

CURRICULUM VITAE

Marcis Leja

First name: Marcis
Family name: Leja
Date of birth: 29.08.1964
Place of birth: Riga, Latvia
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UNDERGRADUATE EDUCATION

Riga Secondary school No.50 with specialisation in English language	9/71-6/82	Diploma
Riga Medical Institute (currently Riga Stradins' University), Faculty of General Medicine	8/82-7/88	Physicians Diploma with honour

POSTGRADUATE EDUCATION

Latvia Academy of Medicine (currently Riga Stradins' University), Dept. of Internal Medicine No.3	08/88-12/90	Clinical ordination (postgraduate clinical training) in Internal Medicine, certificate
Latvia Academy of Medicine (currently Riga Stradins' University), Dept. of Internal Medicine No.3, P.Stradin Clinical University hospital	01/91-08/92	Fellowship and research fellowship in gastroenterology, Certificate of gastroenterologist
Riga International College of Economics and Business Administration	09/00-01/03	Master studies, MBA diploma
Riga Stradins' University	02/03	PhD thesis on the diagnostics and clinical significance of duodenogastric reflux, PhD diploma

Regular participation in continuing medical education, including AGA Postgraduate course and DDW an annual basis, United European Gastroenterology Week and related postgraduate courses, postgraduate courses held by European Association for Gastroenterology, Endoscopy and Nutrition and European Society for Digestive Oncology, annual participation in European Helicobacter Study group and other meetings.

CLINICAL WORK EXPERIENCE

Centre of Clinical Medicine LINEZERS of Latvia	09/92-12/98 (until the reorganization of the	Internist - gastroenterologist, physician-lecturer
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Academy of Medicine Hospital LINEZERS	institution) 01/99-07/05 (until the reorganization of the institution)	Consulting gastroenterologist
Digestive Diseases Centre GASTRO	05/99-present	Consulting gastroenterologist
Riga East University Hospital	05-present	Consulting gastroenterologist

EDUCATIONAL WORK EXPERIENCE

Latvia Academy of Medicine, Dept. of Internal Medicine No.3	01/89-11/92	Student training during clinical ordinarure and research fellowship
Centre of Clinical Medicine LINEZERS of Latvia Academy of Medicine	09/92-06/95	Responsibility for the problem-based student education program in gastroenterology
Hospital LINEZERS	09/98-07/05 (until the reorganization of the institution)	Postgraduate student training in gastroenterology
Postgraduate training and qualification institute (University of Latvia) and Riga P.Stradins' University postgraduate education course	09/96-present	Lecturer in gastroenterology
Faculty of Medicine, University of Latvia	09/03-05/07	Lecturer
Faculty of Medicine, University of Latvia	05/07-02/14	associated professor
Faculty of Medicine, University of Latvia	02/13-02/17	Vice-dean; periodic replacement of the Dean in the quality of acting-dean
Faculty of Medicine, University of Latvia	12/14-present	professor

Currently M.Leja is the initiator and member of the Board, Doctorial School in Translational Medicine, University of Latvia. 5 PhD thesis have been defended under his supervision (A.Sīviņš, 2012, J.Misiņš, 2013, A.Ruskule, 2013, I.Kikuste, 2016, D.Šantare, 2016), currently supervising 4 PhD fellows, number of resident and student research works. M.Leja is involved in regular postgraduate education either in Latvia or internationally, e.g. in postgraduate courses of European Association of Gastroenterology, Endoscopy and Nutrition (EAGEN).

Corresponding Fellow of Latvia Academy of Sciences since 2012. Since 2017 – Member of the Latvia Academy of Sciences. Has been elected as the member of European Helicobacter Study Group from January, 2014, President of the group since September, 2017. Fellow of American Gastroenterology Association since Feb., 2014.

Currently involved in organization of the following international events: UEG Week being the member of UEG Scientific Committee and European Helicobacter and Microbiota annual conference being the group member.

M.Leja has organized number of educational conferences and postgraduate courses in Latvia, including postgraduate course in hepatology in collaboration with EASL (European Association for Study of Liver), postgraduate course organized in collaboration between American Association of Gastroenterology (AGA) and United European Gastroenterology Federation (UEGF) in 2005, European Helicobacter Study Group meeting (2008).

