# PERIODONTAL PROBES AND PROBING TECHNIQUE

DEPARTMENT OF PERIODONTOLOGY

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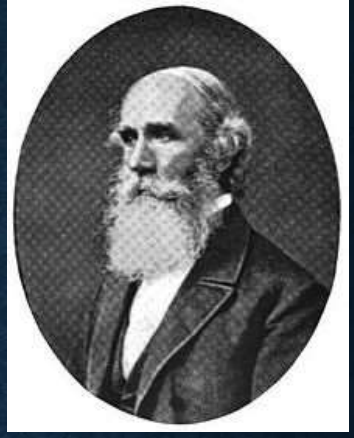
# INTRODUCTION

- For decades, probing clinical pocket depth and attachment level have been recognized as the dentist's most important tools in diagnosing periodontal health and disease.
- The **periodontal probe** is an important diagnostic tool of periodontal disease.

# HISTORY OF PERIODONTAL PROBES



- The Latin word *probo* means " to test".
- 1882 -John W Riggs first described the periodontal probe as a tool in the diagnosis of periodontal disease.
- In 1925- F.V. Simmonton stated that "the only way to determine the existence and extent of pyorrhea was by the measurement of pockets". He described the periodontal probe and its uses
- In 1958- Orban described the periodontal probe as the "eye of the operator beneath the gingival margin."

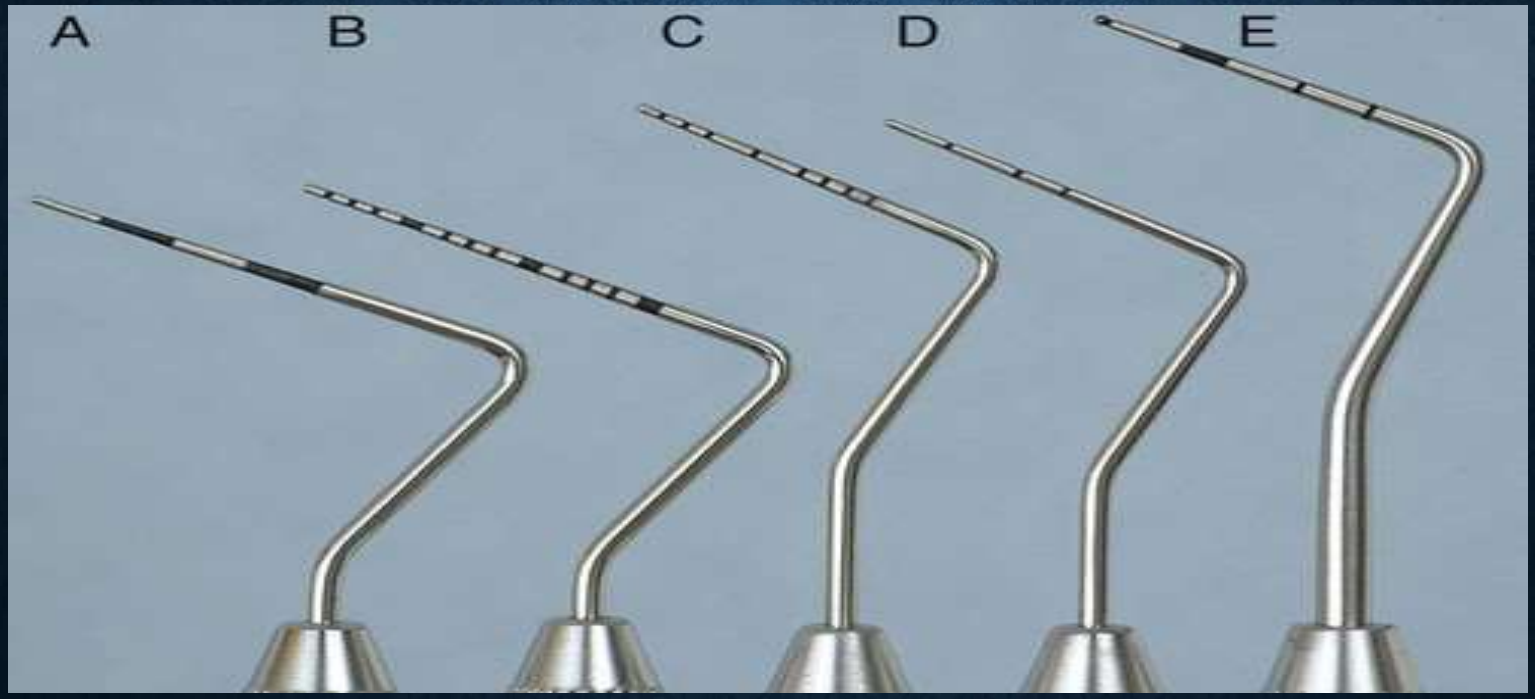
- Hanford and Patten’s design of a periodontal probe then called a periodontometer and made of silver is nearly same in appearance as the probes that are routinely used in clinical practice today.

- In1992, B.L.Philstrom created a classification of periodontal probes which included 3 generations and in 2000, Watts included fourth and fifth generations.

# PERIODONTAL PROBE

Probe is a diagnostic instrument.

- It is the primary instrument used in periodontal examination.



# USES OF PERIODONTAL P

- Primary function: Detect periodontal pockets to determine the health status of the periodontium.
- Other functions:

❖ Measure clinical attachment loss.

❖ Measure the extent of gingival recession .

❖ Measure the width of the attached gingiva .

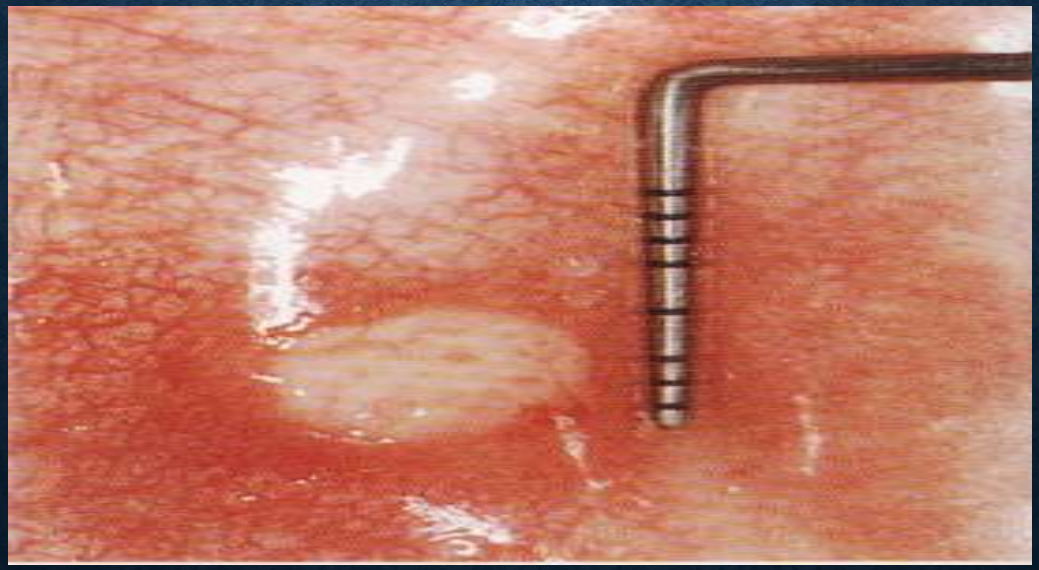
❖ Measure the size of the intraoral lesions.

