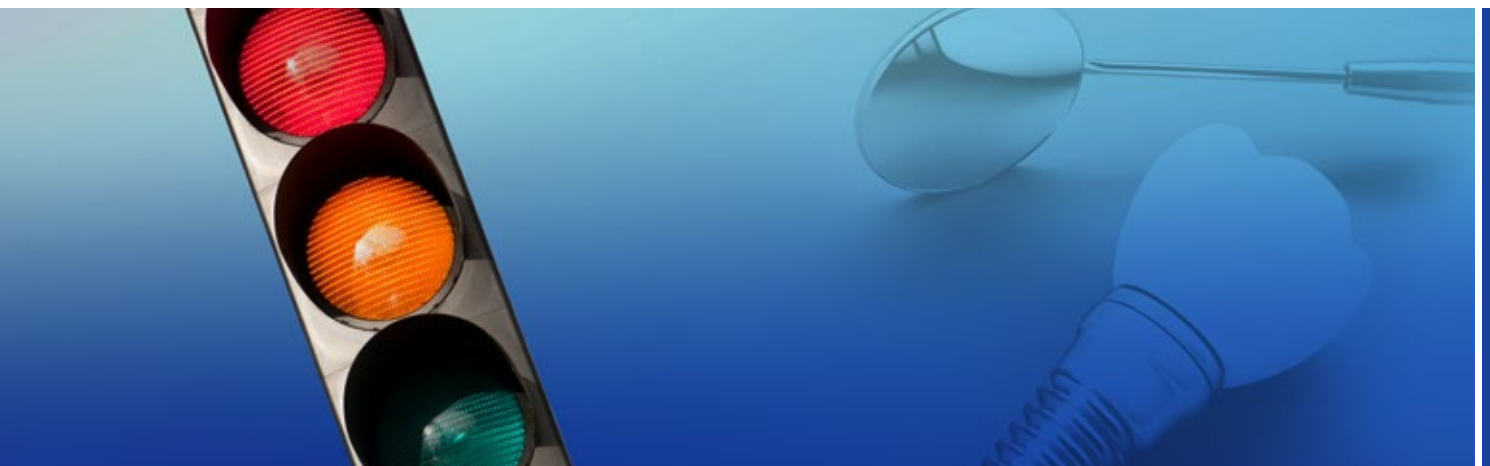




Bundesverband der implantologisch tätigen Zahnärzte in Europa e.V.
European Association of Dental Implantologists

Guideline 2022 Update Cologne ABC Risk Score for Implant Treatment

17th European Consensus Conference (EuCC)
26 April 2022



2022

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Content

1	Methods	Page 4
2	Practical application of the Cologne ABC Risk Score	Page 5
3	Partial scores (Medical history – Local findings – Surgical – Restorative)	Page 6
4	References	Page 10



Guideline 2022

Cologne ABC Risk Score for Implant Treatment (Update)

17th European Consensus Conference (EuCC) 2022

April 26, 2022

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1. Methods

1.1. Purpose

This updated Guideline was designed to help dental implantologists to assess, in advance, the individual complexity of a given implantological procedure, contributing to minimizing risks associated with implant therapy. It is an update of the 2007 Guideline.

1.2. Introduction

This consensus paper addresses the general aspects (i.e., those aspects not specific to a given implant design) of implant treatment to eliminate diagnostic and therapeutic uncertainties and to avoid complications.

All consensus recommendations in this paper should be considered as guidelines only. The patient's specific situation is always an important consideration and may justify a deviation from the recommendations of this consensus paper.

1.3. Background

Since the first elaboration of the Cologne ABC Risk Score, overall medical treatment concepts with a bearing on implant treatment have evolved. For this reason, Partial Score (Medical history) had to be revised extensively- The more strictly implantological partial scores 2 to 4 were revised according to reflect the current state of our knowledge.

1.4. Literature search

The Cochrane Library, EMBASE, DIMDI and Medline literature databases were used to conduct the search. The searching strategy included selected search terms specific to the corresponding fields and issues. The studies returned by the search were screened by reading the abstracts. Studies found to be irrelevant to the subject were identified and excluded on this basis.

All articles that were found to be (potentially) relevant were obtained in full-text form. Few if any randomized controlled trials (RCT) or other systematic clinical studies were available on the various topics.

