

Dan Stieper Karbing  
Associate Professor  
Department of Health Science and Technology  
The Faculty of Medicine  
Respiratory and Critical Care  
Respiratory and Critical Care  
AI for the People  
**Type of address: Visiting address.**  
Selma Lagerløfs Vej 249  
12-03-051  
9260  
Gistrup  
Denmark  
**Email:** dank@hst.aau.dk  
**Phone:** +4599407458



## Employment

### Associate Professor

Associate Professor  
Department of Health Science and Technology  
The Faculty of Medicine  
Gistrup, Denmark  
15 Aug 2009 → 31 Dec 4712

### Associate Professor

Associate Professor  
The Faculty of Medicine  
Gistrup, Denmark  
15 Aug 2009 → 31 Dec 4712

### Respiratory and Critical Care

The Faculty of Medicine  
Gistrup, Denmark  
1 Jan 2020 → present

### Associate Professor

Associate Professor  
Respiratory and Critical Care  
The Faculty of Medicine  
Gistrup, Denmark  
15 Aug 2009 → 31 Dec 4712

### AI for the People

The Technical Faculty of IT and Design  
Aalborg, Denmark  
1 Nov 2019 → present

## Research outputs

### Intraoperative Ventilation/Perfusion Mismatch and Postoperative Pulmonary Complications after Major non-cardiac surgery: a prospective cohort study

Scaramuzzo, G., Stieper Karbing, D., Ball, L., Vigolo, F., Frizziero, M., Scomparin, F., Ragazzi, R., Verri, M., Rees, S. E., Volta, C. A. & Spadaro, S., 1 Oct 2024, In: Anesthesiology. 141, 4, p. 693-706 14 p.

### **A Prospective, Longitudinal Study Evaluating the Efficacy of an Automated Secretion Removal Technology**

Sinnige, J. S., Karbing, D. S., Valk, C. M. A., Schultz, M. J., Rees, S. E. & Paulus, F., 1 Aug 2024, In: *Respiratory Care*. 69, 8, p. 931-936 6 p.

### **Clinical practice, decision-making, and use of clinical decision support systems in invasive mechanical ventilation: a narrative review**

Murali, M., Ni, M., Karbing, D. S., Rees, S. E., Komorowski, M., Marshall, D., Ramnarayan, P. & Patel, B. V., Jul 2024, In: *British Journal of Anaesthesia*. 133, 1, p. 164-177 14 p.

### **Hypoxia in the pulmonary vein increases pulmonary vascular resistance independently of oxygen in the pulmonary artery**

Magnusdottir, S. O., Simonsen, C., Karbing, D. S., Rasmussen, B. S. & Kjaergaard, B., Apr 2024, In: *Animal models and experimental medicine*. 7, 2, p. 156-165 10 p.

### **Four Different Models for Simulation-based Training of Bronchoscopic Procedures**

Kronborg, S. H., Arshad, A., Karbing, D. S. & Lundgaard, A. C., 20 Jan 2024.

### **Four different models for simulation-based training of bronchoscopic procedures**

Kronborg, S. H., Karbing, D. S., Arshad, A. & Lundgaard, A. C., 9 Jan 2024, In: *BMC Pulmonary Medicine*. 24, 1, 23.

### **Efficacy of an automated secretion removal technology at different inspiratory pressures**

Nielsen, A. H., Karbing, D. S., Sølling, C. G., Winding, R. R., Rees, S. E. & Dey, N., Nov 2023, In: *Respiratory Care*. 68, 11, p. 1502-1509 8 p.

### **Effect of expiratory flow limitation on ventilation/perfusion mismatch and perioperative lung function during pneumoperitoneum and Trendelenburg position**

Fogagnolo, A., Spadaro, S., Karbing, D. S., Scaramuzzo, G., Mari, M., Guirriani, S., Ragazzi, R., Al-Husinat, L., Greco, P., Rees, S. E. & Volta, C. A., Sept 2023, In: *Minerva Anestesiologica*. 89, 9, p. 733-743 11 p.

### **The metabolic cost of inspiratory muscle training in mechanically ventilated patients in critical care**

Jenkins, T. O., MacBean, V., Poulsen, M. K., Karbing, D. S., Rees, S. E., Patel, B. V. & Polkey, M. I., 7 Jul 2023, In: *Intensive Care Medicine Experimental*. 11, 1, 41.

### **Inspiratory pressure waveform influences time to failure, respiratory muscle fatigue, and metabolism during resistive breathing**

Poulsen, M. K., Rees, S. E., Hansen, J., Stevenson, A. J. T., Kjærgaard, S. C., Volta, C. A., Spadaro, S. & Karbing, D. S., 5 May 2023, In: *Physiological Reports*. 11, 9, e15668.

### **Heterogeneity of Ventilation/Perfusion Mismatch at Different Levels of PEEP and in Respiratory Mechanics Phenotypes of COVID-19 ARDS**

Scaramuzzo, G., Karbing, D. S., Fogagnolo, A., Mauri, T., Spinelli, E., Mari, M., Turrini, C., Montanaro, F., Volta, C. A., Rees, S. E. & Spadaro, S., 1 Feb 2023, In: *Respiratory Care*. 68, 2, p. 188-198 11 p.

### **Computer clinical decision support that automates personalized clinical care: a challenging but needed healthcare delivery strategy**

Morris, A. H., Horvat, C., Stagg, B., Grainger, D. W., Lanspa, M., Orme, J., Clemmer, T. P., Weaver, L. K., Thomas, F. O., Grissom, C. K., Hirshberg, E., East, T. D., Wallace, C. J., Young, M. P., Sittig, D. F., Suchyta, M., Pearl, J. E., Pesenti, A., Bombino, M. & Beck, E. & 50 others, Sward, K. A., Weir, C., Phansalkar, S., Bernard, G. R., Thompson, B. T., Brower, R., Truwit, J., Steingrub, J., Hiten, R. D., Willson, D. F., Zimmerman, J. J., Nadkarni, V., Randolph, A. G., Curley, M. A. Q., Newth, C. J. L., Lacroix, J., Agus, M. S. D., Lee, K. H., deBoisblanc, B. P., Moore, F. A., Evans, R. S., Sorenson, D. K., Wong, A., Boland, M. V., Dere, W. H., Crandall, A., Facelli, J., Huff, S. M., Haug, P. J., Pielmeier, U., Rees, S. E., Karbing, D. S., Andreassen, S., Fan, E., Goldring, R. M., Berger, K. I., Oppenheimer, B. W., Ely, E. W., Pickering, B. W., Schoenfeld, D. A., Tocino, I., Gonnering, R. S., Pronovost, P. J., Savitz, L. A., Dreyfuss, D., Slutsky, A. S., Crapo, J. D., Pinsky, M. R., James, B. & Berwick, D. M., 13 Dec 2022, In: *Journal of the American Medical Informatics Association*. 30, 1, p. 178-194 17 p.

