# IMPACT VAN OMICRON OP ISOLATIE EN QUARANTAINE

**RAG – 03/01/2022**

**CONTEXT**

De RAG bracht reeds verschillende voorgaande adviezen uit in verband met de impact van de Omicron variant in België. Er werd onder meer geadviseerd om de quarantaineregels voor gevaccineerde hoog-risicocontacten te herzien, maar deze aanbeveling werd politiek niet gevolgd. Er werd eveneens voorzien om, wanneer meer gegevens beschikbaar zouden zijn, de definitie van 'volledig gevaccineerd' en de impact van het herstelcertificaat te herzien.

**Aan de RAG wordt nu gevraagd om bij hoge dringendheid vervroegd advies uit te brengen. Er wordt opgemerkt dat de bijzonder korte tijdslijn en het niet volgen van de geijkte procedures de kwaliteit van het advies in gedrang kunnen brengen.**

**OPGEPAST! De officiële besluiten zoals genomen op 04/01/2022 door de Interministeriële Conferentie wijken af van de aanbevelingen die hier gegeven worden.**

## Inhoud

# 1. Aanbevelingen

## Algemeen

- Er wordt herhaald dat er nood is aan **heldere en begrijpelijke regels** die zoveel mogelijk stabiel blijven en breed gecommuniceerd worden.
- De **gevalsdefinitie blijft ongewijzigd**. Er moet nogmaals herhaald worden dat ook bij milde symptomen een test aangewezen is en dat het onderscheid met andere virale infecties niet gemaakt kan worden op basis van klinische symptomen, zeker wat betreft Omikron.
- In geval van een uitbraak die moeilijk onder controle geraakt moet kunnen afgeweken worden van onderstaande maatregelen indien dit nodig wordt geacht door de regionale gezondheidsdiensten.
- In een context van onvoldoende gegevens over de gevoeligheid van snelle antigeentesten (RAT) voor Omikron (uitgevoerd door gezondheidspersoneel of als zelftest) met zeer uiteenlopende resultaten in functie van het merk van test, is validatie van dergelijke testen die op de markt zijn in België nodig, met publicatie van een lijst van de meest betrouwbare testen. Dit zou kunnen opgenomen worden door het NRC en, beter nog, met een Europese coördinatie.

## Duur van isolatie:

- Er wordt **geen onderscheid gemaakt voor de duur van isolatie tussen gevaccineerde en niet gevaccineerde personen**, noch tussen symptomatische en asymptomatische personen. Er is namelijk momenteel onvoldoende bewijs voor een verschil in besmettelijkheid van infecties post-vaccinatie voor de Omikron-variant en deze aanbeveling heeft het voordeel van de eenvoud en is in lijn met andere internationale aanbevelingen.
- Voor patiënten in thuisisolatie (dus zonder noodzaak aan hospitalisatie) kan de duur van de isolatie **verkort worden tot 7 dagen** (mits 3 dagen koortsvrij te zijn + klinische verbetering van de klachten), met nadien nog minstens 3 dagen het nemen van extra beschermende maatregelen zoals het beperken van het aantal contacten tot de strikt noodzakelijke, waarbij er continu een masker moet gedragen worden (bij voorkeur een FFP2 masker, zonder ventiel) in een binnenruimte. Dit houdt in dat alle activiteiten waarbij de mondmaskerdracht onmogelijk is (zoals het samen eten met andere personen) niet toegelaten zijn of buiten moeten gebeuren op voldoende afstand. Tijdens deze periode van 7+3 dagen zal de persoon geen toegang hebben tot een “Covid Safe Ticket”.
- In collectiviteiten voor kwetsbare personen (zoals woonzorgcentra) wordt de duur van isolatie voor asymptomatische bewoners of bij milde klachten verkort van 14 naar 10 dagen (mits 3 dagen koortsvrij te zijn + klinische verbetering van de klachten). Voor zorgpersoneel van deze collectiviteiten is de duur van isolatie ook 7 dagen, met nadien minimum 3 dagen verplicht dragen van een FFP2 masker (zonder ventiel) op de werkvloer.

- Voor gehospitaliseerde patiënten en ernstig immuungecompromitteerden blijven de huidige aanbevelingen (zie bijlage) ongewijzigd.

**Duur van quarantaine:**

- Voor de **volledig gevaccineerde hoog-risicocontacten** (definitie zie verder) **en kinderen <12 jaar** wordt verwezen naar het RAG advies van 16 december.
    - Zolang er voldoende testcapaciteit is, blijft de huidige richtlijn onveranderd (1 PCR test tussen dag 3 en 6, bij voorkeur op dag 5). Tot ontvangst van het negatieve testresultaat moet een quarantaine in acht genomen worden.
    - Indien er onvoldoende testcapaciteit is om een test uit te voeren op dag 5, blijft de quarantaineduur behouden op 5 dagen, maar dient aanvullend 5 dagen strikte maskerdracht gerespecteerd te worden, bij voorkeur met FFP2-masker zonder ventiel. Voor zorgverleners is dit verplicht een FFP2-masker.

| Type HRC | Als voldoende testcapaciteit | Als onvoldoende testcapaciteit |
|---|---|---|
| Gevaccineerd (indien 18+ : booster of <4m) OF <12 jaar | Test D5 (of D3-D6) en Q tot resultaat | 5d Q + 5d masker (bij voorkeur) FFP2 |
| Niet gevaccineerd | Q tot negatieve test op D7 | 10d Q |

- Voor volledig **gevaccineerde huisgenoten** van een besmet persoon die niet geïsoleerd kan worden (bv. omdat het een jong kind is) is de quarantaine duur ook 5 dagen, met ofwel een test op dag 5 ofwel aanvullend het dragen van een masker gedurende 5 dagen (cf. supra). Indien er voldoende testcapaciteit is wordt wel aanbevolen **om bijkomend een PCR test uit te voeren vanaf dag 10** na begin van de symptomen/positieve test bij het indexgeval.
- De huidige **uitzonderingen op quarantaine** voor volledig gevaccineerde hoog-risicocontacten voor essentiële functies blijven van toepassing (zie voorwaarden en voorzorgen hier), ook als er geen test gebeurt tussen dag 3 en dag 6. Wel gelden er dan bijkomende maatregelen: het mondmasker moet een FFP2 masker zijn (zonder ventiel) en de persoon moet gedurende 5 dagen dagelijks een zelftest afnemen. Indien de continuïteit van de zorg niet anders kan gewaarborgd worden, kan deze uitzondering van quarantaine ook toegepast worden na een hoog-risicocontact binnen het huishouden.
- Voor **niet gevaccineerde hoog-risicocontacten vanaf 12 jaar** blijven de huidige maatregelen gelden: quarantaineduur van 10 dagen, die eventueel verkort kan worden na een negatief testresultaat van een test ten vroegste afgenomen op dag 7.

- Kinderen <12 jaar met een hoog-risicocontact binnen het huishouden volgen dezelfde regels als volledig gevaccineerde volwassenen. Voor contacten binnen de schoolcontext, in het bijzonder voor kinderen <12 jaar, kunnen andere maatregelen gelden, die nog verder uit te werken zijn.

### Definitie van volledig gevaccineerd / herstelcertificaat

- Een persoon 18+ wordt als volledig gevaccineerd beschouwd tot 4 maanden na de laatste aanbevolen dosis van het basisvaccinatie schema, of na een booster dosis. De geldigheidsperiode voor deze laatste kan momenteel nog niet bepaald worden.
- Voor kinderen en jongeren < 18 jaar wordt momenteel nog geen booster aanbevolen en de definitie van volledig gevaccineerd wordt dus niet gewijzigd.
- De periode van bescherming na een doorgemaakte infectie wordt ook verlaagd tot 4 maanden Gezien de hogere ratio van herinfecties door Omikron gelden voor personen met een herstelcertificaat dezelfde quarantainemaatregelen als voor gevaccineerde personen. Bij milde symptomen moet steeds een test worden afgenomen.

