


 Implant Dentistry Education @ HKU

## Managing patients expectations:

*...a new dimension of success and failure in Implant Dentistry*





 Nikos Mattheos 馬毅剛  
 The University of Hong Kong




## Today's Menu :

- Success and failure with implants
- a different point of view...
  - how do patients perceive success?
  - what do they expect from us?
  - how do we manage their expectations?



## Emergency room, 1.30 am





## Success...



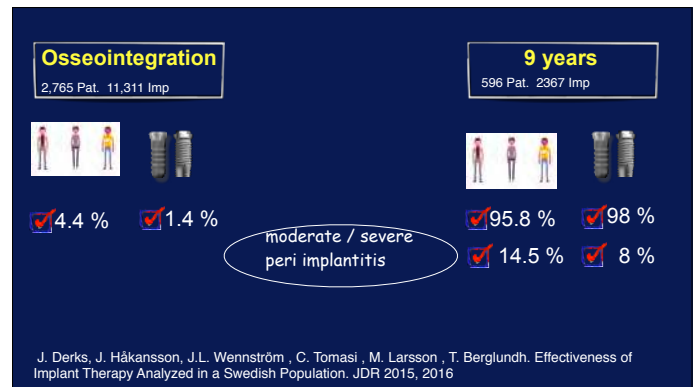
**...is a matter of definition!**

## Success and Failure with Dental Implants



How do dentists perceive success?

A composite image. The left side has a black background with three white text boxes stacked vertically. The top box contains the word 'Success' in yellow. The middle box contains the word 'Predictable' in white. The bottom box contains the word 'Sustainable' in white. The right side of the image is a vertical photograph of a blue whale swimming underwater, with a diver visible in the background for scale.



**Success**

- Achieve
- Maintain

**Patient defined outcomes:**

- Rehabilitation ...
- Improvement in quality of life?
- Getting back something lost?
- Getting something never had before?
- Satisfaction ?

**Function**

**Aesthetics**

Labels on the right side of the diagram: Bone to implant contact, Soft tissue attachment, Pain index, Pink Score / White Score.

**Patient  
Satisfaction..!**



Barcelona '92

... bronze medal winners were more satisfied by their performance and happier than silver medal winners..."

Medvec VH, Madey SF, Gilovich T. When less is more: counterfactual thinking and satisfaction among Olympic medalists. J Pers Soc Psychol. 1995 Oct;69(4):603-10.

## Counterfactual thinking:

Research has shown that people's subjective responses to events are influenced by their thoughts on ***"what might have been"***.

"This might explain the often observed phenomenon in which people who are objectively better off nonetheless feel worse".

Medvec VH, Madey SF, Gilovich T. When less is more: counterfactual thinking and satisfaction among Olympic medalists. J Pers Soc Psychol. 1995 Oct;69(4):603-10.

Discrepancies between self-ratings of satisfaction with oral health in two older adult populations.


Locker D, Gibson B.

Community Dent Oral Epidemiol 2005; 33: 280-8.

Type:	Cross sectional survey with random sample
Sample:	225 + 541 (>50 yrs)
Instrument:	OHRQoL questionnaires Clinical examination

" approximately 10% of those with favourable oral health ratings were dissatisfied while approximately 50% of those with unfavourable ratings were satisfied".

Sample:  
Married Men



J. R. Roney. Effects of Visual Exposure to the Opposite Sex: Cognitive Aspects of Mate Attraction in Human Males. Pers Soc Psychol Bull, March 1, 2003; 29(3): 393 - 404.

"The group of males who had been browsing photos of attractive women showed significantly lower scores when asked how attractive did they find their wives".

J. R. Roney. Effects of Visual Exposure to the Opposite Sex: Cognitive Aspects of Mate Attraction in Human Males Pers Soc Psychol Bull, March 1, 2003; 29(3): 393 - 404.

