# *PROSTHODONTICS*

4th year Lecture series

Fall 2006

**Theme: The costs and benefits of prosthodontic interventions**

Asbjørn Jokstad

Head, Prosthodontics

# The costs and benefits of prosthodontic interventions

- **All prosthodontic interventions include a biological cost – although also provide benefits**
- **The costs can be small and the benefits large often with a minimalist approach – and vice versa**
- **Exact information relating to the patient's oral and medical condition and history – evidence based when possible –is required to allow the patient to make an informed decision consistent with his or her treatment needs and preferences**

# The costs and benefits of prosthodontic interventions

1. **Sept 14. The concept of risk factors and of prognostic factors in treatment planning, choice of interventions and prognosis. Dr Asbjorn Jokstad**
2. **Sept 21. Evidence-based prosthodontics – principles, and need for implementation in practice. Dr Jim Anderson**
3. **Sept 28. Treatment outcomes in prosthodontics and importance of oral hygiene compliance and good control routines. Dr Asbjorn Jokstad**
4. **Oct 5. The dental technician – support and possibilities, and need for correct communication. LHM Lab. & Terri Jancen**








Current situation:
exposed to few types of prostheses
(for a number of reasons)













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exposed to few types of prostheses

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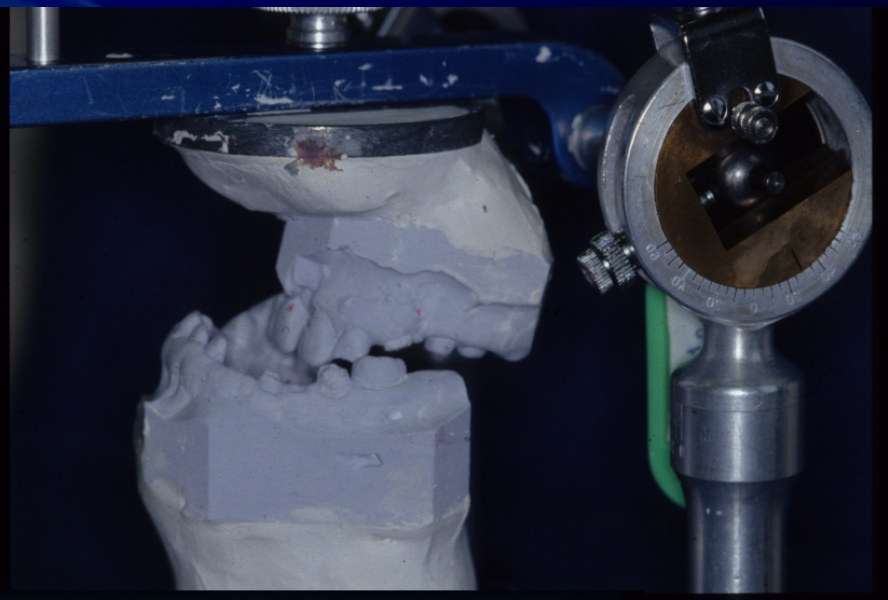
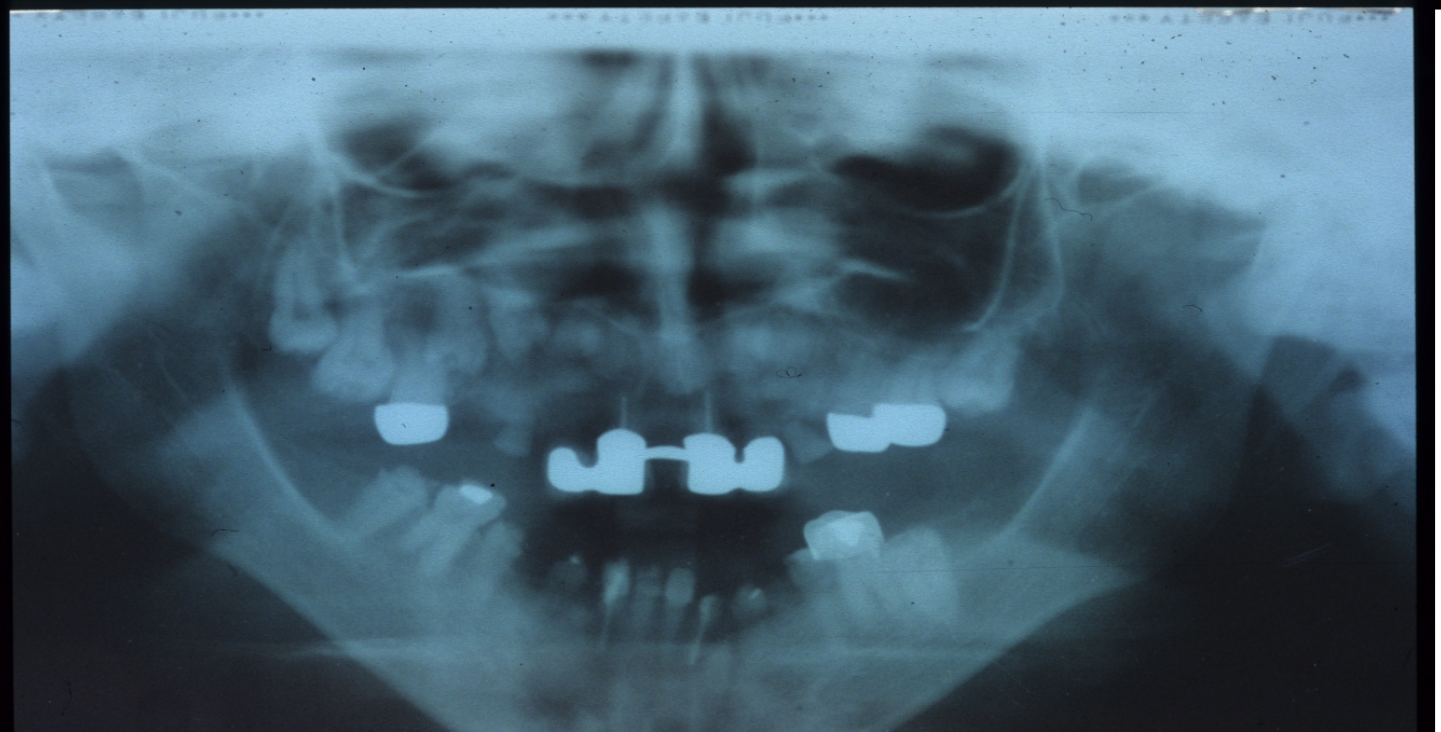
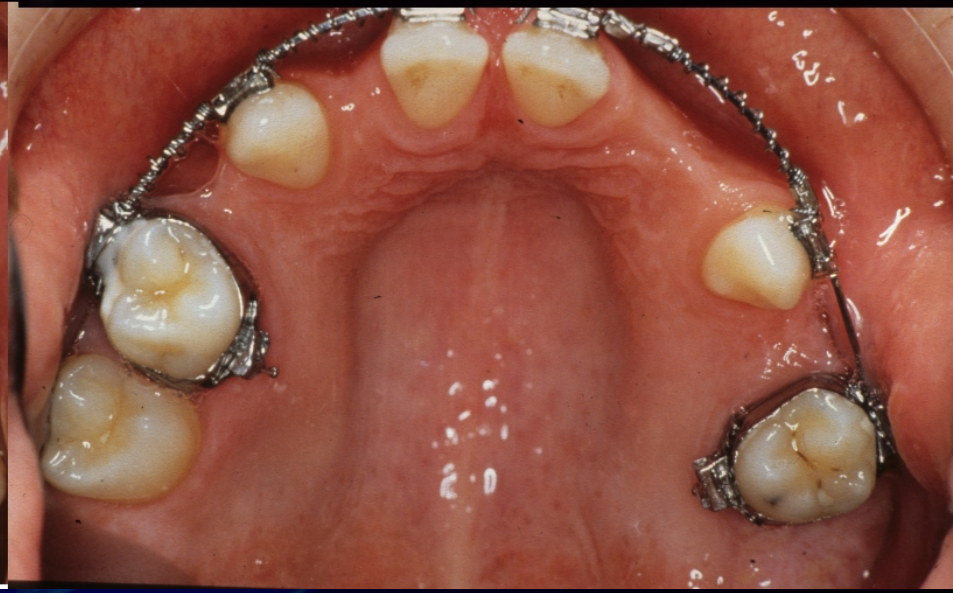
**Many patients today retain their teeth – creating many complex rehabilitative needs**

