



# CONSIDERATIONS FOR THE **RESUMPTION** OF **AESTHETIC SURGERY, TREATMENTS AND VISITS** **IN COVID-19 PANDEMIC**

Statement of the International Society of Aesthetic Plastic Surgery

## **PROVIDED BY THE ISAPS COVID- 19 TASK FORCE**

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Dear Colleagues,

In most countries, regulations restricting elective surgery were enacted during the COVID--19 era.

With these recommendations, we as an international society try to comply with the currently different stages and situations in the different countries with regard to COVID-19. As a scientific society, we have carried out an extensive literature review under the leadership of Dr. Kai Kaye, Chair of ISAPS COVID-19 Task Force, to ensure that our recommendations are backed up by evidence-based data to help you find your way back to a new normality when elective surgery is possible again.

Every day new insights in the prevention and treatment of the virus are available and the measures taken today may need to be revised tomorrow. **When interpreting these guidelines, we ask you to consider that a regional adaptation to facilities and legislation must be made.**

The following considerations are based on available information, official guidelines and other regulations. Future official updates and guidelines and specific state or community regulations should supersede the recommendations listed below.

Although the majority of infected people experience a mild disease, there are currently anecdotal reports on potential adverse outcomes even after relatively minor, elective surgical procedures.

Until better data are at hand, the uncertainty will affect management during the surge of the pandemic. It will have implications in the long term during the 'tail' of the pandemic, as COVID-19 may be present in the general population until vaccine is universally available and proper systems for high-accuracy testing and availability allow proper protection of patients and healthcare providers alike.

We focus on answering the questions: **when, what, and how** and will provide you with an evidence-based approach for optimization of infection control, resource- and operating room management during the COVID-19 pandemic. [1]

We very much hope that this document will help you get through these unusual, difficult times.

Yours sincerely,



Dirk F. Richter  
ISAPS President

## A. WHEN CAN WE START ELECTIVE SURGERY AGAIN?

Once that the restrictions of movement for patients have been loosened or lifted and decision has been made to implement elective, non-urgent procedures, every specialty department should thoroughly analyze their clinical and surgical workflow, their procedure/specialty related risk profile and adapt their institutional clinical guidance protocols for patient evaluation and procedure selection to respond to the new post pandemic challenges.

### **Acute phase of the pandemic**

In the acute phase, most governments have banned elective surgery to provide the necessary resources for the treatment of Covid-19 patients.

We distinguish between three acute phases [2]:

#### **ACUTE PHASE I:**

Semi-urgent setting (preparation phase): Few COVID 19 patients, hospital resources not exhausted, institution still has ICU ventilator capacity, and COVID-19 trajectory not in rapid escalation phase. Surgery restricted to patients likely to have survivorship compromised if surgery is not performed within next three months.

#### **ACUTE PHASE II:**

Urgent setting: Many COVID-19 patients, ICU and ventilator capacity limited, operating room (OR) supplies limited or COVID-19 trajectory within hospital in rapidly escalating phase. Surgery restricted to patients likely to have survivorship compromised if surgery is not performed within next few days.

#### **ACUTE PHASE III:**

Hospital resources are all routed to COVID 19 patients, no ventilator or ICU capacity, OR supplies exhausted. Surgery restricted to patients likely to have survivorship compromised if surgery not performed within next few hours.

### **Recovery phase of the pandemic**

In the recovery phase of the pandemic, Covid-19 cases are decreasing, and resources are stabilizing. In this phase, elective surgery is usually possible again.

#### **EARLY-PHASE RECOVERY:**

Past the peak of COVID-19, with fewer new cases recorded each day. Resources are starting to become available, including hospital and ICU beds, ventilators, blood, healthy staff, personal protective equipment (PPE), and critical testing. Social distancing is still required for general containment, but some sort of COVID-19-free environment has been secured with adequate testing and PPE.

#### **LATE-PHASE RECOVERY:**

Well past the peak of new COVID-19 cases by at least 14 days. Resources are more readily available to near normal levels, including hospital and ICU beds, ventilators, blood, healthy staff, PPE, and readily available testing to track cases and monitor, as needed, individuals entering the hospital environment. A substantial and high-functioning COVID-19- free environment has been established.

