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Forskningsprofil

My research focuses on advancing digital health through explainable AI and decision support systems in management of chronic diseases, with a primary focus on optimizing basal insulin titration for type 2 diabetes. By combining machine learning, user-centered design, and clinical expertise, I work on developing personalized, data-driven tools that empower healthcare professionals and improve clinical decision-making to better patient outcomes. My work aim to bridge technology and patient care, driving innovation in chronic disease management.

Kvalifikationer

Ph.D., Optimizing Basal Insulin Titration in People with Type 2 Diabetes: An Explainable AI-Based Decision Support System for Personalized Glycemic Management in Primary Care, Det Sundhedsvidenskabelige Fakultet
Dimissionsdato: 16 dec. 2024

Sundhedsteknologi, Candidata Polytechnices
1 sep. 2019 → 30 jun. 2021
Dimissionsdato: 30 jun. 2021

Sundhedsteknologi, Bachelor
1 sep. 2016 → 30 jun. 2019
Dimissionsdato: 30 jun. 2019

Ansættelse

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Gistrup, Danmark
15 aug. 2021 → 31 dec. 4712

Publikationer

Effectiveness and safety of telemonitoring compared with standard of care in people with type 2 diabetes treated with insulin: a national multicenter randomized controlled trial

Hangaard, S., Kronborg, T., Cohen, S. R., Kofoed-Enevoldsen, A., Thomsen, C. H. N., Aradóttir, T. B., Kristensen, S. N. S., Kaas, A., Bengtsson, H., Vestergaard, P., Dethlefsen, C., Hejlesen, O. & Jensen, M. H., 24 maj 2025, (E-pub ahead of print) I: European Journal of Internal Medicine. 137, s. 112-118 7 s.

Personalized Prediction of Change in Fasting Blood Glucose Following Basal Insulin Adjustment in People With Type 2 Diabetes: A Proof-of-Concept Study

Thomsen, C. H. N., Kronborg, T., Hangaard, S., Vestergaard, P., Hejlesen, O. & Jensen, M. H., maj 2025, I: Journal of Diabetes Science and Technology. 19, 3, s. 769-777 9 s.

Developing an AI-Based clinical decision support system for basal insulin titration in type 2 diabetes in primary Care: A Mixed-Methods evaluation using heuristic Analysis, user Feedback, and eye tracking

Thomsen, C. H. N., Kronborg, T., Hangaard, S., Vestergaard, P. & Jensen, M. H., mar. 2025, I: International Journal of Medical Informatics. 195, 105783.

Modeling the fasting blood glucose response to basal insulin adjustment in type 2 diabetes: An explainable machine learning approach on real-world data

Thomsen, C. H. N., Kronborg, T., Hangaard, S., Vestergaard, P., Hejlesen, O. & Jensen, M. H., mar. 2025, I: *International Journal of Medical Informatics*. 195, 105758.

The intelligent diabetes telemonitoring using decision support to treat patients on insulin therapy (DiaTRUST) trial: study protocol for a randomized controlled trial

Thomsen, C. H. N., Nørlev, J. T. D., Hangaard, S., Jensen, M. H., Hejlesen, O., Cohen, S. R., Kofoed-Enevoldsen, A., Kristensen, S. N. S., Aradóttir, T. B., Kaas, A., Vestergaard, P. & Kronborg, T., 8 nov. 2024, I: *Trials*. 25, 1, 744.

The intelligent Diabetes TelemonitoRing Using decision Support to treat patients on insulin Therapy (DiaTRUST) trial: study protocol for a randomized controlled trial

Thomsen, C. H. N., Nørlev, J. D., Hangaard, S., Jensen, M. H., Hejlesen, O., Kristensen, S. N. S., Aradóttir, T. B., Kaas, A., Vestergaard, P. & Kronborg, T., 8 sep. 2024, Research Square Platform LLC, 21 s.

Effectiveness and safety of telemonitoring compared with usual care in people with type 2 diabetes treated with insulin: preliminary results from a national multicentre randomised controlled trial

Hangaard, S., Kronborg, T., Cohen, S., Kofoed-Enevoldsen, A., Rasmussen, M., Pedersen, L., Thomsen, C., Aradóttir, T., Kristensen, S., Kaas, A., Bengtsson, H., Dethlefsen, C., Hejlesen, O., Vestergaard, P. & Jensen, M., sep. 2024, I: *Diabetologia*. 67, Suppl. 1, s. S405 1 s., 846.

