



## New Guidelines on Preoperative Tests Preoperatif Testlerle İlgili Kılavuzlardaki Son Yenilikler

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### ABSTRACT

Preoperative tests before elective surgeries are routine in clinical practice despite having negative recommendations for it. As millions of people undergo surgery every year, even a single preoperative test has huge economic impact. In the present era of evidence based medicine different scientific bodies / societies have come out with guidelines / protocols / recommendations on this issue to reduce the load of unnecessary preoperative tests and its burden and negative impacts on patients as well as health authority. However, the uses of these recommendations are poor in clinical practice. In the present communication we are putting brief insight in to the new NICE guideline on preoperative tests as well as suggesting few strategies to get maximum benefit out of different guidelines and recommendations.

**Key words:** Preoperative investigations, elective surgeries, NICE.

### ÖZ

Hasta isteğine bağlı cerrahi müdahale öncesi uygulanan testler olumsuz yanları olmasına rağmen klinik uygulamalarda rutin olarak kullanılmaktadır. Her yıl milyonlarca insan cerrahi operasyona girerken ameliyat öncesi tek bir test bile büyük ekonomik öneme sahiptir. Kanıta dayalı tıp çağında, gereksiz ameliyat öncesi testlerin hasta üzerindeki yükünü ve olumsuz etkileri azaltmak için sağlık otoritesinin yanı sıra farklı bilimsel kurumlar / toplumlar bu konuda kılavuz / protokol / öneriler ortaya sunmuşlardır. Bununla birlikte, bu önerilerin kullanımı klinik uygulamada zayıftır. Mevcut koşullarda, ameliyat öncesi testler hakkındaki yeni NICE kılavuzuna kısa bir bakış açısı getirmekteyiz ve farklı yönergelerden ve tavsiyelerden azami fayda sağlamak için birkaç strateji önermekteyiz.

**Anahtar kelimeler:** Ameliyat öncesi tetkikler, hasta isteğine bağlı ameliyat, NICE.



## Introduction

Surgery and interventional health procedures have become an integral part of health care and a significant proportion of the population need to undergo one or the other forms of surgical procedures or interventions at one or more points of life. Although exact figure for total numbers of surgical procedures and interventions performed worldwide is not available, an epidemiological study from India has shown life time prevalence for surgeries as high as 12.3%<sup>1</sup>. The huge economic impact of preoperative tests for these millions of surgeries is a big concern even in developed countries. National Institute for Health and Care Excellence (NICE) published their first guideline for preoperative tests in 2003<sup>2</sup>. Although it has been 13 years, use of unnecessary preoperative tests have remained still very high<sup>3,4</sup>. Recently NICE has updated their previous clinical guideline<sup>5</sup>. A brief insight in to the new NICE guideline is presented here along with a few strategies to get maximum benefit out of this as well as other guidelines and recommendations. Although these mentioned strategies are well known, yet it is less used in practice. We believe that publishing these in a journal will reemphasize it and increase their application.

## The Role of Preoperative Tests

Preoperative tests are beneficial where they yield additional information that cannot be obtained from a patient history and physical examination alone, help to predict postoperative complications, assess the risk benefits of surgery and allow the patient's clinical management to be altered, if necessary. It can also establish a baseline measurement for later reference where potentially abnormal postoperative test results cannot be adequately interpreted in isolation<sup>5</sup>. However, we have to also consider the fact that even genuinely abnormal results often do not result in any significant change in perioperative management in relatively healthy patients and Cost-effective elimination of tests with unchanged outcomes are known facts<sup>5,6</sup>.

## Current Practice of Preoperative Tests

Preoperative testing varies markedly from hospital to hospital, and clinicians in the same hospital may show extreme variation in their ordering of tests. Recent studies have shown that preoperative routine tests are very prevalent and nearly two third of the patients undergoing elective surgeries are subjected to unnecessary tests<sup>4</sup>. Evidence suggests that

these patterns can be modified when they are audited and when local protocols are introduced<sup>7</sup>.

### **Updated NICE Guideline: What is New?**

In 2003, NICE took a major step on guiding for routine preoperative tests before elective surgery. The guideline was based on consensus of panel of experts under the initiative of the Acute Care National Collaborating Centre, within the Royal College of Surgeons which worked directly with the Royal Colleges of Anaesthetists, Pathologists, Radiologists, Ophthalmologists, and Obstetricians and Gynaecologists. Stakeholders and patient representatives were also consulted<sup>2</sup>. The present updated guideline is based on a multidisciplinary Guideline Development Group (GDG) comprising health professionals and lay member, supported by health service researchers from the National Clinical Guideline Centre (NCGC)<sup>5</sup>. Although the previous guideline tried to answer preoperative tests related research questions by using a questionnaire, the present Delphi method of survey used in the preparation of guideline appears to be more robust in this aspect as "PICO" (patient, intervention, comparison and outcome) framework was used in developing review questions. This makes the guideline and recommendations trustworthy as these are based on the best available evidences. The full guidelines can be downloaded from PubMed Health [http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0086571/pdf/PubMedHealth\\_PMH0086571.pdf](http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0086571/pdf/PubMedHealth_PMH0086571.pdf)

The present guideline has also included recommendations for resting echocardiography, polysomnography, HbA1c (both for known diabetic as well as non diabetic) and cardiopulmonary exercise testing. However it has excluded random blood sugar and patients aged below 16 years which were part of previous guideline. The present guideline also has included two more specific comorbidities i.e. diabetes and obesity<sup>5</sup>.

