

Helle Precht
KI, Cardiology
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1. FORMAL EDUCATION

- April 2015 PhD degree in Radiography, SDU & Cardiovascular Research Unit, Department of Medicine, OUH Svendborg Sygehus, Thesis: Influence of Image Reconstructions on Image Quality In Coronary Computed Tomography Angiography
- June 2009 Master of Health Science, specialized in Radiography, University of Bergen, Norway, Thesis: Processing optimization by Canons software – a phantom project focusing on dose optimization when using Canon's new DR Spectra software on pediatric femur examinations
- June 2007 Diploma degree in digital radiography and pediatrics, CVSU Fyn, Thesis: Scoliosis - DR Detector Scintillator Influence in Image Quality
- August 2003 Radiography education, Radiography education in Odense, Topic: Pediatric pelvis Examination – Correct Airgab Distance for Image Quality and Radiation Protection

2. RELEVANT PROFESSIONAL EXPERIENCES INCLUDING CLINICAL EDUCATION

- 01.01.2020-present Associate Professor, Department of Clinical Research, SDU 10 % employment
- 01.03.2018-31.12.2019 Assistant Professor, Department of Clinical Research, SDU 10 % employment
- 01.09.2017-01.09.2020 Post doc, Medical Research Department, OUH Svendborg 40 % employment. Postmortem Cardiac CT: The vulnerable plaque
- 01.10.2015-present Head of CONRAD Research Program in Diagnostic and Treatment, Health Sciences Research Centre, UCL
- 01.02.2010-01.02.2011 Head of Master's program in Medical Imaging, SDU
- 01.06.2006-present Lecturer, Radiographer education, UCL
- 01.04.2004-01.01.2006 Clinical Application specialist on Canon DR system in the Nordic countries, Santax Medico A/S 30 % employment
- 01.08.2003-01.01.2006 Clinical Radiographer at Kolding Hospital including responsible for Radiographer students and expert at the DR modality 100 % employment

3. EXPERT MEMBERSHIPS

- 15.06.2019-present National PhD network for Radiographers
- 01.03.2018-present Member of evaluation committees for coming PhD students, SDU
- 01.02.2017-present Editorial Board member of Radiography Journal, Elsevier, London
- 23.06.2014-15.04.2017 ECR (European Congress for Radiology and Radiography) subcommittee member planning the congress for Radiographers in 2016 & 2017
- 03.03.2011-05.03.2014 Management team for educational wing of the EFRS (European Federation of Radiographers Societies)
- 10.08.2010-present EFRS Expert Network
- 01.01.2009-01.02.2010 Management team of Master's program in Medical Imaging, SDU
- 15.05.2006-01.11.2011 International Coordinator at UCL
- 01.04.2006-present Examiner at the national Radiography board

4. COMPLETED WORKSHOPS AND COURSES

- 2020 GE Healthcare super users CT symposium, Stockholm, Sweden
- 2019 Conference on Artificial Intelligence in the Healthcare system, SDU

2019 Project management education for researchers on SDU, SDU

2019 Image quality workshop at the Nordic Congress of Radiology and Radiography, Copenhagen

2019 CT optimization course, NACP, Bergen, Norway

2019 Visual Grading Analyses conference in medical imaging, Malmö, Sweden

2018 Workshop in histopathology evaluation focusing on coronary arteries, Nr. Vorupør, Denmark

2018 Artificial Intelligence in image quality evaluation workshop, European Congress of Radiology, Vienna, Austria

2017 Endnote course, SDU

2017 Improving my daily CCTA – contrast enhancement basics, administration and scan protocols. GE Healthcare Webinar

2017 CCTA: How to achieve more with less - radiation, contrast and artifacts. GE Healthcare Webinar

2017 ging imaging and therapy, 4th Symposium of NACP, Radisson Blu Scandinavian Hotel, Oslo, Norway

