

# List of Publications

Leo Lahti Phd

2024-02-19

[Heiskanen2024] Marja Heiskanen, Anna Aatsinki, Petra Hakonen, Noora Kartiosuo, Eveliina Munukka, Leo Lahti, Anniina Keskitalo, Pentti Huovinen, Harri Niinikoski, Jorma Viikari, Tapani Rönnemaa, Hanna Lagström, Antti Jula, Olli Raitakari, Suvi Rovio, Katja Pahkala. "Association of Long-Term Habitual Dietary Fiber Intake since Infancy with Gut Microbiota Composition in Young Adulthood". In: {The Journal of Nutrition} (2024), pp. 744-754. doi: 10.1016/j.tjnut.2024.01.008.

[Ojala2024] Ronja Ojala, Jaakko Hentilä, Martin Lietzén, Milja Arponen, Marja Heiskanen, Sanna Honkala, Heidi Virtanen, Kalle Koskensalo, Riikka Lautamäki, Eliisa Löyttyniemi, Riitta Parkkola, Olli Heinonen, Tarja Malm, Leo Lahti, Juha Rinne, Olli Eskola, Johan Rajander, Kirsi Pietiläinen, Jaakko Kaprio, Kaisa Ivaska, Jarna Hannukainen. "Bone marrow metabolism is affected by body weight and response to exercise training varies according to anatomical location". In: {Diabetes, Obesity and Metabolism} (2024), pp. 251-261. doi: 10.1111/dom.15311.

[Eckermann2024] Henrik Eckermann, Jennifer Meijer, Kelly Coolijmans, Leo Lahti, Carolina Weerth. "Daily skin-to-skin contact alters microbiota development in healthy full-term infants". In: {Gut Microbes} (2024), pp. No pages available. doi: 10.1080/19490976.2023.2295403.

[König2024] Emilia König, Paulina Heponiemi, Sanni Kivinen, Jaakko Räkköläinen, Shea Beasley, Tuomas Borman, Maria Collado, Vilja Hukkinen, Jouni Junnila, Leo Lahti, Marianna Norring, Virpi Piirainen, Seppo Salminen, Mari Heinonen, Anna Valros. "{Fewer culturable Lactobacillaceae species identified in faecal samples of pigs performing manipulative behaviour}". In: {Scientific Reports} (2024), pp. No pages available. doi: 10.1038/s41598-023-50791-0.

[Huovinen2023] Venla Huovinen, Anna-Katariina Aatsinki, Eeva-Leena Kataja, Eveliina Munukka, Anniina Keskitalo, Santosh Lamichhane, Peppi Raunioniemi, David Bridgett, Leo Lahti, Siobhain O'Mahony, Alex Dickens, Riikka Korja, Hasse Karlsson, Saara Nolvi, Linnea Karlsson. "Infant gut microbiota and negative and fear reactivity". In: Development and Psychopathology (2023), pp. 1-16. doi: 10.1017/S0954579423001396.

[MarcosZambrano2023] Laura Marcos-Zambrano, Víctor López-Molina, Burcu Bakir-Gungor, Marcus Frohme, Kanita Karaduzovic-Hadziabdic, Thomas Klammersteiner, Eliana Ibrahimi, Leo Lahti, Tatjana Loncar-Turukalo, Xhilda Dharmo, Andrea Simeon, Alina Nechyporenko, Gianvito Pio, Piotr Przyamus, Alexia Sampri, Vladimir Trajkovik, Blanca Lacruz-Pleguezuelos, Oliver Aasmets, Ricardo Araujo, Ioannis Anagnostopoulos, Önder Aydemir, Magali Berland, M. Calle, Michelangelo Ceci, Hatice Duman, Aycan Gündoğdu, Aki Havulinna, Kardokh Bra, Eglantina Kalluci, Sercan Karav, Daniel Lode, Marta Lopes, Patrick May, Bram Nap, Miroslava Nedyalkova, Inês Paciência, Lejla Pasic, Meritxell Pujolassos, Rajesh Shigdel, Antonio Susín, Ines Thiele, Ciprian-Octavian Truică, Paul Wilmes, Ercument Yilmaz, Malik Yousef, Marcus Claesson, Jaak Truu, Enrique Santa Pau. "A toolbox of machine learning software to support microbiome analysis". In: Frontiers in Microbiology (2023), pp. No pages available. doi: 10.3389/fmicb.2023.1250806.

