
Arvid Sjölander, PhD (781127-0417)

Dept. of Medical Epidemiology and Biostatistics

Karolinska Institutet, P.O. Box 281, SE-171 77 Stockholm, Sweden

Telephone: +46-8-524 838 59; Telefax: +46-8-31 49 75; E-mail: arvid.sjolander@ki.se

Education - programs

2004-2009 PhD in Biostatistics, Karolinska Institutet, Stockholm

2002-2004 MSc in Mathematical Statistics, Stockholm University

1997-2002 MSc in Electrical Engineering, Royal Institute of Technology, Stockholm

Education – freestanding courses

2019 Framtidens utbildningsledare, Karolinska Institutet, Stockholm

2013 Forskarhandledarutbildning, Karolinska Institutet, Stockholm

2012 Grundläggande högskolepedagogik, Karolinska Institutet, Stockholm

Employment

2009-2013 Post Doc at the Dept. of Medical Epidemiology and Biostatistics, Karolinska Institutet

2013-2017 FOASS at the Dept. of Medical Epidemiology and Biostatistics, Karolinska Institutet

2017-present Researcher at the Dept. of Medical Epidemiology and Biostatistics, Karolinska Institutet

Awards

The Causality in Statistics Education Award 2016.

The paper “Doubly robust estimation of attributable fractions” (Biostatistics, 2010) was rated as “recommended” by the Faculty of F1000.

The paper “Comparing different strategies for timing of dialysis initiation through inverse probability weighting” (American Journal of Epidemiology, 2011) was rated as “must read” by the Faculty of F1000.

Biomedicinarnas pedagogiska pris 2008.

Editorial activities

2019 – current Associate editor for *European Journal of Epidemiology*

2018 Associate editor for *Epidemiologic Methods*

2016-2018 Associate editor for *Biometrics*

Reviewer for *American Journal of Epidemiology*, *Biometrics*, *Biometrika*, *Biostatistic*, *BMC Cancer*, *British Journal of Cancer*, *Epidemiology*, *Epidemiologic Methods*, *International Journal of Epidemiology*, *Journal of the American Statistical Association*, *Journal of Epidemiology and Community Health*, *Scandinavian Journal of Statistics*, *Statistical Methods in Medical Research*, *Statistical Science*, *Statistics in Medicine*, *The International Journal of Biostatistics*, *Transactions on Intelligent Systems and Technology*

Research supervision

Current PhD students, co-supervisor

Elsa Ojalehto, planned defense 2027

Jim Alkas, planned defence 2028

Alessandro Bosi, planned defence 2024

Aleksandra Kanina, planned defence 2024

Yuanhang Yang, planned defence 2024

Past PhD students, main supervisor

Elisabeth Dahlqwist. Thesis defence 2019.

Johan Zetterqvist, thesis defence 2017.

Past PhD students, co-supervisor

Erwei Zheng, thesis defence 2023.

Adam Brand, thesis defence 2023.

Kejia Hu, thesis defence 2022.

Pablo Gonzalez Ginestet, thesis defence 2022.

Qian Yang, thesis defence 2022.

Tyra Lagerberg, thesis defence 2022.

Marco Trevisan, thesis defence 2021.

Shadi Azam, thesis defence 2020.

Jianwei Zhu, thesis defence 2018.

Jie Song, thesis defence 2017.

Camilla Sjörs, lic defence 2017.

Xingrong Liu, thesis defence 2017.

Qi Chen, thesis defence 2016.

Thang Trinh, thesis defence 2016.

