

Toni Tapani Seppälä  
University Researcher, Title of Docent, Docent  
Faculty Common Matters (Faculty of Medicine)  
ATG - Applied Tumor Genomics  
HUS Abdominal Center  
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## Curriculum vitae

### EDUCATION

Associate professor (title of Docent) in surgery  
2019  
Specialist (board certification) in gastrointestinal surgery  
2018  
Doctor of Medical Sciences (PhD), University of Eastern Finland  
2012  
Licentiate of Medicine (MD), University of Eastern Finland  
2010

### CURRENT POSITIONS

GI surgeon - Department of Gastrointestinal Surgery, Helsinki University Hospital  
2018  
Principal investigator - University of Helsinki, Faculty of Medicine  
2017

### PREVIOUS PROFESSIONAL APPOINTMENTS

Research fellow - Johns Hopkins University, Dept. of Surgical Oncology  
2019–2021  
Postdoc - Helsinki University Hospital and University of Helsinki  
2017–2018  
Resident - Department of Gastrointestinal Surgery, HUS  
2016–2018  
Resident - Central Finland Central Hospital, Jyväskylä  
2012–2015

### RESEARCH AWARDS AND HONOURS

Young Scientist of the Year  
2016, Gastropäivät, Finnish Digestive Surgeons

### REFeree TASKS AND EDITORIAL BOARD MEMBERSHIPS

In scientific journals: 42 reviews listed @ publons.com  
2012–2021  
Reviewer for the Dutch Cancer Society (KWF)  
2018–2020  
Reviewer for 1 PhD thesis  
2021

Associate Editor, Hereditary Cancer in Clinical Practice  
2020–  
Assistant Editor, Journal of Alzheimer's disease  
2012–2013

### PEER-REVIEWED SCIENTIFIC PUBLICATIONS

Total number of peer-reviewed publications: 53  
Number of citations: 2025 (Google Scholar 7/6/2021)  
H-index: 20  
M-index: 1.82  
i10-index: 27  
Terikko Rankings: Terikko Scholar Chart

### PROFESSIONAL MEMBERSHIPS

Finnish Society of Surgery, Board of directors  
2020–

European Hereditary Tumour Group (EHTG)  
2018–  
Member of the board of directors, Secretary  
2019–  
Prospective Lynch Syndrome Database (PLSD)  
Member of the Scientific Steering committee  
2017–  
The International Society for Gastrointestinal Hereditary Tumours  
2017–  
European Society of Coloproctology (ESCP)  
2017–  
Finnish Digestive Surgeons  
2014–  
Finnish Society of Surgeons  
2014–  
The Finnish Medical Society Duodecim  
Member 2006–  
Board of directors 2009–2011

### **MEDICAL COMMUNITY SERVICE**

Finnish Junior Doctors' Association  
Board of directors, treasurer 2011–2014  
Chairman of the Council 2015–2018  
Finnish Medical Association  
Member of the Council 2010–2012  
5 other committees 2006–2014  
National Institute for Health and Welfare  
Member of the Expert Working Group on developing nursing and multiprofessional documentation practices 2011–2012  
Finnish Medical Students' Association  
Vice president, board of directors 2006–2007  
Medical Students' Association of Kuopio  
Chairman of the board of directors 2006–2007

### **GRANTS AND RESEARCH SUPERVISION**

Research Grant, Relander Foundation (45,000 €)  
2021–2024  
State Research Funding, HUS VTR (500,000 €)  
2021–2025  
Research Grant, Jane and Aatos Erkko Foundation (1,173,000 €)  
2021–2025 (Together with co-PIs P. Peltomäki, M. Nyström and J-P Mecklin)  
iCAN Flagship (Academy of Finland) subproject funding (280,000 €)  
2021–2022  
Research Grant, Sigrid Juselius Foundation (150,000 €)  
2021–2024  
Research Grant, Cancer Society Finland (150,000 €)  
2021–2022  
  
State Research Funding, HUS VTR (20,000 €)  
2021  
Fellowship Grant, Sigrid Juselius Foundation (140,000 €)  
2019–2021 Research Fellowship at Johns Hopkins Hospital  
Fellowship Grant, Instrumentarium Science Foundation (40,000 €)  
2019–2021 Research Fellowship at Johns Hopkins Hospital  
Research Grant, Emil Aaltonen's Foundation (210,000 €)  
2019–2021  
Research Grant, Finnish Medical Foundation (150,000 €)  
2019–2021  
Postdoctoral 12 months funded position (50% during 2 years)  
Helsinki University Hospital and University of Helsinki, about 100,000 €  
2017–2018  
Research Grant, Finnish Medical Foundation (9,000 €, 4 months)  
2015  
Research Grant, Research Fund in Gastrointestinal Diseases  
Grant for advanced researcher (10,000 €, 4 months) 2014  
Six minor grants (several foundations, less than 10,000 €)  
2008–2012

Supervisor of PhD and bachelor theses  
2018–  
Pedagogical training: 10 credits /University of Helsinki  
2018

### **PRESENTATIONS 2018-2021**

Invited oral presentation: SMB2021, Virtual Meeting  
2021  
Invited oral presentation: Royal Society of Genetics, 2021, Virtual Meeting  
2021  
Invited panel discussant: CGA 2020, Virtual Meeting  
2020  
Invited oral presentation: EHTG 2020, Virtual Meeting  
2020  
Invited oral presentation: Highlights 2019, CGA 2019, Salt Lake City, UT  
2019  
Invited oral presentation: Missing the target: over and underdiagnosis in LS  
EHTG 2019, Barcelona, Spain  
Invited oral presentation: Clinical Guidance in LS, EHTG 2019, Barcelona, Spain  
2019  
Invited oral presentation: Incident cancers during colonoscopy surveillance for LS are usually not preceded by  
compromised quality of colonoscopy  
EHTG 2019, Barcelona, Spain  
Invited oral presentation: Finnish LS-research meeting  
2019  
Invited oral presentation: Insight 2019, Auckland, New Zealand  
2019  
Invited oral presentation: Clinical Aspects: from phenotype to genotype and back  
ESCP 2018, Nice, France  
Invited oral presentation: EHTG 2018, Nice, France  
2018  
Invited oral presentation: EHTG 2018, Nice, France  
2018  
Invited oral presentation: Finnish LS-research meeting  
2018  
Invited oral presentation: Finnish Medical Genetics Annual Meeting  
2018

## **Qualifications**

### **Principal Investigator**

Period : 19.03.2019 - \* in Clinicum

## **Employment**

### **Title of Docent**

Faculty Common Matters (Faculty of Medicine)  
University of Helsinki  
Finland  
28 Nov 2019 → present

### **University Researcher**

ATG - Applied Tumor Genomics  
University of Helsinki  
1 May 2021 → present

### **Docent**

HUS Abdominal Center  
HYKS erva  
Finland  
1 Jan 2017 → present

## Research fellow

Johns Hopkins Medicine  
Baltimore, United States  
24 Jul 2019 → 30 Jun 2021

## Publications

### **The impact of preoperative treatments on the immune environment of rectal cancer**

Wirta, E.-V., Elomaa, H., Ahtiainen, M., Hyöty, M., Seppälä, T. T., Kuopio, T., Böhm, J., Mecklin, J. P. & Väyrynen, J. P., Dec 2024, In: *APMIS*. 132, 12, p. 1046-1060 15 p.

### **Lynch syndrome-associated and sporadic microsatellite unstable colorectal cancers: different patterns of clonal evolution yield highly similar tumours**

Martin, S., Katainen, R., Taira, A., Välimäki, N., Ristimäki, A., Seppälä, T., Renkonen-Sinisalo, L., Lepistö, A., Tahkola, K., Mattila, A., Koskensalo, S., Mecklin, J.-P., Rajamäki, K., Palin, K. & Aaltonen, L. A., 24 Aug 2024, In: *Human Molecular Genetics*. 33, 21, p. 1858-1872 15 p., ddae124.

### **Circulating miRNA Signature Predicts Cancer Incidence in Lynch Syndrome-A Pilot Study**

Sievänen, T., Jokela, T., Hyvärinen, M., Korhonen, T.-M., Pylvänäinen, K., Mecklin, J.-P., Karvanen, J., Sillanpää, E., Seppälä, T. T. & Laakkonen, E. K., 4 Jun 2024, In: *Cancer prevention research*. 17, 6, p. 243-254 12 p.

### **Detection of a major Lynch Syndrome-causing MLH1 founder variant in a large-scale genotyped cohort**

Sipilä, L. J., Aavikko, M., Ravantti, J., Martin, S., Kuopio, T., Lahtinen, L., Peltomäki, P., Mecklin, J. P., Aaltonen, L. A. & Seppälä, T. T., Jun 2024, In: *Familial Cancer*. 6 p.

