

Bērna ar akūtas elpceļu infekcijas slimībām
atpazīšana izglītības iestādē un rīcība bērna
saslimšanas gadījumā

J.PAVĀRE

BĒRNU KLĪNISKĀ UNIVERSITĀTES SLIMNĪCA

10.09.2020.

Saturs

1. COVID-19 bērniem pasaulē un Latvijā.
2. Vai iespējama COVID-19 atpazīšana pēc simptomiem.
3. Biežākās slimības bērniem ar COVID-19 līdzīgu simptomātiku.
4. Kā palīdzēt bērnam un vecākiem, ja vērojamas infekcijas slimības pazīmes.
5. Post-virālais sindroms COVID-19 gadījumā – Latvijas un pasaules pieredze.

-
- Mēs dzīvojam ļoti mainīgā situācijā un katru dienu mums nāk klāt jauna informācija gan par slimības klīniku, gan transmisiju, gan attālinātām sekām.
 - Jebkuri **saprātīgi mēri**, kas tiek pielietoti un **ievēroti**, uztur izcili labu mūsu pašreizējo situāciju valstī un sagatavo mūs brīdim, kad var būt iespējams saslimstības pieaugums.



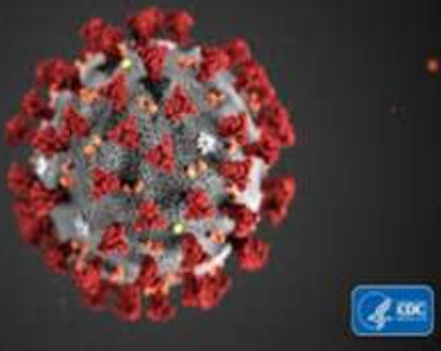
COVID-19 bērnēm pasaulē un Latvijā

Vai COVID-19 bērniem kā slimība ir aktuāla?

1. **ASV 7.8% no** COVID-19 gadījumiem ir bērniem vecumā līdz 18 gadiem (patiesā incidence nav zināma, jo vēl aizvien testēšanas ierobežojumu) – CDC dati;
2. Bērni veido **1% no visiem COVID-19** gadījumiem vecumā līdz 10 gadiem un 4% vecumā no 10-19 gadiem – ECDC dati;
3. Latvijā 8.3% ir bērni
4. COVID -19 inkubācijas periods bērniem 2-14 dienas, vidēji **6 dienas**;
5. Bērniem ir daudz **20x mazāks hospitalizāciju skaits** nekā pieaugušajiem;
6. Vidēji ap **16% bērnu ir asimptomātiski**, bet vienlaikus ir pētījumi, kas min augstākus rādītājus;

Kas vēl zināms par COVID-19 bērniem?

1. Bērniem ir tāds pats vīrusa daudzums elpceļos un viņi var efektīvi izplatīt vīrusu **mājsaimniecībās un nometnēs ar nakšņošanu**, citi pašreizējie pierādījumi par vīrusa transmisiju bērnu vidū nav viennozīmīgi.
2. 10-17 gadus veci pusaudži biežāk inficējas ar SARS-CoV-2 nekā jaunāki bērni, bet noteikti nav riska grupa smagai slimības norisei.
3. Smagāk slimo:
 - Bērni līdz 1 gada vecumam
 - Bērni ar hroniskām saslimšanām – ģenētiskām, neiroloģiskām, astmu, diabētu, sirds un plaušu slimībām.
 - Risks smagākai slimības norisei ir bērniem ar aptaukošanos
 - Nedaudziem ir post-virāla imunoloģiska reakcija- multisistēmu iekaisuma sindroms.



Kīnas dati

- **2135 bērnu** Kīnā ar COVID-19 no 16.01. - 08.02.2020.
- No šiem laboratorī apstiprināti **728 gadījumi**, neapstiprināti 1407 gadījumi.
- Bērnu mediānais vecums 7 gadi.
- No visiem bērniem 1208 (56,6%) bija zēni.
- Vairāk nekā 90% bērni bija asimptomātiski, vieglu vai vidēji smagu gaitu.
- Klīnisko pazīmju apraksts nav īpaši detalizēts, bet pirmo reizi tiek minēts, ka smagāk slimības gaita ir vecuma grupā līdz 1 gadam (10.6% saslimušo šajā vecuma grupā).

Epidemiology of COVID-19 Among Children in China

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abstract

OBJECTIVE: To identify the epidemiological characteristics and transmission patterns of pediatric patients with the 2019 novel coronavirus disease (COVID-19) in China.

METHODS: Nationwide case series of 2135 pediatric patients with COVID-19 reported to the Chinese Center for Disease Control and Prevention from January 16, 2020, to February 8, 2020, were included. The epidemic curves were constructed by key dates of disease onset and case diagnosis. Onset-to-diagnosis curves were constructed by fitting a log-normal distribution to data on both onset and diagnosis dates.

RESULTS: There were 728 (34.1%) laboratory-confirmed cases and 1407 (65.9%) suspected cases. The median age of all patients was 7 years (interquartile range: 2–13 years), and 1208 case patients (56.6%) were boys. More than 90% of all patients had asymptomatic, mild, or moderate cases. The median time from illness onset to diagnosis was 2 days (range: 0–42 days). There was a rapid increase of disease at the early stage of the epidemic, and then there was a gradual and steady decrease. The disease rapidly spread from Hubei province to surrounding provinces over time. More children were infected in Hubei province than any other province.

CONCLUSIONS: Children of all ages appeared susceptible to COVID-19, and there was no significant sex difference. Although clinical manifestations of children's COVID-19 cases were generally less severe than those of adult patients, young children, particularly infants, were vulnerable to infection. The distribution of children's COVID-19 cases varied with time and space, and most of the cases were concentrated in Hubei province and surrounding areas. Furthermore, this study provides strong evidence of human-to-human transmission.

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Prof Tong conceptualized and designed the study, collected data, drafted the initial manuscript, obtained the funding, and reviewed and revised the manuscript. Ms Deng and Dr Ma conducted the initial analyses, drafted the initial manuscript, and reviewed and revised the manuscript. Dr Qi, Mr Hu, and Prof Jiang and Jiang critically reviewed the manuscript for important intellectual content, and all authors approved the final manuscript as submitted and agree to be accountable for all aspects of the work.

