

THEORETICAL-PRACTICAL COURSE:

Implant Maintenance – A Practical Approach

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21 hours

3 DAYS

ON SITE

Training Dates:

Start (23/03/2022) – Ending (25/03/2022)

Framework:

The constant evolution in Implant Dentistry with new materials, techniques and methods, along with a higher quality and expectancy of life of the rehabilitated patients, demands a continuing update and education by the clinicians in order to satisfactorily address the challenges that an implant-supported rehabilitation might present.

Based on the assumption that no implant-supported rehabilitation can survive without maintenance, and that the maintenance phase is as important as the surgical phase, it became necessary to implement a set of clinical guidelines, with epidemiological and technical engagement, in order to maximize the probability of success of the rehabilitation not only during the osseointegration phase but also in long-term maintenance. In this regard, the involvement of the clinician is of crucial importance to achieve success.

The main goal of this course is to provide participants with a comprehensive theoretical and hands-on training within the maintenance of implant-supported rehabilitations, with a strong focus on the clinical appointment and the best interest of both patient and clinician. To achieve this goal, the training considers an important and significant practical component with a meticulous clinical practice approach, integrating tips to enhance a better performance, along with the integration of epidemiological tools to support the clinical decision process.

Participants |

Requirements: Professionals in the field of dentistry.

General objectives:

At the end, trainees should be able to:

1. Recognize the main terms in Implantology;
2. Recognize the main materials in Implant Dentistry;
3. Identify the main steps during the 1st phase of maintenance in implant-supported rehabilitations with immediate function from the aspects of diagnosis, prophylaxis and patient advice;
4. Recognize the main causes for failure of dental implants during the 1st phase of maintenance;

5. Recognize the meaning, principles and success of the term Immediate Function;
6. Identify the main steps during the 2nd phase of maintenance in implant-supported rehabilitations with immediate function from the aspects of diagnosis, prophylaxis and patient advice, distinguishing between risk indicators and problems;
7. Recognize the basic concepts of Clinical Epidemiology applied to implant maintenance clinical appointments;
8. Understand the main concepts of peri-implant pathology and its management (strategies for intervention).
9. Identify the main steps in the maintenance of restorations supported by zygomatic implants inserted through the Extra-maxilla surgical technique

Specific objectives:

- At the end, trainees should be able to:
- 1.1. Recognize the basic anatomical aspects and their implications in Implant Dentistry (Circulatory apparatus, Lymphatic System and its influence in healing, Nervous system – Cranial nerves, Alveolar bone);
 - 1.2. Recognize the main historic landmarks in Implant Dentistry;
 - 1.3. Understand the concept of Osseointegration;
 - 1.4. Recognize the implant, the abutment and the prosthesis;
 - 2.1. Identify the implant through macro design and type of connection;
 - 2.2. Recognize the type of implant surface through the micro design;
 - 2.3. Identify the type of abutment (healing, straight or tilted) through its macro design;
 - 2.4. Recognize the type of abutment surface through its micro design;
 - 2.5. Identify the type of manual and mechanic wrench in the management of prosthetic screws and abutments;
 - 2.6. Recognize the material used per-operatively and post-operatively (healing caps, engines, surgical kit);
 - 3.1. Denominate the 5 clinical times during the first phase of maintenance;
 - 3.2. Recognize the necessary pre-surgical advice to provide the patients when preparing for implant surgery;
 - 3.3. Recognize the necessary advice to provide the patients for post-operative period;
 - 3.4. Identify the main chemical coadjuvants for the patient self-care (Chlorhexidine, hyaluronic acid, chitosan, cetylpyridinium chloride, triclosan);
 - 3.5. Identify the main auxiliary means of plaque removal adapted to implant-supported restorations (toothbrush, dental floss, interproximal brush, waterpick);
 - 3.6. Apply the main methods of diagnosis in the correct order (mobility index, suppuration index, modified plaque index, modified bleeding index, probing pocket depths);
 - 3.7. Apply the main prophylactic actions (prophyjet with Erythritol or bicarbonate powders, polish with rubber cup and chlorhexidine gel);