### **Updated European guidelines for clinical management of familial adenomatous polyposis (FAP), MUTYH-associated polyposis (MAP), gastric adenocarcinoma, proximal polyposis of the stomach (GAPPS) and other rare adenomatous polyposis syndromes: a joint EHTG-ESCP revision**

Zaffaroni, G., Mannucci, A., Koskenvuo, L., de Lacy, B., Maffioli, A., Bisseling, T., Half, E., Cavestro, G. M., Valle, L., Ryan, N., Aretz, S., Brown, K., Buttitta, F., Carneiro, F., Claber, O., Blanco-Colino, R., Collard, M., Crosbie, E., Cunha, M. & Doulias, T. & 19 others, Fleming, C., Heinrich, H., Hüneburg, R., Metras, J., Nagtegaal, I., Negoi, I., Nielsen, M., Pellino, G., Ricciardiello, L., Sagir, A., Sánchez-Guillén, L., Seppälä, T. T., Siersema, P., Striebeck, B., Sampson, J. R., Latchford, A., Parc, Y., Burn, J. & Möslein, G., 3 May 2024, In: *The British journal of surgery*. 111, 5, 71 p., znae070.

### **High immune cell infiltration predicts improved survival in cholangiocarcinoma**

Wirta, E. V., Szeto, S., Koppatz, H., Nordin, A., Mäkisalo, H., Arola, J., Sirén, J., Ahtiainen, M., Böhm, J., Mecklin, J. P., Sallinen, V. & Seppälä, T. T., 1 May 2024, In: *Frontiers in oncology*. 14, 12 p., 1333926.

### **Quantitative Multiplexed Analysis of Indoleamine 2,3-Dioxygenase (IDO) and Arginase-1 (ARG1) Expression and Myeloid Cell Infiltration in Colorectal Cancer**

Elomaa, H., Härkönen, J., Väyrynen, S. A., Ahtiainen, M., Ogino, S., Nowak, J. A., Lau, M. C., Helminen, O., Wirta, E. V., Seppälä, T. T., Böhm, J., Mecklin, J. P., Kuopio, T. & Väyrynen, J. P., Apr 2024, In: *Modern Pathology*. 37, 4, 12 p., 100450.

### **Multiplexed analysis of macrophage polarisation in pulmonary metastases of microsatellite stable colorectal cancer**

Karjula, T., Elomaa, H., Väyrynen, S. A., Kuopio, T., Ahtiainen, M., Mustonen, O., Puro, I., Niskakangas, A., Mecklin, J.-P., Böhm, J., Wirta, E.-V., Seppälä, T. T., Sihvo, E., Yannopoulos, F., Helminen, O. & Väyrynen, J. P., 22 Feb 2024, In: *Cancer Immunology, Immunotherapy*. 73, 3, 15 p., 59.

### **Circulating metabolome landscape in Lynch syndrome**

Jokela, T. A., Karppinen, J. E., Kärkkäinen, M., Mecklin, J.-P., Walker, S., Seppälä, T. T. & Laakkonen, E. K., 5 Feb 2024, In: *Cancer & Metabolism*. 12, 11 p., 4.

### **Commentary on Estimating cancer risk in carriers of Lynch syndrome variants in UK Biobank**

Møller, P., Säppälä, T. T., Domiguez-Valentin, M. & Sampson, J., 2024, In: *Journal of Medical Genetics*. 1 p.

### **Establishing Criteria for Tumor Necrosis as Prognostic Indicator in Colorectal Cancer**

Kastinen, M., Sirniö, P., Elomaa, H., Äijälä, V. K., Karjalainen, H., Tapiainen, V. V., Pohjanen, V.-M., Kemppainen, J., Sliashynskaya, K., Ahtiainen, M., Rintala, J., Meriläinen, S., Rautio, T., Saarnio, J., Lindgren, O., Mattila, T. T., Wirta, E.-V., Helminen, O., Seppälä, T. T. & Böhm, J. & 4 others, Mecklin, J.-P., Tuomisto, A., Mäkinen, M. J. & Väyrynen, J. P., 2024, In: American Journal of Surgical Pathology. 48, 10, p. 1284-1292 9 p.

### **Genome-wide polygenic risk scores for colorectal cancer have implications for risk-based screening**

FinnGen, Tamlander, M., Jermy, B., Seppälä, T. T., Färkkilä, M., Widén, E., Ripatti, S. & Mars, N., 2024, In: British Journal of Cancer. 130, 4, p. 651-659 9 p.

### **Incidences of colorectal adenomas and cancers under colonoscopy surveillance suggest an accelerated "Big Bang" pathway to CRC in three of the four Lynch syndromes**

Møller, P., Haupt, S., Ahadova, A., Kloor, M., Sampson, J. R., Sunde, L., Seppälä, T., Burn, J., Bernstein, I., Capella, G., Evans, D. G., Lindblom, A., Winship, I., Macrae, F., Katz, L., Laish, I., Vainer, E., Monahan, K., Half, E. & Horisberger, K. & 9 others, da Silva, L. A., Heuveline, V., Therkildsen, C., Lautrup, C., Klarskov, L. L., Cavestro, G. M., Möslin, G., Hovig, E. & Dominguez-Valentin, M., 2024, In: Hereditary Cancer in Clinical Practice. 22, 1, 12 p., 6.

### **Das Two-in-one-hit-Modell der beschleunigten Genese von kolorektalen Karzinomen beim MLH1-assoziierten Lynch-Syndrom**

Ahadova, A., Stenzinger, A., Seppälä, T., Hüneburg, R., Kloor, M. & Bläker, H., Dec 2023, In: Die Pathologie. 44, p. 188-192 5 p.

### **Dominantly inherited micro-satellite instable cancer - the four Lynch syndromes - an EHTG, PLSD position statement**

European Hereditary Tumour Grp EHT, Moller, P., Seppälä, T. T., Ahadova, A. & Dominguez-Valentin, M., 11 Oct 2023, In: Hereditary Cancer in Clinical Practice. 21, 1, 12 p., 19.

### **A "Two-in-One Hit" Model of Shortcut Carcinogenesis in MLH1 Lynch Syndrome Carriers**

Ahadova, A., Stenzinger, A., Seppälä, T., Hueneburg, R., Kloor, M. & Bläker, H., Jul 2023, In: Gastroenterology. 165, 1, p. 267-+ 8 p.

### **Tertiary lymphoid structures in pulmonary metastases of microsatellite stable colorectal cancer**

Karjula, T., Niskakangas, A., Mustonen, O., Puro, I., Elomaa, H., Ahtiainen, M., Kuopio, T., Mecklin, J.-P., Seppälä, T. T., Wirta, E.-V., Sihvo, E., Yannopoulos, F., Helminen, O. & Väyrynen, J. P., Jul 2023, In: Virchows Archiv. 483, 1, p. 21-32 12 p.

### **The prognostic role of tumor budding and tumor-stroma ratio in pulmonary metastasis of colorectal carcinoma**

Karjula, T., Kemi, N., Niskakangas, A., Mustonen, O., Puro, I., Pohjanen, V.-M., Kuopio, T., Elomaa, H., Ahtiainen, M., Mecklin, J.-P., Seppälä, T. T., Wirta, E.-V., Sihvo, E., Väyrynen, J. P., Yannopoulos, F. & Helminen, O., Jul 2023, In: European Journal of Surgical Oncology. 49, 7, p. 1298-1306 9 p.

### **Immunological and prognostic significance of tumour necrosis in colorectal cancer**

Kastinen, M., Sirniö, P., Elomaa, H., Ahtiainen, M., Väyrynen, S. A., Herzig, K.-H., Meriläinen, S., Aro, R., Häivälä, R., Rautio, T., Saarnio, J., Wirta, E.-V., Helminen, O., Seppälä, T. T., Kuopio, T., Böhm, J., Tuomisto, A., Mecklin, J.-P., Mäkinen, M. J. & Väyrynen, J. P., 29 Jun 2023, In: British Journal of Cancer. 128, 12, p. 2218-2226 9 p.

### **Spatially resolved multimarker evaluation of CD274 (PD-L1)/PDCD1 (PD-1) immune checkpoint expression and macrophage polarisation in colorectal cancer**

Elomaa, H., Ahtiainen, M., Väyrynen, S. A., Ogino, S., Nowak, J. A., Lau, M. C., Helminen, O., Wirta, E.-V., Seppälä, T. T., Böhm, J., Mecklin, J.-P., Kuopio, T. & Väyrynen, J. P., 15 Jun 2023, In: British Journal of Cancer. 128, 11, p. 2104-2115 12 p.

### **Is HLA type a possible cancer risk modifier in Lynch syndrome?**

Ahadova, A., Witt, J., Haupt, S., Gallon, R., Hueneburg, R., Nattermann, J., Ten Broeke, S., Bohaumilitzky, L., Hernandez-Sanchez, A., Santibanez-Koref, M., Jackson, M. S., Ahtiainen, M., Pylvanainen, K., Andini, K., Grolmusz, V. K., Moeslein, G., Dominguez-Valentin, M., Moller, P., Fuerst, D. & Sijmons, R. & 7 others, Borthwick, G. M., Burn, J., Mecklin, J.-P., Heuveline, V., Doeberitz, M. V. K., Seppälä, T. & Kloor, M., 15 May 2023, In: International Journal of Cancer. 152, 10, p.

