

# [Effectiveness of oxygen therapy for cardiac problems](https://assignbuster.com/effectiveness-of-oxygen-therapy-for-cardiac-problems/)

Oxygen therapy is the administration of oxygen at a higher concentration than that of ambientair. The main intention of this process is to either treat or prevent the symptoms and manifestations of hypoxia. Oxygen therapy decreasesthe work of breathing by increasing alveolar oxygen tension. As an essential part of clinical practice, oxygen therapy is widely used in cardiac care. Despite all thiswide uses of this therapy have been criticalin cardiac care. Studies have provedthat excessive use of oxygen, results incritical conditionsinthe areas that it is applied. This essay aims at examining the concentration required, different conditions, where it could be needed and the effects of use of high concentration oxygen for the client with chest pain.

When there is airway obstruction as a result of cardiac effects such as asthma, pneumonia, breathing system of the client becomes complicated. This client can only breathewhen the oxygen level climbs above a setlevel. This will maintain functional ability and at the same time minimize the chest pain, which may have been caused by breathing problem. It is very important to note that there are several causes or condition that may arise to chest pain(Fritz&Faber, 2012). The different approachesproposed, suggestthat these statementsandsolutions do not conform withthe available evidence in the cardiac care. Also, inthe treatmentof a patient with cardiacproblems, the main issueto be consideredis the balance ofevidence for both the safety andefficiency of oxygen administrationin cardiac care.

Arterial oxygen tension is one of thesigns todeterminant coronary artery tone. Slightincrementin arterial oxygen reducescoronary flow irrespective of priorsaturation(Atar, 2010). The human study of patientswith cardiac problems hyperoxia from concentrated oxygentherapy reducescoronary blood flow(Atar, 2010). Administering oxygen therapyto patients with myocardial infarction, oxygen therapy canreduce cardiac outputvolumes, and blood pressure and vascular resistance(Atar, 2010). Thereevidencein determiningsafety and efficiency ofoxygenadministration in cardiac care. The evidence supportsuseofoxygentherapyin minormyocardial infection resultsinincreaseddeath rates tothe patients.

Research has approved that resuscitation from cardiac arrest; administration of high oxygenresults in hypoxia. Thisis directly associatedwith more deaths to patients incomparison to either normoxia or hypoxiaproblems. Continuoususe of oxygen therapy in cardiac careis harmful to the patient of cardiac problem and this approach is not the best. It is recommended that, the administration of oxygentherapyshould be at the level of 96% to keepstandardizedsaturation(Bersten&Soni, 2009). Also, oxygen needbe administeredfordefinitecardiac cares, in which benefit of oxygen therapyoutweighs the risks it may impose to the patient. Healthcare professionals should take into account that the method, doseand delivery periodis clearly speltand patient’s reaction to oxygenadministration is thoroughly monitored (Fritz&Faber, 2012).

Since oxygen is a drug, its administration requires a medical order. Each of the episodes of oxygen delivery should be ordered on the medicationchart either as on-going or one-off treatment. There are some conditionsthat should be examined before the nurse initiatesoxygen. First, the nurse should realize that the patient hasbreached expected normal parameter of oxygen saturation, also a medical review is required within thirty minutesand then at the time of the medical review, the right prescription of oxygen should be written. Before the selection of the delivery method, caregiversshould check at the individual flow meter for where to read the ball when setting the flow rate (Straface et al. , 2008). Some of the flow metersmay register greater than the maximum flow indicated in the meter in the case of the ball being set above the highest amount(Hunt, 1999). The nurse is required to use caution when adjusting the flow meter. All of the high concentration or delivery requires humidification. The selection ofthehumidification will depend on the oxygen delivery system in use. It should be noted that, air entrainment devices are not effective when it comes to delivering FiO2that is greater than 50%. Administration of high concentration of oxygen to clients with chest pain may worsen the pain, when breathing elevated pressure of oxygen is extended for a longer period(Myers et. al. , 2008).

