Curriculum vitae for the Fulbright-Masaryk Scholarship

Name and surname: Jan Polák

Academic titels: MD, PhD

Date of birth: 3rd April 1978

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Address: U Sluncove 604, Praha 8, 186 00, Czech Republic

Institution: 2nd Internal Medicine Department Vinohrady Teaching Hospital, Prague
Sport Medicine Department Third Faculty of Medicine of Charles University, Prague

Education:

1996-2003 Third Faculty of Medicine of Charles University, graduated Ăsumma cum laudeñ
2003- 2007 postgraduate studies in Biomedicine, board of Preventive Medicine. PhD thesis title: ĂThe role of adipose tissue in etiopathogenesis of insulin resistance ñ defended April 2007
10/2007-4/2009 Course in Sports Medicine, professional certificate of ñSport Medicine Physicianò obtained
11/2008 Basic Course in Abdominal Ultrasonography
10/2010 Diabetology Board-Exam Course

Employment:

2003-present: 2nd Internal Medicine Department Vinohrady Teaching Hospital, Prague ï senior house oficer
2003-present: Sport Medicine Department Third Faculty of Medicine of Charles University, Prague assistant, Research Fellow
11/2006-6/2009: Department of Normal, Pathological and Clinical Physiology of Third Faculty of Medicine of Charles University ï lector
9/2009 ï present: Institute of Clinical and Experimental Medicine, Prague, Cardiology Department, Research Fellow

Awards: The Award of The Minister of Education 2007, Josef Hlavka Award 2006, The Award of the Czech and Slovac Internal Medicine Society Congress for Young Internal Medicine Physicians 2005. Participated in The Meeting with Nobel Prize Laureates in Lindau 2007

Membership in societies : American Physiology Society
European Association for the study of Obesity (EASO) and member of EASO Young Investigators United Steering Board (YIU)
European Association for the Study of Diabetes
Czech Obesitology Association
Czech Internal Medicine Association
Czech Diabetes Association

In EASO, I represent the Eastern and Central Europe in the Young Investigators United Steering Board (4 members). This an official initiative established in 2005, supported by EASO which has a goal of bringing young scientists across Europe (aged below 35 years) together and enable them to individually interact in research projects as well as informally. Since 2005, Young Investigators United have become part of the official European Congress on Obesity program. Congress activities include a 3 review-selected presentations competing for the ñYIU Best Obesity Thesisò and a social event afterwards, organized by the Steering Board.

Teaching activities: At the Third Faculty of Medicine of Charles University in Prague, I have the opportunity to be involved in multiple steps of pre-gradual education of medical students. This is enabled by a reformed study curriculum which has been implemented at the Faculty since 1996. A strong emphasis is put on horizontal understanding of topics, problem-oriented education and clinical experience with patients from the first year of medical studies. Chronologically, I hold selected lectures in Physiology (1st and 2nd year students) with a special emphasis on metabolism, nutrition, adipose tissue and muscle physiology, later I am involved in the introduction of 3rd year students to principles of clinical medicine at the Internal Medicine Department which is subsequently followed by a full clinical education in the 5th year and 2-week clinical/practical affiliation of the 6th year students, where supervision and mentoring of these soon-to-come physicians is provided by me and other colleagues. In parallel, a short, mostly practical, course of Sports Medicine is provided in the 6th year with emphasis on physical activity as therapeutic/preventive measure in chronic diseases. Each course and teacher is individually and repeatedly evaluated by students through the mandatory anonymous evaluation process. Based on the year 2008/2009 evaluation results, I have been honored a Dean's thankful letter and financial prize in 2008.

This unique system demands high level of commitment of faculty members, but is splendidly rewarded by much closer and long-term relationship with students and possibility to share personal interests in the clinical or research field during less formal discussions. Together with my colleagues, we enjoy sharing the excitement which research bring with students and try to stimulate independent thinking of students. Furthermore, my active participation in the project of ñStudent Research Activitiesò can be mentioned. This project enables substantial involvement of pre-gradual students in research projects during their medical studies. So far, 3 students participated in clinical research projects supervised by myself, results of which were presented successfully by each from the students at the Faculty Scientific Conference and local Nutrition Conference. Finally, I have supervised 5 master-degree thesis so far and participated in the tutoring of two PhD students attached to our laboratory.

Academical and social involvement: Being a member of the Faculty Academic Senate from December 2007, I try to represent interests of young researchers in basic and clinical field. Currently a proposal to establish an institute of ñPost-doctoral Fellowsò at the Faculty was worked-out from my initiative, as post-doc platform is completely absent in the organization system of our faculty and limits the development of research activities after completion of the PhD study program. This proposal is now in the ñlegislative processò of the Senate.