# complex rehabilitative needs





# Congenital - complex rehabilitative needs



# Congenital - complex rehabilitative needs

1. Patient communication aspects particular to the patient situation prior to examination
   - Elements that provide an indication of appropriate therapy



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   - Signs that may indicate that any particular intervention may become a risk factor for further disease
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3. Which technical solutions that are possible
   - Prognosis data
   - Gain versus loss, risk versus benefits data
   - Advantages – disadvantages, biology, function, costs data



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5. How (selected) technical solutions are carried out in practice – e.g. case(s) review



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6. Patient communication aspects particular to the patient situation post treatment

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5. Oct 12 The patient with need for prosthodontic therapy– considerations for treatment planning, choice of interventions and prognosis Dr Jim Anderson
6. Oct 19 The adult patient with age and medical condition concerns - considerations for treatment planning, choice of interventions and prognosis Dr Aaron Fenton
7. Oct 26 The patient with the edentulous jaw – considerations for treatment planning, choice of interventions and prognosis Dr Randa Diwan
8. Nov 2 The patient with the bounded edentulous space – considerations for treatment planning, choice of interventions and prognosis Dr Peter McDermott
9. Nov 9 The patient with the shortened dental arch – considerations for treatment planning, choice of interventions and prognosis Dr Thuan Dao
10. Nov 16 The patient with the missing single tooth – considerations for treatment planning, choice of interventions and prognosis Dr Limor Avivi-Arber
11. Nov 23 The patient with the worn down dentition – considerations for treatment planning, choice of interventions and prognosis Dr Leslie Laing Gibbard

# Prosthodontics 477 Course Schedule

| # | Date | Topic | Instructor | Manual | View Lecture Online | Additional Material | Print Handout | Learning Objectives |
|---|---|---|---|---|---|---|---|---|
| 1 | Thursday Sep 14 | The concept of risk factors and of prognostic factors in treatment planning, choice of interventions and prognosis | Dr Asbjorn Jokstad | | | | | |
| 2 | Thursday Sept 21 | Evidence-based prosthodontics – principles, and need for implementation in practice | Dr Jim Anderson | | | | | |
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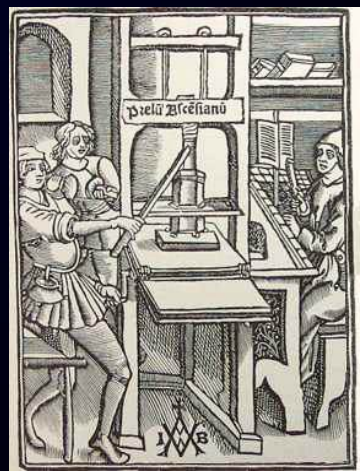
12. **Nov 30 Multidisciplinary treatment planning – the patient with high caries activity. Dr D McComb**
13. **Dec 7 Multidisciplinary treatment planning – the patient with endodontic difficulties. Dr K Roth**
14. **Dec 14 Multidisciplinary treatment planning – the patient with**

# The Origins of the Conventional Lecture (Middle Ages)

1. The professor reads the book to the students
2. A few days later the professor again reads the book to the students, perhaps adding some commentary
3. A few days after that the professor gives the book its “third reading” with added commentary

What if anything has changed since the Middle Ages?

The students have the book too!



# Problems With Conventional Lectures

- People, including students, have a 10 – 15 minute concentration span.
- Most students don't learn very effectively when they are expected to passively absorb the "received truth" from the lecturer.
- All students learn more effectively when they are actively engaged with the material.

# More Problems With Conventional Lectures

- Most students learn more effectively in a social environment.
- Almost all of the communication is in one direction: from the front of the room to the students.
- When a student asks a question:
  - How many students have the same question?

Easy to Administer

# iclicker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HARDWARE
SOFTWARE
DEMONSTRATIONS
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## iclicker Radio Frequency Classroom Response System

A **hassle-free solution**
created *for* educators
*by* educators.

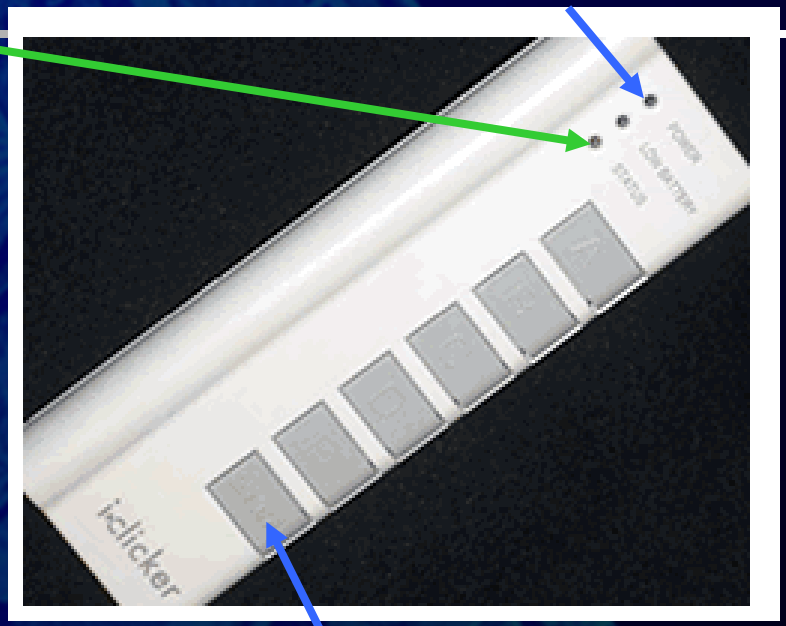
**iclicker available for fall 2006 Classes!**

› Are you considering a classroom response system?

# The “Clickers”

Power Light

**Status Light**



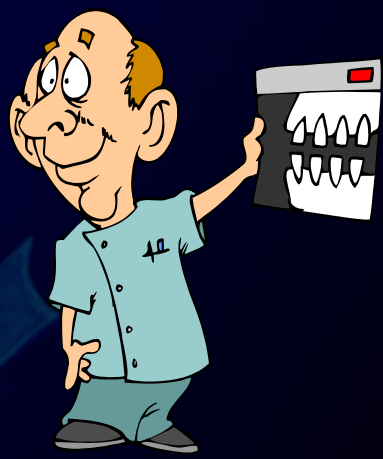

When we start asking you questions:

- Will flash **green** when your response is registered
- Will flash **red** if your response is not registered