- 4.1. Recognize the importance of low density bone, surgical trauma, excessive load, occlusal factors, smoking habits, and lower immunological balance on the failure of dental implants;
- 4.2. Distinguish correctly between dehiscences and fenestrations;
- 4.3. Recognize the main complications with the immediate prosthesis (biological, mechanical, aesthetical, functional);
- 5.1. Define immediate function as the placement of the implant, abutment and prosthetic connection on the day of surgery;
- 5.2. Recognize the difference between risk and contraindication;
- 6.1. Recognize the importance of an organized maintenance appointment (Collecting clinical data, instrumentation, oral hygiene instructions, motivation, recall evaluation);
- 6.2. Identify the time of radiographical evaluation and of the alternative clinical measurements;
- 6.3. Recognize the types of radiographical evaluation (quantitative and qualitative);
- 6.4. Identify the main points of prosthetic evaluation, distinguishing between risk indicators (cantilever, implant:crown ratio, controlled parafunctional habit) and risk indicators (non-controlled parafunctional habits, fracture or loosening of prosthetic componentes, passive misfit);
- 6.5. Identify the main chemical coadjuvants for the patient self-care (Chlorhexidine, hyaluronic acid, chitosan, cetylpyridinium chloride, triclosan);
- 6.6. Apply the main prophylatic actions (prophyjet with Erythritol or bicarbonate powders, polish with rubber cup and chlorhexidine gel followed by dental floss; curettage);
- 6.7. Demonstrate the main auxiliary methods of plaque removal adapted to implant-supported restorations (toothbrush, dental floss, interproximal brush, waterpick);
- 6.8. Recognize the value in individualized instructions for the patient self-care and motivation;
- 6.9. Identify the main criteria of success in Implant Dentistry;
- 7.1. Recognize the basic concepts of Clinical Epidemiology applied to clinical appointments for maintenance of implant-supported restorations (diagnosis, prognosis, treatment);
- 8.1. Define Peri-implant pathology;
- 8.2. Identify the different degrees of peri-implant pathology;
- 8.3. Recognize the importance of using tools to Support the clinical decision (risk score for peri-implant pathology);
- 8.4. Identify the main strategies for intervention in the management of peri-implant pathology (Prevention, Precise Diagnosis, Treatment, Prognosis);
- 8.5. Recognize the importance of prevention in peri-implant pathology and their components (Prophylaxis, Maintenance);
- 8.6. Recognize the importance of a precise diagnosis and its components (acute vs chronical pathology);
- 8.7. Identify the applications and limitations of non-surgical treatment of peri-implant pathology;
- 8.8. Apply non-surgical treatment of peri-implant pathology;
- 8.9. Identify the applications and limitations of surgical treatment of peri-implant pathology;

