

ARCHIVAL PUBLICATIONS IN REFEREED JOURNALS

- Johanson, C.E.** The effect of cerebrospinal fluid osmolarity on the clearance of urea and sucrose from the goat ventriculo-cisternal perfusion system. *Ph. D. Dissertation*, University of Kansas, University Microfilms, Order no. ADG71-13320, Ann Arbor, MI, 1970.
- Johanson, C.E.**, Reed, D.J. and D.M. Woodbury. Active transport of sodium and potassium by the choroid plexus of the rat. *J. Physiol. (London)* **241**: 359-372, 1974.
- Johanson, C.E.**, Foltz, F.M. and A.M. Thompson. The clearance of urea and sucrose from isotonic and hypertonic fluids perfused through the ventriculo-cisternal system. *Exper. Brain Res.* **20**: 18-31, 1974.
- Johanson, C.E.**, Woodbury, D.M. and C.D. Withrow. Distribution of bicarbonate between blood and cerebrospinal fluid in the neonatal rat in metabolic acidosis and alkalosis. *Life Sci.* **19**: 691-700, 1976.
- Johanson, C.E.**, Reed, D. J. and D.M. Woodbury. Developmental studies of the compartmentalization of water and electrolytes in the choroid plexus of neonatal rat brain. *Brain Res.* **116**: 35-48, 1976.
- Johanson, C.E.** and D.M. Woodbury. Penetration of C-14 barbital and C-14 antipyrine into the choroid plexus and cerebrospinal fluid of the rat. *Exper. Brain Res.* **30**: 65-74, 1977.
- Johanson, C.E.** and D.M. Woodbury. Uptake of C-14 urea by the in vivo choroid plexus-cerebrospinal fluid-brain system: Identification of sites of molecular sieving. *J. Physiol. (London)* **275**: 167-176, 1978.
- Johanson, C.E.** Choroid epithelial cell pH. *Life Sci.* **23**: 861-868, 1978.
- Hise, M.A. and **C.E. Johanson**. The sink action of the cerebrospinal fluid in uremia. *Eur. Neurol.* **18**: 328-337, 1979.
- Johanson, C.E.** Distribution of fluid between extracellular and intracellular compartments in the heart, lungs, liver and spleen of neonatal rats. *Biol. Neonate* **36**: 282-289, 1979.
- Smith, Q.R. and **C.E. Johanson**. Effect of ouabain and potassium on ion concentrations in the choroidal epithelium. *Am. J. Physiol. (Renal Fluid Elec.)* **238**: F399-F406, 1980.
- Smith, Q.R. and **C.E. Johanson**. Effect of carbonic anhydrase inhibitors and acidosis on choroid plexus epithelial cell sodium and potassium. *J. Pharmacol Exper. Ther.* **215**: 673-680, 1980.
- Johanson, C.E.** Permeability and vascularity of the developing brain: cerebellum vs. cerebral cortex. *Brain Res.* **190**: 3-16, 1980.
- Smith, Q.R., Woodbury, D.M. and **C.E. Johanson**. Uptake of Cl-36 and Na-22 by the choroid plexus-cerebrospinal fluid system: Evidence for active chloride transport by the choroidal epithelium. *J. Neurochem.* **37**: 107-116, 1981.

- Smith, Q.R., **Johanson, C.E.** and D.M. Woodbury. Uptake of Cl-36 and Na-22 by the brain-cerebrospinal fluid system: Comparison of the permeability of the blood-brain and blood-cerebrospinal fluid barriers. *J. Neurochem.* **37**: 117-124, 1981.
- Smith, Q.R., Pershing, L.K. and **C.E. Johanson.** A comparative analysis of extracellular fluid volume of several tissues as determined by six different markers. *Life Sci.* **29**: 449-456, 1981.
- Parandoosh, Z. and **C.E. Johanson.** Ontogeny of the blood-brain barrier to, and cerebrospinal fluid sink action on, C-14 urea. *Am. J. Physiol.* **243**: R400-R407, 1982.
- Smith, Q.R., Woodbury, D.M. and **C.E. Johanson.** Kinetic analysis of Cl-36, Na-22 and H-3 mannitol uptake into the in vivo choroid plexus-cerebrospinal fluid system: Ontogeny of the blood-brain and blood-CSF barriers. *Devel. Brain Res.* **3**: 181-198, 1982.
- Pershing, L.K. and **C.E. Johanson.** Acidosis-induced enhanced activity of the Na-K exchange pump in the in vivo choroid plexus: An ontogenetic analysis of possible role in cerebrospinal fluid pH homeostasis. *J. Neurochem.* **38**: 322-332, 1982.
- Johanson, C.E.** Differential effects of acetazolamide, benzolamide and systemic acidosis on hydrogen and bicarbonate gradients across the apical and basolateral membranes of the choroid plexus. *J. Pharmacol. Exp. Ther.* **231**: 502-511, 1984.
- Murphy, V.A. and **C.E. Johanson.** Adrenergic-induced enhancement of brain barrier system permeability to small non-electrolytes: choroid plexus vs. cerebral capillaries. *J. Cereb. Blood Flow Metabol.* **5**: 401-412, 1985.
- Johanson, C.E.,** Parandoosh, Z. and Q.R. Smith. Chloride-bicarbonate exchange in the choroid plexus: Analysis by the DMO method for cell pH. *Am. J. Physiol.* **249** (*Renal Fluid and Elec. 18*): F478-F484, 1985.
- Smith, Q.R. and **C.E. Johanson.** Active transport of chloride by lateral ventricle choroid plexus of the rat. *Am. J. Physiol.* **249** (*Renal Fluid and Elec. 18*) : F470-F477, 1985.
- Harbut, R. and **C.E. Johanson.** Third ventricle choroid plexus function and its response to acute perturbations in plasma chemistry. *Brain Res.* **374**: 137-146, 1986.
- Johanson, C.E.,** Allen, J. and C.D. Withrow. Regulation of pH and HCO₃ in brain and CSF of developing mammalian central nervous system. *Devel. Brain Res.* **38**: 255-264, 1988.
- Murphy, V.A. and **C.E. Johanson.** Alteration of sodium transport by the choroid plexus with amiloride. *Biochim. Biophys. Acta* **979**: 187-192, 1989.
- Spector, R. and **C.E. Johanson.** The mammalian choroid plexus. *Sci. Amer.* **260**(11): 68-74, 1989.
- Murphy, V.A. and **C.E. Johanson.** Acidosis, acetazolamide and amiloride- Effects on ²²Na transfer across the blood-brain and blood-CSF barriers. *J. Neurochem.* **52**:1058-63, 1989.

