Principle (rationale)

As the COVID-19 pandemic is stabilising, the return to normal daily life will also see the need to restart the provision of ART treatments. Infertility is a disease and once the risk of SARS-CoV-2/COVID-19 infection is decreasing, all ART treatments can be restarted for any clinical indication, in line with local regulations.

However, vigilance and measured steps must be taken for safe practice and to minimise the risks related to SARS-CoV-2/COVID-19-positive patients or staff during treatment.

The key principle in restarting activity in an ART centre is that patients, staff and anyone attending the centre is triage-negative. From a patient perspective, it means that only triage negative patients are commencing and continuing treatments. Each centre should ensure they adapt the triage questionnaire to their specific population.

If the triage is positive, testing for SARS-CoV-2 is recommended. The testing process should follow the same pathway as per any other viral screening routinely performed in the ART centre.

Each ART centre should discuss with the laboratory testing service which SARS-CoV-2 tests are available. The laboratory specialists should offer advice and guidance in interpreting the results, acknowledging that no test has 100% accuracy. COVID-19 data are emerging continuously and both the testing tools and the advice given must be adjusted accordingly.

Concept

The working group identified six pillars of good medical practice proposed for the restart of activity in the ART clinic and laboratory.

1. Discussion, agreement and consent to the start of treatment
2. Staff and patient triage
3. Access to advice and treatment
4. Adaptation of ART services
5. Treatment cycle planning
6. Code of Conduct for staff and patients
ESHRE recommends that ART centres use this guidance having first followed the local and/or national legislation and local and/or national government advice related to COVID-19.

1. Discussion, agreement and consent to start treatment
   a. High-risk patients (e.g. diabetes, hypertension, using immunosuppressant therapy, past transplant patients, lung, liver or renal disease) should not start ART treatment until it is deemed safe to do so by relevant healthcare professionals and/or local health authorities.
   b. All patients should be offered a choice to proceed with or postpone their ART treatment. In both cases patient preference should be clearly documented.
   c. Patients must be comprehensively informed, clearly understand the risks related to COVID-19 disease and acknowledge the increased risks in case of infection during pregnancy. Patients must also be informed on how to reduce the risk of infection in general.
   d. Patients must sign and adhere to the Code of Conduct.

2. Staff and patient triage and management

   Triage questionnaire
   ESHRE provides an ART triage questionnaire which can be used/adapted for the triage of both staff and patients (see Appendix 1).

Procedure for staff
   a. Triage information regarding health status, symptoms and lifestyle of the clinic team members and of individual(s) living in the same household should start at least two weeks before the beginning of clinical activities at the centre.
   b. Staff, suspected of infection after triage, should undergo regular SARS-CoV-2 IgM/IgG testing or equivalent tests. Additional and/or more frequent testing can be considered in line with national recommendations and/or availability of tests.
   c. All staff members who test positive, either for SARS-CoV-2 IgM or IgG, irrespective of symptoms, should receive occupational health advice and go into self quarantine.
   d. Staff who are symptomatic should be referred for medical advice and testing and should not re-attend work until the infection is cleared and documented by negative RT-PCR test or equivalent.
   e. Contact tracing and testing should be routine if a staff member is diagnosed with COVID-19 infection.
   f. Depending on the size of the unit, staff should be subdivided in “mini-teams” with minimum interactions among them. Teams should work according to a rotating schedule, similar to the one adopted for weekend work.
Procedure for patients
a. All patients planning to start treatment should have a triage questionnaire (paper, email or phone) two weeks before commencing treatment.
b. A preliminary triage of both partners should be performed two weeks before starting the ART treatment.
c. A further triage of both partners should be performed during ovarian stimulation.
d. Triage should be performed according to the same procedures used for staff members. Both partners should undergo triage. Patients, suspected of infection after triage should get regular SARS-CoV-2 IgM/IgG testing or equivalent tests. Additional testing can be considered in line with national recommendations and/or availability of tests.
e. All patients with a previous confirmed COVID-19 infection should present medical evidence of clearance in order to be eligible for treatment. If patients have been on respiratory support during the COVID-19 infection episode, they should additionally provide evidence of assessment and a medical specialist report.

