

AAOM Clinical Practice Statement



Subject: Risk Assessment

The AAOM affirms that the patient evaluation process requires inclusion of determination of risk associated with dental treatment. Risk assessment is essential for the delivery of safe and appropriate dental care as well as the overall health of the patient.

This Clinical Practice Statement was developed as an educational tool based on expert consensus of the American Academy of Oral Medicine (AAOM) leadership. Readers are encouraged to consider the recommendations in the context of their specific clinical situation, and consult, when appropriate, other sources of clinical, scientific, or regulatory information before making a treatment decision.

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PURPOSE

The AAOM affirms that the patient evaluation process requires inclusion of determination of risk associated with dental treatment. Risk assessment is essential for the delivery of safe and appropriate dental care and for the overall health of the patient.

METHODS

This statement is based on a review of the current dental and medical literature related to the importance of risk assessment with respect to dental treatment. A MEDLINE search was conducted using the terms “medical risk,” “risk assessment,” “surgery,” “invasive,” “procedure,” “medical history,” and “dentistry.” Expert opinions and best current practices were relied upon when clinical evidence was not available.

BACKGROUND

Patient evaluation is an important component of dental treatment and includes assessment of the type and likelihood of the risk involved in the performance of

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dental procedures.¹⁻³ Every dentist is responsible for the proper evaluation and risk assessment of his or her patients. This assessment should be age appropriate for patients of all age groups, ranging from the infant to the geriatric patient. This is increasingly important in an aging population that has numerous medical conditions impacting the health of the patient and the delivery of safe and effective dental care.⁴⁻⁶ The importance also increases as the level of intervention and the complexity of dental care increase.^{7,8}

Evaluation of the patient includes acquisition of information from the medical history, including psychosocial, developmental, and behavioral histories, review of medications, clinical examination findings, measurement of vital signs, review of radiographs and images, laboratory (e.g., complete blood count, hepatic and renal function tests, bleeding indices) and diagnostic tests, and medical consultations, when needed. A structured diagnostic sequence is advocated to help prevent omission of important information that would contribute to the delivery of safe and effective dental care.^{9,10}

The clinical examination should be thorough and include general assessment of physical appearance and mobility, evaluation of the skin, head and neck examination, intraoral examination, assessment of behavioral response, and evaluations that address the chief complaint. Intraoral assessments should include visual inspection and digital palpation of the oral soft and hard tissues, use of the periodontal probe for periodontal assessment, and, if age-appropriate, clinical evaluation of salivary flow, appearance, and consistency. A complete clinical oral examination should be performed to evaluate the patient for oral lesions, with attention to premalignant and malignant oral lesions. Patients should be informed that they have received such a screening examination.^{11,12} Radiographic examinations should be based on clinical examination findings, the chief complaint, and current recommended guidelines.¹³ Information obtained from the radiographic and clinical examinations should identify normal and abnormal findings and should be documented in the patient’s record in a timely, complete, and accurate manner.

Risk assessment involves consideration for the preoperative, intraoperative, and postoperative periods and

Table I. American Society of Anesthesiologists (ASA) Physical Status Classification System

ASA I	Normal healthy patient.
ASA II	Patient with mild systemic disease. No significant impact on daily activity; unlikely to have an impact on anesthesia and surgery.
ASA III	Patient with significant or severe systemic disease that impacts daily activity; probable impact on anesthesia and surgery.
ASA IV	Patient with severe systemic disease that is a constant threat to life. Serious limitation on daily activity; major impact on anesthesia and surgery.
ASA V	A moribund patient who is not expected to survive without the operation.
ASA VI	A declared brain-dead patient whose organs are being removed for donor purposes.

Note: ASA V and VI are not typically evaluated in a dental setting.

broadly includes the patient's susceptibility to infection, poor healing, bleeding, medication interactions, and physical and emotional ability to tolerate dental treatment. Standard medical classification schemes can be used to provide an indication of the relative severity of a patient's systemic disease (e.g., angina, heart failure, asthma, chronic kidney disease). The number and type of medications, laboratory results, and visits to the hospital/physician also provide important diagnostic information. The American Society of Anesthesiologists physical classification system is one method for establishing a global assessment of medical status (see Table I).¹⁴ As illustrated in this table, a general assessment of risk is provided with respect to the administration of anesthesia, level of consciousness, and the performance of surgery. This can be an initial tool for the dentist to use in assessing patient risk of complications during an invasive procedure.

Clinicians should be aware that the information in Table I is only intended to be a guide and may vary among practitioner assessments.¹⁵ In addition, the categorization may vary in utility with respect to the practice of dentistry, as many dental procedures do not involve general anesthesia or the performance of surgery. Instead, risks of dental care often involve the following:

1. Patient-based considerations:
 - Potential for behavior, cognitive, or emotional issues
 - Potential for bleeding
 - Potential for infections
 - Potential for poor wound healing
 - Potential for airway obstruction
 - Potential for complications (e.g., bony pathology, trismus)
 - Functional reserve
 - Potential for medical emergencies
2. Treatment-based considerations:
 - Patient age

- Chair position
- Use of drugs (e.g., antibiotics, anesthetics, and/or analgesics)
- Drug interactions and adverse effects
- Invasiveness of procedure
- Duration of the procedure
- Potential for medical emergencies

As evident from this list, Table I does not address several factors that can impact the outcome of dental care performed on an outpatient or inpatient basis. It is therefore recommended that the clinician routinely determine individual patient-related issues that contribute to risk before initiating care. These risk assessments allow clinicians to identify, in a timely manner, significant diseases in patients and ensure that the necessary precautions, actions, or modifications are implemented to prevent, or reduce the risk of, complications arising from the delivery of dental treatment. Accordingly, these modifications can prevent exacerbation of a patient's condition and the development of adverse outcomes, operatively and postoperatively. In summary, a thorough medical history, physical evaluation, and risk assessment provide insight into how best to deliver safe and effective dental care. Medical consultation with the patient's physician may be necessary to develop a risk evaluation most effectively.

