

## Curriculum Vitae

Hermann Brugger MD, nato a Brunico/Bolzano/Italia, il 30 dicembre 1951; sposato con la pittrice diplomata Elfriede Gangl; figli: Franz e Johanna. 1972 – 1978 corso di laurea in medicina e conferimento di laurea presso l'Università di Vienna/Austria. 1979 – 1983 Medico di turno presso l'ospedale «Barmherzige Schwestern» a Lienz e Ried im Innkreis, Austria. Dal 1983 medico di medicina generale per il servizio sanitario nazionale a Brunico/Italia, medico d'emergenza e medico del soccorso alpino. 1992 *Premio «Eduard Wallnöfer», Società degli Industriali Tirolesi, Austria*; 1995 *Premio «Georg Grabner», Università di Vienna, Austria*; 2012 «Research Award», *Wilderness Medical Society, USA*; 2016 «Paul Auerbach Award», *Wilderness Medical Society, USA*; 1999 - 2005 Membro del consiglio direttivo della *Società Italiana di Medicina di Montagna SIMeM*; 2001 – 2009 Membro del consiglio direttivo della *Medical Commission of the Union Internationale des Associations d'Alpinisme UIAA MEDCOM*; 2011 – 2009 Presidente della *International Commission for Mountain Emergency Medicine ICAR MEDCOM*; dal 1991 membro della *International Commission for Mountain Emergency Medicine ICAR MEDCOM*; dal 1991 membro del consiglio direttivo della *International Society of Mountain Medicine ISMM*; dal 2016 presidente della *International Society of Mountain Medicine ISMM*. Dal 2001 editore associato di *High Altitude Medicine & Biology*. Dal 1999 guest lecturer presso diverse università. 2006 Abilitazione presso l'*Università Medica di Innsbruck, Austria* e dal 2006 professore associato presso l'*Università Medica di Innsbruck, Austria*. 2009 Fondazione dell'Istituto per la medicina d'emergenza in montagna di Eurac Research, Bolzano/Italia e dall' stesso anno direttore d'istituto. Autore di circa 180 articoli scientifici e 60 capitoli di libri di medicina in montagna e medicina d'emergenza. Cumulative IF [17-03-19]: 648.1. Appassionato di montagna e di scialpinismo. Numerose escursioni in America, Europa e Asia.



Hermann Brugger

17 marzo 2017

## **Selected peer reviewed articles 2011-to date**

### **2017**

Kottmann A, Blancher M, Pasquier M, Brugger H. Avalanche Victim Resuscitation Checklist adaption to the 2015 ERC Resuscitation guidelines. *Resuscitation* 2017, <http://dx.doi.org/doi:10.1016/j.resuscitation.2017.01.008>

### **2016**

Braun P, Putzer G, Strapazzon G, Wimmer A, Schnell H, Arnold H, Neururer S, Brugger H, Wenzel V, Paal P. Effects of Stomach Inflation on Cardiopulmonary Function and Survival During Hemorrhagic Shock- a randomized, controlled, porcine study. *Shock* 2016, in press

Putzer G, Braun P, Strapazzon G, Toferer M, Mulino M, Glodny B, Falk M, Brugger H, Paal P, Helbok R, Mair P. Monitoring of brain oxygenation during hypothermic CPR - A prospective porcine study. *Resuscitation*. 2016 Apr 16;104:1-5. doi: 10.1016/j.resuscitation.2016.03.02

Strapazzon G, Plankensteiner J, Mair P, Ruttman E, Dal Cappello T, Procter E, Brugger H. Prehospital management and outcome of avalanche patients with out-of-hospital cardiac arrest: a retrospective study in Tyrol, Austria. *Eur J Emerg Med*. 2016 Mar 17. [Epub ahead of print]

Grasegger K, Strapazzon G, Procter E, Brugger H, Soteras I. Avalanche Survival After Rescue With the RECCO Rescue System: A Case Report. *Wilderness Environ Med* 2016 doi:10.1016/j.wem.2016.02.004

Strapazzon G, Falk M, Paal P, Brugger H. The challenge of establishing a correct serum potassium cutoff for in-hospital triage after avalanche-induced cardiac arrest. *Am J Emerg Med*. 2016 Apr 30. pii: S0735-6757(16)30090-0. doi: 10.1016/j.ajem.2016.04.040.

Procter E, Strapazzon G, Dal Cappello T, Zweifel B, Würtele A, Renner A, Falk M, Brugger H. Burial duration, depth and air pocket explain avalanche survival patterns in Austria and Switzerland. *Resuscitation* 2016;105:173-176.

