



Centre Antoine Lacassagne
Institut Méditerranéen de ProtonThérapie
CyberKnife®

INFORMATION NOTICE HIGH-ENERGY PROTON THERAPY



Antoine Lacassagne
CENTRE DE LUTTE CONTRE LE CANCER

unicancer

NICE

Dear Sir/Madam,

Your doctor is sending you to the Mediterranean Institute of Proton Therapy at the Antoine Lacassagne Centre to perform a somewhat special treatment: proton therapy.

We will try in a few pages to give you as much information as possible on the theoretical foundations, the realisation and the practical organisation of this treatment.

If any of these explanations seem insufficient or confusing, do not hesitate to speak to your doctor or to the members of the team that will take care of you; they are at your disposal to inform you and help you.

If you have any practical details that concern you about your stay if you do not reside in the Nice area, please call the toll-free number 0800 971 374 or email protontherapie@nice.unicancer.fr.

Finally, we point out that, given the evolution of the techniques, the information concerning you is collected digitally and archived in accordance with the rules of the CNIL. You have access to this information on your request and have the right to rectify it.

The proton therapy team



Proton therapy
treatment room
(Proteus One®)

What is proton therapy?

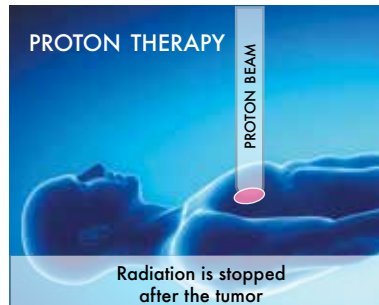
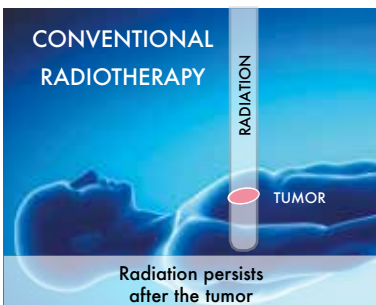
Proton therapy is a radiotherapy technique.

In general, radiotherapy consists in using ionising radiation (or rays) to treat cancers. You are placed under a machine that will deliver rays to the desired location. During a radiotherapy session, when the rays are delivered you do not feel anything, exactly as during a radiological examination (CT scan, MRI or X-ray). Symptoms related to irradiation are not systematic; they depend on the location and type of lesion. They will be explained to you by the radiotherapist. If symptoms occur, they appear after a few days and are of minimal to moderate intensity. Depending on the case, it is possible that irradiation causes significant symptoms that are predictable and are cured almost without sequelae depending on the area to be treated.

In recent decades, radiotherapy techniques have improved considerably in order to cure cancer by constantly reducing toxicities and in particular by using proton particles (known as proton therapy) instead of photon particles or electrons.

Proton therapy targets very precisely the tumoral volume to be treated: once the target is reached, no more proton dose is deposited, contrary to other types of radiation therapy.

The radiotherapist can therefore treat tumours located near very sensitive tissues. The dose delivered to the surrounding tissues is much lower than in conventional radiotherapy, as is the total dose received by the whole body, which reduces the risk of radiation-induced cancers. These secondary cancers are rare in general, but they are even rarer after proton therapy.



Proton therapy increases the dosage at the tumour site while ensuring better protection of healthy tissues around the area to be treated. Efficacy is increased and the risk of complications is reduced.

What are the indications for proton therapy?

Proton therapy is currently indicated in France for paediatric and cranial tumours (sinus tumours, chordomas, chondrosarcomas, etc.), and spinal cord tumours very close to nerve structures, which are very sensitive to irradiation.

For cranial and spinal tumours, the challenge is to deposit very high levels of doses to sterilise the tumour while avoiding irradiation of very sensitive nerve structures.

For children, the volume of healthy irradiated tissue should be reduced so as to reduce acute toxicities (hormonal disorders, bone growth, etc.) and decrease the risk of radiation-induced cancer 15-30 years after irradiation.

In the future, indications for proton therapy should be extended.