Past post docs

Valentin Vancak 2021-2023

Erin Gabriel 2017-2019

Scientific committee work

2024 Dissertation committee for Weng Ian Che, Dept. of Medicine, Karolinska Institutet

2023 Faculty opponent for Jeppe Ekstrand Halkjaer Madsen, Dept. of Public Health, University of Copenhagen

2022 Half-time committee for Joshua Philipp Entrop, Dept. of Medicine, Karolinska Institutet.

2021 Dissertation committee for Menghan Gao, Dept. of Global Public Health, Karolinska Institutet

2020 Dissertation committee for Renata Zelic, Dept. of Medicine, Karolinska Institutet.

2019 Half-time committee for Menghan Gao, Dept. of Public Health Sciences. Karolinska Institutet.

2019 Half-time committee for Renata Zelic, Dept. of Medicine, Karolinska Institutet.

2017-2022 Member of the committee for The Causality in Statistics Education Award

2016 Faculty opponent for Minna Genbäck, Dept. of Statistics, Umeå School of Business and Economics.

2016 Half-time committee for Yiqiang Zhan, Dept. of Medical Epidemiology and Biostatistics, Karolinska Institutet.

2015-2019 Member of the steering group for the Epidemiology PhD program at Karolinska Institutet.

2015 Dissertation committee for Karel Vermeulen, Ghent University.

2014 Dissertation committee for Ronnie Pingel, Uppsala University.

2014 Half-time committee for Yang Fei, Dept. of Medical Epidemiology and Biostatistics, Karolinska Institutet.

2014 Half-time committee for Eva Herweijer, Dept. of Medical Epidemiology and Biostatistics, Karolinska Institutet.

2013 Scientific program committee, 4th Nordic-Baltic Biometric Conference, Stockholm.

2013-2015 Admission board committee, Dept. of Medical Epidemiology and Biostatistics, Karolinska Institutet.

2012 Half-time committee for Gao He, Dept. of Medical Epidemiology and Biostatistics, Karolinska Institutet.

Research support

Principal investigator

The effect of obesity on cardiovascular disease: mediation analysis with Mendelian randomization. PI: Sjölander A. The Swedish Research Council. Period: 2021-2024. Amount: 1.200000 SEK/year.

Risk factors for neurodevelopmental problems: development of novel statistical methods to estimate and compare the public health impact. PI: Sjölander A. Provider: The Swedish Research Council. Period: 2017-2020. Amount: 900000 SEK/year.

Research stipend from Magnus Bergvalls stiftelse 2016. 60000 SEK.

Research stipend from Ruth och Nils-Erik Stenbäcks stiftelse 2015. 35000 euro.

Causal inference in studies of neurodevelopmental problems. PI: Sjölander A. Provider: The Swedish Research Council. Period: 2013-2016. Amount: 900000 SEK/year.

Co-investigator

Assessing Real-World Evidence of the Effects of Opioid Analgesic Tapering on Substance-Related Problems. PI: Quinn P. Provider: NIH/NIDA, Period: 2023-2026. Amount: \$1,072,077.

Reproductive mood disorders in women – etiology and impact. PI: Valdimarsdottir U. Provider: The Board of the Icelandic Research Fund. Period: 2021. Amount: 17884000 ISK.

Repurposing drugs for Alzheimer's disease using a reverse translational approach. PI: Hägg S. Provider: NIH. Period: 2021-2024. Amount: 1562430 USD.

Impact of premenstrual disorders on women's health and working life. PI: Lu D. Provider: Forte. Period: 2021-2024. Amount: 5990000 SEK.

Drug repurposing for age-related diseases using Mendelian Randomizations on large individual-level genomic data. PI: Hägg S. Provider: The Swedish Research Council. Period: 2020-2022. Amount: 800000 SEK/year.

Drug utilization patterns and adverse events in persons with chronic kidney disease. PI: Carrero-Roig JJ. Provider: The Swedish Research Council. Period: 2020-2023. Amount: 1200000 SEK/year.

Development and application of statistical methods for register-based research. PI: Dickman P. Provider: The Swedish Research Council. Period: 2019-2023. Amount: 2600000 SEK/year.

Adverse health outcomes during the diagnostic workup of cancer – An epidemiological study. PI: Fang F. Provider: Forte. Period: 2018-2020. Amount: 1100000 SEK/year.