On/Off Switch

Please turn on your clicker now

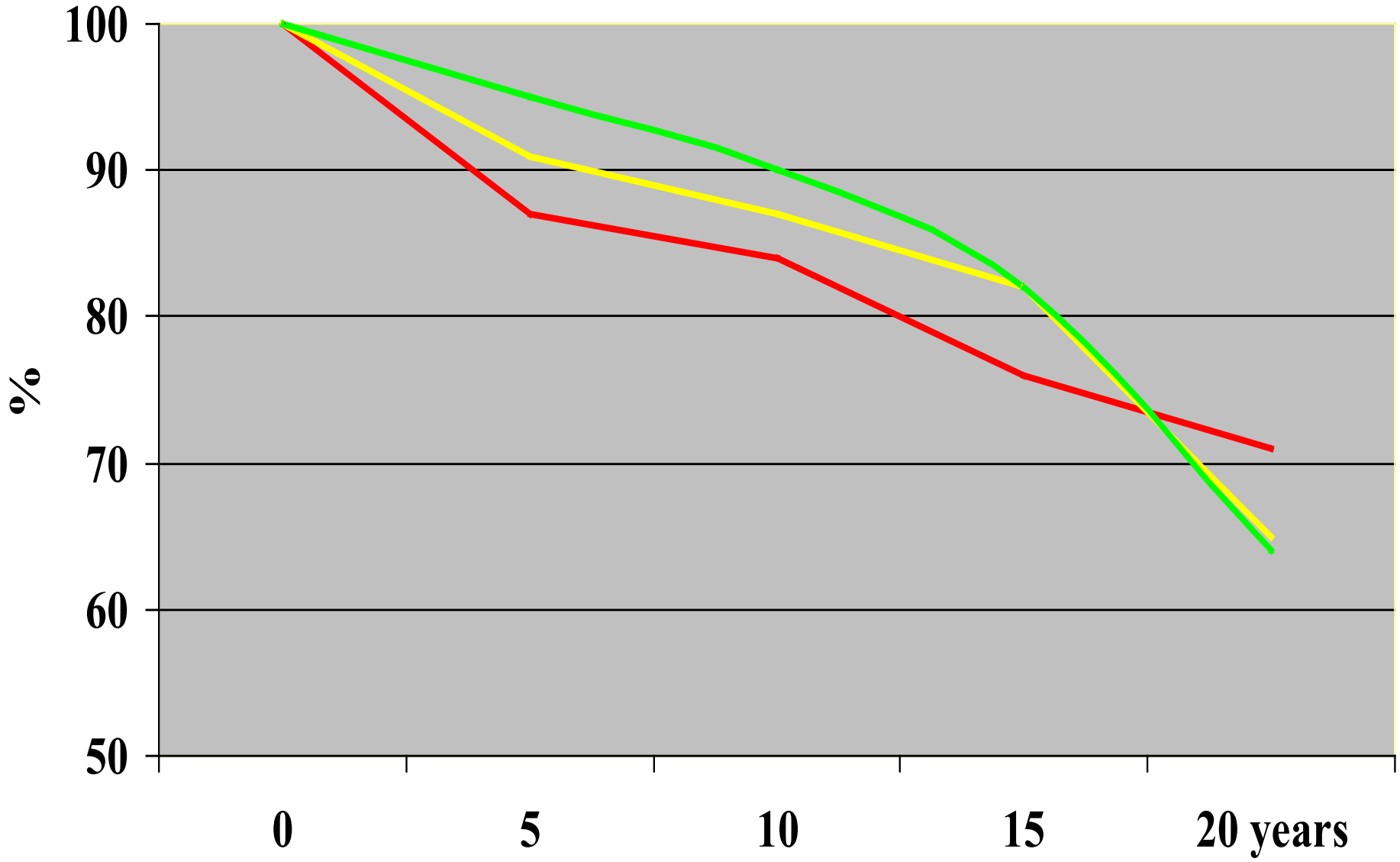
# How should we proceed when discussing prosthodontic treatment options with our patients?



# Treatment planning

What comes first?

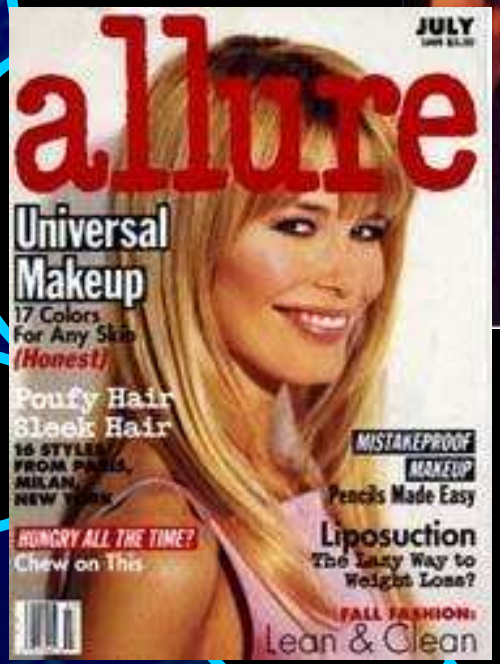
# …do we start and present longevity?



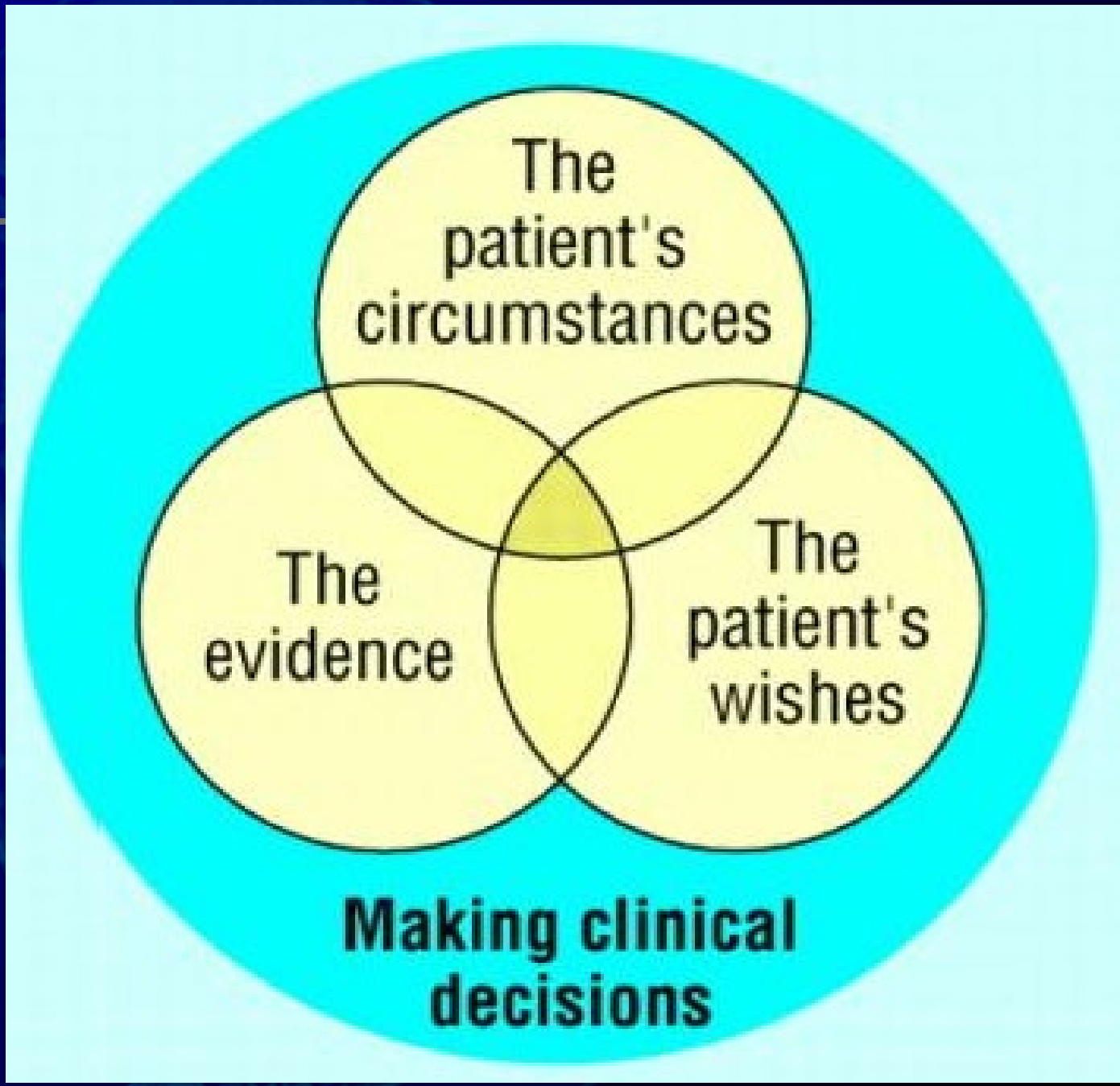
# or do we discuss prognostic variables?