[Koponen2023] Kari Koponen, Oleg Kambur, Bijoy Joseph, Matti Ruuskanen, Pekka Jousilahti, Rodolfo Salido, Caitriona Brennan, Mohit Jain, Guillaume Meric, Michael Inouye, Leo Lahti, Teemu Niiranen, Aki Havulinna, Rob Knight, Veikko Salomaa. "{Role of Gut Microbiota in Statin-Associated New-Onset Diabetes—a Cross-Sectional and Prospective Analysis of the FINRISK 2002 Cohort}". In: {Arteriosclerosis, Thrombosis, and Vascular Biology} (2023), pp. No pages available. doi: 10.1161/ATVBAHA.123.319458.

[Raulo2023] Aura Raulo, Alexis Rojas, Björn Kröger, Antti Laaksonen, Carlos Orta, Silva Nurmio, Mirva Peltoniemi, Leo Lahti, Indrė Žliobaitė. "What are patterns of rise and decline?". In: {The Royal Society of Open Science} (2023), pp. No pages available. doi: 10.1098/rsos.230052.

[Kaisanlahti2023] Anna Kaisanlahti, Jenni Turunen, Nadiya Byts, Anatoliy Samoylenko, Genevieve Bart, Nikke Virtanen, Mysore Tejesvi, Artem Zhyvolozhnyi, Sonia Sarfraz, Sohvi Kumpula, Jenni Hekkala, Sonja Salmi, Olga Will, Johanna Korvala, Niko Paalanen, Pande Erawijantari, Marko Suokas, Tuula Medina, Seppo Vainio, Oula Medina, Leo Lahti, Terhi Tapiainen, Justus Reunanen. "Maternal microbiota communicates with the fetus through microbiota-derived extracellular vesicles". In: {BMC Microbiome} (2023), pp. No pages available. doi: 10.1186/s40168-023-01694-9.

[Erawijantari2023] Pande Erawijantari, Ece Kartal, José Liñares-Blanco, Teemu Laajala, Lily Feldman, The Challenge, {ML4Microbiome} Communities, Pedro Carmona-Saez, Rajesh Shigdel, Marcus, Joakim Claesson, Randi Bertelsen, David Gomez-Cabrero, Samuel Minot, Jacob Albrecht, Verena Chung, Michael Inouye, Pekka Jousilahti, Jobst-Hendrik Schultz, Hans-Christoph Friederich, Rob Knight, Veikko Salomaa, Teemu Niiranen, Aki Havulinna, Julio Saez-Rodriguez, Rebecca Levinson, Leo Lahti. "Microbiome-based risk prediction in incident heart failure: a community challenge". In: {medRxiv preprint} (2023), pp. No pages available. doi: 10.1101/2023.10.12.23296829.

[Husso2023] Aleksi Husso, Tiina Pessa-Morikawa, Ville Mikael, Olli Kärkkäinen, Hyuk Kwon, Leo Lahti, Antti Livanainen, Kati Hanhineva, Mikael Niku. "Impacts of maternal microbiota and microbial metabolites on fetal intestine, brain, and placenta". In: {BMC Biology} (2023), pp. No pages available. doi: 10.1186/s12915-023-01709-9.

[DElia2023] Domenica D'Elia, Jaak Truu, Leo Lahti, Magali Berland, Georgios Papoutsoglou, Michelangelo Ceci, Aldert Zomer, Marta Lopes, Eliana Ibrahimi, Aleksandra Gruca, Alina Nechyporenko, Marcus Frohme, Thomas Carrillo-de Santa Pau, Laura Marcos-Zambrano, Karel Hron, Gianvito Pio, Andrea Simeon, Ramona Suharoschi, Isabel Moreno-Indias, Andriy Temko, Miroslava Nedyalkova, Elena-Simona Apostol, Ciprian-Octavian Truică, Rajesh Shigdel, Jasminka Hasić-Telalović, Erik Bongcam-Rudloff, Piotr Przymus, Naida Jordamović, Laurent Falquet, Sonia Tarazona, Alexia Sampri, Gaetano Isola, David Pérez-Serrano, Vladimir Trajkovik, Lubos Klucar, Tatjana Loncar-Turukalo, Aki Havulinna, Christian Jansen, Randi Claesson. "{Advancing microbiome research with machinelearning:key findings from the ML4Microbiome COST action}". In: Frontiers in Microbiology (2023), pp. No pages available. doi: 10.3389/fmicb.2023.1257002.