Risks and benefits of ADHD medication for psychiatric and neurologic problems. PI: D'Onofrio BM. Provider: NIH. Period: 2014-2018. Amount: 155646 USD in 2014.

Unique registers and advanced family designs to address causes and consequences of common childhood disorders. PI: Catarina Almqvist. Provider: The Swedish Research Council. Period: 2014-2018. Amount: 3932000 SEK/year.

A study of sustainable food habits and its potential effect on public health. PI: Katarina Bälter. Provider: Alpro Foundation. Period: 2014-2015. Amount: 500000 SEK/year.

Globala växthusgaser och matvanor: En studie om hållbara matvanor och möjliga folkhälsoeffekter. PI: Katarina Bälter. Provider: The Swedish Research Council. Period: 2013-2015. Amount: 635000 SEK/year.

Studies of Prostate Cancer Survivors: The importance of Body Mass Index and physical activity for quality of life, tumor progression and survival after diagnosis. PI: Katarina Bälter. Provider: FAS. Period: 2012-2014. Amount: 2100000 SEK/year.

Studies of Prostate Cancer Survivors: The importance of Body Mass Index and physical activity for quality of life, tumor progression and survival after diagnosis. PI: Katarina Bälter. Provider: Cancerfonden. Period: 2012-2013. Amount: 1000000 SEK/year.

Causal inference in observational studies; Modeling effects of genes and lifestyle on cancer risk and prognosis. PI: Palmgren J. Provider: The Swedish Research Council. Period: 2009-2011. Amount: 1950000 SEK/year.

Scientific conferences

Invited

2024 Ding and VanderWeele's sensitivity analysis: review, improvements and limitations. EuroCIM Copenhagen.

2023 Are E-values too optimistic or too pessimistic? CEN, University of Basel.

2021 Covariate selection with causal diagrams. ISRHML, virtual conference.

2021 Register-based research – a Swedish perspective (Discussion). ISCB, Virtual conference.

2020 The E-value: Methodological clarifications. CMStatistics, Virtual conference.

2019 Introduction to the field of causal inference. Joint DSBS/FMS meeting, Copenhagen.

2018 The case-time-control design. Basic theory and extensions. Workshop on discovery of causal structure in high dimension, Centre de Recherches Mathematiques, Montreal.

2016 Confounding, mediation and colliding – what shared covariates does the sibling comparison design control for? CMStatistics, Seville.

2015 Bounds on biological/causal interactions. UK Causal Inference Meeting, Bristol.

2013 Ignoring the matching variables in cohort studies – when is it valid, and why? SIS, Brescia.

2011 Doubly robust estimators. Nordic and Baltic Stata Users Group Meeting, Stockholm.

2009 Estimation of attributable fractions using inverse probability weighting. Causal Modeling International Workshop, Oslo.

2005 Identifying the direct effect in presence of unmeasured confounding. Joint Statistical Meeting, Minneapolis.

Contributed

2013 Using inverse probability weighting to estimate the optimal timing of dialysis initiation. Nordic-Baltic Biometric Conference, Stockholm.

2006 On informative detection bias in screening studies. Joint Statistical Meeting, Seattle.

Chair

2021 Methodological approaches to infer causality. ISRHML, virtual conference.

2015 Clinical trials. Nordic-Baltic Biometric Conference, Reykjavik.

2015 Causal inference. Nordic-Baltic Biometric Conference, Reykjavik.

2013 Survival analysis. Nordic-Baltic Biometric Conference, Stockholm.

2013 Designs. Nordic-Baltic Biometric Conference, Stockholm.

2011 Causal inference from observational studies. International Statistical Institute, Dublin.

Teaching

Total number of teaching hours: > 1000

Main teacher

2023 Causal inference, Danish Society for Biopharmaceutical Statistics

2021 Advanced causal inference, Biostat PhD program, Karolinska Institutet

2020 Causal inference, Danish Society for Biopharmaceutical Statistics

2022, 2021, 2020, 2019, 2018, 2017, 2015, 2014, 2012, 2010 Causal inference for epidemiologists, Epi PhD program, Karolinska Institutet