2017 Digital Radiography super user conference, Amsterdam, Netherlands

2016 Canon workshop on dose and image quality optimization using DR systems, Milling Hotels, Middelfart, Denmark

2016 Image theory, perception and processing course, Nordic Association for Clinical Physicist, Bergen, Norway

2016 Forensic Congress in Radiology and Imaging, Course in Forensic Radiography, Amsterdam, Netherlands

2016 Workshop on academic writing, UC South, Kolding, Denmark

2016 Workshop in Radiation protection, European Congress of Radiology, Vienna, Austria

2015 Digital Radiography developments, Santax Medico, Middelfart, Denmark

2015 Workshop in image quality optimization with hands on, Radiology Society of Northern America, Chicago, USA

2014 Postgraduate course and annual scientific meeting with workshop in Pediatric Imaging, European Society for Pediatric Radiology, NH Grand Hotel Krasnapolsky, Amsterdam, Netherlands

2014 Symposium on Spectral Cardiac CT, GE Healthcare, Oslo, Norway

2014 Workshop in Pediatric Radiology & Battered Child, European Society of Pediatric Radiology, Sheffield, UK

2013 Future in medical imaging and the radiography profession, Aarhus, Denmark

2013 Dual Energy CT, European Congress of Radiology, Vienna, Austria

2012 Advanced course in academic English, Lammas, Odense, Denmark

2012 Pediatric Radiology workshop in radiation protection, European Society of Pediatric Radiology, Athens, Greece

2012 Digital Radiography forum and discussion for optimization, Helsinki, Finland

2012 CT radiation protection workshop, European Congress of Radiology, Vienna, Austria

2012 Coronary plaque analysis course, Leiden & Rotterdam, Leiden University Medical Center research group in Image processing, Netherlands

2012 Course in clinical cardiovascular imaging, Nordic Association for Cardiologists in CCTA, Copenhagen, Denmark

2012 Nordic Gemstone Spectral Imaging Clinical Workshop Agenda, Stockholm, Sweden

2012 Application meeting & Workshop on new image processing software, Canon Europe, Amsterdam, Netherlands

2011 Plaque analysis in Cardiac CT, Toshiba Europe, Amsterdam, Netherlands

2011 Image interpretation and perception, Nordic Congress of Radiology and Radiography, Åland, Finland

2011 Pediatric Radiology and image quality course, International Pediatric Radiology, London, UK

2011 Stating up Radiographer research field, European Federation of Radiographer Societies, Paris, France

2011 Individual patient based examination in medical imaging course, European Congress of Radiology, Vienna, Austria

2011 Workshop in image evaluation for scientific studies, Radiology Society of Northern America, Chicago, USA

2011 2nd Nordic Symposium on Cardiac CT, The Danish Board for Accreditation in Cardiology, Silkeborg, Denmark

2010 Cardiac CT Workshop - Image Review, GE Healthcare. Plymouth, UK

2010 CT Dosimetry and Image optimization for Medical Physicists, Nordic Association of Clinical Physicist, Aarhus, Denmark