**In Vivo Evaluation of a New Endotracheal Tube Cuff Controller Promoting Tracheal Secretion Clearance: Preliminary Results**

Vivona, L., Zanella, A., Rees, S. E., Karbing, D. S., Bellotti, M., Florio, G., Sodi, F., Caddeo, G., Panigada, M., Pesenti, A. & Grasselli, G., Oct 2022, In: *Respiratory Care*. 67, Suppl. 10, 3776321.

**Inspiratory pressure pattern affects respiratory muscle fatigue during resistive breathing**

Poulsen, M., Hansen, J., Rees, S., Stevenson, A., Kjærgaard, S., Volta, C., Spadaro, S. & Karbing, D., Jun 2022, In: *Chest*. 161, Suppl. 6, p. 491A

**What is new in respiratory monitoring?**

Karbing, D. S., Leonhardt, S., Perchiuzzi, G. & Bates, J. H. T., Jun 2022, In: *Journal of Clinical Monitoring and Computing*. 36, 3, p. 599-607 9 p.

**Appropriate ventilator settings for the TrachFlush automated tracheal secretion removal technology: preliminary results**

Karbing, D. S., Dey, N., Sølling, C. G., Nielsen, A. H., Rees, S. E. & Winding, R., 1 Mar 2022, In: *Critical Care*. 26, Suppl. 1, p. 59-60 P150.

**Efficacy and safety of TrachFlush artificial cough maneuver for fluid removal in simulated breathing**

Karbing, D. S., Zanella, A. & Rees, S. E., 1 Mar 2022, In: *Critical Care*. 26, Suppl. 1, p. 59 1 p., P149.

**Transparent decision support for mechanical ventilation using visualization of clinical preferences**

Rees, S. E., Spadaro, S., Dalla Corte, F., Dey, N., Brohus, J. B., Scaramuzzo, G., Lodahl, D., Winding, R. R., Volta, C. A. & Karbing, D. S., 24 Jan 2022, In: *BioMedical Engineering Online*. 21, 1, 5.

**Decision support system to evaluate ventilation in the acute respiratory distress syndrome (DeVENT study)—trial protocol**

Patel, B., Mumby, S., Johnson, N., Falaschetti, E., Hansen, J., Adcock, I., McAuley, D., Takata, M., Karbing, D. S., Jabaudon, M., Schellengowski, P., Rees, S. E. & DeVENT study group, 17 Jan 2022, In: *Trials*. 23, 1, 47.

**A Chest-Mounted Accelerometer for Estimation of Cardiorespiratory Fitness**

Schmidt, S. E., Hansen, M. T., Sørensen, K., Rømer, T., Gliemann, L., Karbing, D. S., Poulsen, M. K., Helge, J. W. & Søgaard, P., 2022, In: *Cardiovascular Digital Health Journal*. 3, 4, Suppl., p. S21-S22

**Effects of oxygen availability on microvascular responsiveness in human tibialis anterior muscle**

Franch, J., Thomsen, L. P., Rokkedal-Lausch, T., Poulsen, M. K., Karbing, D. S. & Larsen, R. G., 2022, In: *Acta Physiologica*. 236, Suppl. 725, p. 89-90

**Analyse af relativ alderseffekt i dansk børnefødbold (U3-U12) Anno 2020**

Raaby, K., Karbing, D. S. & Rossing, N. N., 15 Nov 2021, 20 p.

**Enabling a learning healthcare system with automated computer protocols that produce replicable and personalized clinician actions**

Morris, A. H., Stagg, B., Lanspa, M., Orme, J., Clemmer, T. P., Weaver, L. K., Thomas, F., Grissom, C. K., Hirshberg, E., East, T. D., Wallace, C. J., Young, M. P., Sittig, D. F., Pesenti, A., Bombino, M., Beck, E., Sward, K. A., Weir, C., Phansalkar, S. S. & Bernard, G. R. & 48 others, Taylor Thompson, B., Brower, R., Truwit, J. D., Steingrub, J., Duncan Hite, R., Willson, D. F., Zimmerman, J. J., Nadkarni, V. M., Randolph, A., Curley, M. A. Q., Newth, C. J. L., Lacroix, J., Agus, M. S. D., Lee, K. H., deBoisblanc, B. P., Scott Evans, R., Sorenson, D. K., Wong, A., Boland, M. V., Grainger, D. W., Dere, W. H., Crandall, A. S., Facelli, J. C., Huff, S. M., Haug, P. J., Pielmeier, U., Rees, S. E., Karbing, D. S., Andreassen, S., Fan, E., Goldring, R., I Berger, K., W Oppenheimer, B., Ely, E. W., Gajic, O., Pickering, B., A Schoenfeld, D., Tocino, I., S Gonnering, R., J Pronovost, P., A Savitz, L., Dreyfuss, D., S Slutsky, A., D Crapo, J., Angus, D., R Pinsky, M., James, B. & Berwick, D., 12 Jun 2021, In: *Journal of the American Medical Informatics Association*. 28, 6, p. 1330-1344 15 p.

**Multiple-day high-dose beetroot juice supplementation does not improve pulmonary or muscle deoxygenation kinetics of well-trained cyclists in normoxia and hypoxia**

Rokkedal-Lausch, T., Franch, J., Poulsen, M. K., Thomsen, L. P., Weitzberg, E., Kamavuako, E. N., Karbing, D. S. & Larsen, R. G., 1 Jun 2021, In: *Nitric Oxide: Biology and Chemistry*. 111-112, p. 37-44 8 p.

**Physiological effects of two driving pressure-based methods to set positive end-expiratory pressure during one lung ventilation**

Spadaro, S., Grasso, S., Karbing, D. S., Santoro, G., Cavallesco, G., Maniscalco, P., Murgolo, F., Di Mussi, R., Ragazzi, R., Rees, S. E., Volta, C. A. & Fogagnolo, A., 2021, In: *Journal of Clinical Monitoring and Computing*. 35, 5, p. 1149-1157

**Intensive Care Weaning (iCareWean) protocol on weaning from mechanical ventilation: a single-blinded multicentre randomised control trial comparing an open-loop decision support system and routine care, in the general intensive care unit**

Vizcaychipi, M. P., Martins, L., White, J. R., Karbing, D. S., Gupta, A., Singh, S., Osman, L., Moreno-Cuesta, J. & Rees, S. E., 2 Sept 2020, In: *BMJ Open*. 10, 9, 9 p., e042145.

**A Clinical Method for Estimation of VO<sub>2</sub>max Using Seismocardiography**

Sørensen, K., Poulsen, M. K., Karbing, D. S., Sogaard, P., Struijk, J. J. & Schmidt, S. E., Sept 2020, In: *International Journal of Sports Medicine*. 41, 10, p. 661-668 8 p.

**Oxygen: Uptake and Transport in Blood**

Karbing, D. S. & Rees, S. E., May 2020, *Cotes' Lung Function*. Cotes, J. E., Maynard, R. L., Pearce, S. J., Nemery, B. B., Wagner, P. D. & Cooper, B. G. (eds.). 7 ed. Wiley-Blackwell, p. 353-375 23 p.