- Parmelee, J. T. and **C.E. Johanson**. Development of potassium transport capability by choroid plexus of infant rats. *Am. J. Physiol.* **256**: (Reg. Int. Comp. 25): R786-R791, 1989.
- Deng, Q-S. and **C.E. Johanson**. Stilbenes inhibit exchange of chloride between blood, choroid plexus and cerebrospinal fluid. *Brain Res.* **501**: 183-187, 1989.
- Johanson, C.E.**, Sweeney, S.M., Parmelee, J.T. and M.H. Epstein. Cotransport of sodium and chloride by the adult mammalian choroid plexus. *Am. J. Physiol.* **258** (Cell Physiol. 27): C211-C216, 1990.
- Murphy, V.A. and **C.E. Johanson**. Na⁺-H⁺ exchange in choroid plexus and CSF in acute metabolic acidosis or alkalosis. *Am. J. Physiol. (Renal 258)*: F1528-F1537, 1990.
- Spector, R. and **C. Johanson**. Les reins du cerveau. *Pour La Science* **147**: 82-89, 1990.
- Johanson, C.E.** and V.A. Murphy. Acetazolamide and insulin alter choroid plexus epithelial cell [Na⁺], pH and volume. *Am. J. Physiol. (Renal)* **258**: F1538-F1546, 1990.
- Bairamian, D., **Johanson, C.E.**, Parmelee, J.T. and M.H. Epstein. Potassium cotransport with sodium and chloride in the choroid plexus. *J. Neurochem.* **56**: 1623-1629, 1991.
- Knuckey, N. W., Fowler, A.G., **Johanson, C.E.**, Nashold, J.R. and M.H. Epstein. Cisterna magna microdialysis of ²²Na to evaluate ion transport and cerebrospinal fluid dynamics. *J. Neurosurg.* **74**: 965-971, 1991.
- Parmelee, J., Bairamian, D. and **C.E. Johanson**. Response of infant and adult rat choroid plexus potassium transporters to increased extracellular potassium. *Dev. Brain Res.* **60**: 229-233, 1991.
- Smith, Q.R. and **C.E. Johanson**. Chloride efflux from isolated choroid plexus. *Brain Res.* **562** (2): 306-310, 1991.
- Johanson, C.E.**, Parandoosh, Z. and M.L. Dyas. Maturation differences in acetazolamide-altered pH and HCO₃ of choroid plexus, CSF and brain. *Am. J. Physiol* **262**: R909-R914, 1992.
- Deng, Q.S. and **C.E. Johanson**. Cyclic AMP alteration of chloride transport into the choroid plexus-cerebrospinal fluid system. *Neurosci. Lett.* **143**: 146-150, 1992.
- Johanson, C.E.**, Murphy, V.A. and M. Dyas. Ethacrynic acid and furosemide alter Cl, K and Na distribution between blood, choroid plexus, CSF and brain. *Neurochem. Res.* **17**: 1079-1085, 1992.
- Knuckey, N. W., Preston, J., Palm, D., Epstein, M.H. and **C. Johanson**. Hydrocephalus decreases chloride efflux from the choroid plexus epithelium. *Brain. Res.* **618**: 313-317, 1993.
- Preston, J. E., Dyas, M. and **C.E. Johanson**. Development of chloride transport by the rat choroid plexus, in vitro. *Brain Res.* **624**: 181-187, 1993.