**Perceived availability of choices:**

"Subjective expression of satisfaction with a choice can be significantly affected by the person's perception of available alternative options".

J. R. Roney. Effects of Visual Exposure to the Opposite Sex: Cognitive Aspects of Mate Attraction in Human Males Pers Soc Psychol Bull, March 1, 2003; 29(3): 393 - 404.



21 June 1954



John Landy 3:58

## Rehabilitation : Edentulous patient



" Implant borne dentures on the mandible are superior to conventional dentures when it comes to impact on Quality of Life ".

Strassburger et al	2006	Systematic review
McGrath c	2005	RCT
Attard et al	2006	RCT
Heydecka et al	2006	RCT
Awad et al	2003	RCT
Awad et al	2005	RCT
Naito et al	2006	Systematic review

### A longitudinal study of quality of life outcomes in older adults requesting implant prostheses and complete removable dentures.

Allen PF, Mc Millan A  
Clin Oral Implants Res. 2003 Apr;14(2):173-9.

Type:	Prospective clinical trial
Sample:	103 edentulous patients
Instrument:	OHIP quationnaires

#### 4 groups:

- Requested implants – got implants
- Requested dentures – got dentures
- Requested implants – got dentures
- Control group – dentate subjects receiving other treatments

### A longitudinal study of quality of life outcomes in older adults requesting implant prostheses and complete removable dentures.

Allen PF, Mc Millan A  
Clin Oral Implants Res. 2003 Apr;14(2):173-9.

#### 4 groups:

- Requested implants – got implants



## Rehabilitation : Edentulous patient

### Removable (IOD)



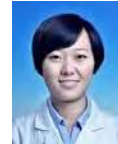
### Fixed (IFCD)



## Removable (IOD) - Fixed (IFCD)



Dr. Coral Yao  
HKU



Dr. Cong Cao  
CJB Hospital,  
Beijing



Prof. Bornstein  
HKU



Dr. Mattheos  
HKU

## Comparing patient reported outcomes from edentulous patients with implant supported fixed and removable dental prosthesis. A systematic Review

Yao J, Cong C, Bornstein M, Mattheos N.  
Manuscript

### 14 comparative studies:

	FDP +	IOD +	No difference
Function	3/11		8/11
Phonetics		1/11	9/10
Aesthetics	1/7		6/7
Overall Satisfaction	4/9	1/9	4/9
Oral Hygiene		5/5	

Oh et al. 2016  
De Souza et al. 2016  
De kok et al. 2011  
Martinez et al. 2013  
Martin-Ares et al. 2015  
Brennan et al. 2010  
Katsoulis et al. 2011  
Quirynen et al. 2005  
Zitzmann et al. 2000  
Heydecke et al. 2003/2004  
De Grandmont et al. 1994  
Feine et al. 1994

## Sense of Coherence as a determinant of the Oral health-related quality of life: a national study in Finnish adults.

Savolainen J et al.  
Eur J Oral Sci 2005: 113: 121-127.

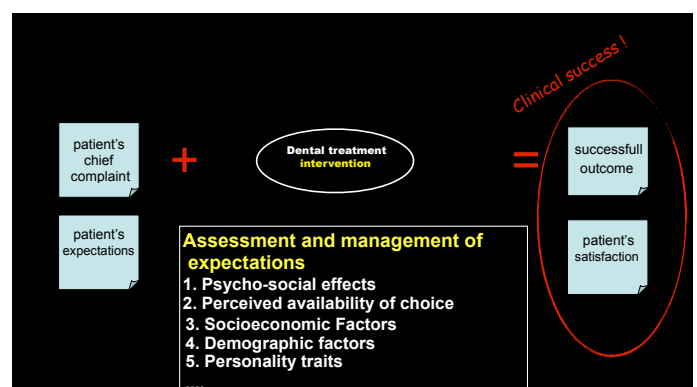
Type:	Cross sectional survey with random sample
Sample:	4039 Finnish (30-64 yrs)
Instrument:	OHIP questionnaires, SOC profile Home Interview

Sense of Coherence as a determinant of the Oral health-related quality of life:  
a national study in Finnish adults.  
Savolainen J et al.  
Eur J Oral Sci 2005: 113: 121-127.

