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Practitioners' guide to improving online searching and critical review of literature for clinical queries

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Abstract

Research investigates ideas and uncovers useful knowledge. Research can be corrupted with propaganda or bias, both of which lead to misrepresentation of information. This is harmful to health-care providers who unknowingly incorporate corrupt information into clinical practice. This course will provide helpful guidelines for evaluating research to determine its quality level and provide tools to perform quality searches and synthesize information to transform evidence-based research into clinical practice.

Educational objectives

At the conclusion of this course, participants will be able to:

1. Identify quality studies based on design parameters.
2. Interpret and critically analyze research and become a more informed consumer of information.
3. Differentiate between study designs to determine which ones yield more valid and reliable information.
4. Perform quality online searches to access credible information through appropriate search engines.



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Introduction

Dentistry’s clinical practice guidelines are derived from the application of evidence-based dentistry (EBD). EBD evolved from evidence-based medicine and is a systematic method for evaluating published research.¹ EBD increases optimal patient care by reducing variation in treatment approaches in the profession and forms the dental professional’s decision-making.¹ The American Dental Association (ADA) defines EBD as “an approach to oral healthcare that requires the judicious integration of systematic assessments of clinically relevant scientific evidence, relating to the patient’s oral and medical condition and history, with the dentist’s clinical expertise and the patient’s treatment needs and preferences.”²

The US total investment in health research has increased tenfold since 1970 to \$6,585 million.³ This strong financial investment has created a rapid growth in publications available for access. In 1989, the World Wide Web was created, and since then has revolutionized people’s access to that information. With increased access to publications and the vast number of publications available, health-care providers are now able to access literature within seconds when they have a clinical query. There can be a drawback to this instantaneous access of information because not all search results yield credible and valid reports. It has become the provider’s burden to know how to critically evaluate research publications. This course will explore quality research and arm the dental professional with tools that are easy to use and apply to derive and interpret credible literature.

Quality of studies

It is important for health-care providers to recognize quality studies versus studies that have allowed bias and propaganda to enter their methodology. Quality studies will use good judgment and honesty throughout. They will begin with a well-defined question, otherwise known as a hypothesis, that is linked to broader issues. That research question will be formulated after a thorough review of existing literature.

In health-care research, the hypothesis is typically stated in the null.^{3,4} A null hypothesis claims that any differences in outcomes is due to chance and that the independent

Table 1: Ways bias can infiltrate research

Hypothesis	Readers should be concerned with the credibility of research when a hypothesis is: <ul style="list-style-type: none"> • Vague • Absent • Not the starting point of the scientific process, but instead researchers start with a conclusion in mind⁵
Sampling	Appropriate sampling ensures results can be generalized to the population as a whole. The likelihood of bias increases in the following sampling situations ^{3,5} <ul style="list-style-type: none"> • Inadequate sample size • No description of sample groups • Lack of randomization • Convenience sampling • Selecting participants who will support a conclusion instead of random sampling The grouping of participants should be randomized. Bias is introduced when participants are assigned into groups based on a particular trait and/or circumstance and when a control group is absent.
Review of literature, references, and citations	Bias probability increases when authors present no alternative perspectives, and differing perspectives are ignored or ridiculed. ⁵ An inadequate literature review allows for misrepresentation of the conceptual basis for the research. ³ Lack of credible references, such as using references only from special interest groups that stand to gain financially from conclusions, should be a red flag for readers. ⁵
Research strategy	Bias probability increases if a research report uses inappropriate variables or does not control for, or report, confounding extraneous variables. ^{3,8} Confounding variables are other factors in a study that can influence outcomes. As a hypothetical example, consider the use of an electric toothbrush used twice daily versus a manual toothbrush used twice daily for a group of patients who just completed nonsurgical periodontal therapy. The aim is to see if the electric toothbrush group has decreased plaque biofilm accumulation and thereby improved periodontal health compared to those using a manual toothbrush. All patients were given the same home-care instructions and those who used tobacco products were encouraged to quit. At the conclusion of the study, researchers observed both groups had improved periodontal health and it was determined that toothbrush selection did not play a part in improved outcomes. Consider the plausible alternative explanations for the observed result: <ol style="list-style-type: none"> 1. The improvement may have been due to other factors, such as the cessation of smoking among the patients. 2. The improvement may have been in the natural recovery from nonsurgical therapy. 3. The improvement may have been due to a placebo effect, such as the patient’s expectations of the potential benefits of the intervention. All three of these alternatives demonstrate the influence of confounding extraneous variables. All were present at the same time as the intervention, and may have produced the observed effects, resulting in ambiguity of observed participant changes. Concern should exist if the general research strategy and tone of the writing are used to persuade rather than inform the reader. ⁵
Data	When a study only presents statistics and analysis that support a desired outcome, is not repeatable, or unavailable for review by others, readers should be critical. ⁵ Bias is likely when inappropriate statistics are used to describe and analyze data or when erroneous calculations of statistics exist. ³
Results	If a study only presents factoids that support a preconceived conclusion, or conclusions are based on faulty logic, bias is present. ⁵ Any manipulation or misrepresentation of information to support conclusions is not ethical and will lead the reader to draw incorrect inferences from the data. ^{3,8} Overgeneralization of findings or lack of comparison to other published literature should be another red flag. ³

