



# Peri-implantitis Risk Factors: a Prospective Evaluation

1036

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## Objectives

The aim of this work was to create a tool allowing an evaluation of peri-implantitis risk according its severity.

## Material and methods

After approval of ethics committee of Marseille University Hospital Institute under number 2016-011, 43 patients with at least one implant, randomly selected from the odontology department at "La Timone" Hospital in Marseille (France), signed consent and were included prospectively. Observations (n=45) were recorded. The following data were collected on each implant:

- number of faces showing bleeding and/or suppuration
- pocket depth on at least two implant faces
- bone loss as a function of implant length evaluated on X-rays
- parameters required for determination of excess cement (screwed or sealed prosthesis, burying of sealed prostheses)
- periodontal status
- glycemia
- annual consumption of tobacco
- number of faces with bacterial plaque

With Microsoft Excel® software, each of these parameters has been plotted on a radar chart. Results obtained made it possible to evaluate the risk specific to each patient.

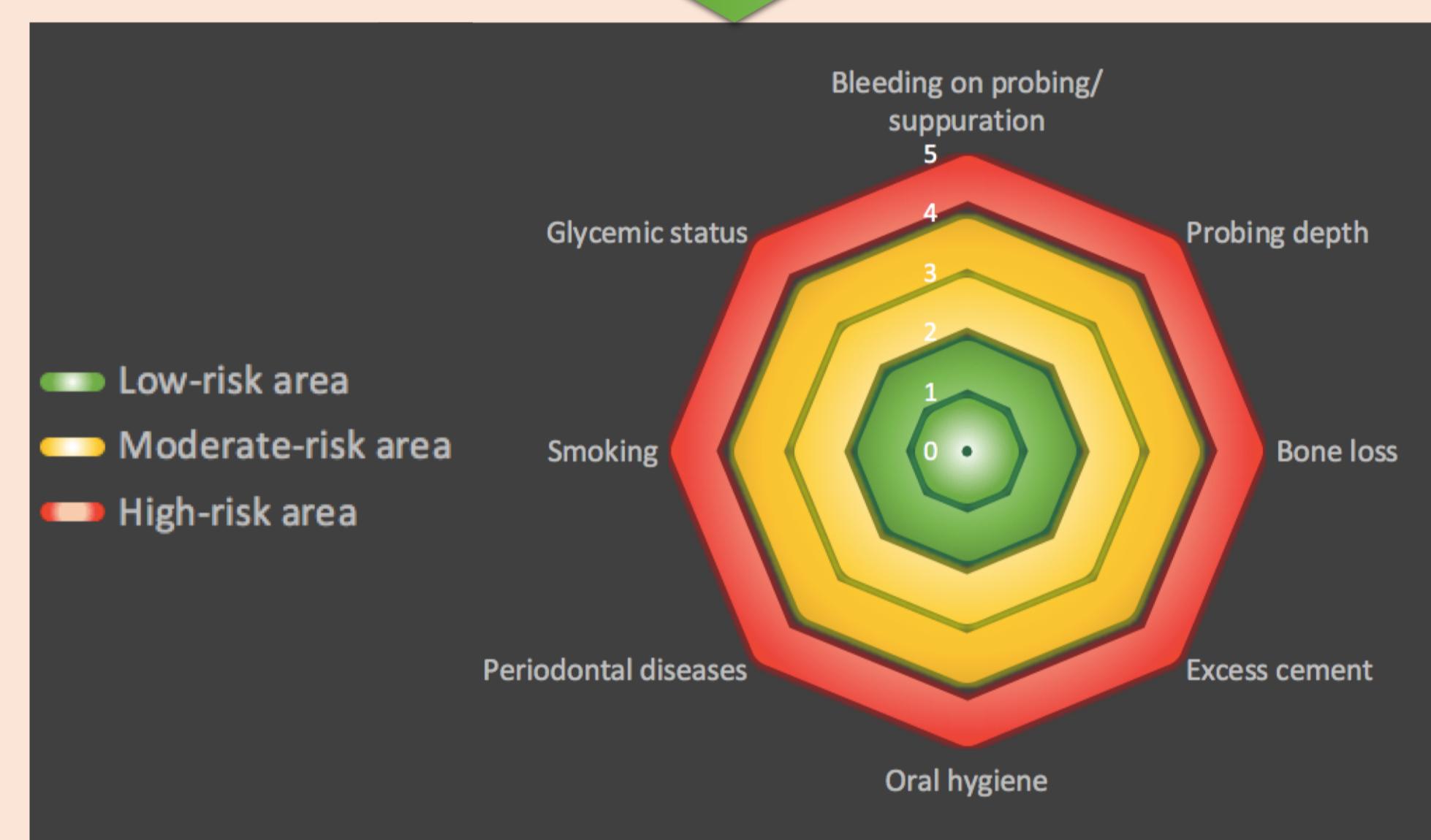
Axis score	Faces with bleeding on probing/presence of pus	Probing depth on at least 2 implant faces (mm)	Bone loss related to implant length (%)	Axis score	Prothesis Type
0	0	<4	<10	0	Screw-retained prosthesis
1	1	≥4	10-20	1	Cemented prosthesis with supragingival cervical margin
2	2	≥5	20-30	2	Cemented prosthesis with juxta gingival cervical margin
3	3	≥6	30-40	3	Cemented prosthesis with intra-sulcus margin <1 mm
4	4	≥7	40-50	4	Cemented prosthesis with intra-sulcus margin of 1-2 mm
5	5-6	≥8	>50	5	Cemented prosthesis with intra-sulcus margin >2 mm