1.5. Procedure for developing the Guideline/consensus paper

A first draft of the Cologne ABC Risk Score (authored by Professors Hans-Joachim Nickenig, Joachim E. Zöller and Jörg Neugebauer, Clinic and Policlinic for Maxillofacial and Plastic Surgery, Policlinic for Oral Surgery and Implantology, Plastic, Reconstructive and Aesthetic Surgery, University of Cologne, Director: Professor Joachim E. Zöller) was made available online to the members of the working group on the day of the consensus conference.

The agenda of the Consensus Conference consisted of four steps: Reviewing the preliminary draft; collecting alternative proposals; discussing non-consensual issues; final voting.



2. Practical application of the Cologne ABC Risk Score

2.1. Introduction

Descriptions in the literature are limited mainly to classifications or scores applicable only to partial aspects of implant therapy (e.g., classifications for indications). There are only few classifications intended to assess the overall risk involved with a potential implantological patient case (e.g., the SAC Classification).

The Cologne ABC Risk Score is intended to allow a professional assessment of an individual case with regard to medical history, local findings, surgical aspects and restorative aspects to be made simply and quickly and in a well-structured manner. Only a few scattered RCT on the subject matter of the partial scores were available at the time of the consensus conference. The studies that were available for review were mainly retrospective studies (evidence levels IIb/III), so the level of recommendation of these guidelines falls into class B (indicating “should”-type recommendations).

2.2. Principles of the Cologne ABC Risk Score (see enclosed form)

- Any evaluation or risk assessment using the Cologne ABC Risk Score is made specifically for an individual patient.
- The Cologne ABC Risk Score can be assessed only by the treating physician (or team of physicians).
- The Cologne ABC Risk Score is unsuitable for assessing risks based on patient records or diagnostic casts.

- The Cologne ABC Risk Score can be determined as a total score for overall findings (medical history and local findings) and treatment planning (surgical and restorative).
- Partial scores of the Cologne ABC Risk Score can be used if appropriate (e.g., for restorative aspects only, in the case of patient referrals).

2.3. Evaluation of the Cologne ABC Risk Score

Each of the partial scores of the Cologne ABC Risk Score should be assessed as completely as possible.

2.3.1. Criteria

- Each criterion or issue within a partial score receives its own appropriate rating, where green stands for A (Always, lowest assessed risk), yellow stands for B (Between, medium risk) and orange stands for C (Complex, high risk).
- Red is strictly reserved for situations where the risk profile indicates that treatment may not be recommended (which is not the same as a contraindication).

2.3.2. Partial scores

(Medical history – Local findings – Surgical – Restorative)

- Each partial score is given a summary rating, with the results – like the criteria – expressed in terms of the colours green, yellow and orange, corresponding to A, B and C (Always – Between – Complex).
- If two or more criteria for a partial score are assessed as yellow (for B, medium risk), the entire partial score is deemed to be B (yellow, medium risk). Four yellow or two orange criteria result in an overall partial score of C (orange, high risk).

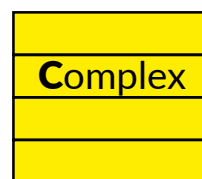
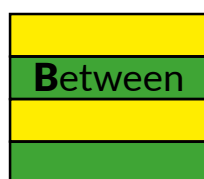
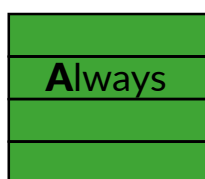
2.3.3. Overall assessment of a given patient case

If all four partial scores are green, the patient case as a whole is assessed as low-risk (A for Always).

If at least two of the four partial scores are yellow, the patient case is assessed as medium-risk (B for Between).

If all four partial scores are yellow, the patient case is assessed as high-risk (C for Complex).

The same is true if at least two of the four partial scores are orange or yellow.