- Szmydynger-Chodobska, J., Chodobski, A. and **C.E. Johanson**. Postnatal developmental changes in blood flow to choroid plexuses and cerebral cortex of the rat. *Am. J. Physiol.* **266**: R1488-R1492, 1994.
- Johanson, C.E.**, Palm, D.E., Dyas, M.L. and N.W. Knuckey. Microdialysis analysis of effects of loop diuretics and acetazolamide on chloride transport from blood to CSF. *Brain Res.* **641**: 121-126, 1994.
- Yacavone, R.F., Dyas, M., and **C.E. Johanson**. A developmental analysis of differences in the uptake of [¹²³I]-Isopropylidoamphetamine versus ^{99m}Tc-Pertechnetate by the choroid plexus and brain. *Neurochem. Res.* **19**: 379-384, 1994.
- Johanson, C.E.** and J.T. Preston. Potassium efflux from infant and adult rat choroid plexuses: Effects of CSF anion substitution, N-ethylmaleimide and Cl transport inhibitors. *Neurosci. Lett.* **169**: 207-211, 1994.
- Chodobski, A., Szmydynger-Chodobska, J., Vannorsdall, M.D., Epstein, M.H., and **C.E. Johanson**. AT₁ receptor subtype mediates the inhibitory effect of central angiotensin II on cerebrospinal fluid formation in the rat. *Regul. Pept.* **53**(2): 123-129, 1994.
- Palm, D., Knuckey, N., Guglielmo, M., Watson, P., Primiano, M. and **C. Johanson**. Choroid plexus electrolytes and ultrastructure following transient forebrain ischemia. *Am. J. Physiol.* **269**: R73-R79, 1995.
- Chodobski, A., Szmydynger-Chodobska, J., Epstein, M.H., and **C.E. Johanson**. The role of angiotensin II in the regulation of blood flow to choroid plexuses and cerebrospinal fluid formation in the rat. *J. Cereb. Blood Flow Metabol.* **15**: 143-151, 1995.
- Knuckey, N.W., Palm, D., Primiano, M., Epstein, M.H. and **C.E. Johanson**. N-Acetyl-cysteine enhances hippocampal neuronal survival induced by transient cerebral ischemia. *Stroke* **26**: 305-311, 1995.
- Palm, D., Knuckey, N. W., Primiano, M. J., Spangenberg, A. G. and **C.E. Johanson**. Cystatin C, a protease inhibitor, in degenerating rat hippocampal neurons following transient forebrain ischemia. *Brain Res.* **691**: 1-8, 1995.
- Szmydynger-Chodobska, J., Lin, A. Y.-J., Rahman, M. P., Monfils, P.R., **Johanson, C.E.** and A. Chodobski. NADPH-diaphorase histochemistry of rat choroid plexus. *Neurosci. Lett.* **208**: 179-182, 1996.
- Lin, A. Y.-J., Szmydynger-Chodobska, J., Rahman, M.P., Mayer, B., Monfils, P.R., **Johanson, C.E.** and A. Chodobski. Immunohistochemical localization of nitric oxide synthase in rat anterior choroidal artery, stromal blood microvessels, and choroid plexus epithelial cells. *Cell and Tissue Research* **285**: 411-418, 1996.
- Knuckey, N.W., Finch, P., Palm, D.E., Primiano, M.J., **Johanson, C.E.**, Flanders, K.C. and N.L. Thompson. Differential neuronal and astrocytic expression of transforming growth factor beta isoforms in rat hippocampus following transient forebrain ischemia. *Mol. Brain Res.* **40**: 1-14, 1996.

