SURGICAL PROTOCOL

AISER | SWISS QUALITY AT ITS PEAK

Index

1 Introduction

AISER IMPLANT SYSTEM is the result of extensive research, which aims to solve the problems that professionals have to face on a daily basis in clinical practice.
We are committed to providing state-of-the-art technology to enable you to offer your patients the very best.
Our commitment is to provide cutting-edge technology to enable you to offer the best to your patients.
Our R&D department works with clinics, universities and institutions all over the world.
Aiser dental implants are the result of continuous technical research, rigorous quality control and advanced clinical studies.
The entire production chain is traceable via the UDT (Unique Traceability Document - UDT) and is the guarantee we offer to professionals and patients worldwide.

2 Implant System

3 Implant procedure

3.1 Pre-operative phase

This phase consists in all the stages from the moment of diagnosis to the start of surgery.

In this phase the surgery is planned, the outpatient department is organised accordingly, appointments are made, appropriate prescriptions are given to the patient in advance so that they experience the least traumatic and safest treatment possible.

Diagnostic Tools

Cone Beam Computed Tomography is the most useful examination type nowadays for diagnostic and preparatory purposes of implant surgery, which allows to obtain information about the cranial mass in its defined parts, the soft tissues, with considerably reduced radiation emission and with an incredibly high quality.

The quality of detail obtained from scanning leads to more accurate diagnosis and comprehensive treatment planning. Measurements of distances, bone density and angles, with the possibility of three-dimensional reconstructions for implant simulations and virtual implant insertion.

