



# Overdenture in terms of preparation and restoration of supporting teeth

## Supradentalna proteza sa aspekta pripreme i restauracije potpornih zuba

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### Introduction

Overdenture (OD) is applied in removable prosthodontics and also for the prevention of edentulous alveolar ridge reduction<sup>1-7</sup>. Magnets insertion into the OD results in significant slowing down of periodontal disease<sup>2</sup> and osteoporosis<sup>4,5</sup> and produces an antimicrobial effect in the oral cavity<sup>7</sup>. Tooth extraction presents irreversible mutilation that patients unwillingly agree especially in case of the last remained teeth. Of that reason, the suggestion about keeping those remained teeth is being gladly accepted in case where patients are very amenable and prepared to any cooperation. In this respect, patients psychologically very gladly agree with cutting the tooth crown and creation of appropriate abutment in regard to OD that is followed because now they keep their “hopeless” teeth<sup>8</sup>. Subtotal edentulousness might be solved in many ways where the main existing problem is almost always the residual alveolar ridge reduction. The extraction of remained natural teeth and rehabilitation of such status by conventional full denture (D) is nowadays very often, but the most unwilling solution, where every therapist is aware of everlasting problem on retention and stabilization. On the other hand, rising usage of implant-supported ODs offers many possibilities of prosthodontic rehabilitation of subtotal edentulousness. Regarding beforementioned, up-to-date literature offers various solutions for fabrication of implant-bearing OD both for lower and upper jaw. Here many tasks are to be planned such as implant load by suprastructure and precision attachments (connectors) considering partially edentulous alveolar ridge. A decade before, a very few dentists were brave to indicate OD fabrication in fear of

prognosis on the remained, partially endangered teeth. The near future and epidemiology studies will answer the question whether partially edentulous jaw would be solved by conventional acrylic plate denture or ODs. Besides many functions, teeth in oral cavity present the symbol of youth, sound health and beauty from a psychological point of view. Their loss in number and shape might be considered as endangered health, power loss and sign of aging predominantly in rural areas where negligence is more present than in urban ones. Teeth loss sometimes disturbs emotional tranquility exposing often depression. In those cases full denture is unacceptable as a foreign body and loss of identity that is one more reason to prefer OD solution respecting remained teeth-abutments<sup>7-13</sup>.

Bearing this in mind, the patients who have periodontologically weakened teeth in dental arch could count on their keeping and specific reshaping/restoration thus ready to accept OD that follows. By the way, tactile discrimination is preserved by teeth keeping as much as possible<sup>14</sup>. All this motivates a patient to the success of the whole OD treatment. In favour of indications for OD planning goes the fact about possibility of magnet incorporation in its base<sup>15,16</sup>. Encouragements were found about magnet antiosteoporotic<sup>6</sup> and antimicrobial effects<sup>7</sup>. Periodontal tissues around remained preserved teeth, pulp and alveolar bone under OD can be further stimulated biologically by installing micro-magnets and permanent effect of the magnetic field.

The aim of this paper is to present the different approaches in planning, choice, preparation and way of restoration of the remained teeth for OD acceptance.

### General considerations

Based on the assessment of the clinical status and teeth radiographies, the decision about retaining the last remaining teeth is to be made. The criteria for hopeless teeth are: less than 5 mm of health alveolar bone and poor endodontic prognosis (narrow, curved, obstructed or caries-destructed tooth-root) <sup>17</sup>. The remained teeth before OD fabrication might be conservative or prosthodontically prepared/restored by filling in calotte shape [amalgam, composite, glass ionomer cement (GIC), casted cap] <sup>17,18</sup>.

Considering the justification for OD, its significant benefits could be characterized through financial factor and preservation of supporting tissue around crown-destructed tooth, also maintaining the satisfied bone density, very important in elderly population prone to osteoporotic process <sup>19-21</sup>.

In the moment of the change of submaximal partial toothlessness and conventional acrylic denture to OD, the half-time life period of the remaining teeth is prolonged because patients are able to adapt to new OD <sup>17,22</sup>.

In the case of spacing set of teeth or anodontia of several teeth, it is important to keep each of them or apply quality treatment and restoration <sup>22</sup>.