It is the opinion of the International Society of Aesthetic Plastic Surgery when the COVID-19 related system strain on healthcare facilities, healthcare workers and resources has diminished to levels where the available healthcare resources (hospital beds, ICU beds, materials, PPE etc.) meet the demand again with a stable positive margin, plastic surgeons can start to plan and perform elective surgery procedures in hospitals, clinics and surgery centers which have implemented post COVID-19 protocols.[1,3]



## **CHECKLIST ELECTIVE SURGERY - Timing**

### LOCAL REGULATIONS

Check

- if elective surgeries are allowed by your government?

### COVID-19 Tests

Check with your lab

- if enough RNA/PCR and isothermal nucleic acid amplification tests are available in your community and are routine tests allowed / possible for screening patients and staff without symptoms for elective surgeries

### LOCAL HOSPITALS

Check with your local hospital if they have enough

- ventilators
- ICU beds
- acute care beds
- drug resources

to possibly take care about complication cases (e.g. embolism, infections)

### LOCAL STATISTICS

Check Prevalence and Incidence of COVID-19 of your community on daily bases:

- if local numbers of new COVID-19 cases are consistently decreasing?
- If local numbers of new COVID-19 deaths and ICU patients are consistently decreasing?

### SUPPLIES

Check

- if appropriate PPE are available in sufficient numbers (calculate equipment per patient and staff per week)
- if appropriate disinfectants are available
- if appropriate anesthesia supplies available
- consistency of your supply chain

All these resources need to be closely monitored and re-evaluated if the curve rises again.

The classification or assessment of which phase one is currently in, must be carried out by each plastic surgeon himself after careful analysis of his specific environment. Here are strong regional differences, so that a self-assessment is necessary.

As availability of resources and strain on the healthcare system may vary significantly between regions or even between different healthcare structures locally due to some areas being more affected than the local conditions prevail and may resume in staged reimplementation of elective surgery throughout one country or nation.

The American College of Surgeons recommends using local prevalence and incidence rates and to consider a decrease in measures of COVID-19 incidence for at least 14 days before transitioning to provide surgical services for patients without immediately life- or limb-threatening conditions. [2,3]

## **B. WHAT PROCEDURE / TREATMENT CAN BE DONE DURING THE PANDEMIC?**

Elective aesthetic plastic surgery could be considered as safe in most cases, due to an overall low morbi/mortality of the patients, short duration of surgery and Level I-II surgical complexity in most cases. [4,5]

The surgical complexity level may be of importance as well in the context of possible COVID-19+ patients, as the limited data published to date suggesting a higher postoperative morbimortality is based mainly on patients that underwent Level III surgeries. [6]

The complexity and surgical time most aesthetic plastic surgery procedures could be considered as level II. Only combinations of various procedures and large post-bariatric surgeries would be considered level III. (Table III)

Goal of the patient selection and testing protocol is to minimize the risk to operate on a COVID-19 positive patient and to exclude patients with comorbidities that are associated with possible negative postoperative and post anesthetic outcome in case of getting infected in the perioperative period. [7,8,9]

### **Risk assessment**

The most common factors predicting a risk for a negative post anesthetic outcome in case of a perioperative COVID-19 infection are [10,11,12]:

1. Age over 65 years
2. ASA 3 or higher
3. NYHA III-IV
4. Emergency surgeries
5. Arterial hypertension
6. Cerebral vascular disease
7. Ischemic and valvular heart disease
8. Cardiac arrhythmia
9. Diabetes Mellitus
10. Final stage kidney disease
11. COPD/ Asthma
12. Obesity

Only ASA1 and ASA2 patients with a normal functional classification should be selected for elective, non-urgent procedures. [9,13,14]

