

# Beeldvorming bij COVID-19



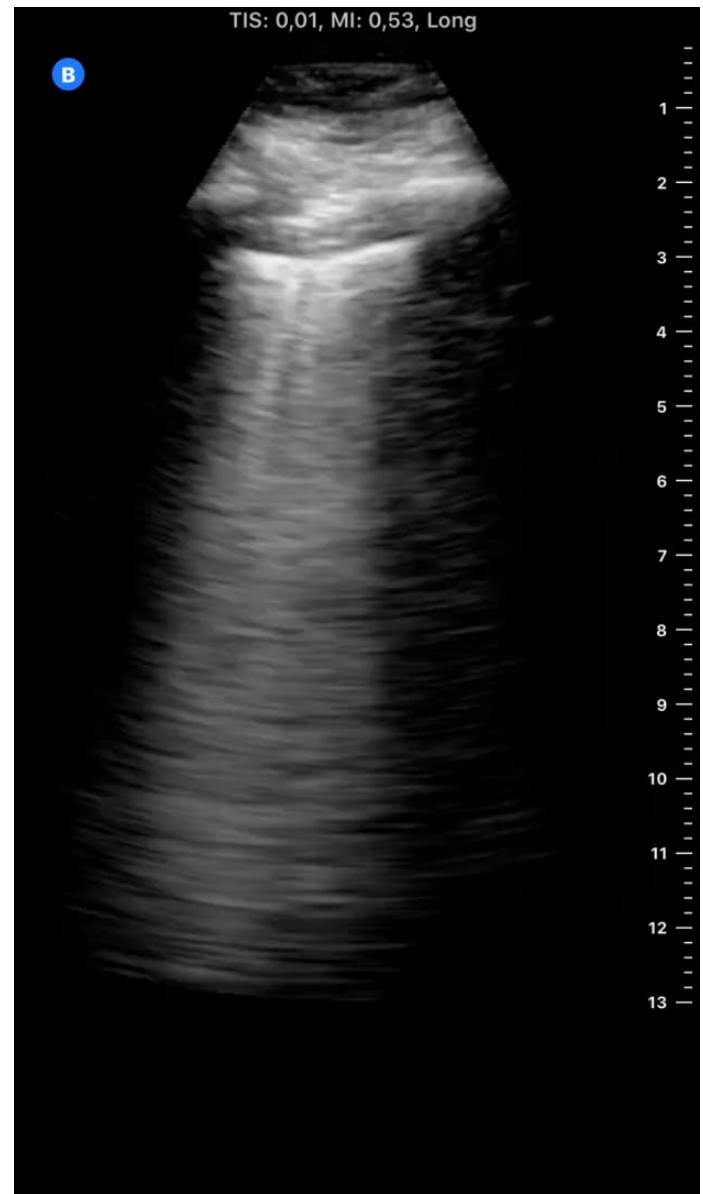
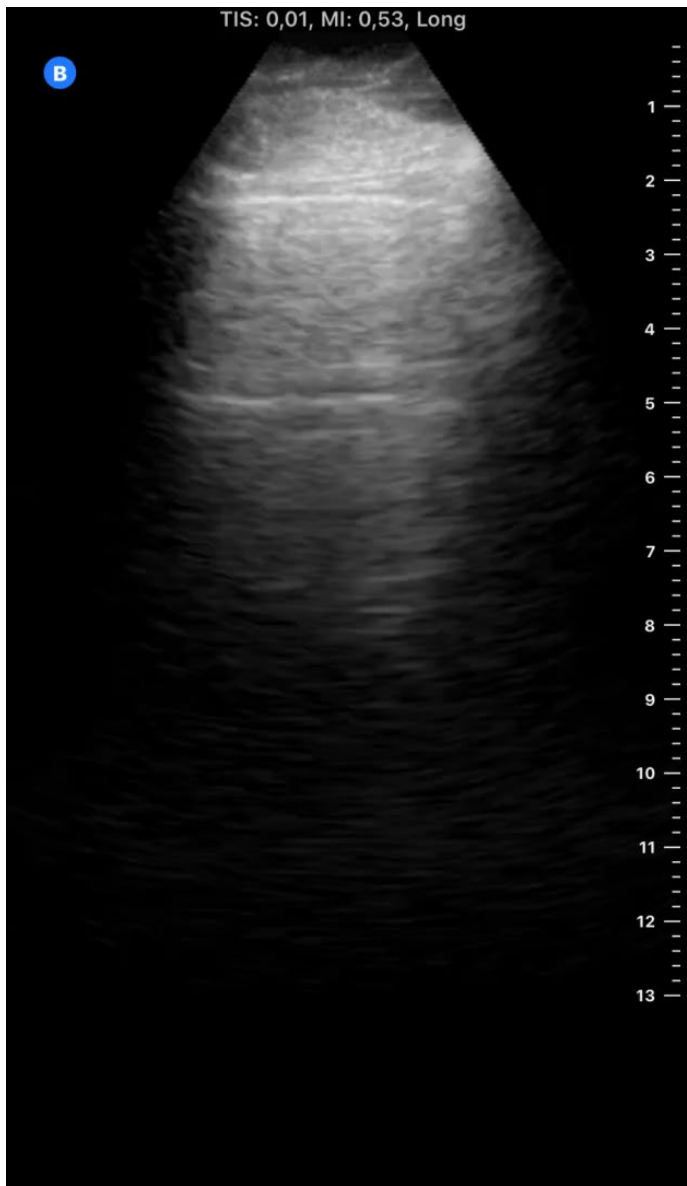
Bram Kok, internist acute geneeskunde