| *Independent variables* | *Bi-variate odds ratios* | *Bivariate significance* | *95% Confidence intervals bivariate odds ratios* | *Multi-variate odds ratios* | *Multivariate significance* | *95% Confidence intervals for multivariate odds ratios* |
|---|---|---|---|---|---|---|
| *Age group* | | | | | | |
| *20-30* | - | - | - | - | - | - |
| *30-40* | 2.32 | ** | 1.15 - 3.13 | 2.52 | ** | 1.35 - 3.33 |
| *+40* | 2.63 | *** | 1.43 - 3.08 | 2.63 | *** | 1.83 - 3.8 |
| *Gender* | | | | | | |
| *Male* | - | - | - | - | - | - |
| *Female* | 2.42 | ** | 1.61 - 2.79 | 2.12 | ** | 1.91 - 2.9 |
| *Material* | | | | | | |
| *Amalgam* | - | - | - | - | - | - |
| *Composites* | 1.12 | NS | 0.13 - 1.56 | 1.42 | NS | 1.13 - 1.96 |
| *Glass ionom.* | 3.12 | *** | 2.52 - 4.34 | 5.65 | ** | 4.67 - 7.23 |
| *Dentists* | | | | | | |
| *#1* | - | - | - | - | - | - |
| *#2* | 1.34 | NS | 0.35 - 1.61 | 1.04 | NS | 1.35 - 2.01 |
| *Location* | | | | | | |
| *Mandible* | - | - | - | - | - | - |
| *Maxilla* | 1.55 | * | 1.17 - 2.04 | 1.15 | * | 1.57 - 2.14 |

# Because the odds are that your patient probably have other ideas!



# Advent of Evidence -based dentistry



# Would you advise the same technical solution to all these patients?

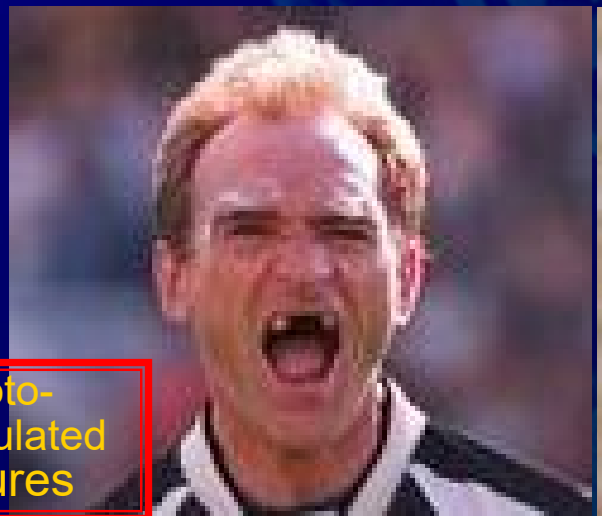
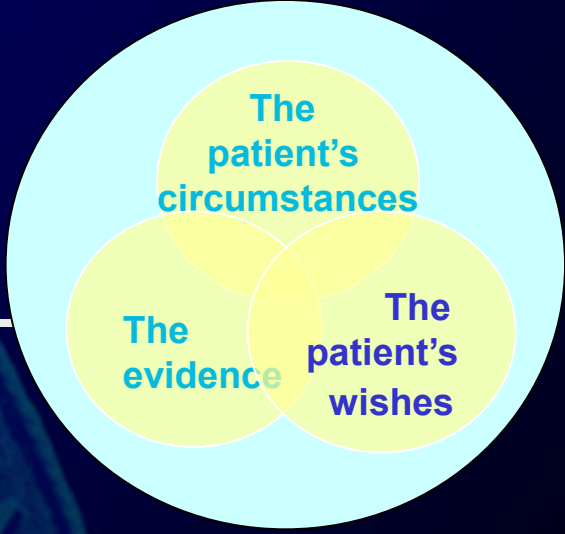


Photo-manipulated pictures

# Five-step treatment planning




1. ~~Identify the patient's views, choice of values and objectives for seeking treatment~~

→ Individualized treatment pl

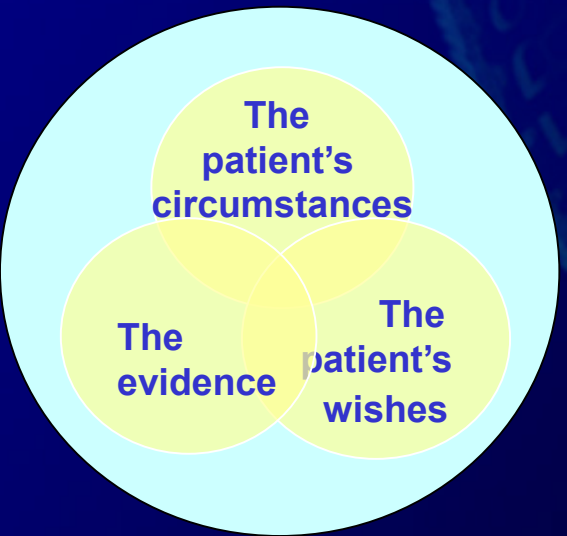

# Five-step treatment planning

1. Identify the patient's views, choice of values and objectives for seeking treatment ⇒ Individualized treatment plan

2. Communicate

Be cognizant of your:

- Interpersonal manners
- Perceived technical competence
- Communication skills

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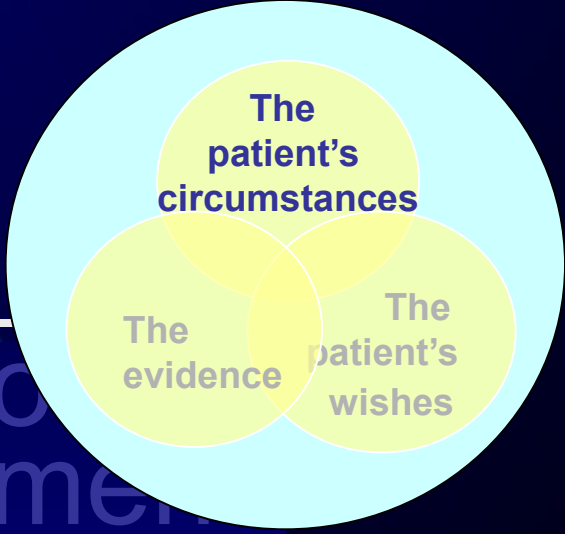


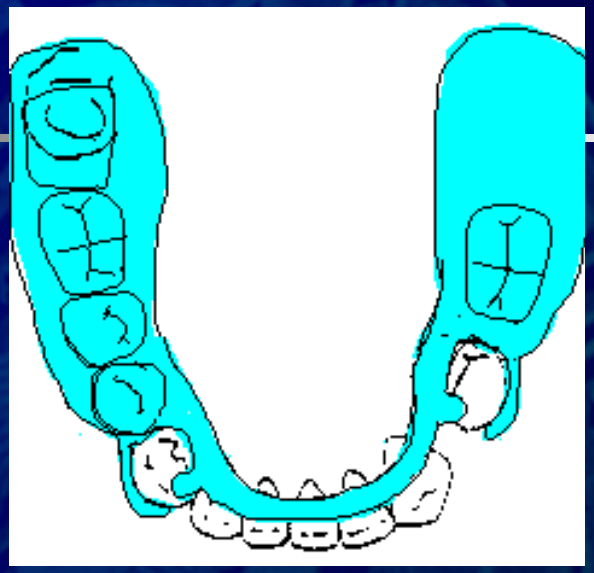

1. Patient views, choice o
values and aim of treatme
2. Patient communication

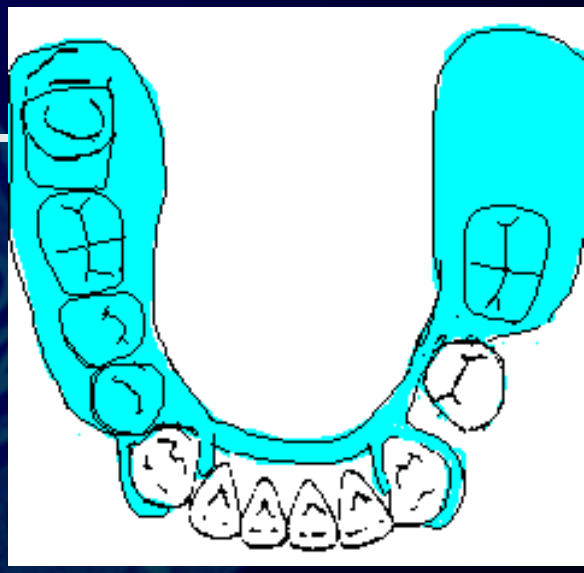
3. Consideration of possible technical solutions – i.e. a treatment strategy

# Choice of technical solution?


Choice of technical solution ?

