

Acidifier (Vitamin C – Ascorbic Acid) and Injection Drug Use: Questions and Answers

What is vitamin C?

Vitamin C (ascorbic acid) is a weak organic acid which is used as an acidifier. It comes as a white powder that can be dissolved in water to form a mild acidic solution. It is available in waterproof sachets of 300mg.

Why do injection drug users use acidifiers?

Crack cocaine and 'black tar' (or 'brown') heroin are usually sold as solid crystals (rock) or powder; to inject them, the user must dissolve them in an acidic solution. Most powdered, 'white', heroin does not require an acidifier to dissolve it in water. Common acidifiers include vitamin C, citric acid, lemon juice, and vinegar^{1, 2, 3}.

What are the problems with lemon juice and vinegar?

Lemon juice and vinegar are commonly used because they are widely available¹. However, they are much harsher acids, causing more pain, irritation, and damage to the veins. Repeated damage causes veins to collapse². A drug user may then start using more dangerous veins⁴, such as veins in the neck or groin, that are near major arteries. If a major artery is pierced accidentally with a needle, life-threatening blood loss can occur³. Vinegar and lemon juice may also be contaminated with bacteria or fungus. These may lead to life-threatening infections including abscesses, cellulitis and heart infections⁵, or eye infections causing blindness^{6, 7}.

How is vitamin C used?

The smallest amount of ascorbic acid is used to dissolve the drug in order to keep vein damage to a minimum. In a stericup or 'cooker' (see Cookers Q and A), the drug is combined with sterile water. Small amounts of vitamin C are added until the drug is fully dissolved. For crack, the amount of vitamin C required is about $\frac{1}{4}$ the size of the rock; however for crack and brown or black tar heroin, the amount of vitamin C needed to fully dissolve the drug varies with the purity of the drug. Heroin may be heated until the drug is fully dissolved. Crack may also be heated, but should not be boiled. Once the packet of vitamin C is opened, any left over should be thrown away, so that it does not become contaminated and cause an infection.

Why does BC Harm Reduction* Strategies and Services provide ascorbic acid?

Medical-grade vitamin C is the safest acidifier. It causes the least damage to the veins, is non-toxic, and is sterile, reducing or eliminating the harms associated with other acids². Acidifiers are commonly shared when supplies are limited or difficult to access⁸. Shared acidifiers, like shared needles and other injecting paraphernalia, may transmit infections such as hepatitis C or HIV between users^{9, 10}. Single-use vitamin C packs should be available to all who need it and in a quantity to ensure sufficiency for each injection. Providing safe supplies to people who inject drugs creates a way to engage hard-to-reach and under-served populations in health care and social services. No studies have found that providing safe supplies makes people more likely to engage in harmful drug use.

How can vitamin C packets be ordered?

Vitamin C packets can be ordered by harm reduction distribution sites which are approved by the appropriate regional health authority. The harm reduction supply requisition form available on-line at <http://www.bccdc.ca/default.htm> should be used and the vitamin C ordered at the same time as other harm reduction supplies. The completed form is faxed to BCCDC.

References

*See *Health File #102a: Understanding Harm Reduction* in the BC Health Guide for a definition of harm reduction: <http://www.healthlinkbc.ca/healthfiles/hfile102a.stm>

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⁴ Darke S, Ross J, Kaye S. Physical injecting sites among injecting drug users in Sydney, Australia. *Drug and Alcohol Dependence*. 2001;62:77-82.

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⁸ Scottish Drugs Forum and Glasgow Involvement Group. Views from the street: Needle exchange users in Glasgow. 2004.

⁹ Shah SM, Shapshak P, Rivers JE, Stewart RV, Weatherby NL, Xin KQ, Page JB, Chitwood DD, Mash DC, Vlahov D, McCoy CB. Detection of HIV-1 DNA in needles/syringes, paraphernalia, and washes from shooting galleries in Miami: A preliminary laboratory report. *Journal of Acquired Immune Deficiency Syndromes and Human Retrovirology*. 1996;14(3):301-306.

¹⁰ Thorpe LE, Ouellet LJ, Hershow R, Bailey SL, Williams IT, Williamson J, Monterroso ER. Risk of hepatitis C virus infection among young adult injection drug users who share injection equipment. *American Journal of Epidemiology*. 2002;155(7):645-653.