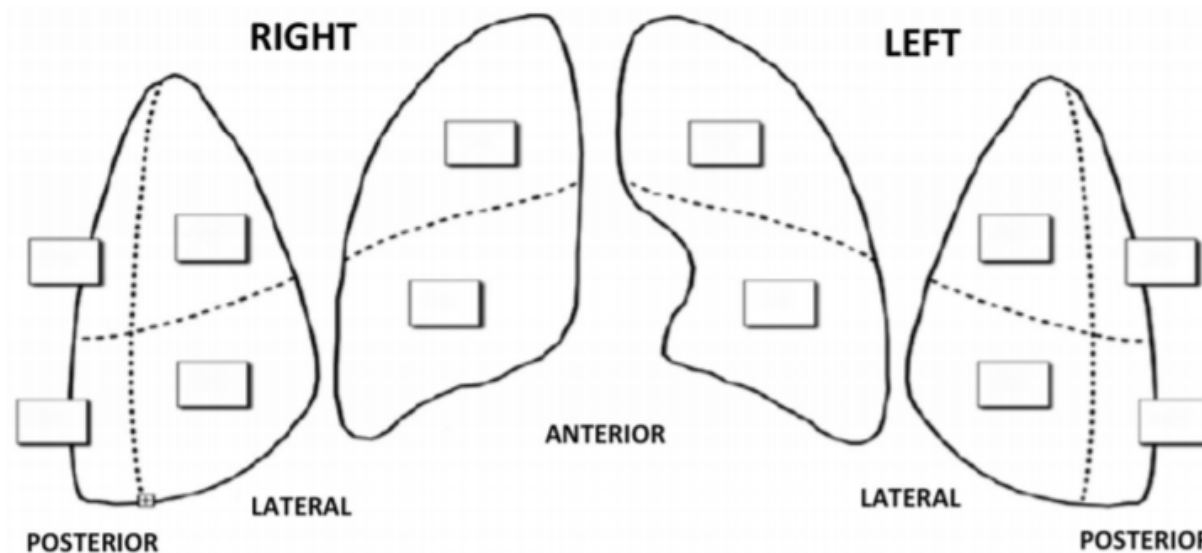
Radboudumc



Verdenking COVID







Echo-diagnose COVID-19 = tenminste 3 B-lijnen en/of consolidatie in twee zones unilateraal of tenminste in 2 bilaterale zones.

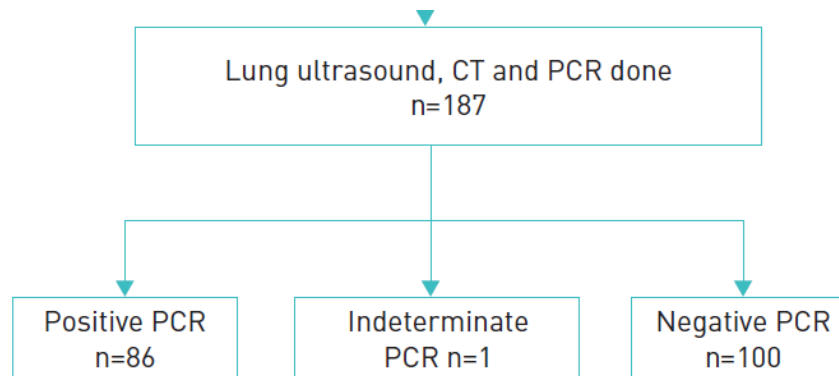
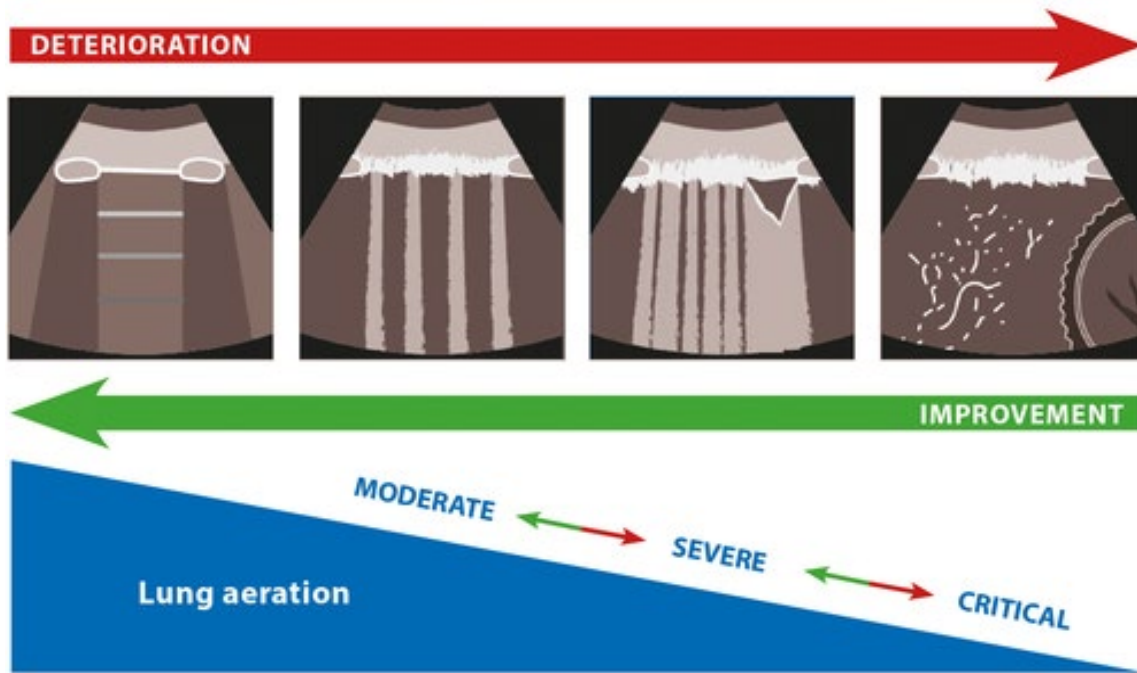