# Acrylic partial denture

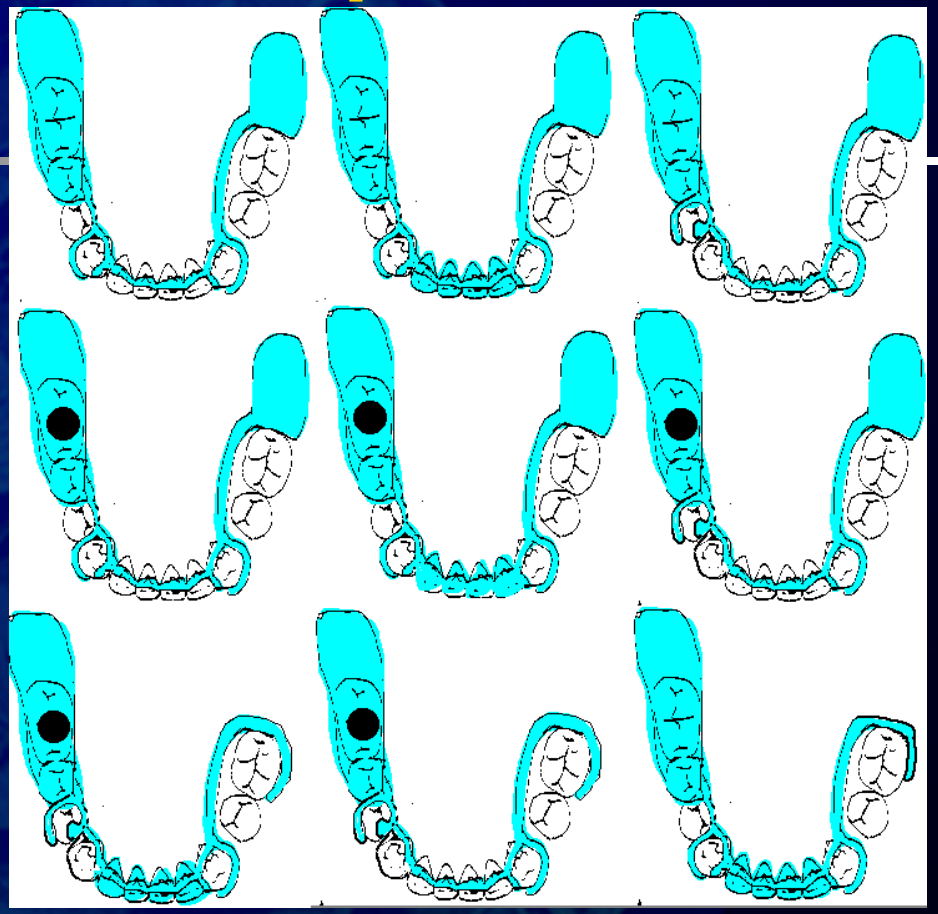




Clinical knowledge

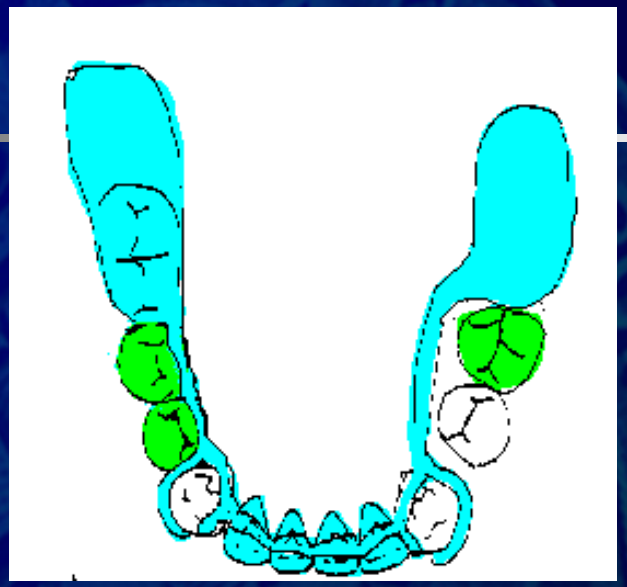
- Prosthesis design
- Prognosis

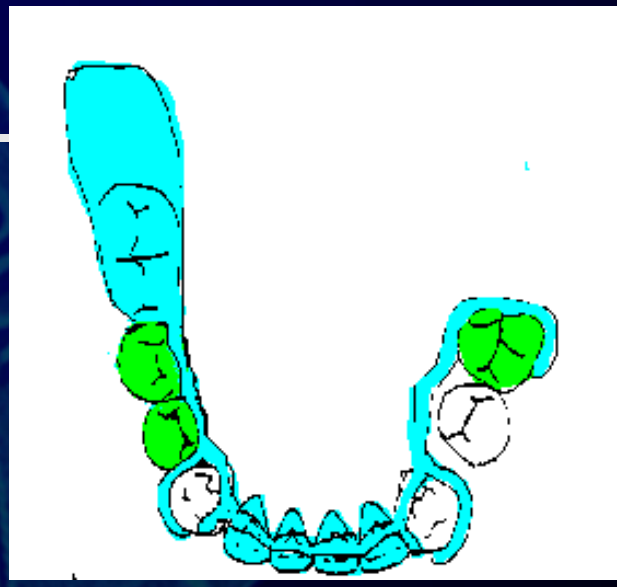
# Cast partial denture



Clinical knowledge
Prosthesis design
Prognosis
Retention

# Crowns + cast partial dentu





Additional clinical knowledge

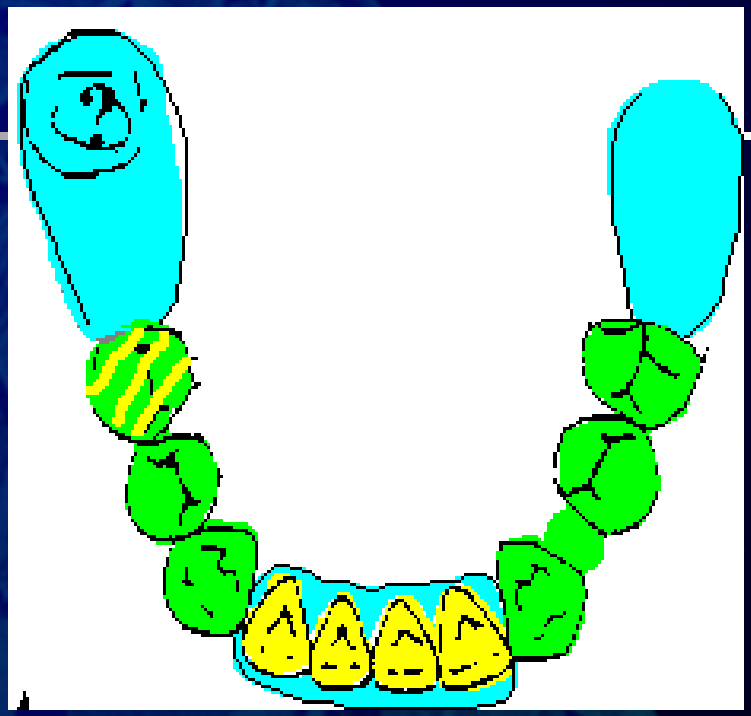
36 extraction or crown?

Soldered 44 + 45?

Milled crowns?

Intra- or extracoronal attachments?

