



# Potential Uses of COVID-19 Antigen-based Tests in settings of Widespread Community Transmission

***SDBL- Ministerial Advisory Committee for COVID-19 Testing***

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***Approved by: SDBL- Ministerial Advisory Committee for COVID-19 Testing***

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# Disclaimer

*The testing recommendations were released on 25/11/2020 and are based on available literature and international guidelines then.*

*These recommendations are subject to change according to emerging scientific data and according to the epidemiologic situation in the country.*

*The algorithms aim to provide a support for clinical decision making, and don't intend to substitute a medical consultation.*

## WHO case definition for COVID-19 [↗](#)

Ag tests show best performance 1-3 days before symptom onset and within the first 5-7 days of illness.

**When?** RT-PCR is unavailable or prolonged turnaround times preclude clinical utility

**Where?** Health care facilities, emergency departments.

**Who?** Trained operator

**How?** [Specimen collection](#) and [biosafety requirements](#) (aeration, [PPEs](#), [waste management](#)) [↗](#)

### Ag Test:

- Minimum performance criteria :  $\geq 80\%$  sensitivity and  $\geq 97\%$  specificity compared to RT-PCR assay
- Maximal performance found in patients with high viral loads (Ct values  $\leq 25$  or  $>10^6$  genomic virus copies/mL)
- Specific conditions for shipping and storage
- List of commercial kits recognized by regulatory authorities (FDA-EUA, WHO-EUL..) [↗](#)
- Overview of validation studies by HAS/APHP [↗](#)

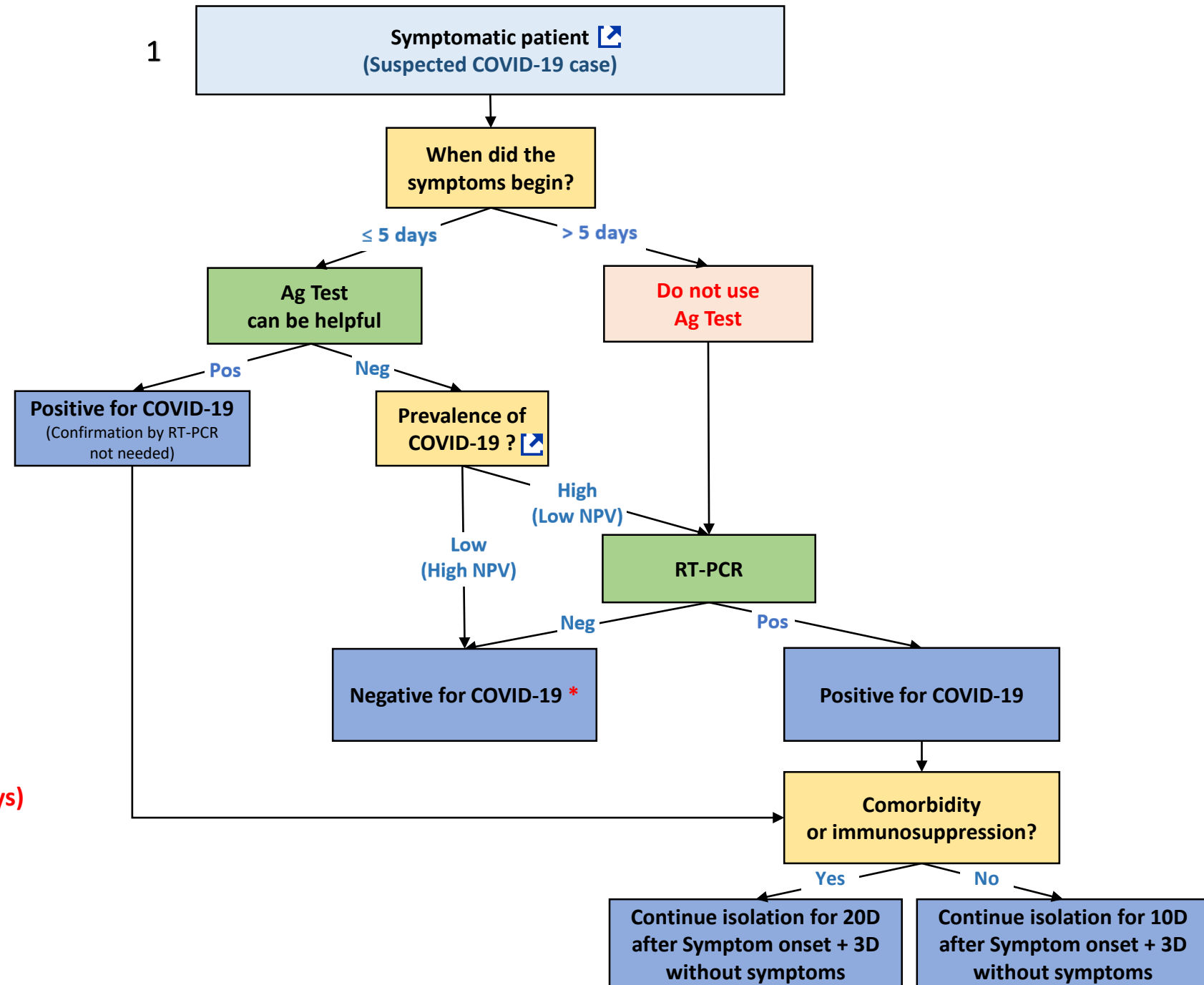
The **prevalence** of disease in the community being tested strongly affects the predictive value of a positive or negative result.

