

## **CURRICULUM VITAE**

### **Ingvald Mikal Tyssebotn**

BIRTHDATE: 13th September 1943, Hosanger, Norway  
CITIZENSHIP: Norway  
VISA STATUS: Permanent Resident  
MARITAL STATUS: Married - Wife: Guri Wien Bergø  
Children: Tarjei Tyssebotn  
Nils Gunnar Bergø Tyssebotn  
Inger Marie Bergø Tyssebotn

### **ACADEMIC HISTORY:**

1968: Completed Medical School (Cand Med), University of Bergen, Norway  
1/5/70: Licensed Physician  
1/1/71: Licensed Diving Physician from Norwegian Health Directorate, licensed in Norway and Great Britain for Examination of North Sea Divers  
12/17/80: Ph.D. in Physiology. Thesis title: Intrarenal Blood Flow in Circulatory Shock and during Infusion of Vasoactive Agents

### **EDUCATION:**

Courses in:  
1969: Critical Medical Care, Central Hospital, Trondheim, Norway  
1969: Suprarenal Gland and Its Illness, Aker Hospital, Oslo, Norway  
1970: Finished Divers Education in Royal Norwegian Navy. Approved Instructor for Theoretical and Practical Diving, Military and Civil Diving Education  
1971: Professional Training for Medical Duty in the Royal Norwegian Navy, Sjøkrigsskolen, Bergen, Norway  
1971: Experimental Renal Physiology, University of Oslo  
1971-1972: Several courses in Diving Medicine, Decompression Treatment, Hyperbaric Oxygen Treatment for Diving Accidents and Clinical Illness, Norwegian Navy and Haukeland Hospital, Bergen, Norway  
1972: Pedagogic Course and Lectural Training, University of Bergen, Norway  
1972: Clinical Renal Physiology, University of Oslo, Norway  
1973: Measurements with Isotopes, The Netherlands-Norwegian School for Isotopic Work, Kjeller, Norway  
1974: Radioimmunoassays and Connected Methods, University of Oslo, Norway  
1978: Light- Microscopy, EM- and SEM- Microscopy, University of Bergen, Norway.

- 1979: Clinical Respiratory Physiology, University of Bergen, Norway
- 1981-1996: Several courses in Diving Medicine, Hyperbaric Oxygen Treatment, and Evaluation of Divers Fitness (Professional and Amateur), approved by the Undersea and Hyperbaric Medical Society and European Undersea Biomedical Society
- 1994: Hyperbaric Oxygen Treatment, Dept of Anesthesiology, Karolinska Sjukhuset, Stockholm, Sweden
- 1998: Responsible Care and Use of Laboratory Animals Certification Program, modules 1-4, Institutional Animal Care & Use Committee, Laboratory Animal Facility SUNY at Buffalo.

**STUDY TOURS** including invited lectureships:

- 1968: To Several Universities in Germany (Erlangen, Goettingen, Kiel and Wuertzburg)
- 1976: Research Fellow at the Queen Elisabeth Hospital, University of Birmingham, Great Britain (4 months), with short Visits to the Universities of Cambridge, Southampton, and London, Lecturing all Places
- 1978: Defense and Civil Institute of Environmental Medicine, Downsview, Ontario, Canada and The Center for Research and Education in Special Environments, State University of New York at Buffalo, USA
- 1978: Aviation and Naval Medicine Laboratory, Lund University, Sweden
- 1982, 1986, 1987, 1988, 1989, 1992, 1994: Karolinska Institutet, University of Stockholm, Sweden
- 1988: Center for Research & Education in Special Environments (CRESE), State University of New York at Buffalo

**TEACHING:**

- 1965-1968: Teaching microscopical and macroscopical anatomy to students of Medical and Dental School, University of Bergen. Supervising research in anatomy, establishing cartoteque for anatomical macro and microscopical preparations used for demonstration and examination purposes
- 1968-1969: Lecturing medical disciplines for nurses, Orkdal Sanitetsforenings Hospital, Orkanger, Norway
- 1970-1973: Lecturing Diving Medicine and Physics, Royal Norwegian Navy Diving Courses (including training for Physicians working in the Navy) and Diving Unit, Fire