**Journal of Clinical Monitoring and Computing 2018-2019 end of year summary: respiration**

Karbing, D. S., Perchiuzzi, G., Rees, S. E. & Jaffe, M. B., Apr 2020, In: *Journal of Clinical Monitoring and Computing*. 34, 2, p. 197-205 9 p.

**Changes in shunt, ventilation/perfusion mismatch, and lung aeration with PEEP in patients with ARDS: a prospective single-arm interventional study**

Karbing, D. S., Panigada, M., Bottino, N., Spinelli, E., Protti, A., Rees, S. E. & Gattinoni, L., 23 Mar 2020, In: *Critical Care (Online Edition)*. 24, 1, 111.

**Medicin og kunstig intelligens: Glem ikke det, vi allerede ved**

Karbing, D. S., Pielmeier, U. S., Thomsen, L. P., Andreassen, S. & Rees, S. E., Feb 2020, In: *Medicoteknik*. 7, p. 20-22

**A novel non-exercise method for estimation of cardiorespiratory fitness using a chest mounted accelerometer**

Schmidt, S. E., Sørensen, K., Poulsen, M. K., Karbing, D. S., Sogaard, P. & Struijk, J. J., 2020.

**Reliability of, and Agreement Between, two Breath-by-Breath Indirect Calorimeters at Varying Levels of Inspiratory Oxygen**

Poulsen, M. K., Thomsen, L. P., Kjærgaard, S., Rees, S. E. & Karbing, D. S., Oct 2019, In: *Nutrition in Clinical Practice*. 34, 5, p. 767-774 8 p.

**Effect of intravenous morphine bolus on respiratory drive in ICU patients**

Dey, N., Thomsen, L. P., Larraza, S., Winding, R., Rees, S. E. & Karbing, D. S., 28 Sept 2019, In: *Intensive Care Medicine Experimental*. 7 (Suppl. 3), 55, p. 171 1 p., 725.

**Where do elite youth football players come from?**

Rossing, N. N., Skrubbeltrang, L. S., Pedersen, M. Z. B. & Karbing, D. S., 25 Jun 2019, In: *Dansk Sportsmedicin*. 7 p.

**A Pilot Bench Study of Decision Support for Proportional Assist Ventilation**

Karbing, D. S., Lobo-Valbuena, B., Poulsen, M. K., Bredal Brohus, J., Abella, A., Gordo, F. & Rees, S. E., 23 Jun 2019, *2019 41st Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)*. IEEE (Institute of Electrical and Electronics Engineers), 5 p. 8856557. (I E E E Engineering in Medicine and Biology Society. Conference Proceedings).

**Chronic high-dose beetroot juice supplementation improves time trial performance of well-trained cyclists in normoxia and hypoxia**

Rokkedal-Lausch, T., Franch, J., Poulsen, M. K., Thomsen, L. P., Weitzberg, E., Kamavuako, E. N., Karbing, D. S. & Larsen, R. G., 1 Apr 2019, In: Nitric Oxide: Biology and Chemistry. 85, p. 44-52 9 p.

#### **Correlation Between Valve Event Amplitudes in the Seismocardiogram and VO<sub>2</sub>-max**

Sørensen, K., Poulsen, M. K., Karbing, D. S., Søgaard, P., Struijk, J. J. & Schmidt, S. E., 2019.

#### **Effekten af rødbedesaft på enkeltstartspræstationen hos veltrænede cykellyttere – når de udsættes for lav iltfraktion i indåndingsluften**

Franch, J., Rokkedal-Lausch, T., Poulsen, M. K., Thomsen, L. P., Karbing, D. S. & Larsen, R. G., 2019, In: Dansk Sportsmedicin.

#### **Metabolic measures and esophageal measured tension time index in patients successfully passing a SBT**

Poulsen, M. K., Spadaro, S., Dalla Corte, F., Cricca, V., Rees, S. E., Karbing, D. S. & Volta, C. A., 2019, In: Intensive Care Medicine Experimental. 7, Suppl. 3, 55, p. 300-301 2 p., 001554.

#### **Model-based decision support for support mode mechanical ventilation**

Karbing, D. S., 2019. 1 p.

#### **The Beacon Caresystem: A system providing advice for mechanical ventilation**

Rees, S. E. & Karbing, D. S., 2019. 1 p.

#### **An investigation of Danish male youth football – is something rotten in the state of Denmark?**

Ryom, K., Rossing, N. N., Flattum, A. & Karbing, D. S., 1 Sept 2018, In: Journal of Physical Education and Sport. 18, 3, p. 1439-1444 6 p.

#### **Relative age effect and the re-selection of Danish male handball players for national teams**

Wrang, C. M., Rossing, N. N., Lilholt, R. M., Hansen, C. G., Hansen, C. B. & Karbing, D. S., 31 Aug 2018, In: Journal of Human Kinetics. 63, 1, p. 33-41 9 p.

#### **Journal of Clinical Monitoring and Computing 2017 end of year summary: respiration**

Karbing, D. S., Perchiuzzi, G., Rees, S. E. & Jaffe, M. B., Apr 2018, In: Journal of Clinical Monitoring and Computing. 32, 2, p. 197-205 9 p.

#### **Influence of population size, density, and proximity to talent clubs on the likelihood of becoming elite youth athlete**

Rossing, N. N., Stentoft, D., Flattum, A., Côté, J. & Karbing, D. S., Mar 2018, In: Scandinavian Journal of Medicine & Science in Sports. 28, 3, p. 1304–1313 10 p.

#### **An open-loop, physiological model based decision support system can reduce pressure support while acting to preserve respiratory muscle function**

Spadaro, S., Karbing, D. S., Dalla Corte, F., Mauri, T., Moro, F., Gioia, A., Volta, C. A. & Rees, S. E., 2018, In: Journal of Critical Care. 48, p. 407-413 7 p.

#### **An open-loop, physiologic model-based decision support system can provide appropriate ventilator settings**

Karbing, D. S., Spadaro, S., Dey, N., Ragazzi, R., Marangoni, E., Dalla Corte, F., Moro, F., Lodahl, D., Hansen, N. S., Winding, R., Rees, S. E. & Volta, C. A., 2018, In: Critical Care Medicine. 46, 7, p. e642–e648

#### **Comparison of breathing effort estimates in pressure support mechanical ventilation**

Karbing, D. S., Spadaro, S., Dalla Corte, F., Poulsen, M. K., Rees, S. E. & Volta, C. A., 2018, p. 1.

#### **Muscle blood oxygen level dependent (bold) responses to brief contraction and cuff occlusion: effects of hypoxia and hyperoxia**

Larsen, R. G., Karbing, D. S., Rokkedal-Lausch, T., Frøkjær, J. B., Franch, J. & Thomsen, L. P., 2018, *Book of Abstracts, 23rd Annual Congress of the European College of Sport Science, ECSS, 4-7 July 2018, Dublin, Ireland*. European College of Sport Science, p. 578 1 p.