DOI: <https://doi.org/10.1542/peds.2020-0702>

Accepted for publication Mar 10, 2020

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WHAT'S KNOWN ON THIS SUBJECT: A growing number of studies have focused on the 2019 novel coronavirus disease (COVID-19) since its outbreak, but few data are available on epidemiological features and transmission patterns in children with COVID-19.

WHAT THIS STUDY ADDS: Children of all ages were susceptible to COVID-19, but no significant sex difference was found. Clinical manifestations of pediatric patients were generally less severe than those of adult patients. However, young children, particularly infants, were vulnerable to 2019 novel coronavirus infection.

Key words: Deng Y, Ma X, Hu Y, et al. Epidemiology of COVID-19 Among Children in China. *Pediatrics* 2020;145(3):e20200702

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PEDIATRICS | Volume 145, number 3, June 2020 | e20200702

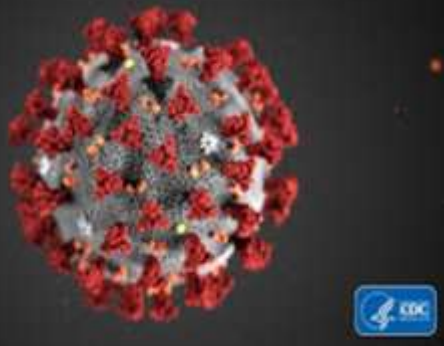
ARTICLE

Klasiskās COVID-19 pazīmes

Drudzis

un

respiratori simptomi (klepus, elpošanas grūtības, sāpes kaklā).



ASV dati

Morbidity and Mortality Weekly Report

Coronavirus Disease 2019 in Children — United States, February 12–April 2, 2020

CDC COVID-19 Response Team

On April 6, 2020, this report was posted as an MMWR Early Release on the MMWR website (<https://www.cdc.gov/mmwr>).

As of April 2, 2020, the coronavirus disease 2019 (COVID-19) pandemic has resulted in >890,000 cases and >45,000 deaths worldwide, including 239,279 cases and 5,443 deaths in the United States (1,2). In the United States, 22% of the population is made up of infants, children, and adolescents aged <18 years (children) (3). Data from China suggest that pediatric COVID-19 cases might be less severe than cases in adults and that children might experience different symptoms than do adults (4,5); however, disease characteristics among pediatric patients in the United States have not been described. Data from 149,760 laboratory-confirmed COVID-19 cases in the United States occurring during February 12–April 2, 2020 were analyzed. Among 149,082 (99.6%) reported cases for which age was known, 2,572 (1.7%) were among children aged <18 years. Data were available for a small proportion of patients on many important variables, including symptoms (9.4%), underlying conditions (13%), and hospitalization status (33%). Among those with available information, 73% of pediatric patients had symptoms of fever, cough, or shortness of breath compared with 93% of adults aged 18–64 years during the same period; 5.7% of all pediatric patients, or 20% of those for whom hospitalization status was known, were hospitalized, lower than the percentages hospitalized among all adults aged 18–64 years (10%) or those with known hospitalization status (33%). Three deaths were reported among the pediatric cases included in this analysis. These data support previous findings that children with COVID-19 might not have reported fever or cough as often as do adults (4). Whereas most COVID-19 cases in children are not severe, serious COVID-19 illness resulting in hospitalization still occurs in this age group. Social distancing and everyday preventive behaviors remain important for all age groups as patients with less serious illness and those without symptoms likely play an important role in disease transmission (6,7).

Data on COVID-19 cases were reported to CDC from 50 states, the District of Columbia, New York City, and four U.S. territories. Jurisdictions voluntarily report data on laboratory-confirmed cases using a standardized case report form.* Data on cases occurring during February 12–April 2, 2020 and submitted through an electronic case-based COVID-19

* <https://www.cdc.gov/coronavirus/2019-nCoV/downloads/pai-form.pdf>.

surveillance database were reviewed for this report. Data submitted to CDC are preliminary and can be updated by health departments as more data become available. At the time of this analysis, characteristics of interest were available for only a minority of cases, including hospitalization status (33%), presence of preexisting underlying medical conditions (13%), and symptoms (9.4%). Because of the high percentage of cases with missing data and because cases with severe outcomes are more likely to have hospitalization or intensive care unit (ICU) status reported, percentages of patients hospitalized, including those admitted to the ICU, were estimated as a range, for which the denominator for the lower bound included cases with both known and unknown hospitalization or ICU status, and the upper bound included only cases with known hospitalization or ICU status. For other characteristics, percentages were calculated from among the number of cases with known information for that characteristic. Demographics of COVID-19 cases were assessed among cases in children aged <18 years and adults aged ≥18 years. Because clinical severity of COVID-19 is higher among adults aged ≥65 years than in younger age groups (8), clinical features including symptoms and hospitalizations were assessed among adults aged 18–64 years and compared with those among the pediatric cases. Statistical comparisons were not performed because of the high percentage of missing data.

As of April 2, 2020, data on 149,760 laboratory-confirmed U.S. COVID-19 cases were available for analysis. Among 149,082 (99.6%) cases for which patient age was known, 2,572 (1.7%) occurred in children aged <18 years and 146,510 (98%) in adults aged ≥18 years, including 113,985 (76%) aged 18–64 years. Among the 2,572 pediatric cases, 850 (33%) were reported from New York City; 584 (23%) from the rest of New York state; 393 (15%) from New Jersey; and the remaining 745 (29%) from other jurisdictions. The distribution of reporting jurisdictions for pediatric cases was similar to that of reporting jurisdictions for cases among adults aged ≥18 years, except that a lower percentage of adult cases was reported from New York state (14%). The first pediatric U.S. COVID-19 case was reported to CDC on March 2, 2020; since March 5, pediatric cases have been reported daily (Figure 1).

Among all 2,572 COVID-19 cases in children aged <18 years, the median age was 11 years (range 0–17 years). Nearly one third of reported pediatric cases (813; 32%) occurred in children aged 15–17 years, followed by those in children aged 10–14 years (682; 27%). Among younger

2572 bērnu līdz 18 gadiem:

- ✓ Drudzis 56%
- ✓ Klepus 54%
- ✓ Galvassāpes 28%
- ✓ Mialģijas 23%
- ✓ Žāvas hiperēmija 24%
- ✓ Diareja 13%
- ✓ Vemšana 11%

Saslimušo sadalījums pa vecuma grupām

<1 gads	15%
1 līdz 4 gadi	11 %
5 līdz 9 gadi	15%
10 līdz 14 gadi	27 %
15 līdz 17 gadi	32%

- 91% inficēšanās notika mājstaimniecībā
- No hospitalizētajiem 77% bija blakussaslimšanas

Kādas atziņas nāca klāt laika gaitā?

