

# Study shows how some severely obese children were negatively affected by the COVID-19 lockdown

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New research presented at this year's European Congress on Obesity (held online, 10-13 May) shows that for some children with severe

obesity, the COVID-19 lockdown had a negative impact on physical activity and eating habits, and some (mostly aged under 10 years) exhibited increased demand for food. The study is by Dr. Ozair Abawi, Dr. Milla Welling and Dr. Bibian van der Voorn, Obesity Center CGG (Healthy Weight Centre), Erasmus MC-Sophia Children's Hospital, University Medical Center Rotterdam, Rotterdam, The Netherlands, and colleagues.

In response to the COVID-19 pandemic, governments have implemented [lockdown](#) measures with a substantial impact on the lifestyle behaviors and well-being of children (including adolescents). The impact on children with severe obesity has not yet been described. These [vulnerable children](#) are plausibly at even larger risk for these adverse effects, since their weight-related health risk is already increased and recommended strict lifestyle measures were already challenging to commit to for most of them, pre-pandemic. The aim of this study was to investigate impact of the COVID-19 pandemic and lockdown measures on eating behaviors, [physical activity](#), [screen time](#) and quality of life (QoL) of children with severe obesity.

In this mixed-methods study, questionnaires and semi-structured telephone interviews were used to investigate the impact of COVID-19 during April 2020, in the first lockdown in the Netherlands on children with severe obesity (adult BMI-equivalent of 35kg/m<sup>2</sup> and above) being treated at the Obesity Center CGG (Healthy Weight Centre), based at Erasmus MC-Sophia Children's Hospital.

Three questionnaires, the Dutch Eating Behavior Questionnaire—Child version, Pediatric Quality of Life Inventory, and Dutch Physical Activity Questionnaire, were filled out by the families of these children both pre-pandemic and during lockdown. Changes over time in percentile scores, time spent on physical activity and screen time were assessed.

In total, 83 families were included, of which 75 participated in telephone interviews. Their children's characteristics were mean age 11.5 years, 52% female, all living with severe obesity. Across the whole group, no overall changes in scores for emotional, restrained, external eating, quality of life, or total screen time (devices/television etc) were observed. Around half (51%) of children saw their physical activity decline to two hours per week or less.

The authors then identified subgroups whose questionnaire scores improved or deteriorated during lockdown, which were associated with age, pre-existent psychosocial problems and pre-pandemic questionnaire scores. For example, children who did not fulfill WHO physical activity criteria pre-pandemic showed a further decline (from 2.8 to 0.7 h/wk.).

The 15 children whose emotional eating scores increased by a clinically significant amount were mostly older children and children with pre-existent psychosocial problems. For children whose emotional wellbeing deteriorated and/or experienced worsened family dynamics (n=46, 61%), this attributed to negative emotions (anger, boredom, anxiety, sadness) and/or increased conflicts (due to spending more time home together but also due to increased conflicts regarding eating behaviors).

Children with high emotional and external eating scores during lockdown had the lowest quality of life scores. The data also revealed that an increased demand for food by the child was frequently observed (in 21 children, more than a quarter of the sample), mostly in children aged 10 years and under (19 of the 21). This was attributed to loss of daily structure, increased stress, or emotional eating. Families who reported no changes (15) or improved eating behaviors (11) attributed this to already existing strict eating schemes that they kept adhering to during lockdown.

The authors say: "This study shows differential response profiles to the

COVID-19 lockdown in children with severe obesity. Although on a group level lifestyle scores tend to average out, a clinically relevant part of families reported a deterioration in physical activity and eating behaviors. Children with pre-existent psychosocial problems and high external or emotional eating scores were most at risk for the negative effects of the COVID-19 pandemic. Health care professionals should target these vulnerable children to minimize short- and long-term negative physical and mental health consequences."

Of course, this study is from the first Netherlands lockdown, and there have been extended periods of restrictions and further lockdowns up to the present day. The authors say follow-up on this patient population is ongoing.

They say: "At our outpatient clinic, we see that the COVID-19 pandemic and related lockdown measures still have a large impact on these children's lives. In The Netherlands, we are currently (as of 11 May 2021) still in a lockdown since early December 2020, with primary schools having opened as late as 8th February 2021 and secondary schools only partly since 1st March 2021. Sports clubs for children are still only open for outdoor sports activities."

They add: "Besides affecting these children's education, physical health, and weight, this situation also negatively affects their general well-being and development.

However, there is a minority of children and their parents who report that they are doing better since the start of the COVID-19 pandemic. The children who are not doing well often have additional risk factors such as psychosocial problems, lower socio-economic status and/or parental job/income instability. This emphasizes that it is important for us as [health care professionals](#) to proactively monitor these children's wellbeing and to offer support if needed, especially in patients who are

already vulnerable for the negative effects of the COVID-19 pandemic such as [children](#) with severe [obesity](#)."

Provided by European Association for the Study of Obesity

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