

# **Guidelines on Infection Control related to Acupuncture**

There is a three-month consultation period for the guidelines, from today till 30 October 2011.  
You are welcome to email your comments to us at: [no\\_icb3@dh.gov.hk](mailto:no_icb3@dh.gov.hk) Thank you.

**Centre for Health Protection**

**Department of Health**

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# Guidelines on Infection Control related to Acupuncture

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## Introduction

Acupuncture refers to "needling" and "moxibustion". It produces therapeutic effects by applying pressure, inserting needles into or burning moxa herb above various human body acupuncture points. Acupuncture has a long history which is originated from China. Under good management by a qualified practitioner, acupuncture-associated infections are extremely rare.

Acupuncture is an invasive procedure. Though needles used for acupuncture are very small and fine, they break the integrity of skin. Theoretically, as for any subcutaneous injection, acupuncture could pose risks of infection. Moreover, usually many acupuncture needles are inserted in each course of treatment and kept in-situ for a period of time, they may have contact with blood. In fact, acupuncture requires aseptic techniques, any lapse in preparation or the acupuncture process can provide opportunities for viruses, bacteria or fungi to invade human body and cause infections.

There are case reports in literatures of acupuncture-associated infections, including blood-borne viral infections, e.g. hepatitis B (Kent et al., 1988), hepatitis C (Wu et al., 1993) and human immunodeficiency virus (HIV) infection (Vittecoq et al., 1989; Wiwanitkit, 2003), acupuncture-associated bacterial infections, e.g. methicillin-sensitive *Staphylococcus aureus* abscesses (Matsumura et al, 1998; Woo et al., 2003; Chen et al., 2004; Seeley & Chambers, 2006; Ogasawara et al, 2009), methicillin-resistant *Staphylococcus aureus* arthritis (Woo et al., 2009), mycobacterial infections (Woo et al., 2001; Woo et al., 2002; Koh et al., 2010), *Listeria monocytogenes* arthritis (Tien et al., 2008) and other infections (Studd & Stewart, 2004; Kim et al, 2010).

Most blood-borne diseases have long incubation periods and the carriers often are asymptomatic, e.g. hepatitis B virus (HBV), hepatitis C virus (HCV) and human immunodeficiency virus (HIV). Therefore, it is recommended using single-use (disposable) or strictly re-processed sterile acupuncture needles and strictly performing skin disinfection and standard precautions to prevent acupuncturists or clients from infection.

We would like to express our gratitude to the following professional organizations for their generous and valuable advice during preparation of the guidelines.

Hong Kong Registered Chinese Medicine Practitioners Association

Association of Hong Kong and Kowloon Practitioners of Chinese Medicine

The Hong Kong Federation of China of Traditional Chinese Medicine

Hong Kong Acupuncturists Association

Hong Kong Physiotherapy Association

Hong Kong Physiotherapists' Union

Centre for Health Protection

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## **1. Environmental hygiene**

- a)** The treatment room for acupuncture should be clean, dry, well-ventilated and well-lit.
- b)** There are sufficient facilities for hand hygiene in the treatment room.
- c)** All work surfaces should be smooth and impervious so that they could be cleaned and disinfected thoroughly.
- d)** To keep the linen clean, soiled linen should be replaced immediately. Another option is to cover the treatment bed with single-use paper towel.
- e)** Appropriate disinfectants should be chosen for environmental cleansing and disinfection. For the details regarding use of bleach, please refer to Appendix I.

