INTRODUCTION

History of Dental Implants
Definitions
Success Rates and Complications

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2. History of Dental Treatment: Slide 2

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3. History of Dental Treatment: Slide 3

Types of Implants:

- Autoplastic: an implant from within the same individual
- Homoplastic: an implant from the same species
- Heteroplastic: an implant from a different species

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4. History of Dental Treatment: Slide 4

Types of Implants:

- Alloplastic: an implant from a non-living material
- Combination: e.g., endodontic endosteal implant which is the placement of an implant through an endodontically treated tooth into bone

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5. History of Dental Treatment: Slide 5

Dental Implant:

- A prosthetic device of alloplastic material implanted into the oral tissues beneath the mucosa and/or periosteal layer, and/or within the bone to provide retention and support for a fixed or removable prosthesis.

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6. History of Dental Treatment: Slide 6

HISTORY OF DENTAL IMPLANTS

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7. History of Dental Treatment: Slide 7

3,000 years ago:
- The first copper stud was nailed into an Egyptian mouth

8. 1780-1800

1780-1800
- “Dissertation on Artificial Teeth”
- De Chemant’s arsenal of prosthetics
- Some of the first porcelain teeth ever made
- An artificial nose, a disfigurement caused by the as yet incurable syphilis
- Source: The Basics of Dental Implants (Textbook for Patients)

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1913

- Boston, MA
- Greenfield
- Endosseous crib of iridio-platinum

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10. History of Dental Treatment: Slide 10

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11. 1920’s

- Dag
- Variation of orthopedic screw

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12. 1930’s

- Development of chrome alloys
- Development of modern dental implant technology and terminology

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13. 1939-1940

1939-1940

- A solid screw by Stock Brothers of Boston in 1939. They screwed a solid screw and false tooth in place and x-rayed the results.
- A corkscrew by Formiggini in 1940’s

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14. 1940

1940

- Dahl in Germany
- Mucosal inserts
- Intramucosal or button implant (maxilla)
- He also conceived the concept of the subperiosteal implant

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15. History of Dental Treatment: Slide 15

![Image of dental prosthesis with implants]

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16. History of Dental Treatment: Slide 16

![Image of dental prosthesis with implants]

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17. History of Dental Treatment: Slide 17

![Image of oral cavity with lesions](c) 2005, Robert Chapman, D.M.D.

18. History of Dental Treatment: Slide 18

![Image of oral cavity with lesions](c) 2005, Robert Chapman, D.M.D.
1940’s

- Leger-Dorez
- Four piece implant

1948

- Goldberg and Gershkoff
- Subperiosteal Implant
- Vitallium
- (1984: CT scan design of frameworks eliminated the need for the bone impression)
1953

- Sollier, Chercheve and Small
- Vertical transfixation (Transosteal) implant

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1966

- Linkow
- Endosseous blade-vent implant
- 1967: Roberts
- 1970: Cranin and Dennison

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26. History of Dental Treatment: Slide 31

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31. 1970

1970

- Roberts and Roberts
- Ramus frame implant

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36. *1977

*1977

- P.I. Branemark
- Branemark or NobelBiocare Implant
- Reported results of prospective clinical research trials of totally edentulous patients restored with dental implants (since 1952).
- Revolutionized implant dentistry

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38. 1980’s

- 1981: ITI – non-submerged implant system
- 1985: Bicon (Driskell, Stryker and Bicon)
- 1987: IMZ (Kirsch, Babbush and Mentag)
- 1989: 3i (Lazzara)

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40. History of Dental Treatment: Slide 47

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41. History of Dental Treatment: Slide 48

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42. 1986

1986

- The year that root form dental implants superceded the blade implant as “the most frequently placed type of implant”

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1984-present

- 1984: CT Scan
- 1987: Sinus lift
- 1988: Nerve transposition
- 1989: Pterygoid implants
- 1991: Guided tissue regeneration (GTR)
- 1995: Distraction osteotomies and split ridge technique

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44. Success Rates

SUCCESS RATES

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45. **Concensus Conferences**

**CONSENSUS CONFERENCES**

- June 1978: Harvard. An implant should provide functional service in 75% of the cases for 5 years.
- 1988: NIH. Recognized 3 main types of dental implants.
- 1989: Albrektsson and Zarb. Criteria for success: 85% at the end of 5 years and 80% at the end of 10 years.

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46. **Types of dental implants:**

**Types of dental implants:**

- Endosseous (within bone): is embedded *in* the bone...
- Subperiosteal (below periosteum): rests *on* the surface of bone...
- Transosteal (through bone): penetrates *through* the mandible...

...and projects through the oral mucosa covering the edentulous ridge

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47. **Branemark:**

- NobelBiocare
- 94% overall
- 95%+ in mandible
- 90%+ in maxilla
- Similar for other modern root form dental implants

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48. **Subperiosteal:**

- 5 Year: 90-95%
- 10 Year: 65-78%
- 20 Year: 66%

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49. **Staple (Transosteal):**

   **STAPLE(Transosteal):**
   - 5 Year: 93%
   - 10 Year: 87%

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50. **Vitreous carbon:**

   **VITREOUS CARBON:**
   - 5 Year: 38%

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51. **Blades:**

BLADES:

- 5 Year: 49-65-75%
- 10 Year: 50%

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52. **Ramus Frame:**

RAMUS FRAME:

- 4 Year: 95%

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53. **Other Factors Affecting Success Rates:**

- Bruxism
- Radiation
- Diabetes
- Unknown (5-10% of implant fixtures fail)
- Smoking

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54. **Complications:**

- Surgical
  - Sinus perforation
  - Soft Tissue Problems
  - Fistula
  - Fixture fracture
  - Paresthesia
  - Jaw fracture
  - Loose cover screw

- Prosthodontic
  - Incorrect fixture placement
  - Loose abutment/crown
  - Fractured screws
  - Materials fracture
  - Speech (maxilla)
  - Cleaning

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