

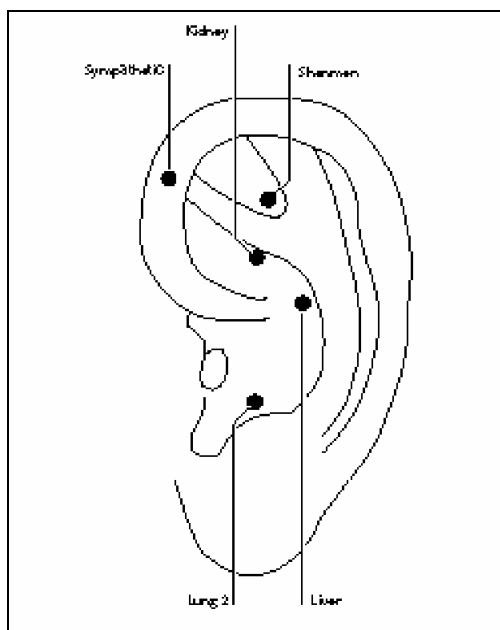
# Understanding Cocaine Addiction According to Chinese Medicine Theory

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## Introduction

Cocaine abuse is a serious problem in Europe, with the UK recorded as having one of the highest incidences of abuse rates in recent years, with a similar prevalence rate to the USA (E.M.C.D.D.A. 2004). Auricular acupuncture has been used as an effective form of treatment for drug abuse since the early 1970s when Wen and Cheung (1973a, 1973b, 1973c) found it to be effective in the treatment of heroin addiction. During the 1980s Michael Smith and his partner Walter Bosque, developed an auricular acupuncture protocol at the Lincoln hospital in New York's South Bronx area. This later developed into the auricular acupuncture system, the National Acupuncture Detoxification Association (NADA) protocol. The NADA protocol represents a 'cookbook' approach to drug abuse treatment. It is made up of five auricular points; shenmen, sympathetic, kidney, liver and lung (figure 1).



**Figure 1.** The five NADA points (Given 1997).

A number of randomised controlled trials have tested the NADA protocol on cocaine abusers, but have

concluded with mixed results (Lipton, Brewington and Smith 1994, Otto, Quinn and Sung 1998, Bullock, Kiresuk, Pheley, Culliton and Lenz 1999, Avants, Margolin, Holford, and Kosten 2000, Killeen *et al.* 2002, Margolin, *et al.* 2002). A recent systematic critique of these studies could not conclude with a definite answer as to the effectiveness of the NADA protocol on cocaine abusers, but did note a number of study design failures (D'Alberto 2004).

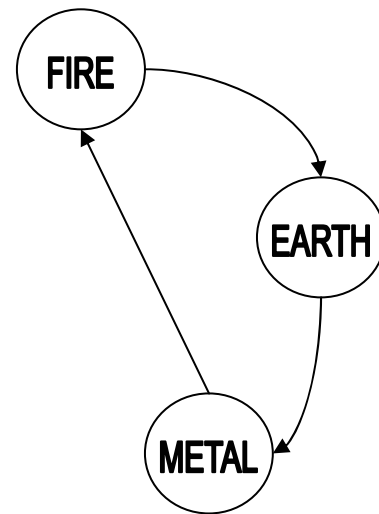
It is important that researchers and practitioners understand the mechanisms of cocaine addiction within the theories of Chinese medicine. There is little or no mention of addiction within the four major classics of Chinese medicine, Nei Jing (Treatise Classic of Internal Medicine), Shang Han Lun (Treatise on Cold Damage), Wen Bing Xue (Warm Disease Theory) and the Jin Kui Yao Lue (Synopsis of the Golden Chamber) (Jian and Seifert 2000, Unschuld 2003, Mitchell, Ye and Wiseman 1999, Luo 1995). The Shang Han Lun does mention sickness of a drinker, but its exact interpretation is unclear and it is not known whether this is related to alcoholism or not (Mitchell, Ye and Wiseman 1999). The great physician Li Dong Yuan created a formula to deal with the side effects of too much alcohol, called Ge Hua Jie Cheng Tang (Pueraria Flower Combination). In more recent times, a large number of Chinese were addicted to opium. There exists some literature on opium addiction during the Qing dynasty. Modern treatments for addiction stem from the treatment of former soldiers who were opium addicts. When they were later wounded it was discovered that patients who received acupuncture as an analgesic had a lessened drug craving. Later Wen and Cheung (1973a, 1973b, 1973c) began their research into auricular acupuncture and addiction. Today, there is no Chinese medical literature on cocaine addiction, a recent South American import. Illegal substances are still available in China, but exact prevalence rates are unknown (W.H.O. 2004). It is not the aim of this paper to address the social-political issues that lead people to abuse cocaine, but instead discuss the mechanisms of cocaine abuse within the theories of Chinese medicine and offer a possible inexpensive and successful means of treatment for drug abusers.