Drudzis

un

respiratori simptomi (klepus, elpošanas grūtības, sāpes kaklā)

**KLĪNISKO SIMPTOMU KOMPLEKSS
IR PAPLAŠINĀMS**



Characteristics of Hospitalized Pediatric Coronavirus Disease 2019 Cases in Chicago, Illinois, March–April 2020

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01.06.2020.

BJA

British Journal of Anaesthesia, xxxx (xxxx): xxx (xxxx)

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Presenting symptoms of COVID-19 in children: a meta-analysis of published studies

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After the First Wave of COVID-19: Reflections From Italy

Luisa Galli, MD,* Elena Chiappini, MD, PhD,* and Richard Fabian Schumacher, MD†

COVID-19 in children and adolescents in Europe: a multinational, multicentre cohort study



Florian Götzinger*, Begoña Santiago-García*, Antoni Noguera-Julán, Miguel Lanaspa, Laura Lancelotti, Francesco I Colò Carducci, Natalia Galbraith, Svetlana Vefizanova, Petra Prunk, Veronika Osterman, Uros Krivec, Andrea Lo Vecchio, Delane Shingadia, Antoni Soriani-Aranda, Susana Melendo, Marcello Lanari, Luca Pierantoni, Noémie Wagner, Arnaud G L'Huillier, Ulrich Heininger, Nicole Ritz, Sini Bandi, Nina Krajcar, Srdan Rogic, Mar Santos, Christelle Christiaens, Marine Creuven, Danilo Buonsenso, Steven B Welch, Matthias Böge, Folke Brinkmann, Marc Tebbe, on behalf of the ptbnet COVID-19 Study Group†

Summary

Background To date, few data on paediatric COVID-19 have been published, and most reports originate from China. This study aimed to capture key data on children and adolescents with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection across Europe to inform physicians and health-care service planning during the ongoing pandemic.

Methods This multicentre cohort study involved 82 participating health-care institutions across 25 European countries, using a well established research network—the Paediatric Tuberculosis Network European Trials Group (ptbnet)—that mainly comprises paediatric infectious diseases specialists and paediatric pulmonologists. We included

Lancet Child Adolesc Health
2020; 4: 652–63
Published Online
June 25, 2020
[https://doi.org/10.1016/S2352-4642\(20\)30177-2](https://doi.org/10.1016/S2352-4642(20)30177-2)

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Characteristics and Outcomes of Children With Coronavirus Disease 2019 (COVID-19) Infection Admitted to US and Canadian Pediatric Intensive Care Units

Lara S. Shekerdemian, MD, MHA; Nabihah R. Mahmood, MD; Katie K. Wolfe, MD; Becky J. Riggs, MD; Catherine E. Ross, MD; Christine A. McKiernan, MD; Sabrina M. Heidemann, MD; Lawrence C. Kleinman, MD, MPH; Anita I. Sen, MD; Mark W. Hall, MD; Margaret A. Priestley, MD; John K. McGuire, MD; Konstantinos Boukas, MD; Matthew P. Sharron, MD; Jeffrey P. Burns, MD, MPH; for the International COVID-19 PICU Collaborative

11.05.2020.

Journal Pre-proof

Pediatric SARS-CoV-2: Clinical Presentation, Infectivity, and Immune Responses

Lael M. Yonker, MD, Anne M. Neilan, MD, Yannic Bartsch, PhD, Ankit B. Patel, MD, PhD, James Regan, BS, Puneeta Arya, MD, Elizabeth Gootkind, BA, Grace Park, BS, Margot Hardcastle, BA, Anita St. John, RN, Lori Appleman, RN, Michelle L. Chiu, MD, Allison Fialkowski, BS, Denis De la Flor, BS, Rosiane Lima, BS, Evan A. Bordt, PhD, Laura J. Yockey, MD, PhD, Paolo D'Avino, BS, Stephanie Fischinger, MSc, Jessica E. Shui, MD, Paul H. Lerou, MD, Joseph V. Bonventre, MD, PhD, Xu G. Yu, MD, Edward T. Ryan, MD, Ingrid V. Bassett, MD, MPH, Daniel Irimia, MD, PhD, Andrea G. Edlow, MD, Galit Alter, PhD, Jonathan Z. Li, MD, MMSc, Alessio Fasano, MD



PII: S0022-3476(20)31023-4
DOI: <https://doi.org/10.1016/j.jpeds.2020.08.037>
Reference: YMPD 11714

To appear in: *The Journal of Pediatrics*

Received Date: 29 July 2020
Revised Date: 10 August 2020
Accepted Date: 13 August 2020



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FAST TRACK

Clinical characteristics of children and young people admitted to hospital with covid-19 in United Kingdom: prospective multicentre observational cohort study

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Cite this as: *BMJ* 2020;370:m3249 <http://dx.doi.org/10.1136/bmj.m3249>

Accepted: 17 August 2020

ABSTRACT OBJECTIVE

To characterise the clinical features of children and young people admitted to hospital with laboratory confirmed severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection in the UK and explore factors associated with admission to critical care, mortality, and development of multisystem inflammatory syndrome in children and adolescents temporarily related to coronavirus disease 2019 (covid-19) (MIS-C).

MAIN OUTCOME MEASURES

Admission to critical care (high dependency or intensive care), in-hospital mortality, or meeting the WHO preliminary case definition for MIS-C.

RESULTS

Median age was 4.6 (interquartile range 0.3-13.7) years; 35% (225/651) were under 12 months old, and 56% (367/650) were male. 57% (330/576) were white, 12% (67/576) South Asian, and 10% (56/576) black. 42% (276/651) had at least one recorded comorbidity. A systemic mucocutaneous-

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Seroprevalence of SARS-CoV-2 antibodies in children - A prospective multicentre cohort study.