Corps of Oslo, Norway. Lecturing and supervised training of Health Personnel in Royal Norwegian Navy

1970-1974: Lecturing physiology, lung diseases and cardiovascular problems, School for Nurses at Betanien sykepleie-skole, Bergen, Norway

1971-1998: Lectured at the Department of Physiology, University of Bergen on the following topics:

Renal Physiology: lectures and supervising courses for medical, dental, and science students. Wrote all laboratory journals for the courses

Barophysiology: low and high pressure physiology for medical and science students

Respiratory Physiology: lectures and training courses for medical, science and dental students. Revised all laboratory journals/manuals for the courses

Acid-Base Chemistry: lectures and training course for medical, science and dentist students. Revised all experimental manuals

science Fluid and Electrolyte Physiology: lectures and training course for medical, and dental students. Revised laboratory manuals for all courses

Basal Metabolism: lectures and training course for medical, science and dental students. Revised the laboratory manuals for all courses

dental Exercise Physiology: lectures and training courses for medical, science and students. Revision of the experimental manuals for all courses

Hemostasis and the Physiology of Erythrocytes: lectures and training courses for medical, science and dental students. Special courses for dentists in a follow up dentists program. Revised all manuals for all courses

Supervision of science students in renal physiology, cardiovascular, hypo- and hyperbaric physiology

Lectured respiratory physiology for physicians in the specialty "Clinical Physiology"

1985-1997: Lectured hyperbaric physiology and diving medicine: nitrogen narcosis, oxygen toxicity, high pressure nervous syndrome, work tolerance at pressure, hyperbaric oxygen treatment for decompression sickness and clinical use at the Norwegian Governmental Diver Training School, Bergen, Norway

- 1975-present: Responsible for testing of medical fitness and certification of scientific divers working at the University of Bergen
- 1988: Organized specialty courses in hyperbaric oxygen treatment and diving medicine for Norwegian surgeons at The Central Hospital in Aust-Agder, Kristiansand, Norway
- 1980-present: Supervisor for use of hyperbaric oxygen for several hospitals in Norway
- 1978-present: Supervised science students studying for the Masters Degree, and Science students and M.D.'s studying for Ph.D Degree. Supervised a total of 15 Masters Degrees and 7 Ph.D. Degrees
- 1985-1994: Supervisor and consultant for research fellows in the Deep Diving Program, the Norwegian Council for Science and the Humanities. Topics: circulation, respiration, oxygen toxicity, gas density.
- 1992: Head of Professor Evaluation Committee, University of Bergen.
- 1992: Organized specialty courses in hyperbaric oxygen treatments for Norwegian Surgeons at Haukeland Hospital, Bergen, Norway.
- 1997-present: Organized PGY503 entitled "Physiological measurements in small animals" for graduate students within the School of Medicine & Biomedical Sciences, SUNY at Buffalo.
- 2001-2003: Respiratory Physiology, PGY 300, University at Buffalo.  
Respiratory Diseases, PGY 412, University at Buffalo.  
Renal Diseases, PGY 412, University at Buffalo.

#### **PHD EVALUATIONS:**

- 1983: Ragnar Vaernes, cand. Psychol. for PhD
- 1999: Outside reader for Andreas Østlund, MD, for PhD thesis, Karolinska Institut, Stockholm, Sweden.
- 2000: Outside reader for Andreas Fahlman, MSc, for PhD thesis, Carlton University, Ottawa, Canada.