Strapazzon G, Malacrida S, Vezzoli A, Dal Cappello T, Falla M, Lochner P, Moretti S, Procter E, Brugger H, Mrakic-Sposta S. Oxidative stress response to acute hypobaric hypoxia and its association with indirect measurement of increased intracranial pressure: a field study. *Scientific reports* 2016;6:32426. DOI: 10.1038/srep32426

Ausserer J, Moritz E, Stroehle M, Brugger H, Strapazzon G, Rauch S, Mair P, Bonsante F, Brandstätter M, Dal Cappello T, Drüge G, Falk M, Fop E, Frasnelli A, Gasteiger L, Gruber E, Hofer G, Lunz W, Palma M, Ploner F, Rammlmair G, Trincanato A, Turner R, Zanon P, Voelckel W, Dengg C, Kettner M. Physician staffed helicopter emergency medical systems can provide advanced trauma life support in mountainous and remote areas. *Injury* 2016;in press

Paal P, Gordon L, Strapazzon G, Brodmann Maeder M, Putzer G, Walpoth B, Wanscher M, Brown D, Holzer M, Broessner G, Brugger H. Accidental hypothermia—an update. *Scand J Trauma Resusc Emerg Med* 2016;24:111. DOI: 10.1186/s13049-016-0303-7

Grasegger K, Strapazzon G, Procter E, Brugger H, Soteras I. Avalanche Survival After Rescue With the RECCO Rescue System: A Case Report. *Wilderness Environ Med* 2016 doi:10.1016/j.wem.2016.02.004

Paal P, Gordon L, Strapazzon G, Brodmann Maeder M, Putzer G, Walpoth B, Wanscher M, Brown D, Holzer M, Broessner G, Brugger H. Accidental hypothermia—an update. *Scand J Trauma Resusc Emerg Med* 2016;24:111. DOI: 10.1186/s13049-016-0303-7

Strapazzon G, Falk M, Paal P, Brugger H. The challenge of establishing a correct serum potassium cutoff for in-hospital triage after avalanche-induced cardiac arrest. *Am J Emerg Med*. 2016 Apr 30. pii: S0735-6757(16)30090-0. doi: 10.1016/j.ajem.2016.04.040.

Brugger H, Grasegger K, Soteras I, Strapazzon G. In Reply to Drs Pasquier, Gnaegi, and Hugli. *Wilderness Environ Med*. 2016 Nov 2. pii: S1080-6032(16)30222-8. doi: 10.1016/j.wem.2016.09.006.

## 2015

Gordon L, Paal P, Ellerton J, Brugger H, Peek G, Zafren K. Delayed and intermittent CPR for severe accidental hypothermia. *Resuscitation* 2015;90:46–9.

Kottmann A, Blancher M, Spichiger T, Elsensohn F, Létang D, Boyd J, Strapazzon G, Ellerton J, Brugger H. The Avalanche Victim Resuscitation Checklist, a new concept for the management of avalanche victims. *Resuscitation*. *Resuscitation* 2015;91:e7-8.

Strapazzon G, Vezzano R, Hofer G, Dal Cappello T, Procter E, Balkenhol K, Platzgummer S, Brugger H. Factors associated with B-lines after exposure to hypobaric hypoxia. *Eur Heart J Cardiovasc Imaging*. 2015 Apr 6. pii: jev074. [Epub ahead of print]

Brigo F, Strapazzon G, Otte WM, Igwe SC, Brugger H. Web search behavior for snow avalanches: an Italian study. *Nat hazards* DOI 10.1007/s11069-015-1961-x

Strapazzon G, Procter E, Putzer G, Avancini G, Dal Cappello T, Überbacher N, Hofer G, Rainer B, Rammimair G, Brugger H. Influence of low ambient temperature on tympanic temperature measurement: a prospective randomized clinical study. *Scand J Trauma Resusc Emerg Med* 2015;23:90.

Travers AH, Perkins GD, Berg RA, Castren M, Considine J, Escalante R, Gazmuri RJ, Koster RW, Lim SH, Nation KJ, Olasveengen TM, Sakamoto T, Sayre MR, Sierra A, Smyth MA, Stanton D, Vaillancourt C, Bierens JJ, Bourdon E, Brugger H, Buick JE, Charette ML, Chung SP, Couper K, Daya MR, Drennan IR, Gräsner JT, Idris AH, Lerner EB, Lockhat H, Løfgren B, McQueen C, Monsieurs KG, Mpotos N, Orkin AM, Quan L, Raffay V, Reynolds JC, Ristagno G, Scapigliati A, Vadeboncoeur TF, Wenzel V, Yeung J. Part 3: Adult Basic Life Support and Automated External Defibrillation: 2015 International Consensus on Cardiopulmonary Resuscitation and Emergency Cardiovascular Care Science With Treatment Recommendations. *Circulation*. 2015 Oct 20;132(16 Suppl 1):S51-83.