2023, 2022, 2021, 2020, 2019, 2018, 2017 Epidemiology II, Epi PhD program, Karolinska Institutet

2018, 2017 Causal inference in epidemiology, Summer school on modern methods in biostatistics and epidemiology, Italy

2017 Causal inference for epidemiological research, University of Leicester

2015 Pre-conference course on Instrumental variables and Mendelian randomization, NBBC.

2015, 2014, 2013, 2012, 2011, 2010, 2006, 2005, 2004 Biostatistics, Biomedical program, Karolinska Institutet

Co-teacher

2020, 2017, 2015 Design and analysis of twin- and family-based studies, Epi PhD program, Karolinska Institutet

2015 Genetic Epidemiology, Epi PhD program, Karolinska Institutet

2020, 2019, 2015, 2014, 2013, 2012, 2011, 2010, 2009 Vetenskaplig utveckling, Medical program, Karolinska Institutet

2016, 2015, 2014, 2011, 2010 Molecular oncology and biostatistics, Biomedical program, Karolinska Institutet

2024, 2022, 2020, 2019, 2015, 2013 Epidemiology I, Epi PhD program, Karolinska Institutet

2022, 2021, 2020, 2019, 2018, 2017, 2016, 2013, 2012 Research school for clinicians, Karolinska Institutet

2012 Epidemiology III, Epi PhD program, Karolinska Institutet

2016, 2013, 2012, 2011, 2010 International course on causal inference in epidemiology, Italy

2006 Math review, Epi PhD program, Karolinska Institutet

2001 Inledande kurs i matematik, Electrical engineering program, Royal Institute of Technology, Stockholm

1999 Signaler och system, Electrical engineering program, Royal Institute of Technology, Stockholm

Invited seminars

2023 Are E-values too optimistic or too pessimistic? Both and neither! Aging Research Center, Karolinska Institutet.

2022 Mendelian randomization + sibling comparison = ?, University of Oulu.

2022 Metod för gemensam förståelse av frågeställning i kvantitativ analys – en introduktion till DAG (Directed Acyclic Graph), Socialstyrelsen, Stockholm.

2022 Confounder selection with causal diagrams, CBB Huddinge.

2021 Bounds for causal effects with sensitivity parameters on the risk difference scale, EPFL, Switzerland.

2021 Covariance inequalities, and bounds for causal effects under unmeasured confounding, Stockholm University (joint with Ola Hössjer).

2021 Webinar om E-value. Svenska Statistikfrämjandet.

2020 A gentle introduction to causal inference, University of Gothenburg.

2019 Directed Acyclic Graphs, Karolinska Huddinge.

2019 Confounders, mediators and colliders – what types of shared covariates does the sibling comparison design control for? Statistikfrämjandet

2018 The case-time-control design. Basic theory and extensions, Aging Research Center, Karolinska Institutet

2017 Confounders, mediators and colliders – what types of shared covariates does the sibling comparison design control for? Copenhagen University

2017 Confounders, mediators and colliders – what types of shared covariates does the sibling comparison design control for? Örebro Universitet

2016 Confounders, mediators and colliders – what types of shared covariates does the sibling comparison design control for? Umeå School of Business and Economics

2016 Directed acyclic graphs, Aging Research Center, Karolinska Institutet

2016 Directed acyclic graphs, Chalmers tekniska högskola

2015 Ursprungssannolikhetens betydelse vid bevisvärdemetoden, Lund University

2015 Directed acyclic graphs, Stress Research Institute, Stockholm University

2014 Roundtable on causal inference from observational data, Swedish Interdisciplinary Graduate School in Register-based Research (SINGS), Stockholm.