#### **PROFESSIONAL EXPERIENCE:**

1965-1968: Research Fellow, Department of Anatomy, University of Bergen

7/1/68 - 6/30/69: Hospital training at Orkdal Sanitetsforenings Hospital, Orkanger, Norway

7/1/68 - 12/31/69: Physician in Sel kommune, Norway

1/1/70 - 2/9/71: Royal Norwegian Navy, Responsible for training in practical diving and diving medicine at the Navy Diving School, Haakonsværn, Norway

2/10/71-1992: Associate Professor, Department of Physiology, University of Bergen, Bergen, Norway

7/15/91-8/15/92: Visiting Research Professor, State University of NY at Buffalo, Center for Research & Education in Special Environments (CRESE)

1/1/93 – 1/8/97: Professor of Physiology, Department of Physiology, University of Bergen, Bergen, Norway

1/2/94-1/8/97: Consultant, Hyperbaric Medicine, Royal Norwegian Navy

1/2/94-1/8/97: Professor of Hyperbaric Medical Research, University of Bergen, Norway

1/2/94-1/8/97: Consultant in Hyperbaric Medicine, Haukeland University Hospital, Bergen, Norway

8/95-1/8/97: Visiting Research Professor, State University of NY at Buffalo, Center for Research & Education in Special Environments (CRESE)

8/97-7/31/01: Senior Bertha H. & Henry C. Buswell Fellowship awarded through State University of NY at Buffalo, School of Medicine and Biomedical Sciences

1/8/01-present: Research Professor of Physiology and Biophysics, State University of New York at Buffalo.

**AWARDS:**

3/14/2000 First Place (with co-inventors) Niagara Frontier Inventor of the Year Award in Science. Nomination for this award was made by the University of Buffalo Technology Transfer and Licensing Office and sponsored by the Niagara Frontier Intellectual Property Law Association.

**PUBLICATIONS:**

### Articles in critically reviewed journals:

1. Aukland, K., Kirkeboe, A., Lying, E. and Tyssebotn, I. Effect of hemorrhagic hypotension on the distribution of renal cortical blood flow in anaesthetized dog. *Acta Physiol Scand*, 87, 514-525, 1973.
2. Clausen, G. and Tyssebotn, I. Intrarenal distribution of glomerular filtration in conscious rats during isotonic saline infusion. *Acta Physiol Scand*, 89, 289-295, 1973.
3. Clausen, G. and Tyssebotn, I. Single-nephron filtration during hemorrhagic hypotension in the conscious rats. *Acta Physiol Scand*, 92, 364-373, 1974.
4. Kirkeboe, A. and Tyssebotn, I. Distribution of renal cortical blood flow during hemorrhagic hypotension in conscious dogs. *Acta Physiol Scand*, 91, 22-31, 1974.
5. Tyssebotn, I. and Kirkeboe, A. Effect of vasoactive agents on the distribution of renal cortical blood flow in dogs. *Acta Physiol Scand*, 95, 318-328, 1975.
6. Kirkeboe, A. and Tyssebotn, I. Effect of dehydration on renal blood flow in dog. *Acta Physiol Scand*, 101, 257-263, 1977.
7. Tyssebotn, I. and Kirkeboe, A. The effect of indomethacin on renal blood flow distribution during hemorrhagic hypotension in dog. *Acta Physiol Scand*, 101, 15-21, 1977.
8. Koller, M.E., Romslo, I., Finne, P.H., Brochmeier, F. and Tyssebotn, I. The diagnoses of iron deficiency by erythrocyte protoporphyrin and serum ferritin analyses. *Acta Pædiatr Scand*, 67, 361-367, 1978.
9. Tyssebotn, I. and Kirkeboe, A. Renal cortical blood flow distribution measured by hydrogen clearance during dopamine and acetylcholine infusion. Effect of electrode thickness and position in cortex. *Acta Physiol Scand*, 106, 385-393, 1979.
10. Clausen, G., Kirkeboe, A., Tyssebotn, I., Øfjord, E.S. and Aukland, K. Erroneous estimates of intrarenal blood flow distribution in the dog with radiolabelled microspheres. *Acta Physiol Scand*, 107, 385-387, 1979.
11. Clausen, G., Hope, A., Kirkeboe, A., Tyssebotn, I. and Aukland, K. Distribution of blood flow in the dog kidney. I. Saturation rates for inert diffusible tracers, <sup>125</sup>I-iodoantipyrine and tritiated water, versus uptake of microspheres under control conditions. *Acta Physiol Scand*, 107, 69-81, 1979.