2010 Postgraduate course in pediatric imaging, European Society of Pediatric Radiology, Bordeaux, France

2010 Clinical pediatric radiography, Basel University Pediatric Hospital, Switzerland

2010 Using the full potential of CT when examine abdominal patients, Radiology Society of Northern America, Chicago, USA

2010 Possibilities in Radiography, PRIS conference, Odense, Denmark

2010	Application course on a new installed CT scanner, GE Healthcare, Svendborg, Denmark
2010	Dual energy CT workshop, European Congress of Radiology, Vienna, Austria
2010	DR image quality course, student tour, Canon Europe, Amsterdam, Netherlands
2010	Radiography image quality, National course for Radiographers, Society for Radiographers in Denmark, Skejby, Denmark
2009	Workshop in Image Optimization, Nordic Congress of Radiology, Copenhagen, Denmark
2009	DR optimization workshop, Canon Europe, Amsterdam, Netherlands
2009	Image optimization in clinical practice, Verona University, Italy
2009	Microsoft Power Point course, Odense local authority, Odense, Denmark
2009	Microsoft Word course, Odense local authority, Odense, Denmark
2009	Optimisation x-ray medical imaging (OXMI), Nordic Association of Physicists, Malmø, Sweden
2009	Workshop in Cardiac CT, Radiology Society of Northern America, Chicago, USA
2008	Health Professional English course, University College Lillebelt, Odense, Denmark
2008	Workshop and application meeting, technical update on DR equipment, Canon Europe, Amsterdam, Netherlands
2008	Digital Radiography and Image Optimization, Radiographer further education, Gjøvik University College, Norway
2005	Conference in CT scanning, Center for education, Region of Vejle, Denmark
2005	Trauma course, Kolding Hospital, Denmark
2005	Radiographers postgraduate course in radiation protection, Society for Radiographers in Denmark, Herlev, Denmark
2004	Digital radiography, Conference about Digital Radiography for Radiographers and x-ray nurses, Center for education, Region of Vejle, Denmark
2004	Digital Radiography, Radiography Education, Herlev, Denmark

5. RESEARCH FINANCING AND INNOVATION

2019	A.P. Møller Maersk - Jess Lambrechtsen, Heart Flow modalitet til avancerede hjerte-CT-skanninger. 3.000.000 DKK.
2019	A PhD study: "Image quality and radiation dose at the new x-ray tube technology for CT scanners at cardiac and abdominal scans". Educational grant from GE Healthcare. 583.000 DDK.
2016	Postdoc salary: "The vulnerable coronary atherosclerotic plaque – ex vivo". Region of Southern Denmark. 500.000 DKK.
2013	Histopathology images in the "Postmortem CT study: the Vulnerable plaque". Research funding from OUH. 180.000 DKK.
2011	An anthropomorphic phantom for the PhD study: "Influence of Image Reconstructions on Image Quality In Coronary Computed Tomography Angiography". Research funds Svendborg Hospital. 159.500 DKK.
2011	PhD salary: "Influence of Image Reconstructions on Image Quality In Coronary Computed Tomography Angiography" from University of Southern Denmark. 500.000 DKK.
2010	Research funds for PhD project: "Influence of Image Reconstructions on Image Quality In Coronary Computed Tomography Angiography". Danish society for Radiographers. 50.000 DKK.

Research outputs

The effect of forearm rotation on radiographic measurements of the wrist: an experimental study using radiostereometric analyses on cadavers

Jensen, J., Tromborg, H. B., Rasmussen, B. S. B., Gerke, O., Torfing, T., Precht, H. & Graumann, O., 2. Apr 2021, In: European Radiology Experimental. 5, 1, p. 15

Anode heel effect: Does it impact image quality in digital radiography? A systematic literature review

Kusk, M. W., Jensen, J. M., Gram, E. H., Nielsen, J. & Precht, H., Mar 2021, (E-pub ahead of print) In: Radiography.

The influence of a novel edge enhancement software on image quality of DR hand images of patients with rheumatoid arthritis

Outzen, C. B., Maron, D., Nissen, J., Munk, J., Grau, L. M., Juhl, D. & Precht, H., Mar 2021, (E-pub ahead of print) In: Radiography.

Organ-based tube current modulation in chest CT. A comparison of three vendors

Mussmann, B. R., Mørup, S. D., Skov, P. M., Foley, S., Brenøe, A. S., Eldahl, F., Jørgensen, G. M. & Precht, H., Feb 2021, In: Radiography. 27, 1, p. 1-7

The impact of COVID-19 upon student radiographers and clinical training

Rainford, L. A., Zanardo, M., Buissink, C., Decoster, R., Hennessy, W., Knapp, K., Kraus, B., Lanca, L., Lewis, S., Mahlaola, T. B., McEntee, M., O'Leary, D., Precht, H., Starc, T. & McNulty, J. P., 6. Nov 2020, (E-pub ahead of print) In: Radiography.