A layer of saliva, which still exists between the depressions formed in OD by impression of retentive restored tooth stump (abutment) and outer surfaces of the restoration, beneficially acts by amortizing the mastication forces that tend to move OD in the horizontal plane. It also has a favourable impact to the adhesion to OD in terms of minimizing the displacement in the vertical direction. This phenomenon is also obtained by fabrication of larger surface of the restoration and preforming of the occlusal tooth surface to be at the level with the surface of the definitive spherical occlusal plane.

Restoration of teeth defects, regardless of origin (caries, erosion, attrition, abrasion, fracture) always has to be planned the best way taking into account the retention, resistance to pressure, its solubility, distance to gingiva and endodontium condition as well <sup>22,23</sup>.

Considering less favourable aesthetic solutions of ODs, they are indicated with extreme wear of tooth substance (bruxists, some professions) <sup>23</sup>. ODs may be indicated in cases of extreme tooth wear because it is the easy way to increase the vertical dimension of occlusion <sup>24</sup>.

Regardless of the choice of the appropriate type of restoration and material during the crown preparation it is important to estimate large undercuts and neutralize them, then preciously plan the type and design of coronal restoration for OD acceptance <sup>18</sup>.

Retention of OD can be based on resting on the shape retention of milled fixed restoration such as cast cap (more usually in practice), creating duplicate – telescopes <sup>3</sup> or installation of specific milled precision attachments and bars.

### Tooth selection for restoration

From the standpoint of stability, bilateral remaining tooth position is always a better choice than unilateral. However, even the survival of only one incisor can have a very

positive impact on the OD stabilization and alveolar ridge preservation in the frontal region which is very prone to the resorption changes <sup>25</sup>. Hence, during the selection of the remaining teeth, priority should be given to the canines, then premolars and optionally incisors <sup>26</sup>. We should bear in mind the survival prognosis of teeth with periodontal disease or osteoporosis <sup>5</sup>. Molars are rarely candidate for the OD bearer due to endodontic reasons (high risk of failure, more complicated and long-term treatment, unsafe guarantee for tooth survival in the jaw or pulp-periodontal complex relation). The incisors are also extremely rare for selection because of unfavourable crown-root ratio and might be included only when there is no other option (markedly reduced alveolar ridge when incisors are only remaining teeth, preserved satisfactory). Restored teeth have a reduced height of the crown thus achieving a favorable ratio to the abutment root. This also reduces harmful effects of the lateral forces when stimulation positive effect of the masticatory forces might be archived <sup>22</sup>.

The most favourable teeth for OD support, assuming topography, are canines (angle teeth) and molars <sup>27</sup> because their mass enable greater stabilization and retention owing to the root morphology, huge root surface, vast and wide junctional epithelium in comparison to the other teeth groups, as well as large root canal space very wishfull for endo treatment. Mascola <sup>28</sup> and Basker et al. <sup>29</sup> in their own clinical studies preferred canines for OD support. The same is for premolars, eventually dislocated mesially, more often in cases of prematurity loss of frontal teeth. Our longitudinal research pointed out canines as the most long-lasting teeth under OD after ten years of check-ups (49%). The exposed premolars have shorter survival upon six (48%) <sup>28</sup> and ten years of surveillance (18%) <sup>30</sup>.

### Periodontology

Periodontal tissue that surrounds preserved remaining teeth, intact pulp and alveolar bone below OD may be additional positive biologically stimulated by installation of small magnets and their permanent irradiation <sup>4,16</sup>. The teeth with greater alveolar support and coronal mass should enter the list. They also have to fulfill one condition – to be inserted in alveolar bone 5 mm at least <sup>22</sup>. The confirmation for these long-lasting teeth in the jaw gave the six-year study that recorded the average loss of alveolar bone height of only 1.5 mm <sup>30</sup>. A ten-year study of American authors points to the just 5.9% of failure due to bad periodontal condition as the cause of tooth extraction <sup>2</sup>. The other groups of teeth are considered insufficiently strong to withstand the mastication forces and have to be extracted <sup>31</sup>.

### Materials and modes for direct tooth restoration

Extraalveolar parts of teeth are cared for conservative or prosthetic restorations as calotte-hemispherical shape of amalgam, composite, glass ionomer cement (GIC) of cast-caps depending on the size of the retention and restoration of gingival shoulder junction. Supplemental retention of some fillings might be presented by canal post or parapulpal pins.