RESEARCH AND ADMINISTRATIVE WORK EXPERIENCE

Institute of Clinical and Preventive Medicine, University of Latvia	06-present	Director
University of Latvia	05/11-present	Senior scientist
Riga East University Hospital	05-present	Head of the Research Dept.
Riga East University Hospital	09-present	Senior scientist

RESEARCH PROJECT MANAGEMENT EXPERIENCE

International or national co-ordinator and/or leading researcher in many local or international projects funded from different sources (national funding, international funding, funding from the internal resources of the University/group). Steering Committee member for several international projects or EU funded projects in Latvia.

The most important are listed below:

- 1) Multicentric randomised study of *H.pylori* eradication, pepsinogen testing and FOBT for prevention of gastric cancer and colorectal cancer mortality (GISTAR; www.gistar.eu) principal investigator; study protocol currently submitted for approval in IARC (International Agency for Research on Cancer), funding pending, tentative amount of funding 15-20 M EUR (currently in the piloting stage, approx. 3 M EUR value, funded from different sources).
- 2) Horizon 2020 Project “Smart Phone for Disease Detection from Exhaled Breath, SNIFFPHONE”, national principal investigator, total funding 5.8 M EUR (0.6 M EUR for Latvia)
- 3) Project within National Research Program of Latvia in Public Health priority “BioMedicine 2015-2017”: Project No.4: “Evaluation of the possibilities to decrease the gastric cancer caused mortality in Latvia”, principal investigator of the project No 4. Total funding of the Program 7 M EUR (for the Project No. 4 - 0.15 M EUR)
- 4) 7FP ERA-NET (Euronanomed) project “Volatile biomarkers for early detection and characterization of gastric and colorectal neoplasms, VOLGACORE, total funding 1.4 M EUR (0.3 M EUR for Latvia)
- 5) Latvia Science Council funded project “Volatile biomarkers for gastric cancer and pre-malignant condition detection: proof of the concept and evaluation of the microbiota impact”; principal investigator; 2013-2016, total funding 0.22 M EUR.
- 6) ERDF funded project “Elaboration of a novel risk stratification method based on biomarkers for the gastric cancer and precancerous conditions”; co-investigator, 2014-2015, total funding 0.7 M EUR
- 7) ERDF funded project “Development of a genetic/serological biomarker diagnostic method for early identification of autoimmune gastrointestinal lesions with increased malignancy risk in patients with autoimmune disease”, co-investigator, 2011-2013, total funding 0.7 M EUR
- 8) Project „Development of anti-cancer drugs directed towards cancer stem-cells” within State Research Program “Development of new tools and methods, biomedical technologies for prevention and treatment to improve public health”, co-investigator, 2010-2013, total funding for the clinical group, total funding ~40 000 EUR

- 9) ESF funded project Multidisciplinary research group for early cancer detection and cancer prevention, principal investigator, 2010-2012, total funding 2 M EUR
- 10) Project „Elaboration of diagnostic methods for the detection of cancer and pre-cancerous lesion risks as well as for optimizing cancer therapy” within State Research Program „Study of major pathologies affecting life duration and quality of the Latvia population by a multidisciplinary research consortium”, principal investigator, 2006-2009, total funding ~ 1 M EUR
- 11) Tri-lateral Latvian-Lithuanian-Taiwanese project on gastric premalignant lesions (2 consecutive projects), national principal investigator and international co-ordinator, 2004-2010, total funding (all countries) ~ 300 000 EUR

PARTICIPATION IN CLINICAL STUDIES

Investigator or Principal investigator in 25 clinical investigations.

INTERNATIONAL COLLABORATION IN RESEARCH

M.Leja is involved in multiple international research groups related to cancer prevention and gastroenterology. Within international teams he has been involved in elaboration of European and international guidelines, including European Guidelines for quality assurance in colorectal cancer screening and diagnosis, Maastricht/Florence IV guidelines (on *H.pylori* related disease), Maastricht/Florence V guidelines, MAPS (Management of Precancerous Lesions in the Stomach) guidelines, the Charter Scaligero on Gastric Cancer as well as quality indicators for colorectal screening under the International Colorectal Cancer Screening network. Regular international activities include active participation in the Screening Committee of World Endoscopy Organization, as well as International Digestive Cancer Alliance (IDCA), European Society for Digestive Oncology (ESDO), European Association of Gastroenterology, Endoscopy and Nutrition (EAGEN), European Helicobacter and Microbiota Study Group (EHMSG), Healthy Stomach Initiative (HIS) and European Celiac Disease Study group, Eurasian Oncology program (EAFO).