Together with a few friends who share the passion for mountaineering, we have established in 2002 a voluntary association named ñTotesò where fellows have elected me as the chairman. Mountaineering trips predominantly to Austrian, Italian and French Alps in summer and skitouring trips are organized under Totes during the year.

Scientific activities and grant funding:

Head investigator : Organized and supervised 2 non-randomized **dietary intervention trials** in obese women (Total number of participants 60 women, 6-month intervention)

SteadyGel study ï investigating the modulation of incretin response to food through functional food supplements

GAUK 72/2005 ĂPolymeric isoforms of adiponectin in respect to insulin resistance parameters during dietary intervention in obese women ñ, finished 2007

Co-Investigator in the running projects:

GACR GA305/09/1390 ñInvestigation of heart failure progression mechanisms in an experimental modelò

IGA NR 9161-3-2007 "The association between nuitrition and secretion of adipokines and related proteins from adipose tissue ñ

GACR 303/07/0840 "Regulation of production of adipokine and related proteins in adipose tissue of obese and healthy individuals."

International European projects under the 6th Framework Program (ADAPT, HEPADIP)

Supervisor: GAUK 126908/2008 ĂThe role of adiponectin polymeric isoforms on the regulation of lipolysis in visceral and subcutaneous adipose tissueñ

Presentation at conferences: over 20 poster and oral presentations were presented on Czech and international conferences (European Congress on Obesity, World Diabetes Congress, World Conference on Insulin Resistance Syndrome, Controversies in Obesity, Diabetes and Hypertension), including invited lectures (European Congres of Endocrinology 2008, Obezitologie 2007, Sports Medicine Congress in Zinkovy 2005)

Peer-review activities: evaluating papers as reviewer for scientific journals: European Journal of Endocrinology, Diabetes, Metabolism, Physiological Genomics, American Journal of Hypertension, Obesity reviews, Cytokine, Recent Patents on Endocrine, Metabolic & Immune Drug Discovery, Medical Science Monitor, Central European Journal of Preventive Medicine,

Papers in journals with impact factor:

1. Corpeleijn E, Petersen L, Holst C, Saris WH, Astrup A, Langin D, Macdonald I, Martinez JA, Oppert JM, Polak J, Pedersen O, Froguel P, Arner P, Sørensen TI, Blaak EE. Obesity-related Polymorphisms and Their Associations With the Ability to Regulate Fat Oxidation in Obese Europeans: The NUGENOB Study. Obesity (Silver Spring). 2009 Oct 29.
2. Grau K, Hansen T, Holst C, Astrup A, Saris WH, Arner P, Rössner S, Macdonald I, Polak J, Oppert JM, Langin D, Martinez JA, Pedersen O, Sørensen TI. Macronutrient-specific effect of FTO rs9939609 in response to a 10-week randomized hypo-energetic diet among obese Europeans. Int J Obes (Lond). 2009 Aug 18.
3. Siklova-Vitkova M, Polak J, Klimcakova E, Vrzalova J, Hejnova J, Kovacikova M, Kovacova Z, Bajzova M, Rossmeislova L, Hnevkovska Z, Langin D, Stich V. Effect of hyperinsulinemia and very-low-calorie diet on interstitial cytokine levels in subcutaneous adipose tissue of obese women. Am J Physiol Endocrinol Metab. 2009 Sep 1.
4. Kuda O, Jelenik T, Jilkova Z, Flachs P, Rossmeisl M, Hensler M, Kazdova L, Ogston N, Baranowski M, Gorski J, Janovska P, Kus V, Polak J, Mohamed-Ali V, Burcelin R, Cinti S, Bryhn M, Kopecky J. n-3 fatty acids and rosiglitazone improve insulin sensitivity through additive stimulatory effects on muscle glycogen synthesis in mice fed a high-fat diet. Diabetologia. 2009 May;52(5):941-51.
5. Goossens GH, Petersen L, Blaak EE, Hul G, Arner P, Astrup A, Froguel P, Patel K, Pedersen O, Polak J, Oppert JM, Martinez JA, Sørensen TI, Saris WH; Several obesity- and nutrient-related gene polymorphisms but not FTO and UCP variants modulate postabsorptive resting energy expenditure and fat-induced thermogenesis in obese individuals: the NUGENOB study NUGENOB Consortium. Int J Obes (Lond). 2009 Jun;33(6):669-79
6. Capel F, Klimcáková E, Viguerie N, Roussel B, Vítková M, Kováciková M, Polák J, Kovácová Z, Galitzky J, Maoret JJ, Hanácek J, Pers TH, Bouloumié A, Stich V, Langin D. Macrophages and adipocytes in human obesity: adipose tissue gene expression and insulin sensitivity during calorie restriction and weight stabilization. Diabetes. 2009 Jul;58(7):1558-67
7. de Glisezinski I, Larrouy D, Bajzova M, Koppo K, Polak J, Berlan M, Bulow J, Langin D, Marques MA, Crampes F, Lafontan M, Stich V. Adrenaline but not noradrenaline is a determinant of exercise-induced lipid mobilization in human subcutaneous adipose tissue. J Physiol. 2009 Jul

