## WHAT IF I DO NOTHING

As mentioned previously, the biggest risk in delaying treatment has to do with jaw bone loss, making future tooth replacement significantly more difficult and very costly.

## DIAGNOSIS

Diagnosis for treatment is based primarily on the stage of root development in the child. The best stage of development is when the root is about 2/3 formed. This corresponds to a chronological age of 9-12 years. This is also a time in life when children are most likely to have an accident and damage a front tooth.

## BENEFITS OF TREATMENT

- Potentially avoiding a dental implant, or at least delaying the need for an implant for many years.
- Maintenance of healthy gum and bone for as long as the tooth stays in the mouth.
- Rebuilding of bone naturally rather than implanting bone grafts and membranes to accomplish the same outcome.

## RISKS OF TREATMENT

- Orthodontic treatment is generally necessary to move the teeth into ideal positions for the best looking, easiest to clean, and longest lasting caps or veneers. This will also ensure that the newly transplanted tooth looks like the tooth it is replacing (see front panel images).
- Damage to the donor tooth resulting in resorption of the root surface which ultimately will cause the loss of the tooth.
- Possible need for root canal, particularly if a tooth is used that has already finished growing.

## WHAT IS TOOTH AUTOTRANSPLANTATION?

Tooth autotransplantation is the surgical extraction of a tooth from one location in the jaw, and implantation at a different position in the ridge. A variation of this is called transalveolar transplantation where a tooth that is severely malpositioned in the correct tooth area is surgically uprighted into a more ideal orientation.

The primary reason for the use of this technique is for replacing a missing or damaged tooth in the front of the mouth in a growing patient. Children who are growing and end up loosing a tooth because of trauma or unusual shape, or simply because it did not form or because of developmental problems like cleft lip and palate, are at great risk for severe bone loss. Because the body is still developing, the lack of certain structures, like teeth, can have a hugely devastating impact on the development of the bone in the jaw. This makes it extremely difficult to rebuild the jaw bone without possibly multiple surgeries to correct the deficiency. In addition, definitive treatments like bridges or implants cannot be performed until the patient has stopped growing around age 18-20.

The advantage to using a tooth from a growing child is that the tooth itself is also growing and has many stem cells useful for rebuilding bone when it is placed in its new location. The transplanted tooth will also continue its development and remain a healthy living tooth.



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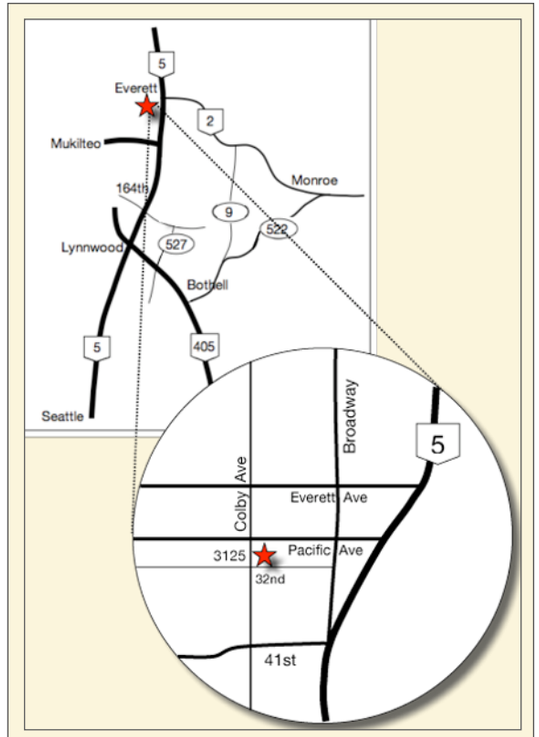
PERIODONTOLOGY IMPLANTOLOGY ORAL MEDICINE

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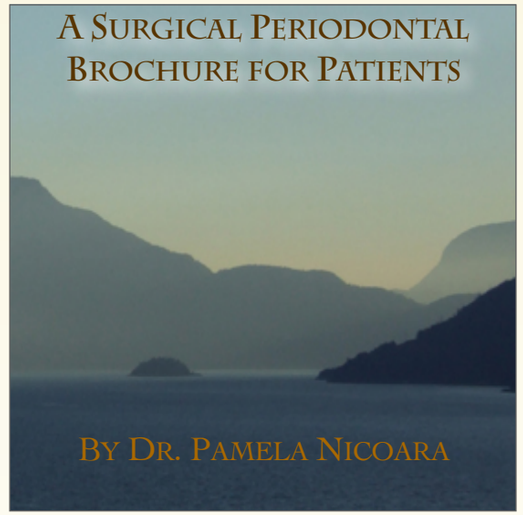
# PATIENT PAGES




