

## COMPARISON BETWEEN IMMEDIATE IMPLANT TECHNIQUES AND DELAYED IMPLANTS USING DIFFERENT ALVEOLAR PRESERVATION TECHNIQUES ON FUNCTIONAL AND AESTHETIC ASPECTS: LITERATURE REVIEW

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**Abstract:** With the loss of tooth structure, biological and physiological events can lead to loss of alveolar structure and surrounding soft tissues, especially in the first three months. The use of implants to replace lost dental elements is highly reliable. Among the protocols for installing implants, according to Morton D. et al. 2018, they are: type 1 (Installation immediately after extraction), type 2 (early installation within 1 to 2 months after extraction), type 3 (late implantation, after 3 to 4 months after extraction) and type 4 (conventional installation, after 4 months). The use of filling biomaterials and guided bone regeneration techniques, as well as the choice of the appropriate moment for implant installation, have been the subject of study in the search for reducing dimensional changes that occur after tooth extraction, in addition to functional aspects. such as predictability, marginal bone loss, keratinized gums and aesthetic aspects. This study reviewed the literature in search of more recent studies on Immediate Implant Installation and Alveolar Preservation, to establish a possible direction on which technique demonstrates more favorable and predictable results when compared.

**Keywords:** Enlargement of the alveolar ridge; Bone graft; Dental Implant, Immediate Load on Dental Implant, Tooth Extraction;

## INTRODUCTION

The constant search for excellence in procedures involving implant rehabilitation has led researchers to seek answers to the dilemma of whether to install implants immediately after extraction or whether alveolar preservation and subsequent installation of these implants would be better.

Tireless studies have shown that after extraction, the naturally repaired alveolar bone undergoes a remodeling process that can reabsorb up to 50% of its volume in the first year, with 30% reabsorbed in the first

three months (1–4). This reabsorption can be observed more intensely in the vestibular wall (5), especially in the anterior region, leading to aesthetic impairment of rehabilitation.

From the use of filling biomaterials combined with surgical techniques, many authors were able to observe that there was a reduction in alveolar bone remodeling, enabling the installation of implants in a better three-dimensional positioning and thus increasing the predictability and success of treatments (6,7). The evolution in the development of filling biomaterials and membranes that aim to isolate the alveolar environment during repair provides security to the alveolar preservation technique prior to the installation of implants.

On the other hand, the improvement of implant surfaces and modernization of their macro geometry led to the development of a technique that allows the immediate installation of implants in fresh sockets (8,9). This feature preserves bone structure, which is so necessary for rehabilitation with implants (7).

In addition to enabling good positioning of the implants, this surgical technique makes it possible to maintain an adequate size of the keratinized gingiva band and gingival architecture (10).

As resources that aim to restore aesthetics and function to the patient, both

The techniques present requirements such as the surgeon's skill, biocompatibility characteristics of the materials and the patient's health conditions, which must be analyzed with great care.

Both for functional aspects such as predictability, marginal bone loss, keratinized gingiva and aesthetic aspects, controversial results are still found, few meta-analyses have been carried out and high risks of bias in studies for both anterior regions. (3) as later (5,11).

Aiming to find answers that guide surgeons in their clinical needs, this study aims to

compare these two rehabilitation techniques, through a review of published literature.

## PROPOSITION

Search in the current literature which of the techniques between Immediate Implantation (IIP) and alveolar preservation (ARP) present better functional results (survival, marginal bone changes and gingival changes) and aesthetics when compared.

## REVIEW OF LITERATURE

### IMMEDIATE IMPLANTS

Since 1978, the concept of implants installed immediately after the extraction of dental elements has been widely practiced and studied (7). Since then, the literature has sought to standardize different circumstances in which the clinician may encounter, they are: type I (characterized by the placement of the implant soon after the extraction of the tooth element or <10 days), type II (installation of the implant early – 4 to 8 weeks, waiting for partial healing of the soft tissues and prior to the formation of bone maturation and modification of the residual ridge), type III (late onset, occurring within 12 to 16 weeks, after most of the soft tissue maturation and bone occurs; within this protocol, tools can be used to maintain or change bone architecture such as Alveolar Preservation) and, finally, type IV (Implant installed after 16 weeks, that is, after complete gingival and bone tissue healing. (12)

Slagter et al. 2016 (13) evaluated whether the marginal bone level (MBL) would be higher after one year of immediate implant placement when compared to delayed placement, in 40 patients. All patients had the same pre- and post-surgical antibiotic therapy, obtained their final prostheses after three months of implant installation and both those who received it through technique I

and technique IV, received standardized bone grafting (autologous BiOss). Even though most of the MBL is lost in the first year after extraction of the tooth, there was no significant difference between the groups in defects greater than or equal to 5 mm, favoring the placement of immediate implants, thus obtaining a large reduction in the treatment time and a higher level of patient satisfaction. The authors also suggest paying attention to the clinical conditions of each case. Especially in cases of advanced periodontal lesions, endodontic lesions or large bone defects.

