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# UBC MEDICINE

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MEDICAL TRAINING AT THE  
“BOUNDARIES OF THE WORLD”

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a place of mind

THE UNIVERSITY OF BRITISH COLUMBIA



# RESIDENT RESEARCHERS

Doug Brown ascending a peak in the Cascades.

Medical residents play two roles — they are physicians, caring for patients, and they are trainees, soaking up the vast amount of knowledge necessary to become expert practitioners in their chosen specialties. But they are often researchers, too. It may be optional, but for many, it's the natural outgrowth of the process of learning and treating, because it's another type of questioning. Here is a glimpse of some of the research undertaken by UBC's current crop of residents.

## 01 | It's worth the trip

When rescue workers reach a victim of hypothermia, they must often make an excruciating choice — transporting them to the nearest medical facility, or to an advanced medical facility that is farther away. Emergency Medicine resident **Doug Brown** has helped make that choice a bit easier.

In a study published in November in the *New England Journal of Medicine*, Dr. Brown and collaborators from Banff, Austria and Italy reviewed the medical literature and concluded that hypothermia

victims whose hearts have stopped functioning should be transported to a medical facility with advanced heart and lung support equipment, even if that means longer travel time.

Cardiopulmonary bypass (CPB) and extracorporeal membrane oxygenation (ECMO) remove carbon dioxide from, and add oxygen to, a patient's blood, while supporting their blood pressure until the heart is warm enough to pump again. Dr. Brown's review found that hypothermia victims in cardiac arrest have a 50 per cent chance of surviving if CPB or ECMO is used, compared to a

survival rate of 0 to 37 per cent when it isn't used.

"Appropriately equipped hospitals are more dispersed here in North America than in Europe, so transport times are longer," says Dr. Brown, an avid mountaineer who earned his M.D. from UBC, and is in his final year of post-graduate training in Emergency Medicine. "But our review shows that hypothermic patients can tolerate many hours of cardio-pulmonary resuscitation (CPR) and still have a good neurologic outcome. Transporting a patient to a hospital with advanced heart and lung

support increases the odds of surviving hypothermia-induced cardiac arrest so much, that it's worth the trip."

The research will help guide updates to the British Columbia Ambulance Service Treatment Guidelines, says **John M. Tallon**, the Vice President of Medical Programs for the B.C. Emergency and Health Services Commission. "These insights would be particularly helpful in optimizing patient outcomes in B.C., with our challenging geography and distances to critical care centres," he says.

## 02 | A better predictor for cardioversion therapy

Atrial fibrillation, a totally irregular rhythm, is an epidemic in Canada, with consequences that include stroke, heart failure and cognitive dysfunction. Cardioversion — a minor electrical shock to the heart — can potentially revert this arrhythmia back into a regular rhythm. But as many as half of