## 2. Discussie

- Data on symptoms of Omicron infections are still limited, but seem to indicate that the presentation is compatible with a common cold for most patients. The **current case definition** of a possible COVID-19 case in Belgium is very broad and **covers the mild symptoms** of a cold. There is thus no need to revise the definition. However, it is even more so impossible for people to rely on symptoms to self-diagnose COVID-19. Also, in addition to Omicron, the Delta variant continues to circulate, along with possible increasing cases of flu. Therefore, further communication to the public is needed that even in case of very mild symptoms like a runny nose and fatigue, they should get tested.
- There is currently not enough information available on the proportion of asymptomatic carriage. However, one study in South Africa showed that Ct values are high in a- or presymptomatic infections with Omicron. Therefore, **testing HRC remains important to detect these asymptomatic infections**, if test capacity is sufficient. If testing is not possible, focus should be on index cases and more emphasis is needed on quarantine and other preventive measures like mask-wearing, to limit further spread.
- The review of duration of isolation and quarantine in other countries shows a very large variety, often with complex rules. The decision on duration for both is depending on what is accepted as residual risk of transmission.
- For previous variants, there was some evidence of faster clearance of the virus in vaccinated persons compared to unvaccinated, which could allow a shorter isolation period for the first group. However, there is thus far no evidence that this is also the case for Omicron. Therefore, no distinction is made for the isolation period according to the vaccination status.
  A potentially shorter incubation period and serial interval for Omicron compared to Delta would imply that limiting the number of contacts will be an important measure in mitigating further

spread and that barrier measures are more efficient, but contact tracing is more difficult (because contacts are identified with a delay, depending on the capacity of the call centers). Therefore, it is important that index cases can identify and report themselves their HRC (through the existing tool). The use of RAT (either by a HCW or as a self-test) has the advantage of a quick result, which could be an important asset in this context (see RAG advice on use of self-tests). However, current evidence on the reliability of RAT (sensitivity and specificity) for Omicron is inconclusive, since results and reports are discordant. A further evaluation of these tests is needed.

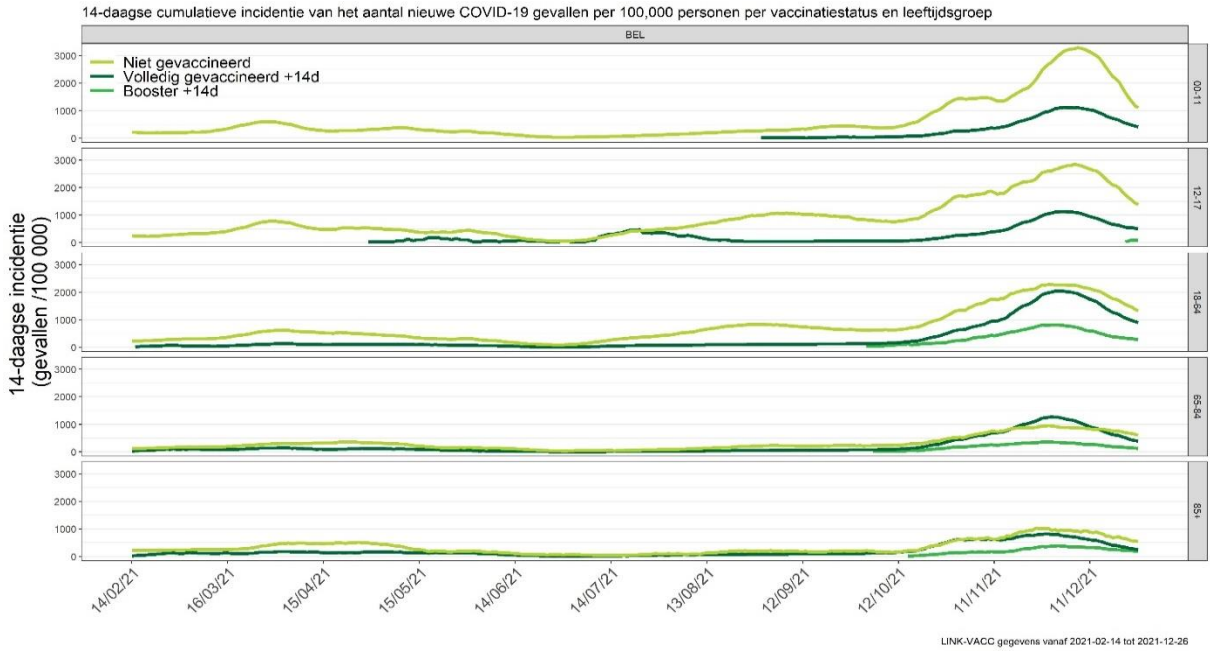
- The duration of the protective effect of vaccines against Omicron is currently unknown, and the rapid waning effectiveness of the second dose against Omicron infection as well as data from neutralization assays on the booster raise concerns about the longevity of the booster response.
- The VE against hospitalisation for Omicron remains still high after a booster (~80%) and there is more and more evidence of less severity, but there is currently still a high burden on the hospitals (with a high ICU occupancy) in Belgium and even a small percentage of a very large number of infections is still a threat to the health care. In addition, it is expected that Omicron will have a high burden on the primary care and the test & trace system.
- Because of the expected high number of infections and high-risk contacts during the Omicron wave, this might impact the continuity of service for essential functions, such as health care staff. The current exceptions for quarantine for essential functions remain valid,

# 3. Epidemiologische context

## 3.1. BELGIË

Zoals verwacht is de trend van besmettingen de laatste week van december omgeslagen, waarbij nu **opnieuw een (snel) stijgende trend van nieuwe besmettingen** wordt geregistreerd. Het meest recente dagelijkse rapport van Sciensano (2 januari 2022, geconsolideerde data tot 30 december) toont een stijging voor de meeste provincies, het meest uitgesproken voor het Brussels Hoofdstedelijk Gewest (+45%) en de provincies Vlaams-Brabant (+35%), Waals Brabant (+25%) en Luik (+18%). De toename versnelt echter. Op 28 december was er nationaal een toename van 11% vergeleken met de week ervoor, de 29e was deze al 36% en op 30/12 52%. Deze data moeten geïnterpreteerd worden in een context van een lager aantal testen (wat algemeen geobserveerd wordt tijdens vakantieperiodes en op feestdagen), waarbij het aantal infecties dus vermoedelijk onderschat wordt. Sedert 29/12 neemt het aantal uitgevoerde testen wel opnieuw toe.

De **epidemiologische gegevens in België bevestigen de wetenschappelijk evidentie dat een booster dosis slechts partieel beschermt tegen infectie**. Echter, voor alle leeftijdsgroepen is de incidentie het laagst voor personen die een booster gekregen hebben ook lager voor gevaccineerde personen vergeleken met niet-gevaccineerden (zie figuur hieronder).