Aspects of Artificial Intelligence (AI) in radiography

Andersen, P. & Precht, H., Nov 2020, In: World Radiography Day. 2020, November special edition, p. 4-5

Physical and structural obstacles for post-mortem computed tomography quality

Aagaard Nielsen, P., Bech, D. M., Brandhøj Nielsen, J., Lund Hansen, P., Lund Hansen, D., Mørup, S. D. & Precht, H., 11. Sep 2020.

Exploring the patient perspectives of mobile X-ray in nursing homes – A qualitative explorative pilot study

Jensen, J. M., Andersen, P. A. B., Kirkegaard, L., Larsen, N., Most, W., Nielsen, D. & Precht, H., 9. Sep 2020, (E-pub ahead of print) In: Radiography.

Are radiographic measurements of distal radius fractures evidence based?

Jensen, J., Rasmussen, B. S., Aarup Duus, L., Torfing, T., Precht, H., Tromborg, H. B. & Graumann, O., 15. Jul 2020.

Comparison of image quality in chest, hip and pelvis examinations between mobile equipment in nursing homes and static indirect radiography equipment in the hospital

Precht, H., Hansen, D. L., Ring-Pedersen, B. M., Møller Hansen, L. F., Waaler, D., Tingberg, A., Midtgaard, M., Jensen Ohlsen, M. G., Juhl Hankelbjerg, S. T., Ravn, P., Jensen, I. E., Christensen, J. K. & Blackburn Andersen, P. A., May 2020 , In: Radiography. 26, 2, p. e31-e37

CAN SCATTER CORRECTION SOFTWARE REPLACE A GRID IN DR PELVIC EXAMINATIONS?

Precht, H., Mørup, S. D., Tingberg, A., Outzen, C. B., Kusk, K. W., Nielsen, R. M., Midtgård, M., Winther, M. B., Waaler, D. & Kusk, M. W., 31. Dec 2019, In: Radiation Protection Dosimetry. 187, 1, p. 8-16

Assessment of Image Quality in Digital Radiographs Submitted for Hip Dysplasia Screening

Moorman, L., Precht, H., Jensen, J., Svalastoga, E., Nielsen, D. H., Proschowsky, H. F. & McEvoy, F. J., 3. Dec 2019, In: Frontiers in Veterinary Science. 6, 7 p., 428.

Distal radius fractures and radiographic assessment: a systematic review of measurement accuracy.

Jensen, J., Rasmussen, B. S., Aarup Duus, L., Torfing, T., Precht, H., Tromborg, H. B. & Graumann, O., Nov 2019, In: Acta Radiologica. 60, 11, p. 1482-1489

Radiographers' perspectives' on Visual Grading Analysis as a scientific method to evaluate image quality

Precht, H., Hansson, J., Outzen, C., Hogg, P. & Tingberg, A., 1. Oct 2019, In: Radiography. 25, Suppl. 1, p. S14-S18

Can We Trust Radiographic Measurements of the Distal Radius Fracture?

Jensen, J., Precht, H., Torfing, T., Rasmussen, B. S., Tromborg, H. B., Aarup Duus, L. & Graumann, O., 19. May 2019.

Does software optimization influence the radiologists' perception in low dose paediatric pelvic examinations?

Precht, H., Waaler, D., Outzen, C. B., Brock Thorsen, J. B., Steen, T., Hellfritzsch, M. B., Aagesen, H., Holst, A. K., Le, P., Lindequist, S., Rasmussen, L. & Tingberg, A., 1. May 2019, In: Radiography. 25, 2, p. 143-147

A novel alignment procedure to assess calcified coronary plaques in histopathology, post-mortem computed tomography angiography and optical coherence tomography

Precht, H., Broersen, A., Kitslaar, P. H., Dijkstra, J., Gerke, O., Thygesen, J., Egstrup, K., Leth, P. M., Hardt-Madsen, M., Nielsen, B., Falk, E. & Lambrechtsen, J., Mar 2019, In: Cardiovascular Pathology. 39, p. 25-29

Impact of decentring patients for abdominal CT scan

Mørup, S. D., Precht, H., Foley, S., Seegert, A. & Mussmann, B. R., 26. Feb 2019, In: *Insights into Imaging*. 10, Suppl 1, p. 326 B-0653.

