

# STATE-OF-THE-ART TECHNOLOGIES, INC. L.A. PAIN CLINIC

## PROTOCOL 1 FOR A HEALTH OUTCOME STUDY: HOME OXYGEN THERAPY WITHIN THE GOLDEN HALF HOUR TO PREVENT AND STOP A SICKLE CELL CRISIS

### 1. STUDY TITLE

**Home Oxygen Therapy Within the Golden Half Hour for the Prevention and Treatment of Sickle Cell Crisis: A Health Outcome Study**

### 2. BACKGROUND AND RATIONALE

Sickle cell disease (SCD) is characterized by recurrent **vaso-occlusive crises (VOCs)**, leading to severe pain, ischemia, and potential organ damage. Hypoxia plays a significant role in triggering and exacerbating VOCs.

Dr. Sota Omoigui's **Golden Half Hour Theory** postulates that **vaso-occlusive crises can be halted or significantly reduced if appropriate interventions, such as oxygen therapy, are initiated within the first 30 minutes of symptom onset**. Early intervention restores reversible sickle cells to their normal discoid shape and prevents their progression to irreversible sickle cells, cell membrane damage and cell death with subsequent cascade of organ ischemia, **inflammatory mediators, cellular adhesion, endothelial injury, multi organ damage and death**.

Traditional management of VOCs often involves **emergency department (ED) visits and hospitalization**, leading to delays in treatment and increased opioid use. **Home oxygen therapy within the Golden Half Hour** offers a **proactive, rapid-response approach**, potentially reducing the frequency, severity and duration of VOCs while decreasing healthcare burdens.

#### **Prevention**

When there is any stressor during the day, as listed below, the person should sleep with oxygen. Sleep is the most dangerous time as the low oxygen environment will tip the person into a crisis:

**Physical stress:** e.g. from physical activity

**Intellectual stress** e.g. preparing for exams, writing papers

**Environmental stress** e.g. cold environment, high altitude, air travel

**Physiological stress** e.g. during sleep, excess heat, dehydration, pain, emotional stress, infection, malaria, pneumonia.

**Note:** Infection, malaria and pneumonia also need to be prevented and timely treated. Otherwise there will be more reversible sickle cells than oxygen can restore.

**Treatment:** use oxygen within the golden half hour of onset of symptoms to stop a crisis.

### 3. OBJECTIVES

#### *Primary Objective:*

- To determine whether **home-based oxygen therapy, initiated after daytime stressors or within 30 minutes of VOC onset, prevents, stops, reduces crisis severity and duration.**

#### *Secondary Objectives:*

- To determine whether **early home oxygen therapy reduces hospital admissions and emergency department (ED) visits.**
- To assess the impact of **home oxygen therapy on pain scores and opioid use.**
- To measure changes in **biomarkers of hemolysis and inflammation.**
- To examine potential **adverse effects of home oxygen therapy in SCD patients.**

### 4. STUDY DESIGN

- **Type:** Prospective, randomized, controlled trial
- **Setting:** **Home-based intervention** for patients with early crisis symptoms, with follow-up in outpatient clinics and hospitals
- **Duration:** 24 months (12-month enrollment, 12-month follow-up)
- **Study Arms:**
  - **Intervention group:** Home oxygen therapy (1.5-2 L/min via nasal cannula) initiated after daytime stressors or within 30 minutes of symptom onset and continued as needed for 1–12 hours.
  - **Control group:** Standard home care for those who refuse routine oxygen, unless hypoxia ( $\text{SpO}_2 < 88\%$ ) develops or those whose home environment does not permit them to safely keep an oxygen cylinder or concentrator.