### Sense of Coherence (SOC):

"An individual with high SOC has the ability to define life events as less stressful, to mobilise resources to deal with encountered stressors and possesses motivation, desire and commitment to cope."

(comprehensibility, manageability, meaningfulness)







## Patient Related Outcome Measures

### Comparing patient reported outcomes from edentulous patients with implant supported fixed and removable dental prosthesis. A systematic Review

Yao CJ, Cong C, Bornstein M, Mattheos N.  
Manuscript

1. PROMs rarely supplement all clinical research
2. "Satisfaction" is often used interchangeable with Impact on Quality of Life
3. Supplementary data is need to correctly interpret PROMs
4. PROMs is rarely assessed prospectively
5. A standard array of instruments for PROMs assessment is needed



### Patient's Perception of Success

#### ✓ Checkpoint !

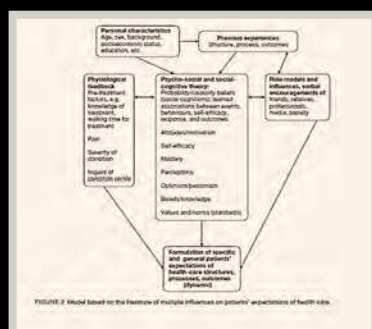
- ✓ Patients' satisfaction with the treatment **does not** only depend on the **clinical outcomes** of our treatment.
- ✓ Patient's **expectations, perceptions and psychosocial background** seriously affect their final satisfaction with rehabilitation.
- ✓ A complete assessment of patient **expectations** and psychosocial background is necessary procedure.



### How expectations are formed (PEHC):

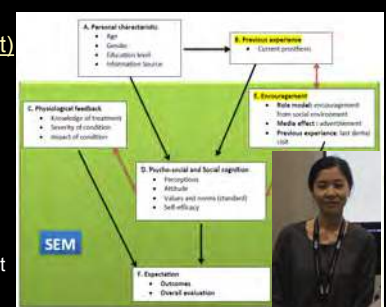


Ann Bowling  
Professor of Health Sciences  
2012



### How expectations (related to Implant Treatment) are formed :

- Personal characteristics
- Previous experiences
- Knowledge, Attitudes
- Perceptions, Values, Beliefs
- Raw models, social environment



Yao J, McGrath C, Gao XL, N. Mattheos. Development of an Instrument to Assess Patients' Expectations of Dental Implants. 2015 in press

The measurement of patients' expectations for health care: a review and psychometric testing of a measure of patients' expectations. Ann Bowling, et al. Health Technology Assessment 2012; Vol. 16; No. 30

### How long do implants last?

Hof, Markus, 2012;	59% of patients think implant could last a life time
Pommer, 2011;	24% of patients think implant could last a life time
Tepper, 2003	34% of patients think implant could last a life time
Rustemeyer, J, 2007	7% >25 years; 66% :10-20 years
Johannsen, A. 2012	"all patients expected the implants to function in the mouth during the rest of their lives"

### What do you expect from implants?

Grey, E. B, 2013	Participants expected implants to restore their oral related quality of life to 'normal'.
	However, individual definitions of normality differed significantly.
Rustemeyer, J, 2007	68% of the women judged improvement in quality of life as very important, but only 41% of the men ( $p < 0.05$ ).

### How much care do implants need?

Pommer, 2011 Rustemeyer, J, 2007 Tepper, 2003	4-7 % think implants need less care than natural teeth.
Johannsen, A. 2012	"The patients perceived that the oral hygiene procedure was too time-consuming with the new teeth".

### How did you learn about implants?

Pommer, 2011 Tepper, 2003	41-74 % received information by the dentist.
Rustemeyer, J, 2007	4-9 % felt that they were well informed.

