

Curriculum vitae for Kristoffer Jarlov Jensen

Position: Pharmacoepidemiologist, PhaseIVCph, Center for Clinical Research and Prevention, Frederiksberg Hospital, Denmark.

Education: MSc in Biology-Biotechnology, University of Copenhagen (2010)
Ph.D., University of Southern Denmark (2014)

Biography

Kristoffer joined PhaseIVCPh in October 2019 as a pharmacoepidemiologist, conducting phase IV registry-based studies of human medicines and medical devices.

Since obtaining his MSc degree in Biology from Copenhagen University (2010) Kristoffer has been working with phase IV clinical trials and real-world evidence for Bandim Health Project, Statens Serum Institut, and the Technical University of Denmark.

Primarily focusing on the tuberculosis vaccine BCG, Kristoffer has continuously pursued the exploration of the real-world effects on overall health and disease of approved early life vaccines, with a particular interest in the youngest population, sex-differential outcomes and the interactions with other health interventions.

A large number of studies primarily from low-income countries find that some routine childhood vaccines, including BCG, non-specifically reduce morbidity and all-cause mortality from other diseases than the specific target disease. To improve our understanding of the non-specific beneficial effects of BCG on all-cause neonatal mortality, Kristoffer has conducted epidemiological studies on the temporal, seasonal, sex-differential, and formulation-specific dependency of the vaccine effects.

During his Ph.D. (2011-2014) exploring the biological mechanisms behind the beneficial non-specific effects of routine childhood vaccines, Kristoffer collected and analyzed blood samples from several cohorts of Guinea-Bissau infants for inflammatory cytokine signatures.

Taking the observations of non-specific effects of vaccines from humans to a veterinary setting, at the Technical University of Denmark (post.doc. 2015-2018), Kristoffer has conducted experimental biological studies of veterinary vaccines in pigs as well as a randomized trial in a large commercial cohort of pigs.

Prior to his Ph.D. project (2007-2009 & 2010-2011), Kristoffer was responsible for the preparation and execution of a clinical phase I trial of an HIV vaccine candidate in adults for Statens Serum Institut in Guinea-Bissau on an EDCTP-sponsored program involving laboratory assay validation, local research capacity building, identification of eligible participants and GCP supervision.

Work experience

- 2019-** **Pharmacoepidemiologist, PhaseIVCph, Center for Clinical Research and Prevention, Frederiksberg Hospital, Denmark**
- 2014-2019** **Postdoc, Research Center for Vitamins and Vaccines, Statens Serum Institut, Denmark & National Veterinary Institute, Technical University of Denmark**
- Epidemiological and immunological studies of vaccines in infants
 - Epidemiological and immunological studies and clinical trials of veterinary vaccines in pigs
 - Supervision of MSc students, funding applications
- 2011-2014** **Ph.D. student, University of Southern Denmark, Bandim Health Project, Guinea-Bissau, and Statens Serum Institut**
- Planning and execution of clinical immunological studies of the effect of early BCG vaccination in infants
 - Ph.D. thesis: *Immunological and sex-differential non-specific effects of childhood vaccines*. Supervision of MSc students.
- 2010-2011** **Research assistant, Department of Virology, Statens Serum Institut**
- Responsible for the preparation, supervision, and execution of a clinical phase I trial of an HIV vaccine candidate in Guinea-Bissau. Capacity building coordinator on an EDCTP-sponsored program. Supervision of MSc students.
- 2007-2009** **Scholarship student, Department of Virology, Statens Serum Institut**
- Responsible for the preparation of a clinical trial of an HIV vaccine candidate in Guinea-Bissau (preparation of immunological assays and identification of eligible participants). On leave from university studies.