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## **2. Handling of instruments and equipment**

- a)** Use pre-packaged, disposable sterile acupuncture needles and guide-tubes. Each sterile needle should be used once only.
- b)** Check the expiry dates of sterile items before use.
- c)** Package should be opened just before use to prevent contamination.
- d)** Acupuncture needles should be examined carefully to ensure their quality before use. Acupuncture needles of poor quality should be disposed.
- e)** Sterile items, e.g. alcohol pads, sterile needles, sterile cotton wool balls and sterile cotton wool sticks, etc. should be stored in cabinets and their expiry date should be checked regularly.
- f)** Non-disposable items with patient contact, such as cupping, scraping plates, dressing cylinder, sterile container and forceps, should be cleaned and disinfected after each use.
- g)** Reusable items should be processed according to the principles of “Cleansing before disinfection”.
- h)** Items should be cleansed in designated sinks, not in handwashing basin.
- i)** Re-used acupuncture needles must be strictly disinfected to meet sterility standard (Appendix II).
- j)** Both sterilized and disinfected items should be kept in a covered sterile container or sealed in a package to prevent contamination.
- k)** Storage areas must be maintained clean and dry to prevent growth of bacteria or fungi.

### 3. Preparation of acupuncturists

- a) Acupuncturists should wear uniform or put on working coat while working in the treatment room; and change clothes or take off the working coat before leaving the treatment room.
- b) Alcohol-based hand rub should be available at bedsides or in pocket of working coat.
- c) While suffering from hand infection, the acupuncturist should not perform acupuncture.
- d) Fingernails of acupuncturists should be trimmed short and artificial fingernails are not permitted.
- e) All cuts or breaks on hands or fingers should be covered with water-proof dressing.
- f) Hand hygiene has to be performed in the following situations (Appendix III):
  1. Before patient contact
  2. Before aseptic procedure
  3. After patient contact
  4. After contact with patient surroundings
  5. After contact with blood or body fluids
- g) Strictly observe hand hygiene before aseptic procedure. No matter before washing hands with liquid soap and water or before rubbing hands with alcohol-based hand rub, sleeves have to be rolled up and all kinds of things below the elbows that allow pathogens to be hidden, e.g. rings, watches, bracelets, etc. should be removed.
- h) Clean hands with liquid soap and water when visibly soiled or likely contaminated with blood or body fluid. Steps are as follows:
  1. Wet hands under running water.
  2. Apply liquid soap and rub hands together to make a soapy lather.
  3. Away from the running water, rub the palms, back of hands, between fingers, backs of fingers, thumbs, finger tips and wrists (Appendix IV). Do this for at least 20 seconds.
  4. Rinse hands thoroughly under running water.

5. Dry hands thoroughly with a clean cotton towel, a paper towel or a hand dryer.
  6. The cleaned hands should not touch the water tap directly again. The tap may be turned off:
    - by using the towel wrapping the faucet; or
    - after splashing water to clean the faucet.
- i) When hands are not visibly soiled, hand hygiene could be performed by using 70-80% alcohol-based hand rub. Steps are as follows:
    1. Apply a palmful of alcohol-based hand rub and cover all surfaces of the hands.
    2. Rub the palms, back of hands, between fingers, back of fingers, thumbs, finger tops and wrists (Appendix IV).
    3. Rub for at least 20 seconds until the hands are dry.
  - j) Surgical gloves should be worn whenever the acupuncturist may be exposed to blood, mucous membranes, broken skin or other potentially infectious materials.
  - k) A pair of gloves should not be used for more than one client.
  - l) Hand hygiene can never be replaced by wearing gloves.
  - m) Hand hygiene should be performed before putting on and after taking off gloves.



#### **4. Preparation of clients**

- a)** Thoroughly review the client's information and pay attention to the potential risk factors:
  - 1.** Medical history: skin infection, infectious disease (e.g. viral hepatitis, HIV infection), chronic illness (e.g. diabetes mellitus, renal disease, epilepsy), cancer and bleeding tendency
  - 2.** Drug history: steroid or anticoagulant, e.g. warfarin
  - 3.** Allergy history : drugs or alcohol allergy
  - 4.** Laboratory investigation results : microbiology and virology reports, international normalized ratio (INR) and platelet count.
- b)** Advise clients to observe good personal hygiene. If deemed necessary, advise them to have shower or wash hair (applicable for clients who require acupuncture on the scalp) before consultation.
- c)** Advise clients to wear mask if they have respiratory symptoms such as cough or sore throat.

