



Metro Toronto Convention Centre  
May 8 - 10, 2008

## The Toronto Osseointegration Conference Revisited

# What have we learned from clinical trials about early loading of implants?

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Faculty of Dentistry, University of Toronto

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SEARCH: (early OR immediate) load\* implant\* (dentistry OR dental)  
→ N= 709 since 1988




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+ sophisticated search algorithms + hand searching + reference list searches + Medline Prepub + Cochrane library + Cochrane database of systematic reviews + DARE + The Web of Science + Embase + Bireme → n= 1000





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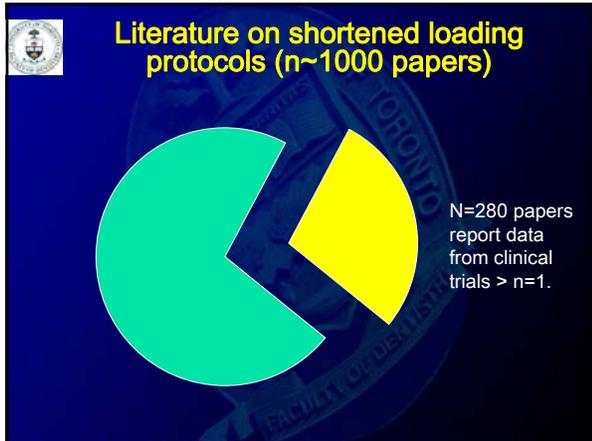
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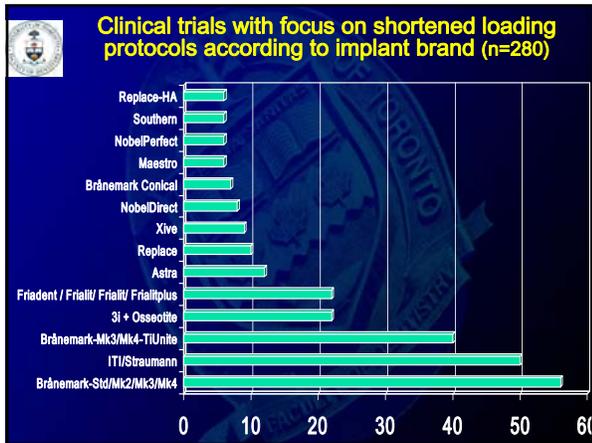
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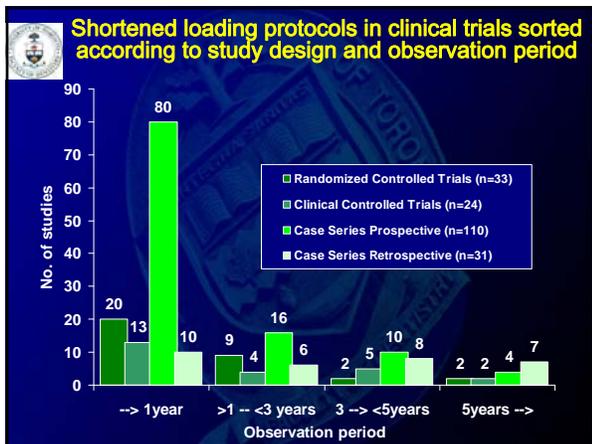
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## General information

### The first trials

- 1968 – 1975 (Brånemark et al. 1977: Experience from a 10-year period)
- TPS implants (Ledermann 1978); Tübinger  $Al_2O_3$  (Schulte 1978)

### The largest RCT trials

- 52 patients and 104 implants (Testori et al. 2007)
- 24 patients and 142 implants (Fischer et al. 2008)

### The longest follow up RCT trial

- 5 years (Rocuzzo et al., 2008 & Fischer et al. 2008)

### The longest observation period

- 8-18 years, average 12, retrospective studies on ITI implants placed in the edentulous mandible (Lambrecht & Hodel 2007)

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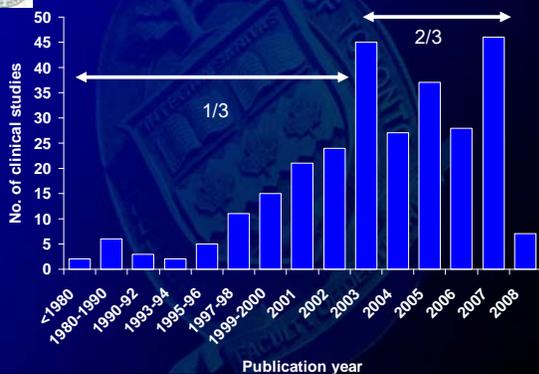
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## Clinical trials with focus on shortened loading protocols by year (n= 280)