❖ Assess bleeding on probing.

❖ Determine mucogingival relationships.

❖ Monitoring the longitudinal response of the periodontium to treatment.

❖MEASURE THE SIZE OF THE INTRAORAL LESIONS.



BLEEDING ON PROBING

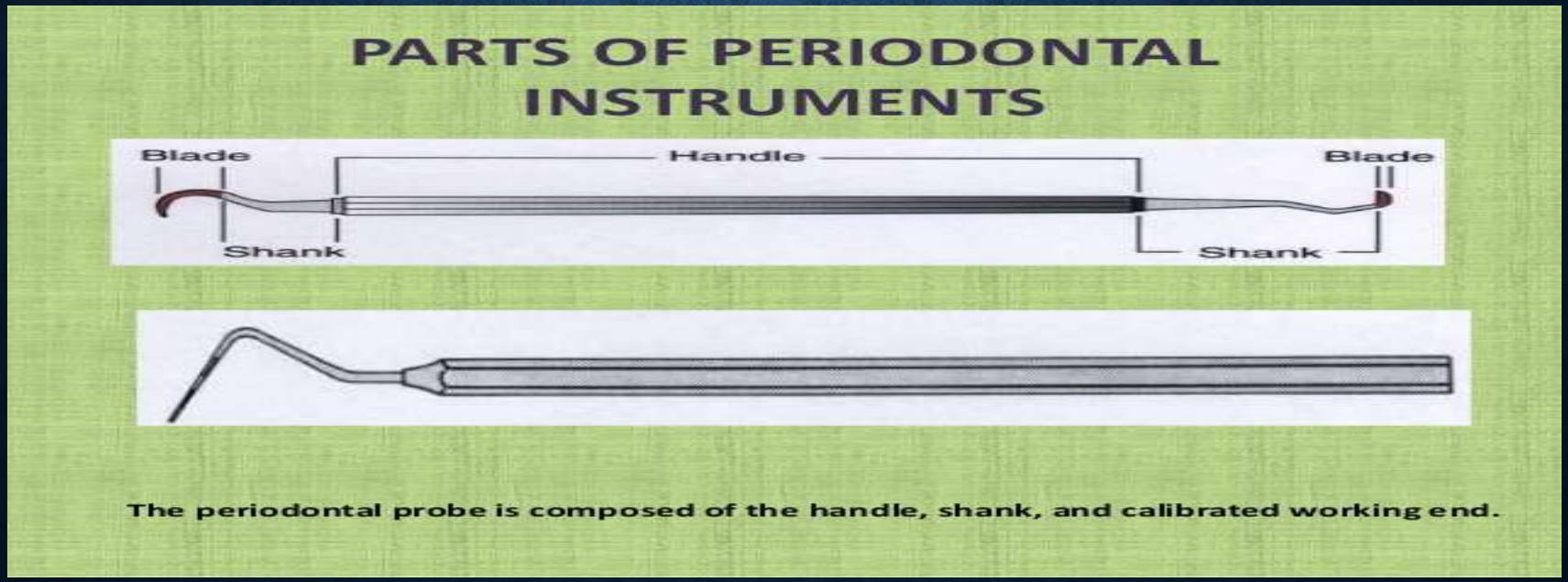
## WIDTH OF THE ATTACHED GINGIVA


❖CLINICAL ATTACHMENT LOSS.

EXTENT OF GINGIVAL RECESSION

# PARTS OF A PROBE:

- Handle; the surface texture of the handle may be smooth, ribbed or scored.
- Shank; the shank of an instrument is thinner than the handle and joins the working end of the instrument to the handle.
- Working end; also called as **TINE**. the working end is that part that actually measures the PD or CAL or other intended functions.



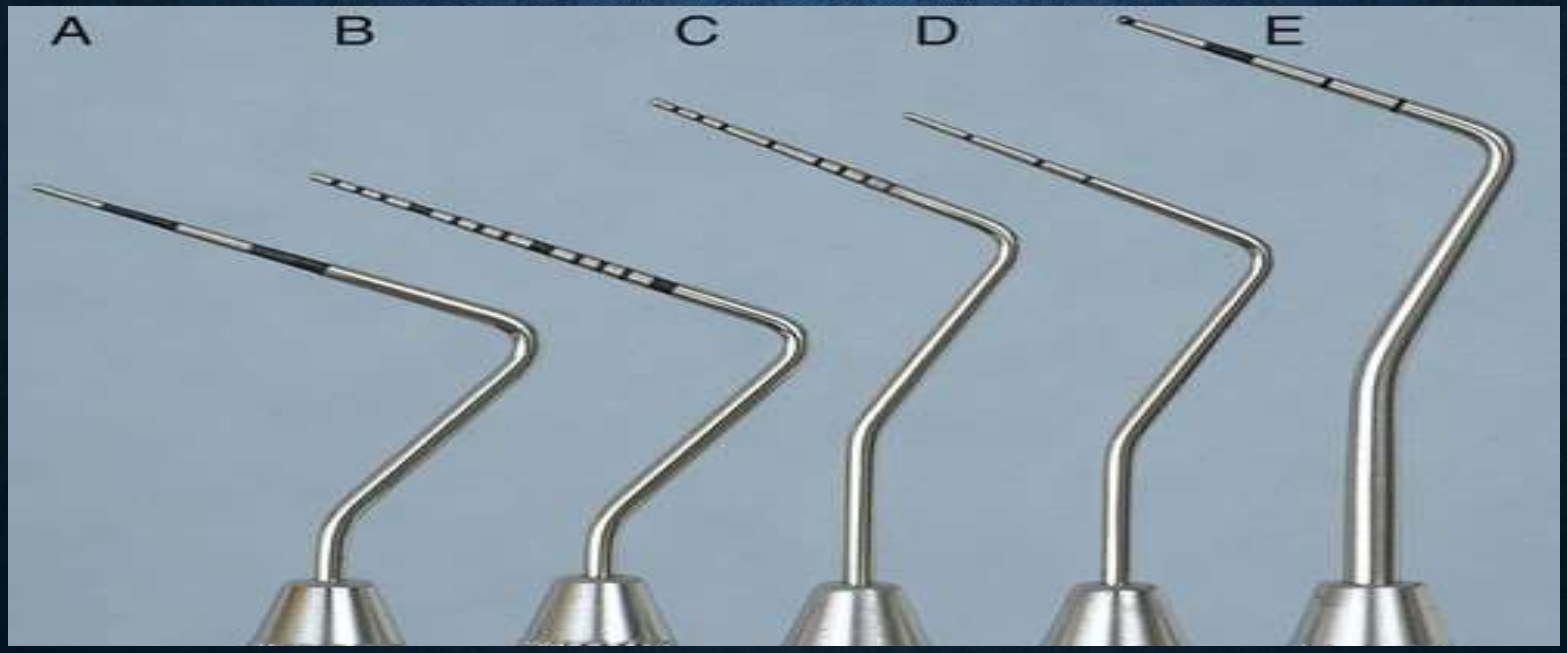
# MATERIALS USED IN MANUFACTURING PROBE

- Stainless steel
- High-carbon-content steel
- titanium
- plastic.

# DESIGN OF A PROBE:

- The typical probe is a tapered, rod like instrument calibrated in millimeters, with a blunt, rounded tip.

