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NF93-126 Health and Safety in the Arts and Crafts

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Health and Safety in the Arts and Crafts

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As more and more individuals use their artistic interest as an income-producing opportunity rather than simply a leisure activity, awareness of major health and safety concerns in the arts and crafts should increase.

Because artwork is expressive, when we do think about the practical aspects, we usually focus on how to increase our ability to express our ideas, rather than on how these creative activities might affect our health and safety.

The philosophical differences between art and craft do not apply to the issue of health and safety. Toxic substances in clays and glazes can harm the ceramic sculptor, as well as the production potter. Oil paint and solvents can irritate the skin, whether the individual is painting a design on a wooden chest or working on canvas.

The potential for harmful effects is not limited to new, untested products. Many of the materials and processes now used in creating art or craft work have been used extensively, and research on the use and misuse of traditional media has suggested a link between poor health and unsafe materials and processes.

Technology has produced a wide array of new media, and creative people delight in using any interesting materials and experimenting with processes, regardless of primary function. For example, polystyrene is available in many forms, such as insulation sheeting and drinking cups, and is also found in studios and classrooms it is used as art or craft materials. One problem associated with polystyrene is inhalation of fumes released when the materials heated, melted or cut. Skin irritation is also possible if it sustains prolonged contact with polystyrene.

The purpose of this publication is to identify potential problem areas and outline simple practices that may decrease the risk of illness or injury. While helpful, this information is not a substitute for expert medical advice on specific problems. Anyone who does art or craft work must be sensitive to physical changes that may occur, such as dizziness, rashes, headaches, pains of any kind, nausea or respiratory ailments.

The Research

Often, research provides the answers to help solve many of life's problems. While solutions are not guaranteed, tapping the growing knowledge base is important. If an individual plans to increase the time spent in art and craft production for economic reasons, the best and most current information is needed to protect the artist's health, as well as reduce the risk of including harmful substances in the products they sell.

While health and safety in the arts and crafts is a fairly new area of research, it has been a concern for centuries. As early as the eighteenth century Bernardino Ramazzini, known as the father of occupational medicine, blamed the poor health of artist on the materials they used. Workshops employing large numbers of artisans were common during this period, so the attention was focused on factory-type settings.

Contemporary research in occupational health hazards has provided valuable information for people working in nonfactory settings. Scientific studies have identified, described and analyzed chemical, physiological and mechanical factors that are harmful. These factors include toxins, fumes, irritants, noise and stress.

The practical application of industrial research is, however, limited by the different quantities and exposure levels found in studio settings. Research shows other factors should also be considered when evaluating potential harm in a home-work situation, including life-style, occupation, environment, age, degree of exposure to harmful elements and overall health.

In determining the potential for illness or injury, three factors, frequency, duration and intensity of exposure to the harmful substance, should be considered. For example, if a batik artist daily mixes dry powder for dye and works in the dust-laden air of the studio without a protective mask, the potential for harm exists. In this situation, the artist should have regular medical tests and change their work practices. Although people who work in the arts are encouraged to be spontaneous and inventive and many find it difficult to develop such as organized approach to life, the alternative might be disability and loss of the work that they find so deeply satisfying.

Research results indicating a relationship between media and health problems should not be interpreted to mean that any person engaged in a specific activity will automatically be subject to harm. These research results do, however, indicate precautions are necessary to control or prevent a health or safety problem.

Research more specific to the arts and crafts tends toward surveys, short-term investigations and case studies, as long-term studies on artists and crafts people pose some difficulty because many individuals move in and out of art or craft production.

Another difficulty in assessing art and craft work is that it is often done in settings that have multiple uses, such as homes, schools, activity centers and other places where the participants are not present for periods of time that can be easily monitored and measured. Because of individual work habits, research conducted in studios is further complicated by the lack of standardized settings. Case studies of these individual settings can alert us to the nature of unusual reactions experienced by others.

Case Study

Jack Geisman found that formaldehyde air contamination in a cabinet shop was the source of nose,

throat and eye irritation. The contamination was traced to the presence of large amounts of particle board used in furniture construction. The cured urea-formaldehyde resin binders used in this product decompose at normal room temperatures and humidity.

Unfortunately, case studies illustrate that concerns about prevention do not emerge until the onset of an illness. Because their situations are unique, individual artists have a greater responsibility than other workers to be their own researchers.

Precautions

Where to find hazards. In work with media, harmful factors can affect the body in three ways, through ingestion, inhalation or skin contact.

Ingestion. Substances, and even small tools, can enter the body if a person is accustomed to eating or drinking while at work. One quilter reported that she had to have a needle surgically removed from her stomach as a result of eating at her work table. Using kitchen utensils to mix art materials is a dangerous practice, as it is not always possible to remove all traces by simple washing. Not washing hands after working and before eating can allow harmful material to enter the mouth. Symptoms of hazardous substance ingestion can vary from immediate discomfort, nausea and pain to delayed reactions that are difficult to link to any single event.

Inhalation. Many minute substances can be carried into the body through the respiratory tract, and are then absorbed into the lungs and virtually every organ of the body. Some of the symptoms are immediate, such as sneezing, coughing, burning, dizziness or headache, while other symptoms take longer to surface, depending on the nature of the substance. Smoking while working can intensify the rate and the effects of inhalation.