ASA Classification	Definition	Adult Examples, Including, but not Limited to:
<b>ASA I</b>	A normal healthy patient	Healthy, non-smoking, no or minimal alcohol use
<b>ASA II</b>	A patient with mild systemic disease	Mild diseases only without substantive functional limitations. Examples include (but not limited to): current smoker, social alcohol drinker, pregnancy, obesity ( $30 < \text{BMI} < 40$ ), well-controlled DM/HTN, mild lung disease
<b>ASA III</b>	A patient with severe systemic disease	Substantive functional limitations; One or more moderate to severe diseases. Examples include (but not limited to): poorly controlled DM or HTN, COPD, morbid obesity ( $\text{BMI} \geq 40$ ), active hepatitis, alcohol dependence or abuse, implanted pacemaker, moderate reduction of ejection fraction, ESRD undergoing regularly scheduled dialysis, premature infant PCA $< 60$ weeks, history ( $>3$ months) of MI, CVA, TIA, or CAD/stents.
<b>ASA IV</b>	A patient with severe systemic disease that is a constant threat to life	Examples include (but not limited to): recent ( $< 3$ months) MI, CVA, TIA, or CAD/stents, ongoing cardiac ischemia or severe valve dysfunction, severe reduction of ejection fraction, sepsis, DIC, ARD or ESRD not undergoing regularly scheduled dialysis
<b>ASA V</b>	A moribund patient who is not expected to survive without the operation	Examples include (but not limited to): ruptured abdominal/thoracic aneurysm, massive trauma, intracranial bleed with mass effect, ischemic bowel in the face of significant cardiac pathology or multiple organ/system dysfunction
<b>ASA VI</b>	A declared brain-dead patient whose organs are being removed for donor purposes	



### **Estimated Procedure Time**

There is high evidence that morbidity significantly increases only after 3.13 hours operating time, with progressively greater odds increases of 3.05 times after 4.52 hours and 4.71 times after 6.77 hours in healthy patients. However, facelifts had long procedures times but showed a low complication rate. Therefore, the surgical complexity level has to be considered as important as surgical time. [5]

### **CHECKLIST Patient Selection**

- Age < 65 years
- ASA 1-2
- NYHA I-II
- Exclusion of:
  - Arterial hypertension
  - Cerebral vascular disease
  - Ischemic and valvular heart disease
  - Cardiac arrhythmia
  - Diabetes Mellitus
  - Final stage kidney disease
  - COPD/ Asthma
  - Obesity BMI >40
- Estimated Procedure Time < 3 hours
- Procedure Complexity Level I – II
- Risk of procedure low
- Risk of long-term care low
- Need of general anesthesia low

Based on the limited data evidence available at time of writing of this recommendation, age and presence of comorbidities are primary factors in the prognosis of the disease. In operated COVID-19 positive patients, higher surgical severity Level, general anesthesia and longer duration of surgery seem to correlate with an aggravation of clinical outcome. [6,15]

## C. HOW CAN WE SAFELY PERFORM ELECTIVE AESTHETIC SURGERY AND NON-INVASIVE PROCEDURES?

### **Considerations for perioperative and Anesthesia Management**

#### **1. Pre anesthetic consultation:**

The main goal is to identify and exclude symptomatic infected patients, asymptomatic patients within the incubation period / asymptomatic carriers and patients with the above-mentioned comorbidities.

The pre anesthetic clinical record should identify ASA Level, the comorbidities, the functional classification and the use of medication. [13,16,17]

- The Health questionnaire has to cover signs of acute infection such as fever, dry cough, fatigue, sore throat, anosmia, skin rash or other gastrointestinal symptoms such as diarrhea, anorexia, vomiting, nausea, abdominal pain and/or gastrointestinal bleeding. [7,8,16,18-22]
- The standard preoperative laboratory work-up should include a full blood count to identify COVID-19 related alterations such as leukocytopenia and lymphopenia as well as coagulation tests, kidney-liver function and CRP levels, as well as blood sugar levels to exclude diabetes. [16,18-22,23-26]
- Standard chest X-ray has a proven predictive strength and may be considered to be included for all patients undergoing intubation anesthesia [17,27]. Mandatory in some European countries. Should be indicated by the anesthesiologist.
- Low-dose chest CT-scan has an even higher predictive value for an active COVID-19 infection and may be considered to be performed in cases where other methods of COVID-19 testing are not available or inconclusive. [18,19,27]. Mandatory in some European countries. Should be indicated by the anesthesiologist. High sensitivity (97%)

Clinical imaging should be analyzed for COVID-19 associated peripheral, uni-/ bilateral pulmonary infiltration patterns that manifest consistently during the initial phases of the disease. [28,29].