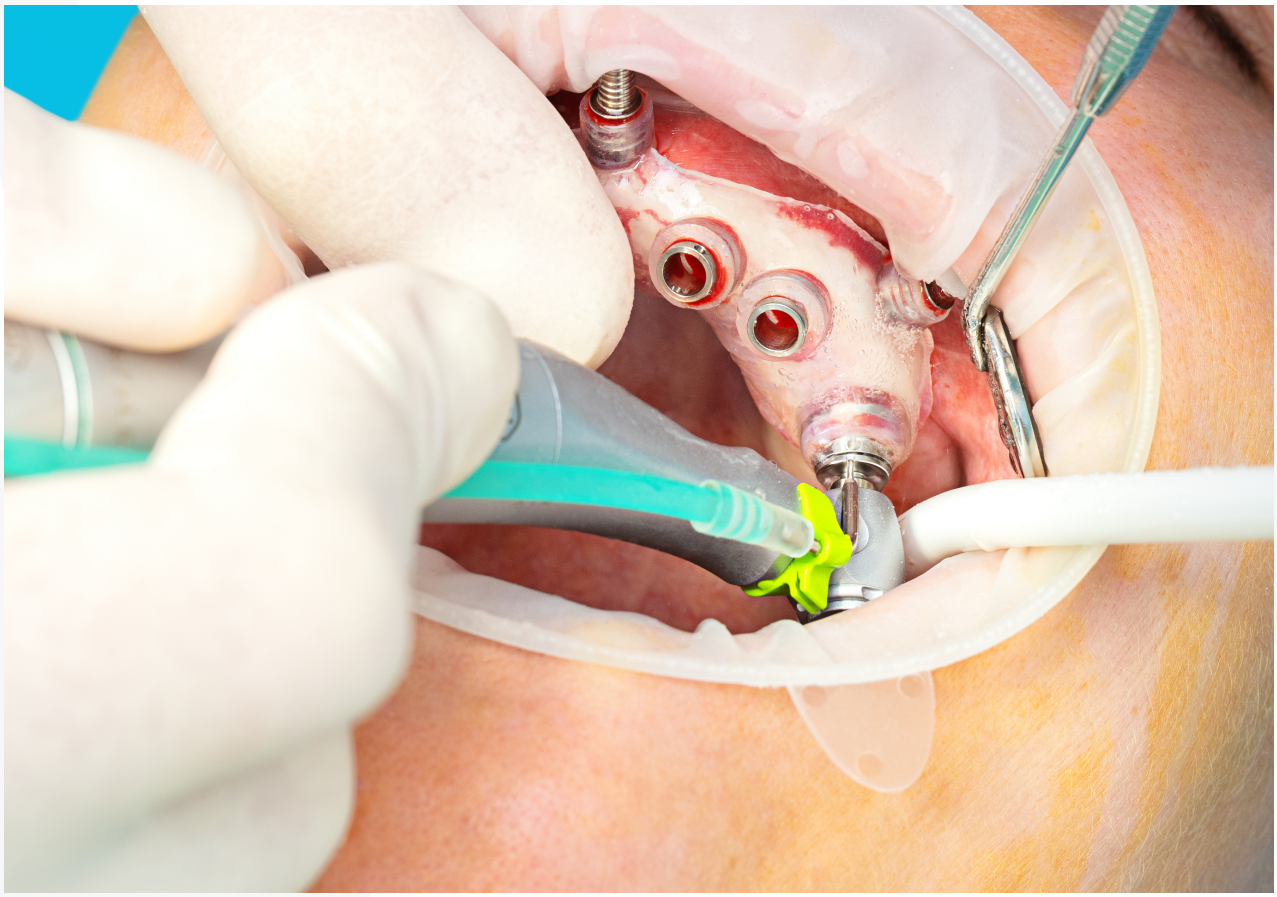
3 Implant procedure

Prosthetically Guided Implant surgery

The planning software for the fabrication of surgical masks and dedicated tools to prepare the implant site easily, accurately and safely.

The use of these tools makes it possible to achieve fundamental objectives such as:

- Correct implant positioning
- Reduction of surgery time and trauma for the patient
- Possibility of creating an immediate provisional prosthesis in the perspective of prosthetically guided implant surgery
- Safe and predictable results



Classification of Bone Density

Misch in 1988 extended this classification to entire craniofacial craniofacial district, basing himself on the micro-structural characteristics of the two components and dividing the types of bone densities.

Type D1: thick cortical bone and sparse spongiosa.
Type D2: bone with thick cortical and narrow mesh spongiosa.
Type D3: bone with thin cortical and tightly meshed spongiosa.
Type D4: bone with thin cortical and large mesh spongiosa.
Type D5: immature and demineralised bone.

LD1 bone is never observed in the maxilla, but it is present in the mandible at the level of the symphyseal region and in cases of high bone atrophy. It is not very suitable for implant placement and graft fixation as it has poor blood supply, which significantly slows down its regeneration;
It is also difficult to carry out site preparation techniques using a classic drill system, as the density of the tissue requires an excessive torque to be applied, which usually results in the bone tissue overheating, risking to fall into necrosis.

D2 density is most frequently observed in the mandible and maxilla: it represents optimal bone quality and is present in the mandibular body and frontal area of the maxilla.
The cortex is sufficiently thick to ensure primary stability for fixation tools and implants.
The good vascularisation of the spongiosa provides adequate support for the reparative bone phenomena.

Classification of Bone Density

Misch in 1988 extended this classification to entire craniofacial craniofacial district, basing himself on the micro-structural characteristics of the two components and dividing the types of bone densities.

Bone density D3 is very common in the maxilla.
Its characteristics are comparable to that of class D2 although, compared to it, it has a lower spongiosa vascularisation of the lower spongiosa.

D4 bone, found at the maxilla level, is found in 40% of cases in the posterior portion, and only 10% of cases in the anterior portion, while it is very rare in the mandible. It is a very low density bone that is not very suitable for any surgical treatment.
Its cortex is very thin and does not allow adequate primary stability of the inserted implants.

D5 bone in Misch's classification means immature bone.
The bone density parameter can be measured more objectively and precisely by means of computed tomography analysed with software built for dentistry such as Denta-scan and Maxi-scan.

