

## THEORETICAL-PRACTICAL COURSE:

### Cadaver Course | All-on-4® Surgical Protocol – From Standard to Zygoma Case

(Dr. Armando Lopes e Dr.ª Ana Ferro)

**20 hours**

**2,5 DAYS**

ON SITE

#### Training Dates:

Start (17/11/2022) – Ending (19/11/2022)

Framework: Designed for those that want to broaden their experience in implant dentistry on total edentulous patients, including Zygoma cases, this training covers the All-on-4® surgical protocol in detail concentrating on all existing approaches – Standard, Hybrid and Double-Zygoma – offering participants a comprehensive training that will allow them to gain the skills and know-how to successfully rehabilitate atrophic mandibles/maxillae as well as severely resorbed maxillae in just a few hours,

Including 2 live surgeries, hands-on on both cryopreserved pieces and models (12 hours), the course will take you through all the relevant aspects of the MALO CLINIC Protocol, from patient selection to treatment planning, and anatomic and imaging considerations, all the way through to the fitting of the immediate and final prostheses so you can offer immediate function to your patients even when facing with extremely atrophic maxilla and mandible cases.

The All-on-4® concept is one of the breakthroughs in Implant Dentistry, allowing the rehabilitation of the majority of edentulous arches without the need of bone grafting. Created at MALO CLINIC, the All-on-4® concept it is backed up by more than 20 years of clinical research with excellent long-term results.

The secret for that success has been the constant evolution of the protocols that receive great attention from our side. Today, the All-on-4® concept is up to date with the digital revolution in Implant Dentistry, allowing to upgrade surgical and prosthodontic protocols following a full digital workflow.

#### Participants |

**Requirements:** Professionals experienced in implant dentistry.

#### General objectives:

At the end, trainees should be able to:

1. Differentiate the several treatment options for full-arch rehabilitation in the maxilla/mandible
2. Recognize the different clinical and surgical steps of the procedure

3. Identify the main prosthetic options for the All-on-4 rehabilitation in the maxilla/mandible
4. Implement the main surgical steps in an All-on-4 rehabilitation in the maxilla/mandible
5. To implement the main surgical steps in an All-on-4 rehabilitation in the maxilla including the use of standard implants alone, the use of hybrid combination of standard and zygomatic implants, or the use of zygomatic implants alone

**Specific objectives:**

- At the end, trainees should be able to:
- 1.1 Recognize the difference between full-arch rehabilitation using more than 4 standard in axial position, using the different All-on-4 configurations;
  - 1.2 Identify the advantages and disadvantages of each rehabilitation option;
  - 2.1 Evaluate the pre-treatment phase (planning) considering the anatomical limitations;
  - 2.2 Identify the essential steps during surgery (Incision, flap elevation, bone reduction, implant-site preparation, implant insertion, abutment connection, suturing).
  - 3.1 Identify the essential steps of prosthetic options for the provisional prosthesis using a pre-made prosthesis (impression tacking, cylinder caption, prosthetic try-in, prosthetic connection, occlusion check).
  - 3.2 Identify the essential steps of prosthetic options for the provisional prosthesis using a new fabricated prosthesis (impression tacking, implant-position capture, prosthetic try-in, prosthetic connection, occlusion check).Recognize the different clinical and surgical steps of the procedure.
  - 4.1 To evaluate the anatomical limitations involved in the All-on-4 rehabilitation in the maxilla/mandible;
  - 4.2 To perform a proper implant site preparation procedure for standard implants in the maxilla;
  - 4.3 To correctly insert the standard implants following the All-on-4 configuration in the maxilla;
  - 4.4 To correctly connect the specific abutments to the implants following the All-on-4 configuration in the maxilla (straight abutments on the anterior implants and tilted abutments on the posterior implants).
  - 5.1 To evaluate the anatomical limitations involved in the All-on-4 rehabilitation in the extremely atrophic maxilla;
  - 5.2 To perform a proper implant site preparation procedure for zygomatic implants;
  - 5.3 To correctly insert the zygomatic implants following the All-on-4 Hybrid configuration in the maxilla;
  - 5.4 To correctly insert the zygomatic implants following the All-on-4 Double Zygoma configuration in the maxilla;

5.5 To correctly connect the specific abutments to the implants following the All-on-4 Hybrid configuration in the maxilla (straight abutments on the anterior standard implants and tilted abutments on the posterior standard or zygomatic implants);  
5.6 To correctly connect the specific abutments to the implants following the All-on-4 Double Zygoma configuration in the maxilla (tilted abutments on all zygomatic implants).