**Hereditary colorectal, gastric, and pancreatic cancer: comprehensive review**

Seppälä, T. T., Burkhart, R. A. & Katona, B. W., 5 May 2023, In: *BJS open*. 7, 3, 19 p., zrad023.

**Lynch Syndrome Genetics and Clinical Implications**

Peltomäki, P., Nyström, M., Mecklin, J.-P. & Seppala, T. T., Apr 2023, In: *Gastroenterology*. 164, 5, p. 783-799 17 p.

**Mortality by age, gene and gender in carriers of pathogenic mismatch repair gene variants receiving surveillance for early cancer diagnosis and treatment: a report from the prospective Lynch syndrome database**

Dominguez-Valentin, M., Haupt, S., Seppälä, T. T., Sampson, J. R., Sunde, L., Bernstein, I., Jenkins, M. A., Engel, C., Aretz, S., Nielsen, M., Capella, G., Balaguer, F., Evans, D. G., Burn, J., Holinski-Feder, E., Bertario, L., Bonanni, B., Lindblom, A., Levi, Z. & Macrae, F. & 96 others, Winship, I., Plazzer, J.-P., Sijmons, R., Laghi, L., Della Valle, A., Heinimann, K., Debniak, T., Fruscio, R., Lopez-Koestner, F., Alvarez-Valenzuela, K., Katz, L. H., Laish, I., Vainer, E., Vaccaro, C., Carraro, D. M., Monahan, K., Half, E., Stakelum, A., Winter, D., Kennelly, R., Gluck, N., Sheth, H., Abu-Freha, N., Greenblatt, M., Rossi, B. M., Bohorquez, M., Cavestro, G. M., Lino-Silva, L. S., Horisberger, K., Tibiletti, M. G., do Nascimento, I., Thomas, H., Rossi, N. T., da Silva, L. A., Zarand, A., Ruiz-Banobre, J., Heuveline, V., Mecklin, J.-P., Pylvaenäinen, K., Renkonen-Sinisalo, L., Lepistö, A., Peltomaeki, P., Therkildsen, C., Madsen, M. G., Burgdorf, S. K., Hopper, J. L., Win, A. K., Haile, R. W., Lindor, N., Gallinge, S., Le Marchand, L., Newcomb, P. A., Figueiredo, J., Buchanan, D. D., Thibodeau, S. N., Doeberitz, M. V. K., Loeffler, M., Rahner, N., Schroeck, E., Steinke-Lange, V., Schmiegel, W., Vangala, D., Perne, C., Hueneburg, R., Redler, S., Buettner, R., Weitz, J., Pineda, M., Duenas, N., Vidal, J. B., Moreira, L., Sanchez, A., Hovig, E., Nakken, S., Green, K., Laloo, F., Hill, J., Crosbie, E., Mints, M., Goldberg, Y., Tjandra, D., ten Broeke, S. W., Kariv, R., Rosner, G., Advani, S. H., Thomas, L., Shah, P., Shah, M., Neffa, F., Esperon, P., Pavicic, W., Torrezan, G. T., Bassaneze, T., Martin, C. A., Moslein, G. & Moller, P., Apr 2023, In: *EClinicalMedicine*. 58, 12 p., 101909.

**Systemic circulating microRNA landscape in Lynch syndrome**

Sievänen, T., Korhonen, T.-M., Jokela, T., Ahtiainen, M., Lahtinen, L., Kuopio, T., Lepistö, A., Sillanpää, E., Mecklin, J.-P., Seppälä, T. T. & Laakkonen, E. K., 1 Mar 2023, In: *International Journal of Cancer*. 152, 5, p. 932-944 13 p.

**Delphi Initiative for Early-Onset Colorectal Cancer (DIRECT) International Management Guidelines**

Cavestro, G. M., Mannucci, A., Balaguer, F., Hampel, H., Kupfer, S. S., Repici, A., Sartore-Bianchi, A., Seppälä, T. T., Valentini, V., Boland, C. R., Brand, R. E., Buffart, T. E., Burke, C. A., Caccialanza, R., Cannizzaro, R., Cascinu, S., Cercek, A., Crosbie, E. J., Danese, S. & Dekker, E. & 46 others, Daca-Alvarez, M., Deni, F., Dominguez-Valentin, M., Eng, C., Goel, A., Guillem, J. G., Houwen, B. B. S. L., Kahi, C., Kalady, M. F., Kastrinos, F., Kuehn, F., Laghi, L., Latchford, A., Liska, D., Lynch, P., Malesci, A., Mauri, G., Meldolesi, E., Moller, P., Monahan, K. J., Moeslein, G., Murphy, C. C., Nass, K., Ng, K., Oliani, C., Papaleo, E., Patel, S. G., Puzzono, M., Remo, A., Ricciardiello, L., Ripamonti, C. I., Siena, S., Singh, S. K., Stadler, Z. K., Stanich, P. P., Syngal, S., Turi, S., Urso, E. D., Valle, L., Vanni, V. S., Vilar, E., Vitellaro, M., You, Y.-Q. N., Yurgelun, M. B., Zuppardo, R. A. & Stoffel, E. M., Mar 2023, In: *Clinical Gastroenterology and Hepatology*. 21, 3, p. 581-+ 56 p.

**Tumor-independent Detection of Inherited Mismatch Repair Deficiency for the Diagnosis of Lynch Syndrome with High Specificity and Sensitivity**

Kansikas, M., Vähätalo, L., Kantelinen, J., Kasela, M., Putula, J., Døhlen, A., Paloviita, P., Kärkkäinen, E., Lahti, N., Arnez, P., Kilpinen, S., Alcalá-Repo, B., Pylvänäinen, K., Pöyhönen, M., Peltomäki, P., Järvinen, H. J., Seppälä, T. T., Renkonen-Sinisalo, L., Lepistö, A. & Mecklin, J.-P. & 1 others, Nyström, M., Mar 2023, In: *Cancer research communications*. 3, 3, p. 361-370 10 p.

**Clinical characteristics of pancreatic and biliary tract cancers in Lynch syndrome: A retrospective analysis from the Finnish National Lynch Syndrome Research Registry**

Zalevskaia, K., Mecklin, J.-P. & Seppälä, T. T., 1 Feb 2023, In: *Frontiers in oncology*. 13, 9 p., 1123901.

**A simple approach for detecting HLA-A02 alleles in archival formalin-fixed paraffin-embedded tissue samples and an application example for studying cancer immunoeediting**

Witt, J., Haupt, S., Ahadova, A., Bohaumilitsky, L., Fuchs, V., Ballhausen, A., Przybilla, M. J., Jendrusch, M., Seppälä, T. T., Fuerst, D., Walle, T., Busch, E., Haag, G. M., Hueneburg, R., Nattermann, J., Doeberitz, M. V. K., Heuveline, V. & Kloor, M., Jan 2023, In: *HLA*. 101, 1, p. 24-33 10 p.

**CD3(+) and CD8(+) T-Cell-Based Immune Cell Score and PD-(L)1 Expression in Pulmonary Metastases of Microsatellite Stable Colorectal Cancer**

Karjula, T., Elomaa, H., Niskakangas, A., Mustonen, O., Puro, I., Kuopio, T., Ahtiainen, M., Mecklin, J.-P., Seppälä, T. T., Wirta, E.-V., Sihvo, E., Väyrynen, J. P., Yannopoulos, F. & Helminen, O., Jan 2023, In: *Cancers*. 15, 1, 16 p.

**Miten ja miksi syöpä leviää?**

Nikkola, J., Jokela, T. & Toni, S., 2023, In: *Duodecim*. 139, 3, p. 193-202 10 p.

**Colorectal cancer incidences in Lynch syndrome: a comparison of results from the prospective lynch syndrome database and the international mismatch repair consortium**

European Hereditary Tumour Grp EHT, Int Mismatch Repair Consortium IMR, Moller, P., Seppala, T., Dowty, J. G., Renkonen-Sinisalo, L., Lepistö, A. & Peltomäki, P., 1 Oct 2022, In: *Hereditary Cancer in Clinical Practice*. 20, 1, 11 p., 36.

**Cancer Prevention with Resistant Starch in Lynch Syndrome Patients in the CAPP2-Randomized Placebo Controlled Trial: Planned 10-Year Follow-up**

CAPP2 Investigators, Mathers, J. C., Elliott, F., Macrae, F., Mecklin, J.-P., Seppälä, T. T. & Burn, J., Sept 2022, In: *Cancer prevention research*. 15, 9, p. 623-634 12 p.

