



手術を受けられる皆様へ
For patients scheduled for surgery

This pamphlet provides information to help you understand some surgery-related complications and methods to prevent them. Please be sure to bring this pamphlet with you when you are admitted to the hospital.

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はじめに

Welcome

At Juntendo University Hospital, our health care providers, including your attending doctor, will work as a team to support you and your family so that you have a worry-free experience during your surgical stay.

As part of this support, we have designed this pamphlet to answer some of the questions you might have. Please read the information carefully before your surgery. If you have any questions or concerns, please do not hesitate to consult with our staff.



手術が決定してから入院まで

Getting ready for hospitalization (after deciding on surgery – before admission)

1. 手術をより安全に受けていただくための確認事項

Confirmation of safety measures for safer surgery

Please be advised that the following information is important for your surgery and may be asked repeatedly as needed.

1) Allergy

A variety of medical materials, instruments, and medications will be used in surgery. To prevent problems caused by allergies, please let us know if you have experienced any skin symptoms (ex. hives and rashes) or nausea from any of the following:

Medication, food (dairy products, eggs, soy proteins, fruits, etc.), rubber products (latex), alcohol, medical tape, or other items.

2) Medication

Are you currently taking any medications? Some medications may need to be adjusted (changed or stopped) for surgery.

3) Past medical history and history of surgery

- Have you or any blood relatives undergone general anesthesia or had any medical problems with anesthesia? Also, have you ever received blood transfusions?
- If applicable, please bring your pacemaker or your ICD (Implantable Cardioverter Defibrillator) identification book/card when being admitted to the hospital.

4) Current health status

- Are you having any symptoms of fever, cold chills, vomiting, nausea, or diarrhea?
- Do you have any shortness of breath, heart palpitations, or trouble breathing in your daily life?
- Are there areas of your body where you have difficulty moving, or feel pain, numbness, or weakness?

2. 禁煙について

Smoking cessation

During surgery under general anesthesia, artificial respiration and inhaled anesthetics may impair the cough reflex and increase secretions (phlegm),

resulting in airway obstruction. Compared to non-smokers, those who smoke are more likely to increase the amount of secretions from their lung and trachea. This increases the risk of some respiratory complications such as atelectasis (partial lung collapse) or pneumonia (lung infection) in which the bronchi are clogged with phlegm. Smoking also lowers immune system function in the lungs, which increases the risk even more. For these reasons, you should stop smoking to clear your lungs before surgery.

Smoking cessation is required for one month before the surgery. Please be warned that failure to comply may result in postponement or cancellation of your surgery.

- Atelectasis

Lung atelectasis is lung collapse due to the accumulation of pulmonary secretions or blood in the bronchi. Reduced airway expansion can impair air flow and can also predispose patients to pulmonary infections and other complications.

- Pneumonia

Pneumonia is a condition in which infection occurs and inflames air sacs (alveoli) in the lungs. Symptoms such as fever or trouble breathing can be physically exhausting. In addition, if a course of antibiotics is needed, this may prolong your hospital stay.

3. 手術前の呼吸訓練について

Respiratory exercise before surgery

Pre-operative breathing exercise can be effective to increase respiratory function, which helps prevent post-operative respiratory complications. Please refer to the instructions shown below.

- Smoking cessation

As previously mentioned, the sooner you stop smoking, the better. The longer you stop smoking for, the lower your risk of respiratory complications will be.

- Aerobic exercise

Aerobic exercise can be beneficial by allowing adequate oxygen to be taken in, improving lung function. However, exercise does not have to be excessive to take in oxygen and enhance lung movement. You can improve lung function by taking a walk or doing calisthenics.

- Pre-operative breathing exercise

Take a deep breath in through your nose and then exhale slowly through your mouth. When doing so, concentrate on abdominal breathing (breathe in and out from the stomach). Keep in mind to expand your lungs as fully as possible.

4. 口腔内の清潔について

Oral Hygiene

When food and beverages are restricted before surgery, the proliferation of oral bacteria may occur in the mouth. Also, in the perioperative period, patients may not be able to brush their teeth adequately while recovering in bed. These situations can cause poor hygiene and lead to the following complications:

Respiratory complications, such as pneumonia, can occur if oral bacteria enter the trachea along with the breathing tube (inserted through the mouth) during general anesthesia. Bacteria from the mouth carried into the bloodstream can cause infections in the heart or surgical sites.