2014 Directed acyclic graphs, Linköping University

2014 Directed acyclic graphs, Institute of environmental medicine, Karolinska Institutet

2014 Directed acyclic graphs, Socialstyrelsen, Stockholm

2013 Doubly robust estimation in generalized linear models, Stockholm University

2012 Directed acyclic graphs, WOLF conference on work and health

2012 Directed acyclic graphs, Department of clinical epidemiology, Karolinska Institutet

2012 Directed acyclic graphs, Institute of environmental medicine, Karolinska Institutet

2012 Directed acyclic graphs, Optimum Insights, Stockholm

2011 Comparing different strategies for timing of dialysis initiation through inverse probability weighting, Occupational and environmental medicine, Sahlgrenska Academy and University Hospital

2011 Directed acyclic graphs, Department of Public Health Sciences, Karolinska University Hospital

2010 Estimation of attributable fractions using inverse probability weighting, Astrazeneca, Göteborg

Publications

Methods

Sjölander A, Waernbaum I. (In press). Improved sensitivity bounds for mediation under unmeasured mediator-outcome confounding. *Journal of Causal Inference*.

Sjölander A. (In press). Sharp bounds for causal effects based on Ding and VanderWeele's sensitivity parameters. *Journal of Causal Inference*.

Sjölander A, Frisell T, Öberg S, Wang Y, Hägg S. (2024). Combining Mendelian randomization with the sibling comparison design. *Statistics in Medicine* **43**(4), 731-755.

- Gabriel EE, Sachs MC, Martinussen T, Waernbaum I, Goetghebeur E, Vansteelandt S, **Sjölander A.** (2024). Inverse probability of treatment weighting with generalized linear outcome models for doubly robust estimation. *Statistics in Medicine* **43**(3), 534-547.
- Vancak V, **Sjölander A.** (2023). Sensitivity analysis of G-estimators to invalid instrumental variables. *Statistics in Medicine* **42**(23), 4257-4281.
- Sjölander A,** Gabriel EE, Ciocanea-Teodorescu I. (2023). Target parameters and bias in non-causal change-score analyses with measurement errors. *European Journal of Epidemiology* **38**(5), 501-509.
- Gabriel EE, **Sjölander A,** Follmann Dean A, Sachs MC. (2023). Cross direct effects in settings with two mediators. *Biostatistics* **24**(4), 1017-1030.
- Gabriel EE, Sachs MC, **Sjölander A.** (2023). Sharp nonparametric bounds for decomposition effects with two binary mediators. *Journal of the American Statistical Association* **118**(544), 2446-2453.
- Gabriel EE, **Sjölander A,** Sachs MC. (2023). Nonparametric bounds for causal effects in imperfect randomized experiments. *Journal of the American Statistical Association* **118**(541), 684-692.
- Brand A, Sachs M, **Sjölander A,** Gabriel EE. (2023). Confirmatory prediction-driven RCTs in comparative effectiveness settings for cancer treatment. *British Journal of Cancer* **128**(7), 1278-1285.
- Sachs MC, Jonzon G, **Sjölander A,** Gabriel EE. (2023). A general method for deriving tight symbolic bounds on causal effects. *Journal of Computational and Graphical Statistics* **32**(2), 567-576.
- Sjölander A.** (2023). Selection bias with outcome-dependent sampling. *Epidemiology* **34**(2), 186-191.
- Sjölander A,** Gabriel EE, Ciocanea-Teodorescu I. (2022). Sensitivity analysis for causal effects with generalized linear models. *Journal of Causal Inference* **10**(1), 441-479.
- Sjölander A,** Pena JM, Gabriel EE. (2022). Bias results for nondifferential mismeasurement of a binary confounder. *Statistics and Probability Letters* 186.
- Hössjer O, **Sjölander A.** (2022). Sharp lower and upper bounds for the covariance of bounded random variables. *Statistics and Probability Letters* 182.
- Ciocanea-Teodorescu I, Gabriel EE, **Sjölander A.** (2022). Sensitivity analysis for unmeasured confounding in the estimation of marginal causal effects. *Biometrika* **109**(4), 101-1116.
- Sjölander A,** Greenland S. (2022). Are E-values too optimistic or too pessimistic? Both and neither! *International Journal of Epidemiology* **51**(2), 355-363.
- Sjölander A,** Öberg S, Frisell T. (2022). Generalizability and effect measure modification in sibling comparison studies. *European Journal of Epidemiology* **37**(5), 461-476.
- Gabriel EE, Sachs MC, **Sjölander A.** (2022). Causal bounds for outcome-dependent sampling in observational studies. *Journal of the American Statistical Association* **117**(538), 939-950.
- Sjölander A,** Frisell T, Öberg A. (2022). Sibling comparison studies. *Annual Review of Statistics and its Applications* **9**, 71-94.