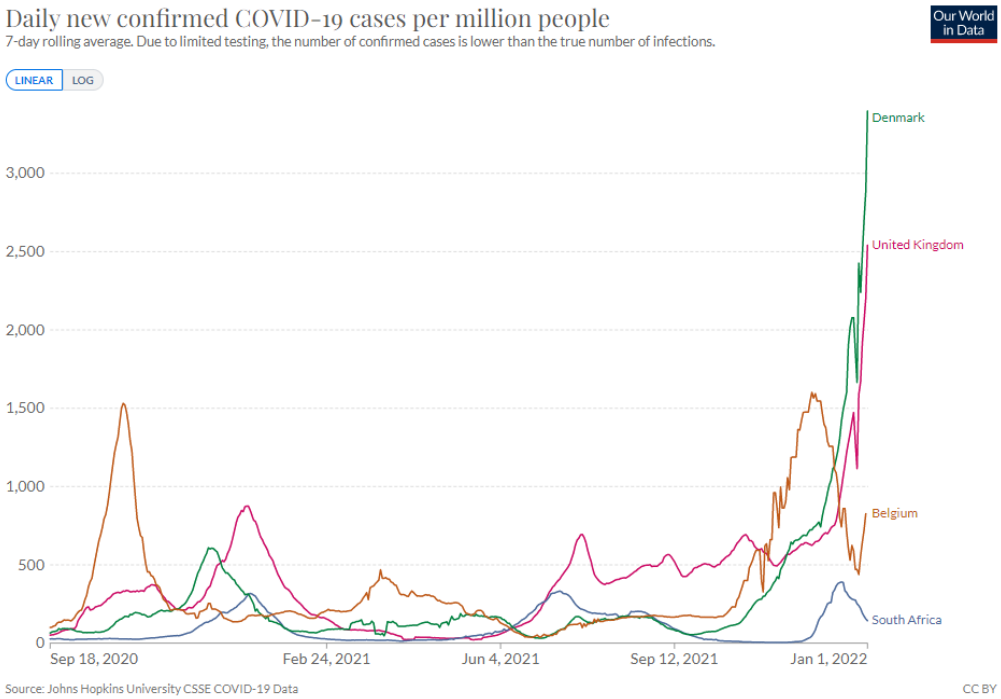

De hoogste incidentie wordt nu geregistreerd bij de 20 tot 39-jarigen. Met de herstart van de scholen na de kerstvakantie wordt verwacht dat er ook een sterke toename zal zijn voor jongere leeftijdsgroepen. En net zoals bij eerdere golven zal de incidentie hoogst waarschijnlijk nadien ook toenemen bij de oudere leeftijdsgroepen.

Sedert 30 december neemt ook het aantal nieuwe hospitalisaties opnieuw (licht) toe. Het totaal aantal ingenomen bedden algemeen en op ICU neemt wel nog verder af, maar zeer beperkt. Er zijn nog geen gegevens bekend over de ligduur van hospitalisatie voor Omikron in België.

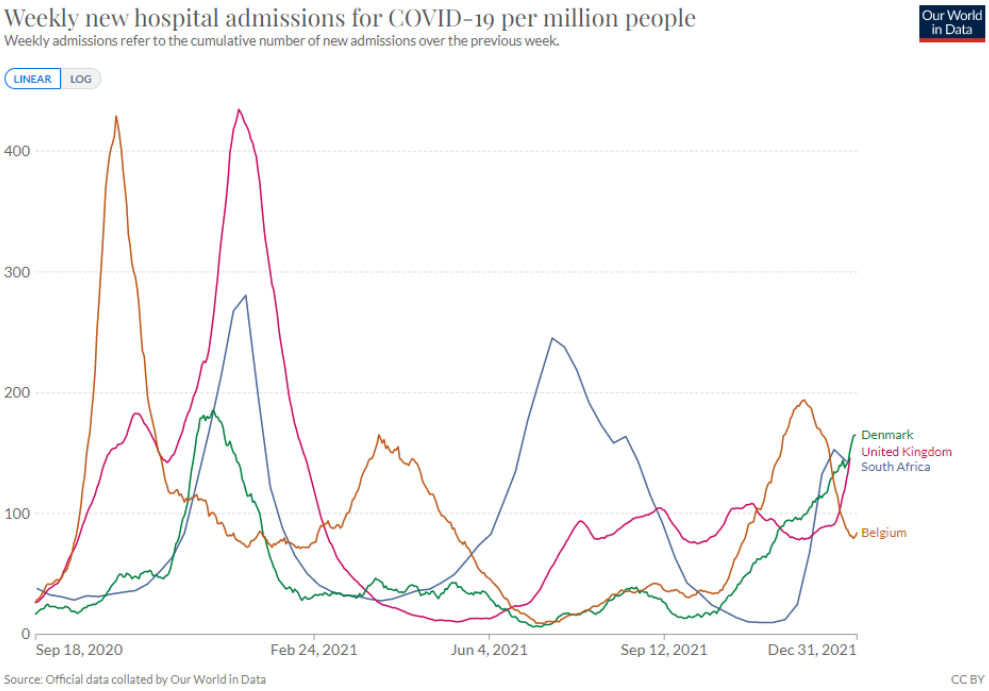
### 3.2. INTERNATIONAAL

Onderstaande figuur vergelijkt het aantal nieuwe besmettingen in België met de landen waar de variant sneller circuleerde, zoals Zuid-Afrika, de UK en Denemarken. In Zuid-Afrika werd een piek van besmettingen bereikt half december met sedert dan een dalende trend. Het gerapporteerde aantal infecties moet geïnterpreteerd worden in een andere context van test capaciteit vergeleken met oa Europese landen. De piek is echter de hoogste sedert de start van de pandemie. Ook in de UK en Denemarken worden veel hogere aantallen gevallen geregistreerd dan bij voorgaande golven. In deze landen waren er wel minder algemene maatregelen dan in België op het ogenblik van de introductie van de variant. De toenemende trend in België is echter momenteel even steil als in beide andere landen.

Ook andere landen, zoals Frankrijk, Spanje en Portugal, rapporteren record aantallen nieuwe besmettingen, met een zeer steile toename. Ook in Nederland wordt er opnieuw een toename van nieuwe besmettingen geregistreerd, ondanks de sterke maatregelen (“lockdown”) die op 19 december van start gingen. De toename is momenteel wel minder uitgesproken dan in andere landen.




Een vergelijking van de landen wat betreft nieuwe hospitalisaties toont dat zowel in Zuid-Afrika, de UK en Denemarken, de stijging van besmettingen ook gevolgd werd door een toename van hospitalisaties, maar voorlopig nog minder belangrijk dan voor voorgaande golven (met in Denemarken toch al een even hoge waarde als begin 2021). Er is inderdaad meer en meer evidentie dat het risico op hospitalisaties lager is voor Omikron als voor Delta. Maar een klein percentage van een zeer groot aantal infecties kan nog steeds leiden tot een te grote last voor het zorgsysteem in België.



# 4. Symptomen

## 4.1. SCIENTIFIC BACKGROUND

Information on symptoms of Omicron infections is still limited. Early evidence suggest however that for most people, Omicron appears to result in a mild disease, resembling a common cold (runny nose, fatigue, cough). Data released on 16 December by the Covid Symptoms Study,1 run by the health science company Zoe and King's College London, compared Delta and Omicron infections, based on London data (with higher prevalence of Omicron than in other parts of the UK) from a week where Delta was dominant (a sample of 363 cases from 3-10 October 2021) compared with the most recent data (847 cases from 3-10 December 2021). This **initial analysis found no clear differences between Delta and Omicron in the early symptoms** (three days after testing) (1). The top five symptoms reported in the app were runny nose, headache, fatigue (either mild or severe), sneezing, and sore throat. Cough was still identified as a common symptom in an outbreak of Omicron SARS-CoV-2 following a Christmas party with 117 attendees in Oslo, Norway late November 2021 (2). The most common symptoms among the 81 cases were cough (83%), followed by runny/stuffy nose (78%), fatigue/lethargy (74%), sore throat (72%), headache (68%) and fever (54%). When asked to grade the severity of symptoms on a scale from 1 (no symptoms) to 5 (significant symptoms), 42% (33/79) reported level 3 symptoms, whereas 11% (9/79) reported level 4 symptoms. Most participants were 30–50 years old. Ninety-six percent of them were fully vaccinated.
Loss of taste and smell seems to be less common but can still occur. An early description of 11 cases in the UK report that 5 of them (45.4%) had classic COVID-19 symptoms (loss or change of sense of taste or smell, fever, persistent cough), 2 (18.2%) were asymptomatic, and symptoms were unknown for 2 cases (3).

There is also emerging evidence that omicron tends not to burrow deep into the lungs as much as previous variants. A study, which was posted online by the University of Hong Kong and not yet peer-reviewed, found that Omicron SARS-CoV-2 infects and multiplies 70 times faster than the Delta variant and original SARS-CoV-2 in human bronchus, while Omicron infection in the lung is significantly lower than the original SARS-CoV-2, which may be an indicator of lower disease severity (4).