**Precision medicine in pancreatic cancer: Patient derived organoid pharmacotyping is a predictive biomarker of clinical treatment response**

Seppälä, T. T., Zimmerman, J., Suri, R., Zlomke, H., Ivey, G., Szabolcs, A., Shubert, C., Cameron, J. L., Burns, W. R., Lafaro, K., He, J., Wolfgang, C. L., Zhou, Y., Zheng, L., Tuveson, D. A., Eshleman, J. R., Ryan, D. P., Kimmelman, A. C., Hong, T. & Ting, D. T. & 2 others, Jaffee, E. M. & Burkhart, R. A., 1 Aug 2022, In: *Clinical Cancer Research*. 28, 15, p. 3296-3307 12 p.

**Prognostic significance of spatial and density analysis of T lymphocytes in colorectal cancer**

Elomaa, H., Ahtiainen, M., Väyrynen, S. A., Ogino, S., Nowak, J. A., Friman, M., Helminen, O., Wirta, E.-V., Seppälä, T. T., Böhm, J., Mäkinen, M. J., Mecklin, J.-P., Kuopio, T. & Väyrynen, J. P., 1 Aug 2022, In: *British Journal of Cancer*. 127, 3, p. 514-523 10 p.

**The prognostic value of extramural venous invasion in preoperative MRI of rectal cancer patients**

Lehtonen, T. M., Koskenvuo, L. E., Seppala, T. T. & Lepistö, A. H., Jun 2022, In: *Colorectal Disease*. 24, 6, p. 737-746 10 p.

**Correspondence on "Cancer risks by gene, age, and gender in 6350 carriers of pathogenic mismatch repair variants: findings from the Prospective Lynch Syndrome Database" by Dominguez-Valentin et al Response**

Dominguez-Valentin, M., Sampson, J. R., Seppälä, T. T. & Mollera, P., May 2022, In: *Genetics In medicine*. 24, 5, p. 1151-1151 1 p.

**The Different Immune Profiles of Normal Colonic Mucosa in Cancer-Free Lynch Syndrome Carriers and Lynch Syndrome Colorectal Cancer Patients**

Bohauimilitzky, L., Kluck, K., Hueneburg, R., Gallon, R., Nattermann, J., Kirchner, M., Kristiansen, G., Hommerding, O., Pfuderer, P. L., Wagner, L., Echterdiek, F., Koesegi, S., Mueller, N., Fischer, K., Nelius, N., Hartog, B., Borthwick, G., Busch, E., Haag, G. M. & Blaeker, H. & 11 others, Moeslein, G., Doeberitz, M. V. K., Seppälä, T. T., Ahtiainen, M., Mecklin, J.-P., Bishop, D. T., Burn, J., Stenzinger, A., Budczies, J., Kloor, M. & Ahadova, A., Mar 2022, In: *Gastroenterology*. 162, 3, p. 907-+ 23 p.

**Toisiolaki - lääketieteellisen tutkimuksen mahdollistaja vai tukahduttaja?**

Reito, A., Sanmark, E., Tuovinen, T., Seppälä, T. T., Kuitunen, I., Ponkilainen, V., Ekman, E. & Kauppila, J. H., 3 Feb 2022, In: *Suomen lääkärilehti*. 77, 7-8, e30589.

**Solving for Chemotherapeutic Sensitivity: Adapting "Black Box" Methods to Study Patient-Derived Tumor Organoids**

Seppälä, T. T., Zimmerman, J. & Burkhart, R. A., Jan 2022, In: *Annals of Surgical Oncology*. 29, 1, p. 4-6 3 p.

**Immunoprofiles and DNA Methylation of Inflammatory Marker Genes in Ulcerative Colitis-Associated Colorectal Tumorigenesis**

Mäki-Nevala, S., Ukwattage, S., Wirta, E.-V., Ahtiainen, M., Ristimäki, A., Seppälä, T. T., Lepistö, A., Mecklin, J.-P. & Peltomäki, P., Oct 2021, In: *Biomolecules*. 11, 10, 17 p., 1440.

**Descriptive study on subjective experience of genetic testing with respect to relationship, family planning and psychosocial wellbeing among women with lynch syndrome**

Kalamo, M., Mäenpää, J., Seppälä, T., Mecklin, J.-P., Pylvänäinen, K. & Staff, S., 14 Sept 2021, In: *Hereditary Cancer in Clinical Practice*. 19, 1, 7 p., 38.

**Can Pancreatic Organoids Help in the Treatment of Pancreatic Cancer?**

Seppälä, T. T. & Burkhart, R. A., Sept 2021, In: *Advances in Surgery*. 55, p. 215-229 15 p.

**Characteristics of Early-Onset vs Late-Onset Colorectal Cancer A Review**

REACCT Collaborative, Zaborowski, A. M., Abdile, A., Lepistö, A. & Seppälä, T. T., Sept 2021, In: *JAMA surgery*. 156, 9, p. 865-874 10 p.

**Towards evidence-based personalised precision medicine for Lynch syndrome**

Moller, P., Sampson, J. R., Dominguez-Valentin, M. & Seppälä, T. T., Sept 2021, In: *Lancet Oncology*. 22, 9, p. e383-e383 1 p.

**Genetic and Epigenetic Characteristics of Inflammatory Bowel Disease-Associated Colorectal Cancer**

Rajamäki, K., Taira, A., Katainen, R., Välimäki, N., Kuosmanen, A., Plaketti, R.-M., Seppälä, T. T., Ahtiainen, M., Wirta, E.-V., Vartiainen, E., Sulo, P., Ravantti, J., Lehtipuro, S., Granberg, K. J., Nykter, M., Tanskanen, T., Ristimäki, A., Koskensalo, S., Renkonen-Sinisalo, L. & Lepistö, A. & 6 others, Böhm, J., Taipale, J., Mecklin, J.-P., Aavikko, M., Palin, K. & Aaltonen, L. A., 21 Aug 2021, In: *Gastroenterology*. 161, 2, p. 592-607 16 p.

**No Difference in Penetrance between Truncating and Missense/Aberrant Splicing Pathogenic Variants in MLH1 and MSH2: A Prospective Lynch Syndrome Database Study**

PLSD, Dominguez-Valentin, M., Plazzer, J.-P., Sampson, J. R., Renkonen-Sinisalo, L., Lepistö, A., Peltomäki, P., Lindberg, L. & Seppälä, T. T., Jul 2021, In: *Journal of clinical medicine*. 10, 13, 12 p., 2856.

**Variation in the risk of colorectal cancer in families with Lynch syndrome: a retrospective cohort study**

IMRC, Win, A. K., Dowty, J. G., Reece, J. C., Seppälä, T. T. & Jenkins, M., Jul 2021, In: *Lancet Oncology*. 22, 7, p. 1014-1022 9 p.

**Somatic mutation profiles as molecular classifiers of ulcerative colitis-associated colorectal cancer**

Mäki-Nevala, S., Ukwattage, S., Olkinuora, A., Almusa, H., Ahtiainen, M., Ristimäki, A., Seppälä, T., Lepistö, A., Mecklin, J.-P. & Peltomäki, P., 15 Jun 2021, In: *International Journal of Cancer*. 148, 12, p. 2997-3007 11 p.

**Distinct Mutational Profile of Lynch Syndrome Colorectal Cancers Diagnosed under Regular Colonoscopy Surveillance**

Ahadova, A., Pfuderer, P. L., Ahtiainen, M., Ballhausen, A., Bohaumilitzky, L., Kösegi, S., Müller, N., Tang, Y. L., Kosmalla, K., Witt, J., Endris, V., Stenzinger, A., von Knebel Doeberitz, M., Bläker, H., Renkonen-Sinisalo, L., Lepistö, A., Böhm, J., Mecklin, J.-P., Seppälä, T. T. & Kloor, M., Jun 2021, In: *Journal of clinical medicine*. 10, 11, 17 p., 2458.

**European guidelines from the EHTG and ESCP for Lynch syndrome: an updated third edition of the Mallorca guidelines based on gene and gender**

the European Hereditary Tumour Group (EHTG), European Society of Coloproctology (ESCP), Seppälä, T. T., Latchford, A., Negoï, I. & Möslin, G., May 2021, In: *British Journal of Surgery*. 108, 5, p. 484-498 15 p.

**Uptake of hysterectomy and bilateral salpingo-oophorectomy in carriers of pathogenic mismatch repair variants: a Prospective Lynch Syndrome Database report**

Seppälä, T., Dominguez-Valentin, M., Crosbie, E., Engel, C., Aretz, S., Macrae, F., Winship, I., Capella, G., Thomas, H., Hovig, E., Nielsen, M., Sijmons, R., Bertario, L., Bonanni, B., Tibiletti, M., Cavestro, G., Mints, M., Gluck, N., Katz, L. & Heinemann, K. & 66 others, Vaccaro, C., Green, K., Laloo, F., Hill, J., Schmiegel, W., Vangala, D., Perne, C., Strauss, H., Tecklenburg, J., Holinski-Feder, E., Steinke-Lange, V., Mecklin, J., Plazzer, J., Pineda, M., Navarro, M., Vida, J., Kariv, R., Rosner, G., Pinero, T., Pavicic, W., Kalfayan, P., Ten Broeke, S., Jenkins, M., Sunde, L., Bernstein, I., Burn, J., Greenblatt, M., Cappel, W., Della Valle, A., Lopez-Koestner, F., Alvarez, K., Buttner, R., Gorgens, H., Morak, M., Holzappel, S., Huneburg, R., Doeberitz, M., Loeffler, M., Redler, S., Weitz, J., Pylvänäinen, K., Renkonen-Sinisalo, L.,



Lepisto, A., Hopper, J., Win, A., Lindor, N., Gallinger, S., Marchand, L., Newcomb, P., Figueiredo, J., Thibodeau, S., Therkildsen, C., Wadt, K., Mourits, M., Ketabi, Z., Denton, O., Rodland, E., Vasen, H., Neffa, F., Esperon, P., Tjandra, D., Moslein, G., Rokkones, E., Sampson, J., Evans, D. & Moller, P., May 2021, In: *European Journal of Cancer*. 148, p. 124-133 10 p.