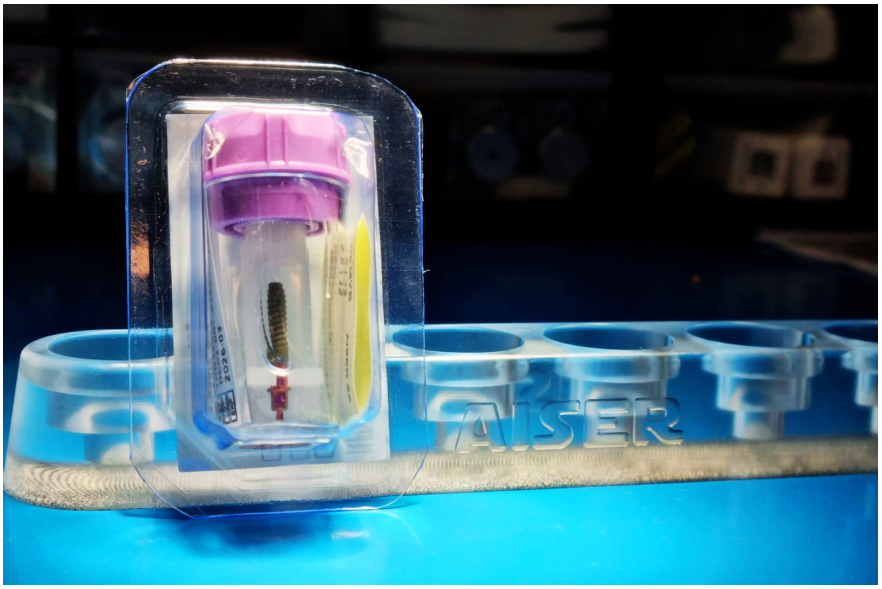
The CT data assign each volumetric unit (voxel) a numerical value based on the average tissue density in that specific volume.
This value falls into a standardized scale expressed in Hounsfield Units (HU) between a value of -1500 and a value of +2595, with a value of 0 for a density equal to that of water and a value of approximately -1500 corresponding to that of the air.

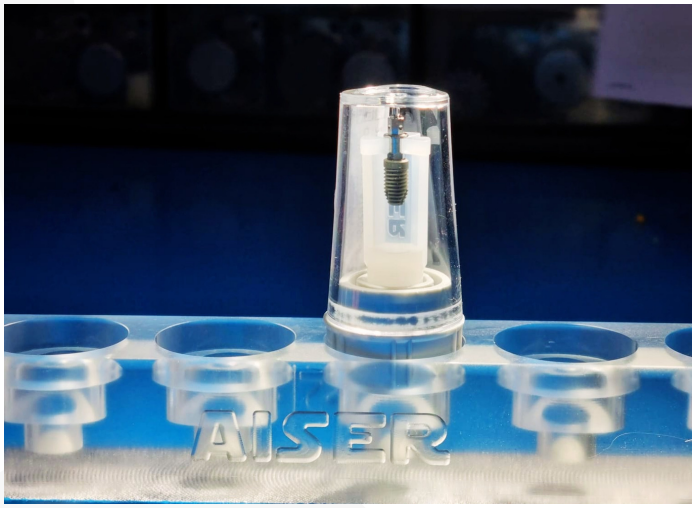
Bone structures on the Hounsfield scale vary in densities between +150 and +1500.

