

## COVID-19: Obesity, a BIG risk factor in young people

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*Recent studies report that a high proportion of young adults who are hospitalized in intensive care because of Covid-19 are obese.*

If there is one thing that the current Covid-19 pandemic has brought to light, it is to what extent the general health of those infected influences the risk of developing serious complications from the disease. Much emphasis has been placed on age as the primary risk factor for Covid-19 mortality, and there is no denying that the steady decline in the effectiveness of the immune system during aging contributes to the greater vulnerability of elderly people with the virus. However, it must be repeated: over 90% of people who died from Covid-19 had one or more comorbidities at the time of infection, the most common being obesity, cardiovascular disease and type 2 diabetes. In other words, it is not only the age, but above all the metabolic state of health of those infected that largely determines the risk that Covid-19 will develop into more severe forms.

### THE RISK OF BEING OVERWEIGHT

Overweight is certainly one of the factors that has a decisive influence on metabolic health. Excess fat generates a state of chronic inflammation which participates in the development of several metabolic abnormalities (hyperglycemia, dyslipidemia, hypertension) and considerably increases the risk of cardiovascular disease, type 2 diabetes and several types of cancer. Obesity therefore generates pathological conditions which are now all recognized to increase the risk of severe Covid-19. Being overweight also disrupts the efficiency of the immune system and can therefore make obese people more susceptible to viral infections. In this sense, a recent analysis indicates that obese people are 40% more likely to be infected with SARS-CoV-2 than thin people (1). In short, being overweight is very often synonymous with poor metabolic health and should therefore be considered as a risk factor for Covid-19.

### YOUTH AT RISK

Over the past 20 years, there has been a large and steady increase in overweight and obesity among citizens of industrialized countries, including children and young adults. Several recent studies have reported that being overweight increases the risk of severe COVID-19 in patients under the age of 60, a segment of the population who should not normally be at high risk for complications.

A recent American study found that the risk of serious complications from Covid-19 was 2 times higher in young obese adults compared to patients of normal weight (2). A recent article published in the prestigious medical journal Lancet came to similar conclusions, that young adults with Covid-19 who were obese were more likely to be admitted to intensive care because of clinical complications (3). Even overweight children are more at risk: an analysis of 48 children (average age 13 years) with Covid-19 and hospitalized in intensive care pediatric units showed that obesity was the main comorbidity observed in these young patients, except congenital diseases and cancer (4).



These data therefore show that in populations with a high prevalence of overweight people, Covid-19 may affect a higher proportion of young adults than previously suspected. In Canada, 64% of the population is overweight, of which 29% are obese, and these people are more at risk of contracting Covid-19 and developing severe complications of the disease than the general population, even very young.

- (1) de Lusignan S et coll. Risk factors for SARS-CoV-2 among patients in the Oxford Royal College of General Practitioners Research and Surveillance Centre primary care network: a cross-sectional study. *Lancet Infectious Dis.*, (published online May 15<sup>th</sup> 2020)
- (2) Lighter J et coll. Obesity in patients younger than 60 years is a risk factor for Covid-19 hospital admission. *Clin. Infect Dis.*, (published online April 9<sup>th</sup> 2020)
- (3) Kass DA et coll. Obesity could shift severe COVID-19 disease to younger ages. *Lancet* 2020; 95:1544-1545.
- (4) Shekerdeman LS et coll. Characteristics and outcomes of children with coronavirus disease 2019 (COVID-19) infection admitted to US and Canadian pediatric intensive care units. *JAMA Pediatr.*, (published online may 11<sup>th</sup> 2020)