**RESUME**

* Covid long : symptômes très variés et d’intensité différentes, certains légers et d’autres qui peuvent être invalidants et ne plus permettre une scolarité normale, d’une durée > 5 semaines
	+ Liste non exhaustive : anosmie, agueusie, extrême fatigue, maux de tête, problèmes de mémoire, concentration, autres pb neurologiques, troubles de la marche, dyspnée, douleurs articulaires, thoraciques , troubles digestifs, syndrome de tachycardie posturale, éruptions cutanées, etc
* La littérature scientifique reporte entre 2% et 40% d’enfants atteint, avec une convergence sur 8% dans plusieurs études, ce qui correspond également aux chiffres UK. Sans rapport avec la gravité de l’infection initiale (ds un article, même chez des asymptomatiques)
* En France, pas de chiffres/enquête sur le covid long pédiatrique, mais deux études scientifiques importantes des équipes de l’hôpital de la Timone (Marseille), co-signées par Brigitte CHABROL (@ChabrolBrigitte). Professeur de Pédiatrie et Présidente du conseil national professionnel de pédiatrie. Dans une de deux études, pour la 1ère fois, la réalité cérébrale de la forme longue de la maladie est démontrée –par imagerie- chez l’enfant. Dans l’autre, ils ont rapporté que 16.8% d'enfants avaient des symptômes 1 an après l'infection initiale, avec les troubles de la concentration/d'apprentissage en deuxième place après l'asthénie
* Cependant, la Présidente de la Societé Française de Pédiatrie occulte cette realité en arrivant à la qualifier d’anecdotique, alors que 8% de plus d’1 million d’enfants et ado testés plus (sans compter donc ceux qui n’ont pas été testés/identifiés)
* L’HAS, qui a émis des recommandations pour les adultes, a déclaré à un journaliste, lors d’un itw, d’être en train de travailler sur le covid long pédiatrique (CLP). A ce jour aucune prise en charge ni médicale ni scolaire existe.

**ARTICLES GENERALISTES (FR)**:

Les plus importants :

**<https://www.parismatch.com/Actu/Sante/Le-Covid-long-de-l-enfant-est-probablement-une-reaction-au-virus-ou-a-l-inflammation-1754476>**

**<https://www.parismatch.com/Actu/Sante/Covid-long-enfant-et-ado-la-detresse-des-familles-1741619>**

<https://www.nationalgeographic.fr/sciences/2021/07/les-enfants-aussi-souffrent-du-covid-long>

<https://www.sciencesetavenir.fr/sante/covid-19-un-pas-vers-la-reconnaissance-du-covid-long-chez-les-enfants_151725>

<https://www.humanite.fr/covid-long-quand-la-fin-du-deni-concernant-les-enfants-717564>

<https://www.lefigaro.fr/sciences/la-reconnaissance-du-covid-long-pediatrique-un-parcours-du-combattant-20210721>

<https://www.francetvinfo.fr/sante/maladie/coronavirus/on-est-epuises-la-detresse-des-familles-pour-faire-reconnaitre-le-covid-long-de-leur-enfant_4299497.html>

