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CHRIS – Cooperative Health Research in South Tyrol

Citation Guide

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Introduction

Researchers both internal and external to the Eurac Research Institute for Biomedicine (IfB) must have approval from the IfB Access Committee to access data or samples from the Cooperative Health Research in South Tyrol (CHRIS) study and other IfB data and sample collections for scientific research. These projects usually result in scientific dissemination products of some type, which must be submitted to the IfB Access Committee for review prior to publication.

The current document is meant to guide all researchers, both internal and external to the IfB, in preparing scientific dissemination products using data or samples from the CHRIS Study and other IfB data and sample collections for IfB Access Committee submission and subsequent submission for publication. It applies to scientific dissemination activities including:

- peer-reviewed publications
- publications on preprint servers
- abstracts
- posters/presentations
- books/book chapters
- theses for completion of degree requirements

This document also provides guidance on how the CHRIS Study can be referenced in social or other media posts describing any of the scientific dissemination products listed above, as well as requirements for submission of any non-peer-reviewed publications citing CHRIS data or concepts.

IfB Access Committee submission process

All researchers using data or samples from the CHRIS Study or other IfB data and sample collections for scientific research receive instructions such as the CHRIS Publication Checklist upon IfB Access Committee approval of their project proposal. These instructions must be followed and a final draft of any resulting scientific dissemination products must be sent via email to access.request.biomedicine@eurac.edu for evaluation by the IfB Access Committee. In case any of the guidance or requirements outlined in the provided instructions cannot be met due to space or other format limitations, please include a justification with your submission of the scientific dissemination produce. Space is provided for this purpose on the CHRIS Publication Checklist.

The IfB Access Committee submission step must be completed prior to submitting scientific dissemination products for publication.

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Final published versions of all scientific dissemination products must be submitted to the IfB Access Committee via email to access.request.biomedicine@eurac.edu for archiving purposes.

Study inclusion in title or abstract

The CHRIS Study should be included in the title or abstract of scientific dissemination products where data or samples from the CHRIS Study were the main contributor.

Authorship

Authors of scientific dissemination products using CHRIS data and samples must adhere to International Committee of Medical Journal Editors (ICMJE) guidelines for determining authorship.

If there are issues with the number of included authors, banner authorship for CHRIS authors can be requested on the CHRIS Portal Publication Checklist.

For IfB researchers, the correct author affiliation is:

- Eurac Research, Institute for Biomedicine, Via Volta 21, 39100, Bolzano, Italy.

Textual references to the CHRIS Study

In the text of any scientific dissemination of results obtained using CHRIS Study data or samples, the CHRIS Study must be referred to as follows when first mentioned:

- Cooperative Health Research in South Tyrol (CHRIS) study

Later reference to the study can be shortened to “CHRIS Study”.

Please use “CHRIS Study” as a key word when these are requested.

CHRIS Study and sample description

Use the following information to guide the language used to describe the CHRIS Study population and the analytic sample used in developing the scientific dissemination product:

The CHRIS baseline study had 13,393 participants. The datasets that are available for approved research projects always consist of fewer than 13,393 participants due to consent restrictions or the unavailability of requested data. If you do not work with the full CHRIS cohort, please refer to your dataset as a sample of the CHRIS cohort or study.

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The following language should be used when describing the CHRIS Study in the text of any scientific dissemination of results:

- cohort study
- population-based study
- longitudinal study (if using multiple time points)
- participants

Please do NOT use terms including pedigree-based study or population isolate or refer to participants as patients.

The following standard description of the CHRIS Study can be used in whole or part:

- The Cooperative Health Research in South Tyrol (CHRIS) study is a population-based cohort of 13,393 adults aged 18 and over recruited from 13 towns in the alpine Val Venosta/Vinschgau district in the Bolzano-South Tyrol province of northern Italy. Mean age was 45 years at baseline and 54% of participants are female. Baseline visits were conducted from 2011 to 2018, collecting socio-demographic, health, lifestyle, and exposure data from questionnaires, interviews, and instrumental examinations, as well as urine and blood samples for biobanking, DNA extraction, and molecular characterization (genome and exome sequencing, metabolomics, and proteomics). Follow up visits are ongoing since 2019. The study was approved by the Ethics Committee of the Healthcare System of the Autonomous Province of Bolzano and funded by the Autonomous Province of Bolzano - Department of Innovation, Research, University and Museums and supported by the European Regional Development Fund (FESR1157). The CHRIS biobank was assigned the “Bioresource Research Impact Factor" (BRIF) code BRIF6107.