Treatment

Treatment will require multiple appointments. The team of the Mediterranean Institute of Proton Therapy will help you to organise them.

First consultation

You will have an appointment with the oncologist who will explain to you the details of your treatment and your treatment's progress.

If chemotherapy is to be delivered in parallel with proton therapy, a consultation with a medical oncologist will take place at the Mediterranean Institute of Proton Therapy and / or in the town of origin.

For children, mild or complete anaesthesia may be necessary to ensure proper treatment. The precision of high-energy proton therapy requires the patient to be immobile, which is difficult to obtain in young children. In this case, an anaesthesia consultation with the parents / guardians and the child will be planned either in the town of origin or at the Mediterranean Institute of Proton Therapy if anaesthesia is required for all stages of treatment.

On the day of the consultation with the radiation therapist oncologist, the entire treatment plan will be presented to you and your child.



Reference scanner

This scanner aims to define your position throughout the treatment and to reconstruct virtually your body in 3D in order to delimit more precisely the areas to be treated and those to be protected.

For head and neck tumours, a plastic mask will be affixed to your face to mould it perfectly on the mask. This mask will harden in seconds and will take the shape of your face so that you will always be treated in the same position.

For other lesions (thorax, abdomen, pelvis, arms or legs), mattresses will be moulded perfectly on your body so that you will always be treated in the same position.

There will also be markers made on your skin (the size of a mole) that are close to your lesion, as well as on the right and left, so that you can always be placed in the same position as the reference scanner.

If the patient does not require anaesthesia, the reference scanner and dosimetry are preferably performed on the same day as the first consultation. In the case of anaesthesia, the reference scanner and dosimetry are organised as early as possible the following day.

Dosimetry

This step does not require your presence.

The radiotherapist physician circumvents the volumes to be treated and defines the dose limits to be delivered to the volume to be treated as well as the organs near the tumour.

Irradiation beams are positioned on a computer and the best position of these beams is simulated in order to target the lesion as much as possible while avoiding as much as possible the healthy tissues. This simulation begins once all the lesions and healthy tissues are defined by the radiation therapist oncologist.

The calculation requires a period of seven days.

Treatment sessions

Your treatment by proton therapy requires several sessions: one session per day, 5 sessions per week and this, for several weeks.

Between installation and treatment, a session lasts about 1 hour.

The medical assistant of the service will give you your Treatment Plan card where all your days and schedules of treatment will be noted, subject to modification.

There are no sessions on weekends and public holidays.

> For children

The precision of the high-energy proton therapy requires the patient to be immobile, which is difficult to obtain in young children. Light or complete anaesthesia is required in order to ensure the proper course of treatment. To this end, a dedicated service has been built next to the high-energy proton therapy room to anaesthetise the child.

Staff at our facility is very vigilant in the application of hygiene and nosocomial infection control procedures (hand washing, proper protective clothing, maintenance and disinfection of premises and equipment). If you have signs of infection (temperature, redness, pain, etc.) you should consult immediately.



Accommodation



Patients in the Alpes-Maritimes region travel from their homes by their own means or by other means of transport if necessary.

Patients from other regions can benefit from accommodation in the immediate vicinity of the ProtonTherapy Centre at «La Consolata», an hospital accommodation structure belonging to the Antoine Lacassagne Centre to accommodate patients and their accompanying persons from all over the world.

Patients benefit from comprehensive and personalised care where all the stages of the treatment are organised: transport, accommodation, treatment organisation, relations with the attending physician, possibility of interpreting, etc.

La Consolata is located on the heights of Nice, a few minutes from the Mediterranean Institute of Proton Therapy, in a calm and relaxing environment with a panoramic view on the Baie des Anges.

Rates and booking on [+33 \(0\)4 93 83 78 12](tel:+330493837812)



If you do not wish accommodation at the Consolata, we can offer you a list of partner hotels at preferential rates.

Contact: protontherapie@nice.unicancer.fr

Administrative Formalities

For French patients, proton therapy is 100% covered in the context of long-term illness by the Social Security. The same applies for transport from home: the institution that has sent you to the Mediterranean Institute of Proton Therapy is responsible for requesting a prior agreement with the health insurance.

