



Dr Lavinia Paternoster
BSc, MSc(Edin.), PhD

Senior Lecturer in Genetic Epidemiology

Area of research

Genetic Epidemiology of Complex Traits

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Summary

I am a Senior Lecturer in Genetic Epidemiology at the MRC Integrative Epidemiology Unit at the University of Bristol. My research is focused on the genetic aetiology of atopic dermatitis and related traits.

I am a leading member of the EAGLE eczema consortium, which brings together studies from around the world with eczema and genetic data in order to conduct large-scale research. Our aim is to identify genetic variants associated with eczema in order to improve understanding of the disease and inform therapeutic development. We have published two large genome-wide association studies for eczema, the largest of which (Paternoster et al., 2015, Nature Genetics) studied 21,000 cases and identified 10 novel risk loci for the disease, bringing the total number of established loci to 31 (24 in Europeans). I am also interested in sub-classes of atopic dermatitis and have worked with latent class analysis to determine longitudinal patterns of the disease throughout childhood and have keen interest in determining genetic risk factors for progression of the disease and response to treatment.

I work with a number of datasets:

- ALSPAC (The Avon Longitudinal Study of Parents and Children)
- UK Biobank
- EAGLE eczema consortium
- GOYA (Genomics of Obese Young Adults)

Methods:

- Genome-wide association studies
- Target identification
- Mendelian Randomization
- Genetics of Progression

Activities / Findings

Ten risk loci for atopic dermatitis identified in a large-scale genome-wide association meta-analysis (Published, Nature Genetics, Dec 2015)

Teaching

Co-ordinator for Genetic Epidemiology short course

Unit lead for Genomic Medicine (iBSc Genomic Medicine)

Keywords

- Genetic Epidemiology
- Complex trait genetics
- Genome-wide association studies

Skills

- Atopic dermatitis
- atopic disease

Memberships

Organisations

[Bristol Medical School \(PHS\)](#)

Other sites

- [Populationhealth](#)

Centres, collaborations and units

- [MRC Integrative Epidemiology Unit](#)

Selected publications

- Paternoster, L, Standl, M, Chen, C-M, Ramasamy, A, Bønnelykke, K, Duijts, L, Ferreira, MA, Alves, AC, Thyssen, JP, Albrecht, E, Baurecht, H, Feenstra, B, Sleiman, PMA, Hysi, P, Warrington, NM, Curjuric, I, Myhre, R, Curtin, JA, Groen-Blokhuis, MM, Kerkhof, M, Sääf, A, Franke, A, Ellinghaus, D, Fölster-Holst, R, Dermitzakis, E, Montgomery, SB, Prokisch, H, Heim, K, Hartikainen, A-L, Pouta, A, Pekkanen, J, Blakemore, AIF, Buxton, JL, Kaakinen, M, Duffy, DL, Madden, PA, Heath, AC, Montgomery, GW, Thompson, PJ, Matheson, MC & others 2012, '[Meta-analysis of genome-wide association studies identifies three new risk loci for atopic dermatitis](#)'. *Nature Genetics*, vol 44., pp. 187-192
- Paternoster, L, Zhurov, A, Toma, A, Kemp, JP, St. Pourcain, MUB, Timpson, N, McMahon, G, McArdle, W, Ring, S, Smith, GD, Richmond, S & Evans, D, 2012, '[Genome-wide association study of three-dimensional facial morphology identifies a variant in PAX3 associated with nasion position](#)'. *American Journal of Human Genetics*, vol 90(3)., pp. 478 - 485
- Paternoster, L, Lorentzon, M, Vandenput, L, Karlsson, M, Ljunggren, O, Kindmark, A, Mellstrom, D, Kemp, JP, Jarett, C, Holly, J, Sayers, A, St. Pourcain, MUB, Timpson, N, Deloukas, P, Smith, GD, Ring, S, Evans, D, Tobias, JH & Ohlsson, C, 2010, '[Genome-Wide Association Meta-Analysis of Cortical Bone Mineral Density Unravels Allelic Heterogeneity at the RANKL Locus and Potential Pleiotropic Effects on Bone](#)'. *PLoS Genetics*, vol 6.
- Paternoster, L, Standl, M, Waage, J, Baurecht, H, Hotze, M, Strachan, DP, Curtin, JA, Bønnelykke, K, Tian, C, Takahashi, A, Esparza-Gordillo, J, Alves, AC, Thyssen, JP, den Dekker, HT, Ferreira, MA, Altmaier, E, Sleiman, PMA, Xiao, FL, Gonzalez, JR, Marenholz, I, Kalb, B, Pino-Yanes, M, Xu, C-J, Carstensen, L, Groen-Blokhuis, MM, Venturini, C, Pennell, CE, Barton, SJ, Levin, AM, Curjuric, I, Bustamante, M, Kreiner-Møller, E, Lockett, GA, Bacelis, J, Bunyavanich, S, Myers, RA, Matanovic, A, Kumar, A, Tung, JY, Hirota, T & others 2015, '[Multi-ancestry genome-wide association study of 21,000 cases and 95,000 controls identifies new risk loci for atopic dermatitis](#)'. *Nature Genetics*, vol 47., pp. 1449-1456