Education

- 2011-2014** **Ph.D. studies, University of Southern Denmark, Bandim Health Project, Guinea-Bissau, and Statens Serum Institut**
- Preparation and execution of immunological studies of the effect of early BCG vaccination in infants
 - Ph.D. thesis: *Immunological and sex-differential non-specific effects of childhood vaccines*. Supervision of MSc students
- 2006-2010** **Master studies in Biology-Biotechnology, University of Copenhagen**
- MSc thesis at Dept. of Virology, Statens Serum Institut: *Characterisation of a cohort of HIV-positive individuals for enrolment into a clinical trial of a vaccine candidate*
 - Junior research assistant at Division of Genetics, Helsinki University
- 2003-2006** **Bachelor studies in Biology-Biotechnology, University of Copenhagen**
- Bachelor thesis at Wageningen University, The Netherlands

List of publications

1. Schaltz-Buchholzer F, Berendsen M, Roth A, **Jensen KJ**, Bjerregaard-Andersen M, Kjær Sørensen M, Monteiro I, Aaby P, Stabell BC (2020) BCG skin reactions by 2 months of age are associated with better survival in infancy: a prospective observational study from Guinea-Bissau. *BMJ Glob Health* 5.
2. Timmermann CAG, **Jensen KJ**, Nielsen F, Budtz-Jørgensen E, van der KF, Benn CS, Grandjean P, Fisker AB (2020) Serum Perfluoroalkyl Substances, Vaccine Responses, and Morbidity in a Cohort of Guinea-Bissau Children. *Environ Health Perspect* 128: 87002.
3. **Jensen KJ**. The tuberculosis vaccine Bacillus Calmette-Guérin trains the innate immune system. *BestPractice*, COVID-19, April 2020.
4. **Jensen KJ**, Biering-Sorensen S, Ursing J, Kofoed PL, Aaby P, Benn CS (2020) Seasonal variation in the non-specific effects of BCG vaccination on neonatal mortality: three randomised controlled trials in Guinea-Bissau. *BMJ Glob Health* 5: e001873.
5. Jensen SK, Jensen TM, Birk NM, Stensballe LG, Benn CS, **Jensen KJ**, Pryds O, Jeppesen DL, Nissen TN (2020) Bacille Calmette-Guerin vaccination at birth and differential white blood cell count in infancy. A randomised clinical trial. *Vaccine* 38: 2449-245
6. **Jensen KJ**, Hansen MS, Heegaard PMH, Benn CS, Jugersen G (2019) The effect of inactivated Mycobacterium paratuberculosis vaccine on the response to a heterologous bacterial challenge in pigs. *Frontiers in Immunology* 10: 1557.
7. **Jensen KJ**. Havde koppe-vaccinen gavnlige immunstimulerende egenskaber? *BestPractice*, *Infektionsmedicin*, May 2019.
8. Blok BA, **Jensen KJ**, Aaby P, Fomsgaard A, van CR, Benn CS, Netea MG (2019) Opposite effects of Vaccinia and modified Vaccinia Ankara on trained immunity. *European Journal of Clinical Microbiology and Infectious Diseases*.