variable made no difference.^{3,4} It implies no effect or relationship between phenomena and is the statement researchers set out to disprove. An example hypothesis might read like this: “There is no difference in treatment outcomes when a dental laser is used in conjunction with scaling and root planing (SRP) versus SRP alone.”

In quality studies, researchers desire to determine what is overall true, regardless of the conclusions of the study, and present conclusions cautiously with a discussion of the implications of their findings.⁵ They avoid exaggerated claims and demand

multiple types of evidence to reach a conclusion.⁵ They offer alternative perspectives and discuss critical assumptions that are contrary to their findings or opinions.^{3,5} They will acknowledge errors, limitations, and contradictions of the study.⁵

Validity and reliability are also important to quality data collection efforts because they strengthen the results obtained and increase the likelihood that the scientific community will be accepting of the results. When a study has a high degree of validity, it increases trustworthiness and believability of the results, which can then be generalized

to the population as a whole.^{6,7} Reliability refers to the results obtained being repeatable and consistent. Reliable studies allow for the same results to occur no matter who conducts the study.³ When a study is reliable, it fulfills the requirements for testability and strengthens the results.⁷ Without high validity and reliability, the study has increased probability of error, bias, or propaganda.³

Bias can enter into research in multiple ways. According to Polgar and Thomas, “Bias represents the conscious or unconscious ways in which researchers influence participation and the research process, resulting in the distortions of the results and drawing erroneous conclusions about the implications of the research project.”³ Table 1 presents ways in which bias can infiltrate research and points out aspects of each step in the scientific process where credibility is challenged.

Guidelines for critical appraisal

Providers owe it to their patients to be cautious and critical concerning research they plan to implement into clinical practice. However, this does not mean being cynical or derogatory toward the work of researchers. The conduct of critical critique requires that providers compare the methods used in the research with the rules of evidence in the content of a research project.

Readers should demand accountability (who said that and why was it said?) and require high credibility and evidence from sources. Consider the ideology, credibility, and financial interests of authors. Just because there is a vested financial interest does not immediately discredit the research. Readers need to ensure that both sides of a perspective are given and not just the side of the vested financial entity.⁵

Clinicians need to avoid jumping to conclusions from reading one piece of literature. They should pull multiple resources and inquire about alternative perspectives to compare and contrast information before implementing changes to clinical practice. Being a lifelong learner is imperative to stay abreast of changing technology, clinical practice guidelines, and interventions. Dental boards believe in lifelong learning as evidenced by the strong requirements for continuing education and training for license renewal.