The following shorter CHRIS Study description can also be used in whole or part:

- The Cooperative Health Research in South Tyrol (CHRIS) study is a population-based cohort of 13,393 adults aged 18 and over recruited from 13 towns in the alpine Val Venosta/Vinschgau district in the Bolzano-South Tyrol province of northern Italy. The study was approved by the Ethics Committee of the Healthcare System of the Autonomous Province of Bolzano and funded by the Autonomous Province of Bolzano - Department of Innovation, Research, University and Museums and supported by the European Regional Development Fund (FESR1157).

The following standard description can be used for the MICROS study, another IfB data and sample collection:

- The Microisolates in South Tyrol (MICROS) study (n=1,314) was conducted among adults from 3 towns in the alpine Val Venosta/Vinschgau district in 2002/03 and 2007 to characterize the genetic epidemiology of complex diseases.

Please note that 'MICROS/GenNova' should be used to identify the MICROS study in materials where the population of Val Venosta/Vinschgau is likely to be an audience. This includes local print and online media. The term 'MICROS study' is acceptable in peer-reviewed scientific publications

CHRIS sub-study descriptions

The term 'sub-study' should only be used to describe a new data collection among CHRIS Study cohort members that has received specific Ethics Committee Approval. The correct reference to all CHRIS sub-studies is listed below, as well as a short standard description of each.

- CHRIS NAFLD (Non-Alcoholic Fatty Liver Disease) – The CHRIS NAFLD recall by phenotype sub-study enrolled 356 CHRIS Study participants with and without a diagnosis of diabetes between October 2016 and January 2017 for in-depth assessments of microbiome and liver function.
- CHRIS PAREGEN (PArkinson Recall by GENotype) – The CHRIS PAREGEN recall by genotype sub-study enrolled 51 CHRIS cohort participants with and without a heterozygous PRKN gene variant in August 2018 for in-depth neurocognitive and psychological assessments.
- CHRIS COVID-19 (Corona-virus disease 2019) – The CHRIS COVID-19 sub-study enrolled 4,451 CHRIS cohort participants and 1,215 of their co-inhabitants for prevalence estimation, screening, investigation of determinants of incident infection, and immune response monitoring among infected participants.
- CHRIS PAREGEN2 (PArkinson Recall by GENotype) - The CHRIS PAREGEN2 recall by genotype sub-study enrolled 95 CHRIS cohort participants with and without a heterozygous PRKN gene variant in April 2022 for in-depth neurocognitive and psychological assessments.

Specific to IfB researchers: When referring to internal IfB projects listed in Converis using data from the CHRIS Study or CHRIS sub-studies listed above, please refer to analyses conducted in the sample or sub-set drawn from the CHRIS Study or cohort or the specific sub-study. Do not refer to the internal IfB project acronym in the dissemination product or refer to an internal IfB project as a CHRIS project, sub-study, or study in the dissemination product.

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Funding and acknowledgements

As space and formatting allow, all scientific dissemination of results obtained using CHRIS Study data or samples must use the following funding acknowledgement:

- The CHRIS Study was funded by the Autonomous Province of Bolzano-South Tyrol - Department of Innovation, Research, University and Museums and supported by the European Regional Development Fund (FESR1157).

The following standard acknowledgement text should be used in all dissemination products using CHRIS data and samples, as space restrictions allow:

- CHRIS Study investigators thank all study participants, the Healthcare System of the Autonomous Province of Bolzano-South Tyrol, and all Eurac Research staff involved in the study (CHRIS acknowledgements - Eurac Research) Bioresource Impact Factor Code: BRIF6107.

Ethics approval statement

The following standard description of ethics approvals should be used in part or whole as needed:

- The Ethics Committee of the Healthcare System of the Autonomous Province of Bolzano-South Tyrol approved…
    - …the CHRIS baseline protocol on 19 April 2011 (21-2011)
    - …the CHRIS follow-up protocol on 13 June 2019 (56-2019) with updates approved on October 16 2019, 13 October 2021, and 19 July 2023.
    - …the CHRIS NAFLD protocol on 22 September 2016 (85-2016)
    - …the CHRIS PAREGEN1 protocol on 19 July 2018 (56-2018)
    - …the CHRIS COVID-19 protocol on 27 May 2020 (53-2020) with an update approved 22 July 2020
    - …the CHRIS PAREGEN2 protocol on 19 May 2021 (66-2021) with updates approved on 17 November 2021 and 24 August 2022.
- The Provincial Ethics Committee of Bolzano-South Tyrol approved the MICROS protocol on 11 November 2003 (23.5 Dr.MVH/31.05.07.14/19644) with an update approved by the Ethics Committee of the Healthcare System of the Autonomous Province of Bolzano-South Tyrol on 18 September 2013.

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The following text should always be used following Ethics Committee approval statements:

- The study conforms to the Declaration of Helsinki, and with national and institutional legal and ethical requirements.