Ketabi et al. 2016 (14) carried out a systematic review and meta-analysis of some studies that performed technique I on molars. After excluding possible biases, 15 articles were selected between 2008 and 2015, with 757 patients and 768 implants installed in posterior areas of the mandible and maxilla, divided between wide implants (4-6 mm in diameter) and ultra-wide implants (< 6mm). A survival rate greater than 98% was observed after one year between studies, with an average bone loss of 0.57 mm. However, when comparing diameters, larger implants had a significantly higher failure rate. They highlighted that for the immediate technique, a minimum value of 1.8 mm of thickness of buccal bone plate is necessary, so that there is a correct dissipation of forces and the greater the thickness of the implant, the greater the torque force during insertion, causing necrosis. peri-implant bone.

In a literature review, Buser & Chen 2017 (7) explained some guidelines to help clinicians evaluate which techniques obtain the best results. With regard to technique I, it must be used in more favorable conditions, such as the presence of an intact buccal bone plate measuring more than 1 mm, thick gingival phenotype, absence of pus at the time of extraction and the possibility of adequate three-dimensional installation. When well

indicated and performed, the technique has a low risk of gingival recession. They also highlight that flapless surgeries are associated with lower rates of gingival recession, compared to full flap procedures. In anterior regions, only 4.6% of cases had a thick vestibular plate, demonstrating a correlation between the gingival phenotype and the bone pattern found. Regarding techniques II and III, the advantages over technique I would be the formation of additional keratinized gingiva, caused by partial resorption of the alveolus and the more easily achieved three-dimensional positioning. As these are the main situations encountered by the group (80%), it is the most suitable for the anterior region of the Maxilla. In certain cases where no other technique is possible, the type IV technique is indicated. These cases are commonly found in young patients, pregnant women or when there are factors that make other techniques impossible (large bone lesions, cysts, dental ankylosis, low bone volume). In these scenarios, always perform bone and gum grafting and, if possible, use Alveolar Preservation during tooth extraction.

Joon-Kyu Kim & Hyun-Joong Yoon in 2017 (15) carried out a retrospective study of 116 patients who received implants in the posterior region and observed after one month, three months, six months, one year and other subsequent years. A survival rate of 97.8% was reported after nine years of installation in the group that received implants via the IV technique and 100% survival in the type I technique group.

The exact concept of “success” in the work was not explored, nor values regarding the rate of marginal bone loss, PES/WES scores and probing depth. Contrary to what was observed, Schwartz-Arad studied 381 implants for three years and observed higher loss rates in immediate implants when compared to delayed implants.

Bassir et al. 2019 (16), in a systematic review accessing the literature on immediate implants and delayed implants, investigating which had more failures, which had greater marginal bone loss (MBL), probing depth and gingival recession when meta-analyses were carried out. 2,518 articles were searched and, after exclusions and reviews, 12 articles were chosen with low risk of bias. No significant differences were identified regarding implant failure in any of the techniques. However, when comparing technique I with technique II, greater marginal bone loss was found for the early technique, suggesting that perhaps immediate installation can interrupt, even if to a low extent, bone resorption.

Juan Blanco et al. 2019 (17) explored, through a literature review article, the main issues regarding the placement of implants in fresh sockets. Through advances in the surface treatment of implants and their macrogeometry, the results of the most current studies demonstrate better bone and gingival healing in the peri-implant tissue, favoring the immediate installation of implants. However, when addressing aesthetic issues, the literature shows that 20 to 25% of patients who received immediate implants in aesthetic areas suffered recession, but emphasize that studies are needed to evaluate possible complications, such as the type of load (immediate, early or late), type of flap performed and three-dimensional positioning.

