12960ft) to Karanga Valley (4200m/13780ft) – the day will begin with a 1.5hr scramble up the Barranco Wall. This is the hardest part of the day. After reaching the top you will make a short descent into the greener Karanga Valley.
5. **Day 5:** Karanga Valley (4200m/13780ft) to Barafu Camp (4600m/15,100ft) On the way to the Barafu Camp you will have a view of several of the glaciers – Barafu Camp offers stunning views of Kibo and Mawenzi Peaks
6. **Day 6:** Summit night: Barafu Camp (4600m/15100ft)– Uhuru Peak (5895m/19340ft) Around midnight, begin the final ascent to Uhuru Peak the highest point in Africa. For the next 6 hours you will hike by the light of your headlamp. The ascent to the crater rim is the most challenging part of the entire trek. You will then descent to the Barafu camp for breakfast. After breakfast you will descent down to the Mweka Camp (3100m/10,170ft)
7. **Day 7:** Mweka Camp (3100m/10170ft) to Mweka Gate (1500m/4920ft) This final descent takes you through the lower heath section that quickly turns into rain forest. Your time on Kilimanjaro Achievers ends at Mweka Gate where your landrover will be waiting to transfer you back to your hotel

The Lemosho Route

Lemosho Ascent Profile:

- [1] Mti Mikubwa 2700m
- [2] Shira Camp I 3350m
- [3] Shira Camp II 3750m
- [4] Barranco Camp 3950m
- [5] Karanga Camp 3950m
- [6] Barafu Camp 4600m
- [7] Uhuru Peak 5895m



The Lemosho Route

Narrative Descriptive

1. **Day 1** We Drive to Londorossi Park Gate then on to the Lemosho Glades (2100m, 3h.). We walk along forest trails to Mti Mkubwa (big tree) campsite, (2750m, and 3h.). We leave lunchtime arriving just before darkness after 4pm
2. **Day 2** The trail steepens and crosses several streams in the giant heather zone. The Shira Ridge is crossed (3600m) to the Shira Plateau, camp by stream. (3500m, 5 h.). NB can be very cold at night in exposed plains and the silk liner is so important here in the sleeping bag
3. **Day 3** A gentle walk across the plateau leads to Shira Hut camp on moorland meadows by a stream (3840m, 1h30min.). A variety of walks are available on the Plateau making this an excellent acclimatisation day.
4. **Day 4** A rocky path leads east up towards the Lava Tower. Shortly beyond this, you descend to Barranco campsite (3950m, 4-5h.). NB **this is the key day in the mind of Kilimanjaro Achievers.** It's this day that symptoms most likely will present. But this day is so important for 2 reasons. **A** it represents the 1st trip above 4,000 metres but we climb high and sleep low so the groggy feeling dissipates largely by the next morning as the kidneys work harder to produce more red blood cells (see appendix on nutrition) **B** the body's physiology doesn't actually change again until 6,500 Metres approx so in other words once you come through this test then you can rest assured in the knowledge that you have every chance of summiting at 5,900 metres. It becomes a mental test thereafter but the team leaders need to show positive encouragement for this point on and focus n the glass half full for the possibilities that lie ahead
5. **Day 5** Scramble easily to the top of the Great Barranco and then a traverse over screes and ridges to the Karanga Valley campsite (4.5-5h, 4000m.), beneath the icefalls of the Southern Glaciers.... The scramble is 30-40% easier than the one they will have done prior on the likes of the Devils Ladder on Carrountohill for example and the views are truly spectacular. On this route there will be traffic from other route parties and all groups must take their time as the scramble begins. A really great day for filming...
6. **Day 6** The trail ascends a ridge to a campsite by the Barafu Hut, an airy location with little vegetation very rocky and under the sun's influence (3.5h, 4600m.); this is the pre-summit camp. It will be warm and the sun will be out all afternoon. After we eat lunch the team will sleep for approximately 6-7 hours and reawaken at 11pm for their pre-summit supper (see appendix on food)
7. **Day 7** Start just after midnight for the ascent of the screes leading to Stella Point (7.5 -8h, 5725m.). From here a further 40mins Lead's the 2 groups to Uhuru Peak. We will have 2 ascending groups those that are going more slowly will set off at 11.45pm and those that are traveling more quickly will leave 30 minutes later. The 2 groups then descend to the Barafu Hut spending no more than 10 minutes on the actual summit for a rest and brunch before continuing down to camp at Mweka Hut at 3100m, (11-14h total walking time).
8. **Day 8** A 3-4 hour descent through beautiful forest brings us to the Park Gate and by lunchtime the feel of a cool clean shower and the inviting sun loungers back at the lodge!!

Health & Safety

Role Distinctions

Rights and obligations of the ED (we use a Tanzanian Doctor Dr Clemence) On a number of the trips we shall also be accompanied by Irish Doctors.

