

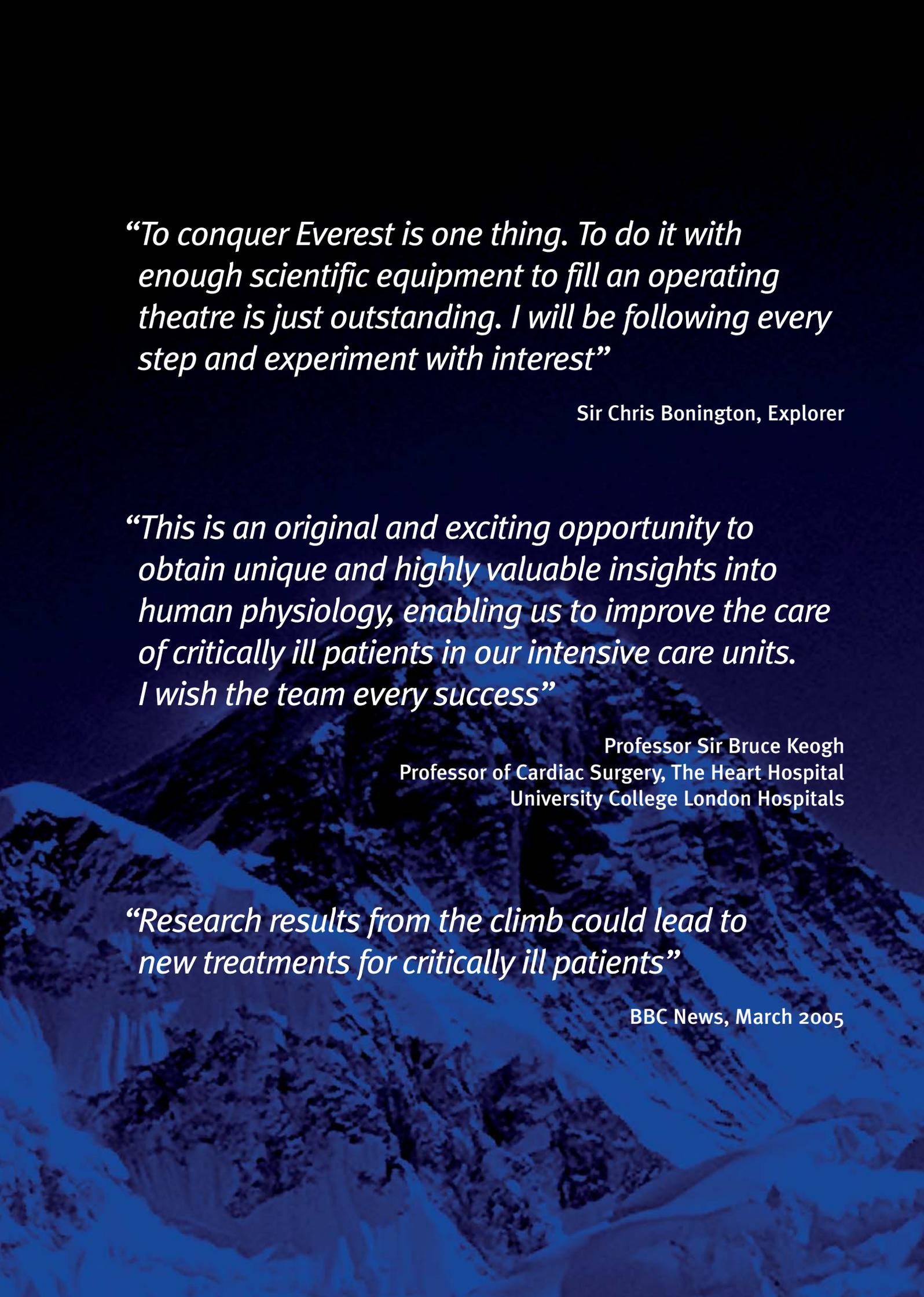


The 2007 Everest Medical Research Expedition

Exploring Human Physiology at Extreme Altitude



An unrivalled scientific endeavour with unique media value.