## **5. Aseptic acupuncture techniques**

- a)** Acupuncturists should perform hand hygiene before the procedure to prevent infections.
- b)** Prepare the skin prior to acupuncture: Use swab with 70% alcohol or povidone-iodine or chlorhexidine-in-alcohol to disinfect the penetration site by scrubbing in a rotary motion starting at the centre of the site.
- c)** When using 70% alcohol for disinfection, allow the alcohol to evaporate before insertion of acupuncture needles.
- d)** Acupuncturist should not touch the disinfected skin with bare hands. Otherwise, the skin disinfection has to be done again.
- e)** The acupuncturist should only hold the handle of the needle so as to avoid touching the shaft of the needle that will penetrate into the skin. When grasping of the needle shaft deems necessary, adequate disinfection should be done first.
- f)** Counted against the insertion record to make sure that the number of needles removed is the same as inserted. If there is any missing needle, search hard to find it.
- g)** Needles after removal should be discarded immediately into a sharp box and be disposed as clinical waste.

## **6. Clinical waste disposal**

- a)** Used disposable needles or sharps should be disposed directly into a sharp box labelled with clinical waste:
  - 1.** The sharps box should be sealed when it is 3/4 full.
  - 2.** Sealed sharps boxes should be put into a red plastic bag, securely tied by the swan-neck method, labelled as clinical waste and are collected by a licensed collector for incineration.
- b)** Wastes with small volume of body fluids or blood stains can be disposed as domestic garbage. Dressings or wastes soaked with or containing large volume of body fluids or blood should be disposed in a red plastic bag, labelled as clinical waste, and are collected by a licensed collector for incineration.
- c)** Disposal records of clinical waste have to be kept for twelve months.

## **7. Management of post-acupuncture complications**

- a)** Post-moxibustion blisters should be covered with sterile dressing to prevent infection and they should be allowed to absorb naturally.
- b)** If the penetrated sites develop redness, abscess or signs of infection, medical advice should be sought immediately.
- c)** Ear press needles are usually retained for no more than five days. If there are signs of infection or severe itching at the needling sites, the needles should be removed immediately.

## **8. Management of sharps injury**

- a)** Before commencing health care related jobs, prospective workers should check their hepatitis B immune status. For non-immune workers, they should first receive hepatitis B vaccinations for their protection.
- b)** When being injured by used sharps, the health care worker should follow the below to manage the situation:
  - 1.** Clean the wound under running water immediately. Gently squeeze out the blood from the wound, then disinfect the wound and cover it with dressing.
  - 2.** Perform risk assessment by checking the HBV, HCV and HIV status of the blood source. In case of doubt, immediately consult the nearest emergency department for blood testing and follow-up.

## Appendix I: Use of bleach

Among household disinfectants, bleach is strong and effective. Its major ingredient is sodium hypochlorite. It is able to destroy bacteria, fungus and virus. Thus, diluted bleach is recommended for environmental disinfection.

However, bleach irritates mucous membranes, skin and airway. It decomposes under heat or light and reacts easily with other chemicals. Therefore, caution should be exercised during its use. Improper use of bleach not only reduces its effectiveness in disinfection but may also lead to accidents. Overuse of bleach will pollute the environment and disturb ecological balance.

- a) All non-metallic surfaces such as tables, desks, chairs and beds should be wiped with “1 in 99 diluted household bleach” by mixing 1 part of household bleach (containing 5.25% sodium hypochlorite) with 99 parts of water.
- b) 70% alcohol should be used for disinfecting metallic surfaces as bleach will corrode metal.
- c) Gloves should be worn for handling items contaminated with vomitus, excreta or body fluid.
  1. Use disposable strong absorbents to perform preliminary cleansing.
  2. Then, disinfect the surface with “1 in 49 diluted household bleach” by mixing 1 part of household bleach with 49 parts of water, allow the bleach on the surface for 15 to 30 minutes before rinsing with water.
  3. Items with rough and uneven surfaces are difficult to wipe, if possible, immersion cleaning will be more effective. These items should be soaked in bleach for a bit longer, at least 30 minutes. Then, rinse with water.
- d) Gloves should be worn for handling blood stains. When there is a pool of blood, use disposable strong absorbents to perform preliminary cleansing. Then, disinfect the surface with “1 in 4 diluted household bleach” by mixing 1 part of household bleach with 4 parts of water. Allow the bleach on the surface for 10 minutes before rinsing with water.
- e) Environmental cleansing during communicable disease outbreak in the community:
  1. Use higher concentration of bleach for environmental cleansing. For routine cleansing, “1 in 99 diluted household bleach” is used. During

the outbreak period, “1 in 49 diluted household bleach” is recommended by mixing 1 part of household bleach with 49 parts of water.

