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Tonix Pharmaceuticals CEO Dr. Seth Lederman Describes Potential Treatment for Fibromyalgia, Post-Traumatic Stress Disorder and Traumatic Brain Injury

Restful Sleep from a New Drug May Alleviate Chronic Pain, Lederman Says in Interview With CEOLive

NEW YORK--([BUSINESS WIRE](#))--Seth Lederman, M.D., President and CEO of New York City-based Tonix Pharmaceuticals Holding Corp. ("TONIX" or the "Company") (OTCBB:TNXP) says that a good night's sleep is a potentially powerful, but currently elusive, treatment for the chronic pain and sleep disorders suffered by patients with fibromyalgia (FM), post-traumatic stress disorder (PTSD), traumatic brain injury (TBI) and chronic traumatic encephalopathy (CTE). Dr. Lederman made his remarks in an interview with the CEOLive Financial Network which is available at: <http://ceolive.tv/tonix-pharmaceuticals/tnxp-videos/279-ceolive-investorinsight-series-featuring-tonix-pharmaceuticals-tnxp>.

He also said that a promising new drug under development by TONIX for treating FM, whose symptoms include pain and sleeping problems, might be able to provide the restful sleep that would help people with these conditions.

Dr. Lederman points out that chronic pain and sleep disorders are common problems in FM, PTSD, TBI and CTE. Many patients have learned that their symptoms can be eased after a restful night's sleep. However, part of the decompensation that's common in all these conditions happens when the pain syndrome makes it impossible to get restful sleep.

It is suspected that TBI or CTE may have been factors in the suicide deaths of several National Football League players, including Junior Seau. Numerous suicides among soldiers returning from combat in Afghanistan and Iraq have been linked to PTSD or TBI. Many patients who suffer from either TBI or CTE wind up abusing sleep and pain medicines.

"Many people with FM, PTSD and TBI desperately try to dampen their pain and to get sleep by taking opiate painkillers and prescription sleep drugs", says Dr. Lederman, "but those drugs don't really help," says Dr. Lederman. "The reason is that the patients' pain comes from their brains, not their bodies," he explained. "Scientists believe that the brain uses the same areas to experience pain as it uses to re-experience painful memories. That potentially explains why the traumatic memories of PTSD patients feel like real pain. And in FM, those same pain centers may also be activated. That would explain why FM patients also experience chronic pain—and why normal painkillers don't work for them either," Dr.

Lederman noted.

“What can help is the right kind of sleep,” says Dr. Lederman. “A restful sleep allows the brain to cleanse itself, reducing the activation of the pain regions and bringing relief.”

Research conducted by TONIX with an active drug ingredient called cyclobenzaprine offers hope for doing just that, says Dr. Lederman. A study published in the December 2011 edition of *Journal of Rheumatology* reported that a small dose of the drug taken at bedtime decreased the number of nights when sleep was disturbed by an unstable brain wave patterns called Cyclic Alternating Pattern A2 and A3 that prevent restful sleep in FM patients. “The result was better sleep and less next-day pain,” Dr. Lederman said, adding that, “this shows that targeted medications can cleanse the sleeping brain of disturbed sleep waves.”

“Regardless of the cause, FM patients know that a good night's sleep makes them feel better. That's what TONIX is working to give them with very-low-dose bedtime cyclobenzaprine. TONIX hopes and has reason to believe that the treatment might also prove to be effective in people with PTSD and TBI as well,” Dr. Lederman said.

About TONIX

TONIX is developing innovative prescription medications for challenging disorders of the central nervous system. The Company targets conditions characterized by significant unmet medical need, inadequate existing treatment options, and high dissatisfaction among both patients and physicians. TONIX's core technology improves the quality of sleep in patients with chronic pain syndromes. TONIX's lead products are designed to be fundamental advances in sleep hygiene and pain management and to be safer and more effective than currently available treatments. TONIX's products are the result of a program to harvest advances in science and medicine to search for potential therapeutic solutions among known pharmaceutical agents. TONIX is developing new formulations that have been optimized for new therapeutic uses. Its most advanced product candidates, TNX-102 SL for fibromyalgia and TNX-105 for PTSD, are novel dosage formulations of cyclobenzaprine, the active ingredient in two U.S. FDA-approved muscle relaxants. To learn more about the Company and its pipeline of treatments for central nervous system conditions, please visit www.tonixpharma.com.

Certain statements in this press release are forward-looking within the meaning of the Private Securities Litigation Reform Act of 1995. These statements may be identified by the use of forward-looking words such as "anticipate," "believe," "forecast," "estimated" and "intend," among others. These forward-looking statements are based on TONIX's current expectations and actual results could differ materially. There are a number of factors that could cause actual events to differ materially from those indicated by such forward-looking statements. These factors include, but are not limited to, substantial competition; our ability to continue as a going concern; our need for additional financing; uncertainties of patent protection and litigation; uncertainties of government or third party payer reimbursement; limited sales and marketing efforts and dependence upon third parties; and risks related to failure to obtain FDA clearances or approvals and noncompliance with FDA regulations. As with any pharmaceutical under development, there are significant risks in the development, regulatory approval and commercialization of new products. TONIX does not undertake an obligation to update or revise any forward-looking statement. Investors should read the risk

factors set forth in the Annual Report on Form 10-K filed with the SEC on March 30, 2012 and future periodic reports filed with the Securities and Exchange Commission. All of the Company's forward-looking statements are expressly qualified by all such risk factors and other cautionary statements. The information set forth herein speaks only as of the date hereof.

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