**Data tables**

Excluded studies obtained through database search can be viewed in Table 1: Link [https://1drv.ms/x/s!AqyfgS53OjI4gTKy4\_jExzV4a7UO?e=aVveeg](https://1drv.ms/x/s%21AqyfgS53OjI4gTKy4_jExzV4a7UO?e=aVveeg) (view only link)

Table 2. Grey literature articles included

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| --- | --- | --- | --- | --- | --- | --- | --- |
| **Date Published** | **Author** | **Publisher** | **URL** | **Title** | **Summary** | **Concerns/ Comments** | **Description** |
| 12-Nov-2014  | John Furst  | First Aid for Free  | https://www.firstaidforfree.com/a-guide-to-pulse-oximetry-for-first-aiders/  | A guide to Pulse Oximetry for First aiders  | Online first aid Blog post/article that is aimed at advanced first aid providers who may be trained to use additional monitoring equipment. Focus is on pulse oximetry as part of assessment, including indications, such as respiratory (asthma/COPD), cardiac conditions and patients with reduced levels of consciousness.   | website sells first aid kits  | Describes FA use of pulse ox as part of assessment of persons with respiratory, cardiac issues and reduced level of consciousness.  |
| 24-Sep-2017  | Keith Murray  | Triton News & Networking for Captains and Crew  | https://www.the-triton.com/2017/09/sea-sick-pulse-ox-a-vital-part-of-every-first-aid-kit/  | Sea sick: "Pulse ox" a vital part of every first-aid kit  | Online article from networking organization for marine staff. The author describes a question he is commonly asked, "what medical equipment should I have on my boat and at home." His answer is, a good digital blood pressure machine and a pulse oximeter. He notes that when at sea, remote medical services ask for vital signs, and the pulse ox and blood pressure machine can provide much of this information. The author states that a good pulse oximeter is a vital part of every first aid kit, the crew members should know how to use it and know the normal readings.   |  The author owns a school for training in onboard CPR, AED and first-aid and that offers AED sales and service.  | Describes FA use of pulse oximetry as part of assessment of persons who may become ill at sea.  |
| Apr-2018  | Lifesaving Society  | The Lifesaving Society (CA) - The Lifeguarding Experts  | https://www.lifesaving.bc.ca/Content/images/Admin/images/ResourceSchoolFiles/ResourceSchoolFilesPdf/Pulse%20Oximeter\_3311431\_PulseOximeter.pdf  | Pulse Oximeters Information Bulleting  | Bulletin by Canadian lifeguarding organization that describes conditions where supplemental oxygen may need to be provided (drowning, DCI, CO, respiratory arrest, other conditions with O2 sat<94%), then provides instruction for use of a pulse oximeter, care/storage, and where to purchase at the lifesaving.  | The bulletin provides links to an online store for the organization for purchasing pulse oximeters.  | Describes conditions where supplemental oxygen and pulse oximetry may be needed.  |
| 2018; Second Edition  | John Haines  | APL Healthcare, Australia  | https://books.google.com/books?id=T-fmDwAAQBAJ&pg=PA392&lpg=PA392&dq=pulse+oximeters+AND+first+aid&source=bl&ots=nHylM9EQUB&sig=ACfU3U17i89EDupM7Wz7aVnDvYi8qXkb1w&hl=en&sa=X&ved=2ahUKEwjYhceyg676AhXkIzQIHcA7B1I4vgEQ6AF6BAgCEAM#v=onepage&q=pulse%20oximeters%20AND%20first%20aid&f=false  | Advanced First Aid Skills  | First aid textbook sold online that Includes measurement of oxygen saturation in the vital signs chapter as a 'Fifth Vital Sign", with range of expected saturations provided for OOPD and cystic fibrosis; includes oxygen for first aid with section on pulse oximetry.  | Text/recommendations are not referenced.  | Describes conditions where supplemental oxygen and pulse oximetry may be needed.  |
| 14-May-2020  | Nicole Harris  | Parents  | https://sports.yahoo.com/pulse-oximeter-family-first-aid-213141156.html?guccounter=1&guce\_referrer=aHR0cHM6Ly93d3cuZ29vZ2xlLmNvbS8&guce\_referrer\_sig=AQAAAMyfX\_gVr6EG7N4ANqXR0X6vSH2VDxVad9SgBHWfrUTat17fC7\_-MBxd2fDTkm7HCIGSC\_egcAbzbtVWLl\_tqUgrv4Zflee6fWTW5W8ec5fL2zJxjjhYGNEQp\_bNonL5-lcebkGAZJwtWB1ZLrXFvh5CUv3yLNch1ZuJ5d44Mdlj  | Should you have a pulse oximeter in your family first aid kit?  | Online magazine article that discusses 'silent hypoxia" and how pulse oximeter measure oxygen saturation and are accurate as long as the person doesn’t have severe respiratory distress. Points out that below 90% saturation, the O2 saturation is over estimated and can give a false sense of security. Notes accuracy affected be affected by many things. Notes that good data does not exist to suggest that the use of home pulse oximeters prevents or decreases bad outcomes in severe COVID-19 patients. Does not come out for or against keeping a pulse oximeter at home, especially in light of their overestimation of oxygen saturation below 90%.  | No concerns  | Describes pros and cons of having a pulse oximeter in home FA kits without suggesting for or against.  |