12. Clausen, G., Hope, A., Kirkeboe, A., Tyssebotn, I. and Aukland, K. Distribution of blood flow in the dog kidney. II. Saturation rates of inert diffusible tracers versus uptake of 15  $\mu\text{m}$  microspheres during vasodilation and vasoconstriction. *Acta Physiol Scand*, 110, 249-258, 1980.
13. Kirkeboe, A. and Tyssebotn, I. Renal blood flow distribution during E.coli endotoxin shock in dog. *Acta Physiol Scand*, 108, 367-372, 1980.
14. Tyssebotn, I. and Kirkeboe, A. Patchy, intermittent ischemia in renal cortex during tourniquet shock in dog. *Acta Physiol Scand*, 109, 253-260, 1980.
15. Onarheim, J. and Tyssebotn, I. Effect of high ambient pressure and oxygen tension on organ blood flow in the anesthetized rats. *Undersea Biomed Res*, 7, 47-60, 1980.
16. Clausen, G., Kirkeboe, A., Tyssebotn, I. and Aukland, K. Distribution of blood flow in the dog kidney. III. Local uptake of 10  $\mu\text{m}$  and 15  $\mu\text{m}$  microspheres during renal vasodilation and constriction. *Acta Physiol Scand*, 113, 481-485, 1981.
17. Clausen, G., Kirkeboe, A., Tyssebotn, I. and Aukland, K. Distribution of blood flow in the dog kidney. IV. Reversed net inward postglomerular capillary flow in the cortex after blocking interlobular arteries by 50  $\mu\text{m}$  microspheres. *Acta Physiol Scand*, 113, 481-485, 1981.
18. Johannessen, W.M., Tyssebotn, I. and Aarbakke, J. Antipyrine and acetaminophen kinetics in the rat. Comparison of data based on blood samples from the cut tail and a cannulated femoral artery. *J Pharma Sci*, 71, 1352-1356, 1982.
19. Hope, A., Tyssebotn, I. and Clausen, G. The effect of hemorrhagic hypotension on total and local renal blood flow in the rat. *Renal Physiol*, 6, 43-52, 1983.
20. Hope, A. and Tyssebotn, I. The effect of water deprivation on local renal blood flow and filtration in the laboratory rat. *Circ Shock*, 11, 175-186, 1983.
21. Sundberg, H, Værnes, R. and Tyssebotn, I. The role of hyperoxia in the possible long term neurological effects of diving. Minipaper, *Acta Neurolog Scand*, 169, 140-141, 1984.
22. Kirkeboe, A, Haugan, A and Tyssebotn, I. Blood flow heterogeneity in the renal cortex during burn shock in dogs. *Acta Physiol Scand*, 123, 205-213, 1985.
23. Aanderud, L., Onarheim, J. and Tyssebotn, I. The effect of 71 ATA He-O<sub>2</sub> on organ blood flow in the rat. *J Appl Physiol*, 1369-1375, 59, (5), 1985.
24. Hordnes, C. and Tyssebotn, I. Effect of high ambient pressure and oxygen tension on organ blood flow in conscious trained rats. *Undersea Biomed Res*, 12, 115-128, 1985.