Data from South Africa (preprint article) from participants to a clinical trial for vaccine efficacy, with routine nasal swabs collected at the initial vaccination visit indicate that among 71 Omicron infected persons (presenting no symptoms at the time of the sampling), **48% had cycle threshold (Ct) values <25 and 18% less than 20**, indicative of high titers of asymptomatic (or possibly presymptomatic) shedding (5).

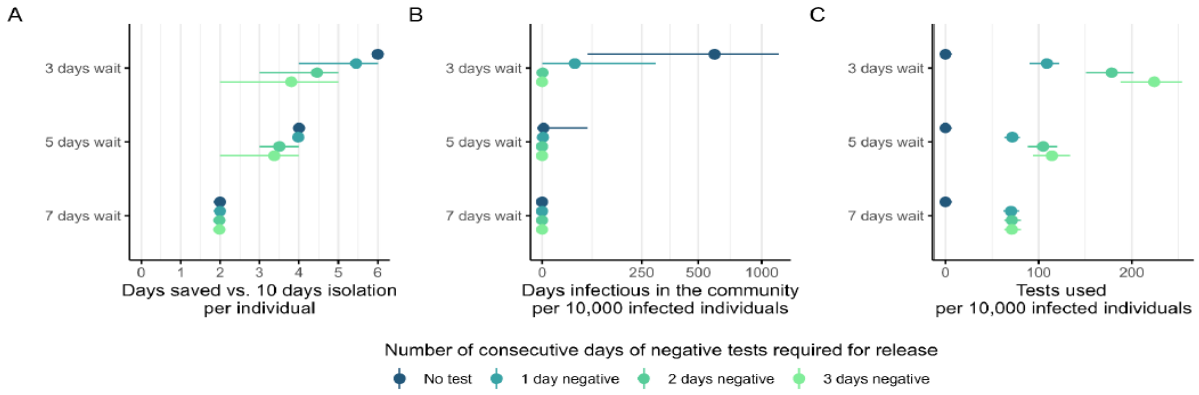
# 5. Duur van isolatie

## 5.1. SCIENTIFIC BACKGROUND

Viral loads and viral dynamics do not only depend on the variant of concern but can also be influenced by characteristics of the infected person (age, sex, vaccination status) and are dynamic over the course of infection. It is therefore not easy to compare different findings.

Kissler et al. previously described viral dynamics in a longitudinally followed cohort of healthy young male athletes (6). Comparing 36 participants infected with the alpha variant, 36 with the delta variant and 41 participants with "wild-type" infection did not yield any differences in mean peak viral load or clearance of infection by virus variant. **In contrast, comparing infections between vaccinated and unvaccinated individuals also showed similar peak viral loads, but a faster clearance of infection in vaccinated individuals** (mean clearance 5.5 days for vaccinated, compared to 7.5 days for unvaccinated). That vaccination status, and not previously circulating VOCs, influenced the speed of clearance of infection was confirmed in another large high-quality study of Singanayagam et al. (7). However, as pre-existing immunity seems to influence Omicron infections less, it is unclear whether this advantage for vaccinated individuals would remain.

To account for inter-individual differences and safely end isolation early for some, whilst maintaining isolation for highly-infectious individuals, Quilty et al. modelled the effect of repeated self-testing (8). According to their analysis, the **number of infectious days in the community can be reduced to almost zero by requiring at least 2 consecutive days of negative tests**.




Since, as described above, faster clearance is expected in vaccinated individuals, test-to-release policies save fewer days in unvaccinated individuals and would require a larger number of tests. Regarding Omicron, if the shorter incubation/proliferation time would be confirmed, this would increase the number of days saved and reduce the number of tests needed. An important caveat is that the **modelling assumes a sensitivity of the self-tests of 89% and a specificity of 99%, which seems high compared to previously described results** (see annex for an overview). Moreover, it is as of yet unclear to which extent the sensitivity of rapid antigen tests is maintained for Omicron. Preliminary results from evaluations in the UK and the Netherlands are reassuring, but the US FDA issued a warning regarding possible reduced sensitivity, based on their

preliminary evaluation results, and one in-vitro study in Switzerland found a lower sensitivity in detecting Omicron compared to previous variants by some tests.

Data from contact tracing in Denmark (2,225 index cases) indicate that the median Ct values of primary cases infected with Omicron and Delta did not differ substantially (27.24 and 28.29, respectively) (9). Adjustment for Ct values of the primary cases did not materially alter the findings regarding secondary attack rates, suggesting that the difference between the Omicron and Delta VOC transmission is not due to differences in viral load in the primary case.

## 5.2. INTERNATIONAL GUIDELINES

| AUTHOR | MILD/MODERATE | SEVERE DISEASE | IMMUNOCOMPROMISED | COMMENTS |
|---|---|---|---|---|
| WHO | Min. 10d after symptom onset<br>+ extra 3d no symptoms | Consider test-based (including VL/nAb) if prolonged symptoms | NA | **Min. 13d** for symptomatic cases<br>Min. 10d for asymptomatic cases |
| ECDC | Clinical improvement<br>+ no fever for 3d<br>+<br>**10d** after symptom onset<br>OR 2x neg PCR | Clinical improvement<br>+ no fever for 3d<br>+<br>**min. 14-20d** after symptom onset<br>OR 2x neg. PCR | Clinical improvement<br>+ no fever for 3d<br>+<br>**20d** after symptom onset<br>OR 2x neg PCR | **Residents/staff of LTCF or other vulnerable population** (prison, migrant hosting facility): like immunocompromised |
| CDC | no fever for 24h<br>**+ 5d** after symptom onset | Consider 20d | Consider test-based | Followed by 5 days of mask-wearing when around others |
| RKI (DE) | 48h no symptoms +<br>**14d** after symptom onset + negative antigen test | (defined as requiring $O_2$)<br>As mild cases + negative PCR | Case-by-case | No symptoms = "significant clinical improvement"<br>High CT-values can be considered "negative PCR"<br>LTCF: like severe |
| RIVM (NL) | 24h no symptoms +<br>**7d** after symptom onset (+ 48h no fever for HCW only) | Only if still hospitalized:<br>14d after symptom onset<br>+ 48h clinical improvement<br><br>If still mechanically ventilated:<br>21d after SO + 48h clinical recovery<br>+ 2x neg PCR on LRT specimen | 24h no symptoms<br>+ **14d** after symptom onset<br>+ consider 2x neg PCR | In LTCF: 24h no symptoms + 48h no fever + **14d** |
| SPF (FR) | **Vaccinated or <12y: 7d** after symptom onset, **5d** if neg test/<br>**Unvaccinated**: **10**d after symptom onset, **7**d if neg test<br><br>+48h no clinical signs infection | ? | 48h no fever/dyspnea<br>+ 10d after symptom onset | From date of test for asymptomatic<br>For those 65y+ "vaccinated" means dose 2 mRNA + max. 4 months or boosted |
| UKHSA (UK) | **10d** after symptom onset + no fever<br>OR<br>**min. 7d** after symptom onset + 2 consecutive negative tests | 48h no fever + clinical improvement<br>+ **14d** after symptom onset | As severe + consider testing | |

# 6. Duur van quarantaine

## 6.1. SCIENTIFIC BACKGROUND

Omicron has a **distinct transmission advantage compared to Delta**.

Data from the UK (10) show that **secondary cases within the household are much more frequent after an index case that is infected with the Omicron variant compared to Delta** variant: 18% of households reported at least one secondary case with Omicron vs. 10% with Delta. In multivariable regression, this leads to an adjusted odds ratio of 2,9 for Omicron (95% CI 2,4 – 3,5 ; p<0.001).

Data from contact tracing in Denmark (2,225 index cases) confirm the higher secondary attack rate for Omicron compared to Delta (9). Preliminary Belgian data from contact tracing (~1000 index cases) also show a very high SAR for Omicron cases of 54%, as compared to 32% for non-Omicron cases.