Data availability statement

When a statement is requested on where to find CHRIS data used in analyses presented in a scientific dissemination product, as is often the case with peer-reviewed publications, the following phrase should be provided:

- Data and samples can be requested for clearly defined research via the CHRIS Portal (CHRIS Portal - Eurac Research).

Required references

Any dissemination product using CHRIS baseline data or samples must cite the following reference:

- Pattaro, C., Gögele, M., Mascalzoni, D., Melotti, R., Schwienbacher, C., De Grandi, A., Foco, L., D'Elia, Y., Linder, B., Fuchsberger, C., Minelli, C., Egger, C., Kofink, L.S., Zanigni, S., Schäfer, T., Facheris, M.F., Smárason, S.V., Rossini, A., Hicks, A.A., Weiss, H., Pramstaller, P.P. The Cooperative Health Research in South Tyrol (CHRIS) study: rationale, objectives, and preliminary results. J Transl Med 13, 348 (2015). https://doi.org:10.1186/s12967-015-0704-9

Recommended references

Below are listed publications related to specific CHRIS data modules that may be useful references when using each respective module.

CHRIS data module or reason for the citation	**Related reference**
Laboratory preanalytical analyses and methods; recruitment design	Noce, D., Gögele, M., Schwienbacher, C., Caprioli, G., De Grandi, A., Foco, L., Platzgummer, S., Pramstaller, P.P., Pattaro, C. Sequential recruitment of study participants may inflate genetic heritability estimates. Hum Genet 136(6), 743-757 (2017). https://doi.org:10.1007/s00439-017-1785-8
Pain sensitivity questionnaire	Melotti, R., Ruscheweyh, R., Pramstaller, P.P., Hicks, H.A., Pattaro, C. Structural Consistency of the Pain Sensitivity Questionnaire in the Cooperative Health Research In South Tyrol (CHRIS) Population-Based

	Study. J Pain 19(12), 1424-1434 (2018). https://doi.org:10.1016/j.jpain.2018.06.007
Mitochondrial DNA (mtDNA) copy numbers	Fazzini, F., Lamina, C., Raftopoulou, A., A Koller, A., Fuchsberger, C., Pattaro, C., Del Greco, F.M., Döttelmayer, P., Fendt, L., Fritz, J., Meiselbach, H., Schönherr, S., Forer, L., Weissensteiner, H., Pramstaller, P.P., Eckardt, K.-U., Hicks, A.A., Kronenberg F., GCKD Investigators. Association of mitochondrial DNA copy number with metabolic syndrome and type 2 diabetes in 14 176 individuals. J Intern Med 290, 190-202 (2021). https://doi.org/10.1111/joim.13242
Biocrates p180-based targeted metabolomics	Verri Hernandes, V., Dordevic, N., Hantikainen, E.M., Sigurdsson, B.B., Smárason, S.V., Garcia-Larsen, V., Gögele, M., Caprioli, G., Bozzolan, I., Pramstaller, P.P., Rainer, J. Age, Sex, Body Mass Index, Diet and Menopause Related Metabolites in a Large Homogeneous Alpine Cohort. Metabolites 12(3), 205 (2022). https://doi.org:10.3390/metabo12030205 König, E., Rainer, J., Hernandes, V. V., Paglia, G., Del Greco M, F., Bottigliengo, D., Yin, X., Chan, L. S., Teumer, A., Pramstaller, P. P., Locke, A. E., & Fuchsberger, C. (2022). Whole Exome Sequencing Enhanced Imputation Identifies 85 Metabolite Associations in the Alpine CHRIS Cohort. Metabolites, 12(7), 604. https://doi.org/10.3390/metabo12070604
Kidney health questionnaire	Barbieri, G., Cazzoletti, L., Melotti, R., Hantikainen, E., Lundin, R., Barin, L., Gögele, M., Riegler, P., Ferraro, P. M., Pramstaller, P. P., Gambaro, G., Zanolin, M. E., Pattaro, C. (2024). Development and evaluation of a kidney health questionnaire and estimates of chronic kidney disease prevalence in the Cooperative Health Research In South Tyrol (CHRIS) study. MedRxiv 2024.03.24.24304607; doi: https://doi.org/10.1101/2024.03.24.24304607
Complement activation measurements	Noce, D., Foco, L., Orth-Höller, D., König, E., Barbieri, G., Pietzner, M., Ghasemi-Semeskandeh, D., Coassin, S., Fuchsberger, C., Gögele, M., Del Greco M, F., De Grandi, A., Summerer, M., Wheeler, E., Langenberg, C., Lass-Flörl, C., Pramstaller, P. P., Kronenberg, F., Würzner, R., & Pattaro, C. (2024). Genetic determinants of complement activation in the general population. Cell reports, 43(1), 113611. https://doi.org/10.1016/j.celrep.2023.113611
Angiotensin I, Angiotensin II and Aldosterone measurements	Arisido, M. W., Foco, L., Shoemaker, R., Melotti, R., Delles, C., Gögele, M., Barolo, S., Baron, S., Azizi, M., Dominiczak, A. F., Zennaro, M. C., P Pramstaller, P., Poglitsch, M., & Pattaro, C. (2023). Cluster analysis of angiotensin biomarkers to identify antihypertensive drug treatment in population studies. BMC medical research methodology, 23(1), 131. https://doi.org/10.1186/s12874-023-01930-8