Coding system for bleeding on probing and/or suppuration, probing depth, and bone loss

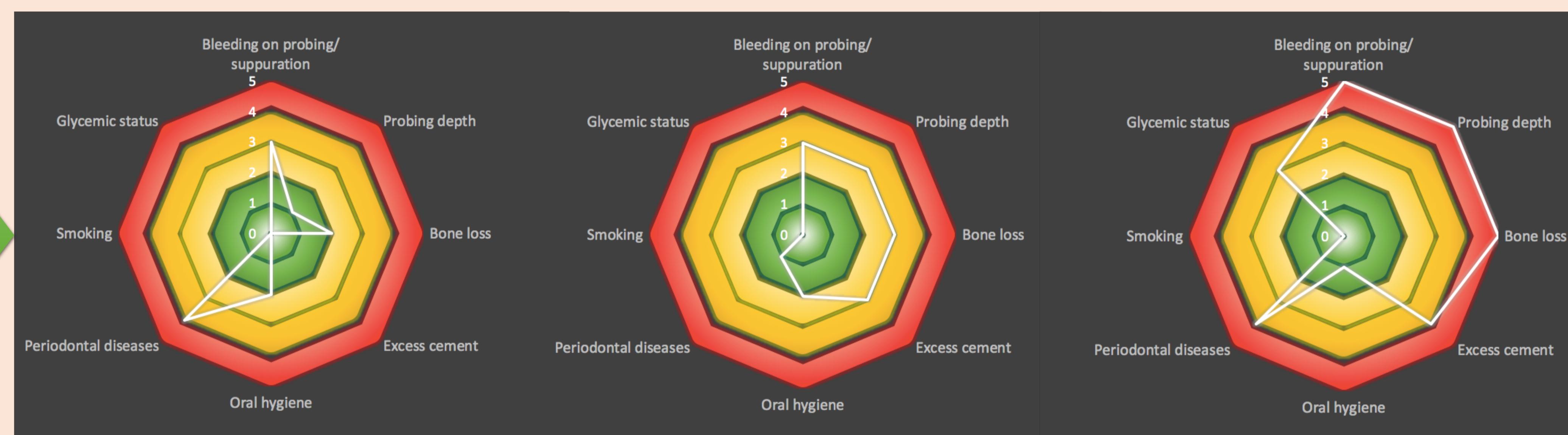
Coding system for excessive cement according to assembly means and cervical margin position

Axis Score	Periodontal status	Glycosylated hemoglobin A1c level (%)	Smoking (cigarettes/d)	No. implant faces with presence of plaque
0	Healthy periodontium	≤6	Non-smoker	0
1	Treated periodontitis	6, 1-7	Former smoker	1
2	Slight chronic periodontitis	7, 1-8	<10	2
3	Moderate chronic periodontitis	8, 1-9	10-19	3
4	Severe chronic periodontitis	9.1-10	20	4
5	Aggressive periodontitis	>10	>20	No accessibility to oral hygiene

Coding system for periodontal diseases, glycemic status, smoking, and oral hygiene



Proposed risk diagram divided in eight parameters on three separate risk areas



## Results

- 37,77% (17/45) of cases were identified with **high peri-implantitis risk**
- 24,44% (11/45) with **moderate risk**
- 4,44% (2/45) of cases with **low risk**
- 33,33% (15/45) patients did not have peri-implantitis and were considered at **very low risk**

## Conclusions

The observed results applied to the evaluation model are an effective diagnostic tool in assessing the peri-implantitis risk. The tool takes into account parameters, which have not been taken into account until now. The information is automatically processed and allows early management of peri-implantitis.

## References

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- Chandra RV. Evaluation of a novel periodontal risk assessment model in patients presenting for dental care. *Oral Health Prev Dent.* 2007;5(1):39-48.
- Lang NP, Tonetti MS. Periodontal risk assessment (PRA) for patients in supportive periodontal therapy (SPT). *Oral Health Prev Dent.* 2003;1(1):7-16.

## Special thanks



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Online diagnostic tool: <https://diagnostic-tool.pagesperso-orange.fr/>