- However, comparing Omicron index cases with Delta index cases, **SARs were not significantly higher for unvaccinated individuals** (aOR 1.17 [0.99-1.38]) but markedly higher for double-vaccinated persons (OR 2.61 [2.34-2.90]) AND for booster-vaccinated individuals (OR 3.66 [2.65-5.05]).
- With an Omicron index case, there was no difference in secondary attack rate between double-vaccinated contacts and unvaccinated contacts (OR 1.04 [0.87-1.24]).
- This is in line with reduced vaccine effectiveness against Omicron and leads to questioning of the current quarantine rules.

### 6.1.1. Vaccine effectiveness

Quarantine is imposed to prevent the transmission of the virus. Therefore, it is mostly **vaccine effectiveness against infection** that will determine how strict quarantine rules for fully vaccinated high-risk contacts should be.

- Several studies have shown that **vaccines have reduced effectiveness** against the Omicron variant. The reduction in effectiveness is less marked after a booster dose or after infection plus previous vaccination (so-called hybrid immunity) (11).
- Analysis of 5,767 Omicron cases in Denmark showed vaccine effectiveness against infection with Omicron to be around 55% [23.5-73.7] during the first month after full vaccination (i.e. 2-6w after 2$^{nd}$ dose of mRNA vaccines), but rapidly decreasing with time. The waning is more pronounced than for infections with Delta (12).

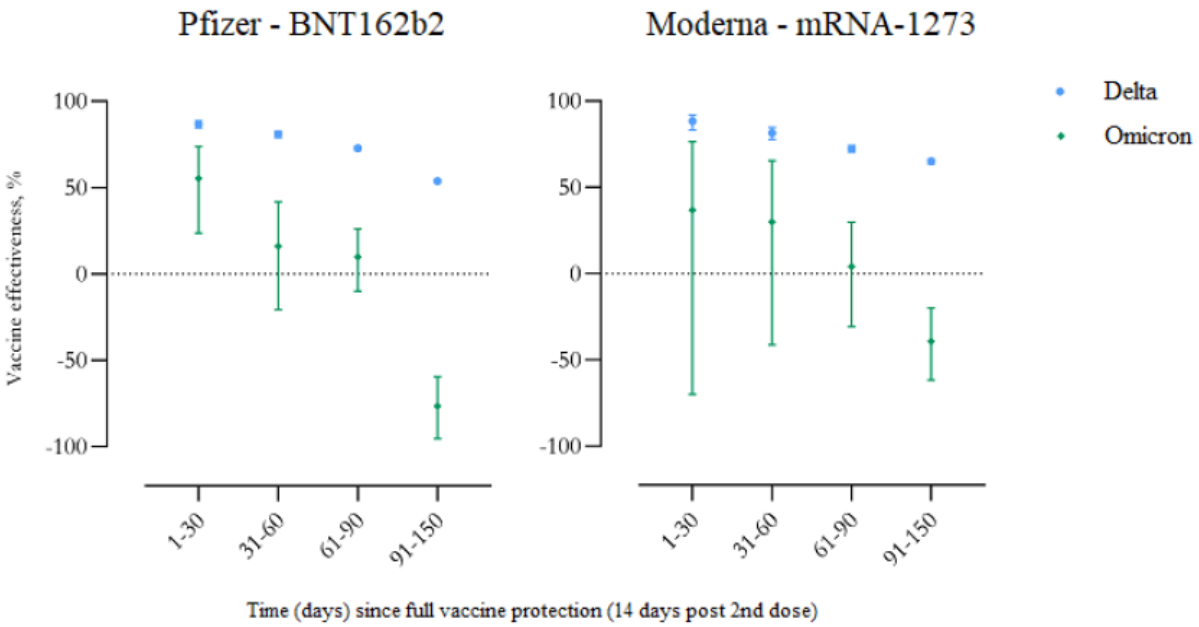
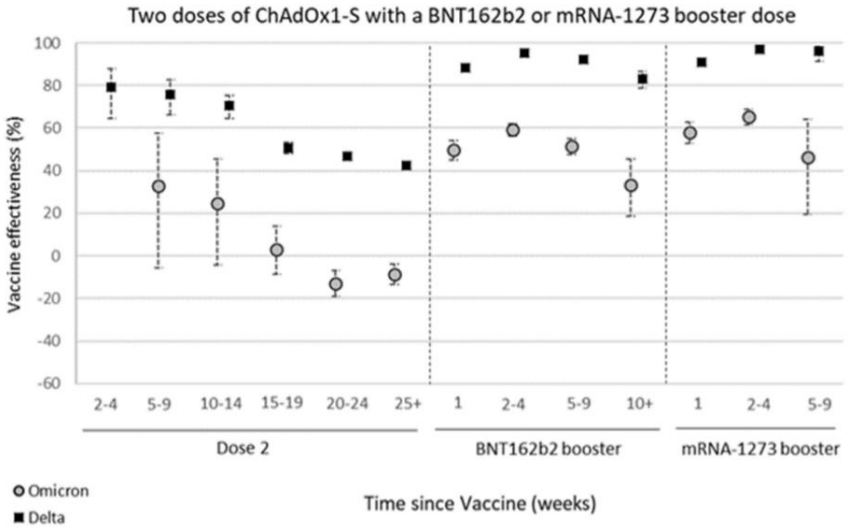
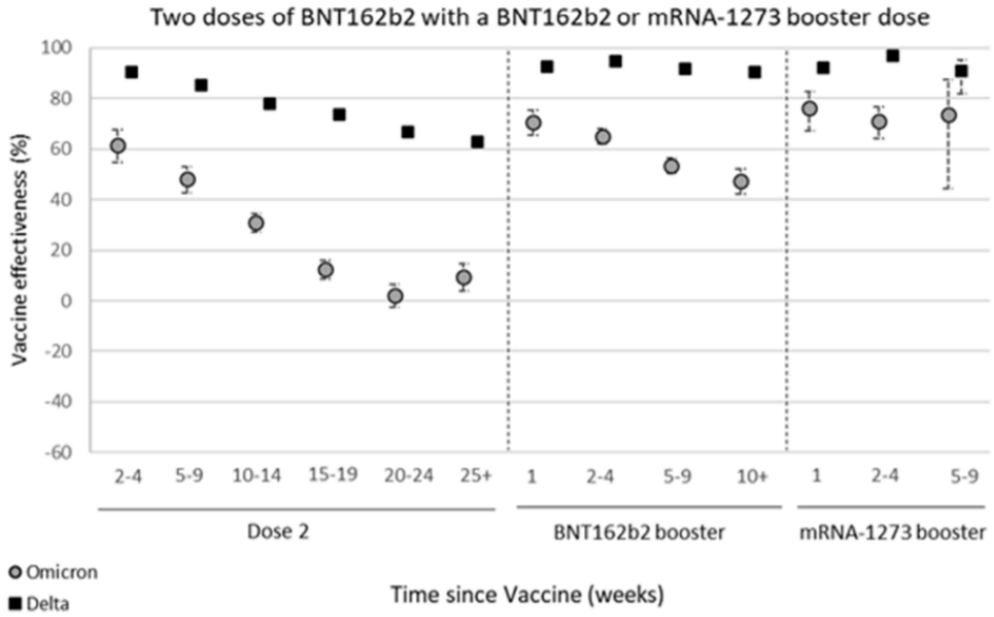



**Figure** Vaccine effectiveness against SARS-CoV-2 infection with the Delta and Omicron variants, shown separately for the BNT162b2 and mRNA-1273 vaccines. Vertical bars indicate 95% confidence intervals.

- The best vaccine-effectiveness estimates **against symptomatic diseases** to date come from the UK where 147,597 Delta and 68,489 Omicron cases have been analyzed (13). In all periods, effectiveness was lower for Omicron compared to Delta.
    - Among those who received an AstraZeneca primary course, **vaccine effectiveness was around 60% 2 to 4 weeks after either a Pfizer or Moderna booster, then dropped to 35-45% with a by 10 weeks after the booster**.