Regarding alveolar preservation techniques, they reiterate that there is still a horizontal resorption of 13 to 25%, mainly in the buccal bone plate, regardless of the recommended technique. While when comparing the type of macrogeometry, conical implants appear to reduce the resorption rate by up to 15% (43%~30%) when compared to cylindrical implants; Added to the filling of bone gaps, these values drop even further.

From a radiographic assessment using tomography, Alexopoulou et al. 2020 (18) verified bone changes in immediate implants located in the posterior areas of 26 patients, using the Alveolar Preservation technique (BiOss or Cerabone) and a customized socket closure device, called a Custom Healing Socket Abutment – SSA. from a TI-Base Trunnion and filled with Flow Resin (unspecified). Even with the use of these techniques, an average bone loss of 0.7 mm was still reported, but it was possible to verify that their use limits bone loss, especially in the proximal regions, after tomographic analysis of the cases. There were differences between the mandible and maxilla, with the Maxilla being the region that suffered the greatest bone changes, probably due to the different bone density between them. The authors concluded that the use of this healing agent significantly reduces changes in the surrounding tissues, based on the same principle of guided bone regeneration, maintaining it as a framework for stabilizing the graft and gingival contour.

Ragucci et al. 2020 (9) performed a systematic review and meta-analysis on articles dated up to 2019 reporting results with immediate implants in molars regarding survival and success rates, influence of the type of connection, positioning, flap or flapless approach, use of grafts, type of intervention, presence of buccal or lingual/palatal bone plate and type of load. After choosing 20 studies with low bias scores, meta-analyses were performed.

There were 1,106 implants installed, with survival rates varying between 93.3% and 96.6%. Bone loss had an average value of 1.29 mm, being more pronounced in immediate implants (15.2%).

In cases where there was a buccal bone plate, there was less marginal resorption, highlighting the need to reconstruct this framework before installing the implant

through regeneration techniques. The authors concluded, after meta-analyses, that the protocol using GAP grafts, with a flapless approach, implants with diameters less than 5 mm and delayed loading had more favorable long-term results.

Cosyn et al. 2019 (10) compared, through a systematic review, factors such as survival rate, aesthetic results, surgical, radiographic and clinical aspects and reports of patient satisfaction in cases of delayed installation and immediate installation of 473 implants. All cases were in function for a period of 12 to 96 months and presented a survival rate in late implants of 98.9%, compared to 94.9% found in immediate implants, with all losses being early, in both cases. approaches being slightly more reported in type I cases. They reported that literature data becomes conflicting and biased towards aesthetic scores (PES/WES Score), probing depth and marginal bone loss, making comparison impossible. In cases where grafts are not used, immediate implants had a significantly better result, implying that immediate installation can reduce marginal bone loss, although it presents a statistically greater recession of the papillae. The authors concluded that immediate implants are associated with a greater need for the use of grafts in other surgical interventions, when compared to delayed implants.

Urban et al. 2020 (19) evaluated radiographic and clinical data on implants installed via technique I in molars with the association of three bone regeneration techniques (autologous bone, Ossix membrane and a combination of the previous two), after 12 months of loading in 92 patients.

After four months of installing the implants, the reopening was carried out for the installation of abutments and, 4 to 6 weeks later, the ceramic crowns were installed. Subsequently, clinical-radiographic analyzes were carried out and no significant difference

was found between the regeneration techniques, favoring the use of techniques with a more financially attractive cost-benefit and with the shortest possible time.

Thanissorn et al. 2022 (8) in their systematic review evaluated 26 randomized clinical studies with 1326 single implants followed for a minimum period of 12 months, between the years 1999 and 2021. When evaluating success rates, the authors explain the lack of an assertive analysis regarding the meaning of the term “success” in the studies evaluated, which do not include factors such as functional, aesthetic and biological performance of rehabilitations, which are important for fully evaluating the techniques, even enabling meta-analyses to be carried out. In general, success rates ranging from 96.7 to 100% were found, using radiographic criteria, marginal bone loss, pain, suppuration or neurosensory changes. Of the studies evaluated, peri-implant mucositis and gingival recession were more pronounced in the groups with immediate implant installation. However, these complications are more common in smoker patients, which can confuse the results. Regarding technical problems, the most reported one's concern screw loosening and loss of retention (4.3% of cases). Regarding aesthetics, studies show that 20% of immediate implants with delayed loading demonstrated gingival recessions, compromising rehabilitation; and concluded that recession is 2.5 to 3 times greater in cases of delayed loading, favoring immediate restoration in aesthetic cases.

