

#280

5.1.2e


**COVID-HOME study**  
***Prospective cohort study of non-hospitalised COVID-19 patients***  
Part I: duration and routes of viral shedding, genetic diversity, and  
development of immunity

5.1.2e

and the COVID HOME research group

*Department of Medical Microbiology and Infection Prevention, University Medical Center Groningen - Groningen (Netherlands),  
Municipal Public Health Services Groningen (GGD Groningen) - Groningen (Netherlands)*

The COVID-HOME study; prospective cohort study of non-hospitalised COVID-19 patients. Part I: duration and routes of viral shedding, genetic diversity, and development of immunity




## Background

5.1.2e

- Most research concentrates on hospitalised patients
- In March 2020, a prospective longitudinal study of non-hospitalised COVID-19 individuals and household (HH) members was initiated in the four northern provinces of the Netherlands
- At times of flexibilization of measures and in the face of new outbreaks, more information is needed

### Aims

- To measure the duration and routes of viral shedding
- Determine SARS-CoV-2 viral genetic diversity and transmission chains in order to inform guidelines for biosafety and patient isolation



The COVID-HOME study; prospective cohort study of non-hospitalised COVID-19 patients. Part I: duration and routes of viral shedding, genetic diversity, and development of immunity

## Participant characteristics

5.1.2e

	Participants (n=49)	Positive (n=26)	p-value
Age in years (median) (range: IQR)	28.3 (1.5-64 ; 22-55)	40 (1.5-64 ; 23-57)	-
Age (years)			
≤ 15	5 (10.2%)	3 (60%)	0.688
16 - 50	31 (63.3%)	15 (48.4%)	
> 50	13 (26.5%)	8 (61.5%)	
Gender			
Female	31 (63.3%)	17 (55%)	0.744
Male	18 (36.7%)	9 (50%)	
Hospital employee	14 (28.6%)	12 (85.7%)	0.002
Number of households	12	-	-
Household size (range)	3.8 (2-17 people)	-	-
Clinical presentation			
Asymptomatic	26 (53%)	4 (15.4%)	<0.001
Mild disease	17 (34%)	16 (94%)	
Moderate/more severe disease	6 (12.2%)	6 (100%)	

The COVID-HOME study; prospective cohort study of non-hospitalised COVID-19 patients. Part I: duration and routes of viral shedding, genetic diversity, and development of immunity

## Methods

### Study design

5.1.2e

**Inclusion Criteria**

- 1) Non-hospitalised
- 2) SARS-CoV-2 RT-PCR test (+)
- 3) Household (HH) members
- 4) Signing a written informed consent
- 5) Follow research sampling schedule

Sampling period finished if SARS-CoV-2 PCR test (-)

**Samples tested by SARS-CoV-2 RT-PCR:**

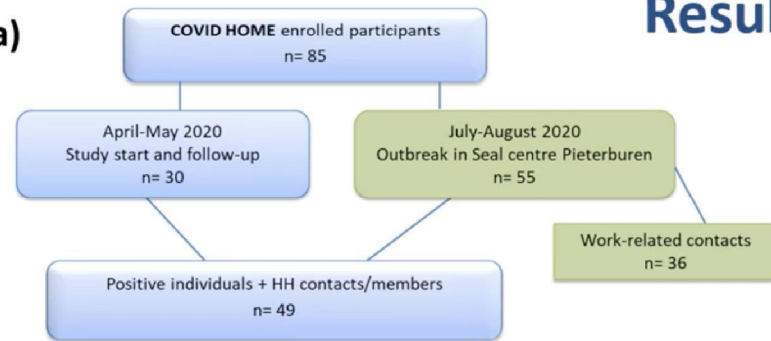
- Nasopharyngeal/throat swabs
- Stool, urine
- sperm/vaginal secretions

**Blood:** lab parameters, serology, cytokines

if SARS-CoV-2 PCR test (+) after 21 days  
Invitation to continue sampling until week 4 or PCR(-)

**Long term follow up**  
Serology  
Post-viral fatigue syndrome

a)



b)

	Number participants (n=49)	Positive (n=26)	p-value
<b>Age in years</b> (median) (range; IQR)	28.3 (1.5-64 ; 22-53)	40 (1.5-64 ; 23-57)	-
<b>Age (years)</b>			
≤ 15	5 (10.2%)	3 (60%)	
16 - 50	31 (63.3%)	15 (48.4 %)	0.688
> 50	13 (26.5%)	8 (61.5 %)	
<b>Gender</b>			
Female	31 (63.3%)	17 (55%)	
Male	18 (36.7%)	9 (50%)	0.744
<b>Clinical presentation</b>			
Asymptomatic	26 (53%)	4 (15.4%)	
Mild disease	17 (34%)	16 (94%)	<0.001
Moderate/more severe disease	6 (12.2%)	6 (100%)	