#### **Body Weight, Physical Activity, and Risk of Cancer in Lynch Syndrome**

Sievanen, T., Tormakangas, T., Laakkonen, E. K., Mecklin, J.-P., Pylvänäinen, K., Seppälä, T. T., Peltomäki, P., Sipila, S. & Sillanpää, E., Apr 2021, In: *Cancers*. 13, 8, 15 p., 1849.

#### **Immune Contexture of MMR-Proficient Primary Colorectal Cancer and Matched Liver and Lung Metastases**

Ahtiainen, M., Elomaa, H., Vayrynen, J. P., Wirta, E.-V., Kuopio, T., Helminen, O., Seppala, T. T., Kellokumpu, I. & Mecklin, J.-P., Apr 2021, In: *Cancers*. 13, 7, 16 p., 1530.

#### **Impact of Age and Comorbidity on Multimodal Management and Survival from Colorectal Cancer: A Population-Based Study**

Kellokumpu, I., Kairaluoma, M., Mecklin, J.-P., Kellokumpu, H., Väyrynen, V., Wirta, E.-V., Sihvo, E., Kuopio, T. & Seppälä, T. T., Apr 2021, In: *Journal of clinical medicine*. 10, 8, 13 p., 1751.

#### **Letter to the Editor-Recent advances in Lynch syndrome**

Moller, P., Sampson, J., Dominguez-Valentin, M., Burn, J., Sunde, L., Moeslein, G., Mecklin, J.-P. & Seppälä, T., Apr 2021, In: *Familial Cancer*. 20, 2, p. 117-118 2 p.

#### **Risk-reducing hysterectomy and bilateral salpingo-oophorectomy in female heterozygotes of pathogenic mismatch repair variants: a Prospective Lynch Syndrome Database report**

Dominguez-Valentin, M., Crosbie, E. J., Engel, C., Aretz, S., Macrae, F., Winship, I., Capella, G., Thomas, H., Nakken, S., Hovig, E., Nielsen, M., Sijmons, R. H., Bertario, L., Bonanni, B., Tibiletti, M. G., Cavestro, G. M., Mints, M., Gluck, N., Katz, L. & Heinimann, K. & 68 others, Vaccaro, C. A., Green, K., Laloo, F., Hill, J., Schmiegel, W., Vangala, D., Perne, C., Strauss, H.-G., Tecklenburg, J., Holinski-Feder, E., Steinke-Lange, V., Mecklin, J.-P., Plazzer, J.-P., Pineda, M., Navarro, M., Brunet Vidal, J., Kariv, R., Rosner, G., Alejandra Pinero, T., Laura Gonzalez, M., Kalfayan, P., Ryan, N., Ten Broeke, S. W., Jenkins, M. A., Sunde, L., Bernstein, I., Burn, J., Greenblatt, M., Cappel, W. H. D. V. T. N., Della Valle, A., Lopez-Koestner, F., Alvarez, K., Buettner, R., Goergens, H., Morak, M., Holzapfel, S., Hueneburg, R., Doeberitz, M. V. K., Loeffler, M., Rahner, N., Weitz, J., Pylvänäinen, K., Renkonen-Sinisalo, L., Lepistö, A., Auranen, A., Hopper, J. L., Win, A. K., Haile, R. W., Lindor, N. M., Gallinger, S., Le Marchand, L., Newcomb, P. A., Figueiredo, J. C., Thibodeau, S. N., Therkildsen, C., Okkels, H., Ketabi, Z., Denton, O. G., Rodland, E. A., Vasen, H., Neffa, F., Esperon, P., Tjandra, D., Moeslein, G., Sampson, J. R., Evans, D. G., Seppälä, T. T. & Møller, P., Apr 2021, In: *Genetics In medicine*. 23, 4, p. 705-712 8 p.

#### **The "unnatural" history of colorectal cancer in Lynch syndrome: Lessons from colonoscopy surveillance**

Ahadova, A., Seppälä, T. T., Engel, C., Gallon, R., Burn, J., Holinski-Feder, E., Steinke-Lange, V., Moeslein, G., Nielsen, M., ten Broeke, S. W., Laghi, L., Dominguez-Valentin, M., Capella, G., Macrae, F., Scott, R., Hueneburg, R., Nattermann, J., Hoffmeister, M., Brenner, H. & Blaeker, H. & 6 others, Doeberitz, M. V. K., Sampson, J. R., Vasen, H., Mecklin, J.-P., Moller, P. & Kloor, M., 15 Feb 2021, In: *International Journal of Cancer*. 148, 4, p. 800-811 12 p.

#### **Analysis in the Prospective Lynch Syndrome Database identifies sarcoma as part of the Lynch syndrome tumor spectrum**

PLSD Collaborators, Dominguez-Valentin, M., Sampson, J. R., Møller, P. & Seppälä, T. T., 15 Jan 2021, In: *International Journal of Cancer*. 148, 2, p. 512-513 2 p.

#### **Prospective observational data informs understanding and future management of Lynch syndrome: insights from the Prospective Lynch Syndrome Database (PLSD)**

Seppälä, T. T., Dominguez-Valentin, M., Sampson, J. R. & Møller, P., 2021, In: *Familial Cancer*. 20, p. 35-39 5 p.

#### **The shared frameshift mutation landscape of microsatellite-unstable cancers suggests immunoediting during tumor evolution**

Ballhausen, A., Przybilla, M. J., Jendrusch, M., Haupt, S., Pfaffendorf, E., Seidler, F., Witt, J., Hernandez Sanchez, A., Urban, K., Draxlbauer, M., Krausert, S., Ahadova, A., Kalteis, M. S., Pfuderer, P. L., Heid, D., Stichel, D., Gebert, J., Bonsack, M., Schott, S. & Blaeker, H. & 10 others, Seppälä, T., Mecklin, J.-P., Ten Broeke, S., Nielsen, M., Heuveline, V., Krzykalla, J., Benner, A., Riemer, A. B., von Knebel Doeberitz, M. & Kloor, M., 21 Sept 2020, In: *Nature Communications*. 11, 1, 13 p., 4740.

**Patient-derived Organoid Pharmacotyping is a Clinically Tractable Strategy for Precision Medicine in Pancreatic Cancer**  
Seppälä, T. T., Zimmerman, J. W., Sereni, E., Plenker, D., Suri, R., Rozich, N., Blair, A., Thomas, D. L., Teinor, J., Javed, A., Patel, H. M., Cameron, J. L., Burns, W. R., He, J., Tuveson, D. A., Jaffee, E. M., Eshleman, J. R., Szabolcs, A., Ryan, D. P. & Ting, D. T. & 2 others, Wolfgang, C. L. & Burkhart, R. A., Sept 2020, In: *Annals of Surgery*. 272, 3, p. 427-435 9 p.

**Incidence and management of patients with colorectal cancer and synchronous and metachronous colorectal metastases: a population-based study**

Väyrynen, V., Wirta, E.-V., Seppälä, T., Sihvo, E., Mecklin, J.-P., Vasala, K. & Kellokumpu, I., Aug 2020, In: *BJS open*. 4, 4, p. 685-692 8 p.

**Prognostic Value of Immune Environment Analysis in Small Bowel Adenocarcinomas with Verified Mutational Landscape and Predisposing Conditions**

Wirta, E.-V., Szeto, S. S. Y., Hänninen, U., Ahtiainen, M., Böhm, J., Mecklin, J.-P., Aaltonen, L. A. & Seppälä, T. T., Aug 2020, In: *Cancers*. 12, 8, 19 p., 2018.