**Physiologic evaluation of ventilation perfusion mismatch and respiratory mechanics at different positive end-expiratory pressure in patients undergoing protective one-lung ventilation**

Spadaro, S., Grasso, S., Karbing, D. S., Fogagnolo, A., Contoli, M., Bollini, G., Ragazzi, R., Cinnella, G., Verri, M., Cavallesco, N. G., Rees, S. E. & Carlo, V. A., 2018, In: *Anesthesiology*. 128, 3, p. 531–538 8 p.

**Beacon Caresystem: et samarbejde mellem virksomhed og universitet**

Rees, S. E. & Karbing, D. S., 2017, In: *Medicoteknik*. 4, 5, p. 6-8

**Determining the appropriate model complexity for patient-specific advice on mechanical ventilation**

Rees, S. E. & Karbing, D. S., 2017, In: *Biomedizinische Technik*. 62, 2, p. 183-198

**Effects of beetroot juice supplementation and hypoxia on time trial performance in well-trained cyclists**

Lausch, T. R., Larsen, R. G., Poulsen, M. K., Karbing, D. S., Thomsen, L. P. & Franch, J., 2017, In: *Medicine and Science in Sports and Exercise*. 49, 5S, p. 566 2062.

**Identification of dynamic hyperinflation using a combination of expiratory flow and respiratory carbon dioxide signals**

Rees, S. E. (Inventor), Larraza Rico, S. (Inventor) & Karbing, D. S. (Inventor), 2017, IPC No. A61B 5/083 (2006.01), A61B 5/087 (2006.01), A61B 5/00 (2006.01), A61M 16/00 (2006.01), Patent No. WO/2017/000961, 5 Jan 2017

**Journal of Clinical Monitoring and Computing 2016 end of year summary: respiration**

Karbing, D. S., Rees, S. E. & Jaffe, M. B., 2017, In: *Journal of Clinical Monitoring and Computing*. 31, 2, p. 247-252

**Simulation training for residents focused on mechanical ventilation: A randomized trial using mannequin-based versus computer-based simulation**

Spadaro, S., Karbing, D. S., Fogagnolo, A., Ragazzi, R., Mojoli, F., Astolfi, L., Gioia, A., Marangoni, E., Rees, S. E. & Carlo, V. A., 2017, In: *Simulation in Healthcare*. 12, 6, p. 349-355

**The relation between proximity to talent clubs and talent development in Danish handball and football**

Rossing, N. N., Stentoft, D. & Karbing, D. S., 2017.

**Typical patterns of expiratory flow and carbon dioxide in mechanically ventilated patients with spontaneous breathing**

Rees, S. E., Larraza Rico, S., Dey, N., Spadaro, S., Brohus, J. B., Winding, R. W., Volta, C. A. & Karbing, D. S., 2017, In: *Journal of Clinical Monitoring and Computing*. 31, 4, p. 773-781

**Variation of pulmonary shunt at different levels of positive end-expiratory pressure in patients undergoing one-lung ventilation**

Savino, S., Fogagnolo, A., Fanni, A., Karbing, D. S., Rees, S. E. & Volta, C. A., 2017, In: *European Journal of Anaesthesiology*. 34, e-Suppl. 55, p. 191 07AP07-1.

**A mechanical ventilation system for respiration with decision support**

Karbing, D. S. (Inventor), Rees, S. E. (Inventor) & Jensen, J. B. (Inventor), 2016, IPC No. G06F 19/00 (2011.01) , A61B 5/08 (2006.01), A61M 16/00 (2006.01), Patent No. WO2016037627 (A1), 17 Mar 2016, Priority date 11 Sept 2015, Priority No. PCT/DK2015/050271

**Comparison of two indirect calorimetry devices at varying levels of inspired oxygen**

Poulsen, M. K., Thomsen, L. P., Kjærgaard, S., Rees, S. E. & Karbing, D. S., 2016, In: *Intensive Care Medicine Experimental*. 4, Suppl. 1, Part Two, p. 258-259 A497.

**Effect of positive end-expiratory pressure on pulmonary shunt and dynamic compliance during abdominal surgery**

Spadaro, S., Karbing, D. S., Mauri, T., Marangoni, E., Mojoli, F., Valpiani, G., Carrieri, C., Ragazzi, R., Verri, M., Rees, S. E. & Volta, C. A., 2016, In: *British Journal of Anaesthesia*. 116, 6, p. 855-861

**Inspiratory muscle function following pressure support advice by a decision support system from states of over- and under-support**

Spadaro, S., Karbing, D. S., Gioia, A., Moro, F., Dalla Corte, F., Mauri, T., Volta, C. A. & Rees, S. E., 2016, In: Intensive Care Medicine Experimental. 4, Suppl. 1, Part Three, p. 598 A1170.

**Intelligent medical monitoring of a patient**

Rees, S. E. (Inventor) & Karbing, D. S. (Inventor), 2016, IPC No. G06F 19/00, A61B 5/00, A61B 5/08, A61B 5/145, Patent No. US2016/0357926, 8 Dec 2016, Priority date 5 Dec 2014, Priority No. PCTDK2014050414

**Journal of Clinical Monitoring and Computing 2015 end of year summary: respiration**

Karbing, D. S., Rees, S. E. & Jaffe, M. B., 2016, In: Journal of Clinical Monitoring and Computing. 30, 1, p. 7-12

**Systems and method for identifying the need for measurement of cardiac output**

Rees, S. E. (Inventor) & Karbing, D. S. (Inventor), 2016, IPC No. G06F 19/00 (2011.01), A61B 5/083 (2006.01), A61B 5/145 (2006.01), A61B 5/029 (2006.01), A61B 5/1455 (2006.01), A61B 5/00 (2006.01), Patent No. WO2016110297, 14 Jul 2016, Priority date 9 Jan 2015, Priority No. PA 2015 70007

**The role of community in the development of elite handball and football players in Denmark**

Rossing, N. N., Nielsen, A. B., Elbe, A.-M. & Karbing, D. S., 2016, In: European Journal of Sport Science. 16, 2, p. 237-245

**Typical patterns of expiratory flow and carbon dioxide in mechanically ventilated patients with spontaneous breathing**

Rees, S. E., Larraza Rico, S., Dey, N., Spadaro, S., Brohus, J. B., Winding, R. W., Volta, C. A. & Karbing, D. S., 2016, In: Intensive Care Medicine Experimental. 4, Suppl. 1, Part Two, p. 315 A612.

**VO<sub>2</sub>, VCO<sub>2</sub> and VE between-day reliability of the Vyntus CPX metabolic cart during progressive cycling**

Poulsen, M. K., Rokkedal-Lausch, T., Larsen, R. G., Thomsen, L. P., Franch, J. & Karbing, D. S., 2016, *Book of Abstracts, 21st Annual Congress of the European College of Sport Science, ECSS, 6-9 July 2016, Vienna, Austria*. European College of Sport Science, p. 411

**VO<sub>2</sub>, VCO<sub>2</sub> and VE between-day reliability of the Vyntus CPX metabolic cart during progressive cycling**

Poulsen, M. K., Rokkedal-Lausch, T., Larsen, R. G., Thomsen, L. P., Franch, J. & Karbing, D. S., 2016.