# Conus bridge

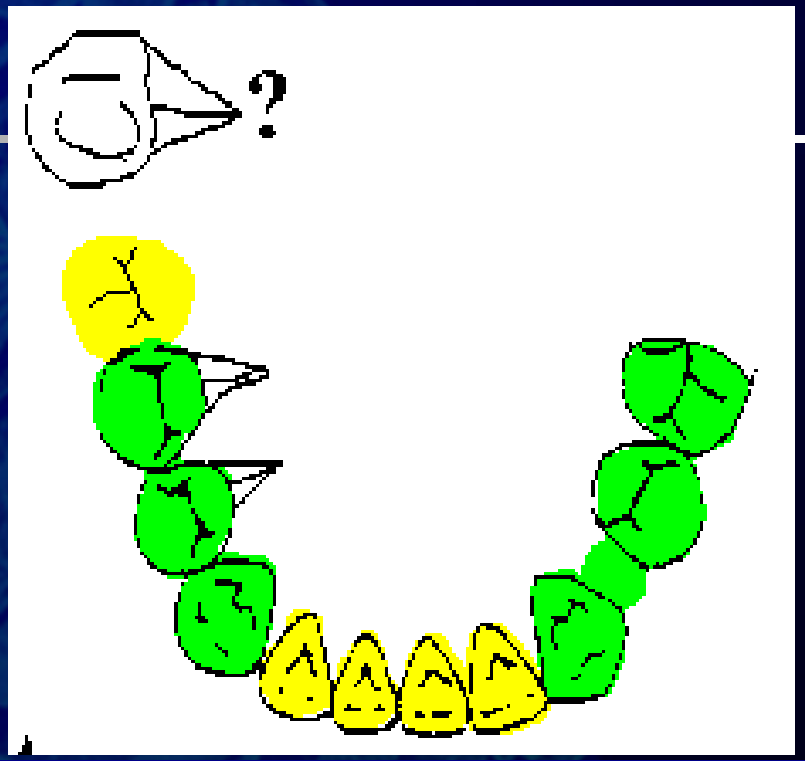


Clinical knowledge:

47, 36, 45: extraction … gold coping … attachment?

43/44/45: separation?

# Fixed bridge



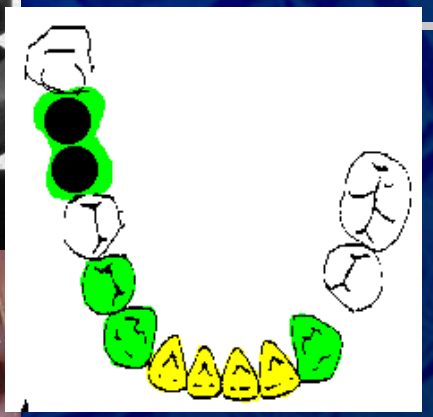

Clinical knowledge

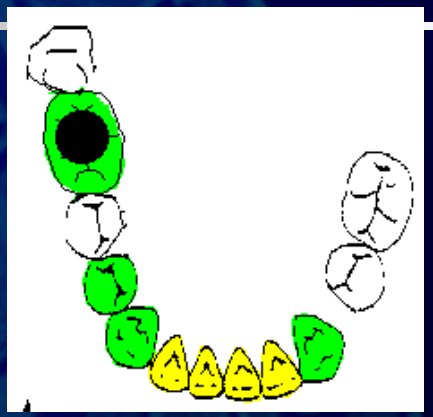
Conventional alloy, titanium-ceramic or gold acrylic?

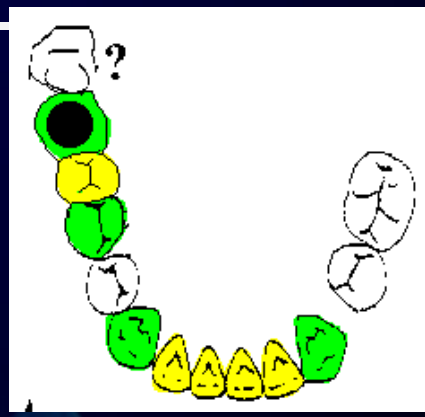
Zn-phosphate, GIC or resin cement?

Bridge extension 46? 46+47 ?

# Implant retained prosthesis








Clinical knowledge

One / two implants?

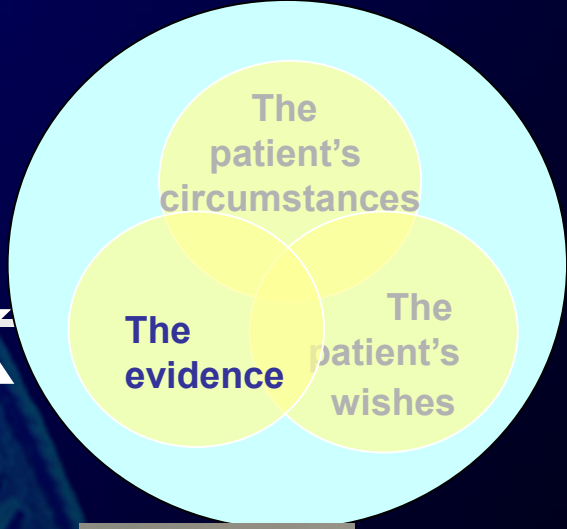
Wide collar - standard diameter?

Splintet - non-splintet FPD?

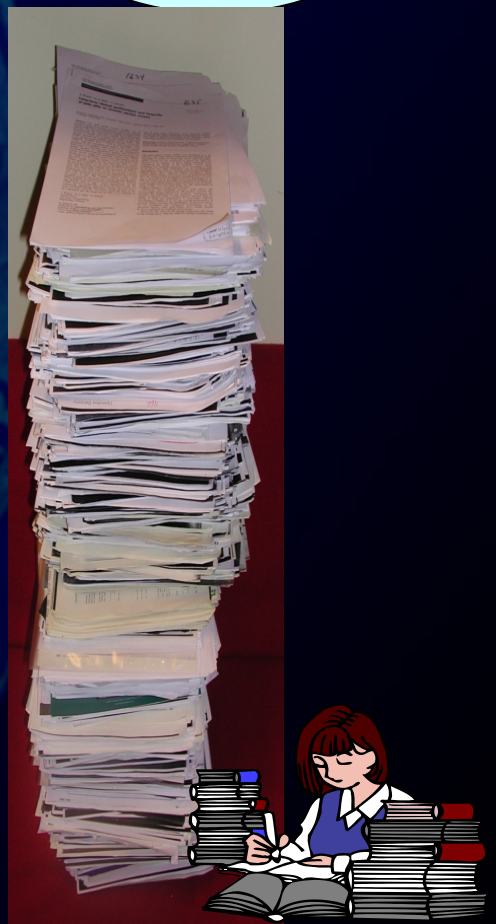
Cement / screw-retained ?

Nobelbiocare, AstraTech, 3i, Endopore, Straumann, Friadent…?

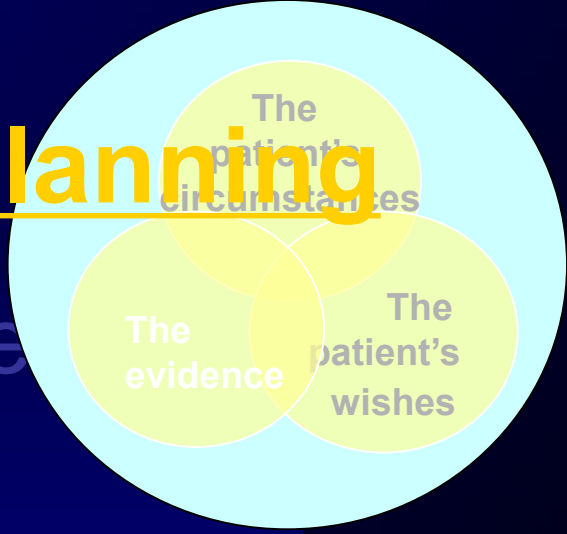
# Treatment planning




Overwhelming task to appraise and present evidence without first communicating with the patient!