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Papildus COVID-19 klīniskās izpausmes bērniem

- I. Samērā bieži sastopamas slimības pazīmes, kurus pašiem bērniem ir grūti aprakstīt vai viņu vecākiem pamanīt - muskuļu sāpes, nogurums, galvassāpes.
- II. 30% bērnu ir sūdzības no gremošanas sistēmas puses – vemšana, slikta dūša, vēdera sāpes.
- III. Jāpievērš uzmanība aukstuma sajūtai – *chills*, kas ir atšķirīga no klasiska drudža “*shake*” jeb kratīšanās sajūtas drudža pirmā fāzē
- IV. Ožas un garšas izmaiņas.

Diarrhoea, vomiting and stomach cramps should be official symptoms of coronavirus in children, say scientists who found they were 'strongly associated' with the illness

- Study by Northern Irish researchers found stomach problems were common
 - Coughing and lost sense of smell were not seen as often in child patients
 - Tests currently limited to members of the public with narrow list of symptoms
 - NHS only recognises cough, fever and lost sense of smell or taste as signs
 - In the US there are 11 symptoms including vomiting and diarrhoea
-

COVID 19 SIMPTOMI

Kādi ir iespējamie simptomi, kas jāzina?



COVID-19 simptomi pēc ASV CDC datiem

- 1) Drudzis vai drebuļi
- 2) Klepus
- 3) Elpas trūkums vai elpošanas grūtības;
- 4) Nogurums;
- 5) Muskuļu un ķermeņa sāpes;
- 6) Galvassāpes;
- 7) Ožas vai garšas zudums;
- 8) Kakla sāpes;
- 9) Iesnas;
- 10) Slikta dūša, vemšana, vēsēra sāpes;
- 11) Caureja.

BKUS Check list (Rīcības skala)

2. Biežākie simptomi: vai ir <u>iebūkurš</u> no minētajiem simptomiem? ☐ Jā ☐ Nē	
☐ Drudzis (pasvītrots): ☐ < 37,5 °C ☐ 37,5 – 38,0 °C ☐ 38,1 – 39,0 °C ☐ > 39,0 °C ☐ Klepus ☐ Sāpes kaklā ☐ Šķaudīšana ☐ Elpas trūkums	☐ Sēkšana ☐ Mialģija ☐ Nogurums ☐ Galvas sāpes ☐ Drebuļi, aukstuma sajūta
3. Papildus simptomi: vai ir <u>iebūkurš</u> no minētajiem simptomiem? ☐ Jā ☐ Nē	
☐ Rinoreja ☐ Aizlikts deguns ☐ Tahipnoja ☐ Tahikardija ☐ Skābekļa saturācija <92%	☐ Sāpes vēderā ☐ Caureja ☐ Vemšana ☐ Slihta dūša ☐ Ožas un garšas izmaiņas
4. Vai pacientam ir blakussaslimšana? ☐ Jā ☐ Nē	
☐ Hroniskas nieru slimības ☐ Hroniskas aknu slimības ☐ Hroniskas plaušu slimības (astma, CF, utml.) ☐ Sirds un asinsvadu slimības ☐ Hematoonkoloģiskas slimības	☐ Endokrīnas saslimšanas ☐ Reimatoģiskas saslimšanas ☐ Imūnsupresija ☐ Smaga aptaukošanās (BMI >40kg/m ²) ☐ Grūtniecība ☐ Citas
5. Veicamie izmeklējumi:	
Primārie izmeklējumi: ☐ Pilna asinsaina ☐ CRO ☐ IL-6 ☐ ASAT, ALAT ☐ Urea, Kreatinīns ☐ Glikoze ☐ Troponīns ☐ CK-MB ☐ LDH ☐ Kreatīnkināze ☐ RTG krūškurvim, pēc indikācijām	Jā bērs atbilst multīsistēmu iekaisuma gadījuma definīcijai¹, tad papildus nekavējotī veicams: ☐ EGĀ ☐ Kaogulogramma, D-dimēri ☐ Ferritīns ☐ Albumīns ☐ Triglicerīdi ☐ Asins gāzes, elektrolīti, pēc indikācijām ☐ Asins uzsējums ☐ Ehokardioskopija un EKG ☐ USG vēdera dobuma orgāniem
¹Rets sindroms, kuram raksturīgas pediātrisku iekaisuma sindromu- Kawasaki slimības, toksiska šoka un makrofāgu aktivācijas sindroma pazīmju pārklāšanās (drudzis, vēdera sāpes un gastrointestināli simptomi ar vai bez kardiālās disfunkcijas) kombinācijā ar smagu limfopēniju un izteiktu iekaisuma marķieru palielināšanos. <u>Gadījuma definīcija</u> Bērs ar: 1) Peristējošu drudzi; 2) Iekaisuma parametriem analīzēs (neitrofilija, limfopēnija un augsts CRP); 3) Multiorgānu disfunkcija (šoks, kardiāla, respiratora, gastrointestināla, renāla, neiroģiska iesaiste). Pilna vai nepilna Kawasaki pazīmes.]	

COVID-19 simptomi bērniem pasaulē un Latvijā

	ASV 64 bērni	Eiropa (582 bērni no 21 valsts)	Meta-analīze (28 pētījumi 1614 bērni)	ASV (Massachust) 67 bērni)	UK (651 bērns, 138 slimnīcas)	LV (30 bērni)
Drudzis (%)	56	65	48	51	70	46
Klepus (%)	75	54	40	46	30	23
<u>Galvassāpes (%)</u>	56	28	13	26	15	23
Kakla sāpes (%)	25	54	14	34	8	20
Elpas trūkums	27			16	30	3
Rinoreja (%)				28	14	27
<u>Muskuļu sāpes (%)</u>	23		14	28	31	3
<u>Gastrointestināli simpt (%)</u>	16	22	10	6	32	15
<u>Ožas un grašas zudumi (%)</u>				20		12
Drebuļi (%)	8			8.2		
<u>Nogurums (%)</u>			8	4	28	23

Latvijā

1. Latvijā pašreiz pieejami dati par 35 bērniem.
2. 9 stacionēti, 2 tikai Neatliekamās palīdzības nodaļas līmenī.
3. Vienam bērnam neiroloģiska simptomātika – atkārtotas krampju lēkmes, izteiktas galvassāpes; viens bērns bija orgāna transplantāta pacients.
4. Vidējais stacionēšanas ilgums 9 dienas, to ietekmējuši sociāli iemesli 1 bērnam un 2 pacienti ar smagāku slimības gaitu
5. Epidemioloģiskie dati – bērni galvenokārt inficējušies ģimenēs, ciešos kontaktos, nav neizsekojami inficēšanās gadījumi.