### Holistic Patient Assessment

✓ Chief Complaint

✓ Medical History

✓ Dental History

✓ Expectations, Perceptions

statements:

- Dental implants are a well tested and documented treatment for replacement of missing teeth. ☐ disagree ☐ agree
- Treatments with Dental Implants have no risks or complications. ☐ disagree ☐ agree
- Dental implants are as functional as natural teeth. ☐ disagree ☐ agree
- Dental implants look as new as natural teeth. ☐ disagree ☐ agree
- Dental implants require less care than natural teeth. ☐ disagree ☐ agree
- Dental implants last longer than natural teeth. ☐ disagree ☐ agree
- Dental implants is a treatment appropriate for everyone. ☐ disagree ☐ agree

Yao J, C, McGrath, Gao XL, N, Mattheos. Patients' Expectations of Dental Implants prior to consultation with the dentist. COIR 2017

Questionnaire part I: Pre-consultation

Subject No:  Assigned name:

Subject name:

Patient Information Sheet and Patient Information Consent Form

This document is for patient's use only and is not to be given to the dentist. The purpose of this document is to collect information about the patient's expectations of dental implants. The information collected will be used for research purposes only.

The document has three parts:

- Part I: Patient Information Sheet and Patient Information Consent Form
- Part II: Patient Information Sheet and Patient Information Consent Form
- Part III: Patient Information Sheet and Patient Information Consent Form

Development of an Instrument to Assess Patients' Expectations of Dental Implants

Faculty of Dentistry  
The University of Hong Kong

34 fields:

- ✓ demographics
- ✓ attitudes / perceptions
- ✓ expectations

### What do patients expect from treatment with dental implant? Perceptions, expectations and misconceptions. A multicenter study.

J Yao, M Li, H Tang, PL Wang, YX Zhao, C McGrath, N Mattheos, COIR 2017

	Agreed
✓ "Dental Implants Require less care than natural teeth"	35 %
✓ "Dental Implants last longer than natural teeth"	37.5 %
✓ "Treatments with Dental Implants have no risks or complications"	47 %
✓ "Dental Implants are as functional as natural teeth"	48 %

Pre-treatment

EAD)))  
CONGRESS

## The Dentist

EAD)))  
CONCRETE

Friends  
Social Circle

## The Dentist

Yao J, McGrath C, Gao XL, N. Mattheos. Development of an Instrument to Assess Patients' Expectations of Dental Implants. COIR 2015

EADON  
CONGRESS

Internet

## Social Circle



## The Dentist



# YOUTUBE PATIENT TESTIMONIALS IN IMPLANT DENTISTRY: INFORMATION OR MISINFORMATION?



## MDS Implant Dentistry

- To determine the educational value of YouTube patient testimonials on Implant Dentistry

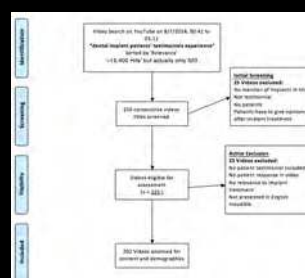
- To investigate their potential for misleading statements
- To provide patients and clinicians with salient advice on the topic

[illegible]

Ho Adrian, C. McGrath, Gao XL, N. Mattheos. Assessing the quality of patient testimonials from Implant Treatments on YouTube. 2014 in press

- 270 Videos

- Sorted by “Relevance”
- Sampling consecutive videos
- URLs saved
- matrix / production characteristics
- 4 different examiners
  - Calibrated
  - Conduct common set of 15 videos





[illegible]

## Results:

### Video Characteristics:

Range of upload	March 2009 - July 2014					
Mean length of Video	2:33					
Highest available quality	144p	240p	360p	480p	720p	1080p
	0.0%	8.9%	5.9%	37.1%	30.2%	18.8%