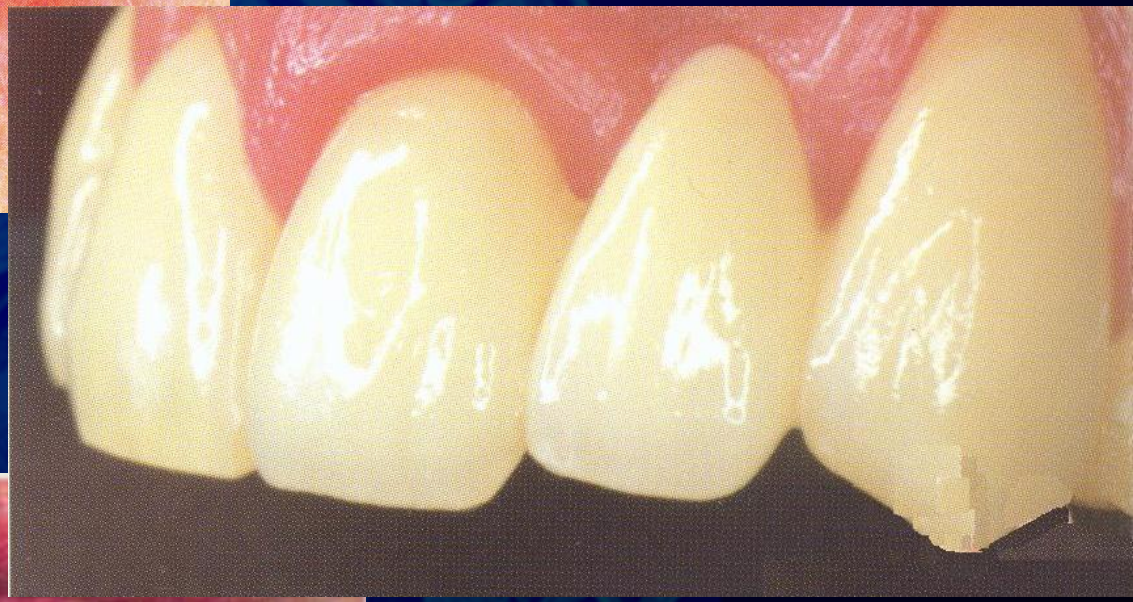


# Five-step treatment planning



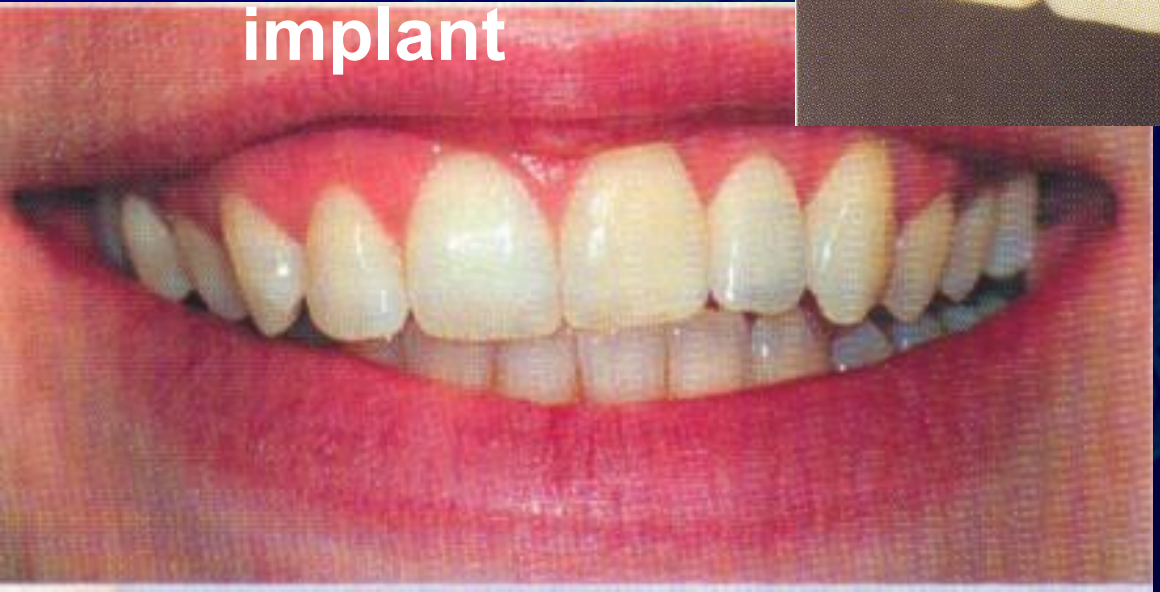

1. Patient views, choice of value aim of treatment
2. Patient communication
3. Consider possible technical solutions
4. Present realistic outcomes with different technical solutions

# Some dentists tend to offer :



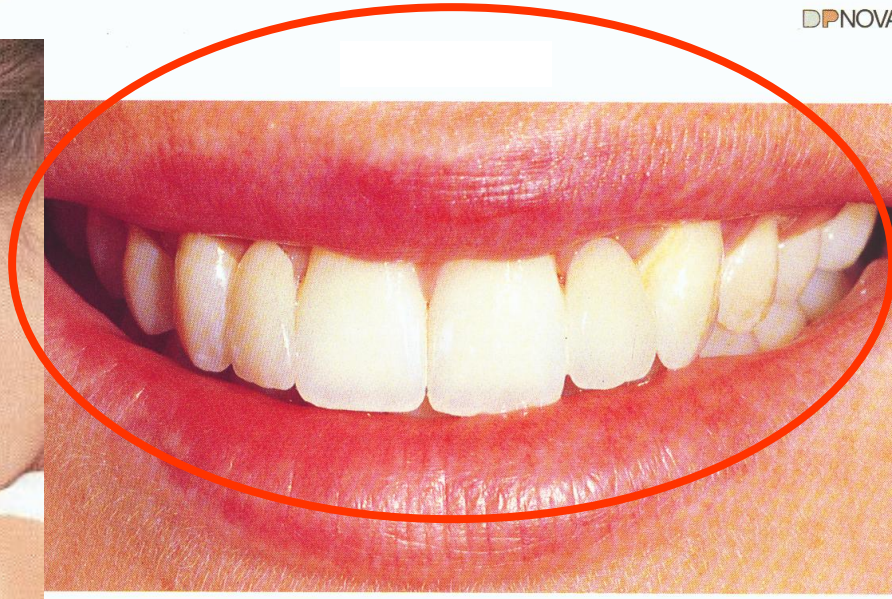
e.g.Etch-bridge

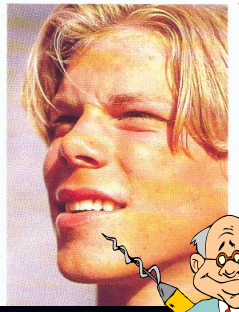
e.g.Single tooth implant



e.g. conventional bridge

# ....glossy pictures!



CASE REPORT
One Stage Procedure

CLINICAL DATA
Scientific update on Fixture S1

CASE REPORT
Soft Tissue Sculpturing

CALENDAR OF EVENTS

ASTRA
ASTRA TECH

# Reality can occasionally be

-etch bridge

Perfect result%?

Grey tone %?

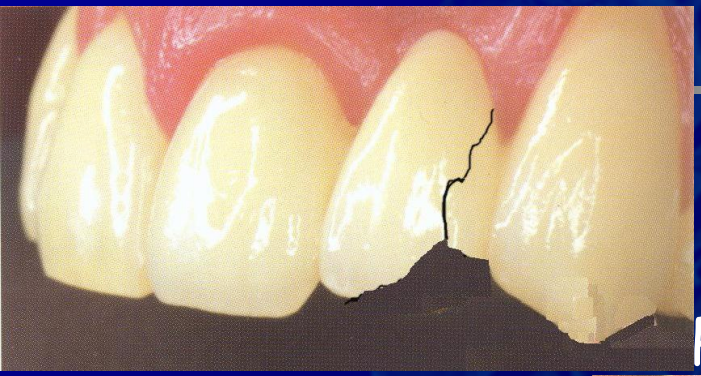
Opacity %?

Gingivitis %?

# ..and sooner or later

Loosening with or without secondary caries ?

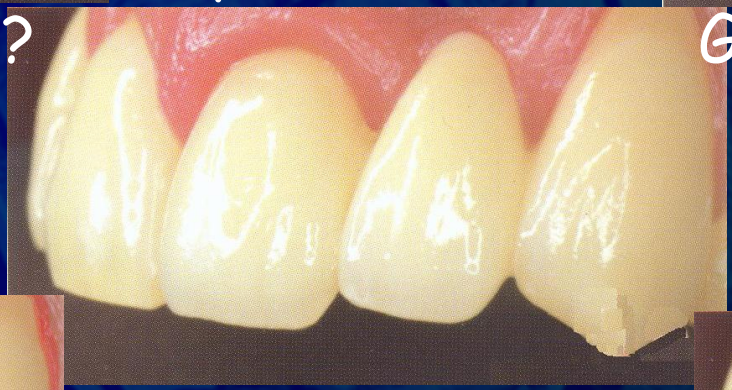
# Reality can occasionally be -bridge



Ceramic fracture%?