## 2. Recommendations on testing for elective surgery patients

In the case of non-urgent elective procedures, especially in the case of aesthetic procedures without a curative indication, surgeons have to be aware that even with a solid routine testing protocol in place for all elective patients there is still a window of uncertainty due to test sensitivity and incubation times. [30,31,32]

Since all patients can be potential carriers of the virus, **ISAPS recommends that all patients who decide to have surgery should be tested before planning surgery** to increase the likelihood that only patients without Covid-19 infection will have surgery [1,16]. During initial consultation, patients will be stratified according to their risk profile, and the level of operation planned is identified. They will be informed that pre-operative testing for Covid-19 will be necessary in order to proceed with surgical planning.

Preoperative PCR testing is currently the gold standard and recommended by many national societies. Pre-op PCR testing should be performed as close to the surgery date as feasible, but in time to get results. **After the test patients should be requested to self-isolate** in their homes prior to the surgery with special precautions to prevent potential infection by family or friends.

**This recommendation must be seen and evaluated individually in each community, as tests are often not or not sufficiently available. If necessary, other diagnostic tools such as imaging techniques should then be considered.**

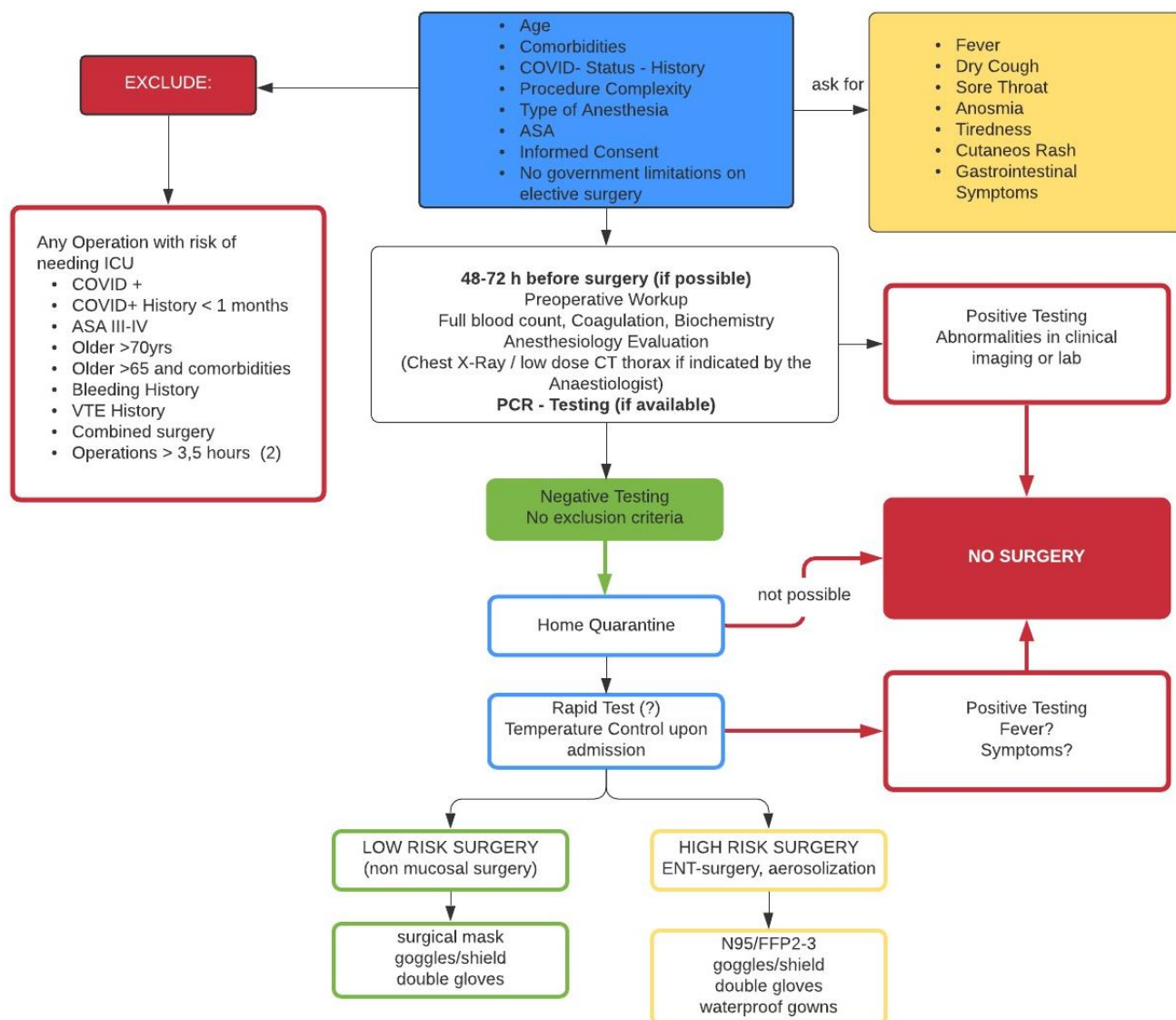
The limitations of sensitivity and specificity of the currently available tests and the influence of the incubation period on the predictive power of preoperative testing are depending on many factors.