### 5. ELIGIBILITY CRITERIA

#### *Inclusion Criteria:*

- Age **6 months or older**
- Diagnosis of **sickle cell disease** (HbSS, HbSC, or HbS/ $\beta$ -thalassemia)
- History of **at least two vaso-occlusive crises in the past year**
- **Access to home oxygen therapy**
- **Ability to initiate oxygen therapy after daytime stressors or within 30 minutes of symptom onset**
- **Access to home oxygen therapy and smart phone or internet connection for remote patient monitoring (RPM)**
- **Ability to use WhatsApp to record assessments and communicate with the healthcare team.**
- **No signs of infection or acute chest syndrome at enrollment**
- **Informed consent** obtained from patient or legal guardian

#### *Exclusion Criteria:*

- Baseline **hypoxia ( $\text{SpO}_2 < 88\%$ )**
- **Acute chest syndrome** or other pulmonary complications
- **History of chronic oxygen therapy**

- **Pregnancy**
- Known contraindications to oxygen therapy (e.g., severe COPD with CO<sub>2</sub> retention)

## 6. STUDY PROCEDURES

### *Enrollment & Randomization:*

- Patients meeting inclusion criteria will be **enrolled from sickle cell clinics and community-based programs.**
- **Randomization (1:1)** to intervention or control group.
- **Home-based training** on the use of oxygen therapy and monitoring.
- **Remote patient monitoring (RPM) setup** (SpO<sub>2</sub> sensors, digital pain logs)

### *Intervention Protocol:*

- **Intervention Group:**
  - **Oxygen therapy (1.5-2 L/min via nasal cannula) initiated after daytime stressors or within 30 minutes of VOC onset.**
  - Oxygen therapy continued as needed for **1–12 hours** with SpO<sub>2</sub> monitoring.
  - **Standard home pain management** as per institutional protocols.
  - Patients record **pain scores and medication use** in a digital (WhatsApp) or paper
  - **Oxygen saturation levels before and after therapy**
  - **Remote monitoring adherence and early VOC detection trends**
  - log.
- **Control Group:**
  - **Standard home care** without routine oxygen unless hypoxia (SpO<sub>2</sub> < 90%) develops.
  - **Pain management per standard home protocols.**

### *Follow-Up Assessments (Up to 30 Days): Recorded in a digital WhatsApp Log.*

- **Pain scores** (Visual Analog Scale or Numeric Rating Scale) at baseline, 6, 12, and 24 hours.
- **Opioid and analgesic medication use.**
- **SpO<sub>2</sub>, respiratory rate, and heart rate monitoring with a home pulse oximeter.**
- **Hospital admission rates and length of stay.**
- **Biomarkers of hemolysis** (FBC/CBC, LDH, bilirubin, reticulocyte count) and **inflammation** (CRP, WBC).
- **Adverse events** monitoring (hyperoxia, respiratory depression, rebound hypoxia).
- Quality of life (SF-36 or similar validated survey) [https://www.rand.org/health-care/surveys\\_tools/mos/36-item-short-form/survey-instrument.html](https://www.rand.org/health-care/surveys_tools/mos/36-item-short-form/survey-instrument.html)

## 7. OUTCOME MEASURES

### *Primary Outcome:*

- Reduction in **crisis frequency and severity**, measured by number of crisis and pain score change at 12 and 24 hours.

*Secondary Outcomes:*

- **Hospital admission rate** subsequent of crisis onset.
- **Total opioid use** within 24 hours.
- **Length of hospital stay** (if admitted).
- **Changes in SpO<sub>2</sub>** and vital signs.
- **Incidence of complications** (e.g., acute chest syndrome).
- **Number and amount of units of blood transfusions**

## 8. STATISTICAL ANALYSIS

- **Sample Size Calculation:** Based on prior studies, assuming a **20% reduction in pain scores**, **80 patients per arm (160 total)** will provide **80% power** at  $\alpha = 0.05$ .
- **Data Analysis:**
  - Continuous variables (**pain scores, opioid use**) analyzed with **t-tests or Mann-Whitney U tests**.
  - Categorical outcomes (**hospital admissions, complications**) analyzed with **chi-square tests**.
  - **Multivariate regression** to adjust for confounders.

## 7. REMOTE PATIENT MONITORING (RPM) IMPLEMENTATION

- **Tools Provided:**
  - **Pulse oximeter** (SpO<sub>2</sub>, heart rate)
  - **Smartphone app** for symptom tracking and pain scores
  - **Automated alerts** for SpO<sub>2</sub> < 88% or rising pain scores
  - **Telehealth check-ins** for data review and intervention adherence
- **Objectives of RPM:**
  - **Ensure timely initiation of oxygen therapy**
  - **Monitor trends in SpO<sub>2</sub> and pain progression**
  - **Provide early alerts for worsening crises**
  - **Enhance patient engagement and adherence**

