



## The Evolution of Obstructive Sleep Apnea (OSA) Treatment and Monitoring

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Although it seems like we have a deep understanding of it now, obstructive sleep apnea (OSA) was a slow starter in the medical education field. Probably the first description of its presence was of Fat Boy Joe in Charles Dickens's first novel *The Posthumous Papers of the Pickwick Club* (first published in 1837) in which he wrote "... and on the box sat a fat and red-faced boy, in a state of somnolency," and "Joe - damn that boy, he's gone to sleep again." A literature search of the world's fiction did not reveal any further descriptions of a person with typical OSA signs, symptoms, or side effects until 50 years later when, in 1889, Dr. William Hill described a child, "who breathes through his mouth instead of his nose, snores, is restless at night, and suffers from headaches at school."

The progression of identifying OSA moved as slowly as Aesop's infamous tortoise that raced the hare. Almost 100 years later, Sir William Osler noticed what Dickens wrote and with medical knowledge (not just smooth-tongued penmanship), he coined a term for OSA, which he called the Pickwickian syndrome.

Decades later, in 1965, came Dr. Henri Gastaut's polysomnography studies. In 1969, treatment by tracheotomy began. In 1981, the invention of a continuous positive air pressure (CPAP) machine was an effective step in treating sleep apnea. In 1995, the American Academy of Sleep Medicine (AASM) accepted the CPAP as the gold standard. Finally, in 2007, oral appliances (OAs) were considered acceptable treatment for those patients with mild to moderate OSA who were unable or unwilling to utilize or comply with CPAP. At a meeting of the Department of Transportation in Washington DC on July 11, 2013 Warren dentist Dr. Richard Klein was asked to attend and explain the problem regarding truck drivers who were diagnosed with OSA but non-compliant with CPAP.

Dr. Klein mentioned the American Academy of Dental Sleep Medicine's (AADSM) statement that OAs are required to be fabricated by dentists who are experienced and qualified in sleep and temporomandibular joint disorder (TMD). Truck drivers should be treated for OSA only after a thorough evaluation of TMD. In a three hour PowerPoint presentation the Federal Motor Carrier Safety Administration became aware of 1) what is and what causes OSA 2) multiple treatments for OSA including OA's provided by dentists and 3) the dangers of untreated OSA to an individual's health and to the safety concerns of

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## Evolution of OSA... *continued*

drowsy driving. The National Institute of Health stated that drowsy driving is more dangerous than drunk driving made a huge impact on the FMCSA officers. They required a source of monitoring and were informed of the availability of a compliancy chip that could be even more effective than the CPAP monitoring since there were multiple websites for truckers to learn how to cheat on their CPAP compliancy. Dr. Klein was asked to return to DC this year on May 12, 2016 to speak about OSA as it relates to multiple accidents and deaths on the railroads of America. He once again explained and provided 23 recent articles concerning the problem.

Here is a brief synopsis of four:

- 1) **Published in Primary Care 3/22/2016**  
Results show that the rate of serious, preventable crashes was 5 times higher among truck drivers with sleep apnea who failed to adhere to PAP therapy
- 2) Drowsy driving may be responsible for 1.2 million car accidents every year, according to a new estimate from the **National Highway Traffic Safety Administration**
- 3) Revealing that OSA has a multitude of medical issues not limited to the well-known high blood pressure, type 2 diabetes, stroke, and cardiac arrest. A documented article statement was quoted: **"Data from 12 studies show the overall prevalence of OSA in people with a serious mental illness was 25.7%. The highest prevalence was seen in patients with major depressive disorder (36.3%), followed by**

**patients with bipolar disorder (24.5%); people with schizophrenia had the lowest prevalence (15.4%)."**

- 4) A study finds that obstructive sleep apnea may also raise the risk of a workplace injury. Of more than 1,200 sleep clinic patients, those with sleep apnea were twice as likely as others to suffer a workplace injury and three times more likely to have one that was related to failed vigilance – such as tripping, falling or getting burned – the researchers report in the journal Thorax **Compliance of Oral Appliance utilization is shown to be significantly higher in all OSA individuals when the mere fact of wearing the appliance for the full night of sleep and on all nights of sleep is considered. Success of using a CPAP only 4 hours a night and only 5 nights of the week is a statistic that does not make sense. It allows insurance coverage if met, but what about the other 72% of the sleep time that OSA is not controlled?**

Several Large Truck Company and Railway owners admitted that they did not know of the OA possibility and some had never heard of any treatment other than a CPAP.

I am pleased to help my country and the people who live in it. Volunteerism as a passion is an exhilarating and life enhancing activity and I am blessed to be able to assist in OSA education. Dentistry should be proud that we as dentists are helping save lives and improve the health and longevity of our dental patients. ❖