One of the major disadvantages of previous guideline was very frequent / common areas of absence of consensus represented in amber color which implied considering the test<sup>2</sup>. The present guideline does have areas where considering the test is advised but it is associated with a note of more or less specified conditions. This is likely to help perioperative care giver to take more firm decision then before. However, the present guideline too suffers from the lack of strong evidence based recommendations as there is very much lack in randomized studies in this field.

## **How to Maximize Benefit Out of Guidelines and Recommendations?**

Evidence supports that the application of protocols and guidelines can change the practice patterns<sup>8,9</sup>. However, it is a well known fact that guidelines should be used along with clinical judgments and applied case by case. Therefore, variation of practice is expected and will be there. But, in the face of challenging task like delivering cost effective health care, the present NICE guideline is expected to help a lot. The maximum benefit out of different guidelines / recommendations can probably be achieved by applying following strategies;

At institute/hospital level:

1. An adapted protocol / master chart based on different evidence based recommendations on preoperative tests should be prepared and institute / hospital health authority should endorse the protocol / master chart and emphasize adherence to it as far as possible.
2. This protocol should not only be given special emphasize during teaching-learning sessions but also in practice especially during pre operative / anaesthetic evaluations in the outpatient departments.
3. A pocket print out should be provided to the residents / physicians involved in preoperative assessment and care.
4. Interdisciplinary (Anaesthesia and Surgical disciplines) seminars on the routine preoperative investigations should be conducted at a regular basis and more research in the field should be carried out.

Professional bodies/organizations/societies;

1. Local, regional and national level conferences should give special importance to this burning issue to raise awareness.
2. Special seminar / continuing medical education session for practicing anesthesiologists, surgeons and residents should be organized at a regular basis.
3. Can form an expert panel and prepare an adapted master chart of required preoperative tests, update it time to time as per new development and can endorse it.

National health authority;

1. Can form a multidisciplinary expert panel to bring out own guidelines and

recommendations, update it time to time and audit the adherence to the guidelines by different hospitals / institutes.

2. Can make legislations for denying reimbursement of expenditure spent for unnecessary tests done both by government and health insurers. This will indirectly help in adherence with the guidelines.

## Conclusion

Unnecessary preoperative tests for elective surgeries can potentially be well reduced by adhering to the guidelines / protocols / recommendations. It is high time for the teaching institutes, hospitals, scientific bodies and health authorities to build and follow strategies for maximal adherence to the evidence based recommendations till indicated otherwise.

## Reference

1. Bhasin SK, Roy R, Agrawal S, Sharma R. An epidemiological study of major surgical procedures in an urban population of East Delhi. *Indian J Surg.* 2011;73:131-5.
2. National Collaborating Centre for Acute Care (UK). Preoperative tests: The Use of Routine Preoperative Tests for Elective Surgery: Evidence, Methods and Guidance. London, National Institute of Clinical Excellence; 2003.
3. Ranasinghe P, Perera YS, Senaratne JA, Abayadeera A. Preoperative testing in elective surgery: Is it really cost effective? *Anesth Essays Res.* 2011;5:28-32.
4. Karim HM, Yunus M, Bhattacharyya P. An observational cohort study on pre-operative investigations and referrals: how far are we following recommendations? *Indian J Anaesth.* 2016;60:552-9.
5. National Guideline Centre (UK). Preoperative Tests (Update): Routine Preoperative Tests for Elective Surgery. London, National Institute for Health and Care Excellence (UK), 2016.
6. Narr BJ, Hansen TR, Warner MA. Preoperative laboratory screening in healthy Mayo patients: cost-effective elimination of tests and unchanged outcomes. *Mayo Clin Proc.* 1991;66:155-9.
7. Carlisle J, Langham J, Thoms G. Guidelines for routine preoperative testing. *Br J Anaesth.* 2004;93:495-7.
8. Mancuso CA. Impact of new guidelines on physicians' ordering of preoperative tests. *J Gen Intern Med.* 1999;14:166-72.
9. Greer AE, Irwin MG. Implementation and evaluation of guidelines for preoperative testing in a tertiary hospital. *Anaesth Intensive Care.* 2002;30:326-30.

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