Disaster Risk Management Unit daily report [↗](#)

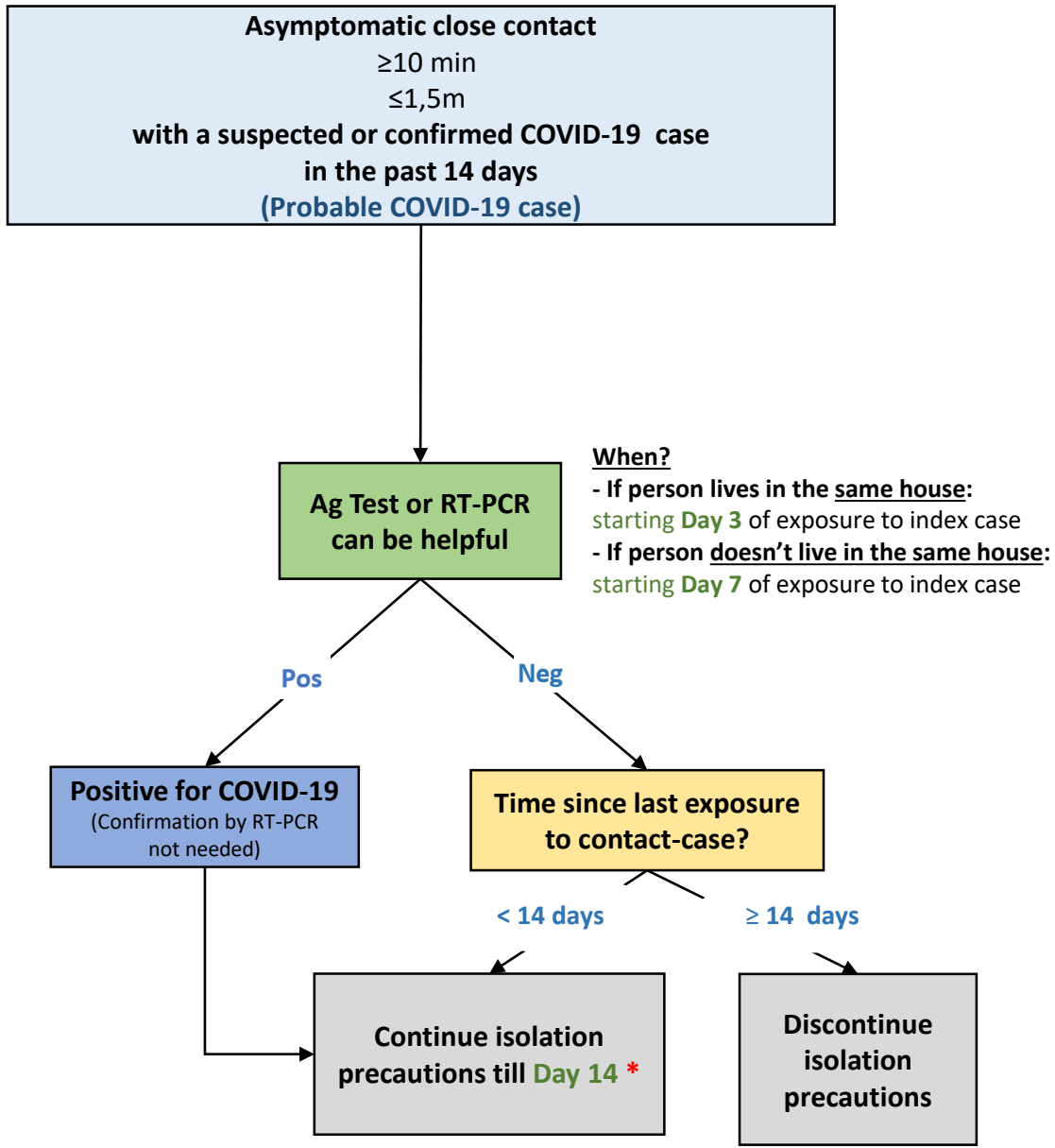
**\* RT-PCR can be negative in early illness (0-7 days)**