1;587(Pt 13):3393-404
8. Kovacova Z, Vitkova M, Kovacikova M, Klimcakova E, Bajzova M, Hnevkovska Z, Rossmeislova L, Stich V, Langin D, Polak J. Secretion of adiponectin multimeric complexes from adipose tissue explants is not modified by very low calorie diet. Eur J Endocrinol. 2009 Apr;160(4):585-92.
9. Polak J., Bajzova M., Stich V. Effect of exercise on lipolysis in adipose tissue. Future Lipidology, 3 (5): 557-572 Oct 2008
10. Kovacikova M, Vitkova M, Klimcakova E, Polak J, Hejnova J, Bajzova M, Kovacova Z, Viguerie N, Langin D, Stich V. Visfatin expression in subcutaneous adipose tissue of pre-menopausal women: relation to hormones and weight reduction. Eur J Clin Invest. 2008 Jul;38(7):516-22.
11. Polak J, Kovacova Z, Holst C, Verdich C, Astrup A, Blaak E, Patel K, Oppert JM, Langin D, Martinez JA, Sørensen TI, Stich V. Total adiponectin and adiponectin multimeric complexes in relation to weight loss-induced improvements in insulin sensitivity in obese women: the NUGENOB study. Eur J Endocrinol. 2008 Apr;158(4):533-41.
12. Pers TH., Martin FP., Verdich C., Holst C., Johansen JV., Astrup A., Polak J., Martinez JA., Rezzi S., Blaak E., Saris W., Kochhar S., Macdonald IA., Sorensen TIA., Ramadan Z. Prediction of fat oxidation capacity using H-1-NMR and LC-MS lipid metabolomic data combined with phenotypic data. Chemometrics and intelligent laboratory systems 93 (1): 34-42 Aug 15 2008
13. Bajzová M, Kovaciková M, Vitková M, Klimcaková E, Polak J, Kovacová Z, Viguerie N, Vedral T, Mikuláġek L, Sramková P, Srp A, Hejnová J, Langin D, Stich V. Retinol -binding protein 4 expression in visceral and subcutaneous fat in human obesity. Physiol Res. 2007 Nov 30;
14. Enevoldsen LH, Polak J, Simonsen L, Hammer T, Macdonald I, Crampes F, de Glisezinski I, Stich V, Bülow J. Post-exercise abdominal, subcutaneous adipose tissue lipolysis in fasting subjects is inhibited by infusion of the somatostatin analogue octreotide. Clin Physiol Funct Imaging. 2007 Sep;27(5):320-6.
15. Polak J, Moro C, Bessière D, Hejnova J, Marquès MA, Bajzova M, Lafontan M,Crampes F, Berlan M, Stich V. Acute exposure to long-chain fatty acids impairs {alpha}2-adrenergic receptor-mediated antilipolysis in human adipose tissue. J Lipid Res. 2007 Oct;48(10):2236-46.
16. Vitkova M, Klimcakova E, Kovacikova M, Valle C, Moro C, Polak J, Hanacek J, Capel F, Viguerie N, Richterova B, Bajzova M, Hejnova J, Stich V, Langin D. Plasma levels and adipose tissue messenger ribonucleic acid expression of retinol-binding protein 4 are reduced during calorie restriction in obese subjects but are not related to diet-induced changes in insulin sensitivity. J Clin Endocrinol Metab. 2007 Jun;92(6):2330-5.
17. Polak J, Moro C, Klimcakova E, Kovacikova M, Bajzova M, Vitkova M, Kovacova Z, Sotornik R, Berlan M, Viguerie N, Langin D, Stich V. The atrial natriuretic peptide- and catecholamine-induced lipolysis and expression of related genes in adipose tissue in hypothyroid and hyperthyroid patients. Am J Physiol Endocrinol Metab. 2007 Jul;293(1):E246-51.
18. Blaak EE, Hul G, Verdich C, Stich V, Martinez JA, Petersen M, Feskens EF, Patel K, Oppert JM, Barbe P, Toubro S, Polak J, Anderson I, Astrup A, Macdonald I, Langin D, Sørensen T, Saris WH; NUGENOB Consortium. Impaired fat-induced thermogenesis in obese subjects: the NUGENOB study. Obesity (Silver Spring). 2007 Mar;15(3):653-63.
19. Polak J, Kovacova Z, Jacek M, Klimcakova E, Kovacikova M, Vitkova M, Kuda O, Sebela M, Samcova E, Stich V. An increase in plasma adiponectin multimeric complexes follows hypocaloric diet-induced weight loss in obese and overweight premenopausal women. Clin Sci (Lond). 2007 Jan 4
20. Klimcakova E, Polak J, Moro C, Hejnova J, Majercik M, Viguerie N, Berlan M, Langin D, Stich V. Dynamic strength training improves insulin sensitivity without altering plasma levels and gene expression of adipokines in subcutaneous adipose tissue in obese men.
J Clin Endocrinol Metab. 2006 Dec;91(12):5107-12.
21. Polak J, Klimcakova E, Moro C, Viguerie N, Berlan M, Hejnova J, Richterova B, Kraus I, Langin D, Stich V. Effect of aerobic training on plasma levels and subcutaneous abdominal adipose tissue gene expression of adiponectin, leptin, interleukin 6, and tumor necrosis factor alpha in obese women. Metabolism. 2006 Oct;55(10):1375-81.
22. Thorkild IA Sørensen, Philippe Boutin, Moira A Taylor, Lesli H Larsen, Camilla Verdich, Liselotte