- The calibrated working end is marked in millimeters or color coded in bands at varying intervals to facilitate reading of depth measurements.



- Working end is usually round in cross section but can be flat or rectangular.
- Most probes are designed with shank and working end almost at right angles.
- Shank with the working end is curved in some probes i.e. Nabers probe.

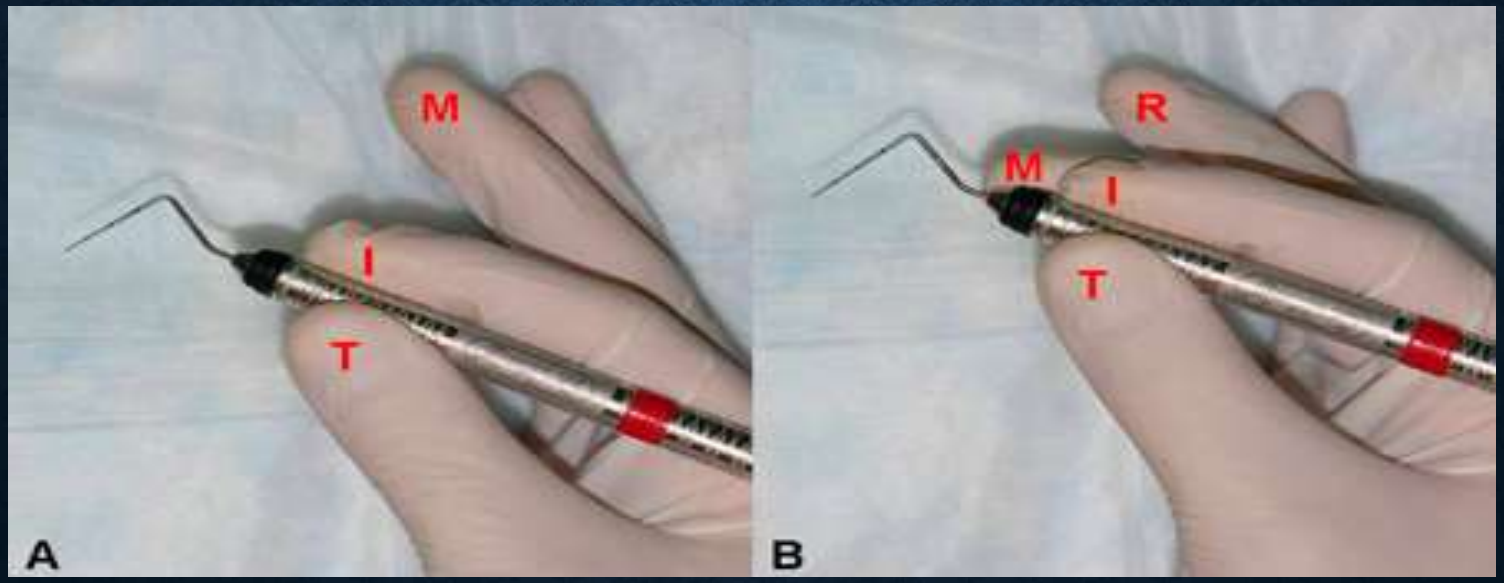
# INSTRUMENTATION

- *Grasping :*

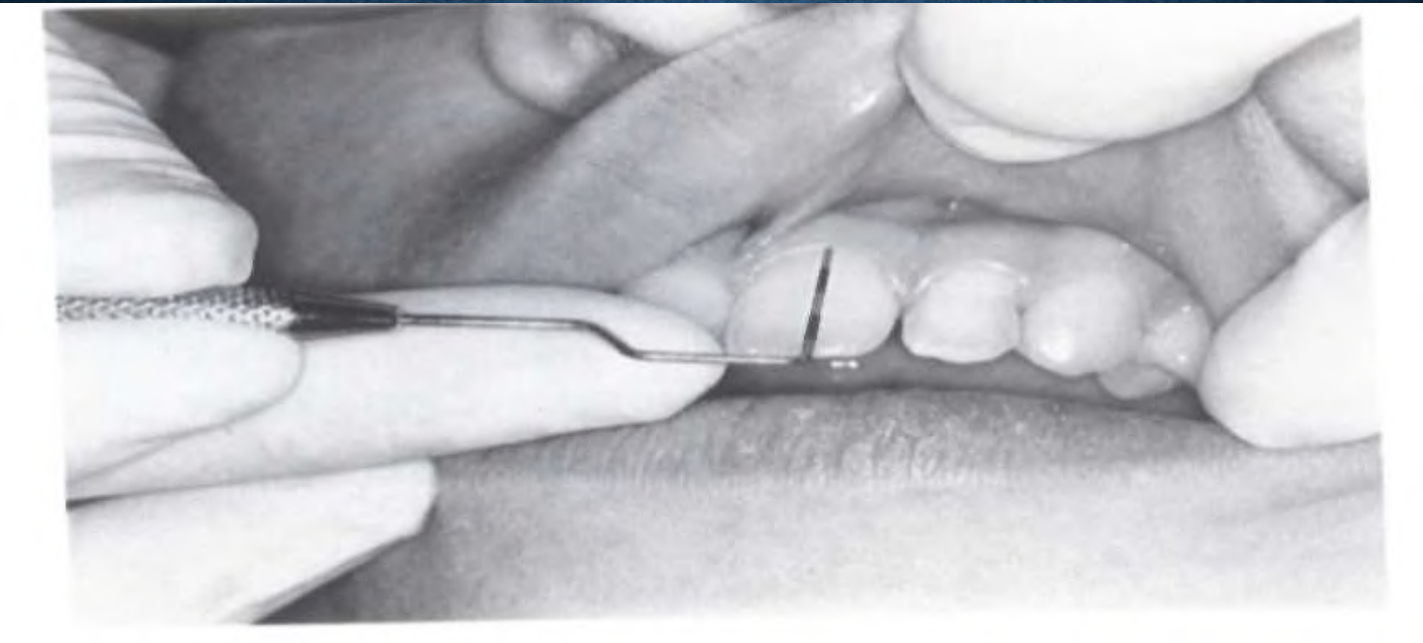
Using the right hand, grasp the probe with a *modified pen grasp.*

Pad of the middle finger is against the shank of the instrument.

The thumb and index finger should be opposite to each other.



- Establishing a finger rest: an intraoral finger rest that is established as close to the working area as possible is preferred