25. Risberg, J. and Tyssebotn, I. Hyperbaric exposure to 5 ATA in a He-N<sub>2</sub>-O<sub>2</sub> atmosphere affects the cardiac function and organ blood flow in awake rats. *Undersea Biomed Res*, 13, (1),77-90, 1986.
26. Risberg, J., Hordnes, C. and Tyssebotn, I. The effect of  $\beta_1$ -adrenoceptor blockade on cardiac output and organ blood flow in conscious trained rats. *Scandinavian J Clin Lab Invest*, 47, 521-527, 1987.
27. Ask, J.A. and Tyssebotn, I. Effect of compression to 5, 10, and 30 Bar on the contractile activity of isolated atrial preparations from the rat heart. *Underwater Physiology IX*, Bethesda, MD, 465-469, 1987.
28. Bergø, G.W., Ask, J.A. and Tyssebotn, I. Breathing gas density influences the myocardial contractility. Minipaper, *Underwater Physiol*, IX, Bethesda, MD, 471-476, 1987.
29. Ask, J.A. and Tyssebotn, I. Inotropic and chronotropic effects of noradrenaline via cardiac beta-adrenoceptors during hyperbaric exposure. *Undersea Biomed Res*, in press.
30. Ask, J.A. and Tyssebotn, I. Positive inotropic effect on the rat atrial myocardium compressed to 5, 10, and 30 bar. *Acta Physiol Scand*, 134, 277-283, 1988.
31. Bergø, G.W., Risberg, J. and Tyssebotn, I. Effect of 5 bar oxygen on cardiac output and organ blood flow in conscious rats. *Undersea Biomed Res*, 15, 457-470, 1988.
32. Furset, K., Aanderud, L., Segadal, K. and Tyssebotn, I. Transcutaneous measurements of P<sub>co2</sub> high ambient pressure (41 bar). *Undersea Biomed Res*, 14, (4), 51-62, 1988.
33. Stuhr, L.E.B., Ask, J.A. and Tyssebotn, I. Increased cardiac contractility in rats exposed to 5 bar. *Acta Physiol Scand*, 136, 167-176, 1989.
34. Furset, K, Aanderud, L. and Tyssebotn, I. Respiratory depression by analgesics at 41 bar. *Undersea Biomed Res*, 16, 219-226, 1989.
35. Mæhle, B.O., Giertsen, J.C.H. and Tyssebotn, I. Hypertrophy of the left cardiac ventricle in professional divers. *J Hyperbaric Medicine*, 4, (4), 189-195, 1989.
36. Risberg, J., Bergø, G.W., Hordnes, C. and Tyssebotn,I. Distribution of cardiac output in awake rats during exposure to 5 bar. *Undersea Biomed. Res.*, 17(6): 503-514, 1990.

37. Stuhr, L.E.B., Ask, J.A. and Tyssebotn, I. Cardiovascular changes in anesthetized rats during exposure to 30 bar. *Undersea Biomed Res*, 17, (5), 383-393, 1990.
38. Ask, J.A. and Tyssebotn, I. Positive inotropic effect on the human atrial myocardium exposed to 30 bar. *Undersea Biomed Res*, 18, (2), 138-143, 1991.
39. Bergø, G.W. and Tyssebotn, I. Respiratory frequency and distribution of cardiac output in rats breathing gas with different densities. *Scand. J. Clin. Lab. Invest.* 51:59-66, 1991.
40. Stuhr, L.E.B., Ask, J.A. and Tyssebotn, I. Inotropic and chronotropic responses to isoprenaline in rats exposed to 30 bar. *Aviat Space Environ Med*, 62, 41-45, 1991.
41. Bergø, G.W. and Tyssebotn, I. Increased breathing gas density enhances cardiac work load. *Scand. J. Clin. Lab. Invest.* 52:151-158, 1992.
42. Bergø, G.W. and Tyssebotn, I. Cerebral blood flow distribution during exposure to 5 bar oxygen in conscious rats. *Undersea Biomed. Res.* 19:339-354, 1992.
43. Risberg, J. and Tyssebotn, I. Organ blood flow and cardiac contractility in anaesthetized cats at 5 bar (300 kPa) ambient pressure. *Europ J Appl Phys*, 64, 389-394, 1992.
44. Stuhr, L.E.B., Bergoe, G.W., Skei, S., Mæhle, B.O. and Tyssebotn, I. Repeated normoxic hyperbaric exposures induce hemodynamic and myocardial changes in rats. *Euro J Appl Physiol* 66(3): 224-234, 1993.
45. Bergø, G.W., Engelsen, B. and Tyssebotn, I. Unilateral frontal decortication changes cerebral blood flow distribution during hyperbaric oxygen exposure in rats. *Aviat Space Environ Med* 64: 1023-1031, 1993.
46. Bergø, G.W. and Tyssebotn I. Cerebral blood flow distribution and systemic hemodynamic changes after repeated exposures to 5 bar oxygen. *Euro J Appl Physiol*, 69:1-9, 1994.
47. Stuhr, L.E.B, Bergø, G.W. and Tyssebotn, I. Systemic hemodynamics during hyperbaric oxygen exposure in rats. *Aviat Space Environ Med*, 65:531-538, 1994.
48. Bergø, G.W. and Tyssebotn, I. Repeated exposures to 5 bar normoxic He-N<sub>2</sub> changes the cerebral blood flow distribution in rats. *J Appl Physiol*, 78 (6):2109-2114, 1995.
49. Risberg, J., Hordnes, C., Stuhr, L.E.B. and Tyssebotn, I. Effects of  $\beta_1$ -adrenoceptor blockade in rats at 5 bar ambient pressure. *Undersea Hyperbaric Med* 21, 371-385, 1994.