[McDonald2023] Daniel McDonald, Yueyu Jiang, Metin Balaban, Kalen Cantrell, Qiyun Zhu, Antonio Gonzalez, James Morton, Giorgia Nicolaou, Donovan Parks, Søren Karst, Mads Albertsen, Philip Hugenholtz, Todd DeSantis, Se-jin Song, Andrew Bartko, Aki Havulinna, Pekka Jousilahti, Susan Cheng, Michael Inouye, Teemu Niiranen, Mohit Jain, Veikko Salomaa, Leo Lahti, Siavash Mirarab, Rob Knight. "Greengenes2 unifies microbial data in a single reference tree". In: Nature

Biotechnology (2023), pp. No pages available. doi: 10.1038/s41587-023-01845-1.

[Gao2023] Yu Gao, Yağmur Şimşek, Emma Gheysen, Tuomas Borman, Yi Li, Leo Lahti, Karoline Faust, Daniel Garza. "miaSim: an R/Bioconductor package to easily simulate microbial community dynamics". In: *Methods in Ecology and Evolution* (2023), pp. 1967-1980. doi: 10.1111/2041-210X.14129.

[Aatsinki2023] Anna-Katariina Aatsinki, Jetro Tuulari, Eveliina Munukka, Leo Lahti, Anniina Keskitalo, Henna-Maria Kailanto, Saara Nolvi, Noora Scheinin, Jani Saunavaara, Riitta Parkkola, John Lewis, Niloofar Hashempour, Satu Shulist, Linnea Karlsson, Hasse Karlsson. "Infant Left Amygdala Volume Is Negatively Associated with Fecal Microbiota Diversity". In: *bioRxiv preprint* (2023), pp. No pages available. doi: 10.1101/2023.04.23.537273.

[Palmu2023] Joonatan Palmu, Christin Börschel, Alfredo Ortega-Alonso, Markó Lajos, Michael Inouye, Pekka Jousilahti, Rodolfo Salido, Karenina Sanders, Caitriona Brennan, Gregory Humphrey, Jon Sanders, Friederike Gutmann, Dominik Linz, Veikko Salomaa, Aki Havulinna, Sofia Forslund, Rob Knight, Leo Lahti, Teemu Niiranen, Renate Schnabel. "Gut microbiome and atrial fibrillation results from a large population based study". In: *{eBioMedicine}* (2023), pp. No pages available. doi: 10.1016/j.ebiom.2023.104583.

[Houttu2023] Noora Houttu, Chouaib Benchakra, Mrunalini Lotankar, Ella Muhli, Harri Niinikoski, Leo Lahti, Kirsi Laitinen. "Gut microbiota composition and function in pregnancy as determinants of prediabetes at two years postpartum". In: *Acta Diabetologica* (2023), pp. No pages available. doi: 10.1007/s00592-023-02064-5.

[Rahkola2023] Ella Rahkola, Samuli Rautava, Henni Hiltunen, Chandler Ross, Leo Lahti, Erika Isolauri. "The preterm gut microbiota and administration routes of different probiotics: a randomized controlled trial". In: *Pediatric research* (2023), pp. No pages available. doi: 10.1038/s41390-023-02560-y.

[Muhli2023] Ella Muhli, Chouaib Benchakra, Mrunalini Lotankar, Noora Houttu, Harri Niinikoski, Leo Lahti, Kirsi Laitinen. "Aberrations in the early pregnancy serum metabolic profile in women with prediabetes at two years postpartum". In: *Metabolomics* (2023), pp. No pages available. doi: 10.1007/s11306-023-01994-z.

[Ndairou2023] Faïçal Ndaïrou, Moein Khalighi, Leo Lahti. "Ebola epidemic model with dynamic population and memory". In: *Chaos, Solitons and Fractals* (2023), pp. 113361. doi: 10.1016/j.chaos.2023.113361.