- Chodobski, A., Loh, Y.P., Corsetti, S., Szmydynger-Chodobska, J., **Johanson, C.E.**, Lim, Y-P and Monfils, P.R. The presence of arginine vasopressin and its mRNA in rat choroid plexus epithelium. *Mol. Brain Res.* **48**: 67-72, 1997.
- Guglielmo, M.A., Chan, P.T., Cortez, S., Stopa, E.G., McMillan, P., **Johanson, C.E.**, Epstein, M. and C. E. Doberstein. The temporal profile and morphologic features of neuronal death in human stroke resemble those observed in experimental forebrain ischemia: The potential role of apoptosis. *Neurol. Res.* **20**: 1-14, 1998.
- Chodobski, A., Szmydynger-Chodobska, J. and **C.E. Johanson**. Vasopressin mediates the inhibitory effect of central angiotensin II on cerebrospinal fluid formation. *Eur. J. Pharmacol.* **347**: 205-209, 1998.
- Johanson, C.E.**, Preston, J.E., Chodobski, A., Stopa, E.G., Szmydynger-Chodobska, J., and P. N. McMillan. Arginine vasopressin V1-receptor-induced decrease in Cl transport and increase in dark cell frequency in choroid plexus. *Am. J. Physiol. (Cell)* **276**: C82-C90, 1999.
- Chodobski, A., Szmydynger-Chodobska, J. and **C.E. Johanson**. Angiotensin II regulates blood flow to choroid plexuses by interacting with the sympathetic nervous system and nitric oxide synthesis. *Brain Res.* **816**: 518-526, 1999.
- Johanson, C.E.**, Szmydynger-Chodobska, J., Chodobski, A., Baird, A., McMillan, P. and E.G. Stopa. Altered formation and bulk absorption of cerebrospinal fluid in FGF-2- induced hydrocephalus. *Am. J. Physiol. (Reg. Integ. Comp.)* **277**: R263-R271, 1999.
- Johanson, C.E.**, Palm, D.E., Primiano, M.J., McMillan, P.N., Chan, P., Knuckey, N.W. and E.G. Stopa. Choroid plexus recovery after transient forebrain ischemia: Role of growth factors and other repair mechanisms. *Cellular and Molec. Neurobiol.*, **20** (2): 197-216, 2000.
- Hakvoort, A. and **C.E. Johanson**. Growth factor modulation of CSF formation by isolated choroid plexus: FGF-2 vs. TGF-B1. *Eur. J. Pediatr. Surg.* **10** (Suppl. I-Hydrocephalus): 44-46, 2000.
- Stopa, E.G., Berzin, T.M., Kim, S., Song, P., Kuo-LeBlanc, V., Rodriquez-Wolf, M., Baird, A. and **C.E. Johanson**. Human choroid plexus growth factors: What are the implications for CSF dynamics in Alzheimer's Disease? *Exper. Neurology* **167**: 40-47, 2001.
- Hayamizu, T.F., Chan, P.T. and **C.E. Johanson**. FGF-2 immunoreactivity in adult rat ependyma and choroid plexus: Response to global forebrain ischemia and intraventricular FGF-2. *Neurol. Res.* **23**: 353-358, 2001.
- Johanson, C.**, Del Bigio, M., Kinsman, S., Miyan, J., Pattisapu, J., Robinson, M. and H. Jones. New models for analyzing hydrocephalus and disorders of CSF volume transmission. *Br. J. Neurosurg.* **15**(3): 281-283, 2001.
- Johanson, C.E.** and H.C. Jones. Promising vistas in hydrocephalus and cerebrospinal fluid research. *Trends in Neuroscience* **24**: 631-32, 2001.

- Johanson, C.E.**, Gonzalez, A.M. and E.G. Stopa. Water-imbalance induced expression of FGF-2 in fluid-regulatory centers: choroid plexus and neurohypophysis. *Eur. J. Pediatr. Surg.* **11** (Suppl. I- Hydrocephalus): 7-8, 2001.
- Szmydynger-Chodobska, J., Chun, Z.G., **Johanson, C.E.** and A. Chodobski. Distribution of fibroblast growth factor receptors and their co-localization with vasopressin in the choroid plexus epithelium. *Neuroreport* **13**: 257-259, 2002.
- Johanson, C.E.**, Jones, H.C., Stopa, E.G., Ayala, C., Duncan, J.A. and P.N. McMillan. Enhanced expression of the Na-K-2Cl cotransporter at different regions of the blood-CSF barrier in the perinatal H-Tx rat. *Eur. J. Pediatr. Surg.* **12** (Suppl.1 - Hydrocephalus): S47
- Anthony, S.G. Schipper, H.M., Tavares, R., Hovanesian, V., Cortez, S.C., Stopa, E.G. and **C.E. Johanson**. Stress protein expression in the Alzheimer-diseased choroid plexus. *J. Alzheimer's Disease* **5**: 171-7, 2003.
- Preston, J.E., McMillan, P.N., Stopa, E.G., Nashold, J.R., Duncan, J.A., and **C.E. Johanson**. Atrial natriuretic peptide induction of dark epithelial cells in choroid plexus: Consistency with the model of CSF downregulation in hydrocephalus. *Eur. J. Pediatr. Surg.* **13**, S40-42, 2003.
- Smith, D.E., **Johanson, C.E.** and R.F. Keep. Peptide and peptide analog transport systems at the blood-CSF barrier. In Drug Transfer in the Choroid Plexus. Multiplicities and Substrate Specificities of Transporters. Y. Sugiyama and J-F. Ghersi-Egea, eds., *Adv. Drug Deliv. Rev.* **56**: 1765-1791, 2004.
- Johanson, C.**, McMillan, P., Tavares, R., Spangenberg, A., Silverberg, G. and E. Stopa. Homeostatic capabilities of the choroid plexus epithelium in Alzheimer's disease, *Cerebrospinal Fluid Research* **1**:1-16, 2004.
- Johanson, C.**, Duncan, J., Baird, A., Stopa, E. and P. McMillan. Choroid plexus: A key player in neuroprotection and neuroregeneration. *Int. J. Neuroprotect. and Neuroregen.* **1**(2): 77-85, 2005.
- Johanson, C.**, Duncan, J., Stopa, E., and A. Baird. Enhanced prospects for drug delivery and brain targeting by the choroid plexus-CSF route, *Pharmaceut. Res.* **22**: 1011-37, 2005.
- Sharma, H.S., Duncan, J.A., and **C.E. Johanson**. Whole-body hyperthermia in the rat disrupts the blood-cerebrospinal fluid barrier and induces brain edema. *Acta Neurochir.* **96**:426-31, 2006.
- Chan, C., Cotman, C.W., Okano, H., Tavares, R., Hovanesian, V., Pinar, H., **Johanson, C.E.**, Svendsen, C.N. and E. G. Stopa. Antigenic determinants of neural progenitor cells during human fetal development, *Exper. Neurol.* **201**: 515-18, 2006.
- Johanson, C.E.**, Donahue, J.E., Spangenberg, A., Stopa, E.G., Duncan, J.A. and H. S. Sharma. Atrial natriuretic peptide: Its putative role in modulating the choroid plexus-CSF system for intracranial pressure regulation. *Acta Neurochir.* **96**: 481-486, 2006.