Mean Views	4,767	
Mean No. of Likes	6.8	
Mean No. of Dislikes	1.0	
Mean No. of Comments	1.2	(8.6% Disabled)

Originating from specific Clinician/Practice	Yes	No
	99.3%	0.5%
No. of patients interviewed	341	

- 

Mean misleading points /video

0.5

**Results:**

**Top 3 Informative Categories:**

1. Potential to improve aesthetics (54.1%)
2. Potential to improve function (37.6%)
3. Relative advantages/disadvantages of alternative options (18.3%)

- Less than 0.5 % of the videos appears to show genuine patient testimonials
- Reference to complications or negative results is minimal
- Reference to patient selection is minimal
- Frequently statements are potentially misleading or dangerous:

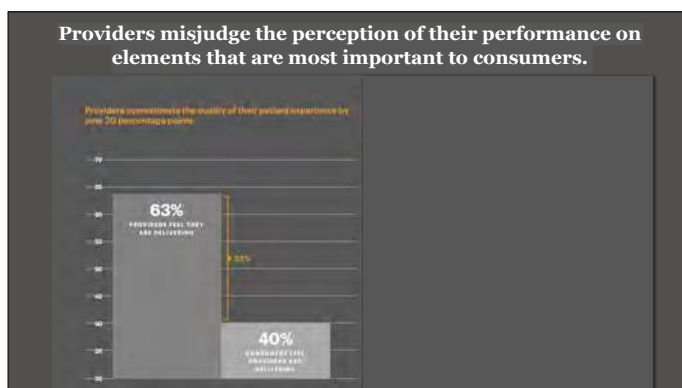


Prophet | All Healthcare Client Group

## The State of Consumer Healthcare: A Study of Patient Experience

There is a real change happening in health care. People are demanding to be treated as savvy consumers, who demand choice, convenience and low prices. The entire revolution of consumerism that's shaking up the way the world does business is now, when it comes to patients and providers, a reality in the world of healthcare. And healthcare providers must. This trend will only accelerate. Providers who are ready to respond by creating a strong patient experience are going to win, and those who aren't will be left behind.

This study was created to understand the consumer healthcare experience by listening to the gap between patient and provider expectations and perceptions, and give individuals with the ability to assess their own organization, define a successful strategy, and deliver on it.



	J Yao et al, COIR 2017	P. Vipattanaporn et al submitted 2018
	Pre-treatment	Post-treatment (short term)
<input checked="" type="checkbox"/> "less care than natural teeth"	35 %	18 %
<input checked="" type="checkbox"/> "last longer than natural teeth"	37 %	35 %

### Implants last for a lifetime:

Hof, Markus, 2012;	59%
Pommer, 2011;	24%
Tepper, 2003	34%
Johannsen, A. 2012	100%

### Provision of information to patients:

8 clinicians interviewed in UK:

Contents lists available at ScienceDirect

Journal of Dentistry

journal homepage: [www.elsevier.com/locate/jdent](http://www.elsevier.com/locate/jdent)

Provision of information to patients on dental implant treatment: Clinicians' perspectives on the current approaches and future strategies

Wafa A. Kashbour<sup>a,\*</sup>, Nikki S. Rousseau<sup>b</sup>, J. Mark Thomson<sup>a</sup>, Janice S. Ellis<sup>b</sup>

<sup>a</sup> School of Dental Science, Newcastle University, Newcastle Upon Tyne, NE2 4BW, United Kingdom  
<sup>b</sup> Institute of Health & Society, Newcastle University, Newcastle Upon Tyne, NE2 4AA, United Kingdom

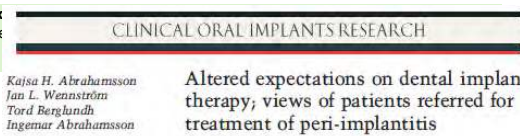
W.A. Kashbour et al. Journal of Dentistry 76 (2018) 117–124