9. **Jensen KJ**. Calmette-vaccinen mod tuberkulose træner det medfødte immunsystem. *BestPractice*, *Almen praksis*, Vaccination, 14. Aug 2018.
10. Sanchez-Schmitz G, Stevens CR, Bettencourt IA, Flynn PJ, Schmitz-Abe K, Metser G, Hamm D, **Jensen KJ**, Benn C, Levy O (2018) Microphysiologic Human Tissue Constructs Reproduce Autologous Age-Specific BCG and HBV Primary Immunization in vitro. *Frontiers in Immunology* 9: 2634.
11. Ugolini M, Gerhard J, Burkert S, **Jensen KJ**, Georg P, Ebner F, Volkers SM, Thada S, Dietert K, Bauer L, Schafer A, Helbig ET, Opitz B, Kurth F, Sur S, Dittrich N, Gaddam S, Conrad ML, Benn CS, Blohm U, Gruber AD, Hutloff A, Hartmann S, Boeschoten MV, Muller M, Jungersen G, Schumann RR, Suttorp N, Sander LE (2018) Recognition of microbial viability via TLR8 drives TFH cell differentiation and vaccine responses. *Nature Immunology* 19: 386-396.
12. Biering-Sorensen S, **Jensen KJ**, Monteiro I, Ravn H, Aaby P, Benn CS (2018) Rapid Protective Effects of Early BCG on Neonatal Mortality Among Low Birth Weight Boys: Observations From Randomized Trials. *Journal of Infectious Diseases* 217: 759-766.
13. Benn CS, Rieckmann A, **Jensen KJ**, Aaby P (2018) The Role of Maternal Priming and Boosting for the Nonspecific Effects of BCG Vaccine. In: Faustman DL, editors. *The Value of BCG and TNF in Autoimmunity*. pp. 171-178.
14. **Jensen KJ**, Sondergaard MJ, Andersen A, Martins C, Erikstrup C, Aaby P, Flanagan KL, Benn CS (2017) Long-term sex-differential effects of neonatal vitamin A supplementation on in vitro cytokine responses. *British Journal of Nutrition* 1-7.
15. Biering-Sorensen S, Aaby P, Lund N, Monteiro I, **Jensen KJ**, Eriksen HB, Schaltz-Buchholzer F, Jorgensen ASP, Rodrigues A, Fisker AB, Benn CS (2017) Early BCG-Denmark and Neonatal Mortality Among Infants Weighing <2500 g: A Randomized Controlled Trial. *Clinical Infectious Diseases* 65: 1183-1190.
16. Baek O, **Jensen KJ**, Andersen A, Bale C, Martins C, Biering-Sorensen S, Poulsen A, Benn CS (2017) Seasonal and sex-specific variations in haematological parameters in 4 to 5.5-month-old infants in Guinea-Bissau, West Africa. *Transactions of the Royal Society of Tropical Medicine and Hygiene* 111: 30-37.
17. Do VA, Biering-Sorensen S, Fisker AB, Bale C, Rasmussen SM, Christensen LD, **Jensen KJ**, Martins C, Aaby P, Benn CS (2017) Effect of an Early Dose of Measles Vaccine on Morbidity Between 18 Weeks and 9 Months of Age: A Randomized, Controlled Trial in Guinea-Bissau. *Journal of Infectious Diseases* 215: 1188-1196.