Vai iespējama COVID-19 atpazīšana pēc
simptomiem?

**BĒRNIEM COVID-19 ATPAZĪŠANA UN
DIAGNOSTICĒŠANA TIKAI PĒC
SIMPTOMIEM NAV IESPĒJAMA!**

Pamatojums

1. Bērniem simptomi ir **mazāk izteikti** un ap 16% bērnu ir asimptomātiski.
2. Latvijā 17% bērnu bija asimptomātiski, 80% bija viegla slimības gaita un 3% vidēji smaga.
3. Ir simptomu pārklāšanās ar citām slimībām.
4. Bērni NEPROT APRAKSTĪT UN ANALIZĒT SAVAS IZJŪTAS, SALĪDZINĀT AR CITĀM SLIMOŠANAS REIZĒM.
5. ROBEŽA STARP HIPOHONDRIJU UN NEVĒRĪBU PRET SAVU VESELĪBU IR ŠAURA.

-
1. Pašreiz pieejamā informācijas līmenī nekur netiek rekomendēta ikdienas visaptverošana bērnu simptomu skrīnēšana jeb pārbaudīšana ar mērķtiecīgu bērnu izvaicāšanu vai liekot aizpildīt *check list*, ja vien tas nav pierādīts infekcijas perēklis.
 2. CDC – simptomu skrīnēšanai ir nozīme, ja tā korelē ar COVID-19 izplatību sabiedrībā.
 3. Ja simptomu skrīnēšana tiek aktīvi lietota vietās, kur ir zema infekcijas izplatība, ar vislielāko varbūtību tiks atklātas citas slimības, ne COVID-19.

Preprint – Fevers rare in the morning

Submission Type: Research Letter / Brief Report

Submission Topic: COVID-19

Fevers Are Rarer in the Morning—Could We Be Missing Infectious Disease Cases by Screening for Fever Then?

Authors: Charles Harding, Francesco Pompei, Samantha F Bordonaro, Daniel C McGillicuddy, Dmitriy Burmistrov, Leon D Sanchez*

*Corresponding author

Temperatūras mērījumi, īpaši ar skrīnējošām ierīcēm, kuras mēra ādas temperatūru, turklāt kā paredzēts, vairāk rīta stundās, nevar tikt izmantoti kā drošs un vienīgais rīks COVID -19 diagnostikā bērniem.

Preprint – Fevers rare in the morning

Abstract (54/50 words)

We retrospectively studied US emergency department visits ($n=295,406$), including nationally representative results. Patients were less likely to have detectable fevers during mornings, with especially large morning-evening differences during influenza outbreaks (national $RR=0.56$, $95\%CI=0.47-0.66$). This suggests morning screenings could miss otherwise-detectable cases. Twice-daily screenings could be a simple solution. However, similar COVID-19 research is needed.

Keywords: Body Temperature; Communicable Diseases; COVID-19; Fever; Influenza, Human; Mass Screening; Preventive Measures; Thermometers; Vital Signs

Article Summary Line: Fevers were about half as common in the morning as in the evening during influenza outbreaks, suggesting that mornings may be a bad time to perform once-daily fever screenings for infectious diseases, and that twice-daily screenings could be preferable.



Biežākās slimības bērniem ar COVID-19 līdzīgu
simptomātiku

Jādiferencē no divām galvenām slimību grupām

- I. Citas infekciju izcelsmes slimības
- II. Hronisku slimību esoši simptomi vai to paasinājumi

Šo abu slimību grupu simptomi ar COVID-19 iespējamo simptomātiku pārklājas!

Simptomu skrīnēšana identificē tikai bērnus, kuriem VAR BŪT ir kāda slimība, bet nenosaka to, ka šī slimība ir tieši COVID-19.

COVID 19 SIMPTOMI

	Covid 19 simptomi	Strep angīna	Saauks- tēšanās	Gripa	Astma	Sezonālās alergijas
Drudzis		✓		✓		
Klepus			✓	✓	✓	✓
Sāpošs kakls		✓	✓	✓		✓
Elpas trūkums					✓	
Nogurums			✓	✓	✓	✓
Caureja vai vemšana		✓		✓		
Iesnas			✓	✓		✓
Sāpes muskulos		✓	✓	✓		