1. The Doctor is authorized in the practice of medicine in his/her country of residence/origin in accordance with the medical code and is prepared to provide medical care and supervision of the EX. He/she has a sound knowledge of general medicine, sport medicine, altitude medicine, emergency medicine, relevant travel medicine and relevant infectious diseases and has the appropriate medical equipment.
2. The ED is charged with overseeing the medical and general health requirements, sport and altitude care of all Ex.'s participants during and after the expedition in case of diseases related to the actual expedition.
3. The ED's advice is to be taken into account in all matters related to the medical welfare of the group, as well by the leader(s) as by the participants and Kilimanjaro Achievers. Where health risks are concerned, the leaders or Kilimanjaro Achievers have to make their ultimate decision based on the advice of the ED.
4. The ED himself/herself has the responsibility to avoid every type of health risk on behalf of all participants in the EX in as much as is humanly possible.
5. The ED is particularly concerned with the following areas of responsibility:

ED Role In the preparatory phase

- **That an analysis** of the route / group climbing objectives/ the altitude profile/ the local medical and search and rescue facilities/ the epidemiology of diseases in the target area are met. **NB** Kilimanjaro Achievers via Everlasting Tours shall ensure that all climbers shall comply with local requirements and Everlasting Tours shall ensure that all personnel working on the trip also comply with local requirements.

- **An assessment of the physical fitness and state of health of each participant** shall be conducted approx. 12 weeks prior to departure, following the assessment each participant shall be provided with a training program relevant to their fitness level. **NB** blood profile work and the GP's sign off shall be forwarded to Kilimanjaro Achievers and this will determine in consultation with the ED any required prophylactic (preventative) measures required such as commencement of altitude prevention **e.g. Diamox prior to actual climbing (for sulpha reactions) and during the actual climb on BD regimen of 125mg moving to 250mg from day 4**

- **Conducting or organizing any proper vaccinating program for all participants.** NB all EX participants will have their Vaccinations done in advance through their local GP or through our medical partners at the Tropical Medical Bureau. Each participant is to bring their vaccination passport with them on the trip as it may be required as part of the entry process into the country.

- **Implementing travel and tropical preventive hygiene guidelines.** NB All EX participants will have a full list of what's required in their kit list/hygiene/ personal first aid kit

- **Planning and overseeing individual training programs.** Kilimanjaro Achievers in consultation with each of the EX participants will provide feedback on the required fitness levels/required training attendances. Kilimanjaro Achievers shall provide each participant with a training program and nutritional advice document.

ED Role During the actual trip

- Creating individual acclimatization programs. NB this is dependent on individual EX responses to acclimatization
- Organizing an appropriate medical kit for the EX (medicines, bandages, instruments, laboratory equipment, emergency oxygen...). This kit is unrelated to the personal medical kits of the participants which would include any personal prescription drugs, and this remains the responsibility of the individual participants themselves. NB See attached in appendix section.
- Establishing the required number (if any), volume and type of Oxygen Bottles needed and make sure that such equipment is cold resistance tested and compatible with other emergency equipment on the EX (e.g. Hyperbaric chamber rescue bag, malaria patient testing kits, etc.).
- The ED oversees the travel and tropical hygiene requirements, the Health and physical condition of each participant including their altitude adaptation. The ED's conclusions must be adhered to by all of the participants concerned, even if this should entail, for medical reasons, the withdrawal of individuals or all participants from the EX objective, a modification of the program, or even the abandonment of the whole EX.
- Any ED should be able to climb at least to the highest camp and always does.
- The manner in which the medical care of the participants, porters, other Local staff is the exclusive responsibility of the ED with the support of the leader and the possible participants. For large expedition groups, the ED should establish and equip a medical tent at the base camp, where the provision of a dedicated two-way radio and the regular high-altitude control examinations of the participants can be carried out. **NB** Two way radio systems are in place with adequate working area provided
- The ED will participate in the climbing activities of the EX, but any injury or illness of a participant (including porters) takes his/her/absolute priority over the ED's personal climbing ambitions and – if required – he/she will stay close to the injured or sick person. In case of sick or injured people at different locations the ED decides with full responsibility and authority where his/hers presence is most required. **NB In practice given the Ex is likely to recover at he/she descends their (ER) overall responsibility will be to the larger group unless circumstances should dictate otherwise**
- In the event of an evacuation, the ED has the full responsibility as the person who is in charge of the operation. His/her decision must be followed by the EX members until the operation is finished. If there are persons who are more experienced in mountain rescue available, the ED can delegate tasks. The ED will always remain fully responsible for the medical care of the patients.