Pena JM, Balgi S, **Sjölander A**, Gabriel EE. (2021). On the bias of adjusting for a non-differentially mismeasured discrete confounder. *Journal of Causal Inference* **9**(1), 221-249.

Sjölander A, Hössjer O. (2021). Novel bounds for causal effects based on sensitivity parameters on the risk difference scale. *Journal of Causal Inference* **9**(1), 190-210.

Ciocanea-Teodorescu I, Nason M, **Sjölander A**, Gabriel EE. (2021). Adjustment for disease severity in the test-negative study design. *American Journal of Epidemiology* **190**(9), 1882-1889.

Sjölander A, Ciocanea-Teodorescu I. (2021). A cautionary note on a recently proposed sensitivity analysis for unmeasured confounding. *International Journal of Epidemiology* **50**(3), 711-716.

Sjölander A. (2021). Estimation of marginal causal effects in the presence of confounding by cluster. *Biostatistics* **22**(3), 598-612.

Sjölander A. (2020). A note on a sensitivity analysis for unmeasured confounding, and the related E-value. *Journal of Causal Inference* **8**(1), 229-248.

Sjölander A. (2020). A cautionary note on extended Kaplan-Meier curves for time-varying covariates. *Epidemiology* **31**(4), 517-522.

Sachs MC, **Sjölander A**, Gabriel EE. (2020). Aim for clinical utility, not just predictive accuracy. *Epidemiology* **31**(3), 359-364.

Dahlqwist E, Kutalik Z, **Sjölander A**. (2020). Using instrumental variables to estimate the attributable fraction. *Statistical Methods in Medical Research* **29**(8), 2063-2073.

D'Onofrio BM, **Sjölander A**, Lahey BB, Lichtenstein P, Öberg AS. (2020). Accounting for confounding in observational studies. *Annual Review of Clinical Psychology* **16**, 25-48.

Sjölander A, Martinussen T. (2019). Instrumental variable estimation with the R package ivtools. *Epidemiologic Methods* **8**(1), 1-20.

Sjölander A, Vansteelandt S. (2019). Frequentist vs Bayesian frameworks for multiple testing. *European Journal of Epidemiology* **34**(9), 809-821.

Zetterqvist J, Vermeulen K, Vansteelandt S, **Sjölander A**. (2019). Doubly robust conditional logistic regression. *Statistics in Medicine* **38**(23), 4749-4760.

Dahlqwist E, Magnusson KEP, Pawitan Y, **Sjölander A**. (2019). On the relationship between the heritability and the attributable fraction. *Human Genetics* **138**(4), 425-435.

Sjölander A, Ning Y. (2019). A general and robust estimation method for the case-time-control design. *Sociological Methodology* **49**(1), 349-365.

Dahlqwist E, Pawitan Y, **Sjölander A**. (2019). Regression standardization and attributable fraction estimation with between-within frailty models for clustered survival data. *Statistical Methods in Medical Research* **28**(2), 462-485.