Cologne, 7 May 2022

Prof Joachim E. Zöller
Vice President

Prof Jörg Neugebauer
Secretary General



PARTIAL SCORE 1: MEDICAL HISTORY


Health status	ASA classification [11]	ASA = 1, 2	Green
		ASA = 3	Yellow
		ASA ≥ 4	Orange
Pre-existing conditions	Diabetes mellitus [5, 15, 17, 18, 44, 45, 54, 55, 61, 78]	HbA1c < 6.5	Green
		HbA1c 6.5–7.5	Yellow
		HbA1c > 7.5	Orange
	irradiated jaw [18, 25, 62, 79, 88]	< 55 Gy	Yellow
		< 55 Gy: maxilla or augmented areas	Red
		> 55 Gy	Red
		in past 12 months	Red
	periodontal disease [6, 21, 28, 53, 72, 76, 87]	no evidence of periodontal disease	Green
		treated or history of periodontal disease	Yellow
		inadequate supportive periodontal therapy	Orange
untreated periodontal disease		Red	
Medications	no medication		Green
	anti-resorptive drugs (ARD) [7, 16, 40, 63, 67, 77, 81, 85]	lower dose, for osteoporosis (oral and systemic)	Green
		• low dose with bone augmentation, immediate implant placement	Yellow
		higher dose, for the prevention of osseous tumour-related complications	Yellow
		• higher dose with augmentation, immediate implant	Red
		high dose, > 4 × yearly for the treatment of osseous	Orange
		• high dose with bone augmentation, immediate implant placement	Red
		ARD and other infection risks (e.g., periodontal disease)	Red
		ARD and drug-related cofactors (e.g.,	Red
	Immunosuppression [32, 33, 68]	low dose steroid therapy	Yellow
		cytotoxic medication	Orange
	anticoagulation	prophylactic	Green
therapeutic		Yellow	
proton pump inhibitors [1, 4, 27]		Yellow	

KEY TO COLOURS

 Small risk

 Medium risk








 High risk

 Therapy not recommended (no all)




















KEY TO COLOURS

	Small risk		Medium risk		High risk		Therapy not recommended (no all)
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PARTIAL SCORE 1: MEDICAL HISTORY

Smoking [18, 24, 59]	non-smoker		
	mild smoking habit	< 10 cigarettes per day	
	severe smoking habit	≥ 10 cigarettes per day	
Bruxism [10, 22, 26, 49–51, 89]	no		
	yes		
Patient expectations [86]	appropriate		
	over-demanding		

PARTIAL SCORE 2: LOCAL FINDINGS

Aesthetic risk factors	outside the aesthetic zone		
	smile line [83]	low	
		medium	
		high	
Soft tissue	attached gingiva [14, 56]	adequate	
		inadequate	
	periodontal biotype [3, 35, 43, 46, 75]	thick biotype	
		thin biotype	
	previous surgeries/scar tissue		
Cologne Classification of Alveolar Ridge Defects (CCARD)	no or small defect		
	horizontal, > 4 mm		
	vertical or combined, > 4 mm		
	outside the alveolar ridge		
Jaw position	regular		
	unfavourable		
Periapical lesions, pathologies of adjacent teeth [31, 66, 69]	no		
	present		
Oral hygiene [29]	adequate		
	inadequate		



PARTIAL SCORE 3: SURGICAL

Anatomical risks [38, 80]	none		Green
	close proximity to adjacent structures (nerves, roots, papillae, etc.)		Yellow
Healing period after tooth loss [9, 19, 23, 37]	late implant placement		Green
	early or delayed implant placement		Green
	immediate implant placement		Yellow
Loading after insertion [13, 20, 37, 73]	conventional healing (at least 8 weeks)		Green
	early loading (within 4 to 8 weeks)		Green
	early restoration/loading (within 72 hours)		Yellow
Augmentation techniques [2, 57]	Cologne Classification of Alveolar Ridge Defects (CCARD)	no augmentation required	Green
		horizontal, > 4 mm	Yellow
		vertical or combined, > 4 mm	Orange
		outside the alveolar ridge	Orange
	sinus floor elevation [34, 48, 60]	with septae	Yellow
		internal sinus lift with < 2 mm residual bone height	Orange

PARTIAL SCORE 4: RESTORATIVE

Biomechanics [39]	no biomechanical problems expected		Green
	implant/tooth connection [12, 42, 47, 82, 84]	rigid	Yellow
		mobile	Orange
	extension required [36, 70, 71, 74]		Yellow
	unfavourable load distribution [65] (crown-to-implant ratio/single-tooth restoration)		Yellow
	non-matching implant diameter [52]		Orange
	need for repair, superstructure revision		Yellow
	multiple implant systems in same restoration		Orange
Aesthetics [41, 52, 58]	adjacent tooth situation	tooth	Green
		pontic	Yellow
		implant	Orange
Type of restoration [39, 52, 64]	number and distribution of implants	adequate	Green
		not adequate	Orange
	fixed restoration	cross-arch fixed restoration	Orange
	removable	bridge design	Orange
Complexity exceeding patient capabilities [64, 86]	handling or cleansability	favourable	Green
		difficult or impossible	Red

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