- Among those who received a Pfizer primary course, **vaccine effectiveness was around 70% after a Pfizer booster, dropping to 45% after 10+ weeks**.



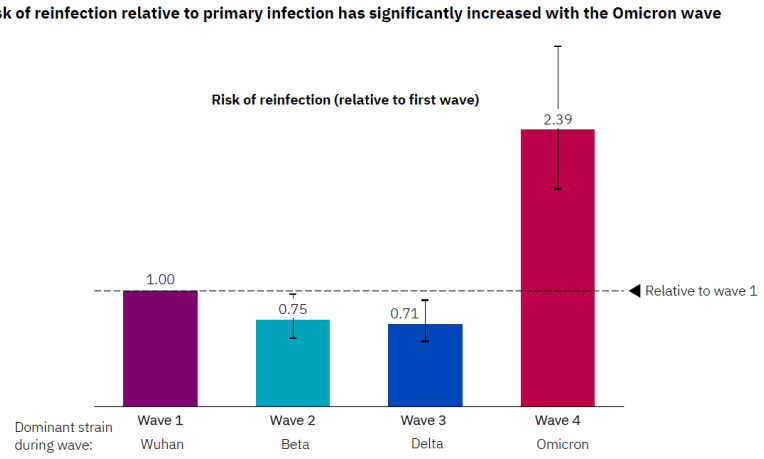

- Both Danish and UK results indicate that initial protection against Omicron after either 2nd dose of mRNA-vaccine or booster is similar, but protection wanes more quickly after 2nd dose. In Israel, researchers compared protection after the 2nd dose (primary vaccination offered to 12-15yo in June) with protection after a booster dose (for adolescents 16-18yo). The analysis shows that a **fresh booster dose provides a 3.7 (95% CI: 2.7-5.2) fold increase in protection against confirmed infection compared to a fresh 2-dose vaccine**. Of note is that both groups might have other differences (susceptibility, risk behavior, testing behavior etc) that could influence the results. However, the results are in line with in-vitro studies that show higher titers of neutralizing antibodies after the booster dose than after the initial vaccination schedule.

In the broader picture, a **maintained vaccine effectiveness against severe disease would mean that higher levels of viral circulation can be tolerated** and hence less strict quarantine rules are needed, especially in combination with a lower disease severity caused by Omicron. The most recent Technical Report from the UK provides the following info (14):

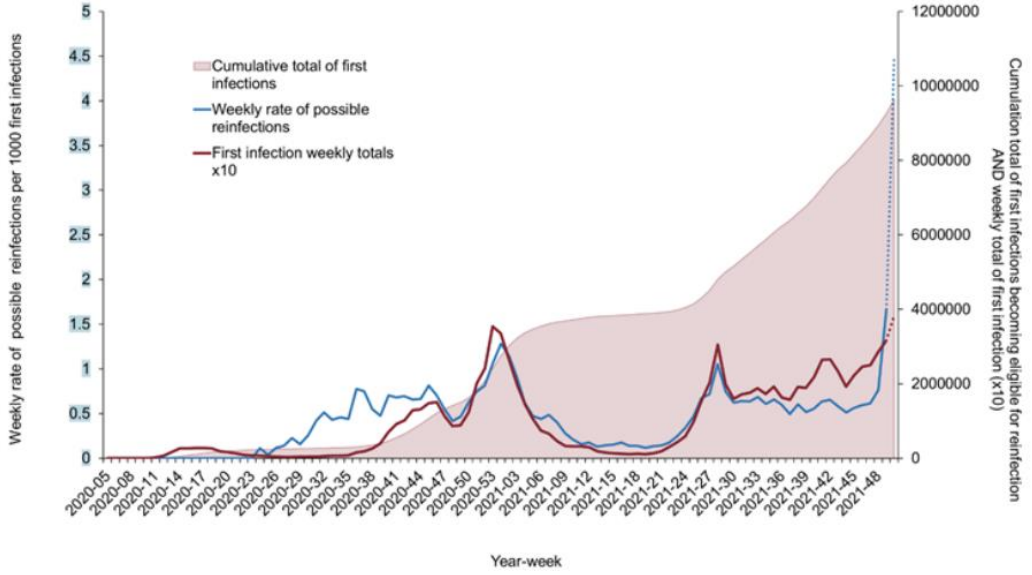
- One study analyzed a large number of Omicron cases (approximately 500,000). The **risk of presentation to emergency care or hospital admission with Omicron was approximately half of that for Delta** (HR 0.53; 95%CI 0.50-0.57) and the risk of hospital admission from emergency departments was about one-third (HR 0.33; 95%CI 0.30-0.37), after adjusting for age, vaccination status and re-infections, among others.
- **VE against hospitalization after a booster was 81% (77-85%).** A second smaller study calculated the VE against hospitalization after a booster in subjects with symptoms to be 68% (42-82%) and for all Omicron infections to be 88% (79-93%).

### 6.1.2. Reinfections

- There is sufficient evidence of a reduced immunity by a previous SARS-CoV-2 infection against Omicron, compared to Delta, from both in-vitro neutralization studies and epidemiological evaluations.
- A study form the UK found that the **neutralizing response in unvaccinated individuals previously infected with Delta was 29 times less potent against Omicron than against Delta** (15). In fully-vaccinated individuals the reduction was, however, less outspoken (4.5 times).
- Epidemiological data from South Africa showed a relatively much higher level of reinfections during the current Omicron wave than during previous waves (16). However, this should be nuanced as the number of people that have had a diagnosis of COVID-19 somewhere in the past is also continuously increasing, thereby increasing the population that can present a possible reinfection.



- Data from England therefore use the population of previous infections eligible to become a reinfection as a denominator, and also show a marked increase in overall reinfection rates (17). Between 1 November and 18 December 2021 9.5% of all infections were reinfections.




- In the Netherlands, a multivariate analysis found an increased risk of SGTF, predictive of the Omicron variant, in previously infected individuals compared with infected naïve individuals (OR=4.9; 95%CI 3.1-7.7) (18).

### 6.1.3. Incubation period

Several studies suggest a possible shorter incubation period for Omicron as compared to previous VOCs, although data remains limited and mostly for young, healthy, vaccinated adults.

- Publicly available data from 18 transmission pairs in South Korea estimated a mean serial interval of **2.2 days** with standard deviation of 1.6 days (19) This is shorter than reported for Delta (mean 3.3 days).
- In a household outbreak in Nebraska, US, median interval between earliest possible exposure and symptom onset of 6 household members was **73 hours** (range 33-75 hours) (20).
- An outbreak after a Christmas party in Norway, involving 87 cases, the incubation period for symptomatic cases ranged from 0-8 days with a **median of 3 days** (IQR 3-4). Of note is that some transmission between colleagues might have happened before the party, which would lead to underestimation of the incubation period (2).
- Currently available Belgian data from contact tracing on 851 transmission pairs, show a median serial interval of **2.2 days** (SD 2,19), as compared to 2.9 days (SD 2,85) for non-Omicron cases.

### 6.2. INTERNATIONAL GUIDELINES

Of note when interpreting international guidelines, is that **the definition of "high-risk contact" in many countries is more strict than in Belgium**. For example, neither in the UK nor the US, mask-wearing during the exposure is taken into account. In the UK, any contact within 1m is considered as "high-risk", regardless of the duration.