✓ Symptom of illness

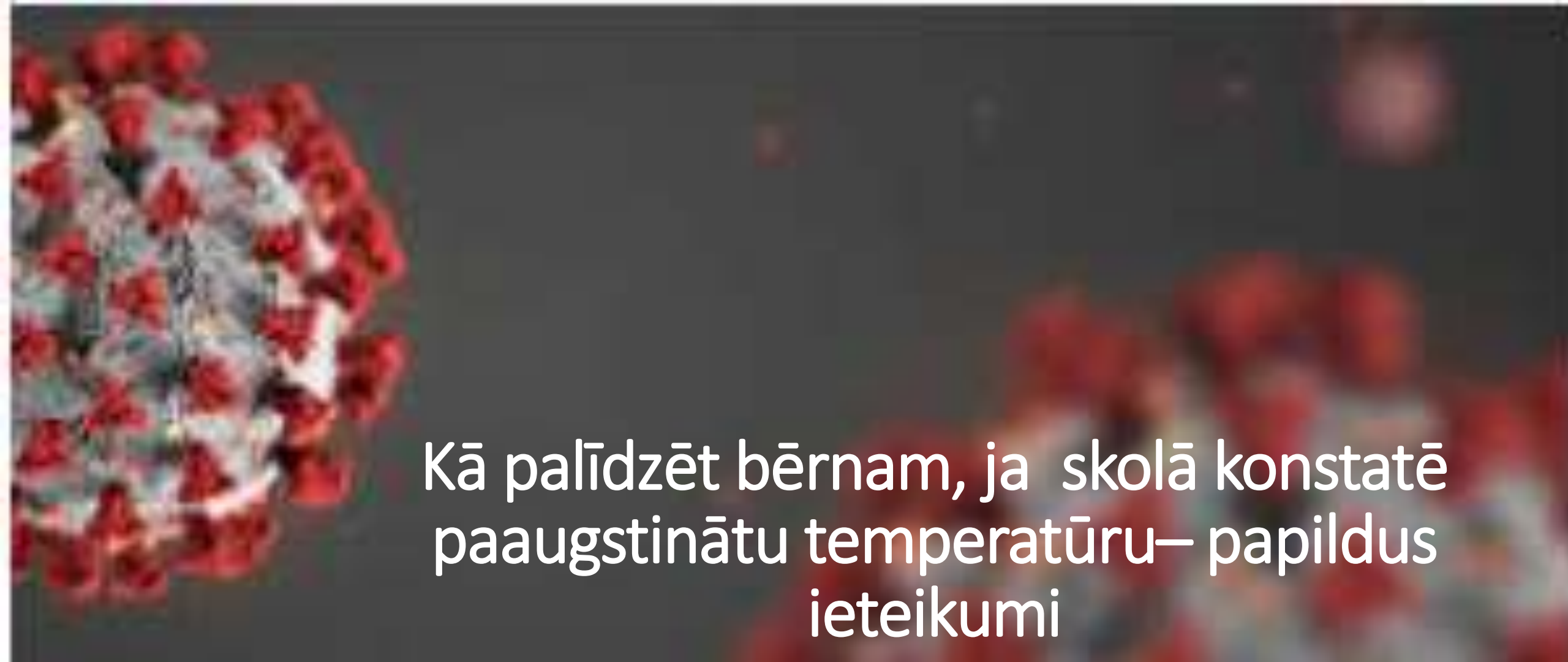


cdc.gov/coronavirus

COVID-19: July 20, 2020 10:34 AM

Jāiegaumē:

1. COVID-19 **biežākais simptoms ir paaugstināta temperatūra**, bet tā ir sastopama arī daudzu citu infekciju gadījumā.
2. Īpaši bieži drudzis ir maziem bērniem – **līdz 5-6 gadu vecumam ir pilnīgi normāli, ka bērnam ir 6-8 akūtas vīrusu infekcijas gadā**, turklāt ar augstu temperatūru.
3. **Vissvarīgā COVID-19 diagnostikā pašreiz ir epidemioloģiskā anamnēze** – ceļojumi, kontakti mājsaimniecībās un citur.



Kā palīdzēt bērnam, ja skolā konstatē
paaugstinātu temperatūru— papildus
ieteikumi

Ja bērnam konstatē paaugstinātu temperatūru (papildus IZM ieteikumiem)



1. Bērnu lūdz atgērbties, iespējami novelkot vismaz vienu drēbju kārtu.
2. Atsēdina, iedot padzerties (vēlams remdenu, ne karstu dzērienu).
3. Pavaicā, ko darījis pirms tam.
4. Nomierina.
5. Pārmēra temperatūru pēc 10 – 15 minūtēm.
6. Pavaicā, kā juties no rīta mājās un iepriekšējās dienas vakarā, vai labi gulējis.
7. Vienlaikus neuzkrītoši pavēro citas iespējamās pazīmes un ievāc datus par citiem simptomiem, **bet neradot bērnam satraukumu.**
8. Ja tiešām ir augsta temperatūra, var uz pieres uzlikt **vēsu apliekamo**.
9. Ja dod temperatūru pazeminošu medikamentu – deva atbilstoša svaram un vecumam un noskaidrot, vai jau nav lietoti citi medikamenti, vai nav alerģijas.
10. Atcerēties, ka patiešām bērnam var būt drudzis un tā pirmā fāzē, sašaurinoties asinsvadiem, var būt auksti. Tad gan bērnu sasedz un dod padzerties siltu ūdeni.
11. Neatkarīgi no iemesla, bērnam mudina dzert, ja vien nav slikta dūša vai vemšana.

Kā palīdzēt pašiem sev?

1. Jābūt kritiski – analītiskiem, saprotot, ka pašreizējā epidemioloģiskā situācija valstī ne vienmēr veicina pilnīgu atbalsta/izpratnes gūšanu sabiedrībā par COVID-19 piesardzības pasākumu īstenošanu.
2. Jāatgādina, pašreizējā situācija ir iespējama tikai pateicoties iepriekš ievērotiem pasākumiem

Atcerēties:

JEBKURA PIENĒMTĀ IEROBEŽOJUMA IEGUVUMS BĒRNIEM JĀSALĀGO AR POTENCIĀLO KAITĒJUMU:

Riski:

- 1) Stigmatizēta attieksme pret pārslimojušiem.
- 2) Stigmatizēta attieksme pret tiem, kuri identificēti ar jebkādiem akūtas saslimšanas simptomiem.
- 3) Ikdienas pārraudzība var emocionāli ietekmēt bērnus.
- 4) Risks hronisko slimo bērnu papildus izolēšanai no izglītības procesa.

Ko iegaumēt vecākiem:

1. Ir svarīgi, ka visi bērni, kuri ir slimi, paliek mājās vismaz vēl 24 stundas no tā brīža, kad viņiem vairs nav temperatūras (37.5°C vai augstāk) un citas drudža pazīmes (drebuļi, aukstuma vai karstuma sajūta, apsārtusi seja, svīšana), un vismaz 24 h nav lietoti temperatūru pazeminoši līdzekļi.
2. Pašreiz galvenā COVID-19 transmisija nenotiek izglītības iestādēs, bet gan visās aktivitātēs ārpus tām – visbiežāk neformālos pasākumos un pusaudžu vidū.
3. Eiropā un Baltijas valstīs saslimstībā pieaug, turklāt COVID-19 “kļūst aizvien jaunāks”.
4. Vakcīna reāli patērētājam nebūs pieejama vismaz šogad noteikti.



Post-virālais sindroms COVID-19 gadījumā – Latvijas un pasaules pieredze

Paul Garner: For 7 weeks I have been through a roller coaster of ill health, extreme emotions, and utter exhaustion

May 5, 2020

Paul Garner, professor of infectious diseases at Liverpool School of Tropical Medicine, discusses his experience of having covid-19



67.5k



In mid March I developed covid-19. For almost seven weeks I have been through a roller coaster of ill health, extreme emotions, and utter exhaustion. Although not hospitalised, it has been frightening and long. The illness ebbs and flows, but never goes away. Health professionals, employers, partners, and people with the disease need to know that this illness can last for weeks, and the long tail is not some “post-viral fatigue syndrome”—it is the disease. People who have a more protracted illness need help to understand and cope with the constantly shifting, bizarre symptoms, and their unpredictable course.



