

# Clinical Trial Protocol

## Iranian Registry of Clinical Trials

28 Jun 2026

### Evaluation of Texture analysis of Radiological Hard Tissue Changes after Tooth Extraction with Socket Preservation Surgery Using xenograft and Allograft

#### Protocol summary

##### Study aim

The purpose of this study is the radiological evaluation of the surgical site by the texture analysis technique in CBCT images prepared from patients with and without tooth preservation surgery before implant placement, to check the radiological parameters in the surgical site performed before the implant placement.

##### Design

The clinical trial is with parallel groups, double-blind, randomized, on 75 patients, and randomized function of Excel software was used for randomization.

##### Settings and conduct

The teeth will be extracted in the Department of Oral and Maxillofacial Surgery of Tabriz Faculty of Medical Sciences under the supervision of the relevant professor. After the measurements are completed, the teeth will either be without any manipulation or with grafting material along with non-absorbable membranes. then, before the implant surgery, CBCT imaging is prepared from the patients for pre-surgery examinations. to examine all the images obtained in the axial section, Mazda software will be used

##### Participants/Inclusion and exclusion criteria

Patients who need extraction of mandibular posterior teeth due to caries.

##### Intervention groups

1. Patients who are candidates for implant placement in the posterior region of the mandible 4 months after tooth extraction without surgical intervention . 2. Patients who need a socket preservation technique after tooth extraction and xenograft material will be used for placement in the socket and will return 4 months later for implant placement. 3. Patients who need a socket preservation technique after tooth extraction and Alugraft material will be used to place it in the socket and will return 4 months later for implant placement.

##### Main outcome variables

Investigating the radiological parameters of hard tissue changes in the surgical site performed before the implant according to the variables obtained from the texture analysis technique

#### General information

##### Reason for update

##### Acronym

##### IRCT registration information

IRCT registration number: **IRCT20220317054321N1**

Registration date: **2022-12-05, 1401/09/14**

Registration timing: **prospective**

Last update: **2022-12-05, 1401/09/14**

Update count: **0**

##### Registration date

2022-12-05, 1401/09/14

##### Registrant information

##### Name

Narges Bayat

##### Name of organization / entity

##### Country

Iran (Islamic Republic of)

##### Phone

+98 24 3344 1874

##### Email address

nargesbayat91@gmail.com

##### Recruitment status

**Recruitment complete**

##### Funding source

##### Expected recruitment start date

2022-12-22, 1401/10/01

##### Expected recruitment end date

2023-03-21, 1402/01/01

##### Actual recruitment start date

empty  
**Actual recruitment end date**  
empty  
**Trial completion date**  
empty

**Scientific title**  
Evaluation of Texture analysis of Radiological Hard Tissue Changes after Tooth Extraction with Socket Preservation Surgery Using xenograft and Allograft

**Public title**  
Evaluation of Texture analysis of Radiological Hard Tissue Changes after Tooth Extraction with Socket Preservation Surgery Using xenograft and Allograft

**Purpose**  
Diagnostic

**Inclusion/Exclusion criteria**

**Inclusion criteria:**

Patients who need extraction of mandibular posterior teeth due to caries

**Exclusion criteria:**

cigarettes and tobacco usage History of chemotherapy and radiotherapy Patients with specific systemic conditions such as diabetes Taking certain drugs, including corticosteroids and bisphosphonate

**Age**  
From **18 years** old

**Gender**  
Both

**Phase**  
N/A

**Groups that have been masked**

- Investigator
- Outcome assessor
- Data analyser

**Sample size**  
Target sample size: **75**

**Randomization (investigator's opinion)**  
Randomized

**Randomization description**  
Each patient is coded by the envelope given to him and randomization is done by the SPSS software randomizer.

**Blinding (investigator's opinion)**  
Double blinded

**Blinding description**  
The radiology resident will do the radiological examinations of the images under the supervision of the supervisor, and the way of blinding is such that none of the people in the stage of radiological examinations and also statistical examinations are aware of the type of preparation before implant placement.