Perkins GD, Travers AH, Berg RA, Castren M, Considine J, Escalante R, Gazmuri RJ, Koster RW, Lim SH, Nation KJ, Olasveengen TM, Sakamoto T, Sayre MR, Sierra A, Smyth MA, Stanton D, Vaillancourt C, Bierens JJ, Bourdon E, Brugger H, Buick JE, Charette ML, Chung SP, Couper K, Daya MR, Drennan IR, Gräsner JT, Idris AH, Lerner EB, Lockhat H, Løfgren B, McQueen C, Monsieurs KG, Mpotos N, Orkin AM, Quan L, Raffay V, Reynolds JC, Ristagno G, Scapigliati A, Vadeboncoeur TF, Wenzel V, Yeung J. Part 3: Adult basic life support and automated external defibrillation: 2015 International Consensus on Cardiopulmonary Resuscitation and Emergency Cardiovascular Care Science with Treatment Recommendations. *Resuscitation*. 2015 Oct;95:e43-e69. doi: 10.1016/j.resuscitation.2015.07.041. Epub 2015 Oct 15.

Truhlář A, Deakin CD, Soar J, Khalifa GE, Alfonzo A, Bierens JJ, Brattebø G, Brugger H, Dunning J, Hunyadi-Antičević S, Koster RW, Lockey DJ, Lott C, Paal P, Perkins GD, Sandroni C, Thies KC, Zideman DA, Nolan JP, Barelli A, Böttiger BW, Georgiou M, Handley AJ, Lindner T, Midwinter MJ, Monsieurs KG, Wetsch WA. European Resuscitation Council Guidelines for Resuscitation 2015: Section 4. Cardiac arrest in special circumstances. *Resuscitation*. 2015 Oct;95:148-201. doi: 10.1016/j.resuscitation.2015.07.017. Epub 2015 Oct 15. Monsieurs KG, Nolan JP, Bossaert LL, Greif R, Maconochie IK, Nikolaou NI, Perkins GD, Soar J, Truhlář A, Wyllie J, Zideman DA, Khalifa GE, Alfonzo A, Arntz HR, Askitopoulou H, Bellou A, Beygui F, Biarent D, Bingham R, Bierens JJ, Böttiger BW, Bossaert LL, Brattebø G, Brugger H, Bruinenberg J, Cariou A, Carli P, Cassan P, Castrén M, Chalkias AF, Conaghan P, Deakin CD, De Buck ED, Dunning J, De Vries W, Evans TR, Eich C, Gräsner JT, Greif R, Hafner CM, Handley AJ, Haywood KL, Hunyadi-Antičević S, Koster RW, Lippert A, Lockey DJ, Lockey

AS, López-Herce J, Lott C, Maconochie IK, Mentzelopoulos SD, Meyran D, Monsieurs KG, Nikolaou NI, Nolan JP, Olasveengen T, Paal P, Pellis T, Perkins GD, Rajka T, Raffay VI, Ristagno G, Rodríguez-Núñez A, Roeher CC, Rüdiger M, Sandroni C, Schunder-Tatzber S, Singletary EM, Skrifvars MB, Smith GB, Smyth MA, Soar J, Thies KC, Trevisanuto D, Truhlar A, Vandekerckhove PG, de Voorde PV, Sunde K, Urlesberger B, Wenzel V, Wyllie J, Xanthos TT, Zideman DA. European Resuscitation Council Guidelines for Resuscitation 2015: Section 1. Executive summary. *Resuscitation*. 2015 Oct;95:1-80. doi: 10.1016/j.resuscitation.2015.07.038. Epub 2015 Oct 15.

Truhlar A, Deakin CD, Soar J, Khalifa GE, Alfonso A, Bierens JJ, Brattebø G, Brugger H, Dunning J, Hunyadi-Antičević S, Koster RW, Lockey DJ, Lott C, Paal P, Perkins GD, Sandroni C, Thies KC, Zideman DA, Nolan JP. Kreislaufstillstand in besonderen Situationen. Kapitel 4 der Leitlinien zur Reanimation 2015 des European Resuscitation Council. *Notfall Rettungsmed* 2015 DOI 10.1007/s10049-015-0096-7.