## 8. COST-EFFECTIVENESS ANALYSIS

- **Healthcare Utilization Metrics:**
  - **Reduction in ED visits, hospital admissions, and length of stay**
  - **Reduction in opioid use and associated costs**
- **Direct and Indirect Cost Analysis:**
  - **Cost of oxygen therapy vs. hospital-based crisis management**
  - **Cost of RPM devices and telehealth vs. traditional follow-ups**
  - **Quality-Adjusted Life Years (QALYs) and cost per avoided hospitalization**

## 9. SCALABILITY STRATEGIES FOR HOME OXYGEN THERAPY

- **Integration into Standard SCD Care:**
  - **Establish insurance coverage models** for home oxygen therapy
  - **Develop training programs** for patients and caregivers
  - **Create collaborations** with community health centers
- **Technology Expansion:**
  - **Evaluate cloud-based RPM** for large-scale deployment

- Advocate for **insurance reimbursement of home oxygen and RPM**
- **Policy and Public Health Implementation:**
  - Engage **SCD advocacy groups** for policy development
  - Conduct **education campaigns** on early oxygen therapy benefits

## 10. OUTCOME MEASURES

### *Primary Outcome:*

- Reduction in **crisis severity**, measured by **pain score change** at 12 and 24 hours post-intervention.

### *Secondary Outcomes:*

- **Decrease in total VOC episodes** within the 12-month intervention phase.
- **Reduction in opioid use** within 24 hours of VOC onset.
- **Decrease in hospital admission rates** within 48 hours of VOC onset.
- **Reduction in healthcare costs per patient per year.**
- **Improvement in quality of life (SF-36 assessment tool).** [https://www.rand.org/health-care/surveys\\_tools/mos/36-item-short-form/survey-instrument.html](https://www.rand.org/health-care/surveys_tools/mos/36-item-short-form/survey-instrument.html)

## 9. ETHICAL CONSIDERATIONS

- **Approval from Institutional Review Boards (IRB)** at all participating centers.
- **Written informed consent** from all participants or guardians.
- **Data confidentiality** maintained per **HIPAA regulations**.
- **Safety monitoring committee** for adverse event evaluation.
- **Documentation of refusal to accept home oxygen**

## 10. STUDY TIMELINE

Phase	Duration
IRB Approval	3 months
Patient Enrollment	12 months
Intervention & Follow-Up	12 months
Data Analysis & Publication	6 months

## 11. POTENTIAL IMPACT

If **home oxygen therapy within the Golden Half Hour** proves effective, it could transform SCD crisis management by:

- **Allowing patients to manage VOCs at home**, reducing ED visits and hospitalizations.
- **Halting vaso-occlusion** before irreversible damage occurs.
- **Decreasing pain severity and opioid use.**
- **Improving overall quality of life for SCD patients.** [https://www.rand.org/health-care/surveys\\_tools/mos/36-item-short-form/survey-instrument.html](https://www.rand.org/health-care/surveys_tools/mos/36-item-short-form/survey-instrument.html)

This study aims to **provide evidence-based validation** for Dr. Sota Omoigui's **Golden Half Hour Theory**, potentially establishing **home oxygen therapy for prevention and as a standard first-line intervention** for vaso-occlusive crises.

## PROTOCOL 2 FOR A LONGITUDINAL HEALTH OUTCOME STUDY: HOME OXYGEN THERAPY WITHIN THE GOLDEN HALF HOUR TO PREVENT AND STOP A SICKLE CELL CRISIS

### 1. STUDY TITLE

**Longitudinal Outcomes of Home Oxygen Therapy (1.5–2 L/min) Within the Golden Half Hour for the Prevention and Treatment of Sickle Cell Crisis**

### 2. BACKGROUND AND RATIONALE

Sickle cell disease (SCD) is characterized by recurrent **vaso-occlusive crises (VOCs)**, which cause severe pain, ischemia, and potential organ damage. **Delayed intervention worsens crisis severity, increases opioid dependence, and leads to more frequent hospitalizations.**

Dr. Sota Omoigui's **Golden Half Hour Theory** emphasizes that **VOCs can be halted or significantly reduced if appropriate interventions, such as oxygen therapy, are initiated after daytime stressors or within the first 30 minutes of symptom onset.** Early intervention **prevents the inflammatory cascade, cellular adhesion, and endothelial damage that worsen VOCs and cause multi-organ damage.**