**Placebo**  
Not used

**Assignment**  
Parallel

**Other design features**

**Secondary Ids**  
empty

## Ethics committees

### 1

**Ethics committee**

**Name of ethics committee**

Ethics committee of Tabriz University of Medical Sciences

**Street address**

Dneshgah Ave., faculty of dentistry

**City**

Tabriz

**Postal code**

5166614711

**Approval date**

2022-10-04, 1401/07/12

**Ethics committee reference number**

IR.TBZMED.REC.1401.588

## Health conditions studied

### 1

**Description of health condition studied**

Patients who need implant placement after tooth extraction

**ICD-10 code**

**ICD-10 code description**

## Primary outcomes

### 1

**Description**

The difference between the parameters obtained from Texture analysis of three studied groups

**Timepoint**

4 month after tooth extraction

**Method of measurement**

evaluation of parameters derived from Mazda software

## Secondary outcomes

empty

## Intervention groups

### 1

**Description**

Intervention group: Patients who are candidates for implant placement in the posterior area of the lower jaw 4 months after tooth extraction without dental socket preservation surgery intervention.

**Category**

Diagnosis

### 2

**Description**

Intervention group: Patients who need socket preservation technique after tooth extraction and are

from Xenograft material. It will be used for placement in the socket and after 4 months they will refer for placement of the implant.

**Category**

Diagnosis

**3**

**Description**

Intervention group: Patients who need a socket preservation technique after tooth extraction and Alograft material will be used for placement in the socket and 4 months later they will refer for implant placement.

**Category**

Diagnosis

**Recruitment centers**

**1**

**Recruitment center**

**Name of recruitment center**

Tabriz university of medical sciences

**Full name of responsible person**

Narges Bayat

**Street address**

Daneshgah Ave., faculty of dentistry

**City**

Tabriz

**Province**

East Azarbaijan

**Postal code**

5166614711

**Phone**

+98 919 547 0553

**Email**

nargesbayat91@gmail.com

**Sponsors / Funding sources**

**1**

**Sponsor**

**Name of organization / entity**

Tabriz University of Medical Sciences

**Full name of responsible person**

Soudabe Kimiayi

**Street address**

Daneshgah Ave., faculty of dentistry

**City**

Tabriz

**Province**

East Azarbaijan

**Postal code**

5166614711

**Phone**

+98 919 547 0553

**Email**

nargesbayat91@gmail.com

**Grant name**

**Grant code / Reference number**

**Is the source of funding the same sponsor**

**organization/entity?**

No

**Title of funding source**

Tabriz university of medical sciences

**Proportion provided by this source**

100

**Public or private sector**

Public

**Domestic or foreign origin**

Domestic

**Category of foreign source of funding**

*empty*

**Country of origin**

**Type of organization providing the funding**

Academic

**Person responsible for general inquiries**

**Contact**

**Name of organization / entity**

Tabriz University of Medical Sciences

**Full name of responsible person**

Narges Bayat

**Position**

Oral and maxillofacial resident

**Latest degree**

Medical doctor

**Other areas of specialty/work**

Radiology

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Daneshgah Ave., faculty of dentistry

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Tabriz

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**Phone**

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**Email**

nargesbayat91@gmail.com

**Person responsible for scientific inquiries**

**Contact**

**Name of organization / entity**

Tabriz University of Medical Sciences

**Full name of responsible person**

Narges Bayat

**Position**

Resident

**Latest degree**

Medical doctor

**Other areas of specialty/work**

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**Person responsible for updating data****Contact****Name of organization / entity**

Tabriz University of Medical Sciences

**Full name of responsible person**

Narges Bayat

**Position**

Resident

**Latest degree**

Medical doctor

**Other areas of specialty/work**

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**Province**

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**Postal code**

5166614711

**Sharing plan****Deidentified Individual Participant Data Set (IPD)**

Undecided - It is not yet known if there will be a plan to make this available

**Study Protocol**

Undecided - It is not yet known if there will be a plan to make this available

**Statistical Analysis Plan**

Undecided - It is not yet known if there will be a plan to make this available

**Informed Consent Form**

Undecided - It is not yet known if there will be a plan to make this available

**Clinical Study Report**

Undecided - It is not yet known if there will be a plan to make this available

**Analytic Code**

Undecided - It is not yet known if there will be a plan to make this available

**Data Dictionary**

Undecided - It is not yet known if there will be a plan to make this available