Rauch S, Schenk K, Paal P, Strapazzon G, Brugger H. Lawinenmedizin - Update 2015: neue Erkenntnisse verlangen neue Strategien. *Der Notarzt* 2015;31:301-5

Brugger H, Procter E, Rauch S, Strapazzon G. Cooling rate for triage decisions should exclude post-extrication cooling in avalanche victims. *Resuscitation* 2015;94:e3 Oberhammer R, Gruber E, Brugger H, Strapazzon G, Procter E. Safety of laryngeal tubes. *Am J Emerg Med* 2015 <http://dx.doi.org/10.1016/j.ajem.2015.10.048>

## 2014

Procter E, Strapazzon G, Dal Cappello T, Castliger L, Staffler HP, Brugger H. Adherence of backcountry winter recreationists to avalanche prevention and safety practices in northern Italy. *Scand J Med Sci Sports* 2014;24/5:823-9

Gruber E, Oberhammer E, Balkenhol K, Strapazzon G, Procter E, Brugger H, Falk M, Paal P. Basic life support trained nurses ventilate more efficiently with laryngeal mask supreme than with facemask or laryngeal tube suction-disposable—A prospective, randomized clinical trial. *Resuscitation* 2014;85:499-502.

Strapazzon G, Brugger H, Dal Cappello T, Procter E, Hofer G, Lochner P. Factors associated with optic nerve sheath diameter during exposure to hypobaric hypoxia. *Neurology* 2014 Apr 30. [Epub ahead of print]

Haegeli P, Falk M, Procter E, Zweifel B, Jarry F, Logan S, Kronholm K, Biskupič M, Brugger H. The effectiveness of avalanche airbags. *Resuscitation*, 85(9), 1197-1203. doi: 10.1016/j.resuscitation.2014.05.025.

Procter E, Strapazzon G, Balkenhol K, Fop E, Faggionato A, Mayr K, Falk M, Brugger H. Search and Rescue Response to a Large-Scale Rockfall Disaster. *Wilderness Environ Med* 2014 doi: 10.1016/j.wem.2014.07.007

Mair P, Brugger H, Mair B, Moroder L, Ruttmann E. Is extracorporeal rewarming indicated in avalanche victims with unwitnessed hypothermic cardiorespiratory arrest? *High Alt Med Biol* 2014;15/4:500-3.

Thapa GB, Neupane M, Strapazzon G, Basnyat B, Elenshoh F, Brodmann Maeder M, Brugger H. Nepalese Mountain Rescue Development Project. *High Alt Med Biol* 2014;15/1:91-92

Strapazzon G, Procter E, Paal P, Brugger H. Pre-Hospital Core Temperature Measurement in Accidental and Therapeutic Hypothermia. *High Alt Med Biol* 2014;15/2:104-111 Schmidt A, Brugger H, Putzer G, Paal P. Akzidentelle Hypothermie. *Wien klin Mag* 2014 doi 10.1007/s00740-014-0005-6.

Ströhle M, Paal P, Strapazzon G, Avancini G, Procter E, Brugger H. Defibrillation in rural areas. *Am J Emerg Med* 2014, 32:1408–12.

Zafren K, Giesbrecht GG, Danzl DF, Brugger H, Sagalyn EB, Walpoth B, Weiss EA, Auerbach PS, McIntosh SE, Némethy M, McDevitt M, Dow J, Schoene RB, Rodway GW, Hackett PH, Bennett BL, Grissom CK. Wilderness Medical Society Practice Guidelines for the Out-of-Hospital Evaluation and Treatment of Accidental Hypothermia. *Wilderness Environ Med* 2014 doi: 10.1016/j.wem.2014.09.002.