<https://fortune.com/2021/05/05/diabetes-covid19-after-effects-children/>

**ETUDES SCIENTIFIQUES:**

1. LUDVIGSSON, Jonas F. Case report and systematic review suggest that children may experience similar long‐term effects to adults after clinical COVID‐19. Acta Paediatrica, 2021, vol. 110, no 3, p. 914-921. <https://doi.org/10.1111/apa.15673>
2. BUONSENSO, Danilo, MUNBLIT, Daniel, DE ROSE, Cristina, et al. Preliminary evidence on long COVID in children. Acta Paediatrica 2021 110(7):2208-2211. <https://doi.org/10.1111/apa.15870>
3. NOGUEIRA LÓPEZ, J., GRASA, C., Nogueira López, J., Grasa, C., Calvo, C., & García López‐Hortelano, M. (2021). Long‐term symptoms of COVID‐19 in children. *Acta Paediatrica*, *110*(7), 2282-2283., C. et al. (2021). Long‐term symptoms of COVID‐19 in children. Acta Paediatrica, 110(7), 2282-2283.. <https://doi.org/10.1111/apa.15849>
4. BUONSENSO, Danilo, ESPUNY PUJOL, Ferran, MUNBLIT, Daniel, et al. Clinical characteristics, activity levels and mental health problems in children with Long COVID: a survey of 510 children. 2021. <https://doi.org/10.20944/preprints202103.0271.v1>
5. SAY, Daniela, CRAWFORD, Nigel, MCNAB, Sarah, et al. Post-acute COVID-19 outcomes in children with mild and asymptomatic disease. The Lancet Child & Adolescent Health, 2021, 5, 6, 22-23.. [https://doi.org/10.1016/S2352-4642(21)00124-3](https://doi.org/10.1016/S2352-4642%2821%2900124-3)
6. RADTKE, Thomas, ULYTE, Agne, PUHAN, Milo Alan, et al. Long-term symptoms after SARS-CoV-2 infection in school children: population-based cohort with 6-months follow-up. Short Report. medRxiv, 2021. <https://doi.org/10.1101/2021.05.16.21257255>
7. DI SANTE, Gabriele, BUONSENSO, Danilo, DE ROSE, Cristina, et al. Immune profile of children with post-acute sequelae of SARS-CoV-2 infection (Long Covid). medRxiv, 2021. <https://www.medrxiv.org/content/10.1101/2021.05.07.21256539v1>
8. MOLTENI, Erika, SUDRE, Carole H., CANAS, Liane S., *et al.* Illness duration and symptom profile in symptomatic UK school-aged children tested for SARS-CoV-2. *The Lancet Child & Adolescent Health*, 2021, vol. 5, no 10, p. 708-718. [https://www.thelancet.com/journals/lanchi/article/PIIS2352-4642(21)00198-X/fulltext](https://www.thelancet.com/journals/lanchi/article/PIIS2352-4642%2821%2900198-X/fulltext)
9. BRACKEL, Caroline LH, LAP, Coen R., BUDDINGH, Emilie P., et al. Pediatric long‐COVID: An overlooked phenomenon?. Pediatric Pulmonology, 2021. <https://doi.org/10.1002/ppul.25521>
10. BLOMBERG, Bjørn, MOHN, Kristin Greve-Isdahl, BROKSTAD, Karl Albert, et al. Long COVID in a prospective cohort of home-isolated patients. Nature Medicine, 2021, p. 1-7. <https://www.nature.com/articles/s41591-021-01433-3>
11. MILLER, Faith, NGUYEN, Vincent, NAVARATNAM, Annalan MD, et al. Prevalence of persistent symptoms in children during the COVID-19 pandemic: evidence from a household cohort study in England and Wales. medRxiv, 2021. <https://doi.org/10.1101/2021.05.28.21257602>
12. MAGNUSSON, Karin, SKYRUD, Katrine Damgaard, SUREN, Pål, et al. Health care use up to 6 months after COVID-19 in 700.000 children and adolescents: a pre-post study. medRxiv, 2021. <https://doi.org/10.1101/2021.06.02.21258211>