	<p>8.10. Recognize the role of prognosis in implants with peri-implant pathology;</p> <p>8.11. Recognize the importance of using tools to Support the clinical decision (Prognostic model for peri-implant pathology);</p> <p>9.1. Identify the different surgical approaches in the Rehabilitation of the extremely atrophic maxilla using zygomatic implants (Classic technique, Slot technique, Extra-maxilla technique);</p> <p>9.2. Identify the main differences in diagnosis between standard and zygomatic implants;</p> <p>9.3. Identify the main differences in maintenance between standard and zygomatic implants;</p> <p>9.4. Recognize the importance of an algorithm to Support clinical decision in the maintenance of zygomatic implants placed through the extra-maxilla surgical technique.</p>
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Modules Program Contents	Workload (h)	
	Theory	Practice
MODULE I: IMPLANT DENTISTRY – GENERAL NOTIONS <ul style="list-style-type: none"> COURSE INTRODUCTION IMPLANTOLOGY: CONCEPTS AND BASIC TERMINOLOGY ANATOMY MATERIALS: IMPLANTS, ABUTMENTS, KEYS, SURGICAL MATERIAL 	0.5h	1.5h
MODULE II: PROTOCOL FOR MAINTENANCE OF REHABILITATIONS SUPPORTED BY IMPLANTS IN IMMEDIATE FUNCTION (1ST PHASE OF MAINTENANCE – FUNCTIONAL OSSEOINTEGRATION PERIOD) <ul style="list-style-type: none"> MATERIALS AND METHODS FOR MAINTENANCE OF IMPLANT-SUPPORTED REHABILITATIONS IN IMMEDIATE FUNCTION DURING THE FUNCTIONAL OSSEOINTEGRATION PERIOD MAIN REASONS FOR IMPLANT FAILURE IN IMPLANT DENTISTRY DURING THE FUNCTIONAL OSSEOINTEGRATION PHASE CLINICAL RESIDENCY ATTENDING CLINICAL APPOINTMENTS OF 1ST PHASE MAINTENANCE – FUNCTIONAL OSSEOINTEGRATION PERIOD 	1h	4h
MODULE III: IMMEDIATE FUNCTION IN IMPLANT DENTISTRY WITH A SPECIAL EMPHASIS ON THE ALL-ON-4 TREATMENT CONCEPT <ul style="list-style-type: none"> MEANING, PRINCIPLES AND SUCCESS OF IMMEDIATE FUNCTION LIVE SURGERY 	2h	
MODULE IV: PROTOCOL FOR MAINTENANCE OF REHABILITATIONS SUPPORTED BY IMPLANTS IN IMMEDIATE FUNCTION (2ND PHASE OF MAINTENANCE – LONG TERM MAINTENANCE) <ul style="list-style-type: none"> MATERIALS AND METHODS FOR LONG-TERM MAINTENANCE MAIN MISTAKES AND HOW TO RESOLVE THEM CLINICAL RESIDENCY ATTENDING CLINICAL APPOINTMENTS OF 2ND PHASE MAINTENANCE – FUNCTIONAL OSSEOINTEGRATION PERIOD 	1h	4h
MODULE V: CLINICAL EPIDEMIOLOGY <ul style="list-style-type: none"> BASIC CONCEPTS OF CLINICAL EPIDEMIOLOGY APPLIED TO THE CLINICAL APPOINTMENTS OF IMPLANT-SUPPORTED REHABILITATIONS 	1h	
MODULE VI: PERI-IMPLANT PATHOLOGY <ul style="list-style-type: none"> DEFINITION, DEGREES, AND RISK FACTORS DEMONSTRATION OF A RISK SCORE FOR PERI-IMPLANT PATHOLOGY AS A TOOL TO AID THE CLINICAL DECISION NON-SURGICAL TREATMENT OF PERI-IMPLANT PATHOLOGY SURGICAL TREATMENT OF PERI-IMPLANT PATHOLOGY 	2h	2h

Modules Program Contents	Workload (h)	
	Theory	Practice
<ul style="list-style-type: none"> DEMONSTRATION OF A PROGNOSTIC MODEL FOR PERI-IMPLANT PATHOLOGY AS A TOOL TO AID THE CLINICAL DECISION 		
MODULE VII: MAINTENANCE OF REHABILITATIONS SUPPORTED BY ZYGOMATIC IMPLANTS INSERTED THROUGH THE EXTRA-MAXILLA SURGICAL TECHNIQUE <ul style="list-style-type: none"> TYPES OF SURGICAL TECHNIQUE IN THE INSERTION OF ZYGOMATIC IMPLANTS MAIN DIFFERENCES IN DIAGNOSIS BETWEEN STANDARD AND ZYGOMATIC IMPLANTS MATERIALS AND METHODS FOR MAINTENANCE OF ZYGOMATIC IMPLANTS DEMONSTRATION OF AN ALGORITHM TO SUPPORT CLINICAL DECISION IN THE MAINTENANCE OF ZYGOMATIC IMPLANTS INSERTED THROUGH THE EXTRA-MAXILLA SURGICAL TECHNIQUE 	1H	1H
<i>Total</i>	8.5H	12.5H
	21H	

Training Methodology: The course includes a face-to-face component with a total duration of 21 hours, organized into theoretical and practical sessions.