| 17-Sep-2020  | Anthony Pearson, MD  | MEDPAGETODAY, LLC  | https://www.medpagetoday.com/opinion/skeptical-cardiologist/88677  | How Accurate Are Home Blood Oxygen Monitors? The skeptical cardiologist examines pulse oximeters labeled not for medical use  | Online opinion article on medical news website. Article points out that inexpensive pulse oximeters available in drugstores are labeled not for medical use (NMU) and are intended for non-medical use by healthy people to monitor their pulse rate and blood oxygen levels for sports and/or aviation use. Cites review article of several NMUs. Makes suggestions on proper use of pulse oximeter and factors that might give false low values and that one should be familiar with their pulse oximeter before using it to assess a potential COVID-19 illness.   | No major concerns. Publisher is an online news site for all medical specialties and covers political news, opinion pieces and essays from readers and editorial board. Offers a career search service and free courses (no CME).  | Does not come out and recommend home pulse oximetry but provides suggestions for use at home during COVID-19 pandemic.  |
| 16-Dec-2020  | Richard Harris  | NPR  | https://www.npr.org/sections/health-shots/2020/12/16/947226068/dark-skin-can-lead-to-errors-with-pulse-oximeters-used-in-covid-19-treatment  | Devices Used In COVID-19 Treatment Can Give Errors For Patients With Dark Skin  | Online article on public news website. Describes NEJM study showing that common fingertip pulse oximeters can sometimes give misleading readings in people with dark skin.    | No concerns  | Informs public of potential inaccurate pulse oximeter readings in persons of color.  |
| 7-Aug-2020  | Sara Hendricks  | USA Today  | https://www.usatoday.com/story/tech/reviewedcom/2020/08/07/pulse-oximeters-back-stock-heres-why-you-may-want-one/3319003001/  | Pulse oximeters are back in stock - here's why you may want one  | Online article from major news publisher that reviews when pulse oximeter might be used at home (medical conditions) Does not come out suggesting home use by healthy people but quotes a physician who notes that it’s more important to pay attention to how you feel in general, and that there is no harm in getting an oximeter especially if someone is at higher risk for COVID-19 or respiratory issues. It's suggested to avoid smartphone oximeter apps. Lack of accuracy described.   | Hyperlinks provided to specific brands available for purchase; General statement that there is no harm in getting a pulse oximeter.  | Suggests pulse oximetry at home for persons with higher risk of COVID-19 or respiratory issues.  |
| 24 April 2020, updated 5 Oct 2021  | Tara Parker-Pope  | The New York Times  | *https://www.nytimes.com/2020/04/24/well/live/coronavirus-pulse-oximeter-oxygen.html*  | What's a pulse oximeter, and do I really need one at home  | Online article from major news publisher, quotes local physician who describes low oxygen saturations seen in patients presenting with COVID-19, and how a pulse oximeter could alert patients to seek medical attention sooner, before complications and death may occur.   | Lack of accuracy from pulse oximetry not discussed  | Suggests pulse oximetry for home monitoring by persons with COVID-19   |
| 22-Jan-2021  | Terry Cralle  | terrycralle.com  | https://www.terrycralle.com/pulse-oximeters/  | Pulse oximeters: 15 things you need to know before buying  | Online review article. Explains what a pulse oximeter is, basic principles, eventually goes into which are best for adults, sports enthusiasts, children, etc.  | Hyperlinks provided to purchase products; associates earn from qualifying purchases  | Describes pulse oximetry uses for different populations.  |
| 23-Aug-2021  | Health Shots  | Health Shots  | https://www.healthshots.com/preventive-care/family-care/have-you-given-your-first-aid-kit-a-covid-19-upgrade-yet/  | Have you given your first-aid kit a Covid-19 upgrade yet?  | Online article that proposes that everyone should upgrade their basic first-aid kit to include a pulse oximeter, a digital blood pressure monitor, an oxygen concentrator or can, and a pocket CPR mask.  | Unreferenced recommendations  | Suggests upgrading of first aid kits to include pulse oximeters and other equipment.  |
