

## Opioids and Lung Health

*Evidence suggests a relationship between opioid misuse, tobacco dependence and respiratory diseases.*

Opioid misuse is a threat to lung health. Individuals who have an opioid use disorder (OUD) and use tobacco are at risk. Concurrently addressing tobacco use and OUD can save lives and help people overcome both the addiction to tobacco and opioids.

### *Underlying Respiratory Diseases at the Heart of Opioid Deaths*

- Misuse of prescription or synthetic opioids can suppress breathing and block air from entering the lungs, leading to hypoxia and suffocation. It can also exacerbate asthma symptoms.<sup>1,2,3</sup>
- Having an existing lung disease is a leading indicator for death from an opioid overdose. Due to decreased lung capacity, individuals who have an existing lung disease are more likely to die from an overdose than their counterparts without existing lung disease.<sup>4</sup>

### *The Strong Connection Between Tobacco Use and Opioid Addiction*

- People with substance use disorders (SUDs), smoke at high rates. Early studies have shown that over half of individuals with SUD smoke cigarettes.<sup>5,6,7</sup> One particular study found smoking prevalence to be as high as 95 percent in individuals with an OUD.<sup>8</sup>
- Research shows that there is a link between nicotine and opioid addiction. Their overlapping pathways have been found to be mutually reinforcing, meaning that one addiction can encourage the other.<sup>9,10,11</sup>
- Tobacco use is a significant threat to patients with SUD. One study suggests that individuals who smoke and have a SUD are more likely to die from a tobacco-related disease than their underlying SUD.<sup>12</sup>

### *Helping Patients with SUDs Quit Smoking*

- Individuals with behavioral health conditions want to and are able to quit smoking.<sup>13,14</sup> The relationship between cigarette smoking and SUDs presents an opportunity to integrate treatments for opioid and tobacco dependence. Research suggests that incorporating smoking cessation into treatment programs for SUDs could improve substance use recovery outcomes and may increase long-term abstinence from substances, including opioids.<sup>15,16,17</sup>

- Tobacco-free campus policies make patients less likely to smoke alone or with staff members and more likely to receive tobacco-related services.<sup>18</sup> Evidence-based treatments for tobacco dependence, including FDA-approved medication and counseling, can be utilized concurrently with treatment for SUDs. However, in 2018, only 67 percent of substance use treatment facilities screened for tobacco use, 49.8 percent provided cessation counseling, 28 percent offered nicotine replacement therapy and 22.3 percent offered non-nicotine tobacco cessation medications.<sup>19</sup>

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<sup>1</sup> National Institute on Drug Abuse. (2017, March) Health Consequences of Drug Misuse. Retrieved from <https://www.drugabuse.gov/publications/health-consequences-drug-misuse/respiratory-effects>

<sup>2</sup> National Institute on Drug Abuse. (2018, December). Misuse of Prescription Drugs. Retrieved from <https://www.drugabuse.gov/publications/misuse-prescription-drugs/what-classes-prescription-drugs-are-commonly-misused>

<sup>3</sup> Kiyatkin, EA. (2019, June). Respiratory Depression and Brain Hypoxia Induced by Opioid Drugs: Morphine, Oxycodone, Heroin, and Fentanyl. *Neuropharmacology*. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/30735692>

<sup>4</sup> Leece, P. Cavacuiti, C. Macdonald, EM. Gomes, T. Kahan, M. Srivastava A, Steele L. Luo J. Mamdani MM. Juurlink DN/ (2015 Apr 15). Predictors of Opioid-Related Death During Methadone Therapy. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/26014916>.