If you have a cavity, or a painful or loose tooth, there are risks of dental injuries and other complications such as dental fracture (chip/crack); displacement of teeth by an external force can lead to it getting caught in the throat or airway. If examination of oral screening by a dentist or dental hygienist suggests that you need treatment, we advise you to visit our dental department or your local dentist for treatment as soon as possible.

- Oral care

Oral care prior to surgery will help prevent the above complications. Be sure to brush your teeth or keep dentures clean daily if applicable.

- Precautions of brushing your teeth

Areas between the teeth, and the border between the teeth and the gums are often left unbrushed. Move your toothbrush in short strokes and carefully brush each tooth one by one.

- Cleaning dentures

After you eat, wash your denture with water and use a special toothbrush made for cleaning dentures. Please refrain from using regular toothpaste as some contain abrasives that can damage dentures. The use of hot water can also lead to deformity of denture, so please be careful.

入院してから手術を受けるまで

Hospital stay (after admission – before surgery)

1. 手術前の身の回りのご準備について

Preparation of what you need for your stay

We would like you to prepare for a safe surgery. Please follow the list below and check the boxes as you prepare. For confirmation, please show these pages to the ward nurse.

Things to do before admission

- Nails: Manicure (including colorless nail polish), extension nails, gel nails, and nail arts must be removed, and nails are to be cut short and evenly before surgery.

If your nails are long, you can injure yourself; medical equipment may not function properly; and monitoring equipment may experience interference. The natural color of your nails, an indicator of healthy blood circulation, enables measurement of oxygen levels during surgery. Nail polish or other factors may interfere with accurate measurements.

- Eyelashes: Please do not wear false eyelashes and have extensions removed before hospitalization.

During surgery, medical tape will be placed on your eyelids for eye protection. When the tape is removed after your surgery, false eyelashes or extensions may be torn off. There is also a risk of damage to the cornea due to falling eyelashes, which can be dangerous to your eye health.

Things to check before heading to surgery

- Hair: Please remove hairpins or wigs. In the operating room, you will be asked to wear a surgical cap.

Metal products (ex. hairclips) are dangerous when doctors are using electrical equipment during surgery, as it can become heated quickly and cause serious burns. If you wish to remove anything after entering the operating room, please inform your attending nurse. If your hair is long, you may wear pigtailed tied behind the ears on each side.

- Teeth: Please take out removable teeth.

While undergoing anesthesia, a breathing tube is placed in your mouth during intubation. This procedure can dislocate teeth due to external pressure which may then enter the stomach or trachea and obstruct the airway.

- Beard: Depending on the surgery, you may need to shave. Please consult with your doctor.

- Contact lenses/eyeglasses/hearing aids must all be removed.

Contact lenses can damage the cornea if the lenses move during surgery. Eyeglasses and hearing aids can be worn before undergoing anesthesia. Please consult with the ward nurse if you wish to wear these to the operating room.

- Makeup: Please remove all makeup.

During the surgery, your doctors will use your natural skin color to help monitor your health. If you wear makeup, medical equipment/tape may not be adequately attached, or may be unable to reflect proper measurements. Some makeup products may contain flammable ingredients.

- Jewelry: All jewelry (such as necklace, rings, earrings/pierces, watch, etc.) must be removed. Please notify the ward nurse or your doctor if you have any tattoos or body art.

Metal products (ex. piercings) are dangerous when using electrocautery during surgery, as they can quickly become heated and cause serious burns.

If you wear rings and your finger becomes swollen during surgery, the blood flow to the fingertip can be blocked, and, in the worst cases, may need an amputation. Like other metal products, iron powder contained in tattoos and body art may be dangerous when using electrocautery during surgery.

If you are unable to remove any rings or have tattoos or non-removable body art, please notify the ward nurse.

We ask that you take care of your personal belongings. Please note that we will not be responsible for any loss or damage.

2. 手術前日について

The day before your surgery

- Please refer to the “Admission Guide” for information on what to prepare for hospitalization and admission.
- You may take a shower or have your body wiped clean.
- Shaving and navel cleaning may be performed if necessary.
- Please follow the instructions from your anesthesiologists regarding food/beverage restrictions (fasting) prior to surgery.