Skin contact. Some materials can be absorbed through the skin directly, or through cuts or breaks in the skin. These damaging materials can enter the bloodstream and travel to organs. A more common occurrence is skin irritation resulting in redness, rash, itching or blisters. Some substances, such as acid, will cause an immediate reaction. Others substances may take years to effect the skin.

Recognizing the problem. The most critical factor in controlling potentially harmful effects is recognition of the problem. The first art-hazards fact sheet, written in 1976 for the American Lung Association by Dr. Bertram W. Carnow, suggested the greatest hazard to artists was their lack of awareness of the nature of their materials and processes. The best approach is to recognize the problem and to prevent exposure.

Prevention. The first step in prevention is to become familiar with the nature of materials used in art or craft production. It is important to read all labels and use the materials according to directions. This step is often difficult because labels get lost, substances are often stored in containers other than the original ones and many labels have no substantive information. Gail Barazani, a prominent author in the field, suggests that the most vexing problem in controlling the potential for hazards is the difficulty of identifying the composition of many art materials.

Several major manufacturers of art materials have voluntarily agreed to a labeling program. In their contacts with distributors, suppliers and manufacturers, consumers should insist the labels on art materials provide complete and accurate information. The new 1990 Labeling of Hazardous Art Materials Act requires labeling of products to disclose potential for long-term or chronic health hazards.

Several desk references list the chemical makeup of substances according to the art or craft media. One of the most comprehensive resources is the *Registry of Toxic Effects of Chemical Substances*. Individuals who use art media regularly should consult such references at home or at a local library.

Question the safety of unlabeled materials. In the United States, there is an increased awareness of the need to develop controls to lessen the potential for hazards in art materials. One report illustrates the enormity of establishing such control, pointing out the myriad of materials used to create art and craft products, as well as the difficulty of monitoring materials imported from other countries.

A report published by the United States Center for Disease Control in Atlanta included a story about a young woman from Texas who had symptoms of chicken pox, which worsened to include chills, fever, diarrhea and loss of appetite. She was the manager of a store that sold imported dried flowers and decorative grains. Her children and two employees developed what was diagnosed as acute and chronic dermatitis. Her husband, who never entered the store, had no symptoms. The Texas Department of Health traced the problem to dried grain stalks that were found to be carrying grain itch mites and larval ticks. Of the 92 stores that handled the product, 82 had employees who reported bites or skin lesions.

It is essential for artists and crafts people learn as much as possible about available materials. One option is to buy only from suppliers who are willing to invest in providing this kind of information.

Knowing about the nature of materials is only one part of the solution equation. The other part is knowing how to use these materials safely.

Develop good safety habits. Health concern are not limited to the toxic effects of materials. Accidents, which can result from unskilled or careless use of sharp tools or power equipment, are a major hazard in the arts and crafts. Prevention includes knowledge of, and skill in the use of sharp tools or power equipment, as well as practicing preventive maintenance.

Recognizing the dangerous aspects of crafts processes is critical. Some processes, such as quilting or weaving, have few obvious dangers. But others, such as metalry, ceramics, enameling, sculpture and woodcarving, have great potential for harmful effects.

Any process that involves intense heat, chemicals or power equipment requires a systematic approach to identifying potential hazards and designing procedures to prevent accidents. The following list of procedures may help prevent a serious accident.

- Use goggles to protect eyes from particles and heat.
- Wear protective gear over ears when operating power equipment.
- Use tools and equipment according to intended functions.
- Keep floor free of clutter.
- Use extension cords of proper size, and keep the cords dry and out of the way.
- Work in a well-lighted area.
- Turn off power equipment before making repairs or checking for problems. Avoid engaging fingers in any moving parts of equipment, whether the equipment is power-driven or not.
- Avoid loose-fitting clothing and flowing hair styles, either of which can be caught in equipment or ignited.
- Use protective gear, such as a nose mask, to protect the respiratory tract and gloves to protect for the skin.

Good housekeeping. Solvents, dust and minute particles of any material are especially hazardous. Any

process that involves solvents and powders or materials that create minute particles as residue requires stringent housekeeping.

- Use disposable covers on surfaces where spills are likely to occur.
- Use disposable material for wipe-ups.
- Provide good ventilation.
- Keep surfaces uncluttered.
- Vacuum, rather than sweep, dusty workplaces.
- Organize the work area.

Proper storage. Store materials in original containers whenever possible. If the materials must be transferred to another container, attach the original label or a copy of the label to the new container. Never store materials in containers that resemble food or drink containers.

- Store all materials and tools out of the reach of children.
- Store all liquids, particularly volatile solvents, in tightly capped containers.
- Cover powders, such as fine sand, clay, talc and glazes.
- Store all flammable solvents in special safety containers. Check with your local fire department for information on where to buy this kind of container. Avoid storing large quantities of flammable material.
- Soak brushes in solvent in a container deep enough to be capped with a tight lid.

Personal habits. Personal habits include practices that encourage cleanliness and influence the formation of positive attitudes toward health and safety. Keep the telephone number of the local poison-control center within easy reach, in case of accidental ingestion.

- Wash hands after using any art materials. Apply hand lotion to restore oils removed by solvents.
- Keep fingernails short, and clean them after each work period.
- Never eat or smoke in the work area. Either activity can lead to ingestion or inhalation of material.
- Do not "point" paint brushes between your lips.
- Never consume alcoholic beverages during or shortly before working. Judgment and reaction time can be affected, and alcohol adds to the hazards of toxic fumes.
- Remove work clothing before leaving the work area. Launder work clothing frequently and separately