## Discussion

In Chinese medicine theory, cocaine abuse affects all the solid (zang, yin) organs: lung, liver, heart, spleen and kidney, causing a complete zangfu disharmony. The manifestation of symptoms will differ from person to person, but will include a collection of the following: nervous excitement, depression, euphoria, restlessness, irritability, tremors, vertigo, nausea, vomiting, hypotension, hypertension, abdominal cramps, exophthalmia, mydriasis, paranoia, peripheral vascular collapse, tachypnoea, tachycardia, chills, fever, renal infarction, atherosclerosis of the kidney, renal scleroderma, Henoch-Schönlein purpura and renal failure as a result of rhabdomyolysis, coma and death (W.H.O. 2004, Anderson 1998, Smith 1979, Smith 1985, Brewington, Smith, and Lipton 1994, Maclean and Lyttleton 1998, Crowe, Howse, Bell and Henry 2000). Cocaine abuse leads to five distinctive patterns. These five patterns are an adaptation of a previous categorisation listed by the author (D'Alberto 2004). They are:

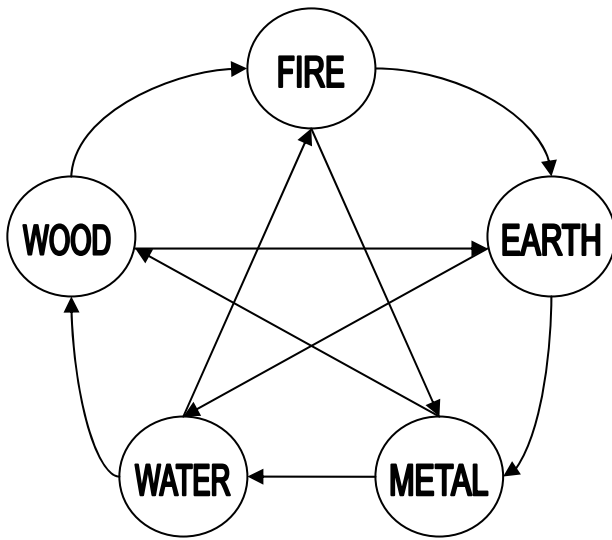
1. Lung qi deficiency,
2. Heart yin deficiency,
3. Spleen qi deficiency,
4. Kidney yin deficiency, and
5. Liver yin deficiency.

To help understand cocaine abuse, these five patterns can be grouped into two cycles, using five phase theory. Both these cycles start at the lung and finish with the kidney. The first cycle involves the lung, heart and spleen. The second cycle involves the lung, kidney and liver. Starting with the first cycle, as cocaine is snorted through the nose, it enters the lung where it impairs the lung's dispersing and descending function. Symptoms manifest instantly with nasal obstruction or rhinorrhoea with a thin watery mucus and sneezing. The lung qi will be damaged with symptoms of peripheral vascular collapse, tachypnoea and tachycardia. As lung qi is deficient, wei qi will be weakened causing the pores to open with spontaneous sweating and making the body susceptible to colds with flu-like symptoms. The lung governs qi and controls the channels and blood vessels. This is essential in aiding the heart in circulating blood; hence peripheral vascular collapse and tachycardia are both associated with the lung and heart. Together, the lung and heart distribute cocaine to the entire body. The pattern moves from the lung to the heart via the insulting sequence of five phase theory (figure 1).