- Donahue J.E., Flaherty, S.L., **Johanson, C.E.**, Duncan, J.A. 3rd, Silverberg, G.D., Miller, M.C., Tavares, R., Yang, W., Wu, Q., Sabo, E., Hovanesian, V., and E. G. Stopa. RAGE, LRP-1, and amyloid-beta protein in Alzheimer's disease. *Acta Neuropathol (Berl)*. **112**: 405-15, 2006.
- Spector, R. and **C.E. Johanson**. Micronutrient and urate transport in choroid plexus: Implications for drug therapy. *Pharm. Res.* **23**: 2515-24, 2006.
- Sharma, H. and **C.E. Johanson**. Blood-cerebrospinal fluid barrier in hyperthermia. *Progress in Brain Research* **162**: 459-78, 2007.
- Zipser, B., **Johanson, C.**, Gonzalez, L., Berzin, T., Tavares, R., Hulette, C., Vitek, M., Hovanesian, V., and E. Stopa. Microvascular injury and blood-brain barrier leakage in Alzheimer's disease. *Neurobiol. of Aging* **28**(7): 977-86, 2007.
- Spector, R. and **C.E. Johanson**. The origin of deoxynucleosides in brain: Implications for the study of neurogenesis and stem cell therapy. *Pharm. Res.* **24**: 859-67, 2007.
- Muldoon, L. L., Soussain, C., Jahnke, K., **Johanson, C.**, Siegal, T., Smith, Q.R., Hall, W., Hynynen, K., Senter, P., Peereboom, D.M., and E.A. Neuwelt. Chemotherapy delivery issues in central nervous system malignancy: A reality check. *J. Clin. Oncol.* **25**: 2295-305, 2007.
- Spector, R. and **C.E. Johanson**. Vitamin transport and homeostasis in mammalian brain: focus on vitamins B and E. *J. Neurochem.* **103**: 425-38, 2007.
- Sharma, H.S. and **C.E. Johanson**. Ventricularly-administered neurotrophins attenuate blood-cerebrospinal fluid barrier breakdown and brain pathology following whole body hyperthermia. *Ann. N.Y. Acad. Sci.*, **1122**: 112-129, 2007.
- Stopa, E., Butala, P., Salloway, S., **Johanson, C.**, Gonzalez, L., Tavares, R., Hovanesian, V., Hulette, C.M., Vitek, M.P. and R.A Cohen. Cerebral cortical arteriolar angiopathy, vascular Beta-amyloid, smooth muscle actin, Braak stage and APOE genotype. *Stroke* **39**:814-21, 2008.
- Johanson, C.E.**, Duncan, J.A., Klinge, P.M., Brinker, T., Stopa, E.G. and G.D. Silverberg. Multiplicity of cerebrospinal fluid functions: New challenges in health and disease. *CSF Research*, **5**:10, 2008.
- Donahue, J. E. and **C.E. Johanson**. Apolipoprotein E, amyloid- β , and blood-brain barrier permeability in Alzheimer Disease. *J. Neuropathol. Exp. Neurol.* **67**: 261-70, 2008.
- Miller, M., Tavares, R., **Johanson, C.E.**, Hovanesian, V, Donahue, J.E., Gonzalez, L., Silverberg, G.D., and E.G. Stopa. Hippocampal RAGE immunoreactivity in early and advanced Alzheimer's disease. *Brain Res.* **1230C**:273-280, 2008.
- Sharma, H.S., Zimmermann-Meinzingen, S., Sharma, A., and **C.E. Johanson**. Cerebrolysin attenuates blood-brain barrier and brain pathology following whole body hyperthermia in the rat. Brain Edema XIV, *Acta Neurochirg Suppl.* **106**:321-5, 2009.