2. Increase the frequency of environmental cleansing.
3. Pay special attention to toilets, kitchen and frequently-touched surfaces such as switches of lamps, door handles and rail.

Methods to prepare diluted bleach and points to notice when using bleach:

- a) Make all necessary items, cleansing tools and personal protective equipments ready, such as bleach, water, large and small measuring cups, rubber gloves, plastic apron, goggles, brush, mop, towel and buckets.
- b) Open windows to ensure good ventilation while diluting or using bleach, so as to decrease the irritability on respiratory tract.
- c) Caution of bleach splashes during the dilution process. Operators should put on personal protection equipment (gloves, plastic apron and goggles) to protect their mucous membranes and skin.
- d) Bleach should be diluted with cold water since hot water will decompose the bleach and make it lose efficacy.
- e) When bleach is containing 5.25% sodium hypochlorite, the diluting methods are as follow:
  1. Prepare 1 in 99 diluted household bleach for usual cleansing by mixing 10ml bleach with 990 ml water (total 1000ml).
  2. Prepare 1 in 49 diluted household bleach for disinfecting items contaminated with vomitus, excreta and secretions by mixing 20ml bleach with 980 ml water (total 1000ml).
  3. Prepare 1 in 4 diluted household bleach for disinfecting items contaminated with blood by mixing 20ml bleach with 80 ml water (total 100ml).
  4. Adjust the required amount of bleach if the available bleach is not exactly containing 5.25% sodium hypochlorite.  
For example, when the currently available bleach contains only 5% sodium hypochlorite, first calculate the multiplier of the required amount of bleach. Dividing 5.25% by 5% (the concentration of the currently available bleach) gets the multiplier of 1.05. If 1 in 99 diluted household bleach is needed, multiplying 1.05 by 10 ml gets 10.5 ml

which is the required amount for 5% bleach.

- f) The required amount of bleach should be accurately measured by a measuring cup.
- g) After disinfected by bleach, articles should be rinsed thoroughly with water.
- h) The used cleaning tools should be soaked in diluted bleach for 30 minutes, and then rinsed thoroughly with water.
- i) Points to notice when using bleach:
  - Do not use bleach on metals, wool, nylon, silk, dyed fabric and painted surfaces.
  - If bleach splashes into eye, immediately rinse with copious amount of water, and then consult a doctor.
  - Bleach should not be used or mixed together with any detergent or acidic solution. Otherwise, its effectiveness of disinfection will be reduced and toxic gas will be produced which may cause accident. Therefore, whenever detergent has been used, rinse thoroughly with water before using bleach for disinfection.
  - When exposed to sunlight, high concentrated bleach liberates toxic gas. Thus, it should be stored in a shaded cool place which cannot be reached by children.
  - Note the date of production when purchase as bleach (sodium hypochlorite) decomposes over time and loses efficacy. Bleach recently manufactured is better. Furthermore, avoid over-stocking of bleach.
  - Diluted bleach should be used within 24 hours after preparation.

## Appendix II: Disinfection-sterilization methods

Among various sterilization / disinfection methods, steam sterilization is the only method that can achieve the sterilization standard required in acupuncture needles. Please note that both boiling and chemical disinfection do not meet the sterilization standard required in acupuncture needles.

### 1. Steam sterilization:

- Special re-usable needles, e.g. plum-blossom needles, triangular needles, silver needles and gold needles should be sterilized in an autoclave.
- Temperature should be maintained at 121°C for 15 minutes or at 134°C for 3 minutes. (WHO, 1999)
- Autoclave should be well-maintained and used in accordance with the recommendations of the user manual.