**Traditional randomized controlled trials (RCTs) may be unethical in this context,** as withholding early oxygen therapy could allow patients to enter a full-blown crisis. Instead, this **longitudinal outcome study** will compare **pre- and post-intervention health outcomes** in patients who incorporate **home-based oxygen therapy (1.5–2 L/min via nasal cannula) initiated after daytime stressors or within the Golden Half Hour of symptom onset.**

#### **Prevention**

When there is any stressor during the day, as listed below, the person should sleep with oxygen. Sleep is the most dangerous time as the low oxygen environment will tip the person into a crisis:

**Physical stress:** e.g. from physical activity

**Intellectual stress** e.g. preparing for exams, writing papers

**Environmental stress** e.g. cold environment, high altitude, air travel

**Physiological stress** e.g. during sleep, excess heat, dehydration, pain, emotional stress, infection, malaria, pneumonia.

**Note:** Infection, malaria and pneumonia also need to be prevented and timely treated. Otherwise there will be more reversible sickle cells than oxygen can restore.

**Treatment:** use oxygen within the golden half hour of onset of symptoms to stop a crisis.



### 3. OBJECTIVES

#### *Primary Objective:*

- To determine whether **home-based oxygen therapy (1.5–2 L/min via nasal cannula) initiated after daytime stressors or within 30 minutes of VOC onset reduces crisis severity and duration.**

#### *Secondary Objectives:*

- To assess whether **early home oxygen therapy reduces hospital admissions and emergency department (ED) visits.**
- To determine the impact of **home oxygen therapy on pain scores and opioid use.**
- To measure changes in **biomarkers of hemolysis and inflammation.**
- To examine **long-term changes in frequency of VOCs and quality of life in SCD patients.**

### 4. STUDY DESIGN

- **Type: Longitudinal pre- and post-intervention observational study**
- **Setting: Home-based intervention with follow-up in outpatient clinics and hospitals**
- **Duration: 24 months (12 months pre-intervention, 12 months post-intervention)**
- **Study Groups:**
  - **Pre-Intervention Phase (Baseline Data Collection):** Patients manage VOCs using their current standard home care (without early oxygen therapy).
  - **Post-Intervention Phase (Oxygen Therapy Implementation):** Patients integrate **home oxygen therapy (1.5–2 L/min via nasal cannula) initiated after daytime stressors or within 30 minutes of VOC onset** and record health outcomes.

### 5. ELIGIBILITY CRITERIA

#### *Inclusion Criteria:*

- **Age 6 months or older**
- **Diagnosis of sickle cell disease (HbSS, HbSC, or HbS/β-thalassemia)**
- **History of at least two vaso-occlusive crises in the past year**
- **Access to home oxygen therapy and smartphone or internet connection for remote patient monitoring (RPM)**
- **Ability to use WhatsApp to record assessments and communicate with the healthcare team.**
- **Ability to initiate oxygen therapy within 30 minutes of symptom onset**
- **No signs of infection or acute chest syndrome at enrollment**
- **Informed consent obtained from patient or legal guardian**

#### *Exclusion Criteria:*

- **Baseline hypoxia ( $SpO_2 < 88\%$ )**
- **Acute chest syndrome or other pulmonary complications**
- **History of chronic oxygen therapy**
- **Pregnancy**
- **Known contraindications to oxygen therapy (e.g., severe COPD with  $CO_2$  retention)**



## 6. STUDY PROCEDURES

### *Pre-Intervention Phase (12 Months) – Baseline Data Collection*

- Patients continue managing VOCs as per their usual home care.
- **Self-reported and clinical data collected on:**
  - Frequency and severity of VOCs
  - Frequency of hospital admissions
  - Pain scores (Numeric Rating Scale)
  - Amount of Opioid and analgesic medication use
  - Number and frequency of ED visits and hospital admissions
  - Blood biomarkers (FBC/CBC, LDH, bilirubin, reticulocyte count, CRP, WBC)
- Quality of life (SF-36 or similar validated survey) [https://www.rand.org/health-care/surveys\\_tools/mos/36-item-short-form/survey-instrument.html](https://www.rand.org/health-care/surveys_tools/mos/36-item-short-form/survey-instrument.html)