## Altered expectations on dental implant therapy

15 patients diagnosed with Peri-implantitis:



Initial ex  
• an exc  
• it feels



Abrahamsson KH, Wennström JL, Berglundh T, Abrahamsson I. Altered expectations on dental implant therapy; views of patients referred for treatment of peri-implantitis. Clin. Oral Implants Res. 28, 2017, 437–442

## Altered expectations on dental implant therapy

15 patients diagnosed with Peri-implantitis:

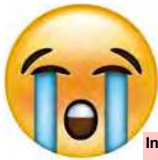


### Being referred to a periodontist and diagnosed with peri-implantitis

- detecting problems - being referred to a specialist
- diagnosis of peri-implantitis
- talking to others about dental/peri-implant **problems** and **social support**
- thoughts about reasons for dental/peri-implant problems and about previous dental treatment decisions

Abrahamsson KH, Wennström JL, Berglundh T, Abrahamsson I. Altered expectations on dental implant therapy; views of patients referred for treatment of peri-implantitis. Clin. Oral Implants Res. 28, 2017, 437–442

## Altered expectations on dental implant therapy



- Investing again in an expensive treatment with no guarantee for the future
- feelings of **trust** towards the specialist team
  - “having to **look deep into your wallet** to be able to live like a human being”
  - **ambivalence** regarding implant/peri-implant treatment and future oral health

Abrahamsson KH, Wennström JL, Berglundh T, Abrahamsson I. Altered expectations on dental implant therapy; views of patients referred for treatment of peri-implantitis. Clin. Oral Implants Res. 28, 2017, 437–442

## Holistic Patient Assessment

- ☒ Chief Complaint
- ☒ Medical History
- ☒ Dental History
- ☒ Expectations, Perceptions

statements	1 agree	2 agree	3 agree	4 agree	5 agree	6 agree	7 agree	8 agree	9 agree	10 agree
1. Dental implants are a well tested and documented treatment for replacement of missing teeth.										
2. Treatments with Dental Implants have no risks or complications.										
3. Dental implants are as functional as natural teeth.										
4. Dental implants look as new as natural teeth.										
5. Dental implants require less care than natural teeth.										
6. Dental implants last longer than natural teeth.										
7. Dental implants is a treatment appropriate for everyone.										

Yao J, C. McGrath, Gao XL, N. Mattheos. Patients' Expectations of Dental Implants prior to consultation with the dentist. COIR 2016

Reliable  
patient information

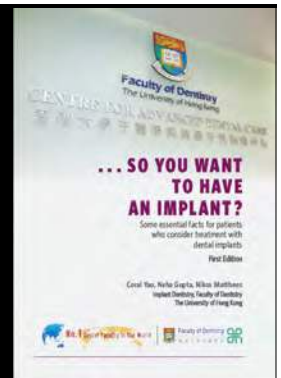
- own material
- on-line sources



www.eao.org/patients

Reliable  
patient information

- own material
- [www.mattheos.net/resources](http://www.mattheos.net/resources)



• “generic”

• “Difficult to identify with”

ORIGINAL RESEARCH

WILEY

Provision of information on dental implant treatment: Patients' thoughts and experiences

Wafa Ahmed Kashbour<sup>1</sup> | Nihal S. Rousouca<sup>2</sup> | John Mark Thompson<sup>3</sup> | Janice Sarah Ellis<sup>4</sup>

Kashbour WA et al. Provision of information on dental implant treatment: Patients' thoughts and experiences. Clin Oral Impl Res. 2018;29:309–319.

Reliable patient information

- own material
- on-line sources

medline plus: NLM, NIH

Reliable patient information

- own material
- on-line sources

www.aaoms.org/ through medlineplus.org

Patient's Perception of Success

**Checkpoint !**

- ✓ Patients come to us with a formed set of **expectations** often including serious misperceptions
- ✓ Diagnosing Expectations is a necessary part of patient assessment
- ✓ Correcting **misperceptions** and communicating **rehabilitation outcomes** is one of the modern therapeutical challenges

## Success and Failure with Dental Implants

Communicating for success

## Strategies for effective communication !

1. Which are the aims of our communication.
2. How to best communicate the treatment plan.
3. What is important to communicate to the implant patient.