### 2. Boiling disinfection:

- This method is suitable for non-invasive items which are made of glass or metal. First, put the equipment into water. The water level should be at least one inch above the items. Maintain boiling for 20 minutes after water reaches the boiling point to meet the standard of high level disinfection.(WHO, 1999)

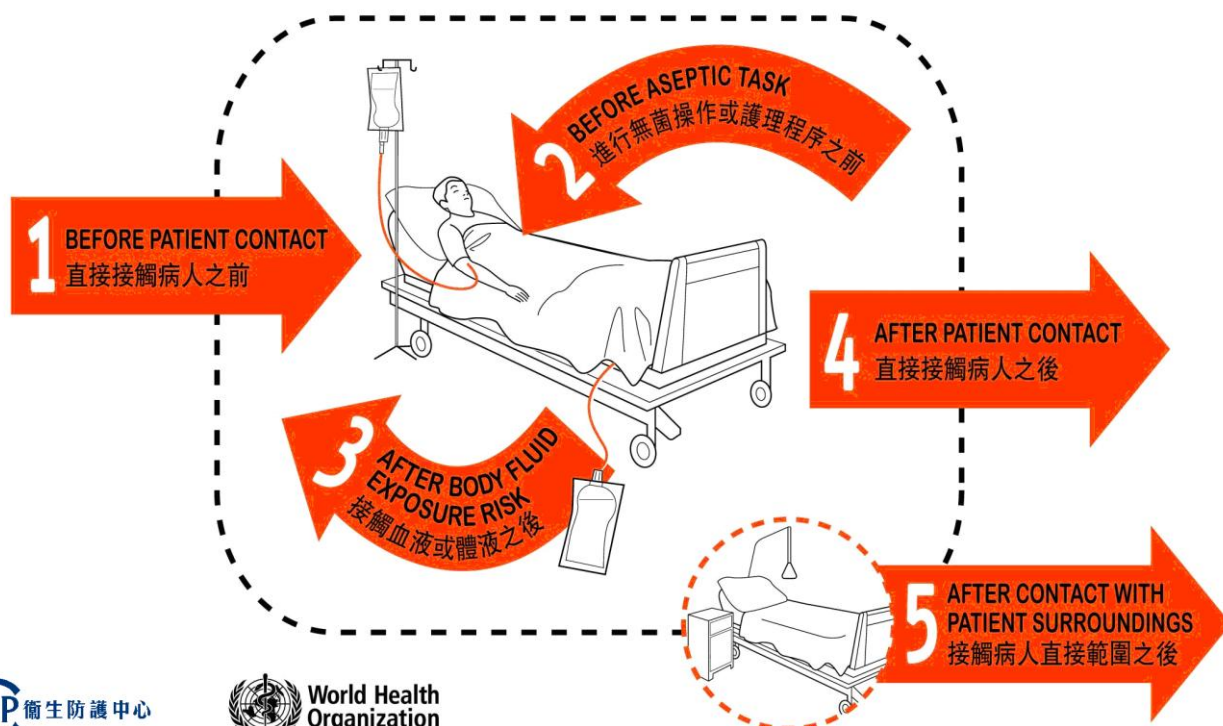
### 3. Chemical disinfection:

- This method is suitable for heat-sensitive items.
- Items must be dismantled or opened, and fully immersed in the solution.
- Check the expiry dates of disinfectants before use.
- Examples of metallic or glass items: cleanse the items first before immersing them into 70% alcohol (ethanol) for 10 minutes. After taking out, place in a dryer to blow dry or wipe dry with a clean towel.
- Examples of plastic or glass items: cleanse the items first before immersing them into the “1 in 99 diluted household bleach”. After 30 minutes, rinse thoroughly with water, then place in a dryer to blow dry or wipe dry with a clean towel.
- The chemical agent should be changed daily.