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Recent publications

- , Warrington, NM, Beaumont, RN, Horikoshi, M, Day, FR, Helgeland, &#x, La;urin, C, Bacelis, J, Peng, S, Hao, K, Feenstra, B, Wood, AR, Mahajan, A, Tyrrell, J, Robertson, NR, Rayner, NW, Qiao, Z, Moen, GH, Vaudel, M, Marsit, CJ, Chen, J, Nodzenski, M, Schnurr, TM, Zafarmand, MH, Bradfield, JP, Grarup, N, Kooijman, MN, Li-Gao, R, Geller, F, Ahluwalia, TS, Paternoster, L, Rueedi, R, Huikari, V, Hottenga, JJ, Lyytikäinen, LP, Cavadino, A, Metrustry, S, Cousminer, DL, Wu, Y, Thiering, E & others 2019, '[Maternal and fetal genetic effects on birth weight and their relevance to cardio-metabolic risk factors](#)'. *Nature Genetics*, vol 51., pp. 804-814
- Budu-Aggrey, A & Paternoster, L, 2019, '[Research Techniques Made Simple: Using Genetic Variants for Randomization](#)'. *Journal of Investigative Dermatology*, vol 139., pp. 1416-1421.e1
- Gregson, CL, Bergen, DJM, Leo, P, Sessions, RB, Wheeler, L, Hartley, A, Youtlen, SE, Croucher, PI, McInerney-Leo, AM, Fraser, WD, Tang, J, Anderson, L, Marshall, M, Sergot, L, Paternoster, L, Smith, GD, Brown, MA, Hammond, C, Kemp, JP, Tobias, JH, Duncan, EL & , 2019, '[A rare mutation in SMAD9 associated with high bone mass identifies the SMAD-dependent BMP signalling pathway as a potential anabolic target for osteoporosis](#)'. *Journal of Bone and Mineral Research*.
- Haworth, S, Mitchell, R, Corbin, L, Wade, K, Dudding, T, Budu-Aggrey, A, Carslake, D, Hemani, G, Paternoster, L, Smith, GD, Davies, N, Lawson, D & Timpson, N, 2019, '[Apparent latent structure within the UK Biobank sample has implications for epidemiological analysis](#)'. *Nature Communications*, vol 10.

- Abuabara, K, Ye, M, McCulloch, CE, Sullivan, A, Margolis, DJ, Strachan, DP, Paternoster, L, Yew, YW, Williams, HC & Langan, SM, 2019, '[Clinical onset of atopic eczema: Results from two nationally representative British birth cohorts followed through mid-life](#)'. *Journal of Allergy and Clinical Immunology*.
- , , , Ferreira, MA, Mathur, R, Vonk, JM, Szwajda, A, Brumpton, B, Granell, R, Brew, BK, Ullemar, V, Lu, Y, Jiang, Y, Magnusson, PK, Karlsson, R, Hinds, DA, Paternoster, L, Koppelman, GH & Almqvist, C, 2019, '[Genetic Architectures of Childhood- and Adult-Onset Asthma Are Partly Distinct](#)'. *American Journal of Human Genetics*, vol 104., pp. 665-684

[View complete publications list](#) in the University of Bristol publications system

Networks & contacts

- EArly Genetics and Lifecourse Epidemiology (EAGLE) eczema consortium

Projects

- [Avon Longitudinal Study of Parents and Children \(ALSPAC\)](#)

Courses

Dr Paternoster currently teaches 1 courses: