

# Clinical Trial Protocol

## Iranian Registry of Clinical Trials

09 Jun 2026

### Clinical Evaluation of Working Length Determination by Electronic Apex-Locator or Radiography on Adequacy of Final Working Length

#### Protocol summary

##### Summary

The aim of this study is to compare the adequacy of working length in root canal therapies in which length determination is done by one of these two methods; radiographic or electronic measurement. Inclusion criteria are need for Endodontic treatment and age of 20-65 years. Exclusion criteria are open apexes and blocked canals. Sample size is 280 canals from all types of tooth selected from all patients admitting to endodontic speciality clinic. Patients will be randomly allocated to group A, in which length determination will be done by Root ZX electronic apex locator, and group B, in which length determination will be done by conventional radiography. The primary outcome is adequacy of length which will be assessed after completing treatment by two endodontists blinded to group allocation by evaluating final and master cone radiographies. Adequacy of length is graded by this classification: short (tip of gutta is shorter than 2mm from the apex), adequate (between 0-2 mm of the apex), and over (obturation material is extended over the apex).

#### General information

##### Acronym

##### IRCT registration information

IRCT registration number: **IRCT138803121991N1**  
Registration date: **2009-06-30, 1388/04/09**  
Registration timing: **registered\_while\_recruiting**

Last update:

Update count: **0**

##### Registration date

2009-06-30, 1388/04/09

##### Registrant information

Name

Seyed Javad Anvar

##### Name of organization / entity

Shiraz University of Medical Sciences- Dental School

##### Country

Iran (Islamic Republic of)

##### Phone

+98 71 1626 3193

##### Email address

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##### Recruitment status

**Recruitment complete**

##### Funding source

Shiraz University of Medical Sciences

##### Expected recruitment start date

2009-06-10, 1388/03/20

##### Expected recruitment end date

2009-07-11, 1388/04/20

##### Actual recruitment start date

empty

##### Actual recruitment end date

empty

##### Trial completion date

empty

##### Scientific title

Clinical Evaluation of Working Length Determination by Electronic Apex-Locator or Radiography on Adequacy of Final Working Length

##### Public title

Clinical Evaluation of Working Length Determination by Electronic Apex-Locator or Radiography on Adequacy of Final Working Length

##### Purpose

Treatment

##### Inclusion/Exclusion criteria

Inclusion Criteria: All the patients who are referred for Root Canal Therapy  
Exclusion Criteria: Blocked Canals, Open Apexes

##### Age

From **20 years** old to **65 years** old

**Gender**

Both

**Phase**

N/A

**Groups that have been masked**

*No information*

**Sample size**

Target sample size: **172**

**Randomization (investigator's opinion)**

Randomized

**Randomization description**

**Blinding (investigator's opinion)**

Single blinded

**Blinding description**

**Placebo**

Not used

**Assignment**

Parallel

**Other design features**

## Secondary Ids

1

**Registry name**

ClinicalTrials.gov

**Secondary trial Id**

NCT00901810

**Registration date**

2009-05-12, 1388/02/22

## Ethics committees

1

**Ethics committee**

**Name of ethics committee**

Shiraz University of Medical Sciences, Research  
Affairs Management

**Street address**

Zand Ave.

**City**

Shiraz

**Postal code**

**Approval date**

1388-03-15, 769/01/-734

**Ethics committee reference number**

4492

## Health conditions studied

1

**Description of health condition studied**

Root Canal Therapy

**ICD-10 code**

K04

**ICD-10 code description**

Diseases of pulp and periapical tissues

## Primary outcomes

1

**Description**

Adequacy of final working length

**Timepoint**

Only one time after finishing Root Canal Therapy

**Method of measurement**

Evaluation of length adequacy of Master Cone  
Radiography

## Secondary outcomes

1

**Description**

Length adequacy of Obturation

**Timepoint**

Once after finishing Obturation

**Method of measurement**

Evaluation of length adequacy in final radiography

## Intervention groups

1

**Description**

3rd generation Apex locator in the intervention group

**Category**

Diagnosis

2

**Description**

radiographic length measurement in control group

**Category**

Diagnosis

## Recruitment centers

1

**Recruitment center**

**Name of recruitment center**

Shiraz Dental School

**Full name of responsible person**

**Street address**

**City**

## Sponsors / Funding sources

1

**Sponsor**

**Name of organization / entity**

Shiraz Dental School

**Full name of responsible person**

Dr. Shohre Ravanshad

**Street address**

Ghasrodasht ave.

**City**  
Shiraz  
**Grant name**  
**Grant code / Reference number**  
**Is the source of funding the same sponsor organization/entity?**  
Yes  
**Title of funding source**  
Shiraz Dental School  
**Proportion provided by this source**  
100  
**Public or private sector**  
*empty*  
**Domestic or foreign origin**  
*empty*  
**Category of foreign source of funding**  
*empty*  
**Country of origin**  
**Type of organization providing the funding**  
*empty*

## Person responsible for general inquiries

### Contact

**Name of organization / entity**  
Shiraz Dental School  
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Shohre Ravanshad  
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## Person responsible for scientific inquiries

### Contact

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## Person responsible for updating data

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## Sharing plan

**Deidentified Individual Participant Data Set (IPD)**  
*empty*  
**Study Protocol**  
*empty*  
**Statistical Analysis Plan**  
*empty*  
**Informed Consent Form**  
*empty*  
**Clinical Study Report**  
*empty*  
**Analytic Code**  
*empty*  
**Data Dictionary**  
*empty*