Rights and obligations of the leader(s) and Kilimanjaro Achievers

1. The group leader must, without exception, lend his immediate, unlimited support to the ED when requested to do so. The ED may insist on changes to the Ex.'s schedule or priorities when health hazards must be avoided.
2. Kilimanjaro Achievers is responsible for providing emergency equipment as established by the ED

3. The Kilimanjaro Achievers, leader(s) and all participants accept that the care of the sick or injured must hold priority over all alpine activities. Kilimanjaro Achievers is responsible to inform all participants about this agreement
4. In case of serious illness or injury which needs immediate evacuation, the EX are to assist in the best possible way and accept instructions from the Rescue Coordinator, whose decisions and consequent orders are to be complied with, even if they should block the alpine activities of the group for a while or if a cessation of the EX should be the consequence in extreme circumstances.
5. **In the case of persons coming off the mountain.** Kilimanjaro Achievers/ED advises that every support be given to the Ex to properly acclimatize properly over the first 4-5 days. In only extreme circumstances shall an individual be required to come off the mountain before this period elapses. Then they will be accompanied directly to the Lodge by 1 African guide and or an additional parent if present. If there is a traveling parent then they will accompany said son/daughter. Costs for same will be made clear by the African organizers. Should they require any additional medical support the ED will make that assessment. Should the incident occur pre-summit the Ex will remain at Summit Camp or if the circumstances dictate that the Ex travel back down to a lower camp and procedures will follow accordingly with adult accompaniment.
6. Kilimanjaro Achievers and leader(s) are informed and accept, that in case of the ED's temporary absence (e.g. to accompany a patient to the hospital) the ED cannot be held responsible for the consequences of illness or injuries during his absence. During the ED's absence the leader(s) and the whole EX should take special care for health and mountain safety. The ED is to return to the EX as soon as the circumstances allow. Kilimanjaro Achievers is responsible to inform all participants about these facts.
7. Kilimanjaro Achievers accepts that the work of the ED is a profession which needs special skills. Often the ED has to provide medical treatment of high quality in an uncomfortable and sometimes dangerous environment and sometimes the ED has to stop any personal alpine activities to assist people.

Rights/ Required obligations of the EX

1. In his/her own interest and in those of the group, each participant of the expedition takes particular care to maintain the strictest and highest standards in his personal hygiene, health and physical fitness prior during and post climb and at all other times during the EX. There is no aerosol usage allowed except for the use of dry shampoo. Stick deodorants are to be used at all times. In their kit the Ex must carry mouth wash as well as toothpaste to avoid any mouth ulcers or sores
2. All participants respect that all health matters are the full responsibility of the ED/Kilimanjaro Achievers. His/her/their instructions at all times, represent measures intended for the prevention of health risk and for the treatment of any sickness or injury should be accepted in their own interests.
3. Every participant **must inform** :Kilimanjaro Achievers/ED of problems in his/her medical history/must produce – bloods/ a letter /certificate of a clean bill of health from their local GP prior to travel .
4. The ED/Kilimanjaro Achievers may further request medical records / documents relating to a participant from that participants physician (e.g. general practitioner (G.P.) or previous medical expedition reports). **The participants have an obligation to fully disclose to the ED/Kilimanjaro Achievers any health problems he/she may have experienced on similar previous activities.**
5. All information shared with the ED/Kilimanjaro Achievers is under medical regulation and strictly confidential. Where a conflict of interest arises between the responsibilities of the leader

and the ED the latter will advise the leader with respect to medical confidentiality (or together with the patient and with his / her agreement)

6. Every participant should be informed and accept that in many mountain areas, due to differentially and often poorly-run local health systems, the medical care standards they are accustomed to in their home countries, cannot/are not be guaranteed, especially in cases of emergency transports and hospital services. The ED has little influence on this situation.
7. Every participant is to report immediately to the ED any health disorder.
8. In most cases the ED will not have certification to fully practice their medical work in the country where the EX will travel to, i.e. the ED is not allowed to work as a "normal" physician. All participants must respect that the ED's primary work is to prevent health problems and to assist in case of medical emergency. The ED's ability to medically practice will be restricted according to the laws of the country visited.
9. It is the responsibility of each participant to provide a medical kit for his/her own personal use, including a sufficient amount of drugs needed to treat a relevant chronic disease(s). For example if the individual suffers from such diseases (e.g. hypertension, asthma etc.), the continuation of this treatment, as recommended and prescribed by his/her doctor at home, is the full responsibility of the participant. Of course, in case of any unexpected problem, the ED shall be contacted. **Please refer to the summary appendix on what the EX needs to have with them on the Kili trip in this regard**
10. Every participant must hold current and comprehensive travel and medical health insurance, including reimbursement of repatriation costs, emergency evacuation, and search and rescue costs. Personal Insurance is compulsory for all persons travelling with the group.
11. **Locally employed porters and staff** should have the same standard of medical care as any other member of the expedition / trekking. It is the ED's responsibility to advise or assist the leader in any topic which touches the health and safety of local staff and porters.
12. **ALL ex persons** are faithfully requested to assist the porters with an end of trip tip of \$180 - (students) -\$200 for adults or above if deemed appropriate as a mark of gratitude for their work and support in helping facilitate their trip. If there is a particular problem that the Ex feels has arisen in relation to making such a donation at the end of the trip they need to clarify same prior to departure day when the closing ceremony take place, otherwise all tips will be collected at lower camp pre exit.
13. **All Ex persons** will be assessed on the mountain day to day by Kilimanjaro Achievers + attending doctor/medically assigned person using a variety of tools (including Oximeters that measure oxygen saturation levels /blood pressure monitoring) that allow various base rates be carefully watched day to day.
14. In addition Kilimanjaro Achievers or Doctor will also use **Lake Louise Questionnaire** to assess Acute Mountain Sickness symptom recognition and appearance be closely monitored. (See work sheet attached. All Ex person are asked to study this carefully pre departure)

Symptom Recognition for Mountain Sickness on Kili

AMS Worksheet

Based on the Lake Louise AMS Questionnaire

Name _____ Age _____ Sex _____ Date _____

Prev Hx AMS/HAPE/HACE?