50. Bergø, G.W. and Tyssebotn, I. Cerebral blood flow distribution and systemic hemodynamics during 3 bar oxygen exposure in rats given 2 kPa (15 mmHg) CO<sub>2</sub> in the breathing gas. *J Appl Physiol*, 78 (6): 2100-2109, 1995.
51. Risberg, J., Skei, S. and Tyssebotn, I. Effect of gas density and ambient pressure on myocardial contractility in the rat. *Aviat Space Envir Med*, 66: 1159-1168, 1995.
52. Bergø, G.W. and Tyssebotn, I. Effect of 101 and 150 kPa oxygen on the cerebral circulation and oxygen supply in conscious rats. *Euro J Appl Physiol*, 71 (6): 475-484, 1995.
53. Jiang, J. and Tyssebotn, I. A model for acute monoxide poisoning in conscious rats. *Undersea Hyperbaric Med. Undersea and Hyperbaric Medicine* 23(2):99-106, 1996.
54. Krossnes, BK, Mella, O. and Tyssebotn, I. Effect of sodium nitroprusside-induced hypotension on the blood flow in subcutaneous and intramuscular BT<sub>4</sub>AN tumors and normal tissues in rats. *Int J Radiation Oncology Biol Phys* 36(2):393-401, 1996.
55. Jiang, J. and Tyssebotn, I. Measurement of cerebrospinal fluid pressure in conscious rats. *Undersea & Hyperbaric Medicine*. 24:39-43, 1997.
56. Jiang, J. and Tyssebotn, I. Normobaric and hyperbaric oxygen treatment of acute carbon monoxide poisoning in rats. *Undersea Hyperbaric Med*, 24(2):107-116, 1997.
57. Jiang, J. and Tyssebotn, I. Cerebrospinal fluid pressure changes after acute carbon monoxide poisoning and therapeutic effects of normobaric and hyperbaric oxygen in conscious rats. *Undersea Hyper Med* 24(4):245-254, 1997.
58. Stuhr, L.E.B., Risberg, J., Bergø, G.W. and Tyssebotn, I. Effect of verapamil and quinidine on cardiac contractility in anesthetized rats at normal and elevated ambient pressure. *Undersea Biomed Res*, revised.
59. Bergø, G.W. and Tyssebotn, I. Vascular adaptation in rats after repeated exposures to 500 kPa normoxic N<sub>2</sub>-He. *J Appl Physiol*, submitted.
60. Bergø, G.W. and Tyssebotn, I. Effect of acute and repeated exposure to 500 kPa O<sub>2</sub> on hemodynamics and cardiac output distribution in rats with and without brain lesions. *Europ J Appl Physiol*, submitted.
61. Bergø, G.W. and Tyssebotn, I. Cardiac contractility and coronary blood flow in rats during hyperbaric oxygen exposure. In prep.

