Obesity has a high prevalence among children. On the other hand, acute respiratory infections especially of viral origin, are an important cause of morbidity and mortality in this age group. During the recent pandemic of influenza A (H1N1) virus, obesity was identified as a novel independent risk factor for severity multiple markers of the disease. We reviewed the evidence associating obesity with a worse course of respiratory diseases in children. Nine out of 40 retrieved articles, were chosen to be reviewed. We concluded that there is evidence suggesting that immunomodulatory effects of obesity could be considered as a novel risk factor. Thus, bearing in mind the drastic rise in obesity prevalence around the world and in Chile, and the latent possibility of new respiratory pandemics caused by viruses, studying the possible effect of obesity aggravating viral respiratory infections will become important.