13. *YOUNGER, David S. Post-acute sequelae of SARS-CoV-2 infection (PASC): peripheral, autonomic, and central nervous system features in a child. Neurological Sciences, 2021, p. 1-5.* [*https://link.springer.com/article/10.1007/s10072-021-05345-5*](https://link.springer.com/article/10.1007/s10072-021-05345-5)
14. MORAND, Aurelie, CAMPION, Jacques-Yves, LEPINE, Anne, et al. Similar patterns of 18F-FDG brain PET hypometabolism in paediatric and adult patients with long COVID: a paediatric case series. 2021. *Eur J Nucl Med Mol Imaging* (2021). <https://doi.org/10.1007/s00259-021-05528-4>
15. MATTEUDI, Tatiana, LUCIANI, Léa, FABRE, Alexandre, et al. Clinical characteristics of paediatric COVID‐19 patients followed for up to 13 months. Acta Paediatrica. <https://onlinelibrary.wiley.com/doi/10.1111/apa.16071>
16. *WISE, Jacqui . Long covid: One in seven children may still have symptoms 15 weeks after infection, data show | The BMJ* [*https://doi.org/10.1136/bmj.n2157*](https://doi.org/10.1136/bmj.n2157)
17. STEPHENSON, Terence, PEREIRA, Snehal Pinto, SHAFRAN, Roz, et al. Long COVID-the physical and mental health of children and non-hospitalised young people 3 months after SARS-CoV-2 infection; a national matched cohort study (The CLoCk) Study. 2021. *BMJ open*, 2021, vol. 11, no 8, p. e052838. [10.1136/bmjopen-2021-052838](https://dx.doi.org/10.1136/bmjopen-2021-052838)
18. ASADI-POOYA, Ali A., NEMATI, Hamid, SHAHISAVANDI, Mina, et al. Long COVID in children and adolescents. World Journal of Pediatrics, 2021, p. 1-5. <https://doi.org/10.1007/s12519-021-00457-6>
19. OSMANOV, Ismail M., SPIRIDONOVA, Ekaterina, BOBKOVA, Polina, et al. Risk factors for long covid in previously hospitalised children using the ISARIC Global follow-up protocol: A prospective cohort study. European Respiratory Journal 2021; DOI: 10.1183/13993003.01341-2021
20. BUONSENSO, Danilo, DI GIUDA, Daniela, SIGFRID, Louise, et al. Evidence of lung perfusion defects and ongoing inflammation in an adolescent with post-acute sequelae of SARS-CoV-2 infection. The Lancet Child & Adolescent Health, 2021, vol. 5, no 9, p. 677-680. [https://doi.org/10.1016/S2352-4642(21)00196-6](https://doi.org/10.1016/S2352-4642%2821%2900196-6)
21. STERKY, Ellinor, OLSSON‐ÅKEFELDT, Selma, HERTTING, Olof, *et al.* Persistent symptoms in Swedish children after hospitalisation due to COVID‐19. *Acta Paediatrica (Oslo, Norway: 1992)*, 2021, vol. 110, no 9, p. 2578. [https://dx.doi.org/10.1111%2Fapa.15999](https://dx.doi.org/10.1111/apa.15999)
22. SMANE, Liene, STARS, Inese, PUCUKA, Zanda, *et al.* Persistent clinical features in paediatric patients after SARS-CoV-2 virological recovery: a retrospective population-based cohort study from a single centre in Latvia. *BMJ Paediatrics Open*, 2020, vol. 4, no 1. [https://dx.doi.org/10.1136%2Fbmjpo-2020-000905](https://dx.doi.org/10.1136/bmjpo-2020-000905)
23. ZIMMERMANN, Petra, PITTET, Laure F., et CURTIS, Nigel. How Common Is Long COVID in Children and Adolescents?. The Pediatric Infectious Disease Journal, September 16, 2021 - <https://journals.lww.com/pidj/abstract/9000/how_common_is_long_covid_in_children_and.95677.aspx>
24. ASHKENAZI-HOFFNUNG, Liat, SHMUELI, Einat, EHRLICH, Shay, et al. Long COVID in children: observations from a designated pediatric clinic. The Pediatric Infectious Disease Journal, 2021. <https://journals.lww.com/pidj/Abstract/9000/Long_COVID_in_Children__Observations_From_A.95712.aspx>

