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1 **Influence of age on the spread of SARS-CoV-2 variant B.1.1.7**

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17

18 Dear Editor,

19 Previous studies of COVID-19 have indicated that children are less likely to be infected than  
20 adults [1,2]. The rate at which the SARS-CoV-2 virus spreads may depend on the age of the  
21 people infected. A new SARS-CoV-2 variant, B.1.1.7, emerged in the south-east of England in  
22 October 2020 (3) and has subsequently spread to several countries including France. Recent  
23 reports estimate that this new variant is up to 70% more transmissible than the original virus  
24 and is responsible for an increase in the number of cases (4,5). We examined the

25 relationship between the circulation of the SARS-CoV-2 variant B.1.1.7 and the age of those  
26 infected.

27 Nasopharyngeal swab samples were collected at drive-through testing centers and private  
28 laboratories in the Toulouse area between January 8 and March 21, 2021. Samples were  
29 tested using the ThermoFisher TaqPath RT-PCR assay (Scientific TaqPath COVID-19 Combo  
30 Kit, Thermo Fisher, Waltham, USA). All positive samples with a cycle threshold (Ct) below 28  
31 (N-gene) were re-tested using the Illumina CovidSeq test (COVIDSeq, Illumina, USA) on the  
32 Illumina Nova Seq 6000 Sequencing System (Genotoul platform, GeTPlaGe, Toulouse). SARS-  
33 CoV-2 sequences were analysed using the Illumina DRAGEN COVIDSeq test pipeline.

34 A total of 2133 positive samples were analyzed. The subjects' ages ranged from 0.25 years to  
35 99 years (mean:  $34.6 \pm 19.09$ ). The main variants in the Toulouse area on January 8, 2021  
36 were B.1.177 (GV/20E.EU1), 42.1% of the total, and B.1.160 (GH/20A.EU2), 17.1%. The  
37 SARS-CoV-2 variant B.1.1.7 was detected the following week (January 11-17) and became  
38 the majority strain (over 70% of positive tests) during the first week of February (Figure 1A).  
39 We compared the distribution of the B.1.1.7 variant to those of the other variants in young  
40 ( $\leq 20$  years) and older subjects ( $> 20$  years). The proportion of the B.1.1.7 variant was  
41 significantly greater in the young subjects in the period January 8 to March 21 (Figure 1B,  
42  $p=0.04$ , Wilcoxon's signed rank test). The greatest proportion of the B.1.1.7 variant was  
43 found in the 10-20 year old subjects (data not shown).

44 The B.1.1.7 variant therefore seems to spread more rapidly in young people ( $< 20$ ) than in  
45 older people, unlike the classic forms of SARS-CoV-2 (6). This may be due to young people  
46 adhering less rigorously to barrier measures (7). These findings could be relevant to the  
47 design of public health measures intended to contain the spread of SARS-CoV-2.

48

49 **Conflict of Interest**

50 The authors declare no conflict of interest

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53 **Ethical Approval**

54 N/A

55

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63

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### 89 **Figure legend**

90 Figure 1: Proportion of circulating SARS-CoV-2 variant B.1.1.7 among all positive samples (1A) and among positive  
91 samples by age category (1B) in the Toulouse area

92 Week 1: 4-10 January, 2021, Week 2: 11-17 January, 2021, Week 3: 18-24 January, 2021, Week 4: 25-31 January,  
93 Week 5: 1-7 February, 2021, Week 6: 8-14 February, 2021, Week 7: 15-21 February, 2021, Week 8: 22-28  
94 February, 2021, Week 9: 1-7 March, 2021, Week 10: 8-14 March, 2021, Week 11: 15-21 March, 2021

Figure 1