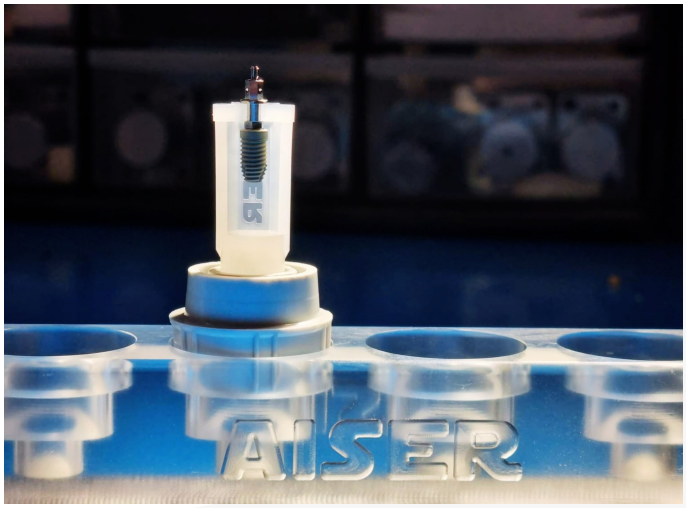
3.2 Intra-operative phase

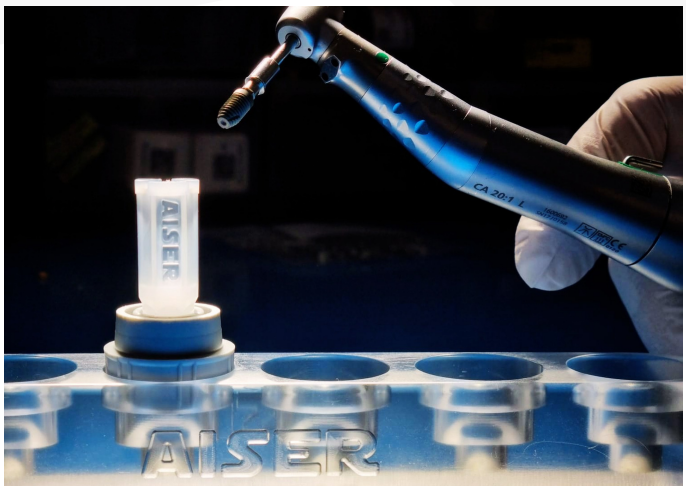
The primary goal is to perform minimally traumatic implant surgery with a predictable outcome for the patient. To achieve this, unnecessary tissue damage must be avoided and any contamination of the implant site with intra- or extra-oral bacteria must be minimised.

Implant site preparation









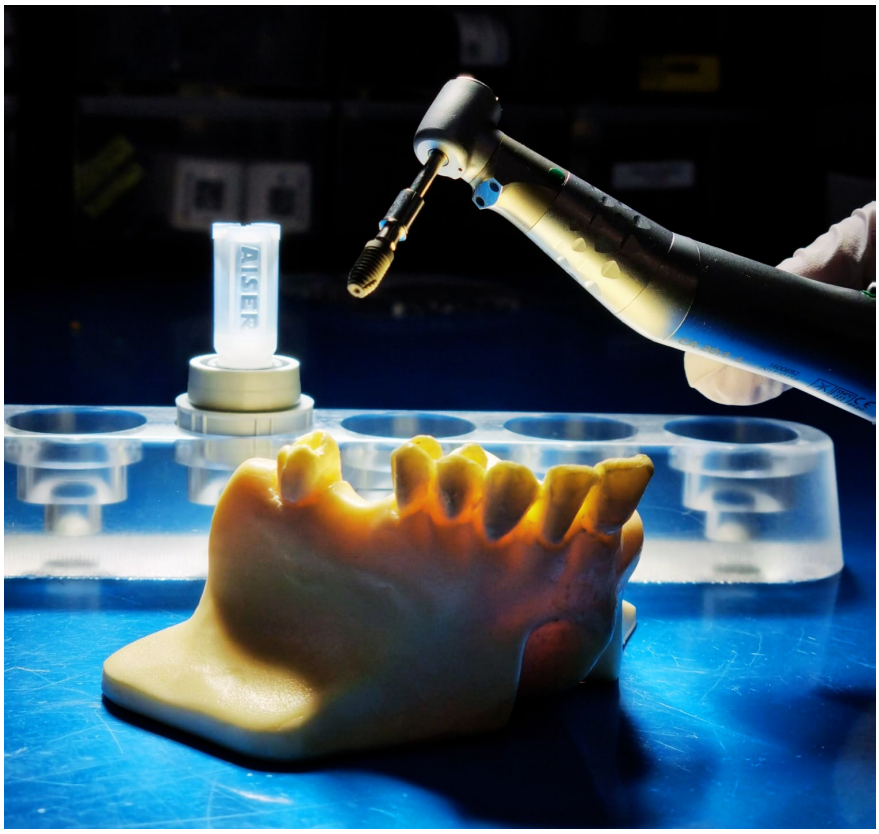
Implant site preparation

General considerations and overview of milling procedures:

