

Table 4: Neurological symptoms of COVID-19

| Review authors (1st author) who discussed the named symptoms | Symptom       |                           |                            |           |           |                  |         |                             |          |                          |                   |          |                           |                   |                        |             |                          |
|--|---------------|---------------------------|----------------------------|-----------|-----------|------------------|---------|-----------------------------|----------|--------------------------|-------------------|----------|---------------------------|-------------------|------------------------|-------------|--------------------------|
|  | Acute CVD (a) | Altered Mental Status (b) | Changes to smell and taste | Dizziness | Dysphagia | Encephalitis (c) | Fatigue | Guillain-Barre syndrome (d) | Headache | Mental Health Issues (e) | Muscle Issues (f) | Myelitis | Neuralgia/ Polyneuropathy | Ondines Curse (g) | Polyneuritis Cranialis | Seizure (h) | Sensory Disturbances (i) |
| Abdelaziz <sup>11</sup>                                      | x             | x                         | x                          | x         |           |                  |         |                             | x        | x                        | x                 | x        | x                         |                   | x                      |             |                          |
| Abdullahi <sup>12</sup>                                      | x             | x                         | x                          | x         |           |                  |         |                             | x        | x                        | x                 | x        | x                         |                   | x                      | x           |                          |
| Abu-Rumeileh <sup>13</sup>                                   |               |                           | x                          |           | x         | x                | x       | x                           |          | x                        | x                 | x        | x                         | x                 |                        |             |                          |
| Agyeman <sup>14*</sup>                                       |               |                           | x*                         |           |           |                  |         |                             |          |                          |                   |          |                           |                   |                        |             |                          |
| Almqvist <sup>15</sup>                                       | x             | x                         | x                          | x         |           | x                | x       | x                           | x        | x                        | x                 |          | x                         | x                 |                        | x           |                          |
| Asadi-Pooya <sup>16</sup>                                    | x             | x                         |                            | x         |           |                  |         |                             | x        | x                        |                   |          |                           |                   | x                      |             |                          |
| Bahtia <sup>17*</sup>  | x*            |                           |                            |           |           |                  |         |                             |          |                          |                   |          |                           |                   |                        |             |                          |
| Carrillo <sup>18*</sup>                                      |               |                           |                            |           |           |                  |         | x*                          |          |                          |                   |          |                           |                   |                        |             |                          |
| Ceravolo <sup>19</sup>                                       | x             |                           |                            |           | x         |                  | x       | x                           |          | x                        | x                 | x        | x                         | x                 |                        |             |                          |
| Collantes <sup>20</sup>                                      | x             |                           |                            | x         |           |                  |         | x                           | x        | x                        | x                 |          |                           |                   |                        | x           |                          |
| Correia <sup>21</sup>  | x             | x                         | x                          | x         |           | x                |         |                             | x        | x                        | x                 | x        | x                         |                   | x                      |             |                          |
| Di Carlo <sup>22</sup>                                       | x             |                           | x                          | x         |           |                  |         |                             | x        | x                        | x                 |          |                           |                   |                        |             |                          |
| Dinakaran <sup>23</sup>                                      | x             | x                         | x                          | x         |           | x                | x       | x                           | x        | x                        | x                 |          | x                         | x                 |                        | x           |                          |
| Fatima <sup>24*</sup>  | x*            |                           |                            |           |           |                  |         |                             |          |                          |                   |          |                           |                   |                        |             |                          |
| Ghannam <sup>25</sup>  | x             |                           |                            | x         |           | x                | x       | x                           | x        | x                        | x                 | x        | x                         | x                 | x                      | x           |                          |
| Gittermann <sup>26*</sup>                                    |               |                           | x                          |           |           |                  |         | x*                          |          |                          | x                 | x        |                           |                   |                        |             |                          |
| Katal <sup>27</sup>  | x             | x                         |                            | x         | x         | x                | x       |                             | x        | x                        | x                 | x        |                           |                   | x                      | x           |                          |
| Katyay <sup>28</sup>   |               |                           | x                          |           |           |                  |         | x                           |          | x                        | x                 |          | x                         |                   |                        | x           |                          |
| Leonardi <sup>29</sup>                                       | x             | x                         | x                          |           |           | x                |         | x                           | x        | x                        | x                 |          | x                         |                   | x                      | x           |                          |
| Liguoro <sup>30</sup>  |               |                           |                            |           |           |                  | x       |                             |          |                          |                   |          |                           |                   |                        |             |                          |
| Montalvan <sup>31</sup>                                      | x             | x                         | x                          |           |           | x                | x       | x                           | x        | x                        | x                 | x        |                           |                   | x                      |             |                          |
| Narula <sup>32*</sup>  |               | x                         |                            |           |           | x                |         |                             | x        | x                        | x                 |          |                           |                   | x*                     |             |                          |
| Nepal <sup>33</sup>  | x             | x                         | x                          | x         | x         | x                |         | x                           | x        | x                        | x                 | x        |                           |                   | x                      |             |                          |
| Orru <sup>34</sup>   | x             | x                         | x                          | x         |           | x                |         | x                           | x        | x                        | x                 | x        | x                         |                   | x                      | x           |                          |
| Paliwali <sup>35</sup>                                       |               | x                         | x                          |           |           |                  | x       | x                           | x        | x                        | x                 | x        | x                         |                   |                        |             |                          |
| Panda <sup>36</sup>  |               |                           | x                          |           |           | x                | x       | x                           | x        | x                        | x                 |          |                           |                   | x                      |             |                          |
| Pinzon <sup>37</sup>   | x             | x                         |                            | x         |           |                  | x       |                             | x        | x                        | x                 | x        | x                         |                   | x                      | x           |                          |
| Pousa <sup>38</sup>  |               |                           | x                          |           |           |                  | x       |                             | x        | x                        | x                 |          |                           |                   | x                      |             |                          |
| Raschetti <sup>39</sup>                                      |               |                           |                            |           |           |                  |         |                             |          |                          | x                 |          |                           |                   |                        |             |                          |
| Rogers <sup>40</sup>   | x             | x                         |                            | x         |           | x                |         |                             | x        | x                        |                   |          | x                         |                   |                        | x           |                          |
| Scoppettuolo <sup>41</sup>                                   | x             |                           | x                          |           |           | x                |         | x                           |          | x                        | x                 | x        | x                         | x                 | x                      | x           |                          |
| Sharifan <sup>42</sup>                                       | x             | x                         | x                          | x         |           | x                |         | x                           | x        | x                        | x                 | x        | x                         |                   | x                      | x           |                          |
| Taherifard <sup>43</sup>                                     | x             | x                         |                            |           |           | x                | x       | x                           | x        | x                        |                   |          | x                         | x                 |                        |             |                          |
| Tan <sup>44*</sup>   | x*            |                           |                            |           |           |                  |         |                             |          |                          |                   |          |                           |                   |                        |             |                          |
| Trevisanuto <sup>45</sup>                                    |               |                           |                            |           |           |                  |         |                             |          |                          |                   |          |                           | x                 |                        |             |                          |
| Tsai <sup>46</sup>   | x             | x                         | x                          | x         |           | x                |         | x                           |          | x                        | x                 | x        | x                         |                   | x                      | x           |                          |
| Tsivgoulis <sup>47</sup>                                     | x             | x                         | x                          | x         |           | x                | x       | x                           | x        | x                        | x                 |          | x                         |                   |                        |             |                          |