**Risk-Reducing Gynecological Surgery in Lynch Syndrome: Results of an International Survey from the Prospective Lynch Syndrome Database**

Dominguez-Valentin, M., Seppälä, T. T., Engel, C., Aretz, S., Macrae, F., Winship, I., Capella, G., Thomas, H., Hovig, E., Nielsen, M., Sijmons, R. H., Bertario, L., Bonanni, B., Tibiletti, M. G., Cavestro, G. M., Mints, M., Gluck, N., Katz, L., Heinimann, K. & Vaccaro, C. A. & 25 others, Green, K., Laloo, F., Hill, J., Schmiegel, W., Vangala, D., Perne, C., Strauss, H.-G., Tecklenburg, J., Holinski-Feder, E., Steinke-Lange, V., Mecklin, J.-P., Plazzer, J.-P., Pineda, M., Navarro, M., Vidal, J. B., Kariv, R., Rosner, G., Alejandra Pinero, T., Laura Gonzalez, M., Kalfayan, P., Sampson, J. R., Ryan, N. A. J., Evans, D. G., Moller, P. & Crosbie, E. J., 18 Jul 2020, In: *Journal of clinical medicine*. 9, 7, 8 p., 2290.

**Cancer prevention with aspirin in hereditary colorectal cancer (Lynch syndrome), 10-year follow-up and registry-based 20-year data in the CAPP2 study: a double-blind, randomised, placebo-controlled trial**

The CAPP2 Investigators, Burn, J., Sheth, H., Elliott, F., Mecklin, J.-P., Seppälä, T. T., Pylvänäinen, K. & Bishop, D. T., 13 Jun 2020, In: *Lancet*. 395, 10240, p. 1855-1863 9 p.

**Associations of Pathogenic Variants in MLH1, MSH2, and MSH6 With Risk of Colorectal Adenomas and Tumors and With Somatic Mutations in Patients With Lynch Syndrome**

German HNPCC Consortium, Dutch Lynch Syndrome Collaborative, Finnish Lynch Syndrome Registry, Engel, C., Ahadova, A., Seppälä, T. T., Lepistö, A., Renkonen-Sinisalo, L. & Vasen, H. F., Apr 2020, In: *Gastroenterology*. 158, 5, p. 1326-1333 8 p.

**Factors associated with decision-making on prophylactic hysterectomy and attitudes towards gynecological surveillance among women with Lynch syndrome (LS): a descriptive study**

Kalamo, M. H., Mäenpää, J. U., Seppälä, T. T., Mecklin, J. P., Huhtala, H., Sorvettula, K., Pylvänäinen, K. & Staff, S., Apr 2020, In: *Familial Cancer*. 19, 2, p. 177-182 6 p.

**Response to Response to Dominguez-Valentin M et al. 2019: Cancer risks by gene, age, and gender in 6350 carriers of pathogenic mismatch repair variants: findings from the Prospective Lynch Syndrome Database**

Sampson, J., Dominguez-Valentin, M., Seppälä, T. & Møller, P., Apr 2020, In: *Genetics In medicine*. 22, 4, p. 813-814 2 p.

**Cancer risks by gene, age, and gender in 6350 carriers of pathogenic mismatch repair variants: findings from the Prospective Lynch Syndrome Database**

Dominguez-Valentin, M., Sampson, J. R., Seppälä, T. T., Ten Broeke, S. W., Plazzer, J.-P., Nakken, S., Engel, C., Aretz, S., Jenkins, M. A., Sunde, L., Bernstein, I., Capella, G., Balaguer, F., Thomas, H., Evans, D. G., Burn, J., Greenblatt, M., Hovig, E., de Vos Tot Nederveen Cappel, W. H. & Sijmons, R. H. & 68 others, Bertario, L., Tibiletti, M. G., Cavestro, G. M., Lindblom, A., Della Valle, A., Lopez-Köstner, F., Gluck, N., Katz, L. H., Heinimann, K., Vaccaro, C. A., Büttner, R., Görgens, H., Holinski-Feder, E., Morak, M., Holzapfel, S., Hüneburg, R., Knebel Doeberitz, M. V., Loeffler, M., Rahner, N., Schackert, H. K., Steinke-Lange, V., Schmiegel, W., Vangala, D., Pylvänäinen, K., Renkonen-Sinisalo, L., Hopper, J. L., Win, A. K., Haile, R. W., Lindor, N. M., Gallinger, S., Le Marchand, L., Newcomb, P. A., Figueiredo, J. C., Thibodeau, S. N., Wadt, K., Therkildsen, C., Okkels, H., Ketabi, Z., Moreira, L., Sánchez, A., Serra-Burriel, M., Pineda, M., Navarro, M., Blanco, I., Green, K., Laloo, F., Crosbie, E. J., Hill, J., Denton, O. G., Frayling, I. M., Rødland, E. A., Vasen, H., Mints, M., Neffa, F., Esperon, P., Alvarez, K., Kariv, R., Rosner, G., Pinero, T. A., Gonzalez, M. L., Kalfayan, P., Tjandra, D., Winship, I. M., Macrae, F., Möslein, G., Mecklin, J.-P., Nielsen, M. & Møller, P., Jan 2020, In: *Genetics In medicine*. 22, 1, p. 15-25 11 p.

**Lynchin oireyhtymän syöpää ehkäisevä seuranta muuttuu geenikohtaiseksi : asetyylisalisyylihapon tehosta vakuuttavaa näyttöä ja rokote kehitteillä**

Seppälä, T. & Mecklin, J.-P., 2020, In: Duodecim. 136, 17, p. 1867-1869 3 p.

**Incident colorectal cancer in Lynch syndrome is usually not preceded by compromised quality of colonoscopy**

Lappalainen, J., Holmström, D., Lepistö, A., Saarnio, J., Mecklin, J.-P. & Seppälä, T., Dec 2019, In: Scandinavian Journal of Gastroenterology. 54, 12, p. 1473–1480 9 p.

**Survival by colon cancer stage and screening interval in Lynch syndrome: a prospective Lynch syndrome database report**

Dominguez-Valentin, M., Seppälä, T. T., Sampson, J. R., Macrae, F., Winship, I., Evans, D. G., Scott, R. J., Burn, J., Moeslein, G., Bernstein, I., Pylvaenäinen, K., Renkonen-Sinisalo, L., Lepistö, A., Lindblom, A., Plazzer, J.-P., Tjandra, D., Thomas, H., Green, K., Laloo, F. & Crosbie, E. J. & 23 others, Hill, J., Capella, G., Pineda, M., Navarro, M., Vidal, J. B., Ronlund, K., Nielsen, R. T., Yilmaz, M., Elvang, L. L., Katz, L., Nielsen, M., ten Broeke, S. W., Nakken, S., Hovig, E., Sunde, L., Kloor, M., Doeberitz, M. V. K., Ahadova, A., Lindor, N., Steinke-Lange, V., Holinski-Feder, E., Mecklin, J.-P. & Moller, P., 14 Oct 2019, In: Hereditary Cancer in Clinical Practice. 17, 1, 6 p., 28.

**Retrotransposon insertions can initiate colorectal cancer and are associated with poor survival**

Cajuso, T., Sulo, P., Tanskanen, T., Katainen, R., Taira, A., Hanninen, U. A., Kondelin, J., Forsstrom, L., Valimäki, N., Aavikko, M., Kaasinen, E., Ristimäki, A., Koskensalo, S., Lepistö, A., Renkonen-Sinisalo, L., Seppälä, T., Kuopio, T., Böhm, J., Mecklin, J.-P. & Kilpivaara, O. & 3 others, Pitkanen, E., Palin, K. & Aaltonen, L. A., 6 Sept 2019, In: Nature Communications. 10, 9 p., 4022.

**Epidemiological, clinical and molecular characterization of Lynch-like syndrome: A population-based study**

Porkka, N., Lahtinen, L., Ahtiainen, M., Böhm, J. P., Kuopio, T., Eldfors, S., Mecklin, J.-P., Seppälä, T. T. & Peltomäki, P., 1 Jul 2019, In: International Journal of Cancer. 145, 1, p. 87-98 12 p.

**The shared mutation and neoantigen landscape of MMR-deficient colorectal cancers suggests immunoediting during tumor evolution**

Kloor, M., Ballhausen, A., Przybilla, M., Jendrusch, M., Pfaffendorf, E., Draxlbauer, M., Seidler, F., Krausert, S., Ahadova, A., Kalteis, S., Heid, D., Gebert, J., Bonsack, M., Schott, S., Blaeker, H., Seppälä, T. T., Mecklin, J.-P., Ten Broeke, S., Nielsen, M. & Krzykalla, J. & 3 others, Benner, A., Riemer, A. & Doeberitz, M. V. K., Jul 2019, In: Cancer Research. 79, 13 s, 3 p., 571.

**Combined prognostic value of CD274 (PD-L1)/PDCDI (PD-1) expression and immune cell infiltration in colorectal cancer as per mismatch repair status**

Ahtiainen, M., Wirta, E.-V., Kuopio, T., Seppälä, T., Rantala, J., Mecklin, J.-P. & Böhm, J., Jun 2019, In: Modern Pathology. 32, 6, p. 866-883 18 p.

**Exome and immune cell score analyses reveal great variation within synchronous primary colorectal cancers**

Hanninen, U. A., Wirta, E.-V., Katainen, R., Tanskanen, T., Hamberg, J., Taipale, M., Böhm, J., Renkonen-Sinisalo, L., Lepistö, A., Forsström, L. M., Pitkänen, E., Palin, K., Seppälä, T. T., Mäkinen, N., Mecklin, J.-P. & Aaltonen, L. A., 30 Apr 2019, In: British Journal of Cancer. 120, 9, p. 922-930 9 p.