**ARTICLES GENERALISTES, POINT DE VUE, AUTRES**

THOMSON, Helen. Children with long covid. 2021. New Scientist, Volume 249, Issue 3323, 27 February 2021, Pages 10-11 [https://doi.org/10.1016/S0262-4079(21)00303-1](https://doi.org/10.1016/S0262-4079%2821%2900303-1)

Legacy of COVID-19 infection in children: long-COVID will have a lifelong health/economic impact <https://adc.bmj.com/content/early/2021/05/27/archdischild-2021-321882>

The four most urgent questions about long COVID, <https://www.nature.com/articles/d41586-021-01511-z#ref-CR4>

Long COVID and kids: scientists race to find answers, <https://www.nature.com/articles/d41586-021-01935-7>

HAGEMAN, Joseph R. Long COVID-19 or Post-Acute Sequelae of SARS-CoV-2 Infection in Children, Adolescents, and Young Adults. 2021. <https://doi.org/10.3928/19382359-20210519-02>

MUNBLIT, Daniel, SIGFRID, Louise, et WARNER, John O. Setting priorities to address research gaps in long-term COVID-19 outcomes in children. *JAMA pediatrics*, 2021. <https://jamanetwork.com/journals/jamapediatrics/article-abstract/2782612>

**Impacts neurologiques Covid19**

SINGER, Timothy G., EVANKOVICH, Karen, FISHER, Kristen, et al. Coronavirus infections in the nervous system of children: a scoping review making the case for long-term neurodevelopmental surveillance. Pediatric Neurology, 2021. <https://doi.org/10.1016/j.pediatrneurol.2021.01.007>

GUILLAUME, Fond, MARC, Masson, CHRISTOPHE, Lancon, et al. The neuroinflammatory pathways of post-SARS-CoV-2 psychiatric disorders. L'encephale, 2021. <https://www.sciencedirect.com/science/article/pii/S0013700621001706>

MADAAN, Priyanka, SINGANAMALLA, Bhanudeep, et SAINI, Lokesh. Neurological manifestations of COVID-19 in children: time to be more vigilant. Pediatric neurology, 2021, vol. 115, p. 28. <https://doi.org/10.1016/j.pediatrneurol.2020.11.006>

SCHOBER, Michelle Elena, ROBERTSON, Courtney Leigh, WAINWRIGHT, Mark Stephen, *et al.* COVID-19 and the Pediatric Nervous System: Global Collaboration to Meet a Global Need. *Neurocritical care*, 2021, p. 1-8. <https://doi.org/10.1007/s12028-021-01269-2>

*AL-RAMADAN, Ali, RABAB’H, Omar, SHAH, Jawad, et al. Acute and post-acute neurological complications of COVID-19. Neurology International, 2021, vol. 13, no 1, p. 102-119.* [*https://www.mdpi.com/2035-8377/13/1/10*](https://www.mdpi.com/2035-8377/13/1/10)

*WILLI, Sandra, LÜTHOLD, Renata, HUNT, Adam, et al. COVID-19 sequelae in adults aged less than 50 years: a systematic review. Travel medicine and infectious disease, 2021, p. 101995.* [*https://www.sciencedirect.com/science/article/pii/S1477893921000363*](https://www.sciencedirect.com/science/article/pii/S1477893921000363)

*DOUAUD, Gwenaëlle, LEE, Soojin, ALFARO-ALMAGRO, Fidel, et al. Brain imaging before and after COVID-19 in UK Biobank. medRxiv, 2021.* [*https://doi.org/10.1101/2021.06.11.21258690*](https://doi.org/10.1101/2021.06.11.21258690)

**Fatigue chronique post-Covid**

PETRACEK, Lindsay S., SUSKAUER, Stacy J., VICKERS, Rebecca F., et al. Adolescent and Young Adult ME/CFS After Confirmed or Probable COVID-19. Frontiers in Medicine, 2021, vol. 8, p. 525. <https://doi.org/10.3389/fmed.2021.668944>

**Chez des enfants hospitalisés pour la phase aigue**

OSMANOV, Ismail M., SPIRIDONOVA, Ekaterina, BOBKOVA, Polina, *et al.* Risk factors for long covid in previously hospitalised children using the ISARIC Global follow-up protocol: A prospective cohort study. *medRxiv*, 2021. <https://doi.org/10.1101/2021.04.26.21256110>

PARISI, Giuseppe Fabio, DIAFERIO, Lucia, BRINDISI, Giulia, *et al.* Cross-Sectional Survey on Long Term Sequelae of Pediatric COVID-19 among Italian Pediatricians. *Children*, 2021, vol. 8, no 9, p. 769.

**Données UK**

<https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/conditionsanddiseases/bulletins/prevalenceofongoingsymptomsfollowingcoronaviruscovid19infectionintheuk/1april2021>

<https://t.co/P9R24u7NW3?amp=1>

**Données Israel**

https://www.timesofisrael.com/more-than-10-of-israeli-kids-who-got-virus-now-suffer-from-long-covid-study/

**Témoignages Enfants/Adolescents/Medecins**

Fil sur Twitter :

https://twitter.com/Ecole\_Oubliee/status/1376323182450384907?s=20

**Préconisations AAP**

https://www.aap.org/en/pages/2019-novel-coronavirus-covid-19-infections/clinical-guidance/post-covid-19-conditions-in-children-and-adolescents/