Meds: _____

Ascent Profile: _____

Treatment: _____

Time	_____	_____	_____	_____	_____	_____
Altitude	_____	_____	_____	_____	_____	_____
Symptoms:						
1.Headache:						
No headache	_____	_____	_____	_____	_____	_____
Mild headache	_____	_____	_____	_____	_____	_____
Moderate headache	_____	_____	_____	_____	_____	_____
Severe, incapacitating	_____	_____	_____	_____	_____	_____
2.GI:						
No GI symptoms	_____	_____	_____	_____	_____	_____
Poor appetite or nausea	_____	_____	_____	_____	_____	_____
Moderate nausea or vomiting	_____	_____	_____	_____	_____	_____
Severe N&V, incapacitating	_____	_____	_____	_____	_____	_____
3.Fatigue/weak:						
Not tired or weak	_____	_____	_____	_____	_____	_____
Mild fatigue/weakness	_____	_____	_____	_____	_____	_____
Moderate fatigue/weakness	_____	_____	_____	_____	_____	_____
Severe F/W, incapacitating	_____	_____	_____	_____	_____	_____
4.Dizzy/lightheaded:						_____
Not dizzy	_____	_____	_____	_____	_____	_____
Mild dizziness	_____	_____	_____	_____	_____	_____
Moderate dizziness	_____	_____	_____	_____	_____	_____
Severe, incapacitating	_____	_____	_____	_____	_____	_____

Appendices

The 'Buddy Buddy' System

The **buddy system** is a procedure in which two people, the buddies, operate together as a single unit so that they are able to monitor and help each other. In adventurous or dangerous activities, where the buddies are often equals, the main benefit of the system is improved safety; each may be able to prevent the other becoming a casualty or rescue the other in a crisis.

When this system is used as part of training or the induction of newcomers to an organization, the less experienced buddy learns more quickly from close and frequent contact with the experienced buddy than when operating alone.

Given the natural climatic effects of the environment into which climbers will be traveling it's imperative that the right partnerships are sought in terms of complimenting personality types, perceived strengths and weaknesses

The buddy system is used by Kilimanjaro Achievers on Kilimanjaro for the following;

Each person is responsible for carrying /adapting this code and filling it in each day, morning and evening

Daily Duties of care by the 'Buddy to the buddy' are to ensure:

Personal welfare through day to day observation of:

The HEED Code

Hygiene Daily washing: Face/ hands with anti-bacterial soap / teeth brushing/mouth washing with Listerine/ under clothes changing/socks/base layers/ baby wipes/foot care with moisturizers.

Environment Sufficient warmth in clothing – day and at night time/that they have the right gear on their person at all times on the mountain/ the right gear carried in their day sacs (rain gear/beanie hat/ gloves) / that they have sufficient to drink/ that their water bottle(s) is filled at night/that they have enough food at all times

Education That they have enough to drink every morning a filled bottle beside their sleeping bag or in the bag if being used as a water bottle the night before (males 1st thing when they wake a headache tablet with ¾ liters of water only (females ½ liters). That their platypus is filled with water plus hydration sachet during climbing/that they have enough energy bars/snacks pre-lunch / pre-dinner/ that when they enter camp they drink another ½ liters males and females pre-dinner/ they have taken any medications required of them (all buddies inform each other of what they are taking and for what)

Decision making Symptom recognition: That the buddy also ensures that that partner is doing ok and if they get into trouble it's the buddy's responsibility to ensure that Kilimanjaro Achievers/ER knows.../buddy needs to be encouraging and positive and to respect their partner's needs. They are not to wander off and leave their buddy walking aimlessly head down/that they are each familiar with the Lake Louise scoring system

Medical Supplies

Each EX & ED must carry the required items below

Personal Medical Kits

Paracetamol / ibuprofen: Whatever is usually taken for a headache.
Anti-malarial prophylaxis
Anti-diarrhea tablets: e.g. Imodium.
Anti-emetic tablets: e.g. Maxilon
Rehydration sachets: e.g. **Sustain** or Dioralyte.
Diamox 125mg Days 1-4 switching to 250mg tablets or 125mg BD (twice a day)
Plasters.
Vaseline.
Sunscreen (factor 30+).
Baby wipes.
Antiseptic: e.g. TCP / Savlon.
Mosquito repellent.

