







#### Dear All

It has been a great honour to be selected as an international expert within the German government's health authorities choosing to put together an international panel of experts to design a national German center for children and young people and health. It was especially honourable to meet with leading pediatricians from Europe and North America from all the pediatric specialties. As an expert in obesity, I have typically not experienced being invited inside because obesity has typically not been a priority. Therefore, it is also remarkably interesting and visionary that there is a prospect of a very large and leading German center, where obesity has a priority and central location within the organization. The proposed budget is a double-digit billion and will thus create the basis for a complete paradigm-shifting environment, from which much can be expected in the future. A point that is extremely important for obesity, as there is a prospect that obesity is prioritized on an equal footing with other serious chronic diseases.

In addition, I have just been asked to give a keynote presentation in a global organization in relation to children and young people living with obesity. It is gratifying that there is international interest in an evidence-based understanding and approach to this global challenge.

**NEW ARTICLE** Genetics of early-life head circumference and genetic correlations with neurological, psychiatric, and cognitive outcomes

The HOLBAEK Study, which is the research part of The Children's Obesity Clinic, an European accredited center for the treatment of children and adolescents with obesity, has again contributed data to the international consortium "Early Growth and Genetics - EGG consortium". This time we have focused on the genetic components related to head circumference measurements which have been found to correlate to intelligence and to be relatively constant from early childhood into adulthood. We performed a genome-wide association study meta-analysis with follow-up of head circumference in 29,192 participants aged

Genetics of early-life head circumference and genetic correlations with neurological, psychiatric and cognitive outcomes

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#### Abstract

**Background:** Head circumference is associated with intelligence and tracks from childhood int adulthood.

Methods: We performed a genome-wide association study meta-analysis and follow-up of hear circumference in a total of 29.192 participants between 6 and 30 months of age.

Results: Seven loci reached genome-wide significance in the combined discovery and replication inadysis of which three loci near ARFGEFZ, MYCLT, and TOPT, were novek. We observed positive genetic correlations or early fish lead circumference with adult intracranial volume, years of schooling, childhood and adult intelligence, but not with adult psychiatric, neurological, or personally-related phenotypes.



6-30 months. We found 7 gene localizations that reached genome-wide significance, where 3 genes near ARFGEF2, MYCL1, and TOP1 were new. We found associations between these genes and head circumference in early childhood, skull volume in adulthood, number of years in the school system, intelligence in both childhood and adulthood, but not with adult neurological or psychiatric illness or personality disorders. The study showed that the biological processes that underlie the early childhood development of head circumference overlap with the development of head circumference, as seen in adults. Correlations between the early childhood cognitive functions over the course of life can be partly explained by underlying genetic determinants.

This study is an elegant example of how we are constantly working to understand the function of the brain and its diseases and their potential interaction with the development and worsening of obesity.

#### THE HOLBAEK-MODEL IN MEXICO

At the European Congress on Obesity, which we also mentioned in the last newsletter, I had the pleasure of being interviewed by 2 skilled journalists from Mexico City. The interview was prompted by a potential desire to integrate the HOLBAEK-model into the development of the understanding, education and management of obesity in children and adolescents in Mexico. A fine and respectful article came out of it, which you can read <a href="here">here</a>.

The article describes well the values and strategies of the HOLBAEK-model and how important it is that millions of overweight children and young people in Mexico potentially are taken care of. The perspective of this effort is borne by the Convention on the Rights of the Child, which states that all children and young people have the right to the highest level of health, including a quality and evidence-based treatment approach. It is, of course, a very big task, but it is also a task that is remarkably close to both my heart and ambitions, because I am sure that





the HOLBAEK-model's universal core values with various modifications can be transferred to the Mexican reality. So, I sincerely hope that the materials and digital system of the HOLBAEK-model can soon be found in Spanish.

# **NEW STUDY** Hyperglucagonemia in Pediatric Adiposity Associates with Cardiometabolic Risk Factors, but Not Hyperglycemia

In adults, high concentrations of glucagon are related to type 2 diabetes, impaired glucose tolerance and obesity. The significance of glucagon in children and adolescents with overweight and obesity is uncertain. In The HOLBAEK study, we investigated whether fasting concentrations of glucagon are increased in adolescents with obesity and whether it is related to cardiovascular risk markers. We included 2,154 children and adolescents aged 6 to 19 years with overweight and compared them with 1,858 children and adolescents from the normal weight background population. Fixed concentrations of glucagon and cardiovascular risk markers were analysed using multiple linear and logistic regression statistical models. We found that children and adolescents with overweight and obesity had higher glucagon concentrations than normal weight children and adolescents. Glucagon was related to BMI SDS, waist circumference, fat percentage, liver fat percentage, ALT, highly sensitive CRP, HOMA, insulin, C-peptide, LDL cholesterol and systolic and diastolic SDS blood pressure and inversely related to blood sugar. The relationship between glucagon and blood sugar was weakened in children and adolescents with a severe degree of overweight. Glucagon was associated with insulin resistance, increased ALT, dyslipidemia, hypertension, and GLP-1, but not with high blood sugar. We concluded that compared with children and adolescents with normal weight, children and adolescents with obesity had increased glucagon concentrations related to an additional stressed cardiovascular risk profile. This suggests that high glucagon concentrations are a precursor to poorer glucose regulation with consequent risk profiles.