| 16-Jul-2021  | Lookee health-technology  | Lookee Health-Technology  | https://www.lookeetech.com/blogs/news/why-refresh-your-first-aid-kit-with-a-pulse-oximeter-during-covid-19  | Why refresh your first aid kit with a pulse oximeter during COVID-19?  | Online blog article that describes when it would be beneficial to refresh your first aid kit with a pulse oximeter.   | Website sells pulse oximeters  | Suggests pulse pximeters are useful for monitoring oxygen saturation  |
| 2-Aug-2022  | Megan Lewis  | MIT News on campus and around the world  | https://news.mit.edu/2022/pulse-oximeters-dont-work-as-well-patients-of-color-0802  | Why it’s a problem that pulse oximeters don’t work as well on patients of color  | Online article describes new research ties inaccuracies in pulse oximeter readings to racial disparities in treatment and outcomes.   | None  | Informs general public of potential inaccurate pulse oximeter readings in persons of color.  |
| 2022  | Mary Burns, RN, BS  | The Pulmonary Education and Research Foundation.  | https://perf2ndwind.org/basics/pulse-oximeters-and-oxygen-saturation/  | Pulse oximeters and oxygen saturation  | Online Review article by nonprofit group describing what can affect accuracy of readings, what is a normal saturation, how to pace oneself during physical activity, and advice for those who wish to purchase their own oximeter Suggests getting a prescription for your PCP so it may be potentially deductible from taxes.  | consultant fee paid by pulse ox manufacturer to the quoted expert  | Informs general public of potential inaccurate pulse oximeter readings in persons of color.  |
| 11-Jul-22  | Jacqueline Howard  | CNN health  | https://www.cnn.com/2022/07/11/health/pulse-oximeters-dark-skin-study/index.html  | Scientists are searching for solutions after studies show pulse oximeters don't work as well for people of color  | Online Article from major new publisher that describes a study showing data of how often pulse oximeters overestimate oxygen levels in black/brown patients.   | None  | Informs general public of potential inaccurate pulse oximeter readings in persons of color.  |
| 2022  | Len Horovitz, MD and Eric Cioe-Pena, MD (sources)  | UC San Diego Health; HealthDay  | https://myhealth.ucsd.edu/RelatedItems/6,757160  | What Is a Pulse Oximeter, and Should You Get One to Warn of COVID-19?  | Online article from healthcare organization that quotes medical expert who describes which patients with COVIDE-19 may benefit from a pulse oximeter,and how it may alert a person to seek emergency care. Also gives opinion that not every American obtain a pulse oximeter.   | None  | Suggests pulse oximetry for home monitoring by persons with COVID-19   |
| 19 Feb 2021; update 7 Nov 2022 | FDA Advisory Committee  | US Food & Drug Administration  | https://www.fda.gov/medical-devices/safety-communications/pulse-oximeter-accuracy-and-limitations-fda-safety-communication  | Pulse oximeter accuracy and limitations: FDA safety communication  | FDA Advisory Committee meeting notice, with plan to  discuss ongoing concerns that pulse oximeters may be less accurate in individuals with darker skin pigmentations, factors that may affect accuracy and performance, the available evidence about the accuracy of pulse oximeters, recommendations for patients and health care providers, and the amount, and type of data that should be provided by manufacturers to assess pulse oximeter accuracy and to guide other regulatory actions as needed.  Original bulletin stated that the COVID-19 pandemic has caused an increase in the use of pulse oximeters, and a recent report suggests that the devices may be less accurate in people with dark skin pigmentation. The U.S. Food and Drug Administration (FDA) is informing patients and health care providers that although pulse oximetry is useful for estimating blood oxygen levels, pulse oximeters have limitations and a risk of inaccuracy under certain circumstances that should be considered. Patients with conditions such as COVID-19 who monitor their condition at home should pay attention to all signs and symptoms of their condition and communicate any concerns to their health care provider.  | None  | Informs public of potential inaccurate pulse oximeter readings in persons of color.  |