For any admission, the Carte Vital, health insurance card and identification must be provided. In some cases, pre-admission will be carried out, so you will be asked to send these documents by fax or email.

If you are not a resident of France, we ask you to contact the Mediterranean Institute of Proton Therapy directly on 0800 971 374 or by email protontherapie@nice.unicancer.fr

> For children

Parental consent to carry out radiotherapy treatment and the appropriate care signed by both parents will be requested.



USEFUL INFORMATION

Access to the Mediterranean Institute of Proton Therapy

GPS coordinates :

Latitude N 43° 41'13.721" Longitude E 7° 12'42.454"

Exit at «NICE SAINT-AUGUSTIN», go under the way of the national road 202 and continue straight on.

Itinerary 1

Stay to the left and follow the signs for the Jardin Botanique. On the right, take Avenue Sainte-Marguerite. After the first bend on the right, take the first left into Avenue Louis Cappati, formerly Traverse des Gardes Mobiles, to Avenue de la Corniche Fleurie facing the entrance of the Jardin Botanique (overlooked by the Mediterranean Institute of Proton Therapy building). Turn right onto Avenue de la Corniche Fleurie and continue for about 500 m to the traffic lights, then turn left onto Avenue Raoul-Dufy and follow it up to Avenue de la Lanterne.

Turn left onto this avenue and continue up to the top of the hill. You will find on the left a roundabout and the entrance of the Mediterranean Institute of Proton Therapy. Go down the road where you can park in front of the medical building.

Itinerary 2

Stay to the right and follow Avenue Henri Matisse until the junction with Boulevard Napoléon III (2nd traffic light). Take the last road on the left and continue until the 5th traffic light. Turn left onto Boulevard de Montréal. At the top, turn left onto Avenue de la Lanterne. After the school, you will find on the right a roundabout and the entrance of the Mediterranean Institute of Proton Therapy. Go down the road where you can park in front of the medical building.