[FeldnerBusztin2023] Dylan Feldner-Busztin, Panos Nisantzis, Shelley Edmunds, Gergely Boza, Fernando Racimo, Shyam Gopalakrishnan, Morten Limborg, Leo Lahti, Gonzalo Polavieja. "Dealing with dimensionality: the application of machine learning to multi-omics data". In: *Bioinformatics* (2023), pp. No pages available. doi: 10.1093/bioinformatics/btad021.

[Khalighi2023] Moein Khalighi, Giulio Benedetti, Leo Lahti. "{FdeSolver: A Julia Package for Solving Fractional Differential Equations}". In: *{arXiv}* (2022), pp. No pages available. doi: 10.48550/ARXIV.2212.12550.

[Vaura2022] Felix Vaura, Hyunkyung Kim, Miriam Udler, {FinnGen}, Veikko Salomaa, Leo Lahti, Teemu Niiranen. "Multi-Trait Genetic Analysis Reveals Clinically Interpretable Hypertension Subtypes". In: *Circulation: Genomic and Precision Medicine* (2022), pp. No pages available. doi: 10.1161/CIRCGEN.121.003583.

[Palmu2022] Joonatan Palmu, Emmi Tikkanen, Aki Havulinna, Erkki Vartiainen, Annamari Lundqvist, Matti Ruuskanen, Markus Perola, Mika Ala-Korpela, Pekka Jousilahti, Peter Würtz, Veikko Salomaa, Leo Lahti, Teemu Niiranen. "Comprehensive biomarker profiling of hypertension in 36 985 Finnish individuals". In: *Journal of Hypertension* (2022), pp. 579-587. doi: 10.1097/HJH.0000000000003051.

[Husso2022] Aleksi Husso, Tiina Pessa-Morikawa, Ville Koistinen, Olli Kärkkäinen, Hyuk Kwon, Leo Lahti, Antti Iivanainen, Kati Hanhineva, Mikael Niku. "Impacts of maternal microbiota and microbial metabolites on fetal intestine, brain and placenta". In: *bioRxiv* (2022), pp. No pages available. doi: 10.1101/2022.07.01.498433.

[Liu2022] Yang Liu, Shu Teo, Guillaume Meric, Howard Tang, Qiyun Zhu, Jon Sanders, Yoshiki Vazquez-Baeza, Karin Verspoor, Ville Vartiainen, Pekka Jousilahti, Leo Lahti, Teemu Niiranen, Aki Havulinna, Rob Knight, Veikko Salomaa, Michael Inouye. "The gut microbiome is a significant risk factor for future chronic lung disease". In: No journal available (2022), pp. No pages available. doi: No DOI available.

[Khalighi2022] Moein Khalighi, Guilhem Sommeria-Klein, Didier Gonze, Karoline Faust, Leo Lahti. "Quantifying the impact of ecological memory on the dynamics of interacting communities". In: *{PLOS Computational Biology}* (2022), pp. e1009396. doi: 10.1371/journal.pcbi.1009396.

[Laitinen2022] Ville Laitinen, Leo Lahti. "Probabilistic multivariate early warning signals". In: No journal available (2022), pp. 259-274. doi: 10.1007/978-3-031-15034-0.

[Keskitalo2022] Anniina Keskitalo, Eveliina Munukka, Anna Aatsinki, Wisam Saleem, Noora Kartiosuo, Leo Lahti, Pentti Huovinen, Laura Elo, Sami Pietilä, Suvi Rovio, Harri Niinikoski, Jorma Viikari, Tapani Rönnemaa, Hanna Lagström, Antti Jula, Olli Raitakari, Katja Pakkala. "{An Infancy-Onset 20-Year Dietary Counselling Intervention and Gut Microbiota Composition in Adulthood}". In: *Nutrients* (2022), pp. 2667. doi: 10.3390/nu14132667.