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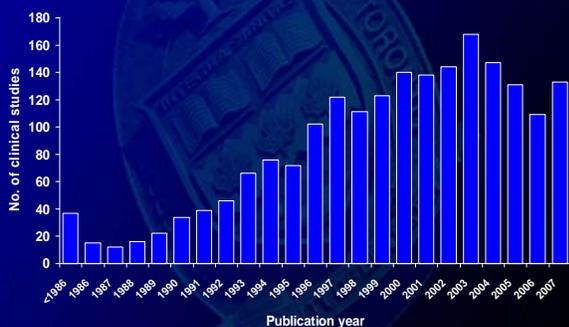
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## Clinical trials with focus on dental implants by year (n ~2000 trials)



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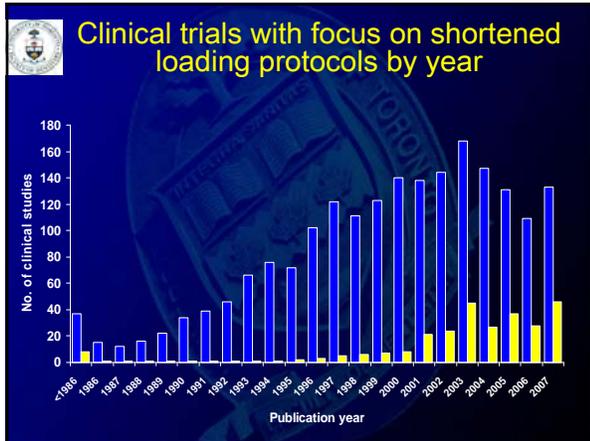
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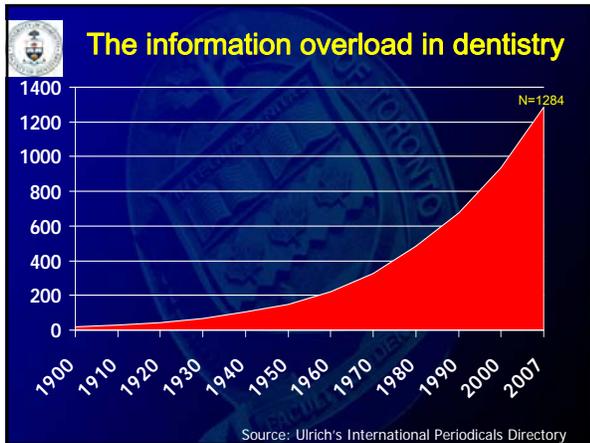
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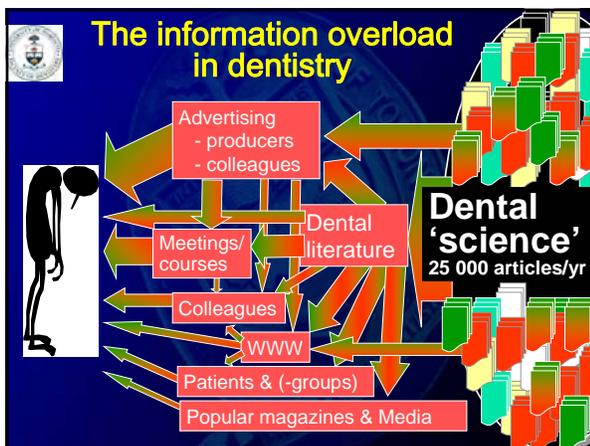
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## Solution?

Limit the reading to only Reviews?

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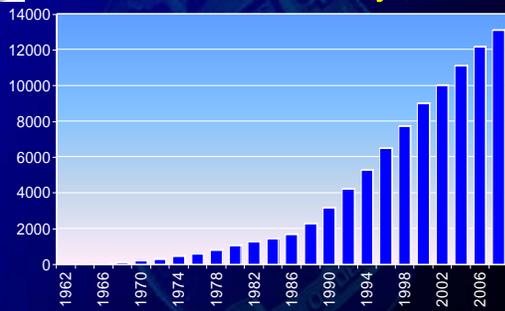
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## Reviews in Dentistry (n=13,187)



(Source: Medline. OVID search strategy: review.pt + exp dentistry)

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## Literature on shortened loading protocols (n~1000 papers)

Animal studies  
Case Reports  
Clinical trials  
Other



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## Reviews - problems

Usually:

- written by a single topic expert
- based on their understanding of the literature
- no methodology is given
- a broad based subject is addressed
- the conclusions and advises differ

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## Solution?

