

Position paper: COVID-19 and endocrinology

Call to address the interactions between COVID-19 and hormones and the understudied endocrine and metabolic consequences of the virus in EU policy

COVID-19 has inflicted large-scale change and challenges across all sectors and states. For the healthcare industry, the crisis has led to disruptions in diagnoses, delays in surgeries, therapeutic changes, the transition to virtual consultations, and even avoidance of medical consultation in fear of transmission, while staff and resource shortages have been felt around the world. In parallel, we must not neglect the structural factors and underlying conditions that render populations vulnerable and exacerbate healthcare crises such as the COVID-19 pandemic. We must address these factors to help with the medium and longer-term management of the pandemic, and to ward off future ones.

The links between endocrine and metabolic conditions and the different stages of COVID-19

Endocrine-related conditions impact COVID-19 outcomes. The hormone system is the key regulator of maintenance of body weight, energy expenditure and energy (food) intake. Emerging research¹ based on rapid expert consensus shows the relationship between COVID-19 and several endocrine and metabolic diseases.

When it comes to **preventing** the severe outcomes of COVID-19, there is evidence that people suffering from hormone conditions, such as diabetes, obesity, adrenal insufficiency and Cushing's syndrome, face an increased risk of and/or from infection. Vitamin D² deficiency renders populations more vulnerable to infection and increases potential lung injuries.³ In addition, recent studies⁴ show that "certain underlying conditions associated with exposures to Endocrine Disrupting Chemicals (EDCs) are exacerbating the effects of COVID-19 in vulnerable populations".

Furthermore, **treatment** of COVID-19 is considerably more complicated for patients with underlying endocrine-related diseases. Obesity, diabetes, and other chronic diseases mean COVID-19 patients are more likely to suffer with severe symptoms, enter intensive care units, as well as have an increased risk of death.

Long-term quality of life following COVID-19 can also be impacted. Endocrine systems could suffer in the long term from the impact of COVID-19, because the hormone system is the key regulator of maintenance of body weight, energy expenditure and energy (food) intake. COVID-19 is associated with anorexia, dysgeusia, dysfunction of gastrointestinal absorption and severe weight loss, mostly from muscle mass. to transmission fears. The current COVID-19 pandemic has transformed every aspect of endocrine/neuroendocrine cancer care, for which diagnosis and clinical management are challenging. Their unique needs require a multidisciplinary approach, while each discipline is uniquely affected by the COVID-19 pandemic.

Endocrinology must be at the heart of EU policy

¹ <https://eje.bioscientifica.com/page/covid19-collection>

² a hormone ingested and/or produced after sun-exposure that helps to control the concentration of calcium in the blood and is vital for the development of strong bones. It also plays an important part in protecting the immune system.

³ Lecture given by Dr. Anna Formenti in the context of ESE Talks, 28/05/2020

⁴ Endocrine Disrupting Chemicals and COVID-19 www.healthandenvironment.org/webinars

EU4Health is a very promising umbrella strategy for the next years. As this paper has outlined, this strategy needs a strong endocrine element to achieve its objectives. ESE calls on the European institutions and EU Member States undertake the below actions without delay, with the aim to improve treatment and long-term health outcomes after the crisis is over by using the valuable experience gained during these challenging times:

- We call for **an urgent increase in research funding for the relationship between COVID-19 and hormones and metabolic factors** and the long-term health consequences of COVID-19 on endocrine and metabolic diseases,
- There also needs to be a coordinated effort for **global surveillance of cases and outcomes monitoring**,
- We also call for the development of new and effective models of **patient management**,
- Finally, **increased collaboration** is required between countries, policy makers and other stakeholder groups such as patient groups, other societies and pharmaceutical companies with endocrine/metabolic portfolios and digital solutions. In the presence of rapidly changing data available on the effect of COVID-19, sharing collective experiences from multiple countries at different stages of the COVID-19 pandemic seems essential.

About ESE

The European Society of Endocrinology is at the centre of Europe's endocrine community. It is our vision to shape the future of endocrinology to improve science, knowledge and health. It is our mission to advance endocrinology. We unite, support and represent our specialty, promoting collaboration and best practice, and enable our community to develop and share the best knowledge in endocrine science and medicine.

On behalf of the ESE policy and advocacy task force

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