Additional medical kit to be brought by expedition doctor.

Dexamethasone: Oral and IV/IM.
Nifedipine SR 20mg tablets.
Antibiotics: e.g. Ciproxin, Augmentin duo.
Anti-emetics IM: e.g. Maxilon, Stemetil or Zofran.
Antihistamines
Additional diamox.
Needles/syringes.
Alcohol wipes.
Bandages / slings / tubigrip /tape /steristrips /dressings etc.
Suture kit

Equipment that will be available on site

Oxygen
Pulse oxymeter
Gamow bag BP
monitor
Stethoscope
Thermometer

Shots / Vaccinations required pre travel

Typhoid
Hepatitis A + B
Yellow Fever
NB for additional options visit the TMB on our website or call the Mercer Medical Clinic at reduced rates visit mercermedicalcentre.com or telephone 01 4022300

Foot notes on Diamox

Works by increasing the amount of alkali (bicarbonate) excreted in the urine, making the blood more acidic. Acidifying the blood drives the ventilation, which is the cornerstone of acclimatization..

For prevention, 125mg twice daily Days 1-3 (4- summit) 250mg twice daily once the highest altitude is reached Blood concentrations of acetazolamide peak between 1 to 5 hours after administration of the tablet

Nutrition & Kilimanjaro

The 10 point plan

Friends remember these things:

It's about your Kilimanjaro journey **no one else's** and to that end never compare yourself/your fitness/your body shape to anyone else's. Each person's body is very different and one shoe doesn't fill all in term of remedies and solutions... that said the steps recommended do work so with the adjusting required for your own specific needs taken on board... We don't use terms like weight loss nor weight watching... this program is about your own personal health and wellbeing both on and off the mountain and to that end it's mostly about being happy in yourself, having energy and operating at your daily max!

Top 10 food tips 20- 30 days prior to departure

Pre Kili

A multi vitamin daily (liquid iron daily) unless otherwise stated

1. **Single most important Control your sugars!!!**.... Sugar dense foods lead to greater insulin being released and a vicious cycle begins ... that leaves you feeling hungry and storing excess calories/fatty acid stores... In short my friends cut out carbs that contain simple sugars. This ref is known as High glycemic index foods (GI) aka crap/junk... Replace with low GI foods i.e. that release the sugar slowly into the blood stream: (see chart attached)
2. **Control your metabolic rate** kick start your morning: and do likewise at bedtime:
3. **Morning time:** 2 glasses water/ A Shake with full ormus greens/barley/water or in the form of a smoothie mixed with Greek yogurt/ Bowl of spelt puffs (high amino acids with whole super milk) / cup of green tea rich in riboflavin's which speed the metabolic rate and have important antioxidants.
4. **Mid Mng/** (Your time...) Juicing vegetables + fruits: Any 2 Greens (broccoli/spinach/lettuce) + celery + beetroot + any 3 fruits (apples/oranges/kiwis/pear/peach/apricots) or as you like it (-:
5. **Lunch + Dinner:** Any good carbohydrate source + protein source (carbs options brown/basmati rice/sweet potato/spelt/Quinoa/millet) good protein sources (fish oily and non-oily mackerel/trout/salmon/tuna/white fish) mix as follows: 1-2 days red meat/4 days fish / 1-2 day white meat.
6. **Snacking options:** Chose well during the day for snacking: Ryvita + avocado/ dry mango/mixed nuts...

Workouts

1. We all need protein within 20 mins post work out: NB Males + Females: options 200 mls of full super milk or Sun Warrior protein + sun warrior barley mixed:
2. Need electrolytes during and pre work out: Use only sustain not isotonic drink. Eat apple during workout to stabilize blood sugars not bananas.
3. Post work out 10 almonds to replace lost iron/minerals.

On Kili

1. Mornings: Males – pre breakfast 1 liters of water only (f ½ liters). During breakfast another pint (m/f) during climbing use sustain mixed in with water in the platypus. Drink i.e. sipping during climbing every 4 minutes small amounts.
2. **NB** Green tea is highly recommended. Apart from its antioxidant qualities it's also a diuretic and studies clearly show a correlation between water retention & AMS!

3. Evening as above pre dinner etc: Snacking inter meal on snacking foods that work energy bars/nuts/cake: Avoid the sugar rushes till necessary later in the climb: Good to have barley sweets at all times for small sugar releases but things like carb gels _ chocolate etc for later in the climbs especially on the summit night

For those going later or throughout the summer... Post May/June...

Fitness will naturally be maintained by you and extended accordingly

Mike will be in Kilimanjaro from May to September to facilitate and guide the 10 groups taking part (9 schools / 1 adult)....