### RT-PCR should be prioritized if:

- Age  $> 65y$
- Presence  $\geq 1$  comorbidity [↗](#)
- Impaired immune status
- Negative Ag test but high clinical suspicion of COVID-19

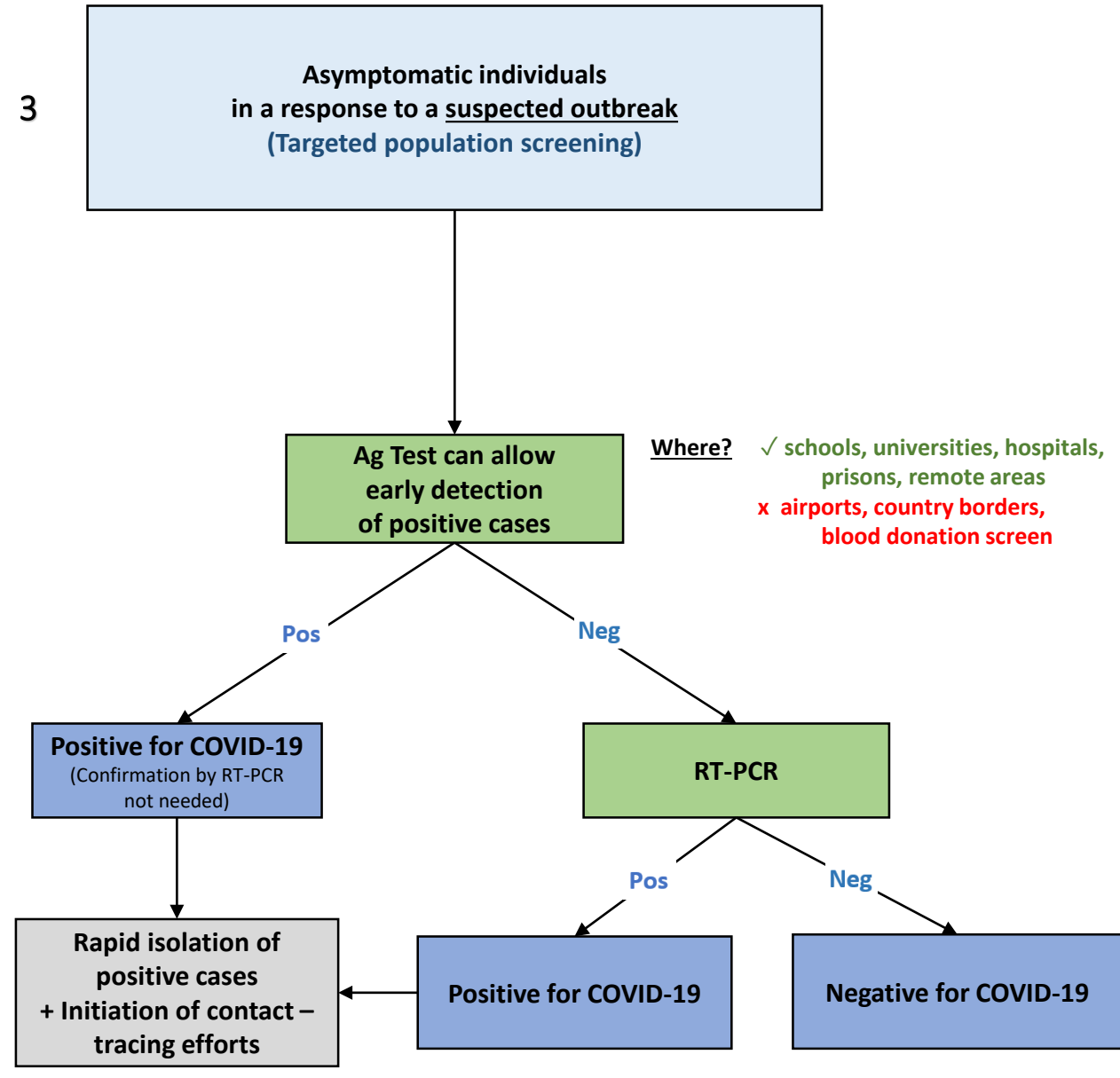


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**\* If symptoms appear during isolation period: do RT-PCR 5-7 days after exposure to contact case**

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**Always keep on following updated MOPH guidelines (lock down measures, social distancing, hygiene precautions, etc.)**

Ag Test	+	-
<p><b>Symptomatic patient</b> (Suspected COVID-19 case)</p>	<p>idem PCR positive : Positive for COVID-19</p>	<p>Need to be confirmed by RT-PCR</p>
<p><b>Asymptomatic contact</b> <b>with a suspected or confirmed</b> <b>COVID-19 case in the past 14 days</b> (Probable COVID-19 case)</p>	<p>idem PCR positive : Positive for COVID-19</p>	<p>Same measure (Isolation) as for RT-PCR test</p>
<p><b>Asymptomatic individuals</b> <b>in a response to a</b> <b><u>suspected outbreak</u></b> (Targeted population screening)</p>	<p>idem PCR positive : Positive for COVID-19</p>	<p>Repeat test <b>frequently</b> to detect more cases</p>

## Abbreviations:

- **Ag** : Antigen
- **APHP**: Assurances Publiques des Hôpitaux de Paris
- **COVID-19**: COrona Virus Infectious Disease - 19
- **Ct**: Cycle threshold