A short and rounded tooth crown of a sphere shape without fillings is abandoned method to adapt to OD. It is potential carrier for new or already existing microbes in the dentinal tubules. Microbes have to be captured with the appropriate long lasting adhesive agent whether at vital or non vital teeth<sup>32</sup>. In the study of Ettinger and Krell<sup>32</sup>, the authors obtained 17% of failure in teeth preservation and teeth vitality where after cutting crown of dentinal stump, surface was only polished without capping or any type of protection. For such cases the most appropriate methods of restoration are liquid or hybrid composites because of their micro penetration and good adhesion to the conditioned substrate (dentine surface of the tooth stump). If the coronal restoration of the abutment tooth is not properly rounded, due to unfavourable distribution of forces and the fact that the OD base is thinner in dental then in the edentulous area, denture fracture could occur.

Although the roots of teeth served as early as 1856 to stabilize the prosthesis<sup>3</sup>, this doctrine began to increasingly apply only since by the merit of Miller (1958), the first time in the US, using the vital tooth with the preparation of annular cap without tooth devitalization. It was not until 1969 when Morrow and collaborates suggested a reduction of the tooth crown to a few millimeters above the free gingival margin which of course usually require root canal therapy<sup>32</sup>. In shallow cavity of vital teeth, when it is assumed that the micromechanical retention will be insufficient, parapulpal pins are desired (class III, V and erosion) respecting the pulp topography. Where the situation demands, in "slot cavities", it is possible to improve the retention by preparation of moderate convergence of walls outwardly (mild undercuts). The drying up of tooth substance before relining and filling should be avoided especially in the application of composite, GIC and compomer materials. It is particularly stressed in non-vital teeth due to weakening of chemical bonds of tooth-filling whose chemistry requires minimal presence of moisture in the dentinal tubules<sup>33</sup>.

It is necessary to round off the remaining tooth stump after the reduction of the tooth crown in order to reduce the impact of adverse forces.

Novelty for amalgam application on the tooth stump assumes, besides additionl macromechanical retention (dovetail, notch within the the cavity), also the micromechanical retention that involves the application of conditioning of enamel margins and peripheral dentine tissue with amalgam bonding substances<sup>34</sup>.

Even improved GICs, up-to-date formulations are recommended for restoration in low stress-bearing areas. Hence, in the case of non-vital tooth, making the deobturation of the first 2–4 mm and applying GIC barrier enable extended amalgam filling with good retention in the coronal portion of canal with the possible implementation of preferred amalgam-bonding agent. Nonvital tooth has lower percentage of water then vital one, thus attention should be focused on the mild drying where remaining water contributes the qualitative chemical reaction during bonding process.

Narrow indication for GIC restoring is abutment teeth prone to caries occurrence and other defects under gingival

margin with mandatory ecartation (cauterization, haemostipitic caustic) and restoration varnishing upon finishing and polishing. The low solubility of type II (around 0.4%) favours GIC restorations in the gingival third cavities at abutment tooth<sup>35</sup>.

In those cavities, varnish layer is mandatory and rubber dam technique due to the water imbalance. The second reason to apply GIC is easyness of removing of restoration if necessary. Up to date GIC and composite filling owe adhesive systems as well as conditioning of cavity walls by polyacrylic and other organic acids for appropriate chemism they need<sup>25</sup>. If the remaining abutment teeth (premolars, molars) under OD are prone to exessive force in masseteric muscular type of chewing, the choice for restoration could be GIC type II–2, silver-reinforced or "cermet" GIC, either as a filling base or a dentine base (dentine substitute) that is further can combine by a cast cap. Silver-reinforced GIC restoration emerged in the early eighties of the last century while still is in very successful use especially in vital teeth as temporary filling<sup>36</sup>.

With increased quality of contemporary adhesives and their bond strength to the tooth hard tissues, the interests among dentists were arising particulary for type of OD prosthetic rehabilitation concerning good composite restoration for abutment teeth. This way of restrictive preparation does not follow the Black rules of preventive extension and extension due to retention when modern types of composites are used. Their elasticity modulus similar to dentine and more superior resistance to pressure in constant contact with dynamic movements of OD should have entered them (ceramcor, ormocer, compomer) on the final checklist and shortlist. In addition, we should uphold strictly to a manufacturer's protocol regarding preparation (conditioning) of cavity walls and composite/adhesive systems application to the treated surfaces<sup>37</sup>.

Where necessary, additional macroretention should be set by canal composite post and composite adhesive for fix it by light cure.