### *Intervention Phase (12 Months) – Home Oxygen Therapy Implementation*

- Patients begin using home oxygen therapy (1.5–2 L/min via nasal cannula) within 30 minutes of VOC onset and continue for 6–12 hours.
- **Self-reported and clinical data collected on:**
  - Changes in VOC severity and duration
  - Pain scores before and after oxygen therapy
  - Reduction in opioid use
  - Changes in frequency of ED visits and hospitalizations
  - Oxygen saturation levels before and after therapy
  - Remote patient monitoring (RPM) setup (SpO<sub>2</sub> sensors, digital pain logs)
- **Long-term improvements in quality of life** Quality of life (SF-36 or similar validated survey) [https://www.rand.org/health-care/surveys\\_tools/mos/36-item-short-form/survey-instrument.html](https://www.rand.org/health-care/surveys_tools/mos/36-item-short-form/survey-instrument.html)

## 7. REMOTE PATIENT MONITORING (RPM) IMPLEMENTATION

- **Tools Provided:**
  - Pulse oximeter (SpO<sub>2</sub>, heart rate)
  - Smartphone app for symptom tracking and pain scores
  - Automated alerts for SpO<sub>2</sub> < 88% or rising pain scores
  - Telehealth check-ins for data review and intervention adherence
- **Objectives of RPM:**
  - Ensure timely initiation of oxygen therapy
  - Monitor trends in SpO<sub>2</sub> and pain progression
  - Provide early alerts for worsening crises
  - Enhance patient engagement and adherence

## 8. COST-EFFECTIVENESS ANALYSIS

- **Healthcare Utilization Metrics:**
  - Reduction in ED visits, hospital admissions, and length of stay
  - Reduction in opioid use and associated costs
- **Direct and Indirect Cost Analysis:**
  - Cost of oxygen therapy vs. hospital-based crisis management

- Cost of **RPM devices and telehealth vs. traditional follow-ups**
- **Quality-Adjusted Life Years (QALYs) and cost per avoided hospitalization**

## 9. SCALABILITY STRATEGIES FOR HOME OXYGEN THERAPY

- **Integration into Standard SCD Care:**
  - Establish **insurance coverage models** for home oxygen therapy
  - Develop **training programs for patients and caregivers**
  - Create **collaborations with community health centers**
- **Technology Expansion:**
  - Evaluate **cloud-based RPM for large-scale deployment**
  - Advocate for **insurance reimbursement of home oxygen and RPM**
- **Policy and Public Health Implementation:**
  - Engage **SCD advocacy groups for policy development**
  - Conduct **education campaigns on early oxygen therapy benefits**

## 10. OUTCOME MEASURES

### *Primary Outcome:*

- Reduction in **crisis severity**, measured by **pain score change at 12 and 24 hours post-intervention**.

### *Secondary Outcomes:*

- **Decrease in total VOC episodes** within the 12-month intervention phase.
- **Reduction in opioid use** within 24 hours of VOC onset.
- **Decrease in hospital admission rates** within 48 hours of VOC onset.
- **Reduction in healthcare costs per patient per year**.
- **Improvement in quality of life (SF-36 assessment tool)**.

## 7. OUTCOME MEASURES

### *Primary Outcome:*

- Reduction in **crisis severity**, measured by **pain score change at 12 and 24 hours post-intervention**.

### *Secondary Outcomes:*

- **Decrease in total VOC episodes** within the 12-month intervention phase.
- **Reduction in opioid use** within 24 hours of VOC onset.
- **Decrease in hospital admission rates** within 48 hours of VOC onset.
- **Reduction in length of hospital stay (if admitted)**.
- **Changes in SpO<sub>2</sub> and vital signs before and after oxygen therapy**.
- **Long-term improvements in quality of life (SF-36 or similar assessment tool)**.

## 8. STATISTICAL ANALYSIS

- **Sample Size Calculation:** Based on preliminary data, a **20% reduction in pain scores and hospital admissions** is expected. A **minimum of 160 participants** will provide sufficient power for statistical significance.
- **Data Analysis:**
  - **Paired t-tests or Wilcoxon signed-rank tests** for pre- and post-intervention comparisons of pain scores and opioid use.
  - **Chi-square tests** for categorical outcomes (hospital admissions, ED visits).
  - **Multivariate regression** to adjust for confounding factors (age, disease severity, socioeconomic factors).