In the face-to-face component, the training methodology will be centered on the articulation of the expository, interrogative, demonstrative and active method, in order to enhance the appropriation of the course contents, based on the analysis of real cases. The training will give clinicians a comprehensive perspective of the practical Implant Maintenance.

Attendance and Punctuality Rules:

Attendance in the face-to-face component of training must be 100%.
In the face-to-face component of the training, each training session has an associated tolerance of 15 minutes after the start defined for its beginning.

Evaluation methodology:

The assessment of trainees' learning is carried out throughout the course, and the final classification results from the trainee's performance in the modules whose weights in the final grade are differently distributed: module 2- 7.5 points; module 4 – 7.5 points; module 7 – 5 points

Training Mode:

Other continuous training actions (not included in the National Qualifications Catalogue)

Form of Organization:

On Site- Presential

Spaces and Logistics Requirements:

On-site Training:
- Theoretical Component - Room with good lighting, ventilation, temperature and isolated from disturbing noises to the proper functioning of the training

sessions, equipped with all the necessary didactic-pedagogical resources (computer, LCD, sound equipment, video system, whiteboard/flipchart and pens, Wi-Fi network), as well as all the technical equipment associated with the themes of the various modules that make up the course.

- Practical Component – Hands-On room and medical office space properly equipped with all the equipment and utensils necessary for clinical practice.

Didactic and Pedagogical Resources:

Toothbrush Tepe Implant care; Toothbrush Tepe IMPL/ORT; Colloge; Tweezers ASA Stainless 601-2; Periodontal metal probes; Periodontal plastic probes; Wax (bar); Inter-proximal brushes (several units per pack); Sealing material; Dental floss (several units per pack); Dental Prostheses models; Ice pack; Gel Curasept AD 350; Hawe Implant Paste; Rubber cups; Kit drills and abutments: 1 kit; Light curing device; Scissors: 2 units; Spatules: 2 units; Plastic curettes; Skull models with implants; Piezon tip for implants; Teflon

Learning support: Video Lectures, Reference bibliography, scientific articles:

- Maló P, Lopes I, De Araújo Nobre M. The All-on-4 Concept. In: Babbush CA, Hahn JA, Krauser JT, eds. Dental Implants: The Art and Science. Maryland Heights, USA: Saunders Elsevier, 2011: 435-447.
- Maló P, de Araújo Nobre M, Lopes A. An overview of the All-on-4™ implant philosophy. Faculty Dental Journal, January 2012; 3: 20-27. DOI 10.1308/204268512X13207759526256.
- Ferro AS, de Araújo Nobre MA, Simões R. Ten-year follow-up of full-arch rehabilitations supported by implants in immediate function with nasal and full-length palatine bicortical anchorage on the anterior maxilla. J Oral Sci. 2022;64(2):129-134. doi:10.2334/josnurd.21-0378
- de Araújo Nobre M, Lopes A, Antunes E. The 10 Year Outcomes of Implants Inserted with Dehiscence or Fenestrations in the Rehabilitation of Completely Edentulous Jaws with the All-on-4 Concept. J Clin Med. 2022;11(7). doi:10.3390/jcm11071939
- Lopes A, de Araújo Nobre M, Ferro A, Moura Guedes C, Almeida R, Nunes M. Zygomatic Implants Placed in Immediate Function through Extra-Maxillary Surgical Technique and 45 to 60 Degrees Angulated Abutments for Full-Arch Rehabilitation of Extremely Atrophic Maxillae: Short-Term Outcome of a Retrospective Cohort. J Clin Med. 2021;10(16). doi:10.3390/jcm10163600
- de Araújo Nobre M, Moura Guedes C, Almeida R, Silva A, Sereno N. Hybrid Polyetheretherketone (PEEK)-Acrylic Resin Prostheses and the All-on-4 Concept: A Full-Arch Implant-Supported Fixed Solution with 3 Years of Follow-Up. J Clin Med. 2020;9(7):2187. doi:10.3390/jcm9072187
- Lopes A, de Araújo Nobre M, Santos D. The Workflow of a New Dynamic Navigation System for the Insertion of Dental Implants in the Rehabilitation of Edentulous Jaws: Report of Two Cases. J Clin Med. 2020;9(2). doi:10.3390/jcm9020421
- Maló P, de Araújo Nobre M, Lopes A, Ferro A, Botto J. The All-on-4 treatment concept for the rehabilitation of the completely edentulous mandible: A longitudinal study with 10 to 18 years of follow-up. Clin Implant Dent Relat Res. 2019;21(4):565-577. doi:10.1111/cid.12769
- Maló P, de Araújo Nobre M, Lopes A, Ferro A, Nunes M. The All-on-4