**Relativ alderseffekt i børne- og ungdomshåndbold**

Rossing, N. N., Lilholt, R. M. & Karbing, D. S., 26 Sept 2015, Institut for Medicin og Sundhedsteknologi. Aalborg Universitet. 39 p.

**Relativ alderseffekt i børne- og ungdomsfodbold**

Rossing, N. N., Lilholt, R. M. & Karbing, D. S., 27 Aug 2015, Institut for Medicin og Sundhedsteknologi. Aalborg Universitet . 37 p.

**A mathematical model approach quantifying patients' response to changes in mechanical ventilation: evaluation in pressure support**

Larraza, S., Dey, N., Karbing, D. S., Jensen, J. B., Nygaard, M., Winding, R. & Rees, S. E., 2015, In: Journal of Critical Care. 30, 5, p. 1008-1015

**A mathematical model approach quantifying patients' response to changes in mechanical ventilation: evaluation in volume support**

Larraza, S., Dey, N., Karbing, D. S., Jensen, J. B., Nygaard, M., Winding, R. & Rees, S. E., 2015, In: Medical Engineering & Physics. 37, 4, p. 341-349

**Decision support system for lung ventilator settings**

Rees, S. E. (Inventor) & Karbing, D. S. (Inventor), 2015, IPC No. A61B5/00, A61B5/08, A61M16/00, Patent No. WO2015070877 (A1), 21 May 2015

**Diffusion capacity of the lung for carbon monoxide: a potential marker of impaired gas exchange or of systemic deconditioning in chronic obstructive lung disease?**

Weinreich, U. M., Thomsen, L. P., Brock, C., Karbing, D. S. & Rees, S. E., 2015, In: *Chronic Respiratory Disease*. 12, 4, p. 357-364

**Electrical activity of the diaphragm during progressive cycling exercise in endurance-trained men**

Poulsen, M. K., Thomsen, L. P., Mifsud, N. L., Nielsen, N.-P. B., Jørgensen, R. M., Kjærgaard, S. & Karbing, D. S., 2015, In: *Respiratory Physiology & Neurobiology*. 205, p. 77-83

**It is your teammates not your schoolmates that matters: the importance of risk population in talent development studies**

Rossing, N. N., Flattum, A., Biegel, A. & Karbing, D. S., 2015, *Book of Abstracts, 20th Annual Congress of the European College of Sport Science, ECSS, 24-27 June 2015, Malmö, Sweden*. European College of Sport Science, p. 194

**Journal of Clinical Monitoring and Computing 2014 end of year summary: respiration**

Karbing, D. S., Rees, S. E. & Jaffe, M. B., 2015, In: *Journal of Clinical Monitoring and Computing*. 29, 2, p. 209-215

**Measured changes in serial dead space during modification of pressure support**

Dey, N., Larraza Rico, S., Rees, S. E., Karbing, D. S. & Winding, R. R., 2015, In: *Acta Anaesthesiologica Scandinavica*. 59, Suppl. 121, p. 30-31, No. O11-05

**Model-based advice for mechanical ventilation: from research (INVENT) to product (Beacon Caressystem)**

Rees, S. E. & Karbing, D. S., 2015, *37th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, EMBC, 25-29 August 2015, Milan, Italy*. IEEE Press, p. 5331-5334 7319595

**Model-based decision support for pressure support mechanical ventilation: implementation of physiological and clinical preference models**

Karbing, D. S., Larraza Rico, S., Dey, N., Jensen, J. B., Winding, R. & Rees, S. E., 2015, *9th IFAC Symposium on Biological and Medical Systems BMS 2015, 31 August-2 September 2015, Berlin, Germany*. IFAC Publisher, p. 279-284 (IFAC-PapersOnLine; No. 20, Vol. 48).

**Model-based optimization of PEEP, a strategy and its implementation**

Rees, S. E. & Karbing, D. S., 2015, In: *Intensive Care Medicine Experimental*. 3, Suppl. 1, p. 334-335, No. A681

**Prospective evaluation of a decision support system providing advice on pressure support from states of over- and under-support**

Spadaro, S., Karbing, D. S., Volta, C. A. & Rees, S. E., 2015, In: *Intensive Care Medicine Experimental*. 3, Suppl. 1, p. 334, No. A680

**Prospective evaluation of a decision support system providing advice on ventilator settings of: Inspiratory oxygen, delivered pressure or volume and frequency**

Rees, S. E., Dey, N., Lodahl, D. C., Ciubotariu, A., Pilypaite, J., Winding, R. R. & Karbing, D. S., 2015, In: *Intensive Care Medicine Experimental*. 3, Suppl. 1, p. 137, No. A281

**Prospective evaluation of a decision support system providing advice on ventilator settings of: Inspiratory oxygen, delivered pressure or volume, frequency and peep**

Karbing, D. S., Spadaro, S., Rees, S. E. & Volta, C. A., 2015, In: *Intensive Care Medicine Experimental*. 3, Suppl. 1, p. 330, No. A672

**Relative age effect and birth place effect in Danish national youth football**

Rossing, N. N., Flattum, A., Biegel, A. & Karbing, D. S., 2015, *Program and Abstracts, 8th World Congress on Science and Football, WCSF 2015, 20-23 May 2015, Copenhagen, Denmark*. Bangsbo, J. & Krstrup, P. (eds.). Department of Exercise and Sport Sciences, University of Copenhagen, p. 100-101, No. S16.3



**The road to success: analysing the progression of male handball players and constant year effect in Danish national teams**

Lilholt, R. M., Rossing, N. N., Hansen, G., Wrang, C. M. & Karbing, D. S., 2015, *Book of Abstracts, 20th Annual Congress of the European College of Sport Science, ECSS, 24-27 June 2015, Malmö, Sweden*. European College of Sport Science, p. 33-34

**X-faktorer i talentudvikling: din hjemegn og din fødselsdag**

Rossing, N. N., Hansen, C. & Karbing, D. S., 2015, *Talentudvikling i sport: reflekterede organisationer, gode teams og stærke atleter*. Rossing, N. N., Ryom, K. & Henriksen, K. (eds.). Aalborg Universitetsforlag, p. 94-105

**Patients' response to changes in ventilator support. A modelling approach**

Larraza Rico, S., Dey, N., Karbing, D. S., Nygaard, M., Winding, R. & Rees, S. E., 26 Sept 2014, In: *Intensive Care Medicine Experimental*. 2, Suppl 1, p. P15 1 p.