62. Bergø, G.W. and Tyssebotn, I. Cardiovascular effects of hyperbaric oxygen with and without addition of carbon dioxide. *Eur J Appl Physiol*, 80:264-275, 1999.
63. Van Liew, H., Burkard, M.E., Lundgren, C.E.G., Tyssebotn, I.M. Method for enhancing transport of gases to tissues. US Patent # 5,869,538 (Feb. 9, 1999).
64. Van Liew, H., Burkard, M.E., Lundgren, C.E.G., Tyssebotn, I.M. US Patent # 6,127,428 (2000).
65. Stuhr, L.E.B., Risberg, J., Bergø, G.W., and Tyssebotn, I. Cardiovascular effects of verapamil and quinidine at normal and elevated ambient pressure. *Aviat Space Environ Med* 72:373-379, 2001.
66. Lundgren CEG, Bergoe GW, Tyssebotn I. Hemorrhagic shock in air breathing pigs treated with bubble-forming intravenous dodecafluoropentane emulsion. *Artif Blood* 11(1); F-I-4, 2003.
67. Lundgren CEG, Bergoe GW, Tyssebotn I. The theory and application of intravascular microbubbles as an ultra-effective means of transporting oxygen and other gases. *Undersea & Hyper Med* 31(1): 105-6,2004
68. Lundgren C, Bergoe G, Olszowka A, Tyssebotn I. Tissue nitrogen elimination in oxygen-breathing pigs is enhanced by fluorocarbon-derived intravascular microbubbles. *Undersea and Hyperbaric Medicine* 32(4): 215-226, 2005
69. Lundgren CE. Bergoe GW. Tyssebotn IM. Intravascular fluorocarbon-stabilized microbubbles protect against fatal anemia in rats. *Artificial Cells, Blood Substitutes, & Immobilization Biotechnology*. 34(5): 473-86, 2006.

**Book chapters:**

1. Kirkeboe, A. and Tyssebotn, I. Intrarenal blood flow in circulatory shock and during infusion of vasoactive agents. Ph.D. thesis (Joint chapter of Ph.D. Thesis), pp. 1-52, 1980.
2. Kirkeboe, A. and Tyssebotn, I. Measurement of regional blood flow in kidney. In: *Acute Renal Failure* (Seybold, D and Gesler,U eds.), Karger, Basel, 32-40, 1982.
3. Tyssebotn, I. and Kirkeboe, A. Patchy, renal ischemia during hypovolemic shock in dog. In: *Acute Renal Failure* (Seybold, D and Gesler,U eds.), Karger, Basel, 23-32, 1982.
4. Tyssebotn, I. *Svømmedykking ved Universitetet i Bergen*. Revision, 1984.
5. Risberg, J., Hordnes, C. and Tyssebotn, I. The effect of  $\beta_1$ -blockade on the distribution on cardiac output at normal and increased ambient pressure in conscious rats. *Underwater*

physiology VIII (Bachrach AJ and Matzen, MM eds.), Undersea Med Soc, USA, 309-314, 1984.