There has been a growing debate and concern on the administration of high oxygen concentration to those clients with chestpain(Frey&Shann, 2003). Traditionally, for over a decade, patients who complained of chest pain were instantly administered high flow of oxygen, this process initially started when medics realized that oxygen would ease myocardial ischaemia in patients with acute coronary syndrome (ACS). Also, highoxygen concentrationmay cause atelectasis. The alveolirelies onnitrogen topreservesurfactantcreationand alveolarpower. The high concentrationof oxygen, when administered may wash out nitrogen and leave the alveoli susceptible to a lack of gas asthegas diffuses to blood(Shekhar et. al. , 2010).

It is important to note that; high oxygen concentration to thosepatients with cardiac problems, do not yield much advantage. Thispractice quickly became a routine in patients presenting with acute chestpain(Robyn and Coffee, 2012). Recently there has been a report indicating that harmful effects of high flow of oxygen in ACS patients where the patient may not be hypoxic. High flow of oxygen has previously been associated witha reductionof cardiac output, attribute to arterial vasoconstriction and also it increases systemic vascular resistance. Inmorerecent evidence, systematic review shows that the routine use of high concentration on chest painmay lead to greater infarct size increasing the risks of mortality.

From a physiological perspective, treatment of ACS’ patientswith oxygen seems reasonable. For apatient suffering from ACS, there isalack of myocardial perfusionsand less oxygenation of the myocardium. In thiscontext, itseems logical to increase the oxygenation of the blood. Thistreatment is not well thought and can lead topatient harm, if not well monitored. The bottom line is that, the drug that is often usedcan cause harm if it is given without a good reason, when there isless saturationof oxygenin apatient’s blood, oxygen cannot help them with shortness of breath, and it may hurt them instead. The same idea holds truefor the neonates and any ofpatients with ongoing tissue injury from MI, stroke or trauma it is true that oxygen can be badwhen not wellmonitoredin administration (Myers et. Al. , 2008).

The hemodynamic effect of high flow of oxygen in the myocardial was explored bygroups to improve on the cardiac care. The cardiovascular response to high concentration of oxygen was primarily attributed to arterial vasoconstriction; this has been demonstrated in retinal blood vessels. This method was also thought to be the reason behind the reduction in renal blood flowofcerebral blood flowwith oxygen therapy. Research has demonstrated that high concentrationof oxygen cannot increase itstransport inpatients with arterial oxygen saturation to a level of less than 90%. This is explainedbythe notionthat the reduction in cardiacoutput in excess leads toincreases in oxygen content. In patients with arterial oxygen saturation of less of 90%, this shows that oxygen administration increased oxygen transportation(Campbell&Silver, 1998). This is due to both increased cardiac output and oxygen content. In therecent years, researchers have providedclearand direct evidence that the administration of high flow oxygen reduces coronaryartery blood flowfor the stable patient with ischaemic heart effect. This evidence wasprovided over a decade ago, and this has been confirmedthe method of high oxygen concentration may change, but the effects of oxygen on the cardiac care remainthe same.

In conclusion, it is important to note that it is not clear whether routine administration of oxygen in patients’ with cardiac problemsin relation to chest pain has all the positive impacts on the outcome(Hunt, 1999). This systematic review challenges the status quo predicted by the international guidelines on the treatment of the chest pain caused by cardiac problems. The argument of reduced mortality due to administration of concentrated oxygen topatients with cardiac problem is disturbing. There is no need to administer a method of treatment on a patient in which the negative impacts outweighs the gain. The different approaches in tackling this major problemofchest paingives a clear evidence and explanationofthe conditions in which a patient is to be administered with concentrated oxygen. Before any treatment is done forpatientswith chest pain, caregiversshould try to understand the cause of the pain(Campbell&Silver, 1998). For example, the pleuritic pain is triggeredby chest movement and it is severe during coughing. Splinting the chest wall will help in reducing the discomfort of coughing. Cardiac care is involved with a lot of approaches that need to be looked at before treatment is undertaken.

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