The risk of operating on a pre-symptomatic COVID-19 patient is = (local prevalence rate) x (false negative test rate).

Note that this information is based on information available at the time of this document. As testing improves and evolves, recommendations for testing may change.

## Covid 19

ISAPS Algorithm - Aesthetic Surgery | May 3, 2020



### 3. Recommendations on garment (PPE)

Airborne transmission may occur when smaller respiratory particles (generally  $<5\ \mu\text{m}$ ) circulate in the air for prolonged periods. Viral particles can be absorbed via the respiratory mucosa and potentially across the conjunctivae. Particles smaller than  $10\ \mu\text{m}$  are most likely to penetrate deeply into the lung and cause infection. Existing data on SARS-CoV-2 regarding airborne transmission available at date suggests that social distancing is considered safe as long as a minimum distance of 1,5 - 2m can be kept [33,34].

However, certain exams and procedures – particularly those associated with treating or examining the face and neck – are susceptible to create aerosols by air acceleration across a fluid surface. These aerosols containing virus may linger in the air for a prolonged time and therefore bear risk for transmission independent from a physical security distance.

Whether micro droplets have real infective potential depends on effective viral load and other factors and available data on SARS-CoV-2 in that sense is still inconclusive [35-38].

**The ISAPS recommends wearing PPE during procedures where it is impossible to maintain social distancing and PPE incl. FFP2 or FFP3 masks if the HCW needs to work close to the face or mouth (e.g. filler or botulinum toxin treatments) [39].**

The use of masks is essential to protect general population and HCWs. Filter efficiency depends of material and sealing in classified by of FFP Level. FFP1 has an 80% clearing capacity, FFP2 up to 94%, and FFP3 up to 99% including airborne ( $< 5$  microns) and micro droplets ( $> 5$  microns). Surgical masks retain only macro droplets and have less 80% filtration efficacy [40,41].

The recommended use of PPE classed by clinical activity and the possible max. recommended reiterate use are shown in Figure V. [ 1 ]

Note that this information is based on information available at the time of this document. As testing improves and evolves, recommendations for testing may change.



Figure V - PPE recommendation for different activities in ASCs/elective surgery units and COVID free areas in hospitals.