Professor Paul Garner, an expert in tropical diseases was also infected with Covid-19, which left the fit and healthy 64-year-old clinician facing extreme fatigue

05.05.2020.



Margaret O'Hara says she knows she is fortunate in having a supportive family and employer.

Like Pescarolo, O'Hara has noticed her mind seems less sharp. "I have brain fog, I can't function. I have a PhD in physics and I can't put two thoughts together," she said.

However, as an administrator on the Long Covid Support Group, she is aware that she is fortunate in having a supportive family and employer.

Research Letter

FREE

July 9, 2020

Persistent Symptoms in Patients After Acute COVID-19

Angelo Carfi, MD¹; Roberto Bernabei, MD¹; Francesco Landi, MD, PhD¹; [et al](#)

» [Author Affiliations](#) | [Article Information](#)

JAMA. 2020;324(6):603-605. doi:10.1001/jama.2020.12603

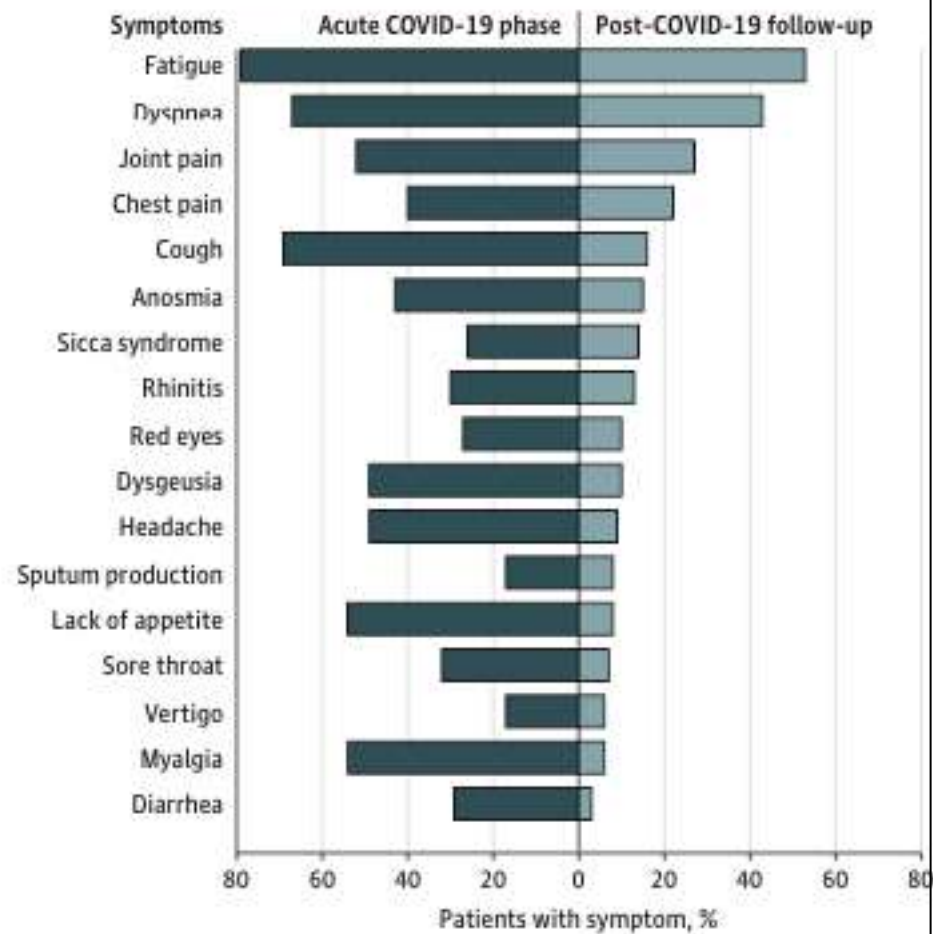


COVID-19 Resource Center



**Related
Articles**

Figure. COVID-19-Related Symptoms



The figure shows percentages of patients presenting with specific coronavirus disease 2019 (COVID-19)-related symptoms during the acute phase of the disease (left) and at the time of the follow-up visit (right).

BKUS/RSU pētniecība Valsts pētījumu programmas ietvaros

I. No 32 analizētiem pacientiem 9 (28%) ir saglabājušies ilgstoši post virāli simptomi:

- 3 bērniem ir ilgstoša subfebrilitāte, vienam bērnam pat 37.8 C temperatūra
- 2 bērniem periodiskas iepriekš nebijušas galvassāpes
- 2 bērniem ilgstošs nogurums, samazināts aktivitātes līmenis
- 1 bērnam sāpes locītavās
- 2 bērniem saglabājušās ožas izmaiņas, 1 arī garšas
- 1 iepriekš veselam bērnam ilgstoša hematūrija, atrodas nefrologa uzraudzībā
- 2 bērniem ilgstoša nemainīga limfadenopātija

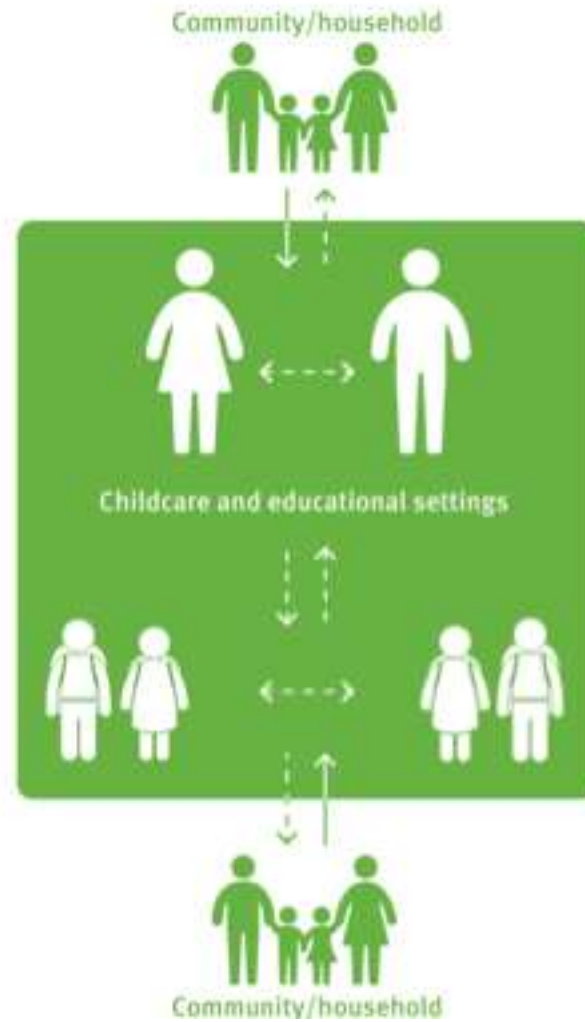
II. COVID-19 ir ietekme uz ģimenes dzīves kvalitāti