# Drop the narrative style and look for the Systematic Reviews (SRs)?

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Search PubMed for: **systematic review** OR **meta-analysis**

Display: Summary | Sort: | Save | Tail | Clip Add | Order

Page 5 of 1156 (1170 of 1171) | Page 2314 of 2315

**"Systematic reviews" appear in 1971, 1972 & 1973!?**

- 11566 [Lindner R, Carpenter WT Jr, Steiner JS.](#)  
Bipolar and schizoaffective patients: A comparative study.  
Am J Psychiatry. 1975 Dec;132(12):127-66.  
PMID: 1200169 [PubMed - indexed for MEDLINE]
- 11567 [Miller KH, Schacter JL, Broome JR, Mulsap D.](#)  
A new consideration in antibiotic response: The classical beta-lactam.  
Clin Orthop. 1975 Sep;111:151-69.  
PMID: 125636 [PubMed - indexed for MEDLINE]
- 11568 [Cobden P.](#)  
A systematic review of the genus *Pharodon* (Araucarioideae, Agkathales).  
Analoga. 1971 Nov;15(2):240-83. No abstract available.  
PMID: 4804091 [PubMed - indexed for MEDLINE]
- 11569 [Lowe J.](#)  
Autoblastic thiasis: a systematic review of thiasis, measures, and independent variables.  
Psychol Bull. 1972 Dec;78(6):497-74. Review. No abstract available.  
PMID: 456651 [PubMed - indexed for MEDLINE]
- 11570 [Smiler SW, Connel HC, Ester D.](#)  
Screening for mucopolysaccharidosis (mucopolysaccharidosis-C). Systematic review and results.  
Monatsschr Kinderheilkd. 1971 Dec;119(12):632-7. German. No abstract available.  
PMID: 4459244 [PubMed - indexed for MEDLINE]

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***"Systematic"  
review?***

**Is just a word!**

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***Systematic Review:***

**5 Qualifiers are  
required**

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**SR: 5 qualifiers**

1. Question or hypothesis
2. All publications on the topic
3. Valid criteria to include or exclude identified studies
4. Extracted relevant data combined and compared
5. Conclusions based solely on the extracted data and the presence or absence of supporting evidence

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## Systematic Reviews - problems

- The selection of studies to include in SRs will reflect conclusions
- The study methodology aspects will reflect conclusions
- Need to focus on studies with good methodological designs

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## 5 qualifiers required:

How effective is Guided Tissue Regeneration (GTR) when there is localized bone loss around teeth?




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## SR Conclusions: GTR attachment gain compared to open flap debridement

Laurell et al. *J Periodontol* 1998: 2.7 mm

- Uncontrolled and unblinded studies

Cortellini et al. *Periodontology* 2000 2000: 1.6 mm

- Unclear selection criteria for studies
- Inclusion of studies of short duration

Needleman et al. *Cochrane Review* 2001: 1.1 mm

- Randomised, controlled trials
- Trials only comparing GTR vs flap debridement
- Trials > 12 months
- Furcation involvements excluded

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In other words:  
Garbage in →  
Garbage out.

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Literature on shortened loading protocols (n~1000 papers)




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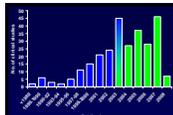
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Best Systematic Reviews on shortened loading protocols

- Esposito et al. 2007(2004). *Cochrane Syst Rev.*
- Jokstad & Carr. 2007. *Int J Oral Maxillofac Impl*
- Nkenke & Fenner. 2006. *Clin Oral Implants Res*
- Del Fabbro et al. 2006. *Int J Periodont Restor Dent*
- Attard & Zarb. 2005. *J Prosthet Dent*
- Cochran et al. 2004. *Int J Oral Maxillofac Impl*

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## Appropriate Study Designs to address implementation of interventions

	Qualitative research	Survey	Case Control	Cohort	RCT	Non-experimental	Systematic review
<b>Effectiveness:</b> Does it work?				☆	☆☆	☆	☆☆☆
<b>Process of intervention/delivery:</b> How does it work?	☆☆	☆				☆	☆☆☆
<b>Salience:</b> Does it matter?	☆☆	☆☆					☆☆☆
<b>Safety:</b> Will it do more good than harm?	☆		☆	☆	☆☆	☆	☆☆☆
<b>Acceptability:</b> Will the patient accept the intervention?	☆☆	☆			☆	☆	☆☆☆
<b>Cost effectiveness:</b> Is it worth paying for the intervention?					☆☆		☆☆☆
<b>Appropriateness:</b> Is this the right intervention for this patient?	☆☆	☆☆					☆☆
<b>Satisfaction with the intervention:</b> Are users, providers and other stakeholders satisfied?	☆☆	☆☆	☆	☆			☆

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**JOMI**  
The International Journal of ORAL & MAXILLOFACIAL IMPLANTS  
The Official Journal of the Academy of Osseointegration

