Diagnosing COVID-19: accuracy of clinical signs and symptoms

This Cochrane Review considers the accuracy of signs and symptoms for diagnosis of COVID-19 in a primary care or hospital outpatient setting. This review updates the original July 2020 version.

Methods and results

- Systematic review (44 studies) and meta-analysis of symptom accuracy in patients with suspected COVID-19
- In **26,885** patients, average COVID-19 prevalence was **21%**

Limitations

- Studies selected participants based on the presence of specific symptoms, so confidence in the evidence is limited.
- Data on symptom combinations (e.g. cough and fever) are too scarce to evaluate.

Conclusions

Neither absence nor presence of a single sign or symptom is accurate enough to rule in or rule out COVID-19.

The combination of **fever**, **cough**, or **loss of sense of smell or taste** may be useful to select patients for further confirmatory COVID-19 testing.



Sensitivity: percentage of true positives out of all patients with COVID-19. Multiple tests had sensitivity > 50% Specificity: percentage of true negatives out of all patients without COVID-19. Multiple tests had specificity > 90% **Pooled sensitivity Pooled specificity 14** symptoms (95% CI) (95% CI) with enough 63.8% (35.0-71.7) 67.4% (53.3-78.9) **Fever** evidence for Headache 21.9% (9.2-43.5) 80.1% (60.2-91.4) meta-analysis Sense of smell loss 93.4% (88.3-96.4) 28.0% (17.7-41.3) **Smell or taste loss** 41.0% (27.0-56.6) 90.5% (81.2-95.4) Sense of taste loss 24.8% (12.4-43.5) 91.4% (81.3-96.3) Sore throat 21.2% (13.5-31.6) 69.5% (58.1-78.9) 67.4% (59.8-74.1) 35.0% (28.7-41.9) Cough **Breathing difficulties** 24.9% (16.6-35.5) 77.1% (66.8-84.8) Sputum production 18.9% (8.1-38.1) 81.3 (57.9-93.2) Chest tightness 4.7% (2.5-8.9) 94.6 (88.6-97.6) Nausea/vomiting 5.4% (2.4-11.5) 95.3% (92.0-97.3) 90.6% (86.6-93.5) Diarrhoea 11.6% (7.6-17.4) 26.6% (15.3-42.4) 83.1% (70.6-90.9) Muscle pain Fatigue 36.4 % (22.1-53.6) 74.7% (63.6-83.3)

Struyf T, Deeks JJ, Dinnes J, Takwoingi Y, Davenport C, Leeflang MM, et al. "Signs and symptoms to determine if a patient presenting in primary care or hospital outpatient settings has COVID-19. Cochrane Database of Systematic Reviews 2021, Issue 2. Art No.: CD013665. DOI: 10.1002/14651858.CD013665.pub2

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