# FACTORS DETERMINING PROBING DEPTH:

The depth of penetration of a probe in a pocket depends on factors such as

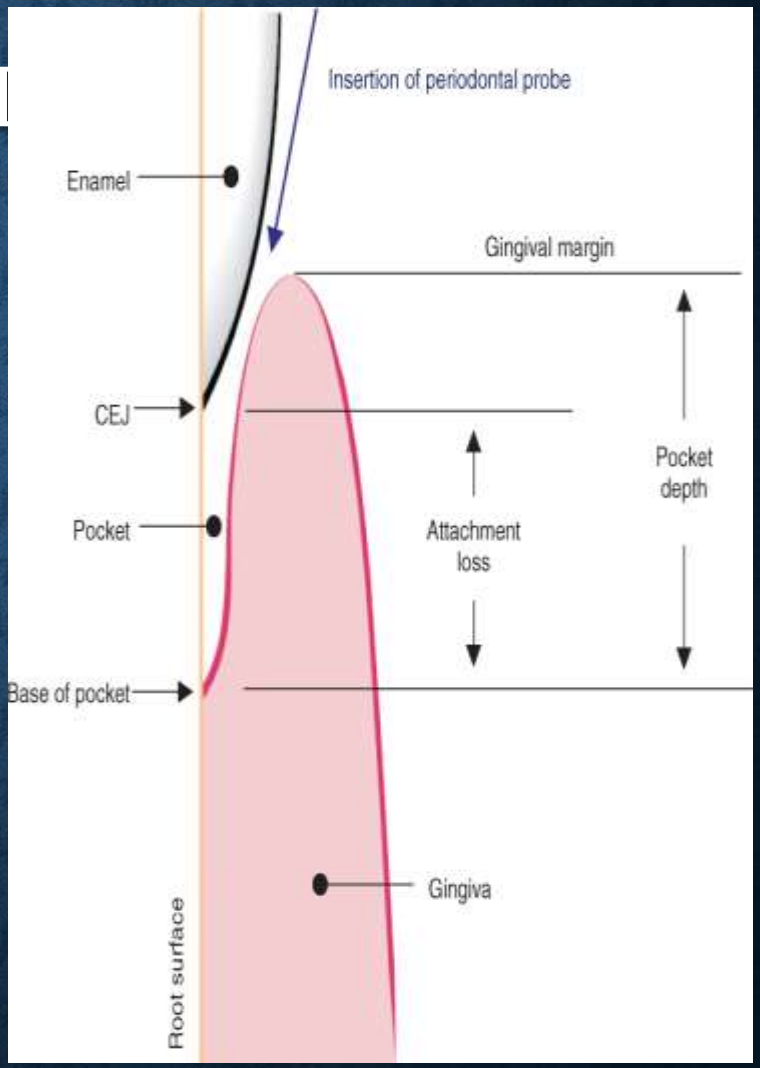
- size of the probe,
- force of its introduction,
- direction of penetration,
- resistance of the tissues,
- convexity of the crown.

# POCKET I

There are two different pocket depths:

- Biologic or histological depth – the distance between the gingival margin and the base of the pocket.

- The clinical or probing depth – the distance to which a probe penetrates into the pocket.



# PROBING PRESSURE

- The pressure used to place the probe tip at the base of the periodontal sulcus/pocket is approximately 50 $N/cm^2$ (20gm).

# PROBING TECHNIQUE

- When measuring a pocket, the probe is inserted with a firm, gentle pressure to the bottom of the pocket.

# PROBING OF PERIODONTIUM

- In health, the tooth is surrounded by a sulcus. The junctional epithelium is the tissue that forms the base of the sulcus by attaching to the enamel of the crown near the CEJ.
- A clinically determined probing depth of 1 to 3 mm is usually observed when the sulcus of healthy gingiva is probed.
- But when the epithelial lining of the sulcus is ulcerated, inflammation can be detected.
- When the depth of the sulcus increases to greater than 3mm

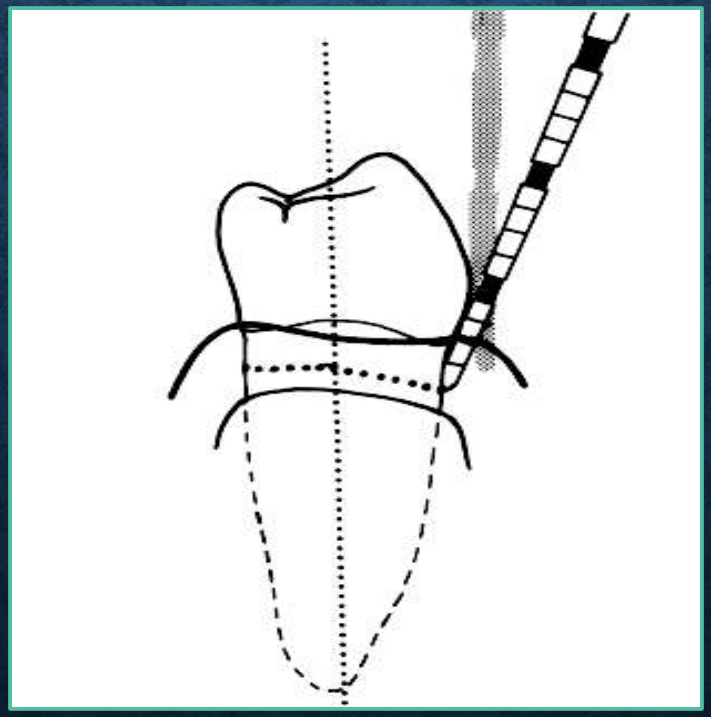
# WALKING STROKE:

- These are a series of bobbing strokes that are made within the sulcus or pocket. The probe is inserted into the pocket while keeping the probe tip against the tooth surface.
- The probe is inserted until the tip encounters resistance of the junctional epithelium that forms the base of the sulcus.
- The walking stroke is by moving the probe up and down in short bobbing strokes and forward in 1mm increments . With each stroke, the probe returns to touch the junctional epithelium.
- The probe is not removed from the sulcus with each upward stroke.
- The pressure exerted with the probe should be controlled and not more than 50 N/cm2.
- Wrist or digital activation may be used with the probe.

# THE WALKING STROKE:

# ADAPTATION

- The side of the probe tip should be kept in contact with the tooth surface.



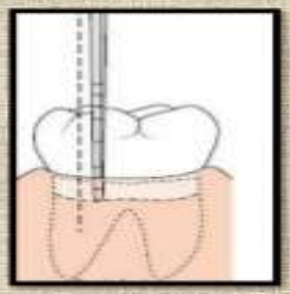
# PARALLELISM

- The probe is positioned as parallel as possible to the long axis of the tooth.
- The probe must be parallel in mesiodistal dimension and faciolingual dimension.

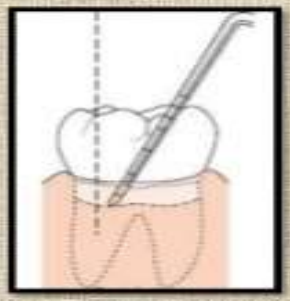
## PARALLELISM

The probe is positioned as *parallel as possible to the tooth surface.*

- *The probe must be parallel in* the mesiodistal dimension and faciolingual dimension.



**Probe Parallel to Long Axis.**
Probe is correctly positioned parallel to the long axis of the tooth.



**Probe Not Parallel to Long Axis.**
**Probe is incorrectly** positioned in relation to the long axis of the tooth.

# INTERPROXIMAL TECHNIQUE

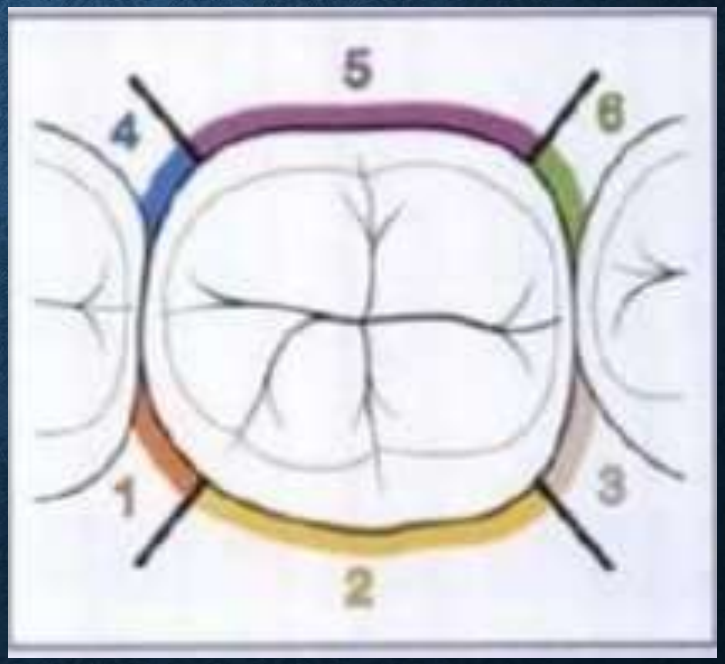
- Step 1: Position the probe with the tip in contact with the proximal surface. While maintaining the tip in contact with the tooth surface, walk it between the teeth until it touches the contact area.
- Step 2: Slant the probe slightly so that the tip reaches under the contact area. The tip of the probe extends under the contact area while the upper portion touches the contact area. With the probe in this position, gently press downward to touch the junctional epithelium.

# MEASURING PROBING DEPTH:

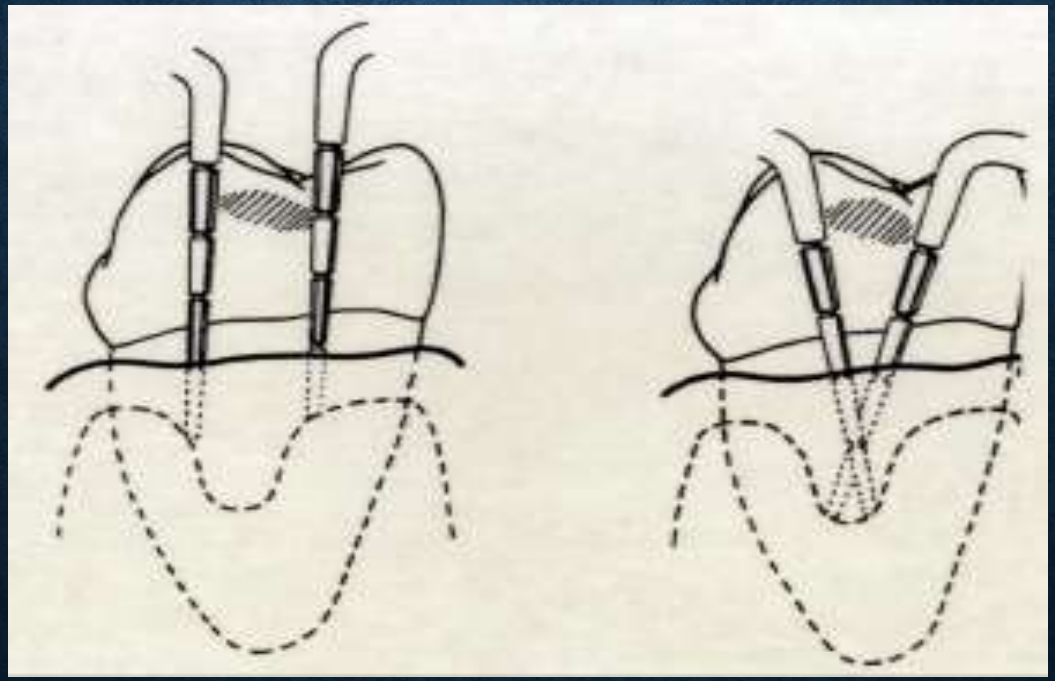
- Charting probing depths:

❖ probing depth measurements are recorded for 6 specific sites on each tooth:

1. Distofacial
2. Facial
3. Mesiofacial
4. Distolingual
5. Lingual
6. mesiolingual



- One reading per site: only one reading per site is recorded. If the probing depths vary within a site, the deepest reading obtained in that site is recorded.
- Full millimeter measurements: probing depths are recorded to the nearest full millimeter. Round measurements to the next higher whole number.

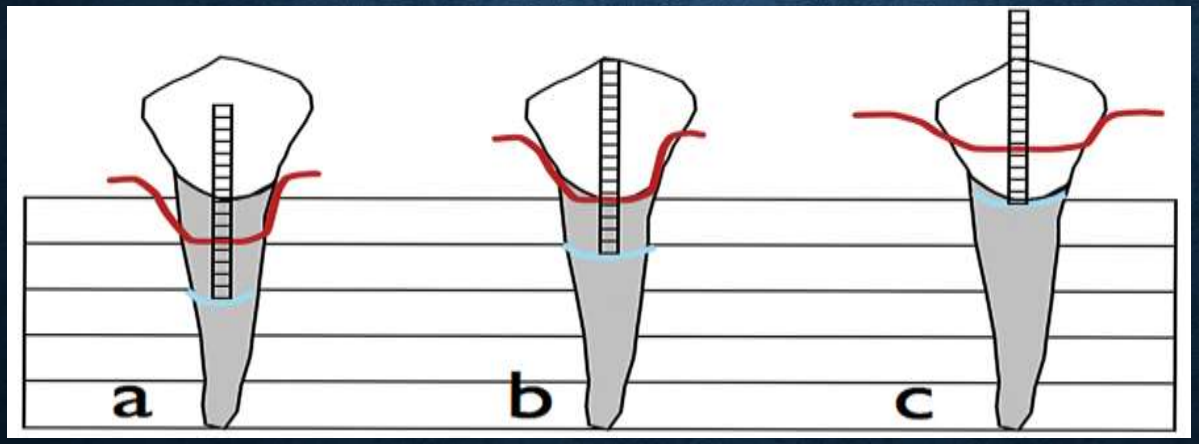


# LIMITATIONS OF PROBING MEASUREMENTS:

- Position of the gingival margin:

A. Gingival margin significantly coronal to CEJ.

B. Gingival margin apical to CEJ.



- Reading errors due to naturally occuring states such as calculus deposits on the tooth surface, the presence of an overhanging restoration, or the crown contour.

- Reading errors due to probing technique and equipment:

A. Incorrect angulation and positioning of probe.

B. Incorrect amount of pressure applied.

C. Misreading the probe calibrations and incorrect recording.

D. Diameter and shape of the probe , calibration scale of the probe, and the degree of inflammation.

E. Manufacturing errors.

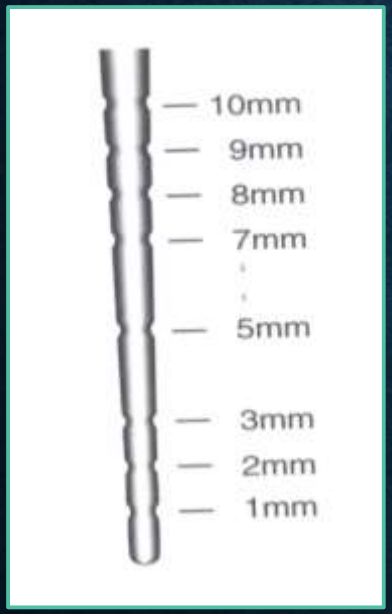
# GENERATIONS OF PROBES:

- First generation probes
- Second generation probes
- Third generation probes
- Fourth generation probes
- Fifth generation probes

# FIRST GENERATION PROBES:

- These are manual, handheld instruments also called conventional probes.
- These probes are typically made of stainless steel, although titanium and plastic (polymaterial) are used as well.
- It is dependent upon the clinicians manual pressure.