Time for Using Machine Learning for Dose Guidance in Titration of People With Type 2 Diabetes? A Systematic Review of Basal Insulin Dose Guidance

Thomsen, C. H. N., Hangaard, S., Kronborg, T., Vestergaard, P., Hejlesen, O. & Jensen, M. H., sep. 2024, I: *Journal of Diabetes Science and Technology*. 18, 5, s. 1185-1197 13 s.

Development of a Basal Insulin Titration System to Support Healthcare Providers in Treatment of People with Type 2 Diabetes: Preliminary Results

Thomsen, C. H. N., Hangaard, S., Kronborg, T., Vestergaard, P., Hejlesen, O. & Jensen, M. H., 22 aug. 2024, *Digital Health and Informatics Innovations for Sustainable Health Care Systems*. IOS Press, Bind 316. s. 1735-1736 2 s. (Studies in Health Technology and Informatics , Bind 316).

Intelligent Diabetes Telemonitoring for Patients on Insulin Therapy: A Randomized Controlled Trial Protocol

Thomsen, C. H. N., Nørlev, J. T. D., Hangaard, S., Jensen, M. H., Kristensen, S. N. S., Aradóttir, T. B., Vestergaard, P., Hejlesen, O. & Kronborg, T., 22 aug. 2024, *Digital Health and Informatics Innovations for Sustainable Health Care Systems*. IOS Press, Bind 316. s. 1737-1738 2 s. (Studies in Health Technology and Informatics , Bind 316).

Optimizing Basal Insulin Titration in People with Type 2 Diabetes: An Explainable AI-Based Decision Support System for Personalized Glycemic Management in Primary Care

Thomsen, C. H. N., 2024, Aalborg University Open Publishing.

A machine learning model for basal insulin titration of people with type 2 diabetes: preliminary results

Thomsen, C. H. N., Kronborg, T., Hangaard, S., Vestergaard, P., Hejlesen, O. & Jensen, M. H., nov. 2023, I: *Diabetologia*. 66, Suppl. 1, s. S81 152.

Time for using Machine Learning for Basal Insulin Dose Guidance for People with Type 2 Diabetes? Preliminary Results from a Systematic Review

Thomsen, C. H. N., Hangaard, S., Kronborg, T., Vestergaard, P., Hejlesen, O. & Jensen, M. H., aug. 2022, *Proceedings of the 18th Scandinavian Conference on Health Informatics*. Linköping University Electronic Press, s. 206-207 (Scandinavian conference on health informatics).

Aktiviteter

Girls' Day in Science AAU 2022

Andersen, A.-L. (Arrangør), Møller, K. V. (Arrangør), Hegelund, R. H. (Arrangør), Larsen, M. S. S. (Deltager), Napoleone, A. (Deltager), Fuglsig, L. V. (Deltager), Petersen, E. (Deltager), Andersen, K. H. (Deltager), Jonge, N. D. (Deltager), Quist-

Jensen, C. A. (Deltager), Pedersen, E. J. (Deltager), Ponnaganti, P. (Deltager), Lykkemark, J. (Deltager), Svane, A. M. (Deltager), Haxvig, H. A. (Deltager), Otto, S. (Deltager), Ananjeva, A. (Deltager), Lechuga, M. M. L. (Deltager), Thomsen, C. H. N. (Deltager) & Pálsdóttir, Á. A. (Deltager)
5 okt. 2022

Presse/medie

Forskere udvikler nyt værktøj: Skal hjælpe med at finde den rigtige insulindosis

Thomsen, C. H. N.

05/10/2023

1 element af Mediedækning

Tina Vilsbøll om årets EASD: Fantastisk både fagligt og socialt

Thomsen, C. H. N.

13/10/2023

1 element af Mediedækning

Projekter

ADAPT-T2D: Adherence through cloud-based Personalised Treatment for Type 2 Diabetes

Jensen, M. H. (Projektleder), Stoustrup, J. (PI (principal investigator)), Hangaard, S. (Projektdeltager), Larsen, T. K. (Projektdeltager), Thomsen, C. H. N. (Projektdeltager), Leth, J.-J. (Projektdeltager) & Ahdab, M. A. (Projektdeltager)
01/12/2019 → 30/10/2025