**Figure 1.** The generating and insulting sequence of the lung, heart and spleen.

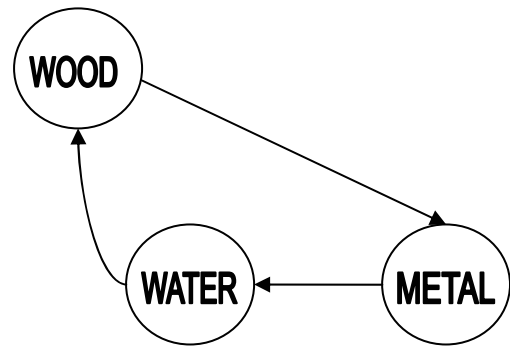
Cocaine then proceeds to destroy heart yin creating an empty fire pattern (Dale 1993) with symptoms of insomnia, vertigo and sweating. Sweat itself is attributed to heart yin, with the mechanism of a deficient spleen allowing it to 'leak' out. Heart qi will also be damaged, with symptoms of anxiety, peripheral vascular collapse, tachycardia and excitement. As the abuse of cocaine depletes heart yin, it allows heart fire to rise. Within the controlling sequence of five phase theory, the kidney regulates and controls the heart (figure 2). The excessive heart fire requires more yin to regulate it, leading to a further deficiency of kidney yin. This is known as heart insulting kidney, just as the lung insults the heart. Secondly, the kidney and heart have a unique relationship, known as the 'mutual assistance of fire and water' (Maciocia 1989). The kidney is the greatest yin organ, is associated with water and is housed in the lower burner, whilst the heart is the greatest yang organ, is associated with fire and is housed in the upper burner. Together, these two organs relationship helps regulate yin and yang within the body. An imbalance of one will naturally affect the other.



**Figure 2.** The generating and controlling sequence of five phase theory.

Heart (fire) is the mother of spleen (earth), (figure 1). A deficiency of the heart will lead to a weakened spleen. The deficient spleen cannot produce enough post-heaven qi to satisfy the body's requirements. Additional qi is sourced from pre-heaven qi or essence housed in the kidney, thus depleting kidney yin. A weakened spleen will in turn lead to a weakened lung, the son of spleen. The cycle reverts back to the lung, which perpetrates the cycle of deficiency.

Starting back at the lung for the second cycle, a deficiency of the lung (metal) inhibits its ability to generate the kidney (water), leading to a deficiency of kidney yin (figure 3). Coupled with this, many addicts are involved in excessive sexual activity that drains jing (essence), which further exacerbates the empty heat pattern, as essence housed in the kidney is the source of yin. Symptoms manifest as night sweats, paranoia, fear and in severe cases renal infarction, atherosclerosis of the kidney and renal failure (Crowe, Howse, Bell and Henry 2000). The abuse of sex that results from the empty heat pattern increases the yin and jing (essence) deficiency. With some abusers, the addiction to drug induced sex is a primary motivation for the abuse of cocaine. The empty heat pattern causes an exuberant yang which increases erectile function in men and a heightened sense of feeling in women. These people may be actually addicted to the empty heat pattern itself (Given 1997, Smith 1985, Dale 1993).



**Figure 3.** The generating and insulting sequence of the lung, kidney and liver.

In turn, a deficiency of water will lead to a weakness of wood, causing a deficiency of liver yin (figure 3). Yin is unable to regulate yang, allowing yang to rise and become disruptive. This causes the pattern liver yang rising and displays all the classic drug abuse symptoms; irritability, euphoria, anger, depression, restlessness, tremors, hypotension, hypertension, exophthalmia and mydriasis. Mydriasis (dilation of the pupil) is termed 'wind orbiculus' in TCM and illustrates the liver's involvement (Yuan 2000). This provides a useful means of diagnosing current cocaine abuse. The liver is the main branch organ involved in drug abuse cases because of these classic drug related symptoms. Liver yang rising further exacerbates the heat pattern and yin depletion. The liver then insults the lung, weakening the lung further, which again perpetrates the cycle of yin deficiency (figure 3). As well as receiving yin from the kidney, the liver also gains yin from jing (essence), stored in the kidneys, hence the saying the liver yin and kidney yin have the same root.

The liver imbalance leads in turn to a disharmony between the liver, spleen and stomach. An overactive liver exploits the spleen causing the symptoms of a loss of appetite, abdominal cramps, loose stools and sweating in the day. As the liver exploits the stomach, it causes nausea and vomiting. Excessive loss of bodily fluids from sweating, vomiting and loose stools worsens the yin deficiency.