## 9. ETHICAL CONSIDERATIONS

- **Approval from Institutional Review Boards (IRB)** at all participating centers.
- **Written informed consent** from all participants or guardians.
- **Data confidentiality** maintained per **HIPAA regulations**.
- **Safety monitoring committee** for adverse event evaluation.

## 10. STUDY TIMELINE

Phase	Duration
IRB Approval	3 months
Pre-Intervention Data Collection	12 months
Intervention (Home Oxygen Therapy)	12 months
Data Analysis & Publication	6 months

## 11. POTENTIAL IMPACT

If home oxygen therapy within the Golden Half Hour proves effective, it could:

- **Empower SCD patients to manage VOCs at home, reducing ED visits and hospitalizations.**
- **Prevent full-blown crises, reducing pain severity and opioid dependence.**
- **Improve overall quality of life and long-term health outcomes.**
- **Shift SCD management toward proactive, early intervention strategies.**

This study aims to **validate Dr. Sota Omoigui's Golden Half Hour Theory** and establish **home oxygen therapy (1.5–2 L/min) initiated after daytime stressors or as a first-line intervention** for vaso-occlusive crises.

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Signed

Sota Omoigui M.D.

*Diplomate of the American Board of Anesthesiology*

*With subspecialty certification in Pain Medicine*

*Diplomate of the American Board of Pain Medicine*

*Title:*

## **Sickle Cell Home Oxygen Therapy Study: Daily Symptom and Treatment Log**

*Form Fields:*

### **1. PATIENT IDENTIFICATION**

- **Full Name (or Study ID)** (SHORT ANSWER)
- **Date of Entry** (DATE PICKER – DEFAULT TO TODAY'S DATE)

### **2. SYMPTOM TRACKING**

- **Are you experiencing any sickle cell crisis symptoms today?** (MULTIPLE CHOICE: YES / NO)
- **Symptom Severity (if applicable)** (LINEAR SCALE: 1 = MILD, 10 = WORST PAIN POSSIBLE)
- **Location of Pain** (CHECKBOXES: ARMS, LEGS, CHEST, ABDOMEN, BACK, OTHER – SHORT ANSWER IF "OTHER" SELECTED)

### **3. HOME OXYGEN THERAPY USAGE**

- **Did you initiate oxygen therapy today?** (YES / NO)
- **Time of Oxygen Therapy Initiation** (TIME PICKER)
- **Duration of Oxygen Use (in hours)** (SHORT ANSWER OR DROPDOWN: <1 HR, 1–3 HRS, 4–6 HRS, >6 HRS)
- **Oxygen Flow Rate Used (L/min)** (DROPDOWN: 1.5 L/MIN, 2.0 L/MIN, OTHER – SHORT ANSWER IF "OTHER" SELECTED)
- **Pain Score Before Oxygen Therapy** (LINEAR SCALE: 1 = MILD, 10 = WORST PAIN POSSIBLE)
- **Pain Score After Oxygen Therapy** (LINEAR SCALE: 1 = MILD, 10 = WORST PAIN POSSIBLE)

### **4. OXYGEN SATURATION (SpO<sub>2</sub>) MONITORING**

- **SpO<sub>2</sub> Before Oxygen Therapy (%)** (SHORT ANSWER – RECOMMEND PULSE OXIMETER USE)
- **SpO<sub>2</sub> After Oxygen Therapy (%)** (SHORT ANSWER)

### **5. MEDICATION AND TREATMENT USE**

- **Did you take any pain medications today?** (YES / NO)
- **Medications Taken (if applicable)** (CHECKBOXES: ACETAMINOPHEN, NSAIDS, OPIOIDS, HYDROXYUREA, OTHER – SHORT ANSWER IF "OTHER" SELECTED)
- **Total Opioid Dosage (if applicable, in mg)** (SHORT ANSWER)

### **6. EMERGENCY AND HEALTHCARE UTILIZATION**

- **Did you visit the ER or hospital today?** (YES / NO)
- **Reason for Visit (if applicable)** (SHORT ANSWER)