During the recent years M.Leja has developed international research collaboration in the field of exosome research, including with research SMEs in Europe (HasaBioMed, Exosomics Siena) and collaborators in academic institutions worldwide.

The group lead by M.Leja has regular international collaboration with the leading research groups in the field in many countries, including Lithuania, Germany, Austria, Sweden, Finland, Norway, Portugal, the Netherlands, Italy, Poland, Belarus, Ukraine, Russia, Taiwan, Japan, Israel and the USA.

BOARD CERTIFICATION*

Certification of a Physician (Latvian Association of Physicians)
Certificate of Gastroenterology (Latvian Association of Gastroenterologists)

CURRENT PROFESSIONAL AFFILIATIONS

Latvian Association of Physicians

Latvian Association of Gastroenterologists
European Association of Gastroenterology, Endoscopy and Nutrition
International Stomach Health initiative, member of the founding group
American Gastroenterological Association, fellow
European Helicobacter and Microbiota Study group, member, President

EDITORIAL BOARD MEMBER AND REVIEWER

Editorial Board member in Digestive Diseases and Sciences (Springer, USA), Editorial Board member in Helicobacter (Wiley, USA), American Journal of Cancer Epidemiology and Prevention (IVY Union Publishing, USA), Frontiers in Pharmacology of Anti-Cancer Drugs, Journal of Circulating Biomarkers (*InTech*), Vestnik of Vitebsk State Medical University (Belarus); reviewer for additional 15 medical journals as well as 3 international congresses (on a regular base).

PUBLICATIONS, PRESENTATIONS

Author of more than 150 research publications (out of these at least 50 PubMed cited), 4 book chapters, more than 160 presentations in international conferences and symposia. 3 patent applications have been submitted (2 approved so far).

Updated: November 26, 2017

SELECTED PUBLICATIONS

1. Leja M, Park JY, Murillo R, et al. Multicentric randomised study of *Helicobacter pylori* eradication and pepsinogen testing for prevention of gastric cancer mortality: the GISTAR study. *BMJ Open* 2017;7(8):e016999. doi: 10.1136/bmjopen-2017-016999
2. Leja M, Camargo MC, Polaka I, et al. Detection of gastric atrophy by circulating pepsinogens: A comparison of three assays. *Helicobacter* 2017 doi: 10.1111/hel.12393
3. Sjomina O, Heluwaert F, Moussata D, Leja M. *Helicobacter pylori* infection and nonmalignant diseases. *Helicobacter* 2017;22 Suppl 1 doi: 10.1111/hel.12408
4. Nakhleh MK, Amal H, Jeries R, et al. Diagnosis and Classification of 17 Diseases from 1404 Subjects via Pattern Analysis of Exhaled Molecules. *ACS Nano* 2017;11(1):112-25. doi: 10.1021/acsnano.6b04930
5. Meistere I, Werner S, Zayakin P, et al. The prevalence of cancer-associated autoantibodies in patients with gastric cancer and progressive grades of premalignant lesions. *Cancer Epidemiol Biomarkers Prev* 2017 doi: 10.1158/1055-9965.EPI-17-0238
6. Young GP, Senore C, Mandel JS, Allison JE, Atkin WS, Benamouzig R, Bossuyt PM, Silva M, Guittet L, Halloran SP .. Leja M, et al: Recommendations for a step-wise comparative approach to the evaluation of new screening tests for colorectal cancer. *Cancer* 2016.
7. Kurilovich S, Belkovets A, Reshetnikov O, Openko T, Malyutina S, Ragino Y, Scherbakova L, Leja M, Paloheimo L, Syrjanen K et al: Stomach-specific Biomarkers (GastroPanel) Can Predict the Development of Gastric Cancer in a Caucasian Population: A Longitudinal Nested Case-Control Study in Siberia. *Anticancer research* 2016, 36(1):247-253.