6. Arntzen, A.J. and Eidsvik, S. Nye norske dykketabeller, Revision, Bergen 1991.

#### **Proceedings from International Conferences and Meetings:**

1. Ask, J.A. and Tyssebotn, I. Positive inotropic effects of rat atrial myocardium compressed to 5, 10, and 30 Bar. Minipaper, Proceeding EUBS 86 on diving and hyperbaric medicine, pp. 65-69, 1986.
2. Stuhr, L.E.B., Ask, J.A. and Tyssebotn, I. Increased inotropy of the heart in normoxic hyperbaric atmosphere. Minipaper, Proceeding EUBS 85 on diving and hyperbaric medicine, Göteborg, Sweden, pp. 133-138, 1985.
3. Bergø, G.W. and Tyssebotn, I. Repeated exposures to 5 Bar oxygen change cerebral blood flow distribution in awake, trained rats. Minipaper, Proceedings EUBS 86 on diving and hyperbaric medicine, pp. 17-23, 1986.
4. Bergø, G.W. and Tyssebotn, I. How will hyperbaric oxygen influence the pump work of the rat heart? Minipaper, Proceedings EUBS 87 on diving and hyperbaric medicine, Palermo, Italy, pp. 154-160, 1987.
5. Bergø, G.W., Engelsen, B. and Tyssebotn, I. Regional cerebral blood flow (rCBF) distribution after unilateral cortical lesions during hyperbaric (HBO) in rats. Minipaper, Proceedings EUBS 87 on diving and hyperbaric medicine, pp. 161-166, 1987.
6. Ask, J.A., Hansen, A. and Tyssebotn, I. Inotropic effect of noradrenaline via cardiac beta-adrenoceptors at 30 and 60 bar. Minipaper, Proceedings EUBS 87 on diving and hyperbaric medicine, Palermo, Italy, pp. 258-263, 1987.
7. Stuhr, L.E.B., Ask, J.A. and Tyssebotn, I. Effect of exposure to 30 bar on the cardiac contractility of anesthetized rats. Minipaper, Proceedings EUBS 87 on diving and hyperbaric medicine, Palermo, Italy, pp. 254-257, 1987.
8. Tyssebotn, I. Physiological effects of breathing increased partial pressure of oxygen. Oljedirektoratets konferanse i Stavanger, 3.-4. Februar, 1988.
9. Risberg, J, Stuhr, L.E.B. and Tyssebotn, I. Increased cardiac contractility in the athenolol treated rat at 5 bar ambient pressure. Proceedings XVI<sup>th</sup> Annual Meeting EUBS, Amsterdam, Netherland, pp. 189-195, 1990.

10. Bergø, GW and Tyssebotn, I. Circulatory changes after repeated exposures to 4 bar oxygen in awake rats. Proceedings of the 10<sup>th</sup> International Congress of Hyperbaric Medicine, Amsterdam, Netherland, pp. 52-59, 1990.
11. Risberg, J., Stuhr, L.E.B. and Tyssebotn, I. Increased cardiac contractility in the athenolol treated rat at 5 bar ambient pressure. Proceedings XVI<sup>th</sup> Annual Meeting EUBS, Amsterdam, Netherland, pp. 189-195, 1990.
12. Risberg, J., Stuhr, L.E.B. and Tyssebotn, I. Increased cardiac contractility in the athenolol treated rat at 5 bar ambient pressure. Proceedings of the 10<sup>th</sup> International Congress of Hyperbaric Medicine, Amsterdam, Netherland, pp. 52-59, 1990.
13. Stuhr, L.E.B, Bergø, G.W., Risberg, J. and Tyssebotn, I. Effekten av ulike pustegasser på hjertets pumpetrykk og kontraktilitet. Vitenskapelig FUDT- seminar, Bergen, Norway, pp. 49-52, 1990.
14. Bergø, G.W. and Tyssebotn, I. Blodstroemsfordelingen i kroppen og hjertets arbeid ved varierende oksygeninnhold i pustegassen. Vitenskapelig FUDT- seminar, Bergen, Norway, pp. 20-23, 1990.
15. Tyssebotn, I, Stuhr, L,E.B. and Bergø, G.W. Relative influence of different factors on the heart during diving. Proceedings of the 10<sup>th</sup> International Congress of Hyperbaric Medicine, Amsterdam, Netherland, pp. 52-59, 1990.
16. Bergø, G.W. and Tyssebotn, I. Circulatory changes after repeated exposures to 4 bar oxygen in awake rats. Proceedings of the Tenth International Congress on Hyperbaric Medicine, Ed: DJ.Bakker, Best Publishing Company, Flagstaff, AZ., ISBN 0-941332-24-1, pp. 52-59, 1992.
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### **Submitted For Publication**

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2. Hickey D., Tyssebotn I., Bergø G., Warkander D., Buyea, C., and Lundgren, C. Indirect Measurement of Mean Left Atrial Pressure. Journal of Biomechanics.