“To conquer Everest is one thing. To do it with enough scientific equipment to fill an operating theatre is just outstanding. I will be following every step and experiment with interest”

Sir Chris Bonington, Explorer

“This is an original and exciting opportunity to obtain unique and highly valuable insights into human physiology, enabling us to improve the care of critically ill patients in our intensive care units. I wish the team every success”

Professor Sir Bruce Keogh
Professor of Cardiac Surgery, The Heart Hospital
University College London Hospitals

“Research results from the climb could lead to new treatments for critically ill patients”

BBC News, March 2005

Risking lives to save lives

These people, highly qualified doctors and medical scientists, are dedicated to saving lives. In Spring 2007 - with other colleagues - they plan to risk their own lives climbing Everest as part of a uniquely adventurous and exploratory expedition designed to quantify the effects of oxygen deprivation on the human body at extreme altitude.

Their scientific endeavours will provide invaluable information impacting across a broad spectrum of life-saving medical treatments.

And their dramatic human-interest story will undoubtedly deliver substantial media impact.

*Team members (from left to right):
Kevin Fong, Monty Mythen, Mike Grocott
and Helen Luery*

*Team members not pictured:
Denny Levett, Hugh Montgomery and
Sundeep Dhillon*



From mountainside to bedside

An extraordinary scientific expedition with extraordinary impact

Imagine an intensive care patient short of oxygen, fighting for breath, lungs filling with fluid, brain swelling, struggling to stay alive. The mountaineer battling toward the summit of Everest knows exactly how that feels.

Oxygen: the key to life

We depend on air for survival; more specifically we depend on oxygen. Starve the brain of oxygen and damage soon becomes irreparable. Indeed all major organs - the heart, the lungs, the liver, the kidneys - will begin to malfunction and eventually fail without properly oxygenated blood.

Quite simply without oxygen we die.

Low oxygen levels are a critical factor in intensive care patients. In particular, diseases of the heart and lungs, and severe infections prevent adequate amounts of oxygen reaching the cells.

This unique expedition will take lessons learnt in the extreme low oxygen environment of the summit of Mount Everest, and bring them back to the bedside of the intensive care unit (ICU).

Dangerously low levels of oxygen are also a fundamental problem in blue babies, children with heart and lung diseases (such as Cystic Fibrosis) and in adults with conditions like chronic bronchitis, emphysema and ARDS (a condition common in Intensive Care patients).

A natural laboratory

The summit of Everest is, by extraordinary coincidence, exactly at the limit of human ability to withstand low oxygen levels.

Indeed, for many years, doctors and scientists believed that it would be impossible to climb Everest without supplemental oxygen. In 1978 Reinhold Messner proved the contrary and, since

then, over 100 individuals have ascended the mountain without additional air supply. However, if the mountain was a few metres higher such feats would be impossible.

Accordingly, the summit of Everest is a unique natural laboratory for the study of the effects of extremely low oxygen levels.

“In the ‘death zone’ (above 8,000 metres) the human body fails to survive because the level of oxygen in the blood drops dramatically.”

The Times, March 16 2005

Although it has been possible to simulate low oxygen levels in specially-designed, low-pressure chambers, studies are expensive and produce variable results that have not always been supported by field studies. Further, it takes the subjects just as long to acclimatise as mountaineers.

It is the quest for original, and accurate, results from the field that has inspired the team to undertake this expedition.

Learning from life at the limits

Conditions that will benefit from the research:

- Acute Respiratory Distress Syndrome (ARDS)
- Altitude Sickness
- ‘Blue Babies’
- Brain Dysfunction
- Congenital Heart Disease
- Cystic Fibrosis
- Emphysema
- Lung Disease
- Oxygen Deficiency
- Severe Infections
- Sepsis/Septic Shock



Clockwise from top left: Cardiopulmonary exercise training; Measuring blood oxygen at altitude; Intensive Care patient; Prototype closed circuit breathing system.

The professional team

This venture is an immense personal and professional challenge for the senior medics - doctors Mike Grocott and Hugh Montgomery - together with Roger McMorrow, designer of a new breathing system and Sundeep Dhillon, a GP with extensive high-altitude experience.

These intrepid ‘adventurers’ will be supported by Kevin Fong, a space expert and Denny Levett, a diving specialist.

The doctors themselves (from CASE, the Centre for Aviation, Space and Extreme Environment Medicine) are dedicated to studying the medicine and physiology of extreme environments and specialise in intensive care and anaesthesia, caring every day for the critically ill.