Organ-based tube current modulation in Chest CT – Effect on radiation dose and noise

Mussmann, B. R., Mørup, S. D., Skov, P. M., Foley, S. & Precht, H., 26. Feb 2019, *Insights into Imaging: ECR 2019 Book of Abstracts*. Suppl 1 ed. Springer, Vol. 10. p. 289 B-0485. (Insights into Imaging, Vol. 10).

Image quality in coronary computed tomography angiography: influence of adaptive statistical iterative reconstruction at various radiation dose levels

Precht, H., Gerke, O., Thygesen, J., Egstrup, K., Auscher, S., Waaler, D. & Lambrechtsen, J., 2018, In: *Acta Radiologica*. 59, 10, p. 1194-1202

First experiences with model based iterative reconstructions influence on quantitative plaque volume and intensity measurements in coronary computed tomography angiography

Precht, H., Kitslaar, P. H., Broersen, A., Gerke, O., Dijkstra, J., Thygesen, J., Egstrup, K. & Lambrechtsen, J., Feb 2017, In: *Radiography*. 23, 1, p. 77-79

Influence of Adaptive Statistical Iterative Reconstruction on coronary plaque analysis in coronary computed tomography angiography

Precht, H., Kitslaar, P. H., Broersen, A., Dijkstra, J., Gerke, O., Thygesen, J., Egstrup, K. & Lambrechtsen, J., Nov 2016, In: *Journal of Cardiovascular Computed Tomography*. 10, 6, p. 507-516

Analysis and compensation for the effect of the catheter position on image intensities in intravascular optical coherence tomography

Liu, S., Eggermont, J., Wolterbeek, R., Broersen, A., Glorioso Rexen Busk, C. A., Precht, H., Lelieveldt, B. P. F. & Dijkstra, J., 2016, In: *Journal of Biomedical Optics*. 21, 12, 126005.

Influence of adaptive statistical iterative reconstruction algorithm on image quality in coronary computed tomography angiography

Precht, H., Thygesen, J., Gerke, O., Egstrup, K., Waaler, D. & Lambrechtsen, J., 2016, In: *Acta Radiologica Open*. 5, 12, p. 1-9

Image processing in Cardiac Coronary Computed Tomography

Precht, H., 2015, Syddansk Universitet. Det Sundhedsvidenskabelige Fakultet.

New developed DR detector performs radiographs of hand, pelvic and premature chest anatomies at a lower radiation dose and/or a higher image quality

Precht, H., Tingberg, A., Waaler, D. & Outzen, C. B., Feb 2014, In: *Journal of Digital Imaging*. 27, 1, p. 68-76

Large dose reduction by optimization of multifrequency processing software in digital radiography at follow-up examinations of the pediatric femur

Precht, H., Gerke, O., Rosendahl, K., Tingberg, A. & Waaler, D., 2014, In: *Pediatric Radiology*. 44, 2, p. 239-240

Optimisation of post mortem cardiac computed tomography compared to optical coherence tomography and histopathology - Technical note

Precht, H., Leth, P. M., Thygesen, J., Hardt-Madsen, M., Nielsen, B., Falk, E., Egstrup, K., Gerke, O., Broersen, A., Kitslaar, P. H., Dijkstra, J. & Lambrechtsen, J., 2014, In: *Journal of Forensic Radiology and Imaging*. 2, 2, p. 85-90

Response to: Letter to the editor on: Optimisation of post-mortem cardiac computed tomography compared to optical coherence tomography and histopathology - Technical note

Precht, H., Leth, P. M., Thygesen, J., Hardt-Madsen, M., Nielsen, B., Falk, E., Egstrup, K., Gerke, O., Broersen, A., Kitslaar, P. H., Dijkstra, J. & Lambrechtsen, J., 2014, In: *Journal of Forensic Radiology and Imaging*. 2, 3, p. 159

Digital radiography: optimization of image quality and dose using multi-frequency software

Precht, H., Gerke, O., Rosendahl, K., Tingberg, A. & Waaler, D., 2012, In: Pediatric Radiology. 42, 9, p. 1112-1118

The newly released Canon CXDI-70C Wireless detector maintains diagnostic image quality at a reduced radiation dose

Precht, H., 27. Nov 2011.