III. Ietekme uz bērnu psihoemocionālo stāvokli.

COVID-19 in children and the role of school settings in COVID-19 transmission

6 August 2020

Figure 3. Diagram of known transmission routes between children and adults within childcare and educational settings and between the community/household



Bērni – bērni transmisija skolā

Dati par skolu slēgšanu/atvēršanas ietekmi uz transmisiju sabiedrībā ir pretrunīgi, bet pašreiz novērotais no dažām Eiropas valstīm neliecina nozīmīgu infekcijas pieaugumu sabiedrībā, atverot skolas un bērnudārzus.

- 1) Francijā viens bērns ar lielu daudzumu kontaktpersonu trīs atsevišķās skolās neinficēja nevienu, testējot gan simptomātiskos, gan asimptomātiskos kontaktus.
- 2) Īrijā 924 bērni un 101 pieaugušais kontaktēja ar 6 inficētiem (3 bērni un 3 pieaugušie), 14 dienu laikā netika identificēts neviens apstiprināts gadījums. Tiesa, netika testēti asimptomātiskie.
- 3) Somijā 12 gadīgs inficēts apmeklēja skolu, nerasīma neviens no 121 kontakts, testēti tika 89 no tiem.
- 4) Austrālijā 9 COVID-19 pacienti, viens sekundāri pozitīvs no 735 ciešiem kontaktiem pirmsskolā

Danis K, Epaulard O, Bénet T, Gaymard A, Campoy S, Bothelo-Nevers E, et al. Cluster of coronavirus disease 2019 (Covid-19) in the French Alps, 2020. Clinical Infectious Diseases. 2020. Heavey L, Casey G, Kelly C, Kelly D, McDarby G. No evidence of secondary transmission of COVID-19 from children attending school in Ireland, 2020. Euro Surveillance: bulletin Européen sur les maladies transmissibles = European communicable disease bulletin. 2020 May;25(21).

Dub T, Erra E, Hagberg L, Sarvikivi E, Virta C, Jarvinen A, et al. Transmission of SARS-CoV-2 following exposure in school settings: experience from two Helsinki area exposure incidents. medRxiv. 2020:2020.07.20.20156018.

Australian National Centre for Immunisation Research and Surveillance (NCIRS). COVID-19 in schools – the experience in NSW [Internet]. Sydney: NCIRS; 2020. Available from: http://ncirs.org.au/sites/default/files/2020-04/NCIRS%20NSW%20Schools%20COVID_Summary_FINAL%20public_26%20April%202020.pdf.

Skolēns - pieaugušais transmisija skolā

- 1) Īrijā neviens no 101 pieaugušā neinficējās no 3 slimiem bērniem
- 2) Austrālijā no 9 slimiem skolēniem neinficējās neviens no 128 pieaugušajiem
- 3) Nīderlandē netika fiksēts neviens gadījums 2020. gada jūnijā

Secinājumi:

Bērni inficējas un, kad ir simptomātiski, izplata vīrusu tādos pašā daudzumā kā pieaugušie un var pārnest infekciju tik pat efektīvi kā pieaugušie, bet mājsaimniecību kontaktos. Asimptomātisku bērnu infekciocitāte nav zināma.

Transmisija izglītības iestādēs ir reti sastopama, bet pie nosacījuma, ja tiek ievēroti visi piesardzības pasākumi.

Skolu aizvēršana pašreizējā pierādījumu līmenī nebūtu efektīva kā vienīgais līdzeklis, lai apturētu SARS-CoV-2 izplatību sabiedrībā.

SARS-CoV-2 Transmission and Infection Among Attendees of an Overnight Camp — Georgia, June 2020

Christine M. Szablewski, DVM^{1,2}; Karen T. Chang, PhD^{2,3}; Marie M. Brown, MPH¹; Victoria T. Chu, MD^{2,3}; Anna R. Yousaf, MD^{2,3}; Ndubuisi Anyalechi, MD¹; Peter A. Aryee, MBA¹; Hannah L. Kirking, MD²; Maranda Lumsden¹; Erin Mayweather¹; Clinton J. McDaniel, MPH²; Robert Montierth, PharmD²; Asfia Mohammed¹; Noah G. Schwartz, MD^{2,3}; Jaina A. Shah¹; Jacqueline E. Tate, PhD²; Emilio Dirlikov, PhD²; Cherie Drenzek, DVM¹; Tatiana M. Lanzieri, MD²; Rebekah J. Stewart, MSN, MPH²

-
1. Konstruktīva pieeja bez pārspīlējumiem un panikas.
 2. Vērot bērnus, sūtīt mājās, ja ir slimības simptomi.
 3. Ja arī bērnam nav COVID-19, bet cita infekcijas slimība, mājās jāpaliek vismaz 24h kopš brīža, kad vairs nav paaugstināta temperatūra (bez temperatūru pazeminošiem līdzekļiem).
 4. Distancēties, neapkampties, mazgāt rokas, vēdināt telpas.
 5. Iet ārā, kustēties.
 6. Jā kāds grib nēsāt masku vai to vajag darīt veselības stāvokļa dēļ – ATBALSTĪT TO!

Lūdzam IEVĒROT:



telpā
NEDRĪKST
uzturēties
VAIRĀK PAR
2 CILVĒKIEM



ievēro
2 M
DISTANCI



ja 2 m
distance nav
iespējama,
OBLIGĀTI
UZLIEC
MASKU



maska
JĀMAINA
IK PĒC
4 H



vienreiz
novilktu
masku
ATKĀRTOTI
NEVELK

KATRS NO JUMS IETEKMĒ DROŠĪBU BĒRNU SLIMNĪCĀ.



Bērnu klīniskā
universitātes
slimnīca

► Esi atbildīgs! ► Sargāsim viens otru!



SARGĀSIM
viens
otru!





Paldies par uzmanību!