

## Addictive behaviors: where do we stand, and where are we going?

Florence Thibaut, MD, PhD – *Editor in chief*  
Margret Hoehe, MD, PhD

### Abstract

*Tobacco and alcohol use remain the most prevalent addictive behaviors reported and the leading risk factors for global burden of disease, injury, and death. Considering addiction as a chronically relapsing brain disorder has opened up the way for biomedical treatment approaches.*

**Keywords:** addictive behavior; opioid; behavioral addiction; pharmacology; genetics

**Author affiliations:** University Hospital Cochin (site Tarnier), Faculty of Medicine Paris Descartes, INSERM U 894, CNP, Paris, France (Florence Thibaut); Max Planck Institute for Molecular Genetics, Berlin, Germany (Margret Hoehe)

**Address for correspondence:** Dept of Psychiatry and Addictive Disorders, Hôpital Tarnier, 89 rue d'Assas, 75006 Paris, France

(email: florence.thibaut@aphp.fr)

According to recent WHO reports, approximately 22.5% of the world's adult population smoked tobacco and 4.9% suffered from alcohol use disorder in the previous 12 months. Cannabis was the most prevalent illicit drug (3.5%), followed by cocaine-type and amphetamine-type stimulants (0.5%). Other illicit drugs were used by less than 1% of the adult population; 0.3% inject illicit drugs.<sup>1,2</sup> While opium and heroin use has remained relatively stable, misuse of pharmaceutical opioids is increasing, and opioid dependence is becoming the greatest contributor to illicit drug burden, accounting for half. Indeed, in the US, death involving heroin and synthetic opioids other than methadone, such as fentanyl, increased greatly in 2015 compared with 2014 (13 000 deaths, 21% increase; 10 000 deaths, 72% increase, respectively).<sup>3</sup> (See also Cicero and Ellis, in this issue p 259). Barely a day passes where the opioid crisis does not appear in the US or European media, culminating in the report by the *New York Times* that the US government considers opioid misuse a national emergency. According to the European Monitoring Centre for Drugs and Drug Addiction, one new illicit drug compound with potential risk of abuse is reported per week (60% are synthetic cannabinoids) (<http://www.emcdda.europa.eu/themes/new-drugs/early-warning>).

In comparison, problem gambling was less prevalent (1.5%) (<http://www.abgamblyinginstitute.ualberta.ca/LibraryResources/ReferenceSources/PrevalenceInternational.aspx>). Nonetheless, tobacco and alcohol use remained by far the most prevalent addictive behaviors reported and the leading risk factors for global burden of disease, injury, and death (for more information, see ref 4).

Despite debate about the most accurate definition of addiction, most colleagues agree that dependence is fundamental in the classification of addiction disorders. Actually, *ICD-10* and *DSM-IV* defined the terms “abuse” and “dependence” for addictive disorders. Surprisingly, *DSM-5* no longer separates abuse from dependence and considers that these disorders occur on a continuum called “substance-use disorders” and finally no longer considers dependence as a core element of the diagnosis. Among behavioral addictions, only gambling disorder was added to *DSM-5*. Yet, there is no habit which provides reward that cannot become excessive, compulsive, and sometimes life-endangering. However, interestingly, not everybody bears the risk of becoming addicted. In fact, even if there is a continuum between recreational and compulsive use of a substance or a behavior, the person becomes addicted when he or she has been deprived of control over a given substance or behavior and develops dependence. The progression from recreational to compulsive use and dependence is better understood in terms of neurobiology and neurocircuitry as well as genetic factors associated with a higher risk of addiction (see George and Koob in this issue, p 217; Berrettini, in this issue p 229; and Gorwood et al, in this issue, p 237). Even if addictions can display different clinical presentations and may be associated with various negative consequences, there is growing evidence showing that they are chronically relapsing brain disorders which share the same brain pathways in which the reward system plays a crucial role. Taken together, these data will open up new avenues for treatments.

In this issue, we have brought together a spectrum of articles from leading experts in the field covering various important aspects of addictions. □

### REFERENCES

1. World Health Organization (WHO). *WHO Global Report: Mortality Attributable To Tobacco*. Geneva, Switzerland: World Health Organization; 2012.
2. World Health Organization. *Global Status Report on Alcohol and Health*. Geneva, Switzerland: World Health Organization; 2014.
3. Rudd RA, Aleshire N, Zibbell JE, Gladden RM. Increases in drug and opioid overdose deaths—United States, 2000–2014. *MMWR Morb Mortal Wkly Rep*. 2016; 64(50-51):1378–1382.
4. Gowing LR, Ali RL, Allsop S, et al. Global statistics on addictive behaviours: 2014 status report. *Addiction*. 2015;110:904–919.