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DR BEAT WALPOTH

Home Is Where the Heart Is



Dr Beat Walpoth trained at the world's best hospitals and is known worldwide for his work on accidental hypothermia

Home Is Where the Heart Is

Interview with Dr Beat Walpoth

There are two ways to meet Dr Beat Walpoth, and one of them is infinitely more pleasant than the other: Over a glass of fine wine at the Palace, or when you've suffered "apparent death".

GSTAADLIFE sat down with Dr Walpoth – Gstaad regular, famous cardiac surgeon, and one of the world's foremost experts on accidental hypothermia – for a fascinating discussion on the personal and professional passions near and dear to his heart.

GL: How did you become interested in accidental hypothermia?

BW: As a fan of winter outdoor activities and a cardiac surgeon I became interested in accidental hypothermia whilst working at the Inselspital in Bern. I have been involved in innovations such as rescue, hospital treatment and research as well as the creation of the International Hypothermia Registry and the International Symposium on Accidental Hypothermia, which recently celebrated its fifth edition Interlaken.

GL: Are there different grades of accidental hypothermia?

BW: Yes. Mild hypothermia is when you

are shivering and the body temperature drops below 35°C, whereas 32°C to 28°C is known as moderate hypothermia. In this state, some of your bodily functions may already be altered. Your muscles and brain may slow, and this is already a dangerous state that requires hospitalisation.

Deep hypothermia is below 28°C and this means you may go into cardiac and respiratory arrest. We call this an "apparent death" yet we know that under optimal conditions some victims can be rewarmed and survive. Not only survive, but go on to lead normal, healthy lives. 13.7°C is the lowest known body temperature recorded where the victim recovered completely. There is a saying that "Nobody is dead until warm and dead".

GL: So how do you know when a person is actually dead?

BW: When we started to treat such hypothermia victims over 30 years ago we had to re-train the rescue teams, as they would declare a person dead if they had no vital signs. That was it! Historically, induced hypothermia and applying re-warming, using heart-lung machines, began in the 1960's and 70's. Patients were

cooled down to core temperatures around 20°C in order to perform complex cardiac surgical repairs in a state of deep hypothermic cardiac arrest, with good survival rates due to the fact that, at that temperature, the brain has a 10 times longer anoxic tolerance. In fact this technique is still used today for some very complicated procedures.

GL: Is Switzerland a leader in treating deep hypothermia?

BW: My former mentor, Professor Ulrich Althaus of the Inselspital, Bern, did the first rewarming of two patients with cardiac arrest and deep hypothermia with these heart-lung machines over 30 years ago. They both survived showing that this technology works. As a result I then conducted a Swiss multi-centre, long-term follow-up study of the 15 survivors of deep accidental hypothermia victims in cardiac arrest. They were rewarmed successfully using this method and we could show that all resumed a normal life. This resulted in a key paper published in the New England Journal of Medicine in 1997. Since then Switzerland has played a leading role in accidental hypothermia treatment and research.

Although 'Come up, slow down' would be a goal for the future, I'm still involved professionally in research and development world.

Dr Beat Walpoth

GL: What about avalanches?

BW: When an avalanche occurs in powder snow, you might be asphyxiated in just a few minutes before your body has a chance to cool down significantly, which means brain death and no chance at later survival. However, if you're lucky enough to have an air pocket under the snow you will have no asphyxia but almost certainly become hypothermic and thus a chance of survival.

GL: Do most cases of hypothermia occur in skiing accidents?

BW: There are several different situations in which hypothermia could occur ranging from sports activities such as skiing and mountaineering in the winter, sailing and water sports in cold water, to professionals working in cold environments. Not forgetting the urban hypothermia seen mainly in homeless people as well as suicide attempts.

GL: Tell me about your efforts to document hypothermia cases worldwide.

BW: I created the International Hypothermia Registry because cases are rare and under-reported; about 20–30 such cases are treated in Switzerland yearly for moderate or deep hypothermia. It's important to gather a database of these cases which we can study to find clues as to prognostic factors for treatment and recovery. Hypothermic treatment is very costly and labour intensive so the more we know about prognostic factors, and whether or not treatment will be beneficial, the better. There are over 75 hospitals on all continents that currently participate in the Registry.

GL: Have you found a prognostic factor thus far?

BW: Yes, so far a blood sample to test the level of potassium is accepted worldwide. High potassium levels reflect cell death, so if the victim's level is very high, over 12 for example (a normal potassium level being 3–5) the rescue and hospital teams will not pursue resuscitation.

GL: What is your connection to the Saanenland?

BW: I've been coming to Gstaad all my life. I grew up in Paris and Zurich and we have a family chalet on the Oberbort where we spend holidays and even to this day it's the place my children consider home, the only place where we all manage to get together for extended periods as a family.

GL: How do you spend your time here?

BW: I'm an avid skier and member of the Eagle Ski Club. My mother was an Olympic skier and taught me to ski on these very slopes. Gstaad is not the biggest skiing resort in Switzerland, but it's one of the nicest. Even now, when I come up to the Saanenland, I feel like I'm living in a fairy tale.

GL: Did your skiing progress to champion levels like your mother?

BW: I am a member of the Swiss Academic Ski Club, and in their student team won several championships. I've also raced with the Eagle Ski Team which hosts some terrific races, especially the Triangular Race, which took place in Gstaad as well as St. Moritz and Cortina in which I have participated for over 40 years.

GL: There's a photo of you as a young boy in the new book Come up, touch down about the airport, is that correct?

BW: Yes, I'm a pilot and have been associated with the airport here for a long time. I'm a member of the Fluggruppe Saanenland. It's a real treat for

the Saanenland to have an international airport. For me, flying from time to time here in the mountains is a wonderful experience. The smaller the airplane, the more fun it is to fly. My great uncle, a pioneer pilot of Eastern Airlines said, 'Fly low, fly slow' and I think that would be a great slogan for the region!

GL: Any other summer sports?

BW: I'm a big fan of sailing and have participated in the World Championship for Finn dinghies, the Olympic single-handed boats. Nowadays my sailing activities consist of cruising and participating in the Ski Yachting of the Gstaad Yacht Club.

GL: Where did you begin your medical career?

BW: I attended medical school in Zurich, then practiced at Harvard and later at Stanford, and was lucky enough to train with the world's top cardiac surgeons including Dr Norman Shumway for cardiac transplant. I was also in California with the team that transplanted Baby Fay, the baby who received a baboon heart while waiting for a human heart.

GL: Are you currently affiliated with any hospital?

BW: Although once retired, I continued to head cardiovascular research at Geneva University Hospital until recently and I am still teaching at the University of Verona. I also have other projects, like the development of artificial organs, specifically novel, biodegradable arteries, which I started many years ago when I was the President of the European Society for Artificial Organs.

GL: You've said you'll begin to slow down this year. What are your plans?

BW: Although 'Come up, slow down' would be a goal for the future, I'm still involved professionally in research and development as well as speaking at medical conferences around the world. The progress in medicine over the last years is so fascinating that I remain involved and hope that improvements in the field of artificial organs or the treatment of hypothermia can benefit many patients in the future.