- Sjölander A.** (2018). Mediation analysis with attributable fractions. *Epidemiologic Methods* **7**(1).
- Sjölander A.** (2018). Estimation of causal effect measures with the R-package stdReg. *European Journal of Epidemiology* **33**(9), 847-858.
- Lee W, **Sjölander A**, Pawitan Y. (2018). Likelihood-based inference for bounds of causal parameters. *Statistics in Medicine* **37**(30), 4695-4706.
- Sjölander A**, Zetterqvist J. (2017). Confounders, mediators or colliders – What types of shared covariates does the sibling comparison design control for? *Epidemiology* **28**(4), 540-547.
- Sjölander, A.** (2017). The case-time-control method for non-binary exposures. *Sociological Methodology* **47**(1), 182-211.
- Sjölander A**, Vansteelandt S. (2017). Doubly robust estimation of attributable fractions in survival analysis. *Statistical Methods in Medical Research* **26**(2), 948-969.
- Dahlqwist E, Zetterqvist J, Pawitan Y, **Sjölander A.** (2016). Model-based estimation of the attributable fraction for cross-section, case-control, and cohort studies with the R package AF. *European Journal of Epidemiology* **31**(6), 575-582.
- Vansteelandt S, **Sjölander A.** (2016). Revisiting g-estimation of the effect of a time-varying exposure subject to time-varying confounding. *Epidemiologic Methods* **5**(1), 37-56.
- Lee W, **Sjölander A**, Pawitan Y. (2016). A critical look at entropy-based gene-gene interaction measures. *Genetic Epidemiology* **40**(5), 416-424.
- Sjölander A.** (2016). Regression standardization with the R package stdReg. *European Journal of Epidemiology* **31**(6), 563-574.
- Sjölander A**, Frisell T, Kuja-Halkola R, Öberg S, Zetterqvist J. (2016). Carry-over effects in sibling comparison designs. *Epidemiology* **27**(6), 852-858.
- Sjölander A**, Dahlqwist E, Zetterqvist J. (2016). A note on the non-collapsibility of rate differences and rate ratios. *Epidemiology* **27**(3), 356-359.
- Zetterqvist J, Vansteelandt S, Pawitan Y, **Sjölander A.** (2016). Doubly robust methods for handling confounding by cluster. *Biostatistics* **17**(2), 264-276.
- Sjölander A.** (2016). A cautionary note on the use of attributable fractions in cohort studies. *Statistical Methods in Medical Research*. **25**(6), 2434-2443.
- Zetterqvist J, **Sjölander A.** (2015). Doubly robust estimation with the R package drgee. *Epidemiologic Methods* **4**(1), 69-86.
- Kennedy E, **Sjölander A**, Small D. (2015). Semiparametric causal inference in matched cohort studies. *Biometrika* **102**(3), 739-746.

Sjölander A, Lee W, Källberg H, Pawitan Y. (2014). Bounds on sufficient-cause interactions. *European Journal of Epidemiology* **29**(11), 813-820.

Sjölander A, Lee W, Källberg H, Pawitan Y. (2014). Bounds on causal interactions for binary outcomes. *Biometrics* **70**(3), 500-505.

Sjölander A. (2013). Reducing mean squared error in the analysis of binary paired data. *Epidemiologic Methods* **2**(1), 33-47.

Sjölander A, Greenland S. (2013). Ignoring the matching variables in cohort studies – when is it valid, and why? *Statistics in Medicine* **32**(27), 4696-4708.

Sjölander A, Lichtenstein P, Larsson H, Pawitan Y. (2013). Between-within models for survival analysis. *Statistics in Medicine* **32**(18), 3067-3076.

Orsini N, Bellocco R, **Sjölander A**. (2013). Doubly robust estimation in generalized linear models. *The Stata Journal* **13**(1), 185-205.

Sjölander A, Bellocco R. (2013). Adjusting for confounding through the blocking of front-doors in longitudinal studies. *Epidemiology, Biostatistics and Public Health* **10**(1), e8757 1-10.

Sjölander A, Johansson ALV, Lundholm C, Altman D, Almqvist C, Pawitan Y. (2012). Analysis of 1:1 matched cohort studies and twin studies, with binary exposures and binary outcomes. *Statistical Science* **27**(3), 395-411.