<sup>5</sup> Lawrence, D., Mitrou, F., Zubrick, S.R. (2009, August 7). Smoking and mental illness: results from population surveys in Australia and the United States. *BioMed Central*. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2734850/pdf/1471-2458-9-285.pdf>

<sup>6</sup> Richter, K.P. & Ahluwalia, J.S. (2008, Oct 12). A Case for Addressing Cigarette Use in Methadone and Other Opioid Treatment Programs. *Journal of Addictive Diseases*. Retrieved from [https://www.tandfonline.com/doi/abs/10.1300/J069v19n04\\_04](https://www.tandfonline.com/doi/abs/10.1300/J069v19n04_04)

<sup>7</sup> Chun, J., Haug, N.A., Guydish, J.R., Sorensen, J.L., Delucchi, K. (2009, October 4). Cigarette Smoking Among Opioid-Dependent Clients in a Therapeutic Community. *The American Journal on Addictions*. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2756535/pdf/nihms-125234.pdf>

<sup>8</sup> Guydish, J., Passalacqua, E., Pagno, A., et al. (2015, September 22). An International Systematic Review of Smoking Prevalence in Addiction Treatment. *Addiction*. Retrieved from <https://onlinelibrary.wiley.com/doi/abs/10.1111/add.13099>

<sup>9</sup> Marynak K, VanFrank B, Tetlow S, et al. Tobacco Cessation Interventions and Smoke-Free Policies in Mental Health and Substance Abuse Treatment Facilities — United States, 2016. *MMWR Morb Mortal Wkly Rep* 2018;67:519–523. DOI: <http://dx.doi.org/10.15585/mmwr.mm6718a3>

<sup>10</sup> Yoon, J.H., Lane, S.D., Weaver, M.F. (2015, September 16). Opioid Analgesics and Nicotine: More Than Blowing Smoke. *Journal of Pain & Palliative Care Pharmacotherapy*. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/26375198>

<sup>11</sup> Kobus, A.M., Smith, D.H., Morasco, B.J., et al. (2013, November 1). Correlates of Higher Dose Opioid Medication Use for Low Back Pain in Primary Care. *The Journal of Pain*. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3641146/pdf/nihms417423.pdf>

<sup>12</sup> Bandiera, F.C., Anteneh, B., Le, T., Delucchi, K., Guydish, J. (2015, March 25). Tobacco-Related Mortality among Persons with Mental Health and Substance Abuse Problems. *PloS ONE*. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4373726/pdf/pone.0120581.pdf>

<sup>13</sup> Marynak K, VanFrank B, Tetlow S, et al. Tobacco Cessation Interventions and Smoke-Free Policies in Mental Health and Substance Abuse Treatment Facilities — United States, 2016. *MMWR Morb Mortal Wkly Rep* 2018;67:519–523. DOI: <http://dx.doi.org/10.15585/mmwr.mm6718a3>

<sup>14</sup> Compton, W. (2017, December 28) The Need to Incorporate Smoking Cessation into Behavioral Health Treatment. *Am J Addict*. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/29283480>

<sup>15</sup> Prochaska, J.J., Das, S., Young-Wolff, K.C. (2017, March 20). Smoking, Mental Illness, and Public Health. *Annu Rev Public Health*. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/27992725>

<sup>16</sup> Mannelli P, Wu, L., Peindl, K.S., Gorelick, D.A. (2013, April 9). Smoking and Opioid Detoxification: Behavioral Changes and Response to Treatment. *Nicotine Tob Res*. Retrieved from <https://academic.oup.com/ntr/article-abstract/15/10/1705/1182054>

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<sup>17</sup> Pakhale, S., Kaur, T., Charron, C., et al. (2018, January 25). Management and Point-of-Care for Tobacco Dependence (PROMPT): a feasibility mixed methods community-based participatory action research project in Ottawa, Canada. (p7). *BMJ Open*. Retrieved from <http://bmjopen.bmj.com/content/bmjopen/8/1/e018416.full.pdf>

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<sup>19</sup> Substance Abuse and Mental Health Service Administration. (2019). National Survey of Substance Abuse Treatment Services (N-SSATS): 2018. Data on Substance Abuse Treatment Facilities. Substance Abuse and Mental Health Services Administration. Retrieved from <https://www.samhsa.gov/data/sites/default/files/cbhsq-reports/NSSATS-2018.pdf>