## Communication of the treatment plan

- ✓ Establish **trust**.
- ✓ Provide reliable **information**.
- ✓ **Empower** patient to make decisions.
- ✓ Share **decisions**.



## Communication of the treatment plan

### ✓ Establish Trust

▶ Trust is not related to intervention

- ▶ Professionalism →
  - Attire
  - Confidence / Knowledge
  - Settings / Environment
  - Individualisation
- ▶ Empathy →
  - non-judgmental

Contextualised Professionalism: Professionalism in contemporary clinical practice. A qualitative study of video-recorded patient consultations. <https://doi.org/10.1111/j.1365-2648.2012.03045.x>

## Communication of the treatment plan

### Professionalism

#### Attire



Patient Educ Group. 2012 Dec 05;2012(51): 10-12. <https://doi.org/10.1111/j.1365-2648.2012.03045.x>

## Communication of the treatment plan

### Professionalism

#### Attire

#### Settings / Environment

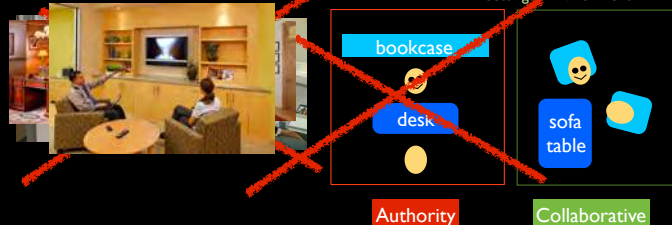


Patient Educ Group. 2012 Dec 05;2012(51): 10-12. <https://doi.org/10.1111/j.1365-2648.2012.03045.x>

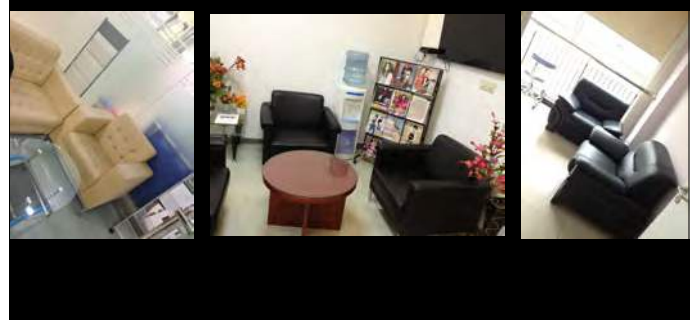
## Communication of the treatment plan

### Professionalism

#### Settings / Environment



Patient Educ Group. 2012 Dec 05;2012(51): 10-12. <https://doi.org/10.1111/j.1365-2648.2012.03045.x>



- Results achieved by the treatment can be maintained in the long term through patient-clinician collaboration.



## Communication of the treatment plan

### Empower patient to make decisions

- ▶ well informed
- ▶ shared responsibility
- ▶ understanding of costs
- ▶ informed consent

"Will it hurt..?"

"You can expect mild pain for the first couple of days, which will be well controlled by over-the-counter painkillers"

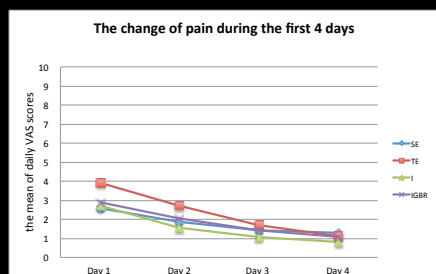
## Comparison of patient-centered outcomes after routine implant placement, teeth extraction and periodontal surgical procedures