Table 2: Format of research publications and process

Title	States the topics of the report.
Abstract	Provides the reader with a short overview of the report.
Introduction	<p>Introductions should state the hypothesis clearly. The hypothesis is very important because it guides the research project in producing evidence required to answer the question.³</p> <p>The research planning process is presented along with a review of the literature that summarizes knowledge of previous research relevant to the topic. A comprehensive introduction will also list the number of online search engines used and how many publications were found. Criteria used for acceptance or elimination of literature in the review should be listed.</p>
Methods and materials	<p>The methods and materials section will describe the research design in detail. The number of participants and how they were sampled and grouped will be provided. A small number of participants decreases the power of the results.³</p> <p>This section will also discuss the measurement apparatus and tools used, such as questionnaires or standardized tests. The tools must be adequate for proper data collection.</p> <p>Methods and materials will describe how data was collected and provide details of experimental procedures. A full description is needed for replication and to prove validity.³ All treatments and interventions used in the control and experimental groups should be laid out.</p>
Results	<p>The results section will present all the findings of the investigation. The data that was used or rejected will be clearly stated. This is especially important in health-care research when concepts are often abstract and patient-provider communication is subjective with varied reporting parameters.^{4,7} Data should be laid out in graphs or tables. If this is absent, readers should be wary of misinterpretation of findings.⁵</p> <p>The results section will also define the confidence intervals used. These tools are essential for evaluating the clinical significance of the results.⁹ It is important to note that just because statistical significance is reported does not indicate clinical significance or applicability.⁹ Just because something is statistically significant does not mean it must be superior to other treatment modalities. Confidence intervals are defined by alpha (α) levels and p-values.</p> <p>Alpha levels set the decision or significance level that indicates when the null hypothesis can/should be rejected. Typically, in health-care research, alpha is set to 0.05.^{3,9} If the null hypothesis being true is LESS than 0.05α, then the hypothesis should be rejected and it is assumed the variable being tested changed the outcome. Let’s use the hypothesis example earlier: “There is no difference in treatment outcomes when a dental laser is used in conjunction with SRP versus SRP alone.” If this statement were proven to be LESS than alpha, then there is a 95% likelihood the laser caused a better outcome than compared to SRP without the laser, and it is only 5% likely the results are due to chance. Thus, the null hypothesis is rejected, and it is accepted that using dental lasers with SRP produces superior results than SRP alone.</p> <p>P-values define the probability of the null hypothesis being true.^{9,10} Probability is expressed between zero (0) and one (1). Zero indicates the event is unlikely to occur and 1 indicates the event is certain to occur.³ If the p-value outcome of the research is equal to or less than alpha ($p \leq \alpha$), then the null hypothesis can be rejected with confidence. Simply stated, the laser did cause a better outcome than SRP alone, and these results can be applied to the population as a whole.</p> <p>Lastly, the results section will lay out the statistical analysis used to interpret findings through descriptive and/or inferential statistics. Descriptive statistics are used to describe and summarize data through dispersion (range, average deviation, variance, standard deviation); distribution (z-scores, bell curves); or methods of central tendency (mean, median, mode).³ These types of measurements will determine how much variation exists in data and how that data correlates to one another. It can demonstrate the relationship between variables to prove the validity and reliability of research outcomes.³</p> <p>Inferential statistics are used to analyze research findings when testing a hypothesis and trying to determine causality.^{3,4} Statistics can infer research findings from the sample population to the population as a whole. They can provide evidence of causality through parametric (T-test, ANOVA, MANOVA, ANCOVA, F-ratio) and nonparametric tests (chi-square, F-test).^{3,4}</p> <p>Quality research does not assume association proves causation. Correlations are essential statistics in the health sciences because they help predict clinical outcomes. Establishing correlation does NOT establish causality.^{3,4} To prove causality, the cause must precede (occur before) the effect. It must also covary (when it increases/decreases, so does the effect), and if the cause does not occur, then the effect does not occur.³ For example, uncontrolled diabetes has a correlative relationship with periodontal disease, but not a causative relationship. People can have periodontal disease and not have diabetes and vice versa.</p>
Discussion	The discussion section provides the interpretation of the data. It will restate the hypothesis and aim of the study and connect results with findings in similar studies. It presents logical links between results and conclusions and does not exaggerate implications. ⁵ The analysis limitations, unexpected results, and cautions should be laid out with transparency.
Conclusion	The conclusion will summarize the main findings and make suggestions for future research.
References	References need to be adequate in number, but more importantly, be from credible resources such as reputable journals, organizations, or textbooks.
Appendix	The appendix will provide a full description of questionnaires, measuring instruments, raw data, and statistical calculations.