8. Baiocchi GL, D'Ugo D, Coit D, Hardwick R, Kassab P, Nashimoto A, Marrelli D, Allum W, Berruti A, Chandramohan SM, .. Leja M, et al: Follow-up after gastrectomy for cancer: the Charter Scaligero Consensus Conference. *Gastric cancer : official journal of the International Gastric Cancer Association and the Japanese Gastric Cancer Association* 2016, 19(1):15-20.
9. Amal H, Leja M, Funka K, Lasina I, Skapars R, Sivins A, Ancans G, Kikuste I, Vanags A, Tolmanis I et al: Breath testing as potential colorectal cancer screening tool. *International journal of cancer Journal international du cancer* 2016, 138(1):229-236.
10. Shehada N, Bronstrup G, Funka K, Christiansen S, Leja M, Haick H: Ultrasensitive silicon nanowire for real-world gas sensing: noninvasive diagnosis of cancer from breath volatolome. *Nano letters* 2015, 15(2):1288-1295.
11. Santare D, Kojalo I, Huttunen T, Rikacovs S, Rucevskis P, Boka V, Leja M: Improving uptake of screening for colorectal cancer: a study on invitation strategies and different test kit use. *European journal of gastroenterology & hepatology* 2015, 27(5):536-543.
12. Leja M, Shums Z, Nikitina-Zake L, Gavars M, Kikuste I, Milo J, Daugule I, Pahomova J, Pirags V, Dzerve V et al: Prevalence estimation of celiac disease in the general adult population of Latvia using serology and HLA genotyping. *United European gastroenterology journal* 2015, 3(2):190-199.
13. Kupcinskas J, Gyvyte U, Bruzaite I, Leja M, Kupcinskaite-Noreikiene R, Pauzas H, Tamelis A, Jonaitis L, Skieceviciene J, Kiudelis G: Common Genetic Variants of PSCA, MUC1 and PLCE1 Genes are not Associated with Colorectal Cancer. *Asian Pacific journal of cancer prevention : APJCP* 2015, 16(14):6027-6032.
14. Krilaviciute A, Heiss JA, Leja M, Kupcinskas J, Haick H, Brenner H: Detection of cancer through exhaled breath: a systematic review. *Oncotarget* 2015, 6(36):38643-38657.
15. Isajevs S, Liepniece-Karele I, Svirina D, Santare D, Kaidaks S, Sivins A, Vikmanis U, Leja M: Different Pattern of Inflammatory and Atrophic Changes in the Gastric Mucosa of the Greater and Lesser Curvature. *Journal of gastrointestinal and liver diseases : JGLD* 2015, 24(4):429-434.
16. Daugule I, Ruskule A, Moisejevs G, Rudzite D, Jonaitis L, Janciauskas D, Kiudelis G, Kupcinskas L, Leja M: Long-term dynamics of gastric biomarkers after eradication of *Helicobacter pylori* infection. *European journal of gastroenterology & hepatology* 2015, 27(5):501-505.
17. Amal H, Leja M, Funka K, Skapars R, Sivins A, Ancans G, Liepniece-Karele I, Kikuste I, Lasina I, Haick H: Detection of precancerous gastric lesions and gastric cancer through exhaled breath. *Gut* 2015.
18. Leja M, You W, Camargo MC, Saito H: Implementation of gastric cancer screening - the global experience. *Best practice & research Clinical gastroenterology* 2014, 28(6):1093-1106.
19. Bornschein J, Leja M: The global challenge of a healthy stomach. *Best practice & research Clinical gastroenterology* 2014, 28(6):949-951.
20. Pasechnikov V, Chukov S, Fedorov E, Kikuste I, Leja M: Gastric cancer: prevention, screening and early diagnosis. *World journal of gastroenterology : WJG* 2014, 20(38):13842-13862.
21. Leja M, Bornschein J, Kupcinskas J, Malfertheiner P. Biomarkers for gastric cancer and the related premalignant conditions. In: *Cancer Biomarkers: Minimal and Noninvasive Early Diagnosis and Prognosis*. Taylor & Francis/CRC Press, ISBN: 9781466584280. 2014.
22. Bornschein J, Leja M, Kupcinskas J, et al. Molecular diagnostics in gastric cancer. *Frontiers in bioscience*. 2014; 19: 312-38.
23. Kupcinskas J and Leja M. Management of *Helicobacter pylori* -Related Diseases in the Baltic States. *Digestive diseases*. 2014; 32: 295-301.
24. Isajevs S, Liepniece-Karele I, Janciauskas D, Moisejevs G, Funka K, Kikuste I, Vanags A, Tolmanis I, Leja M. The effect of incisura angularis biopsy sampling on the