## ALVEOLAR PRESERVATION

Horváth et al. 2011 (2) evaluated the effect of using Alveolar Preservation with allogeneic and xenogenic substitutes, the use of membranes, bioactive materials or a combination of them, when compared to natural healing of alveoli in 14 chosen clinical

studies. The authors showed that studies where bone regeneration techniques guided with physical barriers (membranes) were carried out, obtained more effective results, but did not find a statistical difference for any alveolar preservation technique without the use of membranes. Some studies found favorable results for alveolar preservation when compared to natural healing, but it was not possible to perform a meta-analysis due to the lack of standardization of results. Radiographically, the use of xenogeneic substitutes reduced the loss in height of the evaluated edges, but increased the healing time and the incorporation of tissue into the material. On the other hand, when evaluating the histological part, results were obtained that were more favorable to the control group (natural healing); appearing to form a more robust vital bone and larger connective tissue in the natural alveoli.

In a systematic review, De Risi et al. 2015 (20) selected and evaluated histological and histomorphometric results from 38 articles in the literature regarding post-extraction alveolar preservation using allogeneic, xenogeneic and alloplastic grafts. After meta-analyses, no significant differences were obtained regarding the grafts used in each case. The grafts initially act mechanically in the alveolus, with the main function of stabilizing the clot and starting the healing process by preventing the growth of epithelial/connective tissue; and later as a biological agent, providing collagen, minerals and growth factors.

However, when evaluating the grafts seven months after installation, 35% of xenogeneic and alloplastic grafts still have residual particles, delaying bone formation and, in many cases, performing worse than natural healing.

Ávila-Ortiz et al. 2014 (21) carried out a systematic review with eight randomized

clinical studies. By carrying out quantitative analyses, the main findings were that, in areas of alveolar preservation, there was a reduction in average bone resorption of 1.89 mm in the buccolingual parameter,

2.07 mm for buccal height, 1.18 mm for lingual height, 0.48 mm mesial reduction and 0.24 mm distal reduction, when compared to natural healing. In sites that received a membrane covering the graft, significant differences were observed in mesio-buccal and mesio-lingual parameters. Among the grafts, more favorable results were found with the use of xenogeneic and allogeneic grafts when compared to alloplastic and bioactive materials. However, cases must be interpreted carefully, evaluating the specific characteristics of each alveolus and each patient.

Atieh et al. 2015 (22) published a systematic review in the Cochrane magazine with the aim of carrying out an analysis of the clinical effects of post-extraction Alveolar Preservation techniques when compared to common healing. After a careful analysis of the published articles, eight articles were chosen. A meta-analysis was carried out comparing preservation techniques and the only statistically significant difference was the reduction in bone crest height when compared to normal healing. Although alveolar width also had a significant increase, there was no statistical difference worth noting. Regarding the grafting techniques, there was no difference between the groups.

Apostolopoulos & Darby, 2017 (23) compared immediate implant installations without the use of grafts versus implants installed in previously preserved areas using grafts. 51 patients who received grafts in post-extraction sockets were analyzed through probing depth, bleeding during examination, presence or absence of bone walls and radiographic bone loss. After the healing period, 100% of the implants installed

in areas grafted with freeze-dried bovine bone covered by a membrane survived. The success rate varied between 58% for non-grafted implants and 51% for implants that had received prior preservation, but there was no statistical difference in the values presented, proving similar results between the techniques. However, among the 51 implants installed in preserved areas, 32 did not require other additional interventions and allowed installation in locations that would not previously have been possible via technique I.

Eghbali et al. 2018 (1) evaluated aesthetic results after five years of installation of single implants following alveolar preservation procedures and connective tissue grafting in the vestibular region of 37 patients. The procedure chosen was minimally invasive extraction, filling of the socket with freeze-dried bovine bone (10% collagen), installation of an implant 4~6 months after the first intervention and installation of ceramic crowns after 3 months. It was found that the use of this protocol produced a limitation in the resorption of the alveolar process in a favorable way, and could even reduce the possibility of vestibular shadowing caused by gingival recession, due to the average increase in thickness of 0.91 mm. There were no significant differences in the PES/WES tests between one and five years.

Cha et al. 2019 (24) compared the vertical changes between spontaneous healing and alveolar preservation after extraction in the posterior region of the maxilla.