# WILLIAMS PROBE


Williams periodontal probe is used to measure a pocket accurately.

It has a thin stainless steel tip of 13mm in length and a blunt tip end with a diameter of 1mm.

It has millimeter markings at 1, 2, 3, 5, 7, 8, 9 and 10.

It is the most often used periodontal probe to measure the depth of periodontal destruction.

# MARQUIS PERIODONTAL PROBE

•It is accurate and color coded point for easy viewing.

• Marquis Periodontal probe was the first coded probe and was designed for patient comfort and ease of reading.

• It is available in both straight and curved designs.

• It has a small point with a rounded tip to minimize tissue damage.

• It has markings at 3, 6, 9 and 12 mm.

# UNIVERSITY OF MICHIGAN O PROBES


- University of Michigan “O” probe with Williams markings at 1, 2, 3, 5, 7, 8, 9 and 10mm

# UNIVERSITY OF NORTH CAROLINA -12 (UNC-12)


UNC 12 Probe is a 12mm long Probe with millimeter markings at each millimeter and color coding at the fifth and tenth millimeter.

# UNIVERSITY OF NORTH CAROLINA-15 (UNC-15)


UNC 15 Probe is a straight 15mm long Probe with millimeter markings at each millimeter and color coding at the fifth, tenth and fifteenth millimeter.

# WHO PROBE

- World Health Organization (WHO)
- Probe has a 0.5 mm small, round ball at the tip and millimeter markings at 3.5, 8.5, and 11.5mm; and color coding from 3.5 to 5.5 mm.
- It is also named CPITN (community periodontal index for treatment needs)probe.
- It is recommended for use when screening and monitoring patients with the CPITN index.
- These are of two types: CPITN-E(epidemiological) which have 3.5mm and 5.5mm markings.
- CPITN-C(clinical) which have 3.5mm,5.5mm,8.5mm and 11.5mm markings.

# NABERS PROBE


#2 Naber's Probe

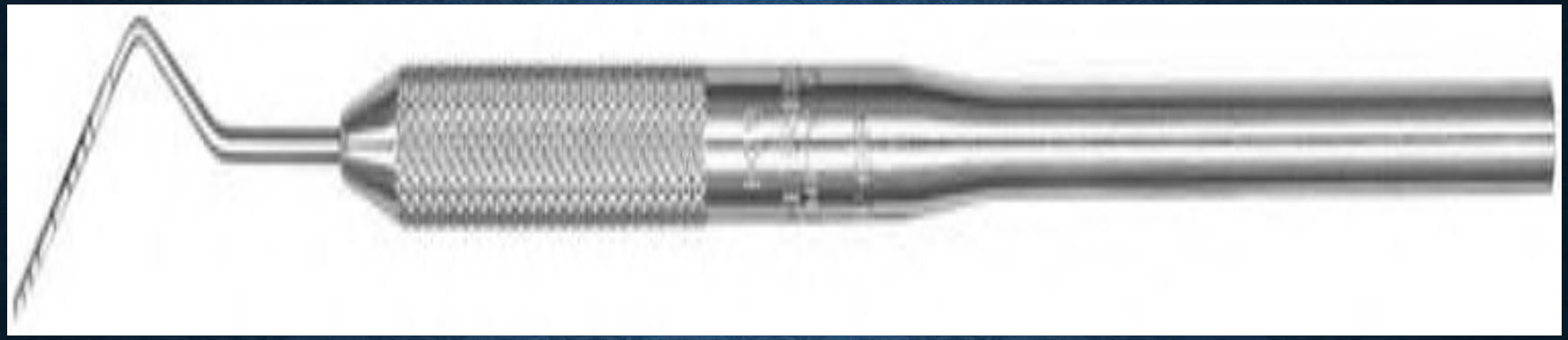
#1 Naber's Probe

- The Naber's probe is curved, with color coded markings at 3, 6, 9 and 12mm.

allows an easier and more accurate exploration of the horizontal component of furcation lesions.

These probes can be color coded or without demarcation.

# GOLDMANFOX PROBE:



Goldmanfox probe has millimeter markings at 1, 2, 3, 5, 7, 8, 9 and 10 as that of  williams periodontal probe.

- The working end is flat.

# NOVATECH PROBE:

- Unique swank design with upward and right- angled bend to facilitate access to the distal surfaces of molars.
- Novatech probe has millimeter markings at 3, 6, 9, and 12mm.
- Available in a variety of millimeter calibrations

# PROBING AROUND IMPLANTS:

- Periimplantitis can lead to pockets around the implants, so probing around the implants becomes part of the examination and diagnosis.
- To prevent scratching of the implant surface, plastic periodontal probes should be used instead of the usual steel probes used for natural dentition.
- The plastic probe tips have color coding at
  1) 3-6, 8-11
  2) 3-6, 9-12

# ADVANTAGES AND DISADVANTAGES OF THE FIRST GENERATION PROBES:

## Advantages:

- Easily available and inexpensive.
- Tactile sensitivity is preserved.
- Even in the presence of subgingival calculus probe can be inserted with little navigation.
- Tip is blunt to avoid tissue trauma.
- Colour coded for easier and faster identification of readings.

## Disadvantages :

- These probes are heavy.
- Probing force is not controlled so the tip of the probe may pass beyond the base of the pocket.
- Errors during visualizing the readings are possible.
- An assistant is needed to transfer the reading to the chart.

# SECOND GENERATION(CONSTANT-PRESSURE) PROBES

- These are pressure sensitive, allowing for improved standardization of probing pressure.
- Probing pressure should be standardized and not exceeding 50N/cm2.
- These can be used in general dental practices as well as periodontal practices and do not require computerization in the operatory.

- TPS probe is the prototype for second generation probes.

- Introduced by Hunter in 1994, these probes have a disposable probing head and a hemispheric probe tip with a diameter of 0.5mm. A controlled set probing pressure is usually applied.

- These probes have a visual guide and a sliding scale where two indicator lines meet at a specified pressure.

- In 1978, Van der Velden devised a pressure-sensitive probe with a cylinder and piston connected to an air-pressure system. Subsequently, it was modified with a displacement transducer for electronic pocket-depth reading.

- In 1980, Polson introduced the electronic pressure-sensitive probe, allowing for control of insertion pressure.

- This probe has a hand piece and a control base that allows the examiner to control the probing pressure. The pressure is increased until an audio signal indicates that the preset pressure has been reached.

- Polson’s original design was modified and called yeaple probe which is used for dentinal hypersensitivity.

- **Which create a response to a tactile stimulus using an electronic pressure sensitive probe (Yeaple probe), and a visual analog scale (VAS).**


# VINE VALLEY PROBE

- The Vine Valley Probe was introduced by Polson et al 1980
- It is an electronic pressure sensitive probe that is not sensitive to lateral forces
- It permits the use of different types of probe tips
- It allows the operator to use the pressure force within a range of sensitivity of 5-100gms

# ADVANTAGES AND DISADVANTAGES OF THE SECOND GENERATION PROBES:

## Advantages:

- Standardization of probing forces.
- Comfortable to the patient.
- Constant pressure.

## Disadvantages:

- Probe tip may pass beyond the junctional epithelium in inflamed sites.
- Reading has to be performed manually, and an assistant is needed to record the same on the patient chart.
- No computer storage of data.