# Tooth Autotransplantation in Children

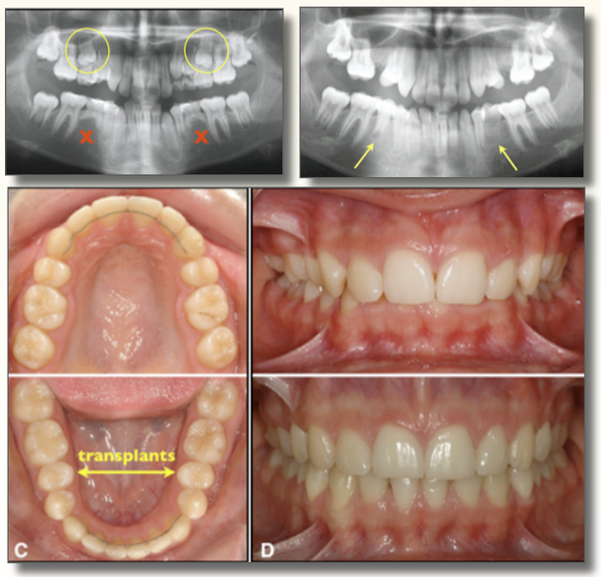
Images from article:
AJODO 2012 Janakievski, J **

# Types of Tooth Autotransplantation

## Case 1: Premolar to Premolar
Ideal Age: 10 yrs

Premolars are considered the easiest teeth to transplant. This is because of an easier surgical procedure with regard to access, and a root shape that is easier to fit into ridge preparation sites as they are generally single rooted. Ideally, the donor tooth should be removed from the non-affected quadrant or arch.

The case below demonstrates a situation where upper premolars, which were planned to be removed for proper orthodontic tooth alignment, were transplanted to the lower jaw where they never formed and were needed. The transplants prevent the use of bridges or dental implants in the future. No problems were noted at the 5 year recall other than shorter roots and pulp space obliteration, which is normal.




Images from article:
AJODO 2013, Plakwicz, P **

## Case 2: Premolar to Central
Ideal Age: 10 yrs

For a situation where an upper front tooth has been lost, or will need to be extracted, a premolar can be used to replace the tooth and regrow bone. The best premolars to use are from the lower jaw because they are generally single rooted and have a small lingual cusp which would not interfere with the bite.

Once placed in the ridge and after about 3 months of healing, the orthodontist can position the premolar to align the gum lines with the adjacent front tooth, and in order to allow uneven space side to side so the tooth can be more easily restored to match the adjacent natural tooth (see front page).

Regrowing bone in the site of a cleft palate is also possible through premolar transplantation.

Images from article:
PCSO Bulletin 2010 Janakievski, J **

## Case 3: Molar to Molar
Ideal Age: 16 yrs

Developing molars can be placed into the space of missing or damaged 1st or 2nd molars. If it is a small enough 3rd molar, it can be used to replace a premolar or even a lateral incisor! Maxillary 3rd molars are easier to remove than mandibular 3rds. Because mandibular molars are more difficult to remove, the risk for damage and subsequent ankylosis or pulp death requiring root canal treatment is greater.

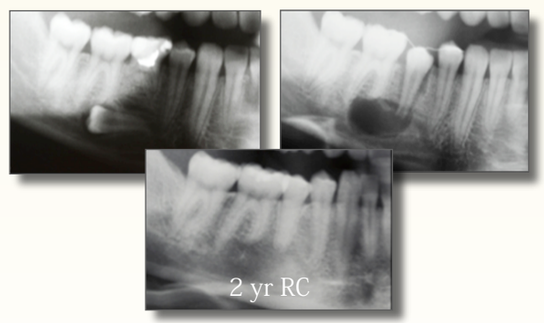
For the case below, the second molar wasn't healing after root canal treatment. It was extracted and the third molar was moved forward into its position. The tooth is alive and in good condition at 4 years despite slightly shortened root tips.



Unpublished images courtesy Dr. Keith Kanter, Endodontist, Orlando FL

## Case 4: Transalveolar
Ideal Age: 10 yrs

Surgically uprighting a tooth in the jaw bone can be utilized in situations where orthodontic treatment would not be possible or would be too complicated. In these situations, the recipient site is oversized because the donor tooth needs adequate bone removal to allow extraction of the tooth without damaging it. This often requires more stabilization than other types of transplantation, with splinting to adjacent teeth for up to 4 weeks. Of note, because of its malposition, the donor tooth can be malformed because of nearness to other structures which limit its normal development. CBCT is an excellent tool to visualize bent roots which may be severe enough to prevent use of the tooth as a transplant.




Images from article:
AJODO 2013, Plakwicz, P **

## References


PCSO Bulletin. Janakievski, J. 2010.
Dental Traumatology Andersson et al. 2012.
AJODO. Janakievski, J. 2012
AJODO. Plakwicz P et al. 2013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