A total of 28 patients were selected, with 14 assigned to each group. In all patients in the control group, it was necessary to perform a sinus lift; while in the test group, only 42% needed additional techniques. Alveolar preservation favorably reduced the pneumatization of the maxillary sinus when compared to natural healing, enabling the installation of implants in areas that would

be impossible if they did not receive grafts. In cases of elevation of the sinus membrane in the control group, it was possible to perform minimally invasive techniques (Summers) in 92% of them.

Lombardi et al. 2018 (25) evaluated in three dimensions the differences between bone resorption and pneumatization of the maxillary sinus in preserved alveoli and alveoli with natural healing of upper molars. After minimally invasive extractions, the 26 individuals were divided into a test group (grafts with synthetic nanohydroxyapatite) and a control group (natural healing). Tomography scans were performed at the time of extraction and after six months in both groups, evaluating expansion of the maxillary sinus floor and horizontal and vertical dimensional changes. Drastic reductions in bone volume were found in the control group, while in the test group, there was only a 4% reduction. Therefore, in 12 of the 13 patients it was possible to install implants without the need for other procedures.

Zhou et al. 2019 (26), in a systematic review, compared the success rates between implants via technique I and implants installed in preserved sockets, as well as aesthetic, tissue and other outcomes that could compromise the final rehabilitation. After searching the literature, 12 studies were chosen, in which 588 implants were installed, 298 post Alveolar Preservation and 290 via immediate technique.

In both the anterior and posterior regions, the technique with alveolar preservation was significantly better (success rate of 97.76% versus 93.41%), especially in sockets with defective bone plates (96.8% versus 86.9%). In alveoli without bone defects, the results were similar. In some studies, a lower rate of marginal bone loss and greater vertical height were observed for the preservation group. Regarding the results reported by patients,

implants installed after preservation obtained higher PES/WES values.

On the other hand, immediate implants associated with immediate loading have excellent results in patient satisfaction, probably due to the drastic reduction in treatment time. They also present significant differences in the bone level of the alveolar crest when compared to the delayed protocol, as well as the preservation of soft tissues in the anterior region. But when complications are evaluated, technique I appears to produce worse results such as pain or infection, directly influencing implant survival.

Robert J Adams 2022 (27) in a literature review, explained clinical evidence about the most current alveolar preservation techniques. It is a relatively current technique, becoming more widely used since 1998 and today represents 29% of the use of all bone substitutes. In addition to delaying the alveolar tissue healing process, no material is currently able to prevent the resorption process. It also presents some classifications of the alveoli that receive this type of material, namely: type 1 (soft tissue and bone tissue at normal levels and remaining intact), type 2 (soft tissue presents with partially absent vestibular bone tissue) and type 3 (tissue soft and bone partially reduced after extraction).

They conclude that there is not enough data in the literature that can certify and indicate the use of alveolar preservation techniques when compared to natural alveolar healing; and that its use must be restricted only in specific cases.



## DISCUSSION

The evolution of Implantology follows a path that seeks to repair function without neglecting the resolution of aesthetic problems. To this end, much work is being done to find techniques that can minimize the physiological effects of bone remodeling resulting from tooth extractions. Many authors point out a lack of consensus in the literature regarding the standardization of the parameters chosen in clinical trials and the lack of coherence in the description of what “success” is, and consider that the results of these trials must be approached with caution when deciding clinical practice by one technique or another, always considering the technical capacity of the operator when choosing.

Tallarico et al. 2017 state that it is possible to obtain better results in PES/WES, when evaluating the thickness of soft tissues, based on radiographic analyses, with immediate installation, and highlight the occurrence of greater marginal bone losses in implants placed immediately after extraction. In contrast, Canelas et al. 2019, in a systematic review, reported that they found no statistical differences in the aesthetic parameters evaluated after one year. But comparing the same procedures, they state that immediate implants showed better results in anterior areas, but in the posterior sector, the delayed installation of implants was more favorable.

Clementini et al. 2019(3) evaluated changes in the marginal bone level of implants installed immediately and later and found that in all groups there was bone reduction, however in the test groups (alveolar preservation), this reduction was smaller.

The authors attributed that the preservation of the gingival and bone contours occurred through the preservation of the alveolus and not just through the installation of immediate implants. These results contrast with the study

by Urban et al. 2020 (19), in which it was found that immediate implants with delayed loading obtained the same values when compared to delayed implants after alveolar preservation, favoring the immediate technique, due to the fact that it reduces treatment time and, often, the cost total treatment.