# THIRD GENERATION (AUTOMATED) PROBES

- Probe for automated detection of the CEJ ,for determination of attachment levels and allowed for computerized data recording (Jeffcoat et al. 1986).
- As the probe glides along the root surface, the tip is subject to abrupt changes in acceleration. There is an acceleration change as it meets the CEJ and when it is stopped at the pocket base. The tip then retracts automatically. Attachment level is computed based on the time the probe tip used to move between the two acceleration bursts and the speed of the tip movement. The probe tip consists of a Teflon-coated thin steel wire with a ball-shaped end 0.5 mm in diameter. Probing force is adjustable between 0 N and 0.49 N.

- Goodson and Kondon (1988) used fiber optic technology in their controlled-force Accutek probe or the Interprobe. The probe tip is attached to an optical encoder transducer element. A fiber bundle transmits light to the transducer and reflected light to a signal processor. Probing depth is computed by comparison of the reflected light signal with the reference obtained from the zero position. The disposable flexible plastic probe tip has a diameter of 0.35 mm.

# FOSTER MILLER PROBE

- Jeffcoat and associates introduced this probe in 1986 This probe can detect the CEJ ,and it automatically retracts and extends under controlled force conditions.
- As it moves along the root surface, the tip experiences a sudden change in acceleration when the CEJ is crossed. Similar change in acceleration is recorded when the probe tip reaches the depth of the pocket.

# TORONTO AUTOMATED PROBE

- This probe was introduced by Briek et al in 1987 for measurements of attachment levels using the incisal or the occlusal edges as landmarks.

- The probe consists of a digital length gauge which is connected to a nickel titanium wire 0.5mm in diameter enclosed in a polyethylene sheath.

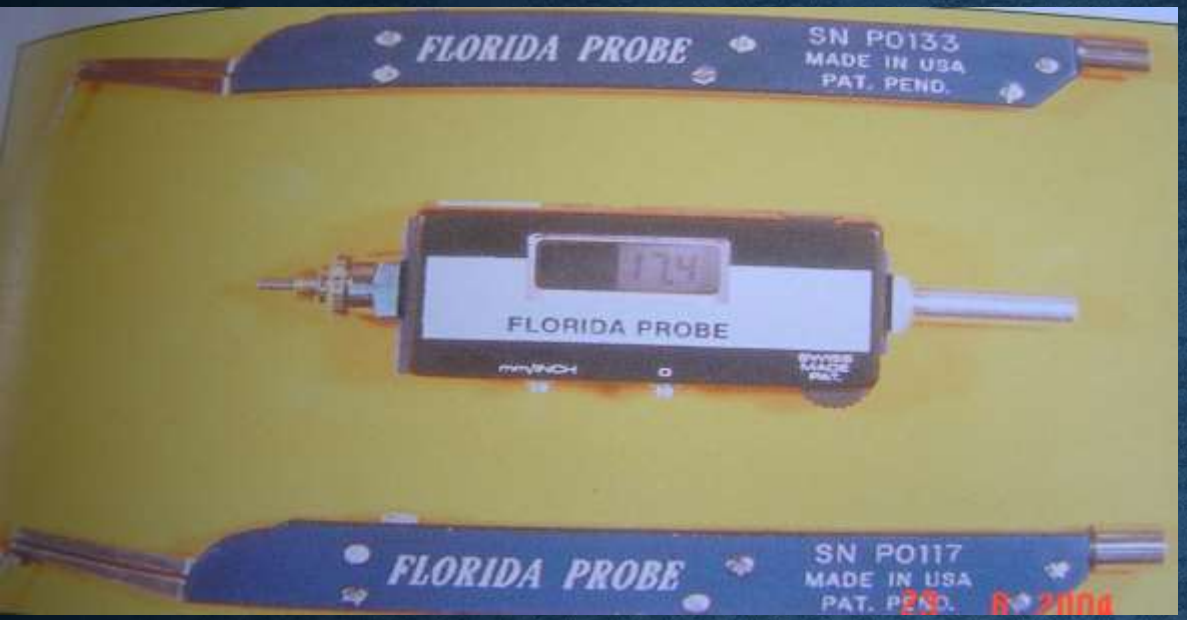
- The probe is propelled by air pressure into the gingival sulcus with a regulated force. The data is recorded by a microcomputer that is interfaced with the digital length gauge.

- Consistency of the angulation of the probe is assured by the incorporation of a mercury level.

# FLORIDA PROBE

- The Florida probe was introduced by Gibbs et al in 1989.
- It is a computerized probe which has the combined advantage of constant probing force with pressure electronic measurement, computer storage of data and also has a guidance system that ensures reproducible pathway.
- The system consists of a probe hand piece, a digital read out, a foot switch ,a computer interface and a computer.
- The probe tip is similar to the Michigan O probe with Williams markings.
- The probe of the stent model has 1mm metal collar that rests on a prepared ledge on a prefabricated stent.
- The disk model has 0.11mm disk and 1mm metal collar that rests on the occlusal surfaces or incisal edge of the tooth.

# FLORIDA PROBE


FLORIDA PROBE
SN P0133
MADE IN USA
PAT. PEND.
FLORIDA PROBE
FLORIDA PROBE
SN P0117
MADE IN USA


FLORIDA PROBE

The Florida probe measuring a pocket. When the sleeve reaches the gingival margin the operator uses the foot pedal which will record the measurement.

The disc probe facilitates recording of relative clinical attachment levels. It uses the occlusal surface as a fixed referred point to the base of the pocket

# ADVANTAGES AND DISADVANTAGES OF THE THIRD GENERATION PROBES:

## Advantages:

- Standardization of probing forces.
- Errors in reading the probe and transferring the data are eliminated.
- Printout of the data from the computer can be used for patient education.

## Disadvantages:

- Tactile sensitivity is decreased.
- Probe may pass beyond the junctional epithelium in inflamed sites, overestimating the pocket depth.
- After the inflammation has resolved, probe may not penetrate beyond the long junctional epithelium, leading to underestimation of the pocket depth.

# FOURTH GENERATION PROBES

- These are three-dimensional probes.
- Currently under development, these probes are aimed at recording sequential probe positions along the gingival sulcus.

# ADVANTAGES AND DISADVANTAGES OF THE FOURTH GENERATION PROBES:

## Advantages:

- Three-dimensional probe.
- Sequential probe positions are measured.

## Disadvantages:

- Under development.
- Invasive probe.

# FIFTH GENERATION PROBES

- These probes are being designed to be 3D and noninvasive.
- The fifth generation probes aim to identify the attachment level without penetrating it.

# ULTRASOUND PROBE

- Ultrasonic periodontal probing has the capability of detecting much smaller increments of anatomic change with the early detection of tissue breakdown and additional histological information, such as tissue thickness and inflammation.
- Periodontal ultrasonography is likely to yield more information with less error.
- Currently under development.

# ADVANTAGES AND DISADVANTAGES OF THE FIFTH GENERATION PROBES:

## Advantages:

•A noninvasive probe that provides painless probing to the patient.

•There is no question of probe passing beyond the junctional epithelium, as ultrasound waves detect, image, and map the upper boundary of periodontal ligament.

•Computer storage of data and printout or visuals can be used for patient education.

•Guidance path is predetermined.
•Provides information regarding condition of the gingival tissues.

## Disadvantages:

•Expensive
•Operator needs to understand the images provided by the computer.
•Requires a learning curve.