In favour of the use of new generation of adhesives for enamel and dentine substrate, combined with aesthetic composite resins is increased bond strength (15–25 MPa)<sup>37</sup>. They simplify the procedure (one bottle system) especially at gingival and subgingival tooth defect, very often cases in OD wearers. In elderly population, prompt action of acid etching, washing and conditioning should be done in relative or absolute dry operation where one bottle adhesive system is required.

The latest investigations have suggested the best bond enabled in the adhesive agent hybrid composite system regarding conditioned dentine creating very thick hybrid layer. This was confirmed by Micro Raman spectroscopy and scanning electron microscope (SEM) analysis where adhesive system of "etching and rinsing" creates thicker bonding hybrid layer in hard tooth tissues in comparison to the next adhesive combinations: self-etching one step and self-etching by two bottle system<sup>38</sup>. As the abutments present solitary remaining teeth in the jaw (without agonists neighbours), they are directly exposed to the stressful thermodynamical

changes from all sides where the best solution for their restoration present hybrid and microfilled composite resins<sup>37</sup>.

At vast and shallow lesions (cavities), regardless of taking care on the composite applying in thin layers, as well as gradual amplifying on the curing light, material contraction still occurs at some degree. For those cases, the best choice is composite consisting of the great deal of filler and less monomer content as well as resin that lessen the viscosity and thus create superior contact to the outermost and distant surfaces of the cavity<sup>37</sup>.

With the advancement of composite technology regarding their physical properties, nowadays is possible to do patching correction at aesthetic fillings. The advantage of patching old composite over its entire removing is unwise adhesive fractures that might occur within resin material. Also, regarding tooth resistance to fracture, the correction should be placed as much as distant to the gingiva and antagonist contacts, closely intended for low-caries risk patients who "promise" proper oral hygiene and regular check-ups<sup>37</sup>.

Some authors point out that combining of persisted amalgam and/or amalgam repair by composite filling increases the resistance to fracture around 51% in comparison to entire amalgam replacement. They conclude that rebonding and patching of old composite by new one is beneficial in improving superior resistance to pressure and fracture<sup>39</sup>.

The vital teeth tissues should be avoided of long and excessive drying (manufacturers' instructions) because necessary remained wetness is wishful to create good bondage to the composite filling.

At nonvital teeth, precaution of over desiccation should be more pronounced due to the less wetness in hard tooth tissues, i.e. enough water content is prerequisite for bonding chemism. In those teeth of decreased flexure strength, final restoration surrounded by enough dentine wall thickness would be of rounded shape to resist the masticatory forces<sup>40</sup>.

The newest studies concerning microleakage of composite resins have revealed increased leakage in the deep cavities of great diameter, what is more often at abutment teeth under OD.

Even solo use of dentine adhesive agent without composite restoration for nuded root surfaces, often in OD bearers, could prevent further progress in depth<sup>41</sup>.

### Indirect restorations

Molded golden or Ag-Pd alloy caps restorations are indicated in abutment teeth with destroyed extraalveolar structure, especially where it is impossible to make preparation with healthy supragingival solid surface of tooth neck<sup>3</sup>, i.e. when gingival wall of tooth is missing or partially destroyed. It is then usually made as a fixed post in root canal for better retention.

By that, the cap follows the shape of neighboring alveolar ridge regardless its design. The cap design can possess additional retention ornament or not above marginal edge and demarcation<sup>18</sup>.

Short dimensioned caps require the preparation of retentive (canal) posts or dentine (parapulpal) pins. This is not necessary for the medium-sized caps, usually dome or long ones of thimble shape. This type of restoration can be applied directly to the prepared tooth stump or previously prepared and restored stump (amalgam, composite, GIC, polycarboxylate or oxiphosphate cement)<sup>42,43</sup>.

At vital and nonvital teeth, chamfer form of demarcation should be precisely defined in order to completely rest the cap margin fully on the prepared tooth part.

The advantage of amalgam and cast fillings over other materials in the gingival third of the supporting teeth, because of the constant presence of moisture during filling, is reflected in resistance to solubility over time. Contact of these fillings with oral fluids immediately after implantation is less susceptible to dimensional changes than other restorative materials (composites, GIC), which is difficult to provide anaerobic conditions without the presence of moisture in the first few hours or days during their setting-curing time (crystallization, conversion, maturation).