Scenarios for patients
Scenario I (include):
- Both patients are triaged as low risk (negative clinical history, lifestyle compatible with low/minimal risk of contact with potentially infected individuals)
- Both patients are asymptomatic
Scenario II [be open minded]

- Patients who have recovered from a previous COVID-19 infection, proven by certified medical evidence of clearance, should have SARS-CoV-2 IgM/IgG testing prior to starting treatment.
- (IIa) Presence of non-specific symptoms in one of the partners before starting ovarian stimulation:
  - Repeat the triage at the beginning of ovarian stimulation
    - If negative: Continue the treatment
    - If symptoms persist: Perform SARS-CoV-2 IgM/IgG testing to decide
      - If IgM/IgG negative: Continue the treatment
      - If IgM/IgG positive: Postpone the treatment and refer for further testing.
- (IIb) Non-specific symptoms arising during ovarian stimulation
  - Perform SARS-CoV-2 IgM/IgG testing
    - If IgM/IgG negative: Continue the treatment
    - If IgM/IgG positive: Postpone the treatment and refer for further testing.

Scenario III [exclude]

- If patients and/or partners are symptomatic or COVID-19 positive, postpone the treatment and refer for further testing and follow-up.

Summary Figure patient triage
3. Access to advice and treatment
Patient education on COVID-19 risk and prevention is an essential step prior to acceptance for treatment. Patient education should include:

- Tutorials on the use of personal protective equipment (PPE), if required.
- Advice on continuation of social distancing and avoidance of unnecessary human physical contact.
- Information about symptoms of SARS-CoV-2/COVID-19 infection or exposure occurrence
- Agreement that treatment can be discontinued if the patient encounters a high-risk situation

4. Adaptation of ART services
The treatment of each patient should be completely re-thought and individualised.

In order to reduce unnecessary visits and staff-patient contact, telemedicine should be used for all treatment steps that do not require the physical presence of patients at the centre.

Guidance on adaptation of services in the centre is summarised below:

Sanitation
- Routine sanitation of all areas should be performed according to local protocols.
- Specific COVID-19 sanitation procedures should be implemented in case of COVID-19 positive patients or staff members.

Staff and centre adaptation
Adaptation should include:
- COVID-19-specific training
- COVID-19-specific standard operating procedures
- Adjusted work shifts
- Emergency agreements between ART centres to guarantee continuity of treatment provision.

Access procedures
- Limitation of the number of persons simultaneously present in the centre
- Provision of protective screens for administrative staff
- Provision of personal protective equipment and sanitation devices for patients and staff
- Restriction of access for partners and accompanying persons
- Redesign of waiting rooms and working spaces to guarantee appropriate distancing
- Management of appointments according to specific timetables, also for scans and blood tests
- Subdivision of staff into mini-teams to reduce unnecessary exposure of patients and staff members
- Follow-up of patients three weeks after oocyte retrieval and/or embryo transfer, in order to identify potential COVID-19 positive patients and implement necessary measures (i.e. contact tracing and sanitation)

5. Treatment cycle

Ovarian stimulation monitoring
During this phase the following specific precautions should be taken:

- Minimal exposure for both staff and patients.
- Isolation of staff showing symptoms of infection
- Use of personal protective equipment (PPE) by staff
- Minimal number of visits and optimised number of blood tests
- Vaginal probe and tissue hygiene
- Re-triage and action depending on pre-triage results or new non-specific symptoms.

Oocyte retrieval
In addition to general precautions and based on triage results, the following recommendations are made:

**Scenario I**  
Follow standard procedures unless changes occur between ovulation trigger and oocyte retrieval

**Scenario II**  
If positive re-triage, consider SARS-CoV-2 IgM/IgG and/or RT-PCR testing for COVID-19. Based on the result, decide whether to continue the treatment or to postpone it.

**Scenario III**  
If the patient tests positive for SARS-CoV-2/COVID-19, before ovulation trigger or embryo thawing, postpone treatment, refer and isolate.