**A mathematical model for simulating respiratory control during support ventilation modes**

Larraza, S., Dey, N., Karbing, D. S., Nygaard, M., Winding, R. & Rees, S. E., 2014, *19th World Congress of The International Federation of Automatic Control, IFAC, 24-29 August 2014, Cape Town, South Africa*. IFAC Publisher, p. 8433-8438

**A system and a corresponding method for estimating respiratory drive of mechanically ventilated patients**

Rees, S. E. (Inventor), Karbing, D. S. (Inventor) & Larraza Rico, S. (Inventor), 2014, IPC No. A61M16/00, A61M16/12, Patent No. WO2014187465, 27 Nov 2014

**Changes in computed tomography and ventilation/perfusion mismatch with positive end-expiratory pressure**

Karbing, D. S., Panigada, M., Bottino, N., Spinelli, E., Protti, A., Rees, S. E. & Gattinoni, L., 2014, In: *Critical Care (Online Edition)*. 18, Suppl. 1, p. S98, No. P276

**Mathematical modelling of pulmonary gas exchange**

Karbing, D. S., Kjærgaard, S., Andreassen, S. & Rees, S. E., 2014, *Modelling Methodology for Physiology and Medicine*. Carson, E. & Cobelli, C. (eds.). 2 ed. Elsevier, p. 281-309 (Elsevier Insights).

**Measuring gas exchange with step changes in inspired oxygen: An analysis of the assumption of oxygen steady state in patients suffering from COPD**

Thomsen, L. P., Weinreich, U. M., Karbing, D. S., Wagner, P. D. & Rees, S. E., 2014, In: *Journal of Clinical Monitoring and Computing*. 28, 6, p. 547-558

**Modelling in anaesthesia and intensive care: A special section including papers from IFAC's 8. Symposium on Medical and Biological Systems in Budapest 2012**

Andreassen, S., Desai, T. & Karbing, D. S., 2014, In: *Journal of Clinical Monitoring and Computing*. 28, 6, p. 499-500

**The role of community density in the development of elite handball and football players in Denmark**

Rossing, N. N., Nielsen, A., Elbe, A. & Karbing, D. S., 2014, *Book of Abstracts, 19th Annual Congress of the European College of Sport Science, ECSS, 2-5 July 2014, Amsterdam, The Netherlands*. European College of Sport Science, Germany (ECSS), p. 685

**Can computed tomography classifications of chronic obstructive pulmonary disease be identified using Bayesian networks and clinical data?**

Thomsen, L. P., Weinreich, U. M., Karbing, D. S., Jensen, V. G. H., Vuust, M., Frøkjær, J. B. & Rees, S. E., 2013, In: *Computer Methods and Programs in Biomedicine*. 110, 3, p. 361-368

**Clinical refinement of the automatic lung parameter estimator (ALPE)**

Thomsen, L. P., Karbing, D. S., Smith, B. W., Murley, D., Weinreich, U. M., Kjærgaard, S., Toft, E., Thorgaard, P., Andreassen, S. & Rees, S. E., 2013, In: *Journal of Clinical Monitoring and Computing*. 27, 3, p. 341-350

**Integrating mathematical models of pulmonary gas exchange, acid base, and respiratory control for simulation of changes in mechanical ventilation during support modes**

Larrazo Rico, S., Dey, N., Karbing, D. S., Winding, R., Nygaard, M. & Rees, S. E., 2013, In: *Journal of Critical Care*. 28, 6, p. e42-e43

**Method for calibrating the level of oxygen in respiratory gas related to the level of oxygen in the blood circulation of an individual**

Rees, S. E. (Inventor), Karbing, D. S. (Inventor) & Thomsen, L. P. (Inventor), 2013, Patent No. WO2013127400, 6 Sept 2013

**Model-based measurement of gas exchange in healthy subjects using ALPE Essential: influence of age, posture and gender**

Karbing, D. S., Thomsen, L. P., Moesgaard, J., Andreassen, S., Toft, E., Thorgaard, P. & Rees, S. E., 2013, *35th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, IEEE EMBS, 3-7 July 2013, Osaka, Japan*. IEEE Press, p. 2441-2444 (IEEE Engineering in Medicine and Biology Society. Conference Proceedings).

**A stratified model of pulmonary gas exchange**

Mogensen, M. L., Karbing, D. S., Steimle, K. L., Rees, S. E. & Andreassen, S., 2012, *8th IFAC Symposium on Biological and Medical Systems (2012)*. Benyo, B., Andreasen, S., Feng, D. D., Carson, E., Chase, J. G. & Kovács, L. (eds.). Elsevier, p. 512-517 6 p. (Elsevier IFAC Publications / IFAC Proceedings series, Vol. 8).

**Electrical activity of the diaphragm in trained subjects during progressive cycling to exhaustion trials**

Karbing, D. S., Mifsud, N. L., Jørgensen, R. M., Poulsen, M. K., Nielsen, N.-P. B. & Thomsen, L. P., 2012, In: *Medicine and Science in Sports and Exercise*. 44, 5S, Suppl. 2, p. 568, No. 2250

**Measuring gas exchange with step changes in inspired oxygen: an analysis of the assumption of oxygen steady state**

Thomsen, L. P., Weinreich, U. M., Karbing, D. S. & Rees, S. E., 2012, *8th IFAC Symposium on Biological and Medical Systems (2012)*. Benyo, B., Andreasen, S., Feng, D. D., Carson, E., Chase, J. G. & Kovács, L. (eds.). Elsevier, p. 507-511 5 p. (Elsevier IFAC Publications / IFAC Proceedings series, Vol. 8).

**Retrospective evaluation of a decision support system for controlled mechanical ventilation**

Karbing, D. S., Allerød, C., Thomsen, L. P., Espersen, K., Thorgaard, P., Andreassen, S., Kjærgaard, S. & Rees, S. E., 2012, In: *Medical & Biological Engineering & Computing*. 50, 1, p. 43-51 9 p.

**The automatic lung parameter estimator for measuring oxygen and carbon dioxide gas exchange**

Karbing, D. S. (Inventor), Andreassen, S. (Inventor), Lindholt, C. (Inventor) & Rees, S. E. (Inventor), 2012, Patent No. WO2012069051, 31 May 2012

**Use of the invent system for standardized quantification of clinical preferences towards mechanical ventilator settings**

Allerød, C., Karbing, D. S., Thorgaard, P., Andreassen, S., Kjærgaard, S. & Rees, S. E., 11 Apr 2011, In: *Journal of Clinical Monitoring and Computing*. 25, 1, p. 22-24 3 p., 17.

**A model of perfusion of the healthy human lung**

Mogensen, M. L., Steimle, K. L., Karbing, D. S. & Andreassen, S., 2011, In: *Computer Methods and Programs in Biomedicine*. 101, 2, p. 156-165

**A model of ventilation of the healthy human lung**

Steimle, K. L., Mogensen, M. L., Karbing, D. S., de la Serna, J. B. & Andreassen, S., 2011, In: *Computer Methods and Programs in Biomedicine*. 101, 2, p. 144-155

**Minimal modeling of pulmonary gas exchange of oxygen and carbon dioxide modeling complexity required in intensive care patients**

Karbing, D. S., Kjærgaard, S., Andreassen, S., Espersen, K. & Rees, S. E., 2011, In: *Intensive Care Medicine*. 37, Suppl. 1, p. S102, No. 0386

**Minimal model quantification of pulmonary gas exchange in intensive care patients**

Karbing, D. S., Kjærgaard, S., Andreassen, S., Espersen, K. & Rees, S. E., 2011, In: *Medical Engineering & Physics*. 33, 2, p. 240-248 9 p.