- Shapiro W.R., **Johanson C.E.**, Boogerd W. Treatment modalities for leptomeningeal metastases. *Semin. Oncol.* **36**(4 Suppl 2): S46-54, 2009.
- Deren, K.E., Forsyth, J., Abdullah, O., Hsu, E.W., Klinge, P.M., Silverberg, G.D., **Johanson, C.E.**, McAllister, J.P. 2nd. Low levels of amyloid-beta and its transporters in neonatal rats with and without hydrocephalus. *Cerebrospinal Fluid Res.* **6**:4, 2009.
- Silverberg G.D., Messier A.A., Miller M.C., Machan J.T., Majmudar S.S., Stopa E.G., Donahue J.E., **Johanson C.E.** Amyloid efflux transporter expression at the blood-brain barrier declines in normal aging. *J Neuropathol Exp Neurol.* **69**(10):1034-43, 2010.
- Ott B.R., Cohen R.A., Gongvatana A., Okonkwo O.C., **Johanson C.E.**, Stopa E.G., Donahue J.E., and G.D. Silverberg. Alzheimer's Disease Neuroimaging Initiative. Brain ventricular volume and cerebrospinal fluid biomarkers of Alzheimer's disease. *J Alzheimers Dis.* **20**(2):647-57, 2010.
- Gonzalez A.M., Taylor W.M., **Johanson C.E.**, King J.C., Leadbeater W.E., Stopa E.G. and A. Baird. Co-localization and regulation of basic fibroblast growth factor and arginine vasopressin in neuroendocrine cells of the rat and human brain. *Cerebrospinal Fluid Res.* **7**:13, 2010.
- Spector R. and **C.E. Johanson.** Vectorial ligand transport through mammalian choroid plexus. *Pharm Res.* **27**(10):2054-62, 2010.
- Silverberg, G.D., Miller, M.C., Machan, J.T., **Johanson, C.E.**, Caralopoulos, I.N., Pascale, C.L., Heile, A. and P.M. Klinge. Amyloid and tau accumulate in the brains of aged hydrocephalic rats. *Brain Res.*, 1317: 286-96, 2010.
- Sharma, H.S., Zimmermann-Meinzingen, S., and **C.E. Johanson.** Cerebrolysin reduces blood-cerebrospinal fluid barrier permeability change, brain pathology and functional deficits following traumatic brain injury in the rat. *Ann N Y Acad Sci.* **1199**:125-37, 2010.
- Gonzalez A.M., Leadbeater W., Podvin S., Borboa A., Burg M., Sawada R., Rayner J., Sims K., Terasaki T., **Johanson C.**, Stopa E., Eliceiri B., Baird A. Epidermal growth factor targeting of bacteriophage to the choroid plexus for gene delivery to the central nervous system via cerebrospinal fluid. *Brain Res.* **1359**:1-13, 2010.
- Silverberg G., Miller M.C., Messier A.A., Majmudar S., Machan J.T., Donahue J.E., Stopa E.G., and **C.E. Johanson.** Amyloid deposition and influx transporter expression at the blood-brain barrier increase in normal aging. *J. Neuropathol. Exper. Neurology* **69**:98-108, 2010.
- Spector R. and C.E. **Johanson.** Choroid plexus failure in the Kearns-Sayre syndrome. *Cerebrospinal Fluid Res.* **7**:14, 2010.
- Gonzalez A.M., Leadbeater W.E., Burg M., Sims K., Terasaki T., **Johanson C.E.**, Stopa E.G., Eliceiri B.P. and A. Baird. Targeting choroid plexus epithelia and ventricular ependyma for drug delivery to the central nervous system. *Biomed Central Neurosci.* **12**:4, 2011.

- Podvin S., Gonzalez A.M., Miller M.C., Dang X., Botfield H., Donahue J.E., Kurabi A., Boissaud-Cooke M., Rossi R., Leadbeater W.E., **Johanson C.E.**, Coimbra R., Stopa E.G., Eliceiri B.P. and A. Baird. Esophageal cancer related gene-4 is a choroid plexus-derived injury response gene: evidence for a biphasic response in early and late brain injury. *PLoS One*. **6**(9):e24609, 2011.
- Johanson C.E.**, Stopa E.G. and P.N. McMillan. The blood-cerebrospinal fluid barrier: structure and functional significance. *Methods Mol Biol*. **686**:101-31, 2011.
- Pascale C.L., Miller M.C., Chiu C., Boylan M., Caralopoulos I.N., Gonzalez L., **Johanson C.E.** and G.D. Silverberg. Amyloid-beta transporter expression at the blood-CSF barrier is age-dependent. *Fluids Barriers CNS*. **8**:21, 2011.
- Gonzalez A.M., Podvin S., Lin S.Y., Miller M.C., Botfield H., Leadbeater W.E., Robertson A., Dang X., Knowling S.E., Cardenas-Galindo E., Donahue J.E., Stopa E.G., **Johanson C.E.**, Coimbra R., Eliceiri B.P. and A. Baird. Ecrg4 expression and its product augurin in the choroid plexus: impact on fetal brain development, cerebrospinal fluid homeostasis and neuroprogenitor cell response to CNS injury. *Fluids Barriers CNS*. **8**(1):6, 2011.
- Baird A., Eliceiri B.P., Gonzalez A.M., **Johanson C.E.**, Leadbeater W., and E.G. Stopa. Targeting the choroid plexus-CSF-brain nexus using peptides identified by phage display. *Methods Mol Biol*. **686**:483-98, 2011.
- Johanson C.**, Stopa E., McMillan P., Roth D., Funk J., and G. Krinke. The distributional nexus of choroid plexus to cerebrospinal fluid, ependyma and brain: Toxicologic/pathologic phenomena, periventricular destabilization, and lesion spread. *Toxicol Pathol*. **39**(1):186-212, 2011.
- Rauch S.M., Huen K., Miller M.C., Chaudry H., Lau M., Sanes J.R., **Johanson C.E.**, Stopa E.G., and R.W. Burgess. Changes in brain β -amyloid deposition and aquaporin 4 levels in response to altered agrin expression in mice. *J Neuropathol Exp Neurol*. **70**(12):1124-37, 2011.
- Johanson C.**, Stopa E., Baird A., and H. Sharma. Traumatic brain injury and recovery mechanisms: peptide modulation of periventricular neurogenic regions by the choroid plexus-CSF nexus. *J Neural Transm* **118**(1):115-33, 2011.
- Chiu C., Miller M.C., Caralopoulos I.N., Worden M.S., Brinker T., Gordon Z.N., **Johanson C.E.**, and G.D. Silverberg. Temporal course of cerebrospinal fluid dynamics and amyloid accumulation in the aging rat brain from three to thirty months. *Fluids Barriers CNS* **9**(1):3, 2012.

