

The Project	Project name	Pressure in the skull (intra-cranial pressure) and the optic nerve
	Project expedition	Hidden Valley 2008
	Aim of project	To assess the relationship between acute mountain sickness and measurements of the optic nerve using ultrasound
	Project funders	Self-funded, Medex
Project staff	Lead person	Dr Zoe Smith
	Assistants	Katherine Talbot, Dan Morris, Stephan Sanders, Jamie McDonald
	Institutes involved	Bangor University
Data collection	What you did to the subjects	Examined the back of their eyes at sea-level and again at 5050m using an ultrasound probe to assess the diameter of their optic nerve sheath (ONSD). Retinal photographs, altitude sickness scores, heart rate and oxygen saturations were also taken at both altitudes.
	What data you collected	Measures of optic nerve sheath diameter (ONSD), heart rate, oxygen saturation, AMS scores, and retinal photographs.
	What you did with the data afterwards	Anonymised, analysed and written up as part of an MSc thesis.
Photos	Attach 2 photos of research in action!	
	Photo captions	Examining the eyes at Pokhara and at Base Camp
	Who took the photos?	Pokhara – Chris Smith Base Camp – Rob (the Pole!)
The results	What did you find out? (positive & negative results)	Small but statistically significant increases in ONSD at high altitude and in those suffering with more severe hypoxia and AMS symptoms.
	How has this helped high altitude research?	Adds weight to the argument that raised intracranial pressure plays a role in AMS pathophysiology.
	How has this helped sea level medicine?	n/a
Sharing the results	What papers have been published	None but used as part of MSc thesis
	What conferences have been attended	British Medical Ultrasound Society (BMUS) Conference, Brighton 2010
	What books include information	None
The future	What plans do you have to use the data in the future	None
	What do you think should be researched next?	More subjects at serial altitudes. There is a role for ONSD measured using ultrasound in detecting raised intra-cranial pressure non-invasively. This is a feasible technique in a remote high-altitude setting and its use in a high altitude clinic could be evaluated.
	Any other comments / advice for others?	Changes observed in this study were small due to sensible acclimatisation profile. Differences may be more pronounced in poorly acclimatised subjects with higher AMS scores.