Tonetti et al. 2019 (5) believe that the clinician’s decision must be based on all possible adversities, and state that the alveolar preservation technique reduces 1.5 to 2.4 mm vertically and 1 to 2.5 mm horizontally, when compared to unassisted extraction, but that the type of graft must be considered, as one may be more advantageous than another. The authors stated that the immediate implant technique presents a lower survival rate, in addition to more pronounced marginal bone loss and lower PES/WES scores, when compared to the installation of delayed implants. These results corroborate the study by Mareque et al. 2021 (28), who evaluated the same parameters and also gingival scores, obtaining similar results. Still under the patients’ evaluation, they obtained more favorable results, probably due to the reduction in treatment time, which corroborates what was described by Zhou et al. 2019 (26), causing a more pleasant perception and positive feedback reported by patients.

Regarding survival, Schwartz-Arad studied 381 implants for three years and observed higher loss rates in immediate implants when compared to delayed implants (14), favoring alveolar preservation assisted by the use of membranes and bone grafts.

In contrast, Joon-Kyu Kim & Hyun-Joong Yoon in 2017 (15) found higher survival rates (100%) in immediate implants when compared to delayed implants, but failed to explain what concepts were evaluated and sample sizes addressed.

When it comes to choosing the best treatment, the results differ greatly depending on the region needed (anterior or posterior).

For the anterior region, the results favor the choice of the immediate technique with the use of bone grafts in the GAP between implant/bone with provisionalization (immediate aesthetics) or personalized healing (18), as long as the clinical circumstance allows it, that is, with the presence partially intact socket (>50% of the socket preserved after extraction), absence of lesions, minimally invasive extractions (flapless), posterior bite containment and allowing an adequate three-dimensional position for the implant (5,9,17).

When considering the posterior region, the results show better performance for implants performed after the alveolar preservation technique, which involves the use of bone grafts and covering membranes (2,23), favoring the maintenance of the gingival and bone framework, consequently, the profile of the final prosthesis reducing marginal bone loss and gingival recession (1,20,21). The aim is to perform a variation of the guided bone regeneration technique.

In the upper posterior region, the alveolar preservation technique showed even better results, as in addition to the factors previously described, pneumatization of the Maxillary

Sinus is avoided, favoring a better three-dimensional positioning of the prosthesis (24) and, in many cases, reducing the need of subsequent interventions (25).

## CONCLUSION

After the literature review, as a conclusion, the clinician must consider some factors before making a decision, they are: the extraction site (posterior or anterior), close to prime areas (IAN or floor of the Maxillary Sinus), aesthetic area, buccal bone loss or compromised buccal wall (less than 1 mm), patient's age, gingival phenotype (thin or thick), adequate three-dimensional positioning and, above all the aforementioned aspects, the technical capacity of the operator. If any of these requirements are not favorable, the use of the alveolar preservation technique assisted by a covering membrane is indicated. In cases of high aesthetic demand (upper anterior region), if all requirements are favorable and there is a correct distribution of functional and parafunctional loads, consider performing the immediate implant with immediate aesthetics and gap filling using bone substitutes.

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## ANEXO A – DISPENSA DO COMITÊ DE ÉTICA EM PESQUISA



Comitê de Ética em Pesquisa  
Faculdade São Leopoldo Mandic

### Comunicado de Dispensa de Submissão ao Comitê de Ética em Pesquisa

Campinas, 18 de novembro de 2022

Prezado (a) aluno (a) **Felipe Martins Nóbilo**

Considerando os documentos encaminhados para avaliação do Comitê de Ética em Pesquisa da Faculdade São Leopoldo Mandic, o projeto abaixo descrito foi dispensado da submissão ao CEP por tratar-se de pesquisa que, individual ou coletivamente, não possui como participante o ser humano, em sua totalidade ou partes dele, e o envolva de forma direta ou indireta, incluindo o manejo de seus dados, informações ou materiais biológicos.

Número do Protocolo: 2022-1044

Data da entrega do Projeto: 12/11/2022

Orientado pelo(a): Nilton de Bortoli Junior

**Projeto:** Comparativo entre as técnicas de implantes imediatos e implantes tardios utilizando diferentes técnicas de preservação alveolar sobre os aspectos funcionais e estéticos: revisão de Literatura

Cordialmente,

**Prof. Dra. Roberta Tarkany Basting Höfling**  
Coordenadora do Comitê de Ética em Pesquisa