**Lack of association between screening interval and cancer stage in Lynch syndrome may be accounted for by over-diagnosis; a prospective Lynch syndrome database report**

Seppälä, T. T., Ahadova, A., Dominguez-Valentin, M., Macrae, F., Evans, D. G., Therkildsen, C., Sampson, J., Scott, R., Burn, J., Möslein, G., Bernstein, I., Holinski-Feder, E., Pylvänäinen, K., Renkonen-Sinisalo, L., Lepistö, A., Lautrup, C. K., Lindblom, A., Plazzer, J.-P., Winship, I. & Tjandra, D. & 37 others, Katz, L. H., Aretz, S., Hueneburg, R., Holzapfel, S., Heinimann, K., Della Valle, A., Neffa, F., Gluck, N., Cappel, W. H. D. V. T. N., Vasen, H., Morak, M., Steinke-Lange, V., Engel, C., Rahner, N., Schmiegel, W., Vangala, D., Thomas, H., Green, K., Laloo, F., Crosbie, E. J., Hill, J., Capella, G., Pineda, M., Navarro, M., Blanco, I., ten Broeke, S., Nielsen, M., Ljungmann, K., Nakken, S., Lindor, N., Frayling, I., Hovig, E., Sunde, L., Kloor, M., Mecklin, J.-P., Kalager, M. & Moller, P., 28 Feb 2019, In: Hereditary Cancer in Clinical Practice. 17, 8 p., 8.

**Geenitieto muuttaa syöpäkirurgiaa**

Seppälä, T. & Meretoja, T., 2019, In: Duodecim. 135, 19, p. 1830-1837 8 p.

### **Lynchin oireyhtymä ei lisää rintasyövän riskiä**

Seppälä, T., Renkonen-Sinisalo, L. & Lepistö, A., 2019, In: Suomen lääkärilehti. 74, 17, p. 1026 1 p.

### **No Difference in Colorectal Cancer Incidence or Stage at Detection by Colonoscopy Among 3 Countries With Different Lynch Syndrome Surveillance Policies**

German HNPCC Consortium, Dutch Lynch Syndrome & Finnish Lynch Syndrome Registry, Nov 2018, In: Gastroenterology. 155, 5, p. 1400-+ 12 p.

### **Cancer risk and survival in path\_MMR carriers by gene and gender up to 75 years of age: a report from the Prospective Lynch Syndrome Database**

Moller, P., Seppala, T. T., Bernstein, I., Holinski-Feder, E., Sala, P., Evans, D. G., Lindblom, A., Macrae, F., Blanco, I., Sijmons, R. H., Jeffries, J., Vasen, H. F. A., Burn, J., Nakken, S., Hovig, E., Rodland, E. A., Tharmaratnam, K., Cappel, W. H. D. V. T. N., Hill, J. & Wijnen, J. T. & 19 others, Jenkins, M. A., Green, K., Laloo, F., Sunde, L., Mints, M., Bertario, L., Pineda, M., Navarro, M., Morak, M., Renkonen-Sinisalo, L., Valentin, M. D., Frayling, I. M., Plazzer, J.-P., Pylvanainen, K., Genuardi, M., Mecklin, J.-P., Moeslein, G., Sampson, J. R. & Capella, G., Jul 2018, In: Gut. 67, 7, p. 1306-1316 11 p.

### **Uptake of genetic testing by the children of Lynch syndrome variant carriers across three generations**

Seppala, T. T., Pylvanainen, K. & Mecklin, J.-P., Nov 2017, In: European Journal of Human Genetics. 25, 11, p. 1237-1245 9 p.

### **Colorectal cancer incidence in path\_MLH1 carriers subjected to different follow-up protocols: a Prospective Lynch Syndrome Database report**

Seppala, T., Pylvanainen, K., Evans, D. G., Jarvinen, H., Renkonen-Sinisalo, L., Bernstein, I., Holinski-Feder, E., Sala, P., Lindblom, A., Macrae, F., Blanco, I., Sijmons, R., Jeffries, J., Vasen, H., Burn, J., Nakken, S., Hovig, E., Rodland, E. A., Tharmaratnam, K. & Cappel, W. H. D. V. T. N. & 20 others, Hill, J., Wijnen, J., Jenkins, M., Genuardi, M., Green, K., Laloo, F., Sunde, L., Mints, M., Bertario, L., Pineda, M., Navarro, M., Morak, M., Frayling, I. M., Plazzer, J.-P., Sampson, J. R., Capella, G., Moslein, G., Mecklin, J.-P., Moller, P. & Collaboration Mallorca Grp, 10 Oct 2017, In: Hereditary Cancer in Clinical Practice. 15, 10 p., 18.

### **Incidence of and survival after subsequent cancers in carriers of pathogenic MMR variants with previous cancer: a report from the prospective Lynch syndrome database**

Moller, P., Seppälä, T., Bernstein, I., Holinski-Feder, E., Sala, P., Evans, D. G., Lindblom, A., Macrae, F., Blanco, I., Sijmons, R., Jeffries, J., Vasen, H., Burn, J., Nakken, S., Hovig, E., Rodland, E. A., Tharmaratnam, K., Cappel, W. H. D. V. T. N., Hill, J. & Wijnen, J. & 19 others, Jenkins, M., Green, K., Laloo, F., Sunde, L., Mints, M., Bertario, L., Pineda, M., Navarro, M., Morak, M., Renkonen-Sinisalo, L., Frayling, I. M., Plazzer, J.-P., Pylvanainen, K., Genuardi, M., Mecklin, J.-P., Moslein, G., Sampson, J. R., Capella, G. & Mallorca Grp, Sept 2017, In: Gut. 66, 9, p. 1657-1664 8 p.

### **Subtotal Colectomy for Colon Cancer Reduces the Need for Subsequent Surgery in Lynch Syndrome**

Renkonen-Sinisalo, L., Seppälä, T. T., Järvinen, H. J. & Mecklin, J.-P., Aug 2017, In: Diseases of the Colon & Rectum. 60, 8, p. 792-799 8 p.

### **Cancer incidence and survival in Lynch syndrome patients receiving colonoscopic and gynaecological surveillance: first report from the prospective Lynch syndrome database**

Moller, P., Seppälä, T., Bernstein, I., Holinski-Feder, E., Sala, P., Evans, D. G., Lindblom, A., Macrae, F., Blanco, I., Sijmons, R., Jeffries, J., Vasen, H., Burn, J., Nakken, S., Hovig, E., Rodland, E. A., Tharmaratnam, K., Cappel, W. H. D. V. T. N., Hill, J. & Wijnen, J. & 17 others, Green, K., Laloo, F., Sunde, L., Mints, M., Bertario, L., Pineda, M., Navarro, M., Morak, M., Renkonen-Sinisalo, L., Frayling, I. M., Plazzer, J.-P., Pylvanainen, K., Sampson, J. R., Capella, G., Mecklin, J.-P., Moslein, G. & Mallorca Grp, Mar 2017, In: Gut. 66, 3, p. 464-472 9 p.

### **Immunoscore in mismatch repair-proficient and -deficient colon cancer**

Wirta, E.-V., Seppälä, T., Friman, M., Väyrynen, J., Ahtiainen, M., Kautiainen, H., Kuopio, T., Kellokumpu, I., Mecklin, J.-P. & Böhm, J., 2017, In: The Journal of Pathology. Clinical Research. 3, 3, p. 203-213 11 p.

### **Lynchin oireyhtymän diagnostiikka ja hoito**

Seppälä, T., Pylvänäinen, K., Renkonen-Sinisalo, L., Böhm, J., Kuopio, T., Järvinen, H. & Mecklin, J.-P., 2016, In: Duodecim. 132, 3, p. 233-240 8 p.

De Garengot's hernia: 40 years after Bassini inguinal hernioplasty.

Liipo, T. K. E., Seppälä, T. T. & Mattila, A. K., 1 Mar 2015, In: *BMJ Case Reports*. 2015, mar02 1, p. bcr2014208327-bcr2014208327

Coexisting ipsilateral right femoral hernia and incarcerated obturator hernia.

Seppälä, T. T. & Tuuliranta, M., 1 Feb 2015, In: *BMJ Case Reports*. 2015, 4, p. 171-173 3 p.

### **Amyloid-beta and Tau Dynamics in Human Brain Interstitial Fluid in Patients with Suspected Normal Pressure Hydrocephalus**

Herukka, S.-K., Rummukainen, J., Ihalainen, J., Fraunberg, M. V. U. Z., Koivisto, A. M., Nerg, O., Puli, L. K., Seppala, T. T., Zetterberg, H., Pyykko, O. T., Helisalmi, S., Tanila, H., Alafuzoff, I., Hiltunen, M., Rinne, J., Soininen, H., Jaaskelainen, J. E. & Leinonen, V., 2015, In: *Journal of Alzheimer's Disease*. 46, 1, p. 261-269 9 p.