|                         |   |   |    |   |   |   |   |   |   |  |   |   |   |  |   |   |   |  |
|-------------------------|---|---|----|---|---|---|---|---|---|--|---|---|---|--|---|---|---|--|
| Uncini <sup>48</sup>    |   | X | X  |   |   |   |   | X |   |  | X |   | X |  |   |   | X |  |
| Valiuddun <sup>49</sup> | X |   |    |   |   | X |   | X |   |  | X | X | X |  |   |   | X |  |
| Vonck <sup>50</sup>     | X | X | X  | X | X | X |   | X | X |  | X |   | X |  | X | X | X |  |
| Wang <sup>51</sup>      |   | X | X  | X | X | X | X | X | X |  | X | X | X |  |   | X | X |  |
| Werner <sup>52</sup>    | X | X | X  | X |   |   |   |   | X |  | X |   | X |  |   | X | X |  |
| Whittaker <sup>53</sup> | X | X | X  | X |   | X |   | X | X |  | X |   |   |  |   | X | X |  |
| Wilson <sup>54</sup>    | X | X | X  | X |   | X |   |   | X |  |   |   |   |  |   | X |   |  |
| Zahara <sup>55*</sup>   |   |   | X* |   |   |   |   |   |   |  |   |   |   |  |   |   |   |  |

\*These studies specifically looked only at these symptoms

- (a) incl. strokes and blood clots thought to cause stroke
- (b) incl. confusion
- (c) incl. meningitis, encephalopathy
- (d) incl. Miller Fisher Syndrome
- (e) incl. suicidal ideation, psychosis, anxiety, depression
- (f) incl. ataxia, dystonia (specifically sustained upward gaze, dystonic bilateral leg extension, tongue deviation), hypertonia, hypotonia, myalgia, myasthenia gravis, muscle injury, muscle weakness, spasms
- (g) fatal respiratory failure in sleep
- (h) incl. epilepsy
- (i) incl. amblyopia
- (j) incl. insomnia