The format of research publications and the research process are listed in Table 2 along with what should be presented in each section for high-quality reports. If sections are missing from publications, the reader should question the validity and reliability of the report.

Being familiar with—and understanding the criteria of—research reports will arm the dental professional with the skills needed to review literature with a critical eye.

Types of studies

Health-care research should be systematic (follow a sequential process); principled (research carried out according to explicit rules); and methodical (critical discussions, comparison, application of methods).¹¹ There is an established hierarchy of evidence, with systematic reviews and randomized controlled trials at the top, followed by single randomized controlled trials, trials without randomization, and nonexperimental studies and opinions from respected authorities at the bottom.^{1,3} (Figure 1) The top two levels focus on reviews and the criteria listed below.

Systematic reviews present scientific methodologies that are intended to identify and interpret relevant literature surrounding a clinical question with the goal of reducing bias.^{3,5,12} Cochrane Reviews have the highest level of reliability and validity because those studies use strong controls, such as using at least two search engines for literature reviews and quantifying data through statistical analysis.^{3,5}

Randomized controlled trials (RCTs)

RCTs employ experimental designs that are applied to evaluate the efficacy of interventions by controlling bias and confounding variables.³ The strengths of RCTs lie in their ability to demonstrate if an intervention has correlation and causality through quantitative statistical analysis, and to decrease bias through randomization, thus improving validity and reliability.³

Peer review is an integral aspect of scholarly research and assists in preventing

Table 3: Search engines and resources for health-care providers	
Medline	Most used health-care database ¹ Managed by the National Library of Medicine Uses open internet search engines (Google Scholar, PubMed) and closed/commercial engines (Scopus, ProQuest, EBSCO, OVID) https://www.nlm.nih.gov/bsd/medline.html
PubMed	Version of Medline Recommended in US for health inquiries ¹ Free access in US https://www.ncbi.nlm.nih.gov/pubmed/
CINAHL	Cumulative Index to Nursing and Allied Health Literature https://www.ebscohost.com/nursing/products/cinahl-databases/cinahl-complete
Cochrane Library	Leading source for systematic reviews on a broad range of topics Unbiased health information Collection of databases containing high-quality, independent evidence to influence health-care decision-making ³ https://www.cochranelibrary.com/
Embase	Biomedical and pharmacological bibliographic database of published literature https://www.elsevier.com/solutions/embase-biomedical-research/embase-coverage-and-content
ADA's EBD website	American Dental Association's evidence-based dentistry site According to the ADA website, "The Center for Evidence-Based Dentistry operates under the advisement of the ADA Council on Scientific Affairs to develop resources that help dentists integrate clinically relevant scientific evidence at the point of care." ² https://ebd.ada.org/en
NIDCR	National Institute of Dental and Craniofacial Research https://www.nidcr.nih.gov/
NIH	National Institutes of Health https://www.nih.gov/

