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# Cleaning Paintings: Precautions – Canadian Conservation Institute (CCI) Notes 10/1



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## Introduction

Over time, the image of a painting may become difficult to see or the colours may become obscured. The two primary causes for this are a build-up of dust, dirt and grime (e.g. insect-related deposits, soot or grease and tobacco smoke) as well as a gradual yellowing or cracking of the varnish as this layer ages.

Although cleaning a painting surface may appear to be straightforward, untrained individuals should not attempt to remove layers of dirt and discoloured varnish. An accurate interpretation of the effects of various cleaning agents on a particular painting requires a thorough understanding of the materials present in each layer of the painting and extensive practical conservation experience.

## Cleaning with water-based solutions

Applying aqueous (i.e. water-based) solutions to paintings can have many deleterious effects, some immediate and others long-term, including:

- weakening the pigment-to-medium bond in some paints (for example, oil paints and acrylic emulsion paints), which can cause loss of pigment
- leaching out water-soluble components (surfactants) from acrylic emulsion paint
- blanching the paint and or varnish layers
- depositing harmful cleaning agents onto or into the paint and varnish layers

Applying an aqueous or solvent-based liquid or paste to a painting rarely penetrates only one layer. Such liquids, or liquids from the paste, can penetrate all layers through visible and invisible cracks and capillaries. Consequently, the effects of a cleaning solution must be considered not only in relation to the dirt, varnish and paint layers, but also in relation to a painting's ground, size and support. Applying water to a painting with a soluble ground may weaken its attachment to the support, resulting in immediate or eventual flaking paint and ground layers. If enough water makes its way through to the canvas layer (made up of cotton, linen or linen-like fabrics such as jute), which is especially water-sensitive, the fabric will shrink, causing separation between canvas, ground and paint layers, as well as possibly distorting all of these layers.

## Cleaning with solvents

Conservation professionals most frequently use solvents to remove highly discoloured or disfiguring varnishes. Removing varnish layers is not always advisable, nor necessary. When it is done, the procedure must only be carried out by someone with conservation training and experience. In addition to being a potential health hazard to the user, solvents can cause serious and irreversible damage to sensitive paint layers. These

layers can be softened or dissolved, depending on the paint medium, paint additives and thickness of the paint layers.

### Commercial products

Never attempt to use commercial paint cleaners or picture restoring preparations on paintings. These preparations are neither used nor recommended by professional paintings conservators.

### Cleaning: special considerations for 19th- to 21st-century art

Many 19th-century paintings are particularly vulnerable to solvent cleaning due to a number of additives mixed into the oil paint by the artists. Some of these additives can result in paint surfaces swelling and wrinkling when solvents are inappropriately applied. The same warning can be applied to many 20th- and 21st-century paintings. New media, synthetic pigments and dyes, plus diverse paint mixtures used by many contemporary visual artists, may result in solvent or water-sensitive paint layers. Some modern and contemporary media are, by their nature, easily damaged by solvents. Acrylic emulsion paintings, for example, do not tolerate even mild organic solvents. Cleaning modern or contemporary paintings should only be carried out when absolutely necessary and only by trained professionals. Recently painted artworks may remain extremely sensitive until paint layers are completely cured (polymerized). This will make any contact with water-based solutions and organic solvents very hazardous.

### Small stains, marks and graffiti

Do not attempt to remove even a minor blemish from a painting. Inexpert attempts to clean may cause an even more unsightly spot and could result in permanent damage to the painting.

### Dusting

Even dusting the surface of a painting carries risks, including the risk of removing paint. Some paintings develop a condition called micro-flaking, where tiny flakes of paint become partially detached. Not immediately visible, these flakes can be swept away by even the lightest dusting. Larger flakes can also be difficult to detect because they can be camouflaged by the painted image or by irregularities in the surface of the paint. Never use dry or moist dust cloths, stiff bristle brushes or feather dusters to dust the surface of a painting. Threads from dust cloths may catch on areas of raised paint (impasto), and moisture may cause subsequent loss of paint (as paint, ground and canvas respond to the introduction of water). Both bristle-haired brushes and feather dusters can scratch the surface of a painting or varnish. The action of dusting an ornate frame can scratch the often fragile layers of its surface finish, and wet-wiping a frame will remove surface finishes, especially if these are traditional gilding. Never use a

vacuum to remove dust from a painting surface, nor from the surface of its frame. Never use compressed (“canned”) air to blow away dust. The propellant may damage the paint surface, and the volume of air may be strong enough to dislodge flaking paint from an unstable surface.

### How to protect your painting

This Note explains the hazards associated with wet, dry and solvent cleaning of painted surfaces in order to discourage any cleaning attempts, no matter how well-intentioned. Several precautions can be taken that will safely prevent or slow down the accumulation of dust and dirt on paintings:

- Include a glazing layer (glass or acrylic) in the framing. Leave a minimum space of 0.5 cm (approximately 3/16 in.) between the highest point of the painting and the glazing. This can be achieved by using an inner frame liner or spacer bars placed between the glazing in the outer frame and the painting surface. Specialty glasses and acrylics are now available that reduce glare. Acrylic glazing can also be obtained with anti-static properties. Clean the glazing with a lightly dampened cloth (taking care not to touch the frame nor allow liquid to run between the frame and the glazing). The glazing will protect vulnerable painted surfaces from normal airborne contaminants, from attack by acidic accretions left by insects and from direct physical contact.
- If a painting is not protected with a frame, glazing and backing, do not display it near an air intake where the concentration of airborne dust and dirt will be highest. Do not place the painting near sources of greasy contaminants such as wood fires or dining and food preparation areas.
- When handling unframed paintings, always wear gloves because natural oils from fingers will etch into unprotected paint layers, leaving indelible marks.
- If liquids splash up against a painted surface, immediately place the painting face up to avoid running drips. Do not rub the painting to remove the liquid, but wick it up using the corner of an absorbent paper or cloth. Call in an expert to assess the damage and to carry out appropriate cleaning measures.

### Conclusion

The safe cleaning of paintings is one of the most demanding areas of paintings conservation, requiring skills acquired through extensive formal training and practical experience. Permanent damage can easily result from even the most cautious attempts to clean a painting by untrained personnel. Certain measures can prevent or slow down the accumulation of dirt and dust. The most important measures are glazing, proper handling and choice of appropriate location to display the painting. Should it become

necessary to clean a painting, its components and composition should be identified and assessed, and subsequent treatment should be undertaken only by a conservation professional.