NB Guide contacts will be provided by Suzanne with dates of options for June/

July/Aug/Sept climbers each weekend climbing in the Galtee's/Clare/Kerry

What we recommend that you follow - Training Period

Weeks 1-2

Training 4 times a week (**NB** Cross Trainer only)

- Building **a base and building towards** a 45 min cardio so that you can learn to operate just below your aerobic threshold
- Nutrition is addressed in the food charts but please be mindful of pre hydration and taking on sufficient fuel during your sessions
- Post cardio - it's on to core strength work on the Swiss ball doing planks (building slowly to 2 mins (see full range in the exercise attachment)
- Lateral raises building to 3 sets by the end of the 1st two weeks. NB Use weights that suit you and your capacity! Refer to exercise attachment for how to do all exercises correctly
- Quads – chose 1 of the exercises in the chart that you can manage
- Planks should also be done when you get out of bed first thing in the morning x 1 min
- TIP Post exercise ladies + teenage gents (for older males protein shake with barley is sufficient) please take handful of almonds + also try make sure and have antioxidants such as portion of lettuce and peppers diced (red) they will reduce lactic acid build up in the muscles

Weeks 3-4

- We now mix/alternate the cross trainer with jogging building our jog base towards 45/60 mins. Please note that the body responds well to consecutive jogging to build time periods. If in the gym using pool/sauna helps relieve lactic. During these weeks increase your daily lettuce/peppers intake as well
- Once the jog base is established we now aim to do intervals every 10 mins for 4 mins (mix these intervals by adding a combination of gradients + faster running aim for 2k's above your aerobic jog pace
- After each 2nd session maintain the weights + after every session mix the stretching/core work each time from the sheet always incorporating some quad strengthening work
- After week 3 start to incorporate Tabata work at the end of every training session. Best done on the cross trainer. That's interval work of 20 sec full on with 10 sec recovery. Your aim is to build eventually towards 5mins (that's 10 x20 sec with 10 recovery intervals in between
- There will be your 1st Mountain to be climbed after 4th week is completed

Weeks 5-6 & beyond

- We continue our mix of above but try to gradually increase the various intervals we are using on both the cross trainer and running.
- In weeks 7-11 we try to train 5 times (that would allow 1 session for a climb on the 5th training day
- As we get fitter/stronger/increase our metabolic rates etc we can adjust the basics of what we do in our training accordingly i.e. more repetitions in our exercises/heavier weights/longer Tabata/more anaerobic work in our intervals on the jogging/cross trainer etc – the key is to keep challenging yourselves
- The 4th training day now however now will be outdoors and focus on jogging/running/walking fast on hills. What you can do here depends on you – just do what you can folks ok. Try your very best Tada Gan iarracht!!
- Think of a 'hill workout' as a running-specific weight workout. The exaggerated knee lift, driving arms, and pronounced toe-off necessary to run up hills strengthens you every bit as much as hitting the weight room. Hill running also works the cardiovascular system as your heart tries to keep pace with the increased energy required to fight gravity. Consequently, hill workouts are very taxing and should be done only once or twice a week.

I recommend four basic types of hill workouts – fitness/ability/age dependent that you try to introduce from weeks 5 – 12. Each has its specific rewards as you go up the ladder so to speak.

1. **Short Hills.** They are relatively short hills of 100 to 200 meters that you repeat multiple times. They can be tacked on the end of an easy run/jog/fast walk or used as a complete workout. Because these hills are short, you should run them at a fast pace -- almost an all-out effort -- with a walk or slow jog back down the hill as a recovery.

While you can run these types of hill repeats on asphalt, a grass or dirt hill is less stressful to your body. Short hills are important for the runner among you - anyone who wants to develop the explosive strength necessary to run a good 800 meters or finish strong in a mile or 5-K. A sample short hill workout: one to two sets of 10 hill repeats. Walk or jog slowly down the hill after each repeat, and do an additional 5 minutes of jogging between sets.

Weeks 7 -9

2. **Hilly Power Run.** This workout builds strength for a strong marathon or half-marathon. Pick a route that has rolling hills and "push" each hill. By push, I mean you should try not to slow down as you roll over each rise. But don't attack the incline as you do when running short hills. I like to do this kind of run as part of a 10-mile workout. I pick a canyon road, and then work each uphill, catching my breath as I cruise on the flat and downhill sections. This type of continuous hilly power run will be your best weapon against monsters such as Heartbreak Hill in Boston.

- **For those that want to really push it!! Last month...**

3. **Hilly Long Run.** This workout is similar to the Hilly Power Run, but longer and less intense. Run this at your long-run pace, but make sure you have some rolling hills in the last half of the run/fast walk/jog. When you hit the hills with fatigued legs, you'll be forced to work on your form. This workout will also build strength and confidence
4. **Long Hill Circuits.** This is more of a traditional long-interval workout. The key is finding a grass or dirt circuit that has a number of up hills. The distance of the circuit can be as short as a half-mile or as long as 2 miles. Run the downhill sections at a semi-easy (75 percent) effort to avoid injury. Run the flat and uphill sections at 5-K race pace. Unless you're a Sherpa, do a total of 3- to 4-miles' worth of the circuit, with 3 to 5 minutes of jog recovery between each circuit

