

**To:** [redacted] (10)(2e) [redacted] (10)(2e) [redacted] (10)(2e) @rivm.nl  
**From:** [redacted] (10)(2e) [redacted] (10)(2e) [redacted] (10)(2e) [redacted] (10)(2e)  
**Sent:** Thur 5/7/2020 9:03:08 AM  
**Subject:** RE: I.E.'s RWZI's  
**Received:** Thur 5/7/2020 9:03:09 AM  
[Atrikel COVID-19 - vs 1\\_ arih.docx](#)

In a study among 138 hospital-admitted Chinese patients, besides common symptoms about 10% experienced diarrhea (Wang et al. 2020). Other studies showed similar common symptoms with fewer cases of diarrhea (2-3%) (Huang et al. 2020; Chen et al. 2020; WHO 2020) or many more cases of diarrhea (19-23%) (Chen et al. 2020; Lin et al. 2020). The presence of SARS-CoV-2 RNA in faecal samples was described (Holshue et al. 2020) and confirmed in later studies with viral RNA fragments detected in over 50% of stool samples from SARS-CoV-2-infected hospitalized patients using rRT-PCR (Xiao et al. 2020; Xu et al. 2020; Lin et al. 2020) not associated with the presence of gastrointestinal symptoms and the severity of illness. The duration of positive stool ranged from 1 to 12 days, and patients remained positive in stool after showing negative in respiratory samples. Virus RNA fragments have been detected at high Ct values (low concentrations) initially (Holshue et al. 2020) but also at very low Ct values in anal swabs (high concentrations; Zhang et al. EMI 2020). Over 20% of patients remained positive in feces even after the viral RNA decreased to undetectable levels in respiratory tract (Xiao et al. 2020; Ling et al. 2020). Few studies on COVID-19 virus in urine showed few samples positive for viral RNA fragments (Holshue et al. 2020; Ling et al. 2020) but did remain positive after throat swabs turned negative (Ling et al. 2020). In most studies urine samples tested negative for SARS-CoV-2 (Wang et al. 2020). Most sputum (72%) and nasal swabs (63%) tested positive for the virus.

Uit bijgevoegde draft

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**Sent:** donderdag 7 mei 2020 09:59  
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**Subject:** RE: I.E.'s RWZI's

Ga uit deze artikelen de getallen halen voor excreatie; of kun jij me die al aanreiken?

Vriendelijke groeten / kind regards,

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First list of assumptions

- From 2-23% diarrhea (Wang et al. 2020; Huang et al. 2020; Chen et al. 2020; WHO 2020; Chen et al.

2020; Lin et al. 2020) More virus shedding in higher volume

- Patients at IC wear diapers? Solid waste
- Viral RNA fragments in >50% of stool (Xiao; Xu; Lin) > In NL 25%
- Ct values 20-40 in feces and anal swabs (Holshue; Zhang) > dynamics
- Not associated with gastrointestinal symptoms and severity
- Cultured from stool (Zhang et al. 2020); failed (Wolfel et al. 2020)
- Few urine RNA positive (Holshue; Ling); most negative (Wang) > leave out virus contribution from urine
- Most sputum (72%) and nasal swabs (63%) tested virus RNA positive (Chen et al. 2020; Lin et al. 2020; Wang et al. 2020)
- Stool remains positive after throat/nose swabs become negative

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**Subject:** I.E.'s RWZI's

Ha (10)(2e)

Nog even voor ons overleg van dadelijk:

In de geselecteerde/onderzochte RWZI's is ook een groot verschil in het aantal i.e.'s, en het aantal werkelijke aangesloten personen (hoeveelheid industrieel water wat erbij komt), zie excel sheet.

Groeten (10)(2e)