



Indispensable helpers in medicine

Medical gases are invisible helpers in medicine, relieving pain, accelerating the healing process and even saving lives. Many medical breakthroughs would never have been possible without gases.

Healthcare – a flourishing business

Gases have been used in medicine for nearly 200 years. They are invaluable tools in many areas from anaesthesia through surgery to respiratory support. Linde bundles its medical gases business in its Healthcare Global Business Unit, which is steadily growing. In industrialised countries, for example, this growth is primarily driven by changing demographics – in other words, aging populations. Improvements in diagnosing illness and a wider choice of therapies, in particular for chronic disease, are also fuelling the increased demand for therapeutic gases. Our Healthcare activities include supplying hospitals, as well as out-of-hospital patients, providing homecare patients with oxygen, for example. The Healthcare segment now accounts for around ten percent of overall revenue.

Treating chronic wounds with oxygen

A chronic wound is a wound that does not show signs of healing despite regular, localized treatment. This inability to heal may be caused by underlying illnesses such as diabetes or vascular disease. Infections can be a further barrier to the healing process. According to the German society for the healing and treatment of wounds (Deutsche Gesellschaft für Wundheilung und Wundbehandlung e.V.) there are no official statistics on the number of people suffering from chronic wounds. However, around two million people are believed to suffer from chronic wounds in Germany, with approximately 60,000 new cases diagnosed each year. Typically, out-patient treatment is costly and success rates often low. To rectify this situation, Linde has developed a method of treating chronic wounds with pressurised oxygen. The therapy involves placing the affected foot or lower leg in an encapsulating chamber, into which oxygen is intermittently pumped at a pressure between 0 and 50 mbar for around an hour. Argentina is the first country in the world to authorise Linde to market this treatment. At the same time, we are also conducting studies in other South American countries. The initial results are certainly promising – all wounds treated with this method so far have either significantly reduced in size or healed completely.

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Biological wastewater treatment

Gases for solar cells

Cleaning with CO₂ snow

Pain relief

[Healing with oxygen](#)

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