TABLE 3 Diagnostic accuracy for COVID-19

	Lung ultrasound <i>versus</i> PCR	CT <i>versus</i> PCR	Lung ultrasound <i>versus</i> COVID-19 diagnosis <sup>#</sup>
<b>Sensitivity % (95% CI)</b>	91.9 (84.0–96.7)	88.4 (79.7–94.3)	90.1 (82.5–95.2)
<b>Specificity % (95% CI)</b>	71.0 (61.1–79.6)	82.0 (73.1–89.0)	80.0 (69.9–87.9)
<b>Positive likelihood ratio</b>	3.2 (2.3–4.3)	4.9 (3.2–7.5)	4.5 (2.9–6.9)
<b>Negative likelihood ratio</b>	0.1 (0.06–0.24)	0.14 (0.08–0.26)	0.12 (0.07–0.2)
<b>PPV % (95% CI)</b>	73.2 (66.6–78.8)	80.9 (73.4–86.6)	84.2 (77.7–89.2)
<b>NPV % (95% CI)</b>	91.0 (83.1–95.4)	89.1 (82.0–93.7)	90.8 (81.7–95.6)
<b>Accuracy % (95% CI)</b>	80.7 (74.2–86.1)	85.0 (79.0–89.8)	82.8 (76.6–87.9)

CT: computed tomography; COVID-19: coronavirus disease 2019; PPV: positive predictive value; NPV: negative predictive value; CI: confidence interval. <sup>#</sup>: According to multidisciplinary team, COVID-19 is highly likely.



Sterke correlatie Lung Aeration Score en CT severity score.

LUS & CT ss	Alle pt N= 114	Ontslag N=24	Afdeling N=78	ICU N=12	P-waarde
LUS mean (SD)	12.2 (6.8)	6.3 (4.4)	13.1 (6.4)	18.0 (5.0)	< 0.001
CT severity score, mean (SD)	9.3 (5.0)	4.8 (2.9)	9.9 (4.8)	13.3 (3.8)	< 0.001

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# Screening versus mate van ernst

Screening middels 6 zone echoprotocol  
= 5 minuten.

Voordeel:  
Excellente negatief voorspellende  
waarde.

Longbetrokkenheid 12 zones  
= 10 minuten.



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# Samenvattend

Longechografie blijkt van enorme waarde bij de diagnostiek van patiënten met COVID-19 pneumonie.<sup>1-4</sup>

Accuraat ter screening (vergelijkbaar met CT en veel beter dan X-thorax).<sup>1,2, 4</sup>

*Lung Aeration Score* correleert sterk met CT severity score.<sup>5</sup>

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2 Volpicelli G, Cardinale L, Fracalini T et al. Descriptive analysis of a comparison between lung ultrasound and chest radiography in patients suspected of COVID-19. Ultrasound J. 2021 Feb 26;13(1):11. doi: 10.1186/s13089-021-00215-9. PMID: 33635443; PMCID: PMC7907795.

3. Pivetta E, Goffi A, Tizzani M et al. Lung Ultrasonography for the Diagnosis of SARS-CoV-2 Pneumonia in the Emergency Department. Ann Emerg Med. 2020 Oct 13:S0196-0644(20)31269-5. doi: 10.1016/j.annemergmed.2020.10.008. Epub ahead of print. PMID: 33461884; PMCID: PMC7552969.

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5. Zieleskiewicz L, Markarian T, Lopez A et al. Comparative study of lung ultrasound and chest computed tomography scan in the assessment of severity of confirmed COVID-19 pneumonia. Intensive Care Med. 2020 Sep;46(9):1707-1713. doi: 10.1007/s00134-020-06186-0. Epub 2020 Jul 29. PMID: 32728966; PMCID: PMC7388119.