The idea behind this presentation is to give radiologists an idea of what to expect on images from Covid-19 patients.

Published data is mainly from Chinese patients, but limited data from Belgian patients show similar findings.
- Key imaging findings on chest CT
  - Peripheral location of abnormalities
  - Initial phase: groundglass is predominant pattern
  - Crazy paving, consolidation
  - Organizing pneumonia like, nodular form
  - No pleural fluid
  - No adenopathies

- In general the preferred imaging technique is unenhanced chest CT, but discuss each case with the treating physician. Depending on comorbidities and previous history, different imaging strategy might be needed.
Avoid inappropriate exposure with no effect on the medical care of patients!
Not every patient with Covid-19 needs imaging. Avoidance of inappropriate exposure is not only important for patients but also for your technicians, radiographers, nurses and doctors.
Images from publications published in Radiology journals
34-y-old man
Fever for 4 days

T. Ai et al.
46-y-old woman
Fever for 4 days

T. Ai et al.
62-y-old man
Fever for 2 weeks

T. Ai et al.
54-y-old woman
Fever

Y. Wu et al.
Longitudinal CT Findings in COVID-19 Pneumonia: Case Presenting Organizing Pneumonia Pattern
Radiology Cardiothoracic Imaging. (2020)
53-y-old woman
Fever and cough for 5 days

Zi Yue Zu et al.
Coronavirus Disease 2019 (COVID-19): A Perspective from China
Radiology. (2020)
51-y-old woman
No fever

Close contact with patients with lab-confirmed COVID-19

Chest CT 6 days before first positive RT-PCR test

Chest CT 4 days later

Zi Yue Zu et al.
Coronavirus Disease 2019 (COVID-19): A Perspective from China
Radiology. (2020)
58-y-old man
No fever
Close contact history
74-y-old man
Fever and cough for 5 days

Y Fang et al.
Sensitivity of Chest CT for COVID-19: Comparison to RT-PCR
Radiology. (2020)
55-y-old woman
Fever and cough for 7 days

Y Fang et al.
Sensitivity of Chest CT for COVID-19: Comparison to RT-PCR
Radiology. (2020)
43-y-old man
Fever and cough for 1 week

Y Fang et al.
Sensitivity of Chest CT for COVID-19: Comparison to RT-PCR
Radiology. (2020)
43-y-old woman
Fever and cough for 5 days

Y Fang et al.
Sensitivity of Chest CT for COVID-19: Comparison to RT-PCR
Radiology. (2020)
36-y-old man
Cough for 3 days

Y Fang et al.
Sensitivity of Chest CT for COVID-19: Comparison to RT-PCR
Radiology. (2020)
36-year-old man

2-day history of fever, sore throat and fatigue 5 days after visiting Wuhan, China

Negative PCR

P Huang et al. Use of Chest CT in Combination with Negative RT-PCR Assay for the 2019 Novel Coronavirus but High Clinical Suspicion. Radiology. (2020)
45-y-old woman

Fever, cough, chest pain after recent travel to Japan

62-y-old woman

7 days after contact with person from Wuhan

Cough, sputum, fever

Initial CT

3 days later

59-y-old woman
Fever and chills

65-y-old woman

Travelled to Wuhan
Fever and cough 5 days after arrival

Chest CT 7 days after symptom onset

Case

Normal chest radiograph
→ ground glass CT

NG Ming-Yen et al.
Imaging Profile of the COVID-19 Infection: Radiologic Findings and Literature Review
Radiology (2020)
45-y-old woman
Wuhan
2 days cough and fever

At presentation

2 days later

Y Fang et al. CT Manifestations of Two Cases of 2019 Novel Coronavirus (2019-nCoV) Pneumonia Radiology (2020)
32-y-old male

Y Fang et al. CT Manifestations of Two Cases of 2019 Novel Coronavirus (2019-nCoV) Pneumonia Radiology (2020)

After 3 days of therapy

After 8 days of therapy
33-y-old woman
5-day history of fever and cough
Worked in Wuhan

J Lei et al. CT Imaging of the 2019 Novel Coronavirus Pneumonia Radiology (2020)

At presentation
3 days after FU
A 36-year-old man

B 44-year-old man

C 65-year-old woman

Figure 1:
An axial CT image obtained without intravenous contrast in a 36-year-old male (Panel A) shows bilateral ground-glass opacities in the upper lobes with a rounded morphology (arrows). An axial CT image obtained in a 44-year-old male (Panel B) shows larger ground-glass opacities in the bilateral lower lobes with a rounded morphology (arrows). An axial CT image obtained in a 65-year-old female (Panel C) shows bilateral ground-glass and consolidative opacities with a striking peripheral distribution.
### Reported Chest CT Findings in 2019 Novel Coronavirus Infections

<table>
<thead>
<tr>
<th>CT Findings</th>
<th>Frequency (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ground-glass opacity</td>
<td>86</td>
</tr>
<tr>
<td>Consolidation</td>
<td>29</td>
</tr>
<tr>
<td>Crazy-paving</td>
<td>19</td>
</tr>
<tr>
<td>Linear</td>
<td>14</td>
</tr>
<tr>
<td>Cavitation</td>
<td>0</td>
</tr>
<tr>
<td>Discrete nodules</td>
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<tr>
<td>Pleural effusion</td>
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<tr>
<td>Lymphadenopathy</td>
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<tr>
<td>Bilateral distribution</td>
<td>76</td>
</tr>
<tr>
<td>Peripheral distribution</td>
<td>33</td>
</tr>
</tbody>
</table>

Note.—Data are from reference 10.
Looking for more information?


https://www.european-radiology.org/highlights/covid-19/

https://pubs.rsna.org/2019-ncov