Sjölander A, Frisell T, Öberg S. (2012). Causal interpretation of between-within models for twin research. *Epidemiologic Methods* **1**(1), 217-237.

Frisell T, Öberg S, Kuja-Halkola R, **Sjölander A**. (2012). Sibling comparison designs: bias from non-shared confounders and measurement error. *Epidemiology* **23**(5), 713-720.

Sjölander A. (2011). Estimation of attributable fractions using inverse probability weighting. *Statistical Methods in Medical Research* **20**(4), 415-428.

Sjölander A, Vansteelandt S. (2010). Doubly robust estimation of attributable fractions. *Biostatistics* **12**(1), 112-121.

Sjölander A, Vansteelandt S, Humphreys K. (2010). A principal stratification approach to assess the differences in prognosis between cancers caused by hormone replacement therapy and by other factors. *The International Journal of Biostatistics* Vol. 6 : Iss. 1, Article 20.

Sjölander A. (2009). Bounds on natural direct effects in the presence of confounded intermediate variables. *Statistics in Medicine* **28**, 558-571.

Sjölander A, Humphreys K, Vansteelandt S, Bellocco R, Palmgren J. (2009). Sensitivity analysis for principal stratum direct effects, with an application to a study of physical activity and coronary heart disease. *Biometrics* **65**(2), 514-520.

Sjölander A, Humphreys K, Palmgren J. (2007). On informative detection bias in screening studies. *Statistics in Medicine* **27**, 2635-2650.

Sjölander A, Hössjer O, Werner Hartman L, Humphreys K. (2007). Fine mapping of disease genes using tagging SNPs. *Annals of Human Genetics* **71**(6), 815-827.

Applications

Yang Y, Ludvigsson JF, Forss A, Faucon AL, Faye AS, Olén O, **Sjölander A**, Carrero JJ. (In press). Risk of kidney failure in patients with inflammatory bowel disease undergoing colectomy: a nationwide cohort study. *Clinical Gastroenterology and Hepatology*.

Zeng E, He W, **Sjölander A**, Bergqvist J, Fang F, Czene K. (In press). Familial adversity: association with discontinuation of adjuvant hormone therapy and breast cancer prognosis. *Journal of the National Cancer Institute*.

Yang Q, Bränn E, Bertone- Johnson ER, **Sjölander A**, Fang F, Öberg AS, Valdimarsdóttir UA, Lu D. (In press.) The bidirectional association between premenstrual disorders and perinatal depression: a nationwide register-based study from Sweden. *PLOS Medicine*.

Oliveira TL, Tang B, Bai G, **Sjölander A**, Jylhävä J, Finkel D, Pedersen NL, Hassing LB, Reynolds CA, Karlsson IK, Hägg S. (In press.) Effects from medications on functional biomarkers of aging in three longitudinal studies of aging in Sweden. *Aging Cell*.

Lageborn CT, Zhou M, Boman M, **Sjölander A**, Larsson H, D'Onofrio BM, Pettersson E, Lichtenstein P, Landén M. (In press). Childhood And Adolescence Outcomes in Offspring to Parents With Bipolar Disorder: The Impact Of lifetime Parental Comorbidity, Parental Sex, And Bipolar Subtype. *Journal of Child Psychology and Psychiatry*.

Bosi A, Clase CM, Ceriani L, **Sjölander A**, Fu EL, Runesson B, Chang Z, Landén M, Bellocco R, Elinder CG, Carrero JJ. (In press). Absolute and relative risks of kidney outcomes associated with lithium vs valproate use in Sweden. *JAMA Network Open*.

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Software

AF. R package for estimation of attributable fractions.

cglm. R package for fitting conditional generalized linear models.

drgee. R package for doubly robust estimation in generalized estimating equations.

drglm. Stata command for doubly robust estimation in generalized linear models.

ivtools. R package for instrumental variable estimation.

stdReg. R package for regression standardization.