# NIDCR CRITERIA:

TABLE 1

National Institute for Dental and Craniofacial Research Criteria

| Limitation | Conventional | NIDCR Criteria |
|---|---|---|
| Precision | 1.0 mm | 0.1 mm |
| Range | 12.0 mm | 10.0 mm |
| Probing force | Nonstandardized | Constant |
| Applicability | Noninvasive | Noninvasive |
| Reach | Easy to access | Easy to access |
| Angulation | Subjective | Guidance system |
| Readout | Voice dictation and recording | Direct electronic reading |
| Security | Easily sterilized | Complete sterilization |

# NON PERIODONTAL PROBES:

DETECTAR PROBE:

- These detect the subgingival calculus by means of audio readings.
- This device has a lightweight well balanced handpiece, which can be autoclaved and it produces an audible beep to signify calculus detection.

# PERIODONTOMETER & MOBILOMETER:

- Both of these are electronic devices for the precise measurements of tooth mobility.

Periotest probe: This is also used to determine the tooth mobility and implant mobility(teerlinck et al 1991).

- The mobility is recorded in periotest units(PTU) from -8 to 50.

PERIO 2000 SYSTEM:

- These probes detect periodontal diseases during the routine dental examinations by measuring relative sulfide concentrations as an indicator of gram- negative bacterial activity.

## PERIOTEMP PROBE:

- This is a temperature sensitive probe which reportedly detects e

# DIAMOND PROBE

- The Diamond Probe System reportedly detects periodontal disease during routine dental examinations by measuring relative sulfide concentrations as an indicator of gram-negative bacterial activity.
- Its used to detect halitosis in patients as well.
- The system consists of a single-use disposable probe tip with microsensors connected to a main control unit.
- The probe might detect periodontal disease at an early stage and might find an active site that requires treatment. However, the probing pressure is not controlled. Also, periodontal disease can be caused by bacteria that do not produce volatile sulfur compounds, creating the potential for some disease activity to be missed.

# REVIEW OF LITERATURE:

- Larsen HC, 2009, In his systematic review investigated the influence of probing pressure on the probing pocket depth (PPD) in diseased and healthy periodontal tissue conditions. These studies provided data with probing pressures ranging from 51 to 995 N/cm2. The incremental change in PPD in healthy/treated sites decreased as the pressure increased above 398 N/cm2. In diseased sites, this phenomenon was already present at pressures above 100 N/cm2. At healthy/treated sites, a mean increase of PPD of 0.002mm per increase of 1 N/cm2 in probing pressure could be calculated whereas at diseased sites this value amounted to 0.004 mm. Study concluded that with increasing probing pressure, the PPD increases. The dimensions of the increase are dependent on the periodontal tissue conditions.

- Polson et al. (1980) were able to demonstrate experimentally the relationship of the probe tip to the dentogingival junction by determining the depth of probe tip penetration into clinically healthy gingival sulci. For their study, they used a pressure-sensitive probe pre-set at a probing force of 0.25 N. The probe tip exhibited a terminal diameter of 0.35 mm. A histologic landmark of probe tip location was made with a scalpel, and gingival biopsies were taken during periodontal surgery for the elimination of adjacent pockets. A histometric analysis showed that probe tip penetration was 0.25 ± 0.19 mm coronal to the apical end of the junctional epithelium and 0.70 ± 0.56 mm apical to the coronal end of the junctional epithelium.

- *Jerry J. Garnick* and *Lee Silverstein*, 2000, in their review determined the Importance of the diameter of periodontal probing tips in diagnosing and evaluating periodontal disease. The literature discussing periodontal probe diameters in human, dog, and monkey studies was reviewed and compared. Tip diameters varied from 0.4 to over 1.0 mm in these studies. Probe advancement between the gingiva and the tooth is determined by the pressure exerted on the gingival tissues and resistance from the healthy or inflamed tissue. The pressure is directly proportionate to the force on the probe and inversely proportionate to the probe tip diameter. The larger probing diameters reduced probe advancement into inflamed connective tissue. This effect of change in probe diameter reduced the pressure in a greater manner than an increase of similar change in probe force. Study concluded that Probe tips need to have a diameter of 0.6 mm and a 20 gram force (50 N/cm2) to obtain a pressure which demonstrates approximate probing depth.

# THIN OR THICK PROBE HANDLE: DOES IT MAKE A DIFFERENCE?

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- The aim of the present study was to assess the probing force exerted when using two manual periodontal probes with different handle diameters in hands of different dental professionals

*Conclusion:* The present study showed that the diameter of the probe handle also had an effect on the force exerted with a periodontal probe. However, the clinical relevance of this difference may be minor, when considering the interindividual variance of forces exerted when probing.

# COMPARISON OF TWO PRESSURE-SENSITIVE PERIODONTAL PROBES AND A MANUAL PERIODONTAL PROBE IN SHALLOW AND DEEP POCKETS

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- Three periodontal probes--a manual probe and two computerized, pressure-sensitive probes--were studied to determine their relative recording accuracy.
- Results of this study suggest that an electronic, pressure-sensitive probe yields more reproducible probing depth measurements than a conventional manual periodontal probe.

**Important Differences in Clinical Data From Third, Second, and First Generation Periodontal Probes.** Journal of Periodontology

April 1997, Vol. 68, No. 4, Pages 335-345 , DOI 10.1902/jop.1997.68.4.335
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This study compared relative attachment levels (RAL) and probeable crevice depths (PCD) from 6 periodontal probes (1 third, 4 second, and 1 first generation

Analyses of variance showed significant differences in RAL and PCD between the first generation probe and the second generation probes ($P < 0.005$); in RAL between the third generation probe and the first and second generation probes ($P = 0.0354$); and in PCD between the third generation probe and the first and second generation probes ($P = 0.0475$). Inter-probe differences were clinically significant in the recorded percentages of pockets ≥ 4 mm and ≥ 6 mm. Significant inter-probe differences were found in RAL and PCD which have clinical importance in data interpretation and comparison.

# Comparison of a Conventional Probe With Electronic and Manual Pressure-Regulated Probes

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We compared the accuracy, consistency, time, comfort, and cost of probing with a conventional hand probe (CP) with 3-mm banded markings, a manual pressure-regulated probe (MP), and two electronic probes (IP and FP)

RESULT - Although some statistically significant differences were found between probes, no differences were considered to be of clinical significance when probing periodontally healthy or maintenance patients. Electronic probes were more expensive per use and more time-consuming than hand probes. *J Periodontol 1994;65:908–913*.

# CORRELATION BETWEEN ELECTRONIC AND VISUAL READINGS OF POCKET DEPTHS WITH A NEWLY DEVELOPED CONSTANT FORCE PROBE

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- The purpose of this study was to compare probing measurements obtained using a newly developed constant force electronic probe, which eliminates errors of visual reading and variable force, to those obtained using a standard periodontal probe.
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RESULT- The pocket depth measurements recorded when using the manual probe with visual readings were consistently deeper than those obtained using the electronic probe with computer readings. It was concluded that the reproducibility of measurements obtained with the electronic probe was significantly superior to that obtained with a manual probe.

# CONCLUSION :

- Newer developments in the field of periodontal probes provide the potential for error-free determination of pocket depth and clinical attachment level at a very early stage.
- Screening periodontal diseases earlier is gaining importance as these diseases are being associated with systemic conditions. With more research and innovation, the advent of newer error-free probes may resolve the remaining problems and those yet to be realised.

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