- Use only sharp cutters.
- Do not use cutting instruments more than 10 times.
- Use the surgical diary to keep track of the number of burr uses.
- Apply the intermittent drilling technique.
- Apply light pressure only.
- Respect the drilling sequence and use drills in ascending order.
- Do not exceed speed limits (1000 rpm).
- Ensure appropriate cooling with pre-cooled sterile saline (NaCl) (5 °C)
- Choose the appropriate drilling procedure for the different types of bone according to the attached table.

Preparation of the Alveolar Ridge

Carefully reduce and flatten the selected ridge area to create a flat bone surface and a sufficiently large area of bone for implant insertion using the pilot drill; mark the implant axis by drilling to a depth of 6 mm; check that the orientation is as planned and then continue to the final length of the selected implant with successive drill passes; attach the osteotomy to the correct diameter for implant placement, in case of operating on D1 bone, tap with a dedicated tap for the chosen diameter.



Implant insertion

At this point, implant placement is carried out using a contra-angle handpiece or manually, depending on the surgeon's preference.

Positioning will be carried out at the speed and with Torque force as indicated in the individual tables. A plug screw will then be positioned and the surgical site will be sutured, or if preferred/possible, a healing screw will be positioned and sutured with trans-mucosal passage of the screw in order not to have to intervene later with surgical re-entry.

Aiser Implant- Themys Ø 3,5 mm

Step	LanceDrill	Drill 2,4-2,8	Drill 2,8-3,2	Implant Insertion
Torque(Ncm)	20,0	20	20	35
Speed (rpm)	800	800	800	25
Engine Direction	CW	CW	CW	CW
Watering	SI	SI	SI	NO
Implant Insertion	NO	SI	SI	SI
Bone Density	D2,D3,D4	D2,D3,D4	D2	D2,D3,D4

Aiser Implant- Themys Ø 4,3 mm

Step	LanceDrill	Drill 2,4-2,8	Drill 2,8-3,2	Drill 3,0-3,4	Drill 3,2-3,7	Implant Insertion
Torque(Ncm)	20,0	20	20	20	20	35
Speed (rpm)	800	800	800	800	800	25
Engine Direction	CW	CW	CW	CW	CW	CW
Watering	SI	SI	SI	SI	SI	NO
Implant Insertion	NO	NO	NO	SI	SI	SI
Bone Density	D2,D3,D4	D2,D3,D4	D2,D3,D4	D4	D2,D3	D2,D3,D4

Aiser Implant- Themys Ø 5,0 mm

Step	LanceDrill	Drill 2,4-2,8	Drill 2,8-3,2	Drill 3,0-3,4	Drill 3,2-3,7	Drill 3,4-3,9	Drill 3,8-4,2	Implant Insertion
Torque(Ncm)	20,0	20	20	20	20	20	20	35
Speed (rpm)	800	800	800	800	800	800	800	25
Engine Direction	CW	CW	CW	CW	CW	CW	CW	CW
Watering	SI	SI	SI	SI	SI	NO	SI	NO
Implant Insertion	NO	NO	NO	NO	NO	SI	SI	SI
Bone Density	D2,D3,D4	D2,D3,D4	D2,D3,D4	D2,D3,D4	D4	D3	D2	D2,D3,D4