The study is both an elegant and current example of the collaboration between clinicians and basic researchers and fully illustrates the original vision of establishing a research biobank that can actually make us wiser in order to understand both development and potentially also the treatment of children and adolescents living with obesity.

# OBESITY TREATMENT TOOL – NEW AND IMPROVED FEATURES

The Obesity Treatment Tool Pro (OTTP) is the digital tool for the HOLBAEK-model and is under constant development with improvement of a wide range of functionalities. For example, Basic Data is currently being expanded, variables related to loneliness, bullying and quality of life are nuanced, and the video module is optimized and made more flexible. Together, these improvements aim for a more intuitive user interface that continuously optimizes the OTTP, which is also based on user feedback as well as an available support feature. This makes the consultations more present and natural and provides a smoother consultation flow due to automation of previous manual processes. This helps to ensure a more optimal treatment, greater time surplus and a professional satisfaction with a better working environment. It is thus generally expected to reduce the need for many different professions in the municipal clinics, as the HOLBAEK-model's competence education contributes with interdisciplinary competencies at an overweight-related high professional level. This means that work planning becomes more time-optimized, flexible and helps to make better use of the resources available.

### ANNUAL OBESITY MANAGEMENT CONFERENCE 2022

The Annual Obesity Management Conference 2022 in Denmark will be held at Hotel Nyborg Strand on the  $6^{th} - 7^{th}$  of September 2022. The program is almost complete and will be really exciting and reflects the latest and most important developments.





The first day will primarily have a clinical aim, where different healthcare professionals will give presentations on the treatment of obesity. Already now we can say that there will be a number of posts about the special challenges that obesity entails in the Child-Adolescent Psychiatric Department, Medical Department, Gynaecological / Obstetric Department and Surgical Department and how we can build a bridge to understand and treat obesity better in the future.

The second day will have a more scientific aim, where basic scientific knowledge, insights, recommendations and any new interesting angles and mechanisms with significance for obesity will be reviewed. Here we can already say that there will be a very interesting post about philosophical aspects including existence in relation to obesity and also more specifically regarding the HOLBAEK-model.

We have already landed the first sponsor, which means that the daily price is reduced for the paying participants. Going forward, we are working to establish more sponsors in order to create a national conference where the prices for participation are modest.

The Annual Obesity Management Conference 2022 has as its primary theme to be evidence-based and thus help to see through various beliefs.

You can see the program and other relevant details about the Annual Obesity Management Conference 2022 <u>here</u> (in Danish).

Final confirmation from the remaining speakers is expected during the next weeks' time.





## WEBINAR to everyone

Jens-Christian is hosting his **next webinar on Tuesday 28th of June at 8 pm** in the Facebook-group "Boost din hverdag sundere".

The topic is "Complexity vs. masters and power". You are welcome to ask questions already now. This topic is perhaps the most central theme in the HOLBAEK-model and at the same time contains a number of values, human perceptions, and strategies that the healthcare professionals must master in order to be able to practice the HOLBAEK-model properly.



#### MASTERCLASS for Healthcare Professionals

The next MasterClass are on Tuesday the 16<sup>th</sup> of August 2022 at 13 pm – 14 pm.

If you want to participate, send Dorte an e-mail at klinikken@drholm.com

It is free to attend. At MasterClass, it is possible to discuss challenges in the treatment, get sparring for a specific case (anonymised), get supervision, ask questions about the HOLBAEK-model and Obesity Treatment Tool Pro, or just listen in.

Jens-Christian Holm and Cilius Fonvig are ready to discuss challenges and answer your questions.

The only requirement for participation is that you have at least attended Seminar 1 (course 1) of the HOLBAEK-model's education.





### UPCOMING SEMINARS IN THE HOLBAEK-MODEL

The next seminar in the HOLBAEK-model is Seminar 1, which will be held on the 27<sup>th</sup> – 28<sup>th</sup> of September 2022. The seminar is held at Hotel Scandic Ringsted, Nørretorv 57, 4100 Ringsted.



### Contact Us

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Seminar 1: 27<sup>th</sup> – 28<sup>th</sup> of September 2022. Introductory seminar.

Seminar 2: 25<sup>th</sup> – 26<sup>th</sup> of October 2022.

Follow-up seminar; follow-up on treatment.

**Seminar 3:**  $6^{th} - 7^{th}$  of December 2022.

Immersion sminar; our values in a meta-perspective.

Seminar for the HOLBAEK-model's pedagogy and communication: Spring 2023.

Live patient consultations. Clip from Generation XL. Pattern-recognizing dynamics and mechanisms. Reflection on one's own role in the present with the patient. How do we make patients easier?

https://www.jenschristianholm.dk/uk/our-products/seminars-for-healthcare-professionals.aspx

The scientifically supported digital solution for the HOLBAEK-model; <u>Obesity Treatment Tool Pro</u> is part of the material content on all seminars.