**Model-based medical decision support: A road to improved diagnosis and treatment?**

Andreassen, S., Karbing, D. S., Pielmeier, U., Rees, S. E., Zalounina, A., Sanden, L. R., Paul, M. & Leibovici, L., 2011, In: *International Federation for Medical and Biological Engineering Proceedings*. 34, p. 257-260

**Selected abstracts presented at the 21st Meeting of the European Society for Computing and Technology in Anaesthesia and Intensive Care (ESCTAIC)**

van Dusseldorp, A. A. (Editor), Boer, C. (Editor), Karbing, D. S. (Editor), Krummreich, L. (Editor), Rees, S. E. (Editor) & Loer, S. A. (Editor), 2011, In: *Journal of Clinical Monitoring and Computing*. 25, 1, p. 3-43

**The effect of arteriolar resistance on perfusion distribution in a model of the pulmonary perfusion**

Mogensen, M. L., Karbing, D. S. & Andreassen, S., 2011, *Proceedings of the 18th World Congress of the International Federation of Automatic Control, 28 August-2 September 2011, Milano, Italy*. Bittanti, S., Cenedese, A. & Zampieri, S. (eds.). IFAC Publisher, p. 5018-5023

**The Intelligent Ventilator project: application of physiological models in decision support**

Rees, S. E., Karbing, D. S., Allerød, C., Toftegaard, M., Thorgaard, P., Toft, E., Kjærgaard, S. & Andreassen, S., 2011, In: *Lecture Notes in Computer Science*. 6747, p. 149-158 10 p.

**Tidal breathing model describing end-tidal, alveolar, arterial and mixed venous CO<sub>2</sub> and O<sub>2</sub>**

Poulsen, P., Karbing, D. S., Rees, S. E. & Andreassen, S., 2011, In: *Computer Methods and Programs in Biomedicine*. 101, 2, p. 166-172

**Variability of preference toward mechanical ventilator settings: A model-based behavioral analysis**

Allerød, C., Karbing, D. S., Thorgaard, P., Andreassen, S., Kjærgaard, S. & Rees, S. E., 2011, In: *Journal of Critical Care*. 26, 6, p. 637.e5-637.e12 12 p.

**A mathematical physiological model of the dynamics of pulmonary ventilation**

Mogensen, M. L., Thomsen, L. P., Karbing, D. S., Steimle, K. L., Zhao, Y., Rees, S. E. & Andreassen, S., 2010, *Proceedings of the UKACC International Conference on Control, CONTROL 2010 [CD-ROM]*. p. 734-739

**INVENT - a decision support system for managing inspired oxygen: prospective evaluation in an intensive care unit**

Karbing, D. S., Allerød, C., Thorgaard, P., Andreassen, S., Kjærgaard, S. & Rees, S. E., 2010, In: *Journal of Clinical Monitoring and Computing*. 24, 1, p. 17, No. 14

**Prospective evaluation of a decision support system for setting inspired oxygen in intensive care patients**

Karbing, D. S., Allerød, C., Thorgaard, P., Carius, A.-M., Frilev, L., Andreassen, S., Kjærgaard, S. & Rees, S. E., 2010, In: *Journal of Critical Care*. 25, 3, p. 367-374 8 p.

**Respiration: et grænsefladeproblem**

Bernardino de la Serna, J., Karbing, D. S. & Bagatolli, L., 2010, In: *Medicinsk Teknologi og Informatik*. 7, 1, p. 16-20

**The effect of tissue elastic properties and surfactant on alveolar stability**

Andreassen, S., Steimle, K. L., Mogensen, M. L., de la Serna, J. B., Rees, S. E. & Karbing, D. S., 2010, In: *Journal of Applied Physiology*. 109, 5, p. 1369-1377 9 p.

**A mathematical physiological model of the pulmonary capillary perfusion**

Mogensen, M. L., Steimle, K. L., Karbing, D. S. & Andreassen, S., 2009, In: *Elsevier IFAC Publications / IFAC Proceedings series*. p. 157-162

**A mathematical physiological model of the pulmonary ventilation**

Steimle, K. L., Mogensen, M. L., Karbing, D. S., Bernardino de la Serna, J., Smith, B. W., Vacek, O. & Andreassen, S., 2009, In: *Elsevier IFAC Publications / IFAC Proceedings series*. p. 222-227

**MCBMS'09 i Aalborg: 7th IFAC Symposium on Modeling and Control in Biomedical Systems (including Biological Systems)**

Karbing, D. S., 2009, In: Medicinsk Teknologi og Informatik. 6, 5, p. 21-22

**Physiological models of gas exchange in decision support of mechanical ventilation: prospective evaluation in an intensive care unit**

Karbing, D. S., 2009, Aalborg: Center for Model-based Medical Decision Support. Department of Health Science and Technology. Aalborg University.

**Tidal breathing model describing end-tidal, alveolar, arterial and mixed venous CO<sub>2</sub> and O<sub>2</sub>**

Poulsen, P., Karbing, D. S., Rees, S. E. & Andreassen, S., 2009, *7th IFAC Symposium on Modelling and Control in Biomedical Systems (including Biological Systems) MCBMS'09 - Proceedings*. PART 1 ed. IFAC Secretariat, p. 139-144 6 p. (IFAC Proceedings Volumes (IFAC-PapersOnline); No. PART 1, Vol. 7).

**Tidal breathing model describing end-tidal, alveolar, arterial and mixed venous CO<sub>2</sub> and O<sub>2</sub>**

Poulsen, P., Karbing, D. S., Rees, S. E. & Andreassen, S., 2009, In: Elsevier IFAC Publications / IFAC Proceedings series. p. 139-144

**A decision support system for suggesting ventilator settings: retrospective evaluation in cardiac surgery patients ventilated in the ICU**

Allerød, C., Rees, S. E., Rasmussen, B. S., Karbing, D. S., Kjærgaard, S., Thorgaard, P. & Andreassen, S., 2008, In: Computer Methods and Programs in Biomedicine. 92, 2, p. 205-212 7 p.

**Authors' response to Mohamad F El-Khatib's and Gassan W Jamaledine's letter: Clinical relevance of the PaO<sub>2</sub>/FiO<sub>2</sub> ratio**

Karbing, D. S. & Rees, S. E., 2008, In: Critical Care. 12, 1, 2 p.