- assessment of gastritis stage. *European journal of gastroenterology & hepatology* 2014; 26(5): 510-513
25. Isajevs S, Liepniece-Karele I, Janciauskas D, Moisejevs G, Putnins V, Funka K, Kikuste I, Vanags A, Tolmanis I, Leja M. Gastritis staging: interobserver agreement by applying OLGA and OLGIM systems. *Virchows Archiv : an international journal of pathology* 2014; 464(4): 403-407
 26. Kupcinskas J, Wex T, Link A, Leja M, Bruzaite I, Steponaitiene R, Juzenas S, Gyvyte U, Ivanauskas A, Ancans G, Petrenkiene V, Skieceviciene J, Kupcinskas L, Malfertheiner P. Gene polymorphisms of micrnas in *Helicobacter pylori*-induced high risk atrophic gastritis and gastric cancer. *PloS one* 2014; 9(1): e87467
 27. Leja M, Liu H, Haick H. Breath testing: the future for digestive cancer detection. *Expert Rev Gastroenterol Hepatol* 2013;7:389-91. (Editorial)
 28. Kikuste I, Marques-Pereira R, Monteiro-Soares M, Pimentel-Nunes P, Areia M, Leja M, Dinis-Ribeiro M. Systematic review of the diagnosis of gastric premalignant conditions and neoplasia with high-resolution endoscopic technologies. *Scand J Gastroenterol* 2013; 48(10): 1108-1117.
 29. von Karsa L, .. Leja M, .., Valori R. European guidelines for quality assurance in colorectal cancer screening and diagnosis: overview and introduction to the full supplement publication. *Endoscopy*. 2013 Jan;45(1):51-9.
 30. Amal H, Leja M, Broza YY, Tisch U, Funka K, Liepniece-Karele I, Skapars R, Xu ZQ, Liu H, Haick H. Geographical variation in the exhaled volatile organic compounds. *Journal of breath research* 2013; 7(4): 047102
 31. Xu ZQ, Broza YY, Ionsecu R, Tisch U, Ding L, Liu H, Song Q, Pan YY, Xiong FX, Gu KS, Sun GP, Chen ZD, Leja M, Haick H. A nanomaterial-based breath test for distinguishing gastric cancer from benign gastric conditions. *Br J Cancer*. 2013 Mar 5;108(4):941-50.
 32. Leja M, Cine E, Rudzite D, et al. Prevalence of *H.pylori* infection and atrophic gastritis in Latvia. *Eur J Gastroenterol Hepatol* 2012; 24(12): 1410-1417
 33. Agreus L, Kuipers EJ, Kupcinskas L, Malfertheiner P, Di Mario F, Leja M, et al., Rationale in diagnosis and screening of atrophic gastritis with stomach-specific plasma biomarkers. *Scand J Gastroenterol* 2012; 47: 136-47.
 34. Leja M, Wex T, Malfertheiner P. Markers for gastric cancer premalignant lesions: where do we go? *Dig Dis* 2012;30(3):268-276.
 35. Leja M. Gastric cancer epidemiology. In: *Gastric Cancer: Diagnosis, Early Prevention, and Treatment*. V.Pasechnikov ed. Nova Science Publishers. New York. 2010. ISBN: 978-1-61668-313-9.
 36. Leja, M.; Kupcinskas, L.; Funka, K.; Sudraba, A.; Jonaitis, L.; Ivanauskas, A.; Janciauskas, D.; Kiudelis, G.; Chiu, H. M., and Lin, J. T. The validity of a biomarker method for indirect detection of gastric mucosal atrophy versus standard histopathology. *Dig Dis Sci*. 2009 Nov; 54(11):2377-84.
 37. Shirin, H.; Leja, M., Niv, Y. *Helicobacter pylori* and non-malignant diseases. *Helicobacter*. 2008 Oct; 13 Suppl 1:23-7.