All the above zang organ disharmonies start at the lung, affect all the zangfu and greatly harm the kidney, causing the most predominant pattern; kidney yin deficiency (figure 4). There are six mechanisms that deplete kidney yin. A summary of these is given below:

- Lung qi deficiency: affects its ability to nourish and generate water (kidney) and insults the heart.
- Heart yin deficiency: requires additional yin from the kidney to regulate fire via the controlling sequence of five phase theory and the mutual assistance of fire and water mechanism.

- Excessive sex: drains essence and yin housed in the kidney.
- Fluid loss: vomiting, sweating and loose stools depletes the body's yin.
- Liver yang rising: drains water from the kidney as water nourishes wood (son ruins the mother), whilst also draining essence and insulting the lung.
- Spleen qi deficiency: causes a lack of post-heaven qi, thereby depleting pre-heaven qi housed as essence in the kidney, and is unable to nourish the lung, (son of the spleen).

Some commentators have suggested the source of drug addiction is the Shen as it is the mind and the commander of the other zangfu. This is not the case. From a zangfu spirit perspective, the lack of will in resisting drug cravings coupled with fear and the false need for the drug, are the elements that drive the addiction. Will and fear are both associated with the kidney. A strong kidney will always be able to balance a dysfunctional heart, through the mutual assistance of fire and water mechanism. Therefore, the kidney is the root organ in drug abuse cases.

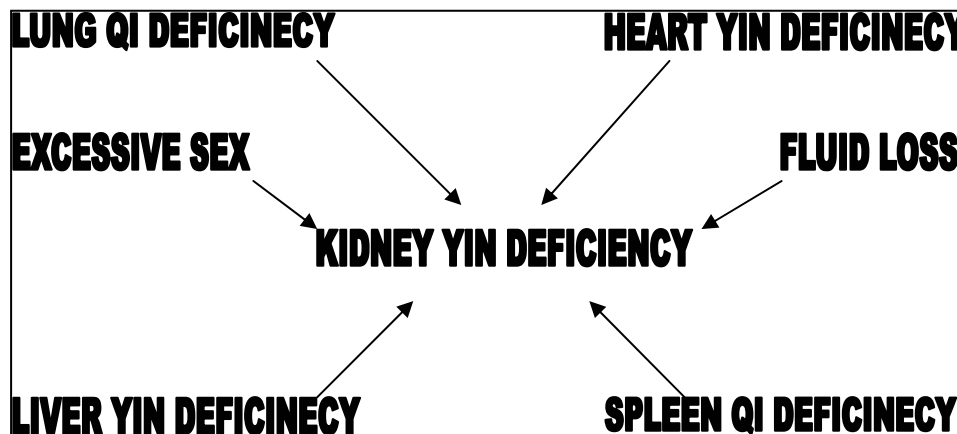


Figure 4. The factors leading to kidney yin deficiency.

### Treatment Strategies

The NADA protocol is a 'cookbook' strategy and should not be used alone. Acupuncture points located on the body should be used in conjunction with auricular therapy to provide a correct treatment program based upon a clear pattern analysis. When using the NADA protocol, it is important to use electrical stimulation on the lung point. This mimics the original research conducted by Wen and Cheung (1973a, 1973b, 1973c) where only the lung point was stimulated using electrical acupuncture to reduce cravings for illicit drugs. It is also an active way of stimulating the lung to nourish the kidney. The lung point lies in the concha of the ear, which is the place of greatest density of vagal innervation (vagus nerve). Blum, Cull, Braverman and Comings suggest that stimulating the vagus nerve causes the release of dopamine and therefore reduces drug cravings.

### Conclusions

The NADA protocol, in addition to body points and Chinese herbal patents, provides a wide range of interventions available to the Chinese medicine practitioner. Acupuncture is highly cost-effective, with little overheads as equipment needs are negligible and has no reported side effects. Chinese herbal patents are equally as cheap and offer an effective way in re-balancing withdrawal cravings for substances such as

cocaine and assist in detoxifying the body. The use of Chinese medicine therapy can decrease the number of patients being admitted to hospital with drug related illnesses, benefit society in reduced crime rates and benefit the abusers themselves.

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