Petersen, Claus Holst, Søren M Echwald, Christian Dina, Søren Toubro, Martin Petersen, Jan Polak, Karine Clément, J Alfredo Martínez, Dominique Langin, Jean-Michel Oppert, Vladimir Stich, Ian Macdonald, Peter Arner, Wim HM Saris, Oluf Pedersen, Arne Astrup, Philippe Froguel. Genetic polymorphisms and weight loss in obesity: a randomised trial of hypo-energetic high- versus low-fat diets. PLoS Clin Trials. 2006 Jun;1(2):e12.

23. Blaak EE, Hul G, Verdich C, Stich V, Martinez A, Petersen M, Feskens EF, Patel K, Oppert JM, Barbe P, Toubro S, Anderson I, Polak J, Astrup A, Macdonald IA, Langin D, Holst C, Sorensen TI, Saris WH. Fat oxidation before and after a high fat load in the obese insulin-resistant state. J Clin Endocrinol Metab. 2006 Apr;91(4):1462-9
24. Cédric Moro, Jan Polak, Jindra Hejnova, Eva Klimcakova, François Crampes, Vladimir Stich, Max Lafontan and Michel Berlan. Atrial natriuretic peptide stimulates lipid mobilization during repeated bouts of endurance exercise *AJP - Endo* 2006 290:864-869.
25. Santos JL, Boutin P, Verdich C, Holst C, Larsen LH, Toubro S, Dina C, Saris WH, Blaak EE, Hoffstedt J, Taylor MA, Polak J, Clement K, Langin D, Astrup A, Froguel P, Pedersen O, Sorensen TI, Martinez JA; The NUGENOB* consortium.Genotype-by-nutrient interactions assessed in European obese women : A case-only study. Eur J Nutr. 2006 Dec;45(8):454-62.
26. Polak J, Moro C, Klimcakova E, Hejnova J, Majercik M, Viguerie N, Langin D, Lafontan M, Stich V, Berlan M. Dynamic strength training improves insulin sensitivity and functional balance between adrenergic alpha 2A and beta pathways in subcutaneous adipose tissue of obese subjects. Diabetologia. 2005 Dec;48(12):2631-40.
27. Cedric Moro, Jan Polak, Blanka Richterova, Coralie Sengene`s, Terezie Pelikanova, Jean Galitzky, Vladimir Stich, Max Lafontan, Michel Berlan. Differential regulation of atrial natriuretic peptideï and adrenergic receptorï dependent lipolytic pathways in human adipose tissue Metabolism, 2005 Jan;54(1):122-31.
28. Richterova B, Stich V, Moro C, Polak J, Klimcakova E, Majercik M, Harant I, Viguerie N, Crampes F, Langin D, Lafontan M, Berlan M.Effect of endurance training on adrenergic control of lipolysis in adipose tissue of obese women.J Clin Endocrinol Metab. 2004 Mar;89(3):1325-31.

Editorial: Polak J., Effect of diet on hormone-induced lipolysis. Future Lipidol. 2007 2(6), 583-585

Popularization articles in Czech journals:

M. Andel, J. Polak, et. al. Chronic low-grade inflammation joins obesity, metabolic syndrome, atherosclerosis and diabetes. Vnitrni lekarsvi 7-8 2009

Polak J. et al. Adipose tissue as an endocrine organ. Vesmir 88, 708, 11/2009

Polak J. et al. Obesity in the etiopathogenesis if insulin resistance and Type 2. diabetes mellitus. Sanquis 59/2008

Polak J. et al. The endocrine function of adipose tissue in the pathogenesis of insulin resistance Interní Med. 2006; 10: 443ï 446