## Results

### c) Frequency of symptoms at presentation & at

5.1.2e

Symptoms	At presentation (n=21) n (%)	Symptoms at any time: days 1-16 (n=21) n (%)
Fever	8 (38.1)	11 (47.8)
Dry cough	7 (33.3)	10 (43.5)
Cough with sputum production	4 (19.9)	6 (26.1)
Cough with bloody sputum	0 (0)	0 (0)
Fatigue / Malaise	11 (52.4)	14 (60.9)
Sleepiness	5 (23.8)	10 (43.5)*
Shortness of breath/ difficult breathing	5 (23.8)	9 (39.1)
Wheezing	0 (0)	0 (0)
Chest pain	1 (4.8)	2 (8.7)
Lack of smell (anosmia)	4 (19.0)	9 (39.1)*
Lack of taste (ageusia)	3 (14.3)	8 (34.8)*
Lower chest wall indrawing	1 (4.8)	3 (13.0)
Runny nose (Rhinorrhoea)	8 (38.1)	9 (39.1)
Sore throat	5 (23.8)	7 (30.4)*
Lack of appetite (Anorexia)	3 (14.3)	9 (39.1)*
Chills / rigors	4 (19.0)	7 (30.4)
Headache	10 (47.6)	12 (52.2)
Muscle aches (Myalgia)	7 (33.3)	9 (39.1)
Joint pain (Arthralgia)	2 (9.5)	3 (13.0)
Abdominal pain	2 (9.5)	4 (17.4)
Vomiting / Nausea	2 (9.5)	3 (13.0)
Diarrhoea	3 (14.3)	7 (30.4)*
Red eyes Conjunctivitis	1 (4.8)	1 (4.3)
Skin rash	0 (0)	2 (8.7)
Skin ulcers	0 (0)	1 (4.3)
Lymphadenopathy	1 (4.8)	1 (4.3)
Altered consciousness /confusion	1 (4.8)	1 (4.3)
Seizures	0 (0)	0 (0)
Feeling dizzy/faint	2 (9.5)	5 (21.7)
Haemorrhage	0 (0)	2 (8.7)

\*Symptoms frequency increasing after enrollment

The COVID-HOME study: prospective cohort study of non-hospitalised COVID-19 patients. Part I: duration and routes of viral shedding, genetic diversity, and development of immunity

# Viral shedding

5.1.2e

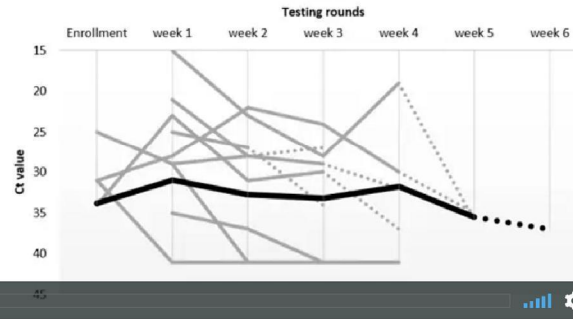
Samples tested	Total individuals tested (n=49)	Positive individuals	Total number of samples (Mean per person)	Median duration shedding in days (Range ; IQR)	Range shedding (days)
Nasopharyngeal/throat	49 (100%)	26 (53%)	258 (5.3)	24 (20.5 - 32)	2 - 45
Stool	16 (33%)	13 (81%)	54 (3.4)	15 (10 - 21)*	8 - 31
Urine	16 (33%)	0	49 (3.0)	-	-
Vaginal (females=31)	10 (32%)	1 (10%)	31 (3.1)	7	-
Sperm (males=18)	3 (17%)	0	12 (4.0)	-	-

(\* Real median duration longer: shedding ongoing)

Nasopharyngeal/throat (n=25)



Stool (n=13)

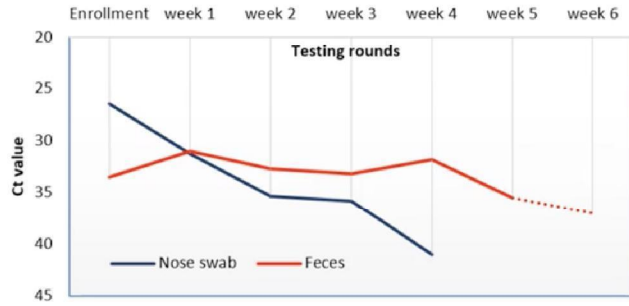


10:43 [play button] [signal strength] [settings] [close]