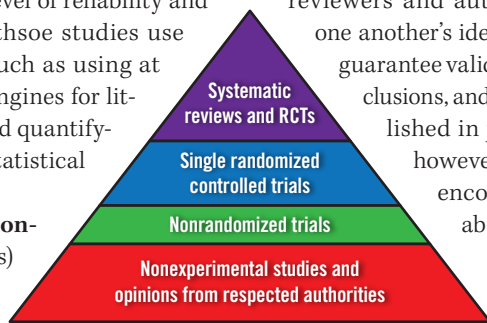


FIGURE 1: Established hierarchy of evidence

the dissemination of unwarranted claims, irrelevant findings, and personal opinions.⁵ Peer reviews provide critical assessments by qualified experts, preferably blind so reviewers and authors do not know one another's identities. They do not guarantee validity of design or conclusions, and not everything published in journals is correct; however, this process does encourage open debate about issues.⁵

Online searching

It has been published that for every 10 patients a dental provider sees, they will develop one to 18 clinical questions.¹ Most practitioners will begin a search about these questions online, but caution is needed if they are using generic search engines (Google, Bing, AOL, Yahoo). Generic search engines deliver unfiltered information that lacks the authority, focus, and reliability for professional searches. Another barrier for searching online is

selecting the right keywords. Health-care providers have a more advanced vernacular compared to laypeople, and search engines typically recognize and deliver more useful results with lay terms as opposed to clinical terms. When the wrong keyword is used, undesired search outcomes are experienced. For example: searching "periodontal disease" will yield different results as opposed to searching "diseased gums" in search engines.

Table 3 lists search engines and resources that are specially designed for health-care providers when they have clinical queries.

Conclusion

EBD has been instrumental in promoting the need for systematic use of evidence to deliver high-quality care and develop clinical practice guidelines. Health-care providers should recognize that the mere existence of evidence does not necessarily mean it will translate to effective clinical implementation. Evidence-based practice combines the best scientific evidence with the expertise of the user and provider/

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QUESTIONS

- How much money does the US invest into health-care research?
 - \$16 million
 - \$65 million
 - \$6,585 million
 - \$7,800 million
- Which term is used to define a health-care research question that claims that any differences in outcomes are due to chance and that the independent variable made no difference?
 - Null hypothesis
 - Statistical analysis
 - Bias
 - Conclusion
- Which of the following is true of high-quality research reports?
 - Desire to determine what is true regardless of outcomes
 - Avoid exaggerated claims
 - Perform and report a comprehensive literature review
 - All of the above
- What term is used to describe research that is repeatable and consistent and can be repeated no matter who conducts the study?
 - Reliability
 - Credibility
 - Validity
 - Bias
- What term did Polgar and Thomas use when they defined “conscious or unconscious ways in which researchers influence participation and the research process resulting in the distortions of the results and drawing erroneous conclusions about the implications of the research project”?
 - Reliability
 - Credibility
 - Validity
 - Bias
- Which of the following aspects of a hypothesis would concern a reader that potential bias is present in a study?
 - Vague
 - Absent
 - Not the starting point of research
 - All of the above
- Which of the following sampling practices should concern the reader as to potential bias in the publication?
 - Inadequate sample size
 - Lack of randomization
 - Convenience sampling
 - All of the above
- What term is used to describe a factor that, when not controlled for, can influence the outcome of a study and make results ambiguous?
 - P-value
 - Confounding extraneous variable
 - Alpha level
 - Validity
- Which of the following are red flags for the potential for bias to be present in a study?
 - The study begins with a conclusion instead of a hypothesis.
 - Findings are not compared to other published literature.
 - Inappropriate statistical analysis is used, which results in erroneous calculations.
 - All of the above.
- Which of the following parts of a research publication states the topic of the report?
 - Title
 - Abstract
 - Introduction
 - Methods and materials
- Which of the following parts of a research publication provides the reader with a short overview of the report?
 - Title
 - Abstract
 - Introduction
 - Methods and materials
- Which of the following parts of a research publication states the hypothesis?
 - Title
 - Abstract
 - Introduction
 - Methods and materials
- Which of the following parts of a research publication presents the review of the literature?
 - Title
 - Abstract
 - Introduction
 - Results
- Which of the following parts of a research publication lists the tools, number of participants, and procedures used in the research?
 - Abstract
 - Introduction
 - Methods and materials
 - Results
- Which of the following parts of a research publication presents the findings, defines the confidence intervals, and presents the statistical analysis used in the research?
 - Abstract
 - Introduction
 - Methods and materials
 - Results
- Which of the following are confidence interval tools?
 - P-value
 - Alpha level
 - Questionnaire
 - Both A & B