- **Hospitalization Required?** (YES / NO)

7. ADDITIONAL COMMENTS & NOTES

- **Other Symptoms or Concerns?** (LONG ANSWER TEXT FIELD)

## **Patient Information**

**<https://www.oxygenconcentratorstore.com/blog/the-10-basic-safety-guidelines-for-oxygen-therapy-use/>**

### **The 10 Basic Safety Guidelines for Oxygen Therapy Use**

**January 21, 2025 Scott Ridl and Kristina Diaz, RRT**

Oxygen itself is a safe gas to use, and oxygen therapy provides benefits to enhance your health. If you use oxygen therapy, taking the right safety measures is essential for yourself and anyone around you. Practicing these tips will reduce your risk of accidents and injuries and ensure you get the most out of your oxygen therapy.

**1. Avoid open flames and heat sources.**

While oxygen itself is not flammable, it significantly accelerates combustion and can cause other materials to ignite. Maintaining a safe distance from open flames, such as candles, gas stoves, and fireplaces, is crucial. It's recommended to stay at least eight feet away from these heat sources to prevent accidental ignition. Additionally, be cautious with space heaters and ensure they are used in well-ventilated areas away from oxygen equipment.

**2. Don't smoke while using oxygen.**

Never smoke while using oxygen therapy. Smoking while wearing oxygen puts you at serious risk for severe burns as oxygen quickly turns a small spark into a large flame. Also, don't let anyone smoke near you. Posting "No Smoking" signs in your home serves as a constant reminder to everyone of the associated risks.

**3. Don't wear loose-fitting clothing while cooking.**

Loose-fitting clothing and long sleeves can drape down and catch fire. And once there's a spark, you're at serious risk of it igniting. Choose well-fitted clothing that stays out of the way.

**4. Avoid using aerosol products.**

Aerosol products, like hairspray, spray deodorant, room spray, and cooking spray, are under pressure and contain chemicals, making them extremely flammable. These chemicals can ignite from a spark, so keep them away from your oxygen.

**5. Keep flammable liquids away from your clothing.**

Keep any flammable liquids away from your clothing. Avoid using hairspray, oil-based skin creams, and pumping gas while using oxygen therapy. Also, use products like hand sanitizer and rubbing alcohol with caution.

**6. Always keep your oxygen equipment secured.**

Oxygen tanks and cylinders contain pressurized gas and can become dangerous projectiles if damaged. Always ensure they are stored upright in a secure location where they cannot be easily knocked over. Using appropriate stands or holders can provide added stability.

Keep your oxygen concentrator in a well-ventilated area, away from direct sunlight and heat sources so that it doesn't overheat and provides medical-grade oxygen.

7. Carry your oxygen tanks with care.

Always use care while carrying your oxygen tanks. If a tank drops, it could break, and a broken tank causes the pressurized gas to escape at full speed and become a dangerous projectile.

8. Be careful with power cords and oxygen tubing.

Make sure you don't trip over your oxygen tubing and power cords. Also, never use oxygen tubing longer than 50 feet, and never cut your tubing.

9. Become familiar with your user manual and concentrator alarms.

Always look over your oxygen concentrator manual so you know how to care for your unit. Become familiar with equipment maintenance and the machine's alarms so you'll know how to respond when an alarm sounds or the machine requires maintenance.

10. Preparation is key.

Knowing how to prepare for unexpected events related to oxygen therapy is vital to your health and safety.

Always keep a fire extinguisher close by.

Ensure your smoke detectors work.

Purchase a backup generator in case you lose power.

Tell your electric company about your oxygen use so you get priority during power outages.

Always keep backup equipment on hand, like extra fully charged batteries or oxygen tanks.

Monitor the gauges on your oxygen tanks so your oxygen supply company can deliver more tanks in plenty of time.

Other Oxygen Safety Tips:

Always turn off your oxygen while you're not wearing it.

Keep your oxygen concentrator away from walls and curtains, and don't cover the unit.

Do not store oxygen tanks in enclosed areas, like car trunks or closets.

If you use liquid oxygen, always keep it upright; never lay it on its side.



Consider using 100% cotton bed sheets if you use oxygen while you sleep to reduce static electricity.