Modules   Program Content	Workload (h)	
	Theory	Practice
<ul style="list-style-type: none"> <li>MODULE 1 – THE ALL-ON-4 CONCEPT STANDARD IN THE ATROPHIC MAXILLA: PRE-TREATMENT, SURGICAL AND POST-TREATMENT CONSIDERATIONS</li> </ul>	4	
<ul style="list-style-type: none"> <li>MODULE 2 – THE ALL-ON-4 CONCEPT STANDARD SURGICAL HANDS-ON</li> </ul>		4
<ul style="list-style-type: none"> <li>MODULE 3 – THE ALL-ON-4 CONCEPT IN THE EXTREMELY ATROPHIC MAXILLA: PRE-TREATMENT, SURGICAL AND POST-TREATMENT CONSIDERATIONS</li> </ul>	4	
<ul style="list-style-type: none"> <li>MODULE 4 – THE ALL-ON-4 CONCEPT HYBRID AND DOUBLE-ZYGOMA SURGICAL HANDS-ON</li> </ul>		4
<ul style="list-style-type: none"> <li>MODULE 5 – THE ALL-ON-4 CONCEPT HYBRID AND DOUBLE-ZYGOMA SURGICAL HANDS-ON ON CRYOPRESERVED PIECES</li> </ul>		4
<i>Total</i>	8	12
	20 H	

**Training Methodology:** The course includes a face-to-face component with a total duration of 20 hours, organized into theoretical and practical sessions, in conjunction with a training component of direct learning in the context of surgery through live viewing through video projection of the surgeries that will take place in the operating room.

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. On the 3rd day the trainees do the practical part in cryopreserved pieces in order to obtain the best learning in a context closer to reality. The Access to the course includes a series of lectures online with the name MALO CLINIC: ALL-ON-4® | Complete course and Zygoma Course that must be viewed and studied by trainees before starting the course Cadaver Course | All-on-4® Surgical Protocol. These lectures can be found on the Education platform.

**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 2, 4 and 5, whose weights in the final grade have different weights: module 2- 5 points, module 4 – 5 points and module 5- 10 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 – Medical office space properly equipped with all the equipment and utensils necessary for clinical practice.

**Didactic and Pedagogical Resources:**

Theoretical part- Computer, LCD, sound equipment, video system, whiteboard/flipchart and pens, Wi-Fi network; Lectures online with the name MALO CLINIC: ALL-ON-4® | Complete course and Zygoma Course.

Practice part 1<sup>st</sup> day: Osseosets; Surgery Kits; Surgery Model with Dummy Implants; Multi-unit abutments; 30º Multi-unit abutments;

Practice Part 2<sup>nd</sup> day: Osseosets; Surgery Kits; Dummy NobelZygoma™ 0º 40 mm;

Zygoma Training Kit; Round bur; Twist Drill 2.9mm; Twist Drill 3.5 mm; Twist Drill 4.0 mm; Twist Drill 4.4 mm; Diamond Drill (Edenta); TC Cutter (Edenta); Cover Screw Driver Branemark System™ Hexagon; Connection to Hand piece; Handpiece Zygoma 20:1; Implant Driver Wrench Adapter 21 mm; Implant Driver Brånemark System RP 26 mm; Zygoma Model; Clamps;

Practice Part 3<sup>rd</sup> day:

Frozen Heads; Motors and Contra Angles; Irrigation System; Zygoma hand parts; Branemark Kits; Hu-Friedy Surgical Kits Prosthetic Kit; Zygomas Drill Kits; Long conveyors; Speedy Dummies; Multi-unit abutments; 30º Multi-unit abutments; Zygoma Dummies ; Visor masks; scalpels or disposable blades; Dermographic pens; Syringes with needle; Sutures (with needle); Laboratory Handpiece..

**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/josnusd.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
- 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, 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, 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/josnusd.16-0890
- 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
- 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
- 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

- 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
- 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 Maxillofac Implant.* 2016;31(5). doi:10.11607/jomi.4336
- 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
- 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 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
- 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 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
- De Araújo Nobre M, Maló P, Gonçalves I. Evaluation of clinical soft tissue parameters for extramaxillary zygomatic implants and conventional implants in all-on-4 hybrid rehabilitations: Short-term outcome and proposal of clinical recommendations for intervention in recall appointments. *Implant Dent.* 2015;24(3):267-274. doi:10.1097/ID.0000000000000253
- Maló P, de Sousa ST, De Araújo Nobre M, et al. Individual Lithium Disilicate Crowns in a Full-Arch, Implant-Supported Rehabilitation: A Clinical Report. *J Prosthodont.* 2014;23(6). doi:10.1111/jopr.12137

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- de Araújo Nobre MA, Maló PS, Oliveira SH. Associations of clinical characteristics and interval between maintenance visits with peri-implant pathology. *J Oral Sci.* 2014;56(2).
- 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
- De Araújo Nobre MA, Maló P. The Influence of Rehabilitation Characteristics in the Incidence of Peri-Implant Pathology: A Case-Control Study. *J Prosthodont.* 2014;23(1). doi:10.1111/jopr.12114
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- Maló P, Nobre MA, Lopes A. Immediate loading of "All-on-4" maxillary prostheses using trans-sinus tilted implants without sinus bone grafting: A retrospective study reporting the 3-year outcome. *Eur J Oral Implantol.* 2013;6(3):273-283.
- 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
- 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
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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.
- Maló P, Nobre MA. A new approach for maxilla reconstruction. *Eur J Oral Implantol.* 2009;2(2).
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- Maló P, Nobre MDA, Petersson U, Wigren S. A pilot study of complete edentulous rehabilitation with immediate function using a new implant design: Case series. *Clin Implant Dent Relat Res.* 2006;8(4). doi:10.1111/j.1708-8208.2006.00024.x
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