[Umerle2022] Tomasz Umerle, Giovanni Colavizza, Elżbieta Herden, Rindert Jagersma, Peter Kiraly, Beata Koper, Leo Lahti, David Lindemann, Jakub Łubocki, Vojtěch Malínek, Alexandra Milanova, Róbert Péter, Nanette Rišler-Pipka, Matteo Romanello, Marcin Roszkowski, Dorota Siwecka, Mikko Tolonen, Ondřej Vimr. "{An Analysis of the Current Bibliographical Data Landscape in the Humanities. A Case for the Joint Bibliodata Agendas of Public Stakeholders}". In: *Zenodo* (2022), pp. No pages available. doi: 10.5281/zenodo.6559857.

[Ruuskanen2022emi] Matti Ruuskanen, Deepti Vats, Renuka Potbhare, Ameeta RaviKumar, Eveliina Munukka, Richa Ashma, Leo Lahti. "Towards standardized and reproducible research in skin microbiomes". In: *Environmental Microbiology* (2022), pp. 3840--3860. doi: 10.1111/1462-2920.15945.

[Lahti2022] Leo Lahti. "Enhancing biomarkers with co-abundance". In: *Nature Computational Science* (2022), pp. No pages available. doi: 10.1038/s43588-022-00254-9.

[Houttu2022] Noora Houttu, Kati Makkala, Wisam Saleem, Seppo Virtanen, Juuso Juhila, Ella Koivuniemi, Outi Pellonperä, Kristiina Tertti, Paula Luokola, Timo Sorsa, Anne Salonen, Leo Lahti, Kirsi Laitinen. "Potential pathobionts in vaginal microbiota are affected by fish oil and/or probiotics intervention in overweight and obese pregnant women". In: *{Biomedicine and Pharmacotherapy}* (2022), pp. 112841. doi: 10.1016/j.biopha.2022.112841.

[Potbhare2022] Renuka Potbhare, Ameeta RaviKumar, Eveliina Munukka, Leo Lahti, Richa Ashma. "Skin microbiota diversity among genetically unrelated individuals of Indian origin". In: *PeerJ* (2022), pp. e13075. doi: 10.7717/peerj.13075.

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[Zhu2022] Qiyun Zhu, Shi Huang, Antonio Gonzalez, Imran McGrath, Daniel McDonald, Niina Haiminen, George Armstrong, Yoshiki Vázquez-Baeza, Julian Yu, Justin Kuczynski, Gregory Sepich-Poore, Austin Swafford, Promi Das, Justin Shaffer, Franck Lejzerowicz, Pedro Belda-Ferre, Aki Havulinna, Guillaume Méric, Teemu Niiranen, Leo Lahti, Veikko Salomaa, Ho-Cheol Kim, Mohit Jain, Michael Inouye, Jack Gilbert, Rob Knight. "Phylogeny-aware analysis of metagenome community ecology based on matched reference genomes while bypassing taxonomy". In: *mSystems* (2022), pp. e0016722. doi: 10.1128/msystems.00167-22.

[Lotankar2022] Mrunalini Lotankar, Kati Makkala, Noora Houttu, Ella Koivuniemi, Nikolaj Sørensen, Henrik Nielsen, Eveliina Munukka, Leo Lahti, Kirsi Laitinen. "Distinct diet-microbiota-metabolism interactions in overweight and obese pregnant women: a metagenomics approach". In: *Microbiology Spectrum* (2022), pp. e00893-21. doi: 10.1128/spectrum.00893-21.

[Qin2022] Youwen Qin, Aki Havulinna, Yang Liu, Pekka Jousilahti, Scott Ritchie, Alex Tokolyi, Jon Sanders, Liisa Valsta, Marta Brożyńska, Qiyun Zhu, Anupriya Tripathi, Yoshiki Vázquez-Baeza, Rohit Loomba, Susan Cheng, Mohit Jain, Teemu Niiranen, Leo Lahti, Rob Knight, Veikko Salomaa, Michael Inouye, Guillaume Méric. "Combined effects of host genetics and diet on human gut microbiota and incident disease in a single population cohort". In: *Nature Genetics* (2022), pp. 134--142. doi: 10.1038/s41588-021-00991-z.