Aiser Implant- Themys Ø 5,5 mm

Step	LanceDrill	Drill 2,4-2,8	Drill 2,8-3,2	Drill 3,0-3,4	Drill 3,2-3,7	Drill 3,4-3,9	Drill 3,8-4,2	Drill 4,2-4,6	Implant Insertion
Torque(Ncm)	20,0	20	20	20	20	20	20	20	35
Speed (rpm)	800	800	800	800	800	800	800	800	25
Engine Direction	CW	CW	CW	CW	CW	CW	CW	CW	CW
Watering	SI	SI	SI	SI	SI	SI	SI	SI	NO
Implant Insertion	NO	NO	NO	NO	NO	NO	SI	SI	SI
Bone Density	D2,D3,D4	D2,D3,D4	D2,D3,D4	D4	D2,D3	D4	D3	D2	D2,D3,D4

Aiser Implant - Tytan Ø 3,5 mm

Step	LanceDrill	Drill 2,4-2,8	Drill 2,8-3,2	Implant Insertion
Torque(Ncm)	20,0	20	20	35
Speed (rpm)	800	800	800	25
Engine Direction	CW	CW	CW	CW
Watering	SI	SI	SI	N
Implant Insertion	NO	NO	SI	SI
Bone Density	D1.D2	D1.D2	D1	D1.D2

Aiser Implant - Tytan Ø 4,3 mm

Step	LanceDrill	Drill 2,4-2,8	Drill 2,8-3,2	Drill 3,0-3,4	Drill 3,2-3,7	Drill 3,4-3,9	Implant Insertion
Torque(Ncm)	20,0	20	20	20	20	20	35
Speed (rpm)	800	800	800	800	800	800	25
Engine Direction	CW	CW	CW	CW	CW	CW	CW
Watering	SI	SI	SI	SI	SI	SI	NO
Implant Insertion	NO	NO	NO	NO	SI	SI	SI
Bone Density	D1.D2	D1.D2	D1.D2	D1.D2	D2	D1	D1.D2

Aiser Implant - Tytan Ø 5,0 mm

Step	LanceDrill	Drill 2,4-2,8	Drill 2,8-3,2	Drill 3,0-3,4	Drill 3,2-3,7	Drill 3,4-3,9	Drill 3,8-4,2	Drill 4,2-4,6	Implant Insertion
Torque(Ncm)	20,0	20	20	20	20	20	20	20	35
Speed (rpm)	800	800	800	800	800	800	800	800	25
Engine Direction	CW	CW	CW	CW	CW	CW	CW	CW	CW
Watering	SI	SI	SI	SI	SI	SI	SI	SI	NO
Implant Insertion	NO	NO	NO	NO	NO	NO	SI	SI	SI
Bone Density	D1.D2	D1.D2	D1.D2	D1.D2	D1.D2	D1.D2	D2	D1	D1.D2

