

Základní údaje o školiteli doktorského studia v biomedicině na 3. LF UK

Oborová rada:	Preventivní medicína	
Příjmení, jméno, tituly:	Polák Jan, MUDr. Ph.D.	
Adresa pracoviště:	Ústav tělovýchovného lékařství CPL	
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Odborné zaměření: (maxim. 254 znaků)	Obezita jako patogentický faktor vývoje metabolických onemocnění Diabetes mellitus – patogeneze, primární a sekundární prevence, léčba Pohybová aktivita v prevenci a terapii metabolických poruch Spánková apnoe jako patogenetický faktor vzniku metabolických chorob	
Výzkumné zaměření: (maxim. 254 znaků)	<ul style="list-style-type: none"> • Regulace lipolýzy a produkce adipokinů jako patogentický faktor vývoje inzulinové rezistence a poruch sekrece inzulinu • Tkáňová a buněčná hypoxie v rozvoji diabetes mellitus 2. typu • Metabolické změny indukované pohybovou aktivitou či dietní intervencí • Buněčné a myší modely v metabolickém výzkumu 	
Jména doktorandů, kteří ukončili úspěšně studium pod vedením školitele:	Jméno	Rok obhajoby
	1. N/A	
Témata doktorských prací pro akademický rok 2012/2013:	1. N/A 2. N/A 3. N/A	
Klinický kontext: (pro uchazeče o kombinovaný klinický výcvik)	Obory chirurgické:	
	Obory vnitřního lékařství:	Atestace z oboru Diabetologie klinická praxe na II. interní klinice FNKV
	Obory preventivní:	Odborný asistent Ústavu tělovýchovného lékařství CPL
	Obory další:	
Kontext výzkumného zaměření:	<input checked="" type="checkbox"/> 1. Prevence, diagnostika a terapie diabetes mellitus, metabolických a endokrinních postižení organismu <input type="checkbox"/> 2. Patofyziologie neuropsychiatrických onemocnění a její klinické aplikace <input type="checkbox"/> 3. Invazivní přístupy k záchraně či regeneraci myokardu <input type="checkbox"/> 4. Molekulárně biologické, genetické a epigenetické aspekty vzniku a rozvoje modelových tumorů dospělého věku. Význam pro epidemiologii, časnou diagnostiku a léčbu. <input checked="" type="checkbox"/> 5. Molekulární biologie a patologie buňky za normy a u vybraných klinicky závažných patologických procesů <input type="checkbox"/> 6. Chronická onemocnění vznikající na podkladě nepřiměřené reaktivity imunitního systému, jejich patogeneze a možnosti včasné diagnostiky a léčby: <input type="checkbox"/> 7. Další (specifikovat):	
Seznam publikací v časopisech s IF od roku 2005:		
Publikace jsou uvedeny v příloze		

Přehled publikací: Jan Polák

Kapitoly v monografiích – cizojazyčné

2012

1. **Polak, J**; Beamer, BA; Punjabi, NM: Chapter 14: Obstructive sleep apnea and glucose metabolism
In *Sleep Apnea: Pathogenesis, Diagnosis and Treatment, Second Edition*
New York: Informa Healthcare 2012. S. 300-317. ISBN: 0849396972

Periodika s IF – cizojazyčné

2005

1. Moro, C; **Polak, J**; Richterova, B; Sengenès, C; Pelikanova, T; Galitzky, J; Stich, V; Lafontan, M; Berlan, M: Differential regulation of atrial natriuretic peptide– and adrenergic receptor–dependent lipolytic pathways in human adipose tissue. *Metabolism*, 2005. 54(1):122-31. **IF 2.294**
2. **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. 48(12):2631-40. **IF 5.337**

2006

3. Blaak, EE; Hul, G; Verdich, C; Stich, V; Martinez, A; Petersen, M; Feskens, EF; Patel, K; Oopert, 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. 91(4):1462-9. **IF 5.799**
4. 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. 91(12):5107-12. **IF 5.799**
5. Moro, C; **Polak, J**; Hejnova, J; Klimcakova, E; Crampes, F; Stich, V; Lafontan; Berlan, M: Atrial natriuretic peptide stimulates lipid mobilization during repeated bouts of endurance exercise. *Am J Physiol Endocrinol Metab*, 2006. 290:864-869. **IF 4.123**
6. **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. 55(10):1375-81. **IF 2.497**