State of Science ON IMPLANT DENTISTRY  
CONSENSUS CONFERENCE PROCEEDINGS

1882 → 187 → 22 papers

**SECTION 1**  
**What is the Effect on Outcomes of Time-to-Loading of a Fixed or Removable Prosthesis Placed on Implant(s)?**  
Richard Johnson, DDS, PhD, MSc, R. Dan Wible\*

**Abstract:** A systematic review of the available literature to assess the effects of time to loading of complete or maxillary arches. Methods: Evidence was sought through computerized searches of PubMed, Embase, Cochrane, and other sources. Studies were included if they reported on time to loading of complete or maxillary arches. Results: The review identified 10 studies that reported on time to loading of complete or maxillary arches. The general impression of the authors was that (1) the methodology of the studies was often poor and (2) the outcomes reported were inconsistent. Conclusions: The review identified 10 studies that reported on time to loading of complete or maxillary arches. The general impression of the authors was that (1) the methodology of the studies was often poor and (2) the outcomes reported were inconsistent.

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## Clinical variables with potential influence on treatment outcomes

- Patient inclusion and exclusion criteria (e.g. host factors, smoking, parafunction, bone type, etc.)
- State of dentition and intra-oral implant site



State of Science ON IMPLANT DENTISTRY  
CONSENSUS CONFERENCE PROCEEDINGS  
August 3-6, 2016  
DUNEDIN UNIVERSITY  
DUNEDIN

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### Clinical variables with potential influence on treatment outcomes

- Patient inclusion and exclusion criteria (e.g. host factors, smoking, parafunction, bone type, etc.)
- State of dentition and intra-oral implant site
- Number of implants to support a superstructure
- Nature of implant-supported superstructure
- Clinical procedures (e.g. stage of healing following extraction, site preparation, torque, etc.)
- Implant morphology (smooth, micrough, rough)
- Treatment outcome criteria
- Observation period

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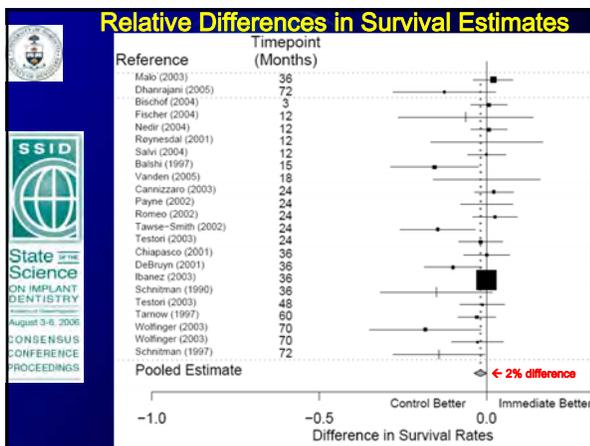
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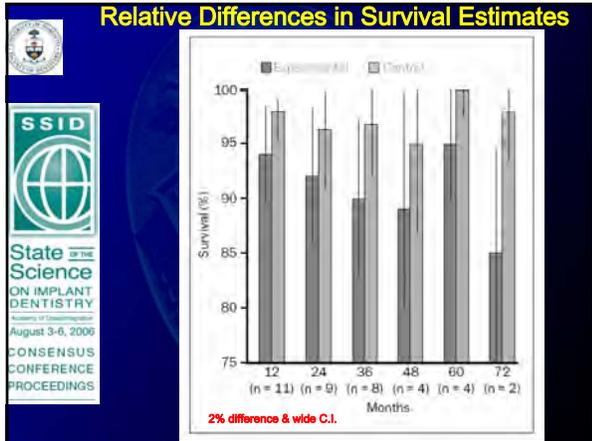
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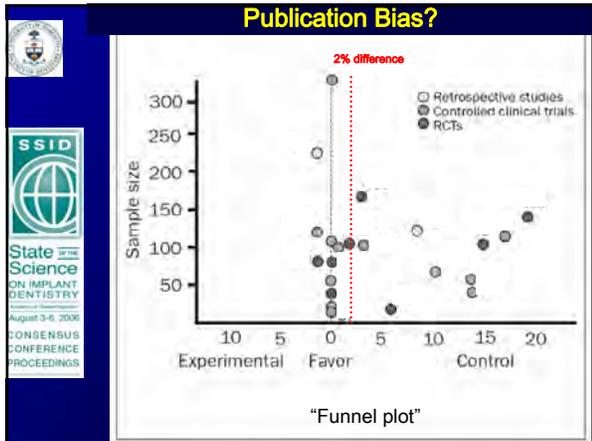
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*Thank you for your  
kind attention*

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