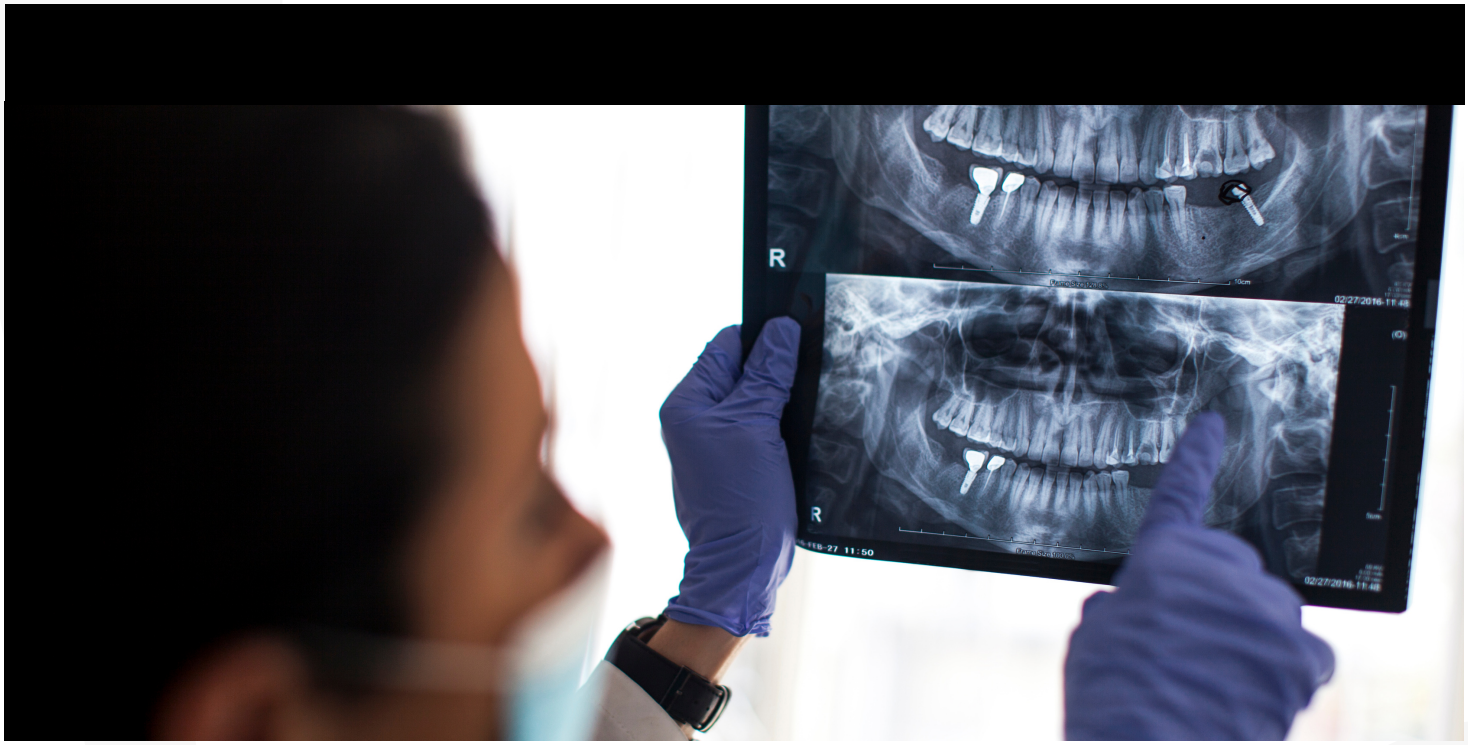
Aiser Implant - Tytan Ø 5,5 mm

Step	LanceDrill	Drill 2,4-2,8	Drill 2,8-3,2	Drill 3,0-3,4	Drill 3,2-3,7	Drill 3,4-3,9	Drill 3,8-4,2	Drill 4,2-4,6	Drill 4,2-5,0	Implant Insertion
Torque(Ncm)	20,0	20	20	20	20	20	20	20	20	35
Speed (rpm)	800	800	800	800	800	800	800	800	800	25
Engine Direction	CW	CW	CW	CW	CW	CW	CW	CW	CW	CW
Watering	SI	SI	SI	SI	SI	SI	SI	SI	SI	NO
Implant Insertion	NO	NO	NO	NO	NO	NO	SI	SI	SI	SI
Bone Density	D2	D2	D2	D2	D2	D2	D2	D2	D1	D1.D2

Aiser Implant - CEOS Ø 4,2 mm

Step	Drill Knurled 4,2	Drill Twist 2,0-2,5-3,0-	Drill Twist 2,8-3,0	Drill Twist 2,8-3,2	Implant Insertion
Torque(Ncm)	45	45	45	45	50
Speed (rpm)	1800	800	800	800	20
Engine Direction	CW	CW	CW	CW	CW
Watering	SI	SI	SI	SI	NO
Implant Insertion	NO	NO	NO	NO	SI
Bone Density	D3,D4	D1	D1	D1	D1

3.3 Post-operative phase



After the operation, the patient is x-rayed to check the results of the operation, painkillers are administered if necessary, the previously given post-operative instructions are repeated, and the patient is left to wait for a few minutes so that the tension can subside and no vagal or similar episodes occur.