**Decision support of inspired oxygen fraction using a model of oxygen transport**

Karbing, D. S., Kjærgaard, S., Smith, B. W., Allerød, C., Espersen, K., Andreassen, S. & Rees, S. E., 2008, In: Elsevier IFAC Publications / IFAC Proceedings series. p. 8080-8084

**Kan et beslutningsstøttesystem indstille en respirator?**

Karbing, D. S., 2008, In: Medicinsk Teknologi og Informatik. 5, 4, p. 12-14

**Retrospective evaluation of a decision support system for advising on ventilator settings in patients with ARDS/ALI**

Allerød, C., Kjærgaard, S., Karbing, D. S., Espersen, K. & Rees, S. E., 2008, In: Intensive Care Medicine. 34, Suppl. 1, p. S75, No. 0283

**Retrospective evaluation of a decision support system for advising on ventilator settings in patients with ARDS/ALI**

Allerød, C., Karbing, D. S. & Kjærgaard, S. C., 2008, In: DASINFO. 16, 4, p. 48

**Variation in the PaO<sub>2</sub>/FiO<sub>2</sub> ratio with FiO<sub>2</sub>: is it relevant?**

Karbing, D. S., Kjærgaard, S., Smith, B. W., Espersen, K., Andreassen, S. & Rees, S. E., 2008, In: Journal of Clinical Monitoring and Computing. 22, 3, p. 250-251

**Changes in PEEP and pulmonary gas exchange: bedside evaluation**

Kjærgaard, S., Karbing, D. S., Espersen, K., Reiter, N., Christensen, M., Smith, B. W. & Rees, S. E., 2007, *Abstracts og Program, Forskningsdag 2007 Aalborg Sygehus, Århus Universitetshospital, 20. september 2007, Aalborg, Danmark*. p. 57-58, No. 55

**Changes in PEEP and pulmonary gas exchange: bedside evaluation**

Kjærgaard, S., Karbing, D. S., Espersen, K., Reiter, N., Christensen, M., Smith, B. W. & Rees, S. E., 2007, In: Intensive Care Medicine. 33, Suppl. 2, p. S143, No. 0549

### **Evaluation of the intelligent ventilator (INVENT) system for optimizing inspired oxygen fraction in intensive care**

Karbing, D. S., Kjærgaard, S., Smith, B. W., Allerød, C., Espersen, K., Reiter, N., Christensen, M., Andreassen, S. & Rees, S. E., 2007, In: Intensive Care Medicine. 33, Suppl. 2, p. S233, No. 0905

### **Examining the effect of positive end-expiratory pressure on gas exchange and lung mechanics**

Karbing, D. S., Smith, B. W., Kjærgaard, S., Allerød, C., Andreassen, S. & Rees, S. E., 2007, In: Journal of Clinical Monitoring and Computing. 21, 3, p. 187-188

### **Modelling the relationship between gas exchange and lung mechanics**

Karbing, D. S., Smith, B. W., Rees, S. E. & Andreassen, S., 2007, In: Journal of Clinical Monitoring and Computing. 21, 3, p. 188-189

### **Quantitative assessment of pulmonary shunt and ventilation-perfusion mismatch without a blood sample**

Smith, B. W., Rees, S. E., Karbing, D. S., Kjærgaard, S. & Andreassen, S., 2007, *Sciences and Technologies for Health, Proceedings of the 29th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, in conjunction with the Biennial Conference of the French Society of Biological and Medical Engineering (SFGBM), 23-26 August 2007, Lyon, France [CD-ROM]*. Electrical Engineering/Electronics, Computer, Communications and Information Technology Association, p. 4255-4258 4 p.

### **Variation in the PaO<sub>2</sub>/FiO<sub>2</sub> ratio with FiO<sub>2</sub>: mathematical and experimental description, and clinical relevance**

Karbing, D. S., Kjærgaard, S., Smith, B. W., Espersen, K., Allerød, C., Andreassen, S. & Rees, S. E., 2007, In: Critical Care. 11, 6, 8 p.

### **Variation in the PaO<sub>2</sub>/FiO<sub>2</sub> ratio with FiO<sub>2</sub>: is it relevant?**

Karbing, D. S., Kjærgaard, S., Smith, B. W., Espersen, K., Andreassen, S. & Rees, S. E., 2007, *Joint SCATA ESCTAIC Scientific Meeting, 21-23 November 2007, London, United Kingdom*. p. 35-36

### **Getting the most from clinical data through physiological modelling and medical decision support**

Smith, B. W., Rees, S. E., Christensen, T. F., Karbing, D. S. & Andreassen, S., 2006, In: Journal of Clinical Monitoring and Computing. 20, 2, p. 128-129

## **Activities**

### **Dansk Medicoteknisk Landsmøde**

Karbing, D. S. (Speaker)

19 Sept 2007 → 20 Sept 2007

## **Press/Media**

### **Børn født sent på året har dårligere chancer for at få succes i fodbold**

Rossing, N. N., Lilholt, R. M. & Karbing, D. S.

02/02/2022

1 item of Media coverage

### **Computerprogram skal holde liv i intensivpatienter**

Karbing, D. S.

26/06/2009

1 item of Media coverage

### **Computerprogram skal holde liv i intensivpatienter**

Karbing, D. S.

01/06/2009

1 item of Media coverage

### **Kunstig intelligens ind på sygestuen**

Rees, S. E. & Karbing, D. S.  
04/09/2018  
2 items of Media coverage

### **Mediko: Software kan hjælpe patienter hurtigere ud af respiratoren**

Karbing, D. S.  
19/06/2009  
1 item of Media coverage

### **Nødrespirator klar til verden**

Thomsen, L. P., Hansen, J., Karbing, D. S., Rees, S. E. & Poulsen, M. K.  
16/04/2020  
1 item of Media coverage

### **Patienter får skræddersyet respiratorbehandling**

Rees, S. E. & Karbing, D. S.  
16/01/2015  
1 item of Media coverage

### **Software kan hjælpe patienter hurtigere ud af respiratoren**

Karbing, D. S.  
19/06/2009  
1 item of Media coverage

## **Projects**

### **CoRESCUE AAU Pandemic Ventilator**

Rees, S. E. (Project Manager), Thomsen, L. P. (Project Participant), Poulsen, M. K. (Project Participant), Hansen, J. (Project Participant) & Karbing, D. S. (Project Participant)  
Uddannelses- og forskningsministeriet, Poul Due Jensen Foundation  
01/04/2020 → ...

### **Relativ alderseffekt i dansk børne- og ungdomsfodbold**

Rossing, N. N. (PI), Lilholt, R. M. (PI) & Karbing, D. S. (PI)  
19/12/2014 → 27/08/2015

### **Relativ alderseffekt i dansk børne- og ungdomshåndbold**

Rossing, N. N. (PI), Lilholt, R. M. (PI) & Karbing, D. S. (PI)  
19/12/2014 → 27/08/2015

### **The Beacon Caresystem - AI for mechanical ventilation decision support**

Rees, S. E. (PI) & Karbing, D. S. (PI)  
01/07/2013 → ...