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[Armstrong2021] George Armstrong, Kalen Cantrell, Shi Huang, Daniel McDonald, Niina Haiminen, Anna Carrieri, Qiyun Zhu, Antonio Gonzalez, Imran McGrath, Kristen Beck, Daniel Hakim, Aki Havulinna, Guillaume Méric, Teemu Niiranen, Leo Lahti, Veikko Salomaa, Mohit Jain, Michael Inouye, Austin Swafford, Ho-Cheol Kim, Laxmi Parida, Yoshiki Vázquez-Baeza, Rob Knight. "Efficient computation of {Faith's} phylogenetic diversity with applications in

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[Mokkala2021] Kati Mokkala, Tero Vahlberg, Noora Houlttu, Ella Koivuniemi, Leo Lahti, Kirsi Laitinen. "Impact of combined consumption of fish oil and probiotics on the serum metabolome in pregnant women with overweight or obesity". In: *EbioMedicine* (2021), pp. 103655. doi: 10.1016/j.ebiom.2021.103655.

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[Arani2021] Babak Arani, Egbert Nes, Leo Lahti, Stephen Carpenter, Marten Scheffer. "Exit Time as a Measure of Ecological Resilience". In: *Science* (2021), pp. eaay4895. doi: 10.1126/science.aay4895.

[Hintikka2021] Jukka Hintikka, Sanna Lensu, Elina Mäkinen, Sira Karvinen, Marjaana Honkanen, Jere Lindén, Tim Garrels, Satu Pekkala, Leo Lahti. "Xylo-Oligosaccharides in Prevention of Hepatic Steatosis and Adipose Tissue Inflammation: Associating Taxonomic and Metabolomic Patterns in Fecal Microbiomes with Biclustering". In: *International Journal of Environmental Research and Public Health* (2021), pp. 4049. doi: 10.3390/ijerph18084049.

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[MorenoIndias2021] Isabel Moreno-Indias, Leo Lahti, Miroslava Nedyalkova, Ilze Elbere, Gennady Roshchupkin, Muhamed Adilovic, Onder Aydemir, Burcu Bakir-Gungor, Enrique Pau, Domenica D'Elia, Magesh Desai, Laurent Falquet, Aycan Gundogdu, Karel Hron, Thomas Klammsteiner, Marta Lopes, Laura Zambrano, Cláudia Marques, Michael Mason, Patrick May, Lejla Pašić,

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[Ruuskanen2021] Matti Ruuskanen, Guilhem Sommeria-Klein, Aki Havulinna, Teemu Niiranen, Leo Lahti. "Modeling spatial patterns in host-associated microbial communities". In: *Environmental Microbiology* (2021), pp. 2374--2388. doi: 10.1111/1462-2920.15462.

[Ruuskanen2021gutmicrobes] Matti Ruuskanen, Fredrik Åberg, Ville Männistö, Aki Havulinna, Guillaume Méric, Yang Liu, Rohit Loomba, Yoshiki Vázquez-Baeza, Anupriya Tripathi, Liisa Valsta, Michael Inouye, Pekka Jousilahti, Veikko Salomaa, Mohit Jain, Rob Knight, Leo Lahti, Teemu Niiranen. "Links between gut microbiome composition and fatty liver disease in a large population sample". In: *Gut Microbes* (2021), pp. No pages available. doi: 10.1080/19490976.2021.1888673.

[Salosensaari2021] Aaro Salosensaari, Ville Laitinen, Aki Havulinna, Guillaume Méric, Susan Cheng, Markus Perola, Liisa Valsta, Georg Alfthan, Michael Inouye, Jeramie Watrous, Tao Long, Rodolfo Salido, Karenina Sanders, Caitriona Brennan, Gregory Humphrey, Jon Sanders, Mohit Jain, Pekka Jousilahti, Veikko Salomaa, Rob Knight, Leo Lahti, Teemu Niiranen. "Taxonomic signatures of cause-specific mortality risk in human gut microbiome". In: *Nature Communications* (2021), pp. 2671. doi: 10.1038/s41467-021-22962-y.

[Sarhadi2021] Virinder Sarhadi, Binu Mathew, Arto A, Tiina Karla, Milja Tikkanen, Hilpi Rautelin, Leo Lahti, Pauli Puolakkainen, Sakari Knuutila. "Gut microbiota of patients with different subtypes of gastric cancer and gastrointestinal stromal tumors". In: *Gut Pathogens* (2021), pp. 1--9. doi: 10.1186/s13099-021-00403-x.

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