Several countries updated their guidance with regards to testing and quarantine of high-risk contacts, in response to the Omicron wave. Measures vary substantially among countries. Several countries (e.g. US, France, UK, Germany) require no quarantine for fully-vaccinated HRCs and sometimes replaced it with stricter precautionary measures. Some (US, Denmark, Italy) differentiate between HRCs already vaccinated with a booster and others. Most countries still require quarantine for non-fully vaccinated HRCs, varying from 5 to 10 days. Testing procedures are very diverse both in timing and tests used.

| Agency/ country | Vaccination status | Testing schedule | Type of test | Quarantine | Adapted because Omicron wave |
|---|---|---|---|---|---|
| ECDC | Vaccinated | First test ASAP<br>Consider a second test 2-4 days afterwards, particularly if a RADT was used | PCR preferred, but RADT is also acceptable | Until result first test is received<br>If working with vulnerable people = unvaccinated HRCs | No |
| | Unvaccinated | First test ASAP<br>Second test on day 10 | PCR or RADT; PCR for second test | Until result second test is received | |
| CDC - general | Boosted or <6m after mRNA D2 or <2m after J&J | One test at day 5 | NAAT or antigen | No, but mask-wearing around others for 10d | Yes |
| | Not boosted or recently vaccinated | | | 5 days + mask wearing around others for 5d | |
| CDC- HCWs | Boosted or <6m after 2nd mRNA or <2m after J&J | D2 and D5-7 | NAAT or antigen | / | |
| | Not recently vaccinated | Only if required for return to work | | 10d without test<br>D7 if test D5 negative | |
| Netherlands | All HRCs (irrespective of vaccination status) | Self-test ASAP<br>One test 5 days after last exposure | PCR, LAMP or Ag test<br>Positive self-tests have to been confirmed PCR | 10 days, unless negative test at day 5 | Yes |
| | HCW HRCs (regardless of vaccination status) | First test ASAP<br>Second test on day 5 | | Until negative test on day 5<br>Surgical mask type II for 10 days | |
| France | Vaccinated Contacts or children <12y | First test ASAP<br>Self-test at day 2 and 4 after start symptoms in index | First test: PCR or rapid Ag test | No quarantine, but stricter measures during 7 days (mask wearing, limit contacts, teleworking…) | Yes |
| | Unvaccinated contacts | First test ASAP<br>Second test at day 7 | | 7 days from last exposure | |
| UK | Vaccinated or <18.5 years | Daily test for 7d (max. until D10)<br>• Household HRCs: after start symptoms in index<br>• Other contacts: after last exposure | Self-test | No quarantine | Yes |
| | Unvaccinated and 18.5+ | One test ASAP | PCR | 10 days | |
| Germany | Vaccinated | One test ASAP | PCR | No quarantine | No |
| | Unvaccinated | One test on day 5 if PCR, on day 7 if rapid Ag test | PCR or rapid Ag test | 10 days, or until negative test result | |
| Denmark | Household contacts vaccinated with booster | First test ASAP<br>Second test on day 4<br>Third test on day 6<br>If no isolation from index possible: 1st test ASAP and 2nd | Day 4: PCR<br>Day 6: PCR or Ag test<br>No isolation | No quarantine, unless isolation from index is not possible (quarantine until result second test) | Yes |

| Agency/ country | Vaccination status | Testing schedule | Type of test | Quarantine | Adapted because Omicron wave |
|---|---|---|---|---|---|
| | Household contacts without booster vaccination | test 48h after index has no symptoms or on day 7 if no symptoms<br>First test on day 4<br>Second test on day 6<br>If no isolation from index possible: 1st test ASAP and 2nd test 48h after index has no symptoms or on day 7 if no symptoms | possible:<br>First test: Ag test<br>Second test: PCR | Quarantine until test result on Day 4; or until second test if no isolation possible | |
| | Other contacts (regardless vaccination status) | First test ASAP<br>Second test on day 4 | Ag test (possibly self-test) | No quarantine | |
| Italy | Boosted or primary vaccination <120d | No testing | - | No quarantine, but wear FFP2 mask for 10 days | Yes |
| | Primary vaccination >120d | Test on day 5 | PCR or Ag test | Until negative test on day 5 | |
| | Unvaccinated | Test on day 10 | PCR or Ag test | Until negative test on day 10 | |

## De volgende personen hebben deelgenomen aan dit advies:

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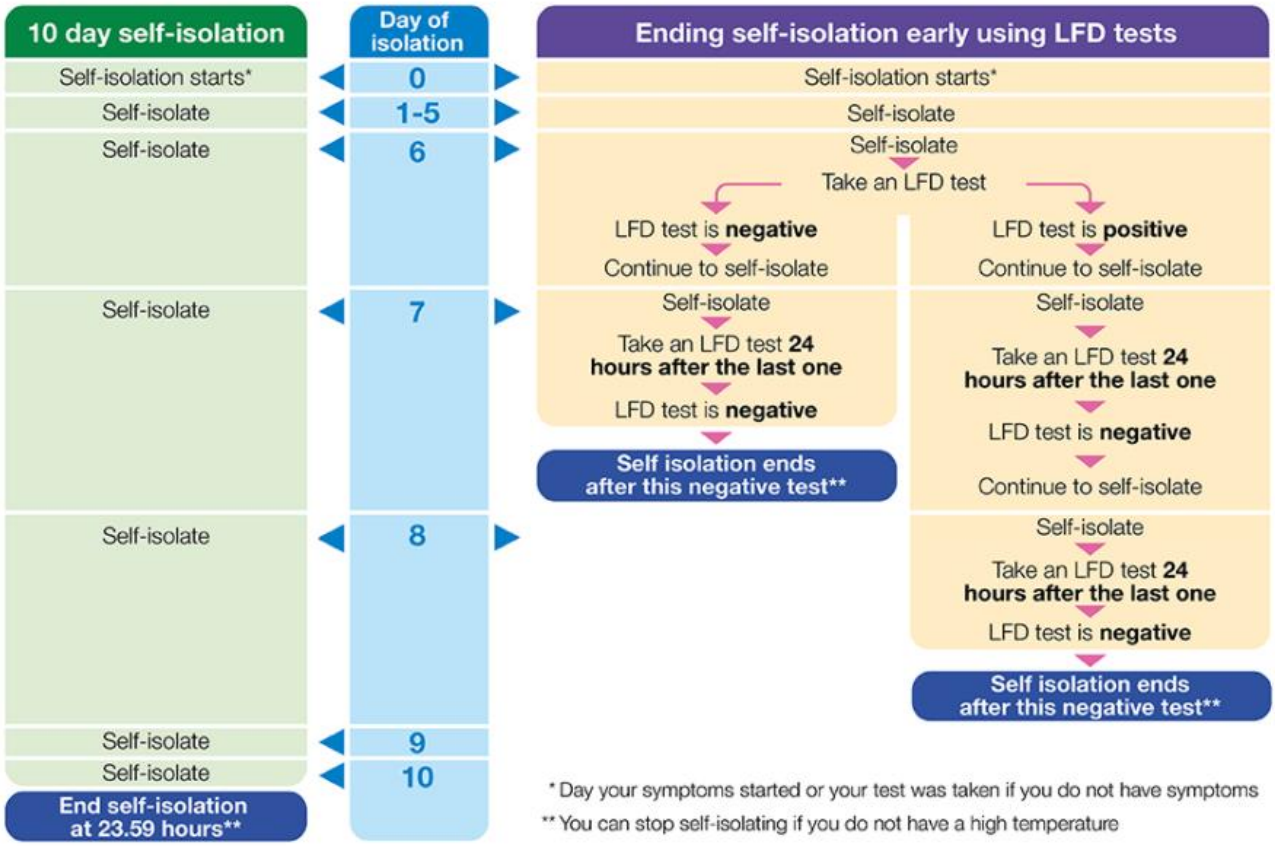
# 8. Bijlagen