7. 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. 45(8):454-62. **IF 2.356**

2007

8. 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. 15(3):653-63. **IF 1.520**
9. 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. 27(5):320-6. **IF 1.000**
10. **Polak, J**; Kovacova, Z; Jacek, M; Klimcakova, E; Kovacikova, M; Vitkova, M; Kuda, O; Sebel, 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. 112(11):557-65. **IF 3.900**
11. **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. 293(1):E246-51. **IF 4.138**
12. **Polak, J**; Moro, C; Bessièrè, 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. 48(10):2236-46. **IF 4.336**
13. 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. 92(6):2330-5. **IF 5.493**

2008

14. 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. 38(7):516-22. **IF 2.784**
15. 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. *Chemometr Intel Lab*, 2008. 93(1):34-42. **IF 1.940**
16. **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. 158(4):533-41. **IF 3.791**
17. **Polak, J.**; Bajzova, M.; Stich, V. Effect of exercise on lipolysis in adipose tissue. *Future Lipidology*, 2008. 3(5):557-572. **IF 0.523**

2009

18. Capel, F; Klimčáková, E; Viguerie, N; Roussel, B; Vítková, M; Kováčiková, M; **Polák, J**; Kováčová, Z; Galitzky, J; Maoret, JJ; Hanáček, 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. 58(7):1558-67. **IF 8.505**
19. 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. 587(13):3393-404. **IF 4.764**
20. 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. 33(6):669-79. **IF 4.343**
21. 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. 33(11):1227-34. **IF 4.343**

22. 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. 160(4):585-92. **IF 3.539**
23. 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. 52(5):941-51. **IF 6.551**
24. 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*, 2009.297(5):E1154-61. **IF 4.395**

2010

25. Bazalova, Z; Rypackova, B; Broz, J; Brunerova, L; **Polak, J**; Rusavy, Z; Treslova, L; Andel, M: Three novel mutations in MODY and its phenotype in three different Czech families. *Diabetes Res Clin Pract*, 2010. 88(2):132-8. **IF 2.134**
26. Corpeleijn, E; Petersen, L; Holst, C; Saris, WH; Astrup, A; Langin, D; Macdonald, I; Martinez, JA; Opper, 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)*, 2010. 18(7):1369-77. **IF 3.531**
27. Koppo, K; Larrouy, D; Marques, MA; Berlan, M; Bajzova, M; **Polak, J**; Van de Voorde, J; Bülow, J; Lafontan, M; Crampes, F; Langin, D; Stich, V; de Glisezinski, I: Lipid mobilization in subcutaneous adipose tissue during exercise in lean and obese humans. Roles of insulin and natriuretic peptides. *Am J Physiol Endocrinol Metab*, 2010. 299(2):E258-65. **IF 4.686**

2011

28. Haspicova, M; Milek, D; Siklova-Vitkova, M; Wedellova, Z; Hejnova, J; Bajzova, M; Stich, V; **Polak, J**: Post-prandial endothelial dysfunction is ameliorated following weight loss in obese premenopausal women. *Med Sci Monit*, 2011. 17(11):CR634-639. **IF 1.699**
29. Kováčiková, M; Sengenés, C; Kováčová, Z; Siklová-Vítková, M; Klimčáková, E; **Polák, J**; Rossmeislová, L; Bajzová, M; Hejnová, J; Hněvkovská, Z; Bouloumié, A; Langin, D; Stich, V: Dietary intervention-induced weight loss decreases macrophage content in adipose tissue of obese women. *Int J Obes (Lond)*, 2011. 35(1):91-8. **IF 5.125**
30. Kovacova, Z; Tencerova, M; Roussel, B; Wedellova, Z; Rossmeislova, L; Langin, D; **Polak, J**; Stich, V: The impact of obesity on secretion of adiponectin multimeric

isoforms differs in visceral and subcutaneous adipose tissue. *Int J Obes (Lond)*, 2011.doi: 10.1038/ijo.2011.223 **IF 5.125**

31. **Polak, J**; Kotrc, M; Wedellova, Z; Jabor, A; Malek, I; Kautzner, J; Kazdova, L; Melenovsky, V: Lipolytic effects of B-type natriuretic peptide 1-32 in adipose tissue of heart failure patients compared with healthy controls. *J Am Coll Cardiol*, 2011. 6;58(11):1119-25. **IF 14.293**
32. Shimoda, LA; **Polak, J**: Theme: Hypoxia Hypoxia and Ion Channel Function. *Am J Physiol Cell Physiol*, 2011. 300(5):C951-67. **IF 3.817**