The team believe the knowledge gained from risking their own lives to conduct experiments in the extreme ‘laboratory’ of Everest will bring back results, from mountainside to bedside, that will improve and save the lives of many.

The team have two further aims. Firstly, to investigate the effects on climbers’ mental faculties when oxygen levels are low and, secondly, to test prototype lightweight oxygen delivery equipment that has a huge potential benefit to patients who need constant oxygen treatment and are housebound.

The team are already at the top of their respective professions. This immense undertaking is, in all senses of the phrase, a further ‘peak of achievement’.

The life and death drama is evident, the human interest and value to humanity substantial.

“16% of us will end up critically ill in intensive care at some time in our lives. Of these, 20% will die in an intensive care unit and another 10% in hospital.”

Dr. Kevin Fong
Deputy Expedition Leader and
presenter of ‘Super-human’, Channel 4

Xtreme-Everest and the Media

Marketing the 'journey into the extreme'

The endeavour will be piloted in late 2005 on the world's sixth highest mountain (Cho Oyu) and publicity will build toward considerable TV and documentary coverage as the main challenge is mounted in 2007.

Xtreme-Everest is an extraordinary expedition, of extraordinary medical value and of extraordinary impact.

In short, an outstanding opportunity for PR and sponsorship in all aspects.

Building media interest

Since the expedition was announced The Times, The Guardian, The Daily Mail and The Sydney Morning Herald have all carried in-depth stories.

Television coverage has included BBC News at Ten, BBC Breakfast and CNN.

Additionally, radio stations ranging from the BBC World Service, Canadian Broadcasting Corporation, Australian Broadcasting Corporation and LBC News London have all featured the story.

Future marketing and promotion

The expedition combines two major selling points into a unique and 'mediagenic' package.

Firstly, there is the human interest drama of intrepid mountaineers pushing themselves to extremes in order to conquer the legendary summit of Everest.

Secondly, from a medical perspective, there is the added value of these efforts being unselfish, being dedicated to the benefit of mankind in general.

The answer to the question, "Why do you climb it?" has, traditionally, been "Because it's there". The response from our team would be that it is not only personally challenging but, also, that it is part of their professional calling.

Dateline Everest: Key scientific dates

1953	Everest first climbed by Hillary and Tenzing
1960	Silver Hut Experiments - First measurements of oxygen carriage around the body
1980	American Medical Research Expedition
1994	British Medical Research Expedition
2000	CASE Medicine founded
2004	Xtreme-Everest conceived
2005	Cho Oyu pilot expedition
2007	Xtreme-Everest Team climb to 8,850m Everest summit

As indicated, preliminary response to our unique proposition from a wide range of media has been most gratifying.

We are currently assembling a professional promotional package for all interested parties, particularly sponsors, and welcome all expressions of support and interest.

We are also in discussions with marketing professionals with a view to maximising our promotional programmes for the future to embrace all communication channels, on and offline, nationally and internationally.



THE TIMES

The Sydney Morning Herald



The Team

Xtreme-Everest Expedition



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Co-Director, CASE Medicine
Senior Lecturer in Intensive Care
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Consultant Intensive Care
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Deputy Leader:

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Medical Officer:

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Research Leader:

Dr Hugh Montgomery
BSc MBBS MRCP MD

Director, Institute of Human
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Reader in Cardiovascular
Genetics, Consultant in Intensive
Care Medicine



Climbing Leader:

Dr Sundeep Dhillon
MA BM BCh MRCP DIMC DCH

GP with special interest in
pre-hospital emergency care and
wilderness medicine.

Member of the RGS Medical Cell.

In 1998 became the world's
youngest person to climb the
highest mountain on each
continent.

Project Everest



Project Director:

Professor Monty Mythen
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Portex Professor and Head of the
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Project Co-ordinator:

Helen Luery
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Head of Cardiopulmonary Exercise
Testing, Institute of Human Health
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Human Physiology at Extreme Altitude

The Centre for Aviation, Space and Extreme Environment Medicine (CASE)

Founded in 2000 as a 'Centre of Excellence' in research and teaching of the medicine and physiology of extreme environments, CASE is based within the Institute of Human Health and Performance at University College London (UCL).

UCL has a world-class reputation in the field of biomedicine, counting 18 Nobel Laureates amongst its graduates and alumni.

Xtreme Everest, CASE Medicine

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