## 8.1. RICHTLIJNEN ISOLATIE BELGIË

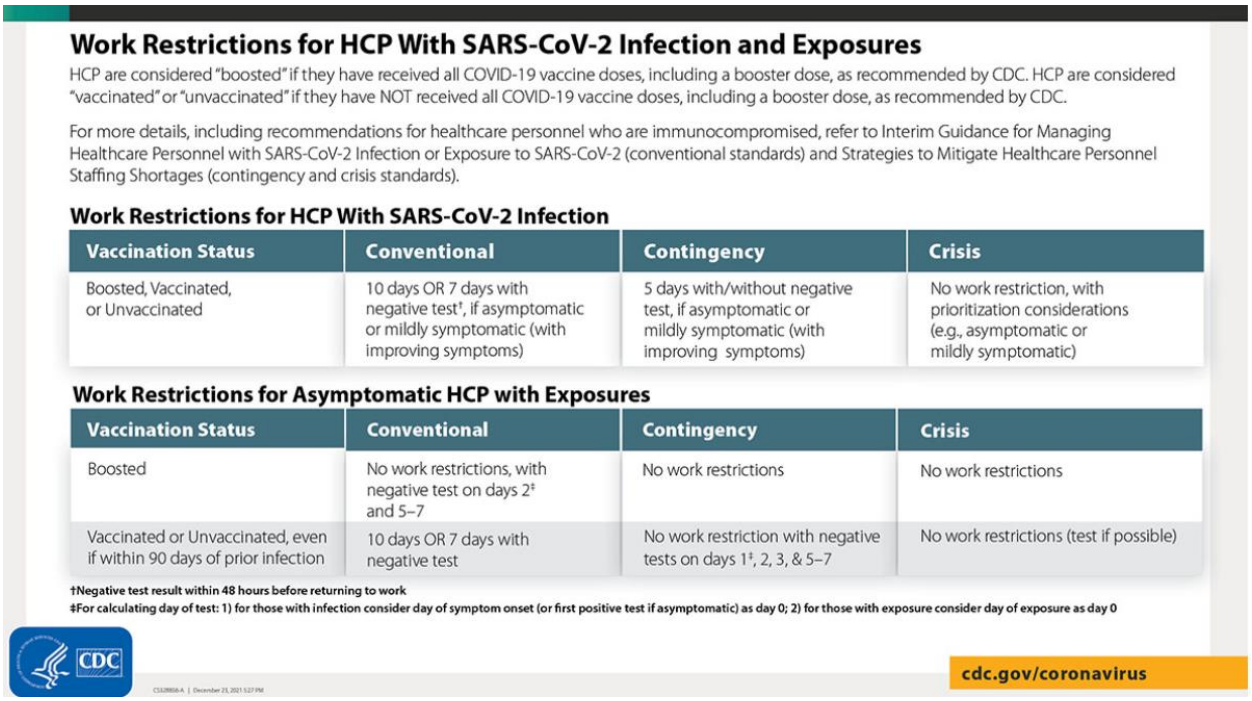
| Einde isolatie | Voor wie? | Opmerkingen |
|---|---|---|
| **10d** na begin symptomen<br>+ min. 3d koortsvrij<br>+ klinische verbetering | Ambulante patiënten in thuisisolatie | - 7d na test voor asymptomatische patiënten<br>- incl. patiënten die uit het ziekenhuis ontslagen worden <14d na begin symptomen<br>- excl. patiënten in residentiële collectiviteiten |
| **14d** na begin symptomen<br>+ min. 3d koortsvrij<br>+ klinische verbetering | Gehospitaliseerde patiënten / bewoners residentiële collectiviteiten | - bv. woonzorgcentra<br>- behalve patiënten die intensieve zorg vereisen |
| min. 3d koortsvrij<br>+ klinische verbetering<br>+<br>**21d*** na begin symptomen<br>OF<br>**14d** na begin symptomen EN PCR 2x <$10^5$ copies/mL met min. 24h interval | Intensieve zorgen | - zowel een test-gebaseerde als een symptoom-gebaseerde aanpak kan gekozen worden<br>- *28 dagen indien patiënt nog geïntubeerd is |
| **21d** na begin symptomen<br>+ min. 3d koortsvrij<br>+ klinische verbetering | Ernstig immuungecompromitteerden | - steeds multidisciplinair overleg<br>- geval-per-geval afwijkingen mogelijk<br>- overweeg serologie en herhaalde PCR |

## 8.2. UK RECOMMENDATIONS ON DURATION OF ISOLATION

**Examples of when to end self-isolation if you have had COVID-19 symptoms or have received a positive COVID-19 test result**



## 8.3. US RECOMMENDATIONS FOR HCWS



### Work Restrictions for HCP With SARS-CoV-2 Infection and Exposures

HCP are considered "boosted" if they have received all COVID-19 vaccine doses, including a booster dose, as recommended by CDC. HCP are considered "vaccinated" or "unvaccinated" if they have NOT received all COVID-19 vaccine doses, including a booster dose, as recommended by CDC.

For more details, including recommendations for healthcare personnel who are immunocompromised, refer to Interim Guidance for Managing Healthcare Personnel with SARS-CoV-2 Infection or Exposure to SARS-CoV-2 (conventional standards) and Strategies to Mitigate Healthcare Personnel Staffing Shortages (contingency and crisis standards).

**Work Restrictions for HCP With SARS-CoV-2 Infection**

| Vaccination Status | Conventional | Contingency | Crisis |
|---|---|---|---|
| Boosted, Vaccinated, or Unvaccinated | 10 days OR 7 days with negative test†, if asymptomatic or mildly symptomatic (with improving symptoms) | 5 days with/without negative test, if asymptomatic or mildly symptomatic (with improving symptoms) | No work restriction, with prioritization considerations (e.g., asymptomatic or mildly symptomatic) |

**Work Restrictions for Asymptomatic HCP with Exposures**

| Vaccination Status | Conventional | Contingency | Crisis |
|---|---|---|---|
| Boosted | No work restrictions, with negative test on days 2‡ and 5–7 | No work restrictions | No work restrictions |
| Vaccinated or Unvaccinated, even if within 90 days of prior infection | 10 days OR 7 days with negative test | No work restriction with negative tests on days 1‡, 2, 3, & 5–7 | No work restrictions (test if possible) |

†Negative test result within 48 hours before returning to work

‡For calculating day of test: 1) for those with infection consider day of symptom onset (or first positive test if asymptomatic) as day 0; 2) for those with exposure consider day of exposure as day 0

CDC

cdc.gov/coronavirus

## 8.4. OVERZICHT KLINISCHE STUDIES ZELF-TESTEN

Table: Sensitivity and specificity of self-administered rapid Ag tests, compared to RT-PCR on NPS

| Study | Type and place of test | Population | N positive | Sensitivity | Specificity | PPV |
|---|---|---|---|---|---|---|
| Schuit et al. | At-home saliva self-test | Test center attendees | 183 | 46.7% | 99.0% | 76.6% |
| | | **High viral load** | 143 | **54.9%** | 98.8% | 70.9% |
| | At home nasal self-test (SD Biosensor) | Test center attendees | 183 | 68.9% | 99.5% | 91.2% |
| | | **High viral load** | 143 | **83.9%** | 99.5% | 90.2% |
| | | Symptomatic | 149 | 78.5% | 99.5% | 92.1% |
| | | Asymptomatic | 31 | 22.6% | 99.6% | 77.8% |
| | | Symptomatic and high viral load | 125 | 90.4% | - | - |
| | | Asymptomatic and high viral load | 18 | 38.9% | - | - |
| | | No prior COVID infection | 161 | 72.7% | 99.6% | 92.9% |
| | | No prior infection and high viral load | 126 | 83.1% | - | - |
| Stohr et al. | At-home BD Veritor RDT on mid-turbinate swab | Test center attendees | 179 | 49.1% | 99.9% | - |
| | | **High viral load** | - | **76.1%** | 99.7% | - |
| | | **Compared to composite index for infectiousness** | - | **75.9%** | 99.9% | - |
| | At-home Roche-RDT on mid-turbinate swab | Test center attendees | 198 | 61.5% | 99.7% | - |
| | | **High viral load** | - | **80.1%** | 99.1% | - |
| | | **Compared to composite index for infectiousness** | - | **78.8%** | 99.7% | - |
| Lindner et al. | SD-Biosensor RDT at OPD | Symptomatic patients | 40 | 82.5% | 100% | - |