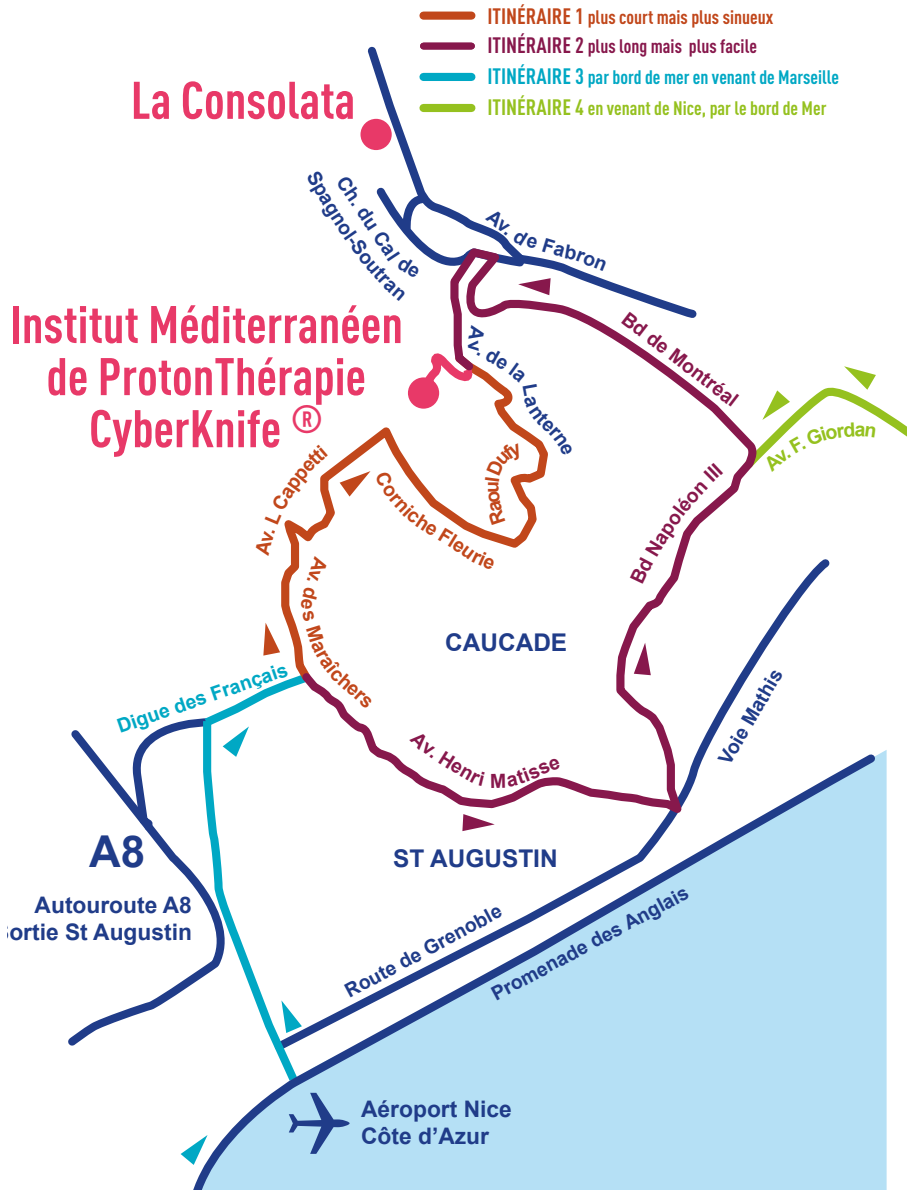
Itinerary 3

Coming from Marseille, after travelling through the Var, follow the direction DIGNE, pass under the Promenade des Anglais and under the motorway. Continue straight on, but do not take the toboggan, stay on the right. Turn right at the traffic lights to join the previous itineraries at La Digue des Français.

Itinerary 4

Coming from Nice-Centre, follow the Promenade des Anglais, past the hotel «RADISSON SAS». At the second traffic light, turn right onto Avenue des Bosquets (at the entrance to the expressway). Pass under the expressway, go up Avenue F. Giordan until the traffic light. Take Boulevard Napoléon III on

the left and at the traffic lights take Boulevard de Montréal on the right. At the top, turn left onto Avenue de la Lanterne. After the school, you will find on the right a roundabout and the entrance of the Mediterranean Institute of Proton Therapy. Go down the road where you can park in front of the medical building.



You can also join the previous itineraries by continuing down the Promenade des Anglais and following the direction to Digne and the motorway at the airport.

Means of transport

Nice, the capital of the French Riviera, is easy to reach from most regions of France and abroad by plane, train or road.

> By plane

Nice-Côte-d'Azur International Airport is in regular contact with a large number of cities in France, Europe and the world. It is located about 10 minutes by car from the Mediterranean Institute of Proton Therapy.

> By train

The SNCF network connects Nice to all regions of France. Nice railway station is located in the city centre, but it is only a 10 minute taxi ride from the Mediterranean Institute of Proton Therapy. International railway connections are provided by SNCF to the entire European rail system.

> By car

Motorway access to Nice from all over France and Europe is very easy on the A8 motorway. The «NICE-Saint-Augustin» exit is at the foot of the hill where the Mediterranean Institute of Proton Therapy is located, less than five minutes from the entrance of the facility.

In Nice

> Taxis

They are the easiest and fastest way to get from the airport or railway station. If transport reimbursement has been granted to you, do not forget to ask the driver for a form so that you can attach it to the transport voucher we will issue to you.

> Urban transport network

The bus network brings you to the Lanterne hill or to Nice. The bus line T60 goes to Avenue de Fabron, stop Cal de Spagnol next to the Consolata.

You can obtain more information at «Ligne d'Azur» on 0810061006 or www.lignesdazur.com

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DE PROTONTHÉRAPIE

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www.protontherapie.fr



The Antoine Lacassagne Centre
is a recognised public institution authorised
to receive donations and bequests.

www.centreantoinelacassagne.org