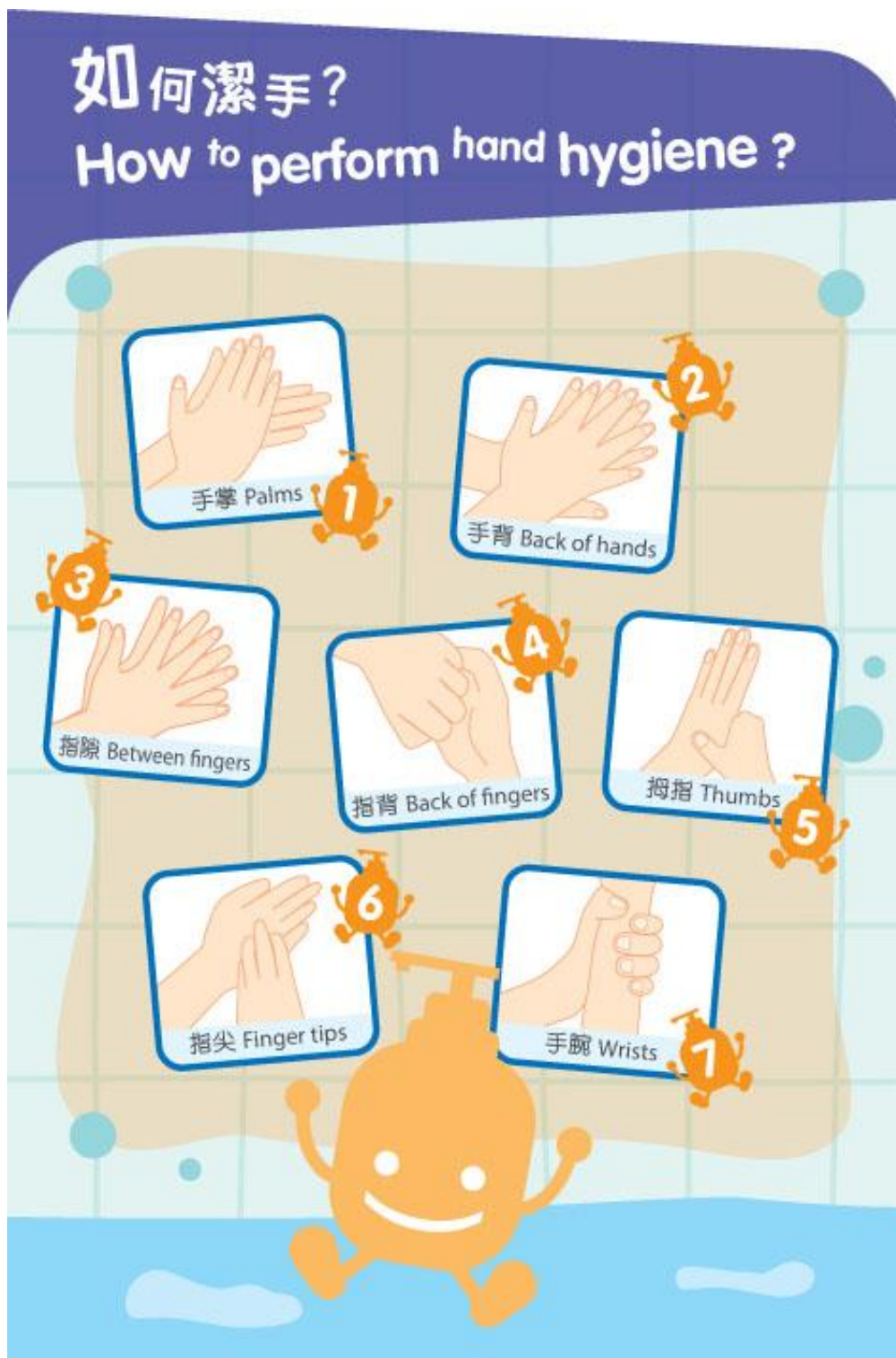


# Your 5 moments for hand hygiene

## 五個必須潔手的時刻



Appendix IV: Hand hygiene techniques – 7 parts for 20 seconds



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