The new released Canon CXDI-70C Wireless detector maintains optimal image quality of the chest anatomy in preterm infants at a reduced radiation dose

Precht, H., 27. May 2011.

A comparison between the Canon CXDI-70C Wireless Flat Panel Detector and a previous generation Csl model when imaging the premature neonatal chest, focusing on dose and image quality

Precht, H., 7. Mar 2011.

Activities

DR Image Quality and Clinical Practice

Helle Precht (Guest lecturer)

3. Dec 2020 → 7. Dec 2020

A tool to help establish the evidence base for the profession (European Congress of Radiology, Radiographers research highlight week, online)

Helle Precht (Speaker)

27. Nov 2020 → 30. Nov 2020

Postmortem cardiac CT research project (Kardiologisk Forskningsenheds Årsmøde 2020)

Helle Precht (Speaker)

30. Sep 2020

Physical and structural obstacles for post-mortem computed tomography quality

Pernille Nielsen (Co-author), Dina Bech (Co-author), Julie Nielsen (Co-author), Pernille Hansen (Co-author), Dennis Hansen (Co-author), Svea Deppe Mørup (Co-author), Helle Precht (Guest lecturer) & Peter Mygind Leth (Co-author)

1. Aug 2020

Patient and public involvement in Research (European Congress of Radiology, Highlights, online)

Helle Precht (Guest lecturer)

16. Jul 2020 → 19. Jul 2020

Postmortem CT Research - oral presentation

Helle Precht (Lecturer)

30. Jan 2020 → 31. Jan 2020

Can we trust radiographic measurements of the distal radius fracture?

Janni Jensen (Lecturer), Trine Torfing (Co-author), Helle Precht (Co-author), Louise Aarup Duus (Co-author), Benjamin Schnack Rasmussen (Co-author), Hans B. Tromborg (Co-author) & Ole Graumann (Co-author)

22. May 2019

Acta Radiologica (Journal)

Helle Precht (Peer reviewer)

2019 → ...

Journal of Digital Imaging (Journal)

Helle Precht (Peer reviewer)

2019 → ...

Radiography (Journal)

Helle Precht (Peer reviewer)

2019 → ...

Optimisation of post mortem coronary computed tomography angiography compared to histopathology using a novel alignment procedure

Helle Precht (Guest lecturer), Peter Mygind Leth (Guest lecturer), Alexander Broersen (Guest lecturer), Jess Lambrechtsen (Guest lecturer), Kenneth Egstrup (Guest lecturer), Jesper Thygesen (Guest lecturer), Pieter H. Kitslaar (Guest lecturer) & Jouke Dijkstra (Guest lecturer)

12. May 2016 → 14. May 2016

Nordic Gemstone Spectral Imaging Clinical Workshop

Helle Precht (Participant)

23. Apr 2012 → 25. Apr 2012

Software and dose optimization in cardiac CT

Helle Precht (Lecturer)

8. Jun 2011 → 10. Jun 2011

Annual Meeting of the Department of Medical Research

Helle Precht (Participant)

1. Jun 2011

NACP Nordisk CT kursus

Helle Precht (Participant)

10. Nov 2010 → 12. Nov 2010

Hjerte CT diagnostik

Helle Precht (Participant)

18. Oct 2010 → 22. Oct 2010

Processing optimization in Pediatric femur examinations - a phantom project focusing on dose optimization when using Canon's new DR Spectra software

Helle Precht (Lecturer)

7. May 2010 → 11. May 2010

How to find the best hardware and software to achieve minimum dose and optimal image quality in DR systems

Helle Precht (Lecturer)

4. Mar 2010 → 8. Mar 2010