### Restoration luting

Immediately before cementing, overdrying should be avoided when disinfection and insulation should be done by appropriate liners/varnishes of big wetting angle to enable their deep tubule penetration<sup>44</sup>. The best properties for luting exposed surfaces has GIC-type 2 due to the favourable features (viscosity, adhesion, solubility)<sup>42,45,46</sup>.

### Endodontic treatment of abutment teeth in the scope of overdenture manufacturing

From the standpoint of modern endodontics there is a need to save and keep each tooth that shows great chances for successful treatment, for example simple canal system. When molars need endodontic treatment, indications for their keeping become much wider. Sometimes, the current unsatisfactory status of filled root canal (canal with bad filling) does not necessarily show the failure (e.g. a female patient, age of 73, who has been followed for 12 years). Her teeth, with insufficiently filled canals (all three lower incisors) still persisted in the jaw without manifested focus followed by well-preserved alveolar structure<sup>31</sup>.

At the end of the previous century, when endotreatment had reached high results, whether alone or by periapical surgery, this form of subtotal edentulousness began to attract more and more OD supporters. Regardless of the endodontic mode of solving the pulpal/periapical pathology (cases of inflamed or infected tissues), the standpoint of abutment tooth longevity should bear in mind as a safe support for OD. The 3–4 months period of follow-up and tooth radiology control are considered mandatory for the full security. In minor endo cases, the expectation period of possible flareup is of several days when significant relief of symptoms is expected<sup>1</sup>.

Periodontal lesions combined with endo pathology presents specific entities but also a high risk for inclusion of

such teeth as OD carriers. For those teeth, primary periodontal treatment involves periodontal and then endo treatment as much as possible compulsory. When endo arouses perio lesion, endo therapy is premier without parodontal therapy. Almost invisible radiological canal silhouette does not involve endo treatment in elders except in extreme rare cases when retentive canal post is unavoidable solution<sup>47</sup>.

Endodontic retreatment should be done in case when canal entrance communicates for 4–40 days at least with oral cavity even if good canal obturation exists on radiogram due to saliva diffusion<sup>47,48</sup>. Some authors have informed risk period of 20–90 days even if proper compaction obturation technique is used<sup>48,49</sup>. The best prognosis at periapical lesion cases gives endo treatment where Ca(OH)<sub>2</sub> canal dressing is applied<sup>50,51</sup>. Mandatory check-ups are protocolar (6 and 12 months) where Ettinger and Quian<sup>1</sup> recorded around 13% postprocedural failures during 23 years at 626 endo treatments, of which one third were due to secondary caries, loose of restorative adherence and microbial leakage. Authors found 31% cases of vertical fractures, predominantly at upper teeth due to lower amortization in maxilla rather than mandibula which was connected by skull base with soft tissue of temporomandibular joint (TMJ). The fractures were noted in teeth without caps when occluded to antagonists. Periapical lesions failed in endo therapy numbered 3.8% extractions of all teeth under OD in the 10-years study<sup>2</sup>. That research cited prevalence of vertical tooth fractures and extractions mostly in men, probably because of stressed superior bite force.

### Overdenture and tooth with attachment or implant combination

If more stability and retention of OD are required, attachments should be planned on the pair of distal teeth (pair of premolars) at Kennedy I case where the rest of teeth might bear indirect or direct fillings. This combination (for example with supraradicular attachments) and other simple tooth restorations are very thankful for OD fabrication. Advantages of such combination are: good stabilization, chance of dental bear of mastication forces, preservation of alveolar ridge and periodontal receptors as well as quick patient adaptation to new oral condition<sup>11</sup>. Besides attachments on the strong teeth abutments, the implant units might be involved for better OD stability reason, especially in mental disordered patients (hyperkinesism)<sup>52</sup>.

### Check-ups

Periodical controls are mandatory for teeth-abutments at six and 12 months and every six months later on, due to possible restoration failures, missing and fractures<sup>2</sup>, assuming suspective symptoms, secondary caries and periodontal tissue condition. Perialveolar pockets lead to the tooth loose by provoking the incurable periapical process<sup>32</sup>.

Up to date, digital radiology systems might be of great help during radiogram analysis where strong softer enables easy and comfortable follow of alveolar bone density in

comparison to the conventional devices. This is enabled through the histogram of bone part along the drawn line what is possible to follow in the course of time by memorize the data at check-up controls<sup>5,53,54</sup>.