PUBLICATIONS IN BOOKS, MANUALS AND ENCYCLOPEDIAS

- Johanson, C.E.** and D.M. Woodbury. Changes in CSF flow and extracellular space in the developing rat. In Drugs and the Developing Brain, A. Vernadakis and N. Weiner, eds., Plenum Press, New York, pp. 281-287, 1974.

Woodbury, D.M., **Johanson, C.E.** and H. Brondsted. Maturation of the blood-brain and blood-CSF barriers and transport systems. In Narcotics and the Hypothalamus, E. Zimmermann and R. George, eds., Raven Press, New York, pp. 225-247, 1974.

Johanson, C.E. In Food and Drug Administration Manual, D. Reed and E. Fingl, eds., University of Utah Press, 1983.

Chapter 9, Sulfonamides, pp. 9-1 to 9-6.

Chapter 24, Local Anesthetics, pp. 24-1 to 24-5.

Chapter 25, General Anesthetics, pp. 25-1 to 25-11.

Chapter 26, Psychopharmacological Agents, pp. 26-1 to 26-10.

Chapter 34, Cardiac Glycosides, pp. 34-1 to 34-9.

Chapter 35, Antianginal Drugs and Vasodilators, pp. 35-1 to 35-9.

Chapter 36, Agents Used in Hyperlipidemias, pp. 36-1 to 36-8.

Chapter 40, Thyroid Pharmacology, pp. 40-1 to 40-10.

Chapter 43, Insulin, Oral Hypoglycemia Agents and Glucagon, pp. 43-1 to 43-9.

Johanson, C.E. Commentary on osmotic modification of the blood-brain barrier. *Neurosurgery* 17(2): 423-424, 1985.

Johanson, C.E. The choroid plexus. In Encyclopedia for Neuroscience, G. Adelman, ed., Birkhauser Boston, Vol. I., pp. 236-239, 1987; 2nd edition, pp. 384-87, 1999.

Johanson, C.E. Developmental neurobiology and neurochemistry. In Biomedical Research at Brown, Div. of Biol. and Med., Brown U., p. 108, 1986-87.

Epstein, M.H. and **C.E. Johanson**. The Dandy-Walker syndrome, In Handbook of Clinical Neurology, Vol. 6 (50): Malformations. N. Myrianthopoulos, ed., Elsevier Sci. Pub., Amsterdam, Chapter 19, pp. 1-14, 1987.

Johanson, C.E. The choroid plexus-arachnoid-cerebrospinal fluid system. In Neuromethods, Vol. 9: Neuronal Microenvironment-Electrolytes and Water Spaces, A. Boulton, G. Baker and W. Walz, eds., Humana Press, Clifton, NJ, pp. 33-104, 1988.

Johanson, C.E. Ontogeny of the blood-brain barrier, Chapter 7, In Implications of the Blood-Brain Barrier and Its Manipulation, Vol. 1: Basic Sci. Aspects, E. Neuwelt, ed., Plenum Press, New York, pp. 101-129, 1989.

Epstein, M. and **C.E. Johanson**. Myelomeningocele. In Current Therapy in Neurological Surgery-2, D.M. Long, ed., B.C. Decker Inc., pp. 319-321, 1989.

Johanson, C.E. Potential for pharmacological manipulation of the blood-cerebrospinal fluid barrier, Chapter 9, In Implications of the Blood-Brain Barrier and Its Manipulation, Vol.1: Basic Sci. Aspects, E. Neuwelt, ed., Plenum Press, New York, pp. 223-260, 1989.