POLICY STATEMENT

1. The AAOM recognizes that:
 - A. physical evaluation and risk assessment is a key component of dental care.
 - B. the collective information derived from the patient interview, medical history, list of medications, clinical examination, review of diagnostic tests, imaging, and medical consultation contribute to proper risk assessment and help to determine if the patient can be treated safely and effectively in the dental environment.
2. The AAOM recognizes that:
 - A. risk assessment should be performed on all dental patients.
 - B. risk assessment should be individualized for each patient.
3. The AAOM recognizes that:
 - A. risk assessment involves evaluation of the patient in light of the patient's physical status and medical health, as well as the type and extent of the planned dental procedures.
 - B. in general, nonsurgical dental procedures carry less risk compared with invasive, surgical, and traumatic procedures.

4. The AAOM recognizes that:
 - A. The assessment of factors relative to the patient's medical health includes:
 - 1) patient age, weight, and vital signs
 - 2) type of condition
 - 3) severity of condition
 - 4) control and stability of condition
 - 5) functional capacity and tolerance
 - 6) emotional status
 - B. the assessment of dental factors includes:
 - 1) invasiveness, trauma, and anticipated intra-operative and postoperative discomfort caused by the procedure
 - 2) bleeding associated with the procedure
 - 3) duration of the procedure
 - 4) drugs administered before, during, and after the procedure.
5. The AAOM recognizes that:
 - A. the dental record should document a thoughtful consideration of the medical issues and that functional and emotional tolerance of the patient should be ensured in the context of the dental procedures performed. This includes informed consent (i.e., the patient was informed that the benefits of having dental treatment outweighed the potential risks).
 - B. in cases, where the clinician determines that the risk of dental treatment outweighs the benefit to the patient, deferral/referral of care or provision of medications can be viable options.
6. The AAOM recognizes that:
 - A. dental treatment should be modified when the medical condition dictates that the benefit of such modification outweighs other options.
 - B. incomplete information regarding risk assessment can be a reason for deferral of care.
 - C. consultation with the patient's physician may be necessary to perform a proper risk evaluation before the provision of dental care.

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REFERENCES

1. Little JW, Falace DA, Miller CS, Rhodus NL, eds. *Little and Falace's Dental Management of the Medically Compromised Patient*. 8th ed. St. Louis, MO: Mosby; 2013:2-18.
2. Ireland RS, Bowyer V, Ireland A, Sutcliffe P. The medical and dental attendance pattern of patients attending general dental practices in Warwickshire and their general health risk assessment. *Br Dent J*. 2012;212:E12.
3. Beckber DE. Preoperative medical evaluation: Part 1: general principles and cardiovascular considerations. *Anesth Prog*. 2009;56:92-102.
4. Dhanuthai K, Sappayatosok K, Bijaphala P, Kulvitit S, Sereerat T. Prevalence of medically compromised conditions in dental patients. *Med Oral Patol Oral Cir Bucal*. 2009;14:E287-E291.
5. Almas K, Awartani FA. Prevalence of medically compromised patients referred for periodontal treatment to a teaching hospital in Central Saudi Arabia. *Saudi Med J*. 2003;24:1242-1245.
6. Georgiou TO, Marshall RI, Bartold PM. Prevalence of systemic diseases in Brisbane general and periodontal practice patients. *Aust Dent J*. 2004;49:177-184.
7. Petranker S, Nikoyan L, Ogle OE. Preoperative evaluation of the surgical patient. *Dent Clin North Am*. 2012;56:163-181.
8. Valerin MA, Napeñas JJ, Brennan MT, Fox PC, Lockhart PB. Modified Child-Pugh score as a marker for postoperative bleeding from invasive dental procedures. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod*. 2007;104:56-60.
9. Zadik Y, Abu-Tair J, Yarom N, Zaharia B, Elad S. The importance of a thorough medical and pharmacological history before dental implant placement. *Aust Dent J*. 2012;57:388-392.
10. Shampaine GS. Patient assessment and preventive measures for medical emergencies in the dental office. *Dent Clin North Am*. 1999;43:383-400.
11. Sciubba JJ. Oral cancer and its detection. History-taking and the diagnostic phase of management. *J Am Dent Assoc*. 2001;132:12S-18S.
12. Wiener RC, Wu B, Crout R, et al. Hyposalivation and xerostomia in dentate older adults. *J Am Dent Assoc*. 2010;141:279-284.
13. American Dental Association, Council on Scientific Affairs, U.S. Department of Health and Human Services, Public Health Service Food and Drug Administration. Dental radiographic examinations: Recommendations for patient selection and limiting radiation exposure. Revised 2012. Available at: http://www.ada.org/~media/ADA/Member%20Center/Files/Dental_Radiographic_Examinations_2012.ashx. Accessed February 2, 2016.
14. Stoelting RK, Miller RD, eds. *Basics of Anesthesia*. 3rd ed. New York: Churchill Livingstone; 1994:108.
15. Haynes SR, Lawler PG. An assessment of the consistency of ASA physical status classification allocation. *Anaesthesia*. 1995;50:195-199.