Activity	Surgical mask	FFP2 mask	Long sleeve waterproof gown	Goggles	Shield face protection	Full-face mask with respirator filter	Gloves	Sterile gloves (double gloves)
HCW performing aerosol generating procedures (ITTN anesthesia, bronchoscopy) or operative procedures exposing mucosa (nasal/oral procedures)		 single use <sup>1</sup>	 single use <sup>1</sup>	 single use <sup>1,3</sup>	 single use <sup>1,3</sup>	 single use <sup>1,3</sup>	 for shift <sup>2</sup>	 single use <sup>1</sup>
HCW working in reception/admission or delivering non-invasive patient care within less than 2 m, or involved in patient transport	 for shift <sup>2,3</sup>	 for shift <sup>2,3</sup>		 for shift <sup>2,3</sup>	 for shift <sup>2,3</sup>		 for shift <sup>2</sup>	
HCW performing invasive procedures within less 2 m		 for shift <sup>2</sup>	 for shift <sup>2</sup>		 for shift <sup>2</sup>	 for shift <sup>2</sup>	 for shift <sup>2</sup>	 single use <sup>1</sup>
HCW performing operative procedures		 for shift <sup>2</sup>	 single use <sup>1</sup>		 for shift <sup>2</sup>		 for shift <sup>2</sup>	 single use <sup>1</sup>
PPE for patients undergoing procedures with loco-regional anesthesia with or without sedation	 single use <sup>1</sup>							
PPE for patients during consultations, exams and non-invasive / minimal invasive procedures	 for shift <sup>2</sup>						 for shift <sup>2</sup>	

1. Single use refers to disposal of PPE or decontamination of reusable items e.g. eye protection or respirator, after each patient and/or following completion of a procedure, task, or session; dispose or decontaminate reusable items after each patient contact as per Standard Infection Control Precautions (SICPs). Risk assessed single use refers to utilizing PPE when there is an anticipated/likely risk of contamination with splashes, droplets of blood or body fluids.
2. A shift / session refers to a period of time where HCWs /patients are exposed to each other in a specific care setting/exposure environment. A shift/ session ends when the HCW leaves the care setting/exposure environment or patient finishes the procedure or consultation. PPE should be disposed of after each session or earlier if damaged, soiled, or uncomfortable. In the case a part of PPE is used for a shift it is imperative that has to be decontaminated along the shift according to activity and rules for decontamination (see text on decontamination).
3. Optional use of one or another option depending on availability of PPE

#### 4. Anesthesia

- **Regional /tumescent anesthesia with or without sedation**

Regional /tumescent anesthesia with or without conscious sedation should be **regarded as the first and most important option** for elective surgery during the post COVID-19 curve as it avoids invasion of the trachea-bronchial tract and protects the asymptomatic patient from lung complications.

This anesthesia modality should be performed whenever complexity of surgery and anatomic location allow, and may include the following categories: Neuraxial Anesthesia, Ultrasound-Guided Peripheral Nerve Block and Tumescent Anesthesia. The equipment used for visualization, such as ultrasound probes, must be efficiently protected/ isolated and disinfected after use following the COVID-19 decontamination guidelines discussed in this article. [14,19,42-44]

- **General anesthesia**

In case of general anesthesia, Rapid sequence intubation (RSI) is recommended using Atropine/Glycopyrrolate to reduce secretion. [9,14,16,20-24,45-50]

In case of COVID-19 positive patients the use of laryngeal masks or supraglottic devices is controversial as these could cause aerosolization of infectious particles and therefore should be strictly reserved in cases of difficulties in intubation or ventilation. [48,51]

The protection of the health care staff should be maintained by the use of double gloves, facial masks, goggles, during extubation/intubation the presence of staff should be kept to minimum necessary.

It becomes clear that a combination of effective patient testing strategies, intelligent work planning, and thoughtful resource-management will help to prepare for uncertain times once the first wave of COVID-19 patients has subsided.

By implementing such strategies, we could optimize treatment capacity, limit healthcare worker exposure, limit unnecessary use of PPE, and ensure patient safety while avoiding staff over-exertion.

Although our healthcare systems will continue to face significant difficulties for some time to come, thorough, thoughtful, and timely preparation for the aftermath of the first wave of the COVID-19 pandemic will help us both to overcome these challenges and to learn sustainably for the future.

**Notice and Disclaimer.** Medical information changes constantly. This Recommendation sets forth the current recommendations of The International Society of Aesthetic Plastic Surgery, is provided for informational purposes only, and does not establish a new standard of care. May 04, 2020

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