- Exceptions could be made for patients at high risk of OHSS. In this case, oocyte retrieval could be performed and unit sanitation should follow according to specific COVID-19 sanitation procedures put in place by national or local competent authorities.
- If a potentially SARS-CoV-2/COVID-19 positive patient must continue treatment (i.e. oncology patient or high risk of OHSS), the following measures should be adopted to reduce risks of transmission to staff members, as follows:
  - FFP2/3 masks according to clinical duty requirements
  - Gowning
  - Disinfection of operating theatre, transfer room and IVF laboratory after the procedure
- The procedure should be cancelled for newly diagnosed COVID-19 positive patients.
Laboratory
a. Routine good laboratory practice should be followed and laboratory staff should wear masks and gloves.
b. Staff should be organised in mini-teams.
c. Extra care should be taken to reduce exposure to native follicular fluid and sperm by dilution and safe disposal of fluids in individual closed containers, as quickly as possible.
d. Published guidelines and good laboratory practice principles should be followed at all times (www.eshre.eu/guidelines).
e. Should a patient become suspect or positive for COVID-19 during embryo culture, a freeze-all policy should be adopted.

Embryo transfer
a. Limit the number of staff members in the transfer room
b. Restrict access for accompanying person(s)
c. Perform transfer only in cases of low risk/asymptomatic patients and partners
d. Apply a freeze-all policy for all patients and/or partners who became symptomatic after the oocyte retrieval.

Cryopreservation
a. High security straws and/or vapour phase storage tanks should be used for cryopreservation of samples from COVID-19 positive patients.

Summary Figure treatment cycle

<table>
<thead>
<tr>
<th>2 weeks prior to the start of ART treatment</th>
<th>At the start of Ovarian stimulation</th>
<th>Oocyte retrieval</th>
<th>Embryo transfer</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCENARIO 1</td>
<td>STANDARD PROCEDURE</td>
<td>STANDARD PROCEDURE</td>
<td>STANDARD PROCEDURE</td>
</tr>
<tr>
<td>SCENARIO 2</td>
<td>STANDARD PROCEDURE</td>
<td>POSTPONEMENT</td>
<td>POSTPONEMENT</td>
</tr>
<tr>
<td>SCENARIO 3</td>
<td>POSTPONEMENT</td>
<td>POSTPONEMENT</td>
<td>POSTPONEMENT</td>
</tr>
</tbody>
</table>

Triage questionnaire

Test for SARS-CoV-2 antibodies (IgM and IgG)
6. **Code of Conduct for staff and patients**

All staff members and patients will be instructed to avoid unnecessary exposure (both at work and in private).

- Each service will prepare compulsory instructions for staff
- Attendance at work will be tied to respecting the signed Code of Conduct
- Activities that are not allowed will be clearly detailed (“Expose yourself less” principle)
- Restricted social life and interactions
- Patients should sign regularly that they are well and have respected the Code.
- Staff members should sign regularly that they are well and have respected the Code or inform the centre’s Person Responsible of any infringements of the Code of Conduct previously signed.
Appendix 1 - ART Triage Questionnaire

1. Have you been sick in the last two weeks?
2. Do you have fever (over 37.5°C)?
3. Are you coughing at present?
4. Do you have a sore throat?
5. Have you lost your sense of smell or taste?
6. Have you been in contact with somebody who has any of these symptoms?
7. Have you travelled to an area at high risk for COVID-19, nationally or internationally?
8. Do you work in a hospital/nursing home or healthcare facility?
9. Have you been in contact with somebody who has COVID-19?
10. Have you been diagnosed with COVID-19?
11. Do you live in a household with somebody who has been diagnosed with COVID-19 infection or has COVID-19 symptoms (fever, cough, loss of smell)?
12. If you have been COVID-19 positive and recovered, do you have certified medical evidence of clearance?
13. Do you have a severe medical condition like diabetes, respiratory disease, chronic kidney disease, etc.? (this question can be skipped when using the ART triage questionnaire for staff)
Disclaimer

This guidance represents the views of ESHRE, which were achieved after careful consideration of the scientific evidence available at the time of preparation. In the absence of scientific evidence on certain aspects, a consensus between the relevant ESHRE stakeholders has been obtained.

ESHRE makes no warranty, express or implied, regarding the guidance and specifically excludes any warranties of merchantability and fitness for a particular use or purpose. ESHRE shall not be liable for direct, indirect, special, incidental, or consequential damages related to the use of the information contained herein. While ESHRE makes every effort to compile accurate information and to keep it up-to-date, it cannot, however, guarantee the correctness, completeness, and accuracy of the guidance in every respect.

The advice expressed herein is not binding on professionals working in the field of human reproduction and embryology. Hence, this advice will never lead to the liability of ESHRE in case a professional is willing to implement it. Notwithstanding the foregoing, ESHRE will not be liable for indirect damages or consequential damage.