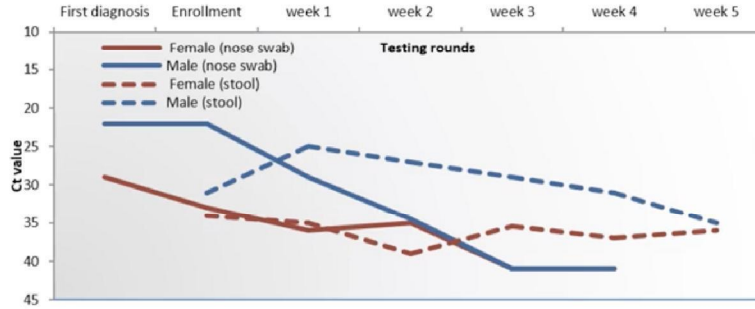
# Viral shedding

5.1.2e

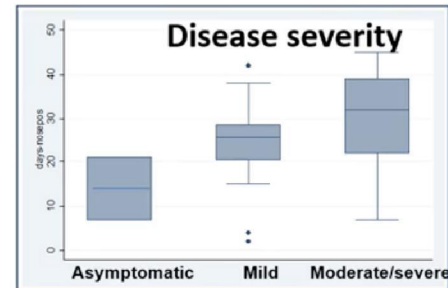
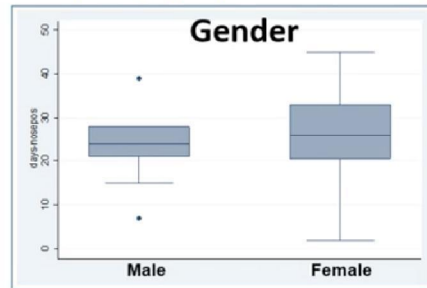
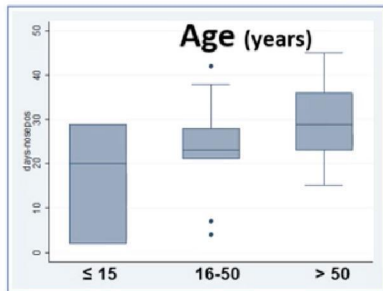
Viral shedding nose-swab vs stool samples (n=13)



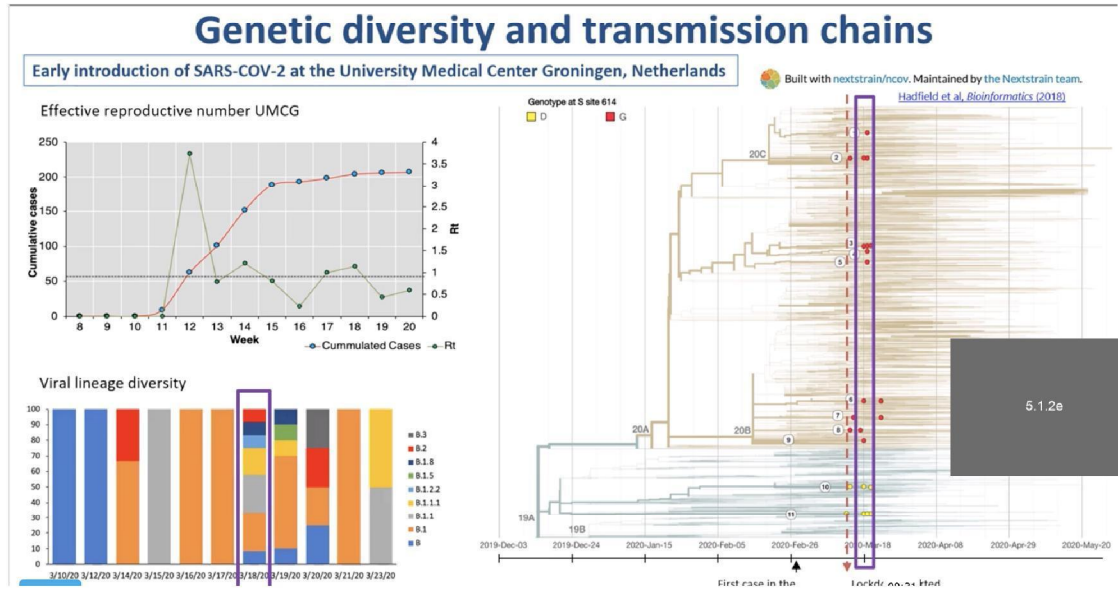
Gender stratified viral shedding nose-swab vs stool samples (n=14)



Duration Nasopharyngeal/throat shedding by



The COVID-HOME study: prospective cohort study of non-hospitalised COVID-19 patients. Part I: duration and routes of viral shedding, genetic diversity, and development of immunity



# Acknowledgements



- The participants of COVID HOME study
- [Redacted] and the Virology lab at UMCG, NL
- [Redacted]
- [Redacted]
- [Redacted]
- Information Technology department, UMCG, NL
- Municipal Public Health Services Groningen (GGD Groningen), Groningen, NL