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Smoking questionnaire	Murgia, F., Melotti, R., Foco, L., Gögele, M., Meraviglia, V., Motta, B., Steger, A., Toifl, M., Sinnecker, D., Müller, A., Merati, G., Schmidt, G., Rossini, A., Pramstaller, P. P., & Pattaro, C. (2019). Effects of smoking status, history and intensity on heart rate variability in the general population: The CHRIS Study. PloS one, 14(4), e0215053. https://doi.org/10.1371/journal.pone.0215053
Food frequency questionnaire (FFQ)	Vukovic, V., Hantikainen, E., Raftopoulou, A., Gögele, M., Rainer, J., Domingues, F. S., Pramstaller, P. P., Garcia-Larsen, V., & Pattaro, C. (2023). Association of dietary proteins with serum creatinine and estimated glomerular filtration rate in a general population sample: the CHRIS Study. Journal of nephrology, 36(1), 103–114. https://doi.org/10.1007/s40620-022-01409-7 Barbieri, G., Garcia-Larsen, V., Lundin, R., Fujii, R., Melotti, R., Gögele, M., Christopher, K. B., Cazzoletti, L., Pramstaller, P. P., Zanolin, M. E., Pattaro, C., & Hantikainen, E. (2024). Associations Between Dietary Patterns and Kidney Health Assessed in the Population-Based CHRIS Study Using Reduced Rank Regression. Journal of renal nutrition: the official journal of the Council on Renal Nutrition of the National Kidney Foundation, S1051-2276(24)00051-7. Advance online publication. https://doi.org/10.1053/j.jrn.2024.03.003
Olfactory test	Gögele, M., Emmert, D., Fuchsberger, C., & Frasnelli, J. (2024). Factors influencing olfactory function in an adult general population sample: the CHRIS Study. Chemical senses, 49, bjae011. https://doi.org/10.1093/chemse/bjae011
Microbiome	Antonello, G., Blostein, F., Bhaumik, D., Davis, E., Gögele, M., Melotti, R., Pramstaller, P., Pattaro, C., Segata, N., Foxman, B., & Fuchsberger, C. (2023). Smoking and salivary microbiota: a cross-sectional analysis of an Italian alpine population. Scientific reports, 13(1), 18904. https://doi.org/10.1038/s41598-023-42474-7
Neuropsychiatric measures	Favaretto, E., Gogele, M., Bedani, F., Hicks, A.A., Erfurth, A., Perugi, G., Pramstaller, P.P. & Melotti, R. Pain sensitivity is modulated by affective temperament: Results from the population-based CHRIS Affective Disorder (CHRIS-AD) study. J Affect Disord 316, 209-216 (2022). https://doi.org/10.1016/j.jad.2022.08.015

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Other citation guidance

The following are suggestions on how you can cite the CHRIS Study when referring to scientific dissemination products using CHRIS data or samples in other forms of media, including social media and the press.

Specific for IfB researchers: Any public communication citing CHRIS concepts or data that is not submitted to the IfB Access Committee (ie. non-peer-reviewed, for example, magazine or newspaper articles) must be submitted for review to the CHRIS Scientific Leadership prior to publication.

Social Media

The following tags can be used:

- #CHRISstudy @EuracBiomed
- #CHRISstudy @Institute for Biomedicine – Eurac Research

Press releases

If you are planning a press release to disseminate your research to the general public, please let us know and provide a copy of the press release as a courtesy. If you think your report is likely to attract public attention this will also give us an opportunity to prepare for media enquiries, and, when necessary, inform our participants.

When citing CHRIS in your press release, please review background information on the study to guide your language, available at https://www.eurac.edu/chris.

Other media

You are welcome to use the CHRIS Study name and logo (high-resolution images available on request to access.request.biomedicine@eurac.edu) in your communications and reports in other media related to a scientific dissemination product which used CHRIS data or samples.

All communications or writing must include the acknowledgment “This research has been conducted using data from the CHRIS Study".

The following addition/optional text can also be included:
“The CHRIS Study is an ongoing longitudinal, population-based cohort study in the general population of the Val Venosta/Vinschgau district (South Tyrol, Italy). The study is a collaboration

between the Health Authority of the Autonomous Province of Bolzano and Eurac Research. You can find out more about CHRIS at https://www.eurac.edu/chris."