concept for full-arch rehabilitation of the edentulous maxillae: A longitudinal study with 5-13 years of follow-up. *Clin Implant Dent Relat Res.* 2019;21(4):538-549. doi:10.1111/cid.12771

- de Araújo Nobre M, Salvado F, Nogueira P, Rocha E, Ilg P, Maló P. A Peri-Implant Disease Risk Score for Patients with Dental Implants: Validation and the Influence of the Interval between Maintenance Appointments. *J Clin Med.* 2019;8(2):252. doi:10.3390/jcm8020252
- Maló P, de Araújo Nobre M, Moura Guedes C, et al. Short-term report of an ongoing prospective cohort study evaluating the outcome of full-arch implant-supported fixed hybrid polyetheretherketone-acrylic resin prostheses and the All-on-Four concept. *Clin Implant Dent Relat Res.* 2018;20(5):692-702. doi:10.1111/cid.12662
- Maló P, Lopes A, de Araújo Nobre M, Ferro A. Immediate function dental implants inserted with less than 30 N·cm of torque in full-arch maxillary rehabilitations using the All-on-4 concept: retrospective study. *Int J Oral Maxillofac Surg.* 2018;47(8). doi:10.1016/j.ijom.2018.04.008
- Maló PS, de Araújo Nobre MA, Ferro AS, Parreira GG. Five-year outcome of a retrospective cohort study comparing smokers vs. Nonsmokers with full-arch mandibular implant-supported rehabilitation using the All-on-4 concept. *J Oral Sci.* Published online 2018. doi:10.2334/josnugd.16-0890
- de Araújo Nobre M, Maló P. Prevalence of periodontitis, dental caries, and peri-implant pathology and their relation with systemic status and smoking habits: Results of an open-cohort study with 22009 patients in a private rehabilitation center. *J Dent.* 2017;67. doi:10.1016/j.jdent.2017.07.013
- de Araújo Nobre M, Mano Azul A, Rocha E, Maló P, Salvado F. Attributable fractions, modifiable risk factors and risk stratification using a risk score for peri-implant pathology. *J Prosthodont Res.* 2017;61(1):43-53. doi:10.1016/j.jpor.2016.03.004
- Hopp M, de Araújo Nobre M, Maló P. Comparison of marginal bone loss and implant success between axial and tilted implants in maxillary All-on-4 treatment concept rehabilitations after 5 years of follow-up. *Clin Implant Dent Relat Res.* 2017;19(5). doi:10.1111/cid.12526
- Lopes A, Maló P, de Araújo Nobre M, Sánchez-Fernández E, Gravito I. The NobelGuide®All-on-4®Treatment Concept for Rehabilitation of Edentulous Jaws: A Retrospective Report on the 7-Years Clinical and 5-Years Radiographic Outcomes. *Clin Implant Dent Relat Res.* 2017;19(2). doi:10.1111/cid.12456
- Agliardi EL, Romeo D, Panigatti S, de Araújo Nobre M, Maló P. Immediate full-arch rehabilitation of the severely atrophic maxilla supported by zygomatic implants: a prospective clinical study with minimum follow-up of 6 years. *Int J Oral Maxillofac Surg.* 2017;46(12). doi:10.1016/j.ijom.2017.05.023
- Maló P, Nobre MA, Lopes A, Ferro A, Gravito I. Complete edentulous rehabilitation using an immediate function protocol and an implant design featuring a straight body, anodically oxidized surface, and narrow tip with engaging threads extending to the apex of the implant: A 5-year retrospective clinica. *Int J Oral Maxillofac Implant.* 2016;31(1). doi:10.11607/jomi.4123
- Nunes M, Almeida RF, Felino AC, Malo P, Nobre MA. The influence of crown-to-implant ratio on short implant marginal bone loss. *Int J Oral*