18. **Jensen KJ**, Benn CS, van CR (2016) Unravelling the nature of non-specific effects of vaccines-A challenge for innate immunologists. *Seminars in Immunology* 28: 377-383.
19. **Jensen KJ**, Fisker AB, Andersen A, Sartono E, Yazdanbakhsh M, Aaby P, Erikstrup C, Benn CS (2016) The effects of vitamin A supplementation with measles vaccine on leucocyte counts and in vitro cytokine production. *British Journal of Nutrition* 115: 619-628.
20. Benn CS, Aaby P, Arts RJ, **Jensen KJ**, Netea MG, Fisker AB (2015) An enigma: why vitamin A supplementation does not always reduce mortality even though vitamin A deficiency is associated with increased mortality. *International Journal of Epidemiology* 2015/07/05.
21. Flanagan KL, **Jensen KJ** (2015) Sex Differences in Outcomes of Infections and Vaccinations in Under Five-Year-Old Children. In: Klein SL, Roberts CW, editors. *Sex and Gender Differences in Infection and Treatments for Infectious Diseases*. Springer International Publishing. pp. 273-312.
22. **Jensen KJ**, Ndure J, Plebanski M, Flanagan KL (2015) Heterologous and sex differential effects of administering vitamin A supplementation with vaccines. *Transactions of the Royal Society of Tropical Medicine and Hygiene* 2014/12/06: 36-45.
23. Biering-Sorensen S, **Jensen KJ**, Aamand SH, Blok B, Andersen A, Monteiro I, Netea MG, Aaby P, Benn CS, Haslov KR (2015) Variation of growth in the production of the BCG vaccine and the association with the immune response. An observational study within a randomised trial. *Vaccine* 33: 2056-2065.
24. **Jensen KJ**, Karkov HS, Lund N, Andersen A, Eriksen HB, Barbosa AG, Kantso B, Aaby P, Benn CS (2014) The immunological effects of oral polio vaccine provided with BCG vaccine at birth: A randomised trial. *Vaccine* 2014/09/17: 5949-5956.
25. **Jensen KJ**, Larsen N, Biering-Sorensen S, Andersen A, Eriksen HB, Monteiro I, Hougaard D, Aaby P, Netea MG, Flanagan KL, Benn CS (2014) Heterologous immunological effects of early BCG vaccination in low-birth weight infants in Guinea-Bissau: a randomized-controlled trial. *The Journal of Infectious Diseases* 2014/09/12.
26. Andersen A, **Jensen KJ**, Erikstrup C, Ravn H, Fisker AB, Lisse IM, Sartono E, Aaby P, Yazdanbakhsh M, Benn CS (2014) Both very low- and very high in vitro cytokine responses were associated with infant death in low-birth-weight children from Guinea Bissau. *PloS one* 9: e93562.
27. **Jensen KJ**, Sondergaard M, Andersen A, Sartono E, Martins C, Garly ML, Eugen-Olsen J, Ullum H, Yazdanbakhsh M, Aaby P, Benn CS, Erikstrup C (2014) A Randomized Trial of an Early Measles Vaccine at 4(1/2) Months of Age in Guinea-Bissau: Sex-Differential Immunological Effects. *PloS one* 2014/05/20: e97536.
28. Andersen A, Roth A, **Jensen KJ**, Erikstrup C, Lisse IM, Whittle H, Sartono E, Yazdanbakhsh M, Aaby P, Benn CS (2013) The immunological effect of revaccination with Bacille Calmette-Guerin vaccine at 19 months of age. *Vaccine* 2013/03/12: 2137-2144.
29. Roman VR, **Jensen KJ**, Jensen SS, Leo-Hansen C, Jespersen S, da Silva TD, Rodrigues CM, Janitzek CM, Vinner L, Katzenstein TL, Andersen P, Kromann I, Andreasen LV, Karlsson I, Fomsgaard A (2013) Therapeutic vaccination using cationic liposome-adjuvanted HIV type 1 peptides representing HLA-supertype-restricted subdominant T cell epitopes: safety, immunogenicity, and feasibility in Guinea-Bissau. *AIDS Research and Human Retroviruses* 29: 1504-1512.
30. Kiraly N, Benn CS, Biering-Sorensen S, Rodrigues A, **Jensen KJ**, Ravn H, Allen KJ, Aaby P (2013) Vitamin A supplementation and BCG vaccination at birth may affect atopy in childhood: long-term follow-up of a randomized controlled trial. *Allergy* 68: 1168-1176.
31. Gomez R, V, Jensen SS, Leo-Hansen C, **Jensen KJ**, Janitzek CM, Rodrigues CM, Jespersen S, Katzenstein TL, Te DS, Fomsgaard A (2012) Assessment of HIV-1 patient recruitability in the Republic of Guinea-Bissau using African versus North American hematology and biochemistry reference intervals. *Clinical Vaccine Immunology* 19: 1322-1325.
32. **Jensen KJ**, Gomez R, V, Jensen SS, Leo-Hansen C, Karlsson I, Katzenstein TL, Rodrigues CM, Jespersen S, Janitzek CM, Te DS, Hayes P, Fomsgaard A (2012) Clade A HIV-1 Gag-specific T cell responses are frequent but do not correlate with viral loads in a cohort of treatment-naïve HIV-infected individuals living in Guinea-Bissau. *Clinical Vaccine Immunology* 19: 1999-2001.
33. Karlsson I, Klopperpris H, **Jensen KJ**, Stryhn A, Buus S, Karlsson A, Vinner L, Goulder P, Fomsgaard A (2012) Identification of conserved subdominant HIV Type 1 CD8(+) T Cell epitopes restricted within

common HLA Supertypes for therapeutic HIV Type 1 vaccines. *AIDS Research and Human Retroviruses* 28: 1434-1443.

34. Vinner L, Holmgren B, **Jensen KJ**, Esbjornsson J, Borggren M, Hentze JL, Karlsson I, Andresen BS, Gram GJ, Kloverpris H, Aaby P, Da Silva ZJ, Fenyo EM, Fomsgaard A (2011) Sequence analysis of HIV-1 isolates from Guinea-Bissau: selection of vaccine epitopes relevant in both West African and European countries. *APMIS* 119: 487-497.