The partial or total loss of coronal restoration after a few (3–7) days can cause diffusion of microorganisms and their products which is particularly unfavorable for curved/narrow root canal what some *in vitro* studies revealed<sup>48,55</sup>. Often controls could prevent such cases when endodontic retreatment must be avoided. If control check-up predicts resection of root, the crown/root ratio has to be not less than 1:1.3.

Tooth restorations and OD itself should be controlled often. There is a need to make an increased effort to maintain them with occasional fluorination of teeth resulting in lower caries incidence<sup>1</sup>. Undetected defect of non-vital tooth fillings when controls miss, allows diffusion of undesirable agents of the oral cavity through dentinal tubules (lateral periodontium) and the apical canal portion (apical periodontium). Hence, there is a need to fulfill at least the first three millimeters of coronal canal portion with GIC as a gold standard by well adaptation to the walls of the access cavity<sup>35</sup>. The modern view is that retreatment must be done if microleakage persisted for at least three months (canal medication by Ca(OH)<sub>2</sub> suspension for a period of 2–4 weeks) with a consequent obturation of compaction techniques of gutta-percha. Contemporary findings suggest that undetected coronal filling defect enables human salivary flora penetration even the entire length of the hermetic root canal obturation by proper compaction technique for a period of 4–40 days<sup>48,55</sup>.

Restored nonvital teeth are particularly susceptible to fractures (along root and crown) that can occur spontaneously or accidentally and should be monitor by six month intervals by the help of loupe and clinical microscope. Those teeth often expose pathognomonic signs of sensitivity to bite and percussion that persist even after the disarticulation of prosthesis even after retreatment or apicotomy. Those teeth should be extracted in case of inadequate therapy, i.e. patients after extraction were immediately alleviated of painful percussion sensation.

The advantage of OD is the fact that the supporting restored teeth allow patients greater mastication force<sup>22</sup> than other solutions of submaximal edentulousness (classic partial or full denture after extraction of the last remaining teeth). Some authors recorded an increase in the strength of occlusal forces up to 120% in the case of OD over the abutment teeth<sup>56</sup>. In addition, OD preserves facial contour mimic muscles and prevents the appearance of wrinkles which meet aesthetics too, slowing the process of aging.

If one considers quality/function of speech in conventional denture bearers, it is much better with OD over supporting teeth whereby better coordinated and an interjaw relation is achieved.

Further preservation of supporting teeth and neighbouring alveoli by OD can be provided by inserting of small magnetic cylinders in its base under the remaining teeth. The constant magnetic field is beneficial in reducing the dental plaque index values<sup>7</sup> and food retention around the support-

ing teeth due to the poor oral hygiene in elders, what was confirmed in the 12-month study<sup>4</sup>.

Long-term monitoring of patients rehabilitated with OD, by implementation of the above-mentioned restoration procedures, recorded a low level of tooth loss (about 10%) at the end of the studies<sup>3, 4, 24, 30, 31</sup>.

In addition to the financial aspect, the advantage of this kind of restoration and conservation of the supporting apparatus of crown-destroyed teeth is evident. These teeth also contribute to maintaining density of the jawbone bearing in mind the pronounced presence of osteoporosis in elders<sup>5</sup>.

### Conclusion

Whatever kind of tooth restoration is planned, the most appropriate mode must be chosen for the current situation, it should be processed properly to enable long abutment life and an adequate OD support. By keeping and restoring of the remaining teeth, their periodontium must be protected too, enabling proprioceptors to protect the abutment teeth of ex-

cessive force during the chewing function and help to control the position and movement of the lower jaw. Patients are therefore subjectively much more comfortable with several own teeth combined with OD if compare to the classic partial denture they have. All in all, if one can summarize the overall benefits for patients, wearer of ODs, owing to the our long lasting experience as well as extensive data from foreign literature, the importance of preserving the remaining teeth is really huge. This implies an inevitable and significant advantage of OD over other forms of prosthetic treatment of subtotal edentulousness. Positive developments in restorative, both laboratory and clinical prosthetic dentistry, are increasingly noticeable, obvious and inevitable, whereof the improvement of OD is limitless and depends on the imagination and practitioner's skill. It can be concluded that if you understand the essence of its existence and many restoration factors that determine its design, OD can be considered as a simple and easily manageable job. In fact, if we start from a simple item concerning its creation, the rest will come by itself. Hence, master the simple, the rest follows.

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