### **Comparison Between Clinical Diagnosis and CSF Biomarkers of Alzheimer Disease in Elderly Patients with Late Onset Psychosis: Helsinki Old Age Psychosis Study (HOPS)**

Seppälä, T. T., Louhija, U.-M., Appelberg, B., Herukka, S.-K. & Juva, K., Sept 2014, In: *American Journal of Geriatric Psychiatry*. 22, 9, p. 908-916 9 p.

### **Cerebrospinal Fluid Biomarker and Brain Biopsy Findings in Idiopathic Normal Pressure Hydrocephalus**

Pyykko, O. T., Lumela, M., Rummukainen, J., Nerg, O., Seppala, T. T., Herukka, S.-K., Koivisto, A. M., Alafuzoff, I., Puli, L., Savolainen, S., Soininen, H., Jaaskelainen, J. E., Hiltunen, M., Zetterberg, H. & Leinonen, V., 17 Mar 2014, In: *PLoS One*. 9, 3, 10 p., 91974.

Alzheimerin taudin varhaisdiagnostiikka

Seppälä, T., Herukka, S. K. S. K. & Remes, A. M. A. M., 2013, In: *Duodecim*. 129, 19, p. 2003-2010 8 p.

CSF biomarkers for Alzheimer disease correlate with cortical brain biopsy findings

Seppala, T. T., Nerg, O., Koivisto, A. M., Rummukainen, J., Puli, L., Zetterberg, H., Pyykko, O. T., Helisalmi, S., Alafuzoff, I., Hiltunen, M., Jaaskelainen, J. E., Rinne, J., Soininen, H., Leinonen, V. & Herukka, S.-K., May 2012, In: *Neurology*. 78, 20, p. 1568-1575 8 p.

### **Longitudinal Changes of CSF Biomarkers in Alzheimer's Disease**

Seppala, T. T., Koivisto, A. M., Hartikainen, P., Helisalmi, S., Soininen, H. & Herukka, S.-K., 2011, In: *Journal of Alzheimer's Disease*. 25, 4, p. 583-594 12 p.

### **Riittääkö Suomessa lääkäritutkijoita?**

Renkonen, R., Björkroth, J., Helve, O., Louhimo, J., Rautava, P., Remes, A., Seppälä, T., Turunen, J.-P., Virjo, I., Visakorpi, T. & Heikinheimo, M., 2011, In: *Duodecim*. 127, 10, p. 1003-1009 7 p.

Plasma A beta 42 and A beta 40 as markers of cognitive change in follow-up: a prospective, longitudinal, population-based cohort study

Seppala, T. T., Herukka, S.-K., Hanninen, T., Tervo, S., Hallikainen, M., Soininen, H. & Pirttila, T., Oct 2010, In: *Journal of Neurology, Neurosurgery and Psychiatry*. 81, 10, p. 1123-1127 5 p.

## **Press/Media**

### **Geenivirheen ja syövän yhteys**

Seppälä, T. T.

02/11/2018

1 item of Media coverage

### **Geenivirheen ja syövän yhteys**

Seppälä, T. T.

02/11/2018

1 item of Media coverage

### **Harvempi tähystystahti riittää Lynchin oireyhtymässä**

Seppälä, T. T.

08/08/2018

1 item of Media coverage

### **Lynch Syndrome Mutation Study Suggests Changes to Clinical Management**

Seppälä, T. T.

25/07/2019

1 item of Media coverage

### **Selkäyänneste tuo viestiä aivoista**

Seppälä, T. T.

10/09/2012

1 item of Media coverage

## **Projects**

### **EARLY CANCER DETECTION THROUGH TRANSCRIPTOMIC ANALYSIS OF HOST IMMUNE CELLS AND CIRCULATING TUMOR DNA: TARGETING FUTURE IMMUNE PREVENTION**

Seppälä, T. T. (Project manager)

Suomen lääketieteen säätiö, Emil Aaltosen säätiö

01/09/2018 → 31/12/2022

### **iCAN - Digital precision cancer medicine for discoveries and improved treatments**

Mäkelä, T. (Project manager), Adhikari, S. (Participant), Aldahdooh, J. M. F. (Participant), Ariotta, V. (Participant), Arjama, M. A. (Participant), Atarsaikhan, G. (Participant), Bao, J. (Participant), Barreiro, K. (Participant), Bhalke, M. S. (Participant), Bollepalli, S. (Participant), Brandt, J. A. J. (Participant), Chernenko, A. (Participant), Dashi, G. (Participant), Eloranta, K. (Participant), Eriksson, M. R. (Participant), Fey, E. (Participant), Gerber, L. J. (Participant), Grönholm, M. (Participant), Hannula, S. A. (Participant), Heistman, V. (Participant), Henriksson, M. E. J. (Participant), Hiitola, E. T. J. (Participant), Huttunen, A. T. (Participant), Hyypä, S. P. P. (Participant), Högel-Starck, C. S. P. (Participant), Ianevski, A. (Participant), Ikonen, N. (Participant), Jansouz, S. (Participant), Jha, S. (Participant), Junquera Mencía, A. (Participant), Kampanellou, E. (Participant), Karabayev, D. (Participant), Karhemo, P.-R. (Participant), Kekkonen, J. (Participant), Kolikova, Y. (Participant), Krami Senhaji, O. (Participant), Kuisma-van der Linden, M. S. (Participant), Kuosmanen, A. (Participant), Kurki, V. (Participant), Kuusela, S. (Participant), Kückel, H. (Participant), Langohr, L. (Participant), Le Joncour, V. (Participant), Lehto, T.-P. (Participant), Leivonen, S.-K. (Participant), Liljeström, M. (Participant), Lindfors, I. S. (Participant), Lindgren, H. (Participant), Luck, T. J. (Participant), Lähdeniemi, I. A. K. (Participant), Maarala, A. I. (Participant), Maljanen, K. J. (Participant), Marchi, G. (Participant), Martikainen, E. M. (Participant), Meriranta, L. (Participant), Metsäranta, N. A. C. (Participant), Miihkinen, M. S. (Participant), Nader, K. M. (Participant), Nagaraj, A. (Participant), Nguyen, M. (Participant), Niemeyer, F. (Participant), Niemiec, I. (Participant), Nylén, M. M. (Participant), Palin, K. (Participant), Palva, A. (Participant), Parsons, A. O. (Participant), Perez Villatoro, F. R. (Participant), Pietiäinen, V. (Participant), Pirinen, I. E. (Participant), Pirttikoski, A. A. (Participant), Pitko, I. M. (Participant), Puhka, M. (Participant), Quintero, I. B. (Participant), Rachidi, S. E. (Participant), Rajalaakso, M. T. (Participant), Rodosthenous, R. (Participant), Saad, J. (Participant), Sanjaya, P. (Participant), Seppälä, T. T. (Participant), Seref Vujaklija, C. (Participant), Shah, S. (Participant), Sorri, S. P. (Participant), Suni, V. (Participant), Suutala, A. (Participant), Suvela, M. (Participant), Udayani, J. E. (Participant), Verkasalo, H. M. (Participant), Viikkavaara Cancocak, Y. (Participant), Vähärautio, A. (Participant), Vääntinen, I. M. (Participant), Västrik, I. (Participant), Väänänen, J. (Participant) & Wang, W. (Participant)

Suomen Akatemia Projektilaskutus, Academy of Finland

01/09/2022 → 31/12/2026

### **LYNCH SYNDROME: A MODEL FOR CANCER DEVELOPMENT, CYTOTOXIC IMMUNE RESPONSE AND PREVENTION**

Seppälä, T. T. (Project manager)

Helsingin yliopisto

01/01/2017 → 31/01/2019

### **PANORG-iCAN: Pan-cancer organoid biobank for precision medicine in abdominal cancers (PANORG-iCAN)**

Seppälä, T. T. (Project manager)

Helsingin yliopisto  
01/01/2021 → 31/12/2022

**PANORG: Pan-cancer organoid biobank opens avenues for precision medicine in hereditary and sporadic abdominal cancers (PANORG)**

Seppälä, T. T. (Project manager), Ristimäki, A. (Project manager), Lepistö, A. H. (Project manager), Sallinen, V. (Project manager), Peltomäki, P. T. (Project manager) & Nyström, M. (Project manager)  
01/01/2021 → 31/12/2025

**SYNCOPE: Systemic Neoadjuvant and adjuvant Control by Precision medicine in rectal cancer (SYNCOPE) – approach on high-risk group to reduce metastases**

Seppälä, T. T. (Project manager), Lepistö, A. H. (Participant) & Ristimäki, A. (Participant)  
Suomen Syöpäsäätiö  
01/07/2021 → 30/06/2026

**Ultrasensitive circulating tumor DNA genomics for practical clinical use in colorectal cancer**

Seppälä, T. T. (Project manager)  
HUS VTR tutkimusrahoitus  
01/12/2020 → ...