Jie Yao<sup>1</sup>, Koon Kay Lee<sup>1</sup>, Colman McGrath<sup>1</sup>, Yu Nong Wu<sup>2</sup>, Kar Yan Li<sup>1</sup>, Nikos Mattheos<sup>1</sup>  
COIR 2016

- Simple extraction **339 patients**
- Transalveolar extraction
- Straightforward implant
- Implant with GBR
- Periodontal Surgery

## Comparison of patient-centered outcomes after routine implant placement, teeth extraction and periodontal surgical procedures

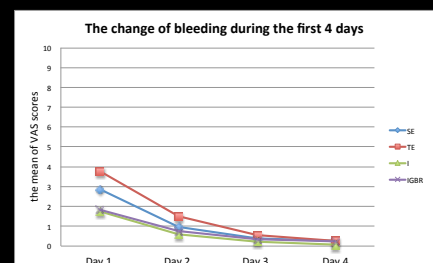
Jie Yao<sup>1</sup>, Koon Kay Lee<sup>1</sup>, Colman McGrath<sup>1</sup>, Yu Nong Wu<sup>2</sup>, Kar Yan Li<sup>1</sup>, Nikos Mattheos<sup>1</sup>  
COIR 2016



Use of NSAID (painkillers)					
	Day 1	day 2	Day 3	Day 4	Day 5
Simple Extraction	40%	21%	11%	10%	5%
Implant	57%	34%	24%	20%	11%
GBR	*71%	*50%	*35%	27%	20%

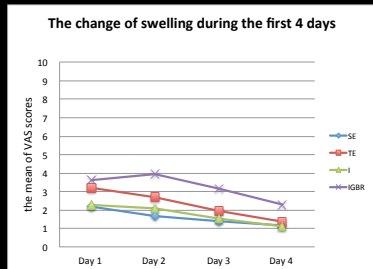
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COIR 2016



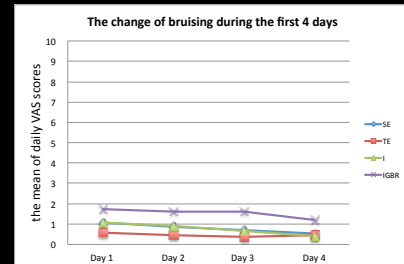
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COIR 2016



## Comparison of patient-centered outcomes after routine implant placement, teeth extraction and periodontal surgical procedures

Jie Yao1, Koon Kay Lee1, Colman McGrath1, Yu Nong Wu2, Kar Yan Li1, Nikos Mattheos  
COIR 2016



“Will it hurt..?”

“Most of our patients have experienced similar or less discomfort than from a simple extraction”

“half of our patients used painkillers the day after the surgery, only 1 out of 3 continued on the second day ”



Patient's Perception of Success

☒ **Checkpoint !**

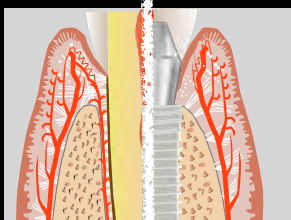
- ☒ Communication of the treatment plan aims at establishing the **trust** of the patient, while provide **reliable information** to empower the patient to **share the responsibility** of the treatment.
- ☒ **Clarity, Professionalism and Empathy** are required to achieve optimal communication, while visualisation of treatment outcomes and documentation are important steps.
- ☒ **Shared ownership** of the treatment with the patient will help to motivate them engage and achieve long term success.

### Periodontal

- ☒ Physiological
- ☒ Stable in health
- ☒ Contain disease progression

### Peri-implant

- ☒ Repair tissue
- ☒ Stable in health
- ☒ Compromised at disease



Implant Dentistry MOOC @ HKU



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IMPLANT DENTISTRY MOOC

BY THE UNIVERSITY OF HONG KONG

ENROL NOW AT :  
[HTTPS://WWW.COURSERA.ORG/LEARN/IMPLANT-DENTISTRY](https://www.coursera.org/learn/implant-dentistry)



