

## Domains of Concern for Drugs of Abuse

### 3 Major Categories of Potential Harm to Self and Society

#### 1. Potential for addiction (physical or psychological dependence):

Salvia divinorum appears to be **Extremely low**

*For comparison, cocaine, heroin and nicotine are extremely high, marijuana and alcohol are moderate, and LSD is extremely low*

- Unlike drugs such as cocaine, heroin, and (to a lesser degree) marijuana, there is no convincing evidence that Salvia divinorum leads to addiction
- In animal experiments that are indicators of addiction potential, Salvia divinorum appears to be the opposite of an addictive drug. In other words, animals avoid it when given a choice
- A hallmark feature of addictive drugs is that they increase dopamine in a special area of the brain, call the shell of the nucleus accumbens, which is often referred as the rewards center in the brain. Addictive drugs such as cocaine, heroine, morphine, and even marijuana increase dopamine in this area. Salvia divinorum, in contrast, lowers dopamine in this area, consistent with its aversive effects in animals and many people.
- Survey research and interviews with human users also suggest that most people who try Salvia divinorum do not try it again. Such users typically state that the effects are too intense and bizarre, and that the drug does not provide an enjoyable or euphoric “high,” as with addicted drugs.
- Not a single case report of addiction has appeared in the medical literature or has been reported by addictions treatment centers to our knowledge. Note that because programs typically ask patients to report all drugs they have used recreationally, some have reported use of Salvia divinorum, However, dependence on Salvia divinorum per se has not been reported to our knowledge.

#### 2. Physical toxicity (organ damage, nerve damage, brain damage):

Salvia divinorum appears to be **Extremely low**

*For comparison, abused solvents, heroin, and tobacco are extremely high, alcohol is moderate, and LSD is extremely low*

- Animal studies show no evidence of organ toxicity or brain damage even at dose many times higher than those that are abused
- Overdose fatally therefore is extremely improbable, and has never been reported

#### 3. Acute impairment (intoxication; relevant to accidents, errors in judgment, ability to drive):

Salvia divinorum appears to be **Moderately High**

*For comparison, LSD and alcohol (at high doses) are extremely high, cocaine and marijuana are moderate, and nicotine is extremely low*

- High doses can cause extreme short-term motor impairment and confusion
- However, no Emergency Department mentions have been made about accidents while impaired, perhaps because the effects are so short lasting (major effects lasting about 10 minutes or less). Therefore, impairment potential for Salvia divinorum may be lower than high doses of alcohol or long-acting hallucinogens such as LSD, for which impairment can last many hours