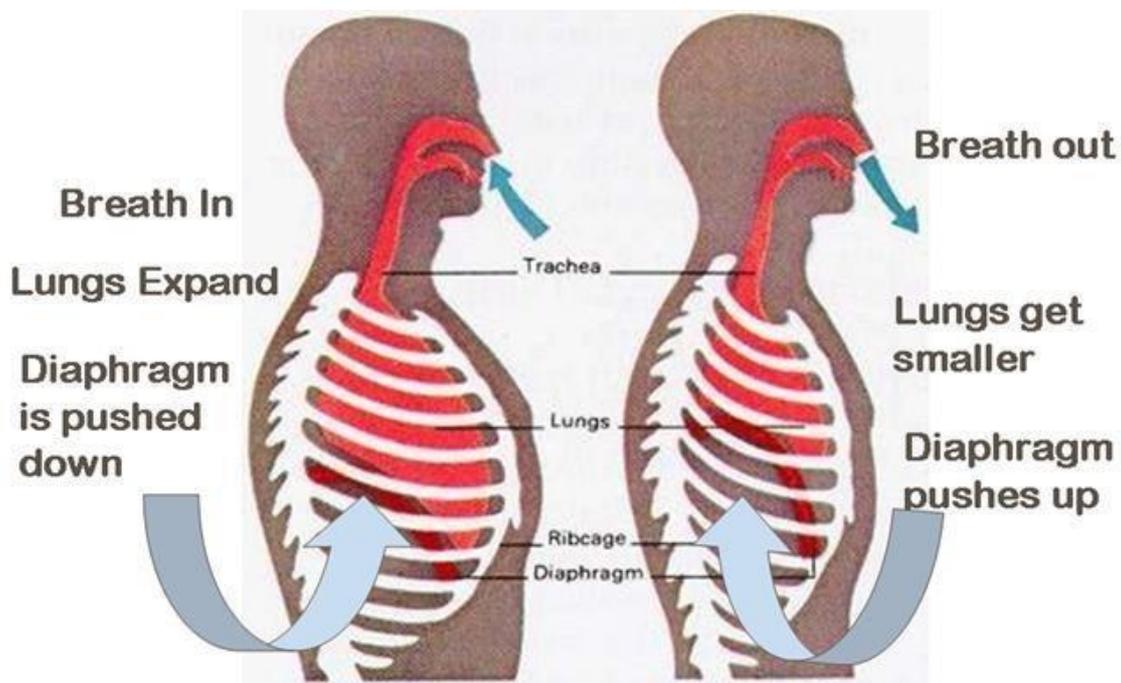
Group work

- We will do multiple weekend sessions together 3 minimum. In there will be two tough cardio sessions one of which we will do some climbing and 1 which will be cardio only. The cardio only comes 1st with the combined cardio/climb session later.
- Our group climbs included Croagh Patrick / Slieve Foy / Carruntohill/ Camaderry/Galtee's/Burren/Nepin/The Lug.
- You will be expected to be able to complete Camaderry hill in Wicklow the hill directly opposite the 2nd car park - The 1st section only will be done 8 times (that's 8, 30 min climbs including 5 min recoveries just before you go to Kilimanjaro)

Breathing on Kilimanjaro

NB ALL CLIMBERS

The secret using your poles is to climb rhythmically by taking/inhaling breath through the nose and breathing out on the 3rd step... done as many times as you can do comfortably as we walk each day. Practice every 5 series of steps doing it this way... oxygen increase to the lungs will increase by 15-20%



Benefits of Diaphragmatic Breathing

There are countless ways that abdominal breathing can benefit our overall health. I've mentioned a few of the most important below: its value in climbing cannot be overstated as it affords you optimal oxygen intake and is key for acclimatization. I recommend therefore that you start to practice as soon as possible...

Benefits

1. Triggers the Relaxation Response
Diaphragmatic breathing soothes the nervous system and is a great tool for releasing tension from the body. It also reduces stress hormones in the body.
2. Boosts Energy and Increases Vitality
Breathing deeply increases your energy levels as it allows fresh oxygen and nutrients to be more easily distributed to all the cells in your body. This helps the brain and all of the organs to function optimally.
3. Strengthens the Immune System.
4. Abdominal breathing helps prevent infection of the lungs and other tissues.
5. Improves the Circulatory System.
6. Diaphragmatic breathing benefits the circulatory system by increasing blood circulation and helping with blood-return to the heart.
7. Helps digestion by massaging the internal organs as the diaphragm moves up and down.
8. Helps us to center and ground ourselves.

How to do it

Find a comfortable position you can remain in for fifteen to twenty minutes. When learning deep diaphragmatic breathing lying down is the easiest and sitting is the most difficult. However some people find that they fall asleep when lying down so it is important to find the posture that both allows you to relax and focus on the technique but one in that you can remain awake.

Wear loose comfortable clothing that allows your abdominal area to easily move. Remove any restrictive garments such as belts.

The eyes can be closed or you can have a soft gaze downward.