- **FDA-EUA**: Federal Drug Association - Emergency Use Authorization
- **HAS**: Haute Autorité de Santé (France)
- **MOPH**: Ministry of Public Health (of Lebanon)
- **NPV**: Negative Predictive Value
- **PPE**: Personal Protective Equipment
- **PPV**: Positive Predictive Value
- **RT-PCR**: Reverse Transcriptase – Polymerase Chain Reaction
- **WHO-EUL**: World Health Organization – Emergency Use Listing

## References:

1. **World Health Organization. Antigen-detection in the diagnosis of SARS-CoV-2 infection using rapid immunoassays.** Interim guidance (September 11, 2020).  
<https://www.who.int/publications/i/item/antigen-detection-in-the-diagnosis-of-sars-cov-2infection-using-rapid-immunoassays>
2. **HAS. Revue rapide sur les tests de détection antigénique du virus SARS-CoV-2 (19 oct. 2020)**  
[https://www.has-sante.fr/upload/docs/application/pdf/2020-10/synthese\\_tests\\_antigeniques\\_vd.pdf](https://www.has-sante.fr/upload/docs/application/pdf/2020-10/synthese_tests_antigeniques_vd.pdf)
3. **APHP. Evaluation de la performance diagnostique des tests rapides d'orientation diagnostique antigéniques COVID-19 (29 septembre 2020)**  
<https://www.aphp.fr/contenu/evaluation-de-la-performance-diagnostique-des-tests-rapides-dorientation-diagnostique>
4. **MOPH مذكرة وزير رقم 159 تاريخ 6/11/2020 تتعلق بفحص المخالطين وتسريح المعزولين والمحجورين**