



## **CCAOM Position Paper on Skin Preparation Prior to Acupuncture Needle Insertion**

The administration of acupuncture should ensure the attainment of maximum benefit, with the least possible harm. Acupuncture adverse events include bleeding/bruising, needle site pain (1), aggravation of symptoms (2) and rarely more severe complications such as local infections (3). It is important to reduce, as far as possible, the risks of these occurring.

There are no studies which compare skin preparation prior to acupuncture needle insertion with no skin preparation. The closest information available pertains to skin preparation prior to injections, such as insulin injections for diabetics and vaccinations. Research conducted as early as the 1960s by Dann (4) and Koivisto & Felig (5) with diabetic patients indicated that although skin preparation with alcohol prior to injection markedly reduced skin bacterial counts, such treatment is not necessary to prevent infection at injection sites. Further studies have also suggested that there is no increased risk of infection if skin antisepsis is not undertaken for injection of insulin for diabetics. (6, 7, 8)

There is similar evidence from reports of infections following vaccination. The World Health Organization in 2003 reported after a review of the literature that if the skin is “clean” there should be no need to swab an injection site no matter what body area was being injected. (9) Similarly, UK Guidance on Best Practice in Vaccine Administration and the Position Statement on Injection Techniques published by the Royal College of Paediatrics and Child Health (March 2002) further reinforces these views by recommending that no formal skin cleaning is required. (10, 11) In the US, the CDC (2002) states that alcohol, soap and water or chemical agents are not needed for preparation of the skin prior to vaccination, unless the skin is grossly contaminated or dirty. (12)

Other researchers have recommended the cleaning of the injection site in order to minimize the risk of infection. (13, 14, 15) Many practitioners believe it follows best practice guidelines to clean the skin prior to injection to reduce the risk of contamination from the patient’s transient skin flora. The NIH, in its patient instructions is very clear that “Since the skin is the body’s first defense against infection, it must be cleansed thoroughly before a needle is inserted.” (15)

The organisms most often responsible for causing skin infections at medication injection sites are *Staphylococcus aureus* and *Streptococcus pyogenes* and coryneform bacteria. (16) Occasionally various non-tuberculous mycobacteria may also infect the skin. (16) *Staphylococcus aureus* is found on the skin including the forehead and nostrils of both children and adults as resident flora. (17, 18) These same organisms are those most commonly associated with skin infections related to acupuncture practices. (3)

Skin that is currently inflamed or which has an active lesion should not be used for needle insertion. These areas often carry higher risk for infection. According to NIH guidelines “injections are not given if the skin is burned, hardened, inflamed, swollen, or damaged...” (15)

There is one case report of a patient who reportedly had septicemia after acupuncture during which the skin was not swabbed. The case report author, who was also the practitioner, admitted that the patient’s skin at the acupuncture point was not cleaned prior to the needle insertion and later found local muscle infection which led to septicemia. (19) Given the millions of acupuncture insertions that take place every year, a single incident of significant infection following an intramuscular acupuncture procedure without skin preparation does not, in itself, help differentiate the claims about whether skin preparation is necessary.

Medical experts, including the NIH, CDC and WHO, agree that the skin must be clean before any type of needle insertion is performed. (9, 12) Additionally, all three categorically state that practitioners’ hands must be washed prior to needle insertion. There remains the question of how the patient’s skin should be prepared prior to acupuncture needle insertion.

Robust, scientific evidence to support the use of soap and water for skin cleansing in general is limited; however, this has long been accepted as good practice. Specifically, the physical action of washing has been long accepted for the mechanical removal of transient flora which may contaminate the skin. (20, 21, 22) Xu, et al (2013) are very clear in their findings that “Clearly, guidelines such as Clean Needle Technique must be followed in order to minimize acupuncture AEs.” (3)

It has also been standard medical practice for some time to use 70% isopropyl alcohol swabs to cleanse skin prior to injection. (23) The most common procedure for cleaning a patient’s skin prior to needle insertion is the use of a 70% isopropyl alcohol swab. The perceived advantages of cleaning the patient’s skin with an alcohol swab include a reduction in transient skin bacterial counts and the fact that using a swab is less time consuming than using soap and water in the clinical setting. The perceived disadvantages of cleaning the patient’s skin with an alcohol swab include the fact that alcohol is rendered inactive as a cleansing agent if skin is soiled with organic matter (23) and the potential for pain if the skin is not allowed to dry prior to needle insertion. (24)

Some practitioners allege that chlorhexidine products be used as skin cleansing agents as they assert that chlorhexidine may work better than alcohol in reducing microbial load on the skin. However, there is little evidence to support this. A recent meta-analysis found that “Perceived efficacy of chlorhexidine is often in fact based on evidence for the efficacy of the chlorhexidine-alcohol combination. The role of alcohol has frequently been overlooked in evidence assessments.” (25) The alcohol may play as great a role as the chlorhexidine in the reduction of microflora.

The CCAOM’s Clean Needle Technique Manual (6<sup>th</sup> edition) states that skin should be cleaned with alcohol prior to needle insertion. According to a July 2013 letter from the CDC (26) “The procedures outlined in the CNT Manual are reasonable” regarding skin preparation.

## CONCLUSIONS:

- The evidence suggests that both the practitioner's hands and the patient's skin at the acupuncture point need to be clean prior to administration of a needle, whether that needle is being inserted to an intradermal, subcutaneous, or intramuscular depth.
- Risk assessment of potentially contaminated skin should be conducted to ensure appropriate cleaning of the skin is undertaken where required. In other words, if the practitioner has reason to believe that the patient's skin is soiled, it should be cleaned prior to needle insertion. There is no clear evidence that skin cleansing with soap and water, alcohol swabs, or antibacterial substances like chlorhexidine is better or worse than the other options.
- Even if skin is visibly clean, mild antisepsis may still be performed prior to needle insertion as all OPIM (other potentially infectious materials) are not necessarily visible to the naked eye.
- If the insertion site is cleaned with an alcohol swab, it should be allowed to dry prior to needle insertion.
- The CCAOM supports the position that the skin should be clean prior to acupuncture needle insertion, but that cleaning the skin with an antiseptic is not necessarily essential to prevent infections.

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26. Letter (2013) from Jeffery Hageman MHS, Deputy Chief, Division of Healthcare Quality, CDC Atlanta, GA to David Sale, Executive Director CCAOM (copy on file at CCAOM National Office).