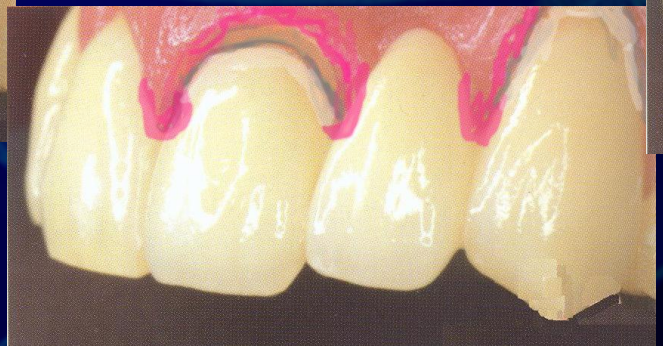
Perfect result %?

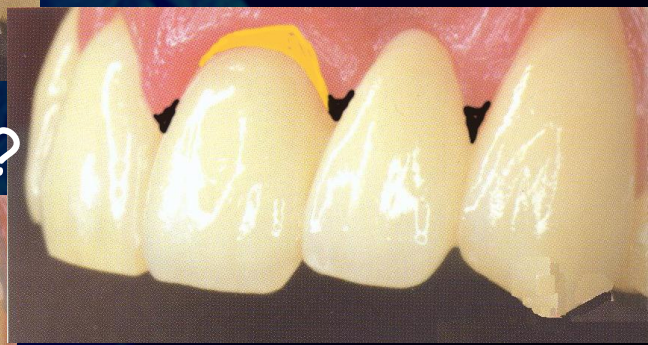
Gingival grey-tone%?



Gingivitis %?

Cervical retraction %?





Secondary caries %?

# Reality can occasionally be

Perfect result %?

Opacity due to misalignment %?

Gingival-retraction %?

Exposed fixture %?

Adjacent necrosis %?

# The prosthesis as a …

| | Conv. | Implant -prosth. |
|---|---|---|
| **Risk factor for new disease** | | |
| Caries | (+) | - |
| Periodontitis | (+) | - |
| Mucosal damage, allergy, stomatitis, hyperplasia | (+) | - |
| Temporomandibular dysfunction | - | - |
| **Prognostic factor for:** | | |
| Occlusal stability (“tooth malpositions”) | + | + |
| Bone remodeling (“Alveolar bone loss”) | -- | ++ |
| “Oral discomfort” (esthetics, mastication, speech, etc.) | + | ++ |
| Nutritional aspects | ? | + |
| Quality of life | ? | + |

# Five-step treatment planning

1. Technical solutions
2. Patient views and choice of values
   Individually aimed cost-benefit evaluations
3. Consider possible technical solutions
4. Present realistic outcomes in respect to treatment aim with different technical solutions

**Restore function?**

**Change appearance?**

**Prevent future problems?**

**+ Level of, or risk for, iatrogenic damage**

# Address the patients' preferences

- Total rehabilitation or minimal solution?
- Demand for longevity, 1 y. - 30 yrs.?
- Risk attitude to iatrogenic damage, i.e. future prognosis of tooth?
- Demand for fixed (or removable) prosthetic solution?
- Expectance of treatment?
- Patient economy (?)

Harm-benefit-cost evaluations must be individualized

# Five-step treatment planning

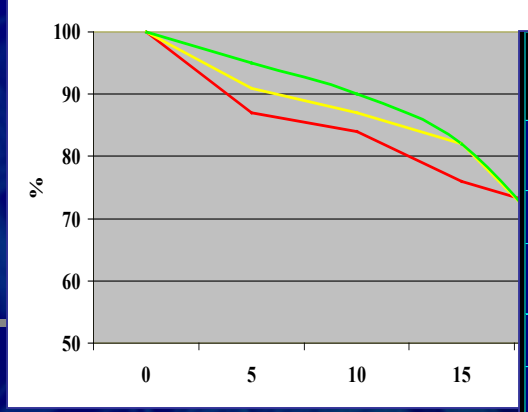
1. Patient views and choice of values
2. Patient communication
3. Consider possible technical solutions
4. Present realistic outcomes relative to aims with different technical solutions

## 5. Obtain informed consent among the alternative technical solutions

Integration of:

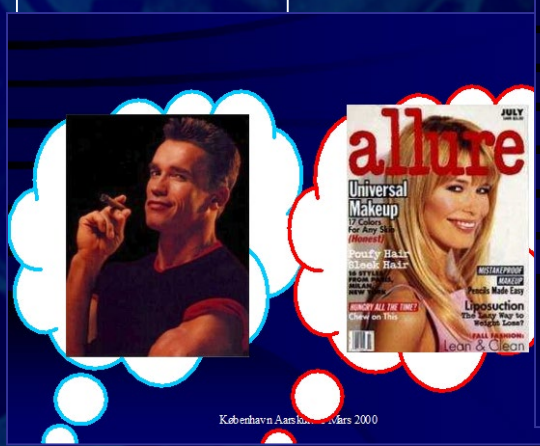
- expected esthetics and function
- costs
- probabilities of survival
- maintenance need
- ”worst-case-scenarios”

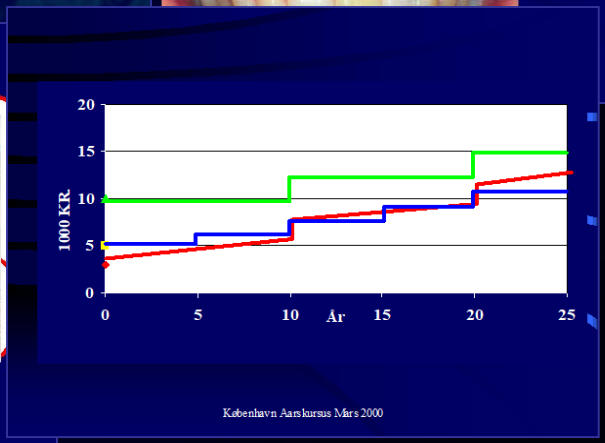
# Correct treatment decision




| Independent variables | Bi-variate odds ratios | Bivariate significance | 95% Confidence intervals bivariate odds ratios | Multi-variate odds ratios | Multivariate significance | 95% Confidence intervals for multivariate odds ratios |
|---|---|---|---|---|---|---|
| *Age group* | | | | | | |
| *20-30* | - | - | - | - | - | - |
| *30-40* | 2.32 | ** | 1.15 - 3.13 | 2.52 | ** | 1.35 - 3.33 |
| *+40* | 2.63 | *** | 1.43 - 3.08 | 2.63 | *** | 1.83 - 3.8 |
| *Gender* | | | | | | |
| *Male* | - | - | - | - | - | - |
| *Female* | 2.42 | ** | 1.61 - 2.79 | 2.12 | ** | 1.91 - 2.9 |
| *Material* | | | | | | |
| *Amalgam* | - | - | | | | |
| *Composites* | 1.12 | N | | | | |
| *Glass ionom.* | 3.12 | ** | | | | |
| *Dentists* | | | | | | |
| *#1* | - | - | | | | |
| *#2* | 1.34 | N | | | | |
| *Location* | | | | | | |
| *Mandible* | - | - | | | | |
| *Maxilla* | 1.55 | * | | | | |

Dentist:patient relationship
**Two-way** communication

# Treatment planning - take-home messages

1. Do not offer patients glossy pictures

# Treatment planning - take-home messages

1. Do not offer patients glossy pictures
2. Two-way communication is critical in the treatment planning phase.

   Be cognizant of:

   - Interpersonal manners
   - Perceived technical competence
   - Communication skills

# Treatment planning - take-home messages

1. Do not offer patients glossy pictures
2. Two-way communication is critical in the treatment planning phase. Be cognizant of: Interpersonal manners, Perceived technical competence & Communication skills
3. Dentists and patients diverge about
   - evaluation of therapy success
   - appraisal of, and attitude towards risk

# Treatment planning - take-home messages

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All treatment suggestions must therefore be individualized and based on the patient's wishes and values