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QUESTIONS

17. In health-care research, what is the alpha level typically set to when determining if the null hypothesis should be rejected?
 - A. 0.01
 - B. 0.05
 - C. 0.1
 - D. 0.5

18. Which of the following is a measure of central tendency used in descriptive statistics?
 - A. Mean
 - B. Median
 - C. Mode
 - D. All of the above

19. Which of the following is a measurement used in descriptive statistics?
 - A. T-test
 - B. ANOVA
 - C. Z-score
 - D. MANOVA

20. Which of the following is a parametric measurement in inferential statistics?
 - A. ANOVA
 - B. Chi-square
 - C. F-test
 - D. T-test

21. Which of the following parts of a research publication interprets the data, restates the hypothesis, and connects the findings to similar studies?
 - A. Methods and materials
 - B. Results
 - C. Discussion
 - D. Conclusion

22. Which of the following parts of a research publication summarizes the main findings and makes suggestions for future research?
 - A. Methods and materials
 - B. Results
 - C. Discussion
 - D. Conclusion

23. Which of the following parts of a research publication provides a full description of questionnaires, measuring instruments, raw data, and statistics calculations?
 - A. Discussion
 - B. Conclusion
 - C. References
 - D. Appendix

24. Which of the following has the highest hierarchy of evidence?
 - A. Systematic review
 - B. Trial without randomization
 - C. Nonexperimental study
 - D. Opinions from experts

25. Which of the following research studies has an ability to demonstrate if an intervention has correlation and causality through quantitative statistical analysis?
 - A. Randomized controlled trial
 - B. Peer review
 - C. Nonexperimental study
 - D. Opinion from expert

26. Which of the following uses critical assessments by qualified experts, preferably blind, but does not guarantee the validity of research designs or conclusions?
 - A. Systematic review
 - B. Peer review
 - C. Expert opinion
 - D. Randomized controlled trial

27. Which of the following search engines is appropriate for clinicians who have clinical queries?
 - A. Google
 - B. Bing
 - C. Yahoo
 - D. PubMed

28. Which database is managed by the National Library of Medicine?
 - A. Medline
 - B. CINAHL
 - C. Embase
 - D. Cochrane

29. Which search engines does Medline utilize?
 - A. Google Scholar
 - B. Scopus
 - C. ProQuest
 - D. All of the above

30. Which of the following is the leading source for systematic reviews on a broad range of topics?
 - A. CINAHL
 - B. Cochrane Library
 - C. Embase
 - D. Google Scholar

Practitioners' guide to improving online searching and critical review of literature for clinical queries

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Educational Objectives

1. Identify quality studies based on design parameters.
2. Interpret and critically analyze research and become a more informed consumer of information.
3. Differentiate between study designs to determine which ones yield more valid and reliable information.
4. Perform quality online searches to access credible information through appropriate search engines.

Course Evaluation

1. Were the individual course objectives met?

Objective #1: Yes No Objective #3: Yes No
 Objective #2: Yes No Objective #4: Yes No

Please evaluate this course by responding to the following statements, using a scale of Excellent = 5 to Poor = 0.

