



## KEY POINT SUMMARY

### OBJECTIVES

To explore aspects of ergonomics that could contribute to the interactions between anesthesiologists, machines, and patients.

### DESIGN IMPLICATIONS

Equipment used by anesthesiologists should be safe, reliable, and ideally up to date so that optimal service may be provided. Lighting is of particular importance within the surgical theatre, as is the legibility of equipment and resource labels. Theatres themselves should be spacious enough to accommodate all staff members, and there should not be any exposed or densely grouped wires or tubes within walkways.

## Ergonomical aspects of anaesthetic practice

Rao, R. R. 2016 | *Indian Journal of Anaesthesia* Volume 60, Issue 5, Pages 306-311

### Key Concepts/Context

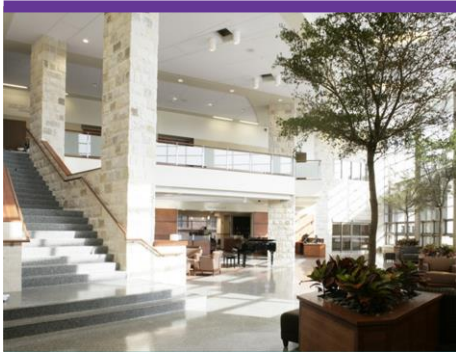
Anesthesiologists typically act as data analyzers, investigators, and planners for forthcoming surgical events, but only after patients and their families have been convinced that the procedure is appropriate. With the field of anesthesiology rapidly developing, it is imperative that workstations are optimized so that procedures can be conducted efficiently and safely. Ergonomics is defined as a discipline that explores and applies information regarding human characteristics, requirements, limitations, and abilities to the development, design, engineering, and testing of equipment, systems, and occupations. Generally, ergonomics attempts to improve safety and performance while enhancing well-being. Few previous studies have explored how concepts stemming from ergonomics could benefit the field of anesthesiology in particular.

### Methods

This paper presents a discussion concerning how the concept of ergonomics could be applied to various aspects of an anesthesiologist's profession. Four areas are covered: 1) equipment design, 2) workplace layout, 3) environmental conditions, and 4) skill acquisition, productivity, and safety.

### Findings

The author claims that equipment design requires the most attention of all categories. Levers and handles should be sturdy and comfortable and shouldn't interfere with knuckle or elbow movement or feature sharp edges. Modern anesthesia machines are expected to have visible, audible, programmable alarms, inbuilt monitors, ventilators, data recording features, and standby backup power. For workplace layout, the author recommends a rotating chair with castors, height-adjusting features and a backrest at the head of the operating table. The operating theatre must provide enough room for nurses and other helping staff to move comfortably. A separate induction room for recoveries from any complications is



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preferable. Groups of wires, cables, and tubes should not impede movement or reside in dangerous locations. Regarding environmental conditions, proper lighting is of extreme importance, as well as the legibility of typed material on equipment. Regarding skill acquisition, the author recommends applying ergonomics by carefully examining the requirements of the different aspects of an anesthesiologist’s work and coming to terms with them in a logical way. This could lead to swifter and more thorough acquisition of skills and safety habits.

**Limitations**

No original research is conducted in this study, thus the discussion presented is largely a collection of the author’s opinions. The recommendations made in this paper might not be universally applicable; though they may be ergonomic in theory, every facility and employee has different needs and preferences.

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