Putzer G, Brugger H, Strapazzon G, Paal P. Does a higher ROSC-rate with mechanical CPR lead to better survival in helicopter rescue? *Resuscitation* 2014 Jan;85(1):e13

Thapa GB, Neupane M, Strapazzon G, Basnyat B, Elsensohn F, Brodmann Maeder M, Brugger H. Nepalese mountain rescue development project. *High Alt Med Biol* 2014;15/1:91-92

Gruber E, Beikircher W, Pizzinini R, Marsoner H, Brugger H, Paal P. Non-extracorporeal rewarming at a rate of 6.8°C per hour in a deeply hypothermic arrested patient. *Resuscitation* 2014;85:e119-20

## 2013

Boyd J, Paal P, Brugger H, Brown DJ. Hypothermic cardiac arrest; is a serum potassium of 6 mEq/L a satisfactory cutoff for extracorporeal rewarming? *J Pediatr Surg* 2013, in press

Brugger H, Durrer B, Elsensohn F, Paal P, Strapazzon G, Winterberger E, Zafren K, Boyd J. Resuscitation of avalanche victims: Evidence-based guidelines of the international commission for mountain emergency medicine (ICAR MEDCOM) intended for physicians and other advanced life support personnel. *Resuscitation* 2013;84:239–243

Paal P, Brugger H, Boyd J. Accidental hypothermia. *Letter New Engl J Med* 2013;368(7):682

Paal P, Brugger H, Kaser G, Putzer G, Tiefenthaler W, Wenzel V. Surviving Six Days in a Crevasse. *Lancet* 2013;381(9865):506

Putzer G, Braun P, Zimmermann A, Pedross F, Strapazzon G, Brugger H, Paal P. LUCAS compared to manual chest compressions are more effective during simulated CPR in helicopter rescue - a prospective, randomized, cross-over manikin study. *Am J Emerg Med* 2013, in press

## 2012

Brown D, Brugger H, Boyd J, Paal P. Accidental hypothermia. *New Engl J Med* 2012;367:1930-1938

Brugger H, Durrer B, Elsensohn F, Paal P, Strapazzon G, Winterberger E, Zafren K, Boyd J. Resuscitation of avalanche victims: Evidence-based guidelines of the international commission for mountain emergency medicine (ICAR MEDCOM) intended for physicians and other advanced life support personnel. *Resuscitation* doi.org/10.1016/j.resuscitation.2012.10.020

Koppenberg J, Brugger H, Esslinger A, Albrecht R. Lebensrettender luftgestützter Lawineneinsatz bei Nacht im hochalpinen Gelände. *Der Anaesthetist* 2012 DOI 10.1007/s00101-012-2082-5

Mitterlechner T, Pircher I, Brugger H, Gruber E, Baur T, Strasak AM, Wenzel V, Herff H, Paal P. Mobile phone-assisted basic life support augmented with a metronome. *J Emerg Med* 2012 Sep;43(3):472-7

Paal P, Putzer G, Gruber E, Brugger H. Basic life support – becoming more complex. *Resuscitation* 2012;83:e23

Paal P, Strapazzon G, Braun P, Ellmauer PP, Schroeder DC, Sumann G, Werner A, Wenzel V, Falk M, Brugger H. Factors affecting survival from avalanche burial-a randomized prospective porcine pilot study. *Resuscitation* doi: 10.1016/j.resuscitation.2012.06.019

Pasquier M, Zen Ruffinen G, Brugger H, Paal P. Pre-hospital wrist block for digital frostbite injuries. *High Alt Med Biol* 2012;13/1:65-66

Strapazzon G, Beikircher W, Procter E, Brugger H. Electrical heart activity recorded during prolonged avalanche burial. *Circulation* 2012 Jan 31;125(4):646-7

Strapazzon G, Nardin M, Zanon P, Kaufmann M, Kritzing M, Brugger H. Respiratory Failure and Spontaneous Hypoglycemia During Non-invasive Rewarming From 24.7°C (76.5°F) Core Body Temperature After Prolonged Avalanche Burial. *Ann Emerg Med* 2012;60/2:193-196

Sumann G, Putzer G, Brugger H, Paal P. Pulmonary edema after complete avalanche burial. *High Alt Med Biol* 2012;13/4:295-296

## **2011**

Brugger H, Paal P, Boyd J. Prehospital resuscitation of the buried avalanche victim. *High Alt Med Biol* 2011;12/3:199-205

Elsensohn F, Soteras I, Reisten O, Ellerton J, Brugger H, Paal P. Equipment of Medical Backpacks in Mountain Rescue. *High Alt Med Biol* 2011;12/4:343-347

Haegeli P, Falk M, Brugger H, Etter HJ, Boyd J. Comparison of avalanche survival patterns in Canada and Switzerland. *CMAJ* 2011;183(7):789-795

Strapazzon G, Ponchia A, Ellerton J, Brugger H. Risk assessment and emergency management of coronary heart disease at altitude. *High Alt Med Biol* 2011;12(1):97-98

Strapazzon G, Procter E, Brugger H. Quest for evidence based practice in mountain emergency medicine. *High Alt Med Biol* 2011;12/4:399-400