- Johanson, C.E.** Book critique of Physiology and Pathophysiology of the Cerebrospinal Fluid, by H. Davson, K. Welch and M. Segal. *J. Neurosurg.* 68: 982-984, 1988.
- Johanson, C.E.**, Murphy, V.A., Bairamian, D. and M. H. Epstein. Exchange vs. cotransport of Na and Cl across the barriers interfacing cerebrospinal fluid and brain with blood. In Intracranial Pressure VII, J. Hoff and A. Betz, eds., Springer-Verlag, New York, pp. 303-311, 1989.
- Johanson, C.**, Parmelee, J., Bairamian, D., Sweeney, S. and M. Epstein. Cotransport of sodium, potassium and chloride in the isolated choroid plexus. In Barriers and Fluids of the Eye and Brain, MacMillan Press, pp. 203-207, 1992.
- Johanson, C.E.** Tissue Barriers: Diffusion, bulk flow and volume transmission of protein within the brain. In Pharmaceutical Biotechnology, Vol. 5: Biological Barriers to Protein Delivery, K.L. Audus and T.J. Raub, eds., pp. 467-486, Plenum Pub. Corp., New York, 1993.
- Johanson, C.E.** Ventricles and cerebrospinal fluid. In Neuroscience in Medicine, P. Michael Conn, ed., J.B. Lippincott Co., pp. 171-196, 1995.
- Johanson, C.E.** Arachnoid membrane, subarachnoid CSF and pia-glia. In An Introduction to the Blood-Brain Barrier: Methodology and Biology, W. Pardridge, ed., Cambridge University Press, 259-269, 1998.
- Chodobski, A., Wojcik, B., Peng Loh, Y., Dodd, K.A., Szmydynger-Chodobska, J., **Johanson, C.E.**, Demers, D.M., Chun, Z.G. and N.P. Limthong. Vasopressin gene expression in rat choroid plexus. In Vasopressin and Oxytocin, Zing et al., eds., Plenum Press, 59-65, 1998.
- Johanson, C.** The choroid plexus-CSF nexus: gateway to the brain, In Neuroscience in Medicine, P. Michael Conn, ed., Humana Press, 165-195, 2003.
- Johanson, C.E.** Choroid plexus and volume transmission. In Encyclopedia for Neuroscience, G. Adelman, ed., Birkhauser Boston, Vol. I., 3rd, electronic edition, 2003.
- Johanson, C.E.**, McMillan, P.N., Palm, D.E., Stopa, E.G., Doberstein, C.E. and J.A. Duncan. Volume transmission-mediated protective impact of choroid plexus-CSF growth factors on forebrain ischemic injury. In Blood-Spinal Cord and Brain Barriers in Health and Disease, H.S. Sharma and J. Westman, eds., Academic Press, San Diego, 361-384, 2003.
- Johanson, C.E.**, editor. Cerebrospinal Fluid and Ependymal Interactions with Brain. In Frontiers in Bioscience, www.bioscience.org, in press.
- Weaver, C.E., McMillan, P.N., Duncan, J.A., Stopa, E.G. and **C.E. Johanson**. Hydrocephalus disorders: Their biophysical and neuroendocrine impact on the choroid plexus epithelium. In Non-Neuronal Cells of the Nervous System: Function and Dysfunction. L. Hertz, ed., Elsevier Press, *Advances in Molecular and Cell Biology*, 31: 269-293, 2004.

- Johanson, C.E.**, Silverberg, G.D., Donahue, J.E., Duncan, J.A., and E.G. Stopa. Choroid plexus and CSF in Alzheimer's disease: Altered expression and transport of proteins and peptides. In The Blood-Cerebrospinal Fluid Barrier, W. Zheng and A. Chodobski, eds., CRC Press LLC, 307-339, 2005.
- Johanson, C.E.**, Donahue, J., Stopa, E. and A. Baird. Fibroblast growth factor and the blood-brain barrier. Chapter 202 In The Handbook of Biologically Active Peptides, A. Kastin, ed., Elsevier Press, 1467-72, 2006.
- Johanson, C.** Report on BrainChild hydrocephalus conference. Cerebrospinal Fluid Research 4:4, 2007.
- Johanson, C.** The blood-cerebrospinal fluid transport interface: choroid plexus. Henry Stewart Talks (London), 48 min audio/visual, online August 2008.
- Johanson, C.** Choroid plexus-CSF circulatory dynamics: Impact on brain growth, metabolism and repair. In Neuroscience in Medicine, 3rd edition, P. Michael Conn, ed., Humana Press, 173-200, 2008.
- Glantz M., **Johanson C.** Report on a conference analyzing the role of cerebrospinal fluid prophylaxis for brain tumors. *Cerebrospinal Fluid Res.* Mar 26;5:6, 2008.
- Johanson, C.E.** Production and flow of cerebrospinal fluid (Geriatric Neurosurgery: Evaluation of Adult Hydrocephalus), In Youmans Neurological Surgery, Part 3, Chapter 34, 2010.
- Baird, A., Eliceiri, B., Gonzalez, A.M., **Johanson, C.**, Leadbeater, W. and E. Stopa. Targeting the choroid plexus-CSF-brain nexus using peptides identified by phage display. In The Blood-Brain and Other Neural Barriers- Biology and Research Protocols, S. Nag, editor, Humana Press, 2010.
- Johanson, C.E.**, Stopa, E.G. and P. N. McMillan. The blood-cerebrospinal fluid barrier: structural and functional significance. In The Blood-Brain and Other Neural Barriers- Biology and Research Protocols, S. Nag, editor, Humana Press, 2010.
- Johanson, C.E.**, Gonzalez, A., Miller, M., Podvin, S., Stopa, E. and A. Baird. Augurin in choroid plexus-cerebrospinal fluid: Implications for subependymal neurogenesis. In The Handbook of Biologically Active Peptides, 2nd edition, A. Kastin, ed., Elsevier Press, 2012.