



# What Are the Newest Effects of COVID-19 in Children?

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Although I have reviewed important aspects of COVID-19 in the pediatric and adolescent age groups in two previous editorials,<sup>1,2</sup> new information is published daily. There is more clinical information that has been reported regarding a pediatric immune multisystem syndrome that resembles Kawasaki disease or toxic shock syndrome, which the Centers for Disease Control and Prevention has called multisystem inflammatory syndrome in children (MIS-C)<sup>3-8,9,10</sup> Children have presented with persistent fever and a variety of clinical manifestations, which may involve multiple organ systems and elevated proinflammatory markers. MIS-C may present weeks after a mild or even clinically asymptomatic infection.<sup>9,10</sup> Second, a variety of cutaneous manifestations have been reported, most commonly in adults but also in

pediatric patients.<sup>11-14</sup> A registry has been set up by the American Academy of Dermatology for clinicians to report these skin findings.<sup>9</sup> Third, there is also a report of the clinical manifestations and outcomes of a convenience sample of patients admitted to pediatric intensive care units (PICU) in the United States and Canada.<sup>15</sup> There were 48 patients admitted to the PICU, with a median age of 13 years<sup>13</sup> with COVID-19 diagnosis confirmed with nasal swab polymerase chain reaction. A total of 40 (85%) had preexisting underlying medical conditions including medical complexity, immune suppression/malignancy, and obesity.<sup>13</sup> This group of patients presented with respiratory symptoms most frequently, and 39 required respiratory support above their baseline and 21 were managed noninvasively.<sup>13</sup> Targeted antiviral therapies were used in 28 (61%) of patients. Two patients died, both of whom had preexisting medical comorbidities and developed multisystem organ failure.<sup>15</sup> At the time of this editorial, 15 children (31%) were still hospitalized including 5 of whom were still critically ill.<sup>15</sup> Fourth, an article by Wu et al.<sup>16</sup> summarizes the characteristics of 74 pediatric patients with COVID-19, which included (1) abnormalities in leukocyte count in 23 (31%) patients, (2) abnormal lymphocyte count in 10 (13.5%) patients, (3) co-infection with common respira-

tory pathogens in 19 patients (51%), and (4) prolonged fecal shedding in 10 patients (13.5%). Fifth, what about COVID-19 and postinfection immunity? The limited available data on antibody responses to COVID-19 and one small animal study, “suggest that recovery from COVID-19 might confer immunity against reinfection, at least temporarily.”<sup>17</sup>

What is clear is that the clinical spectrum of COVID-19 continues to evolve, and investigators continue to update the literature as quickly as possible. This information will help clinicians provide optimal care for our pediatric patients.

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Disclosure: Joseph R. Hageman is a member of the Owlet, Inc advisory board.

doi:10.3928/19382359-20200520-02

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