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- de Araújo Nobre M, Mano Azul A, Rocha E, Maló P. Risk factors of peri-implant pathology. Eur J Oral Sci. 2015;123(3):131-139. doi:10.1111/eos.12185
 - Maló P, de Araújo Nobre M, Lopes A, Rodrigues R. Preliminary report on the outcome of tilted implants with longer lengths (20-25mm) in low-density bone: One-year follow-up of a prospective cohort study. Clin Implant Dent Relat Res. 2015;17(S1):e134-142. doi:10.1111/cid.12144
 - Maló P, De Araujo Nobre M, Lopes A, Rodrigues R. Double Full-Arch Versus Single Full-Arch, Four Implant-Supported Rehabilitations: A Retrospective, 5-Year Cohort Study.; 2015. doi:10.1002/9781119115397.ch15
 - Maló P, de Araújo Nobre MA, Lopes AV, Rodrigues R. Immediate loading short implants inserted on low bone quantity for the rehabilitation of the edentulous maxilla using an All-on-4 design. J Oral Rehabil. 2015;42(8). doi:10.1111/joor.12291
 - Maló P, de Araújo Nobre M, Lopes A, Ferro A, Gravito I. All-on-4® Treatment Concept for the Rehabilitation of the Completely Edentulous Mandible: A 7-Year Clinical and 5-Year Radiographic Retrospective Case Series with Risk Assessment for Implant Failure and Marginal Bone Level. Clin Implant Dent Relat Res. 2015;17. doi:10.1111/cid.12282
 - Lopes A, Maló P, de Araújo Nobre M, Sanchez-Fernández E. The NobelGuide® All-on-4® Treatment Concept for Rehabilitation of Edentulous Jaws: A Prospective Report on Medium- and Long-Term Outcomes. Clin Implant Dent Relat Res. Published online 2015. doi:10.1111/cid.12260
 - Maló P, de Araújo Nobre M, Lopes A, Ferro A, Moss S. Extramaxillary surgical technique: Clinical outcome of 352 patients rehabilitated with 747 zygomatic implants with a follow-up between 6 months and 7 years. Clin Implant Dent Relat Res. 2015;17(S1). doi:10.1111/cid.12147
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 - De Araújo Nobre M, Maló P, Antune E. Influence of systemic conditions on the incidence of periimplant pathology: A case-control study. Implant Dent. 2014;23(3). doi:10.1097/ID.0000000000000071
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retrospective cohort study on the rehabilitation of completely edentulous atrophic maxillae with immediately loaded zygomatic implants placed extra-maxillary. *Eur J Oral Implantol.* 2014;7(3).

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- Maló P, de Araújo Nobre M, Borges J, Almeida R. Retrievable Metal Ceramic Implant-Supported Fixed Prostheses with Milled Titanium Frameworks and All-Ceramic Crowns: Retrospective Clinical Study with up to 10 Years of Follow-Up. *J Prosthodont.* 2012;21(4). doi:10.1111/j.1532-849X.2011.00824.x
- Maló P, De Araújo Nobre M, Lopes A, Francischone C, Rigolizzo M. “All-on-4” Immediate-Function Concept for Completely Edentulous Maxillae: A Clinical Report on the Medium (3 Years) and Long-Term (5 Years) Outcomes. *Clin Implant Dent Relat Res.* 2012;14(SUPPL. 1):e139-150. doi:10.1111/j.1708-8208.2011.00395.x
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- Maló P, Nobre MA, Lopes A. The rehabilitation of completely edentulous maxillae with different degrees of resorption with four or more immediately loaded implants: A 5-year retrospective study and a new classification. *Eur J Oral Implantol.* 2011;4(3):227-243.
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