3. 手術当日について

The day of your surgery

- Please follow the instructions from your anesthesiologists regarding food/beverage restrictions (fasting) prior to surgery.
- Remove all removable items and let your nurse know about any non-removable items.
- Preparation for surgery by wearing your surgical gown and elastic stockings.
- After confirmation from the ward nurse, you will be guided to the operating room.

※Details regarding leaving the ward to go into surgery are explained in a separate document.

4. 小児の日帰り手術あるいは当日入院手術の方へ

Pediatric day surgery and admission on the day of surgery

Surgery (MM/DD/Weekday): _____ / _____ (_____)

1) The day before surgery

Children can eat until **midnight (12:00 am) on the evening prior to surgery.**

Clear fluids such as water, Japanese tea, and sports drinks are allowed.

2) The day of surgery

No eating!

Drinking (clear liquid only) is allowed until _____ **am**

手術後から退院まで

Getting ready to be discharged (after surgery – going home)

1. 術後の経過について

Post-operative course

Returning to the ward after surgery

- You will be transferred back to the ward by gurney or ward bed.
- Parts of your body may feel numb due to anesthesia; your sensation will return gradually.
- An oxygen mask or intravenous lines may be placed on you after surgery. Please do not pull or attempt to take these out yourself.

Physical examination

- Once you are transferred back to your wardroom, vital signs (blood pressure and temperature) will be checked.
- In some cases, electrocardiogram will be performed.

Bedrest after surgery

- After surgery, you will need to rest in bed until the anesthesia wears off. Based on your surgical procedure, some patients may need prolonged bed rest, which can cause bedsores or pressure ulcers. Ulcers can be prevented by frequent or timed position changes in bed, and nurses will help you with this.
- Intravenous lines to deliver hydration and/or nourishment may be needed if eating and drinking continues to be restricted.
- Elastic stocking or use of pneumatic compression pumps on your limbs are used to prevent blood clots (deep vein thrombosis: DVT) during bedrest.
- Please press the patient call button to let the nurse know if you need anything.

After release from bed rest

- Please call a nurse to observe and assist you when you get out of bed for the first time after surgery.
- Your attending doctor will examine your surgical wound and check your post-operative condition.

2. 術後に起こりやすい合併症

Post-operative complications that may occur

術後せん妄

Post-operative delirium (POD)

Post-operative delirium is a condition in which cognitive function is impaired. Fluctuating changes in mental status are characterized by reduced awareness of the environment and disturbance of attention (illusions, hallucinations, and delusions). Environmental changes or stress from surgery may be a trigger. After an initial few days (1-2 postoperative days) of normal consciousness post-operatively, emotional instability may be manifested by irritability and anxiety; some patients may begin to speak incoherently. Although the occurrence of postoperative delirium is most directly associated with surgery/anesthesia, several other factors may be involved.

Factors associated with post-operative delirium

(Pre-operative factors)

Age (elderly), decreased mobility, decreased comprehension, dementia, impaired speech, use of sleeping medications

(Surgical factors)

Highly invasive surgery, prolonged surgery, emergency surgery, anesthetics

(Post-operative factors)

Pain, hypoxia, metabolic abnormalities, changes in the environment, changes in circadian (day/night) rhythm

[What to do if you have post-operative delirium]

- Place a clock or calendar where you can see it.
- Use familiar items that you would use on a daily basis.
- Maintain your day and night rhythms. Opening the curtains in the daytime to get some sunlight, watching television, or talking to friends and family are some things that can stimulate the mind and prevent delirium.
- Refrain from keeping hazardous objects around you for safety. Keeping your bed low and having bed rails up will also help prevent falls and accidents.
- Support from family members will be essential. Having someone from the family by your side can provide comfort and ease, so ask someone to be with you as much as possible. We ask family members to keep their loved

one's company; interact with them as naturally and normally as possible. Please avoid conversing about inconsistent or abnormal behavior.

静脈血栓症

Deep vein thrombosis (DVT)

Resting in bed for a prolonged time during and after surgery may lead to poor blood flow, which can result in blood clots in the vein. Symptoms of DVT include swelling and pain in the area of the blood clot and skin color changes, but it can also be asymptomatic.