2012

33. Koppo, K; Siklová-Vitková, M; Klimčáková, E; **Polák, J**; Marques, MA; Berlan ,M; Van de Voorde, J; Bulow, J; Langin, D; de, Glisezinski I; Stich, V: Catecholamine and insulin control of lipolysis in subcutaneous adipose tissue during long-term diet-induced weight loss in obese women. *Am J Physiol Endocrinol Metab*, 2012. 302(2):E226-32. **IF 4.686**
34. Siklova-Vitkova M, Klimcakova E, **Polak J**, Kovacova Z, Tencerova M, Rossmeislova L, Bajzova M, Langin D, Stich V. Adipose tissue secretion and expression of adipocyte-produced and stromavascular fraction-produced adipokines vary during multiple phases of weight-reducing dietary intervention in obese women. *J Clin Endocrinol Metab*. 2012 Jul;97(7):E1176-81. **IF 5.799**
35. Stocks T, Angquist L, Banasik K, Harder MN, Taylor MA, Hager J, Arner P, Oppert JM, Martinez JA, **Polak J**, Rousseau F, Langin D, Rössner S, Holst C, MacDonald IA, Kamatani Y, Pfeiffer AF, Kunesova M, Saris WH, Hansen T, Pedersen O, Astrup A, Sørensen TI. TFAP2B influences the effect of dietary fat on weight loss under energy restriction. *PLoS One*. 2012;7(8):e43212. doi: 10.1371/journal.pone.0043212. **IF 4.092**

Periodika s IF – české a slovenské

2008

36. Bajzová, M; Kovaciková, M; Vitková, M; Klimcaková, E; **Polak, J**; Kovacová, Z; Viguerie, N; Vedral, T; Mikulášek, 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*, 2008. 57(6):927-34. **IF 1.653**

2011

37. Wedellova, Z; Dietrich, J; Siklova-Vitkova, M; Kolostova, K; Kovacikova, M; Duskova, M; Broz, J; Vedral, T; Stich, V; **Polak, J**: Adiponectin inhibits spontaneous and catecholamine-induced lipolysis in human adipocytes of non-obese subjects through AMPK-dependent mechanisms. *Physiol Res*, 2011. 60(1):139-48. **IF 1.646**

Recenzované časopisy – zahraniční

2006

1. Sørensen, TI; Boutin, P; Taylor, MA; Larsen, LH; Verdich, C; Petersen, L; Holst, C; Echwald, SM; Dina, C; Toubro, S; Petersen, M; **Polak, J**; Clément, K; Martínez, JA; Langin, D; Oppert, JM; Stich, V; Macdonald, I; Arner, P; Saris, WM; Pedersen, O; Astrup, A; Froguel, P: Genetic polymorphisms and weight loss in obesity: a randomised trial of hypo-energetic high- versus low-fat diets. *PLoS Clin Trials*, 2006. 1(2):e12. IF 4.774 (IF až od roku 2007)

Recenzované časopisy – české a slovenské

2009

1. Anděl, M; **Polák, J**; Kraml; Dlouhý, P; Štich, V: Chronický mírný zánět spojuje obezitu, metabolický syndrom, aterosklerózu a diabetes. *Vnitřní lékařství*, 2009. 55(7-8):659-665.

Popularizační práce

2006

1. **Polák, J**; Klimčáková, E; Kováčiková, M; Vítková, M; Bajzová, M; Hejnová, J; Štich, V: *Interní medicína pro praxi*, 2006. 10: 443–446.

2008

2. **Polák, J**; Brož, J: et al. Obezita v etiopatogenezi inzulinové rezistence a diabetes mellitus 2. typu. *Sanquis*, 2008. 59:61-645.

2009

3. **Polák J**. Tuková tkáň jako endokrinní organ. *Vesmír*, 2009. 88(11):708-710.
4. Anděl, M; Brunerová, L; **Polák, J**: Světová epidemie diabetes mellitus. *Vesmír*, 2009. 88(11):696-700.

2010

5. Brož, J; **Polák, J**; Kožera, J; Šilhová, E: Diabetik za volantem. Praha: Nakladatelství Wiesnerová 2010. ISBN 80-239-7903-5.