Place one hand over your abdomen and one over your chest. Inhale through your nose and let your abdomen and the hand on your abdomen rise first. Then continue to inhale and fill the chest cavity. Think of your stomach moving out and away from your low back. Make it a slow deep breath in.

Exhale through the nose allowing the abdomen and the hand on the abdomen to release. Think of your stomach pulling in and towards your low back. Since this is the opposite of how most people breath it may take some practice. Many people pull the stomach in as they inhale, however this constricts the diaphragm

.Continue for fifteen to twenty minutes trying to make each breath a little slower and a little deeper

Low GI = 55 or less
 Medium GI = 56 – 69
 High GI = 70 or more

Breakfast Cereal Low GI		Bread Low GI		Vegetables Low GI		Snacks & Sweet Foods Low GI		Staples Low GI		Legumes (Beans) Low GI		Fruits Low GI		Dairy Low GI	
All-bran (UK/Aus)	30	Soya and Linseed	36	Frozen Green Peas	39	Slim-Fast meal replacement	27	Wheat Pasta Shapes	54	Kidney Beans (canned)	52	Cherries	22	Whole milk	31
All-bran (US)	50	Wholegrain Pumpernickel	46	Frozen Sweet Corn	47	Snickers Bar (high fat)	41	New Potatoes	54	Butter Beans	36	Plums	24	Skimmed milk	32
Oat bran	50	Heavy Mixed Grain	45	Raw Carrots	16	Nut & Seed Muesli Bar	49	Meat Ravioli	39	Chick Peas	42	Grapefruit	25	Chocolate milk	42
Rolled Oats	51	Whole Wheat	49	Boiled Carrots	41	Sponge Cake	46	Spaghetti	32	Haricot/Navy Beans	31	Peaches	28	Sweetened yoghurt	33
Special K (UK/Aus)	54	Sourdough Rye	48	Eggplant/Abori gine	15	Nutella	33	Tortellini (Cheese)	50	Lentils, Red	21	Peach, canned in natural juice	30	Artificially Sweetened Yoghurt	23
Natural Muesli	40	Sourdough Wheat	54	Broccoli	10	Milk Chocolate	42	Egg Fettuccini	32	Lentils, Green	30	Apples	34	Custard	35
Porridge	58			Cauliflower	15	Hummus	6	Brown Rice	50	Pinto Beans	45	Pears	41	Soy Milk	44
				Cabbage	10	Peanuts	13	Buckwheat	51	Black-eyed Beans	50	Dried Apricots	32		
				Mushrooms	10	Walnuts	15	White long grain rice	50	Yellow Split Peas	32	Grapes	43		
				Tomatoes	15	Cashew Nuts	25	Pearled Barley	22			Coconut	45		
				Chilies	10	Nuts and Raisins	21	Yam	35			Coconut Milk	41		
				Lettuce	10	Jam	51	Sweet Potatoes	48			Kiwi Fruit	47		
				Green Beans	15	Corn Chips	42	Instant Noodles	47			Oranges	40		
				Red Peppers	10	Oatmeal Crackers	55	Wheat tortilla	30			Strawberries	40		
				Onions	10							Prunes	29		

Breakfast Cereal Medium GI	Bread Medium GI	Vegetables Medium GI	Snacks & Sweet Foods Medium GI	Staples Medium GI	Legumes (Beans) Medium GI	Fruits Medium GI	Dairy Medium GI
Bran Buds 58	Croissant 67	Beetroot 64	Ryvita 63	Basmati Rice 58	Beans in Tomato Sauce 56	Mango 60	Ice-cream 62
Mini Wheat's 58	Hamburger bun 61		Digestives 59	Couscous 61		Sultanas 56	
Nutrigrain 66	Pita, white 57		Blueberry muffin 59	Cornmeal 68		Bananas 58	
Shredded 67	Whole meal 62		Honey 58	Taco Shells 68		Raisins 64	
Wheat 63				Gnocchi 68		Papaya 60	
Porridge Oats 69				Canned Potatoes 61		Figs 61	
Special K (US) 69				Chinese (Rice) Vermicelli 58		Pineapple 66	
				Baked Potatoes 60			
				Wild Rice 57			
High GI	High GI	High GI	High GI	High GI	High GI	High GI	High GI
Cornflakes 80	White 71	Pumpkin 75	Pretzels 83	Instant White Rice 87		Watermelon 80	
Sultana Bran 73	Bagel 72	Parsnips 97	Water Crackers 78	Glutinous Rice 86		Dates 10	
Bran flakes 74	French Baguette 95		Rice cakes 87	Short Grain White Rice 83		3	
Coco Pops 77			Puffed Crisp bread 81	Tapioca 70			
Puffed Wheat 80			Donuts 76	Fresh Mashed Potatoes 73			
Oats in Honey Bake 77			Scones 92	French Fries 75			
Team 82			Maple flavoured syrup 68	Instant Mashed Potatoes 80			
Total 76							
Cheerios 74							
Rice Krispies 82							
Weetabix 74							