When the blood clot breaks away from the vein, it can flow with the bloodstream and lodge in the vessels of the lungs. This can block blood flow to the heart, resulting in a condition known as pulmonary embolism (PE, or so-called "Economy Class Syndrome"). PE can be life-threatening and is one of the most severe complications after surgery. Symptoms of this condition include dyspnea (difficulty breathing), sudden shortness of breath, chest pain, cold sweats, and dizziness. In severe cases, there is a risk of cardiopulmonary arrest. Therefore, it is crucial to take preventive measures prior to surgery and let our staff know if you notice any of the above symptoms as early as possible.

[Precautionary measures]

- Elastic stockings

Depending on your risk level for venous thrombosis, you may be required to wear elastic stockings before surgery. Do not let them sag and pull them firmly as far as possible to the tops of your legs. Please let the staff know if they are loose or too large.

- Intermittent pneumatic compression (ICP)

ICP devices are used during and after surgery to keep the blood flowing smoothly. However, if you have been diagnosed with DVT in the past, your risk of pulmonary thromboembolism may be increased; decision to use ICP devices will be made after consultation with your doctor.

褥瘡、皮膚異常

Pressure ulcers, skin troubles

Pressure ulcers are commonly known as bedsores. Pressure ulcers can occur when a person stays in the same position in contact with a foreign surface (even something as soft as a bed) for an extended period of time, leading to poor blood circulation. Symptoms of a pressure ulcer include redness of the skin, blisters, skin breakdown, and sores. The majority of pressure ulcers are likely to form in places that cover bony areas such as buttocks and heels, which are more susceptible to pressure and abrasion.

[Precautionary measures]

- During surgery, a specialized mattress is used to prevent pressure going to a single area, instead dispersing the body's weight. Periodic decompression (periodic removal of constant pressure on any single part of the body) is also performed.
- After surgery, if you are to have bed rest or are unable to move, nurses will assist you in changing positions periodically. If you can and are approved to move, we advise you to move your body proactively, trying not to sit or lie too long in the same position.
- Skin condition and nutrition are important factors. Take care of your skin and eat a well-balanced diet to ensure that you are getting enough nutrition.

接触性皮膚炎

Contact dermatitis

Disinfectants such as povidone-iodine solution are used for skin preparation during surgery. Prolonged exposure to large amounts can cause inflammation (redness of the skin). In severe cases, burn-like symptoms may appear.

To prevent skin troubles, excess solutions will be wiped off, and neutralizing agents will be used on disinfected areas after the surgery.

神経障害

Post-operative neuropathies

Depending on your specific surgical procedure, different positioning of the body may be required to facilitate surgical operations. Some positioning of the body may cause pressure on the skin as well as the nerves. In rare cases, numbness, muscle weakness, electric shock-like pain (i.e., stinging pain), and other neuropathic disorders may occur if decompression is not sufficiently performed or if the same positioning continues for a prolonged time.

Excessive stretching of joints can also cause neuropathy. Currently, operating tables and other surgical products that fix body positions firmly with minimal pressure are used. Periodic removal of pressure on the localized area is also done in order to prevent neuropathy during prolonged surgery.

If post-operative neuropathy occurs, most symptoms are likely to recover in about a week, but the earlier you get out of bed and move your joints and muscles, the better chance you have to improve symptoms faster.

コンパートメント症候群

Compartment Syndrome

Areas with multiple muscles have a fibrous tissue-enclosed compartment for each muscle. When the pressure within a muscle compartment increases due to body positioning or other surgical factors, decreased blood supply may cause muscles, nerves, and blood vessel damage. This is called Compartment Syndrome.

It most often occurs in the forearms, lower legs, and thighs, where fibrous bands of fascia surround the muscles. Symptoms include severe pain, swelling, and numbness. Dangerously high pressure within the compartment may require a fasciotomy (decompression surgery).

[High-risk factors]

- Obesity defined as Body Mass Index $> 25 \text{ kg/m}^2$
- Heavy musculature in the lower extremities, varicose veins, or obstructive atherosclerosis
- Hypothermia, hypotension, diabetes, obesity, smoking, peripheral vascular disorders, and decreased body fluid volume

If you have any concerns, please contact us at the Preoperative Clinic.

Explanatory date (MM/DD): _____ / _____ / _____

By: _____