- | | | | | | | |
|---|-------|----|---|---|---|---|
| 2. To what extent were the course objectives accomplished overall? | 5 | 4 | 3 | 2 | 1 | 0 |
| 3. Please rate your personal mastery of the course objectives. | 5 | 4 | 3 | 2 | 1 | 0 |
| 4. How would you rate the objectives and educational methods? | 5 | 4 | 3 | 2 | 1 | 0 |
| 5. How do you rate the author's grasp of the topic? | 5 | 4 | 3 | 2 | 1 | 0 |
| 6. Please rate the instructor's effectiveness. | 5 | 4 | 3 | 2 | 1 | 0 |
| 7. Was the overall administration of the course effective? | 5 | 4 | 3 | 2 | 1 | 0 |
| 8. Please rate the usefulness and clinical applicability of this course. | 5 | 4 | 3 | 2 | 1 | 0 |
| 9. Please rate the usefulness of the supplemental bibliography. | 5 | 4 | 3 | 2 | 1 | 0 |
| 10. Do you feel that the references were adequate? | Yes | No | | | | |
| 11. Would you participate in a similar program on a different topic? | Yes | No | | | | |
| 12. If any of the continuing education questions were unclear or ambiguous, please list them. | _____ | | | | | |
| 13. Was there any subject matter you found confusing? Please describe. | _____ | | | | | |
| 14. How long did it take you to complete this course? | _____ | | | | | |
| 15. What additional continuing dental education topics would you like to see? | _____ | | | | | |

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| 3. (A) (B) (C) (D) | 18. (A) (B) (C) (D) |
| 4. (A) (B) (C) (D) | 19. (A) (B) (C) (D) |
| 5. (A) (B) (C) (D) | 20. (A) (B) (C) (D) |
| 6. (A) (B) (C) (D) | 21. (A) (B) (C) (D) |
| 7. (A) (B) (C) (D) | 22. (A) (B) (C) (D) |
| 8. (A) (B) (C) (D) | 23. (A) (B) (C) (D) |
| 9. (A) (B) (C) (D) | 24. (A) (B) (C) (D) |
| 10. (A) (B) (C) (D) | 25. (A) (B) (C) (D) |
| 11. (A) (B) (C) (D) | 26. (A) (B) (C) (D) |
| 12. (A) (B) (C) (D) | 27. (A) (B) (C) (D) |
| 13. (A) (B) (C) (D) | 28. (A) (B) (C) (D) |
| 14. (A) (B) (C) (D) | 29. (A) (B) (C) (D) |
| 15. (A) (B) (C) (D) | 30. (A) (B) (C) (D) |

AGD Code 770

PLEASE PHOTOCOPY ANSWER SHEET FOR ADDITIONAL PARTICIPANTS.

INSTRUCTIONS

All questions have only one answer. Grading of this examination is done manually. Participants will receive confirmation of passing by receipt of a verification form. Verification of Participation forms will be mailed within two weeks after taking an examination.

COURSE EVALUATION AND FEEDBACK

We encourage participant feedback. Complete the survey above and e-mail feedback to Aileen Gunter (agunter@endeavor2b.com) and Laura Winfield (lwinfield@endeavor2b.com).

COURSE CREDITS AND COST

All participants scoring at least 70% on the examination will receive a verification form for three CE credits. The formal CE program of this sponsor is accepted by the AGD for fellowship and mastership credit. Please contact Endeavor for current term of acceptance. Participants are urged to contact their state dental boards for continuing education requirements.

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RECORD KEEPING

Endeavor maintains records of your successful completion of any exam for a minimum of six years. Please contact our offices for a copy of your CE credits report. This report, which will list all credits earned to date, will be generated and mailed to you within five business days of receipt.

EDUCATIONAL DISCLAIMER

Completing a single CE course should not provide enough information to give participants the feeling that they are experts in the field related to the course topic. It is a combination of many educational courses and clinical experience that allows the participant to develop skills and expertise.

CANCELLATION AND REFUND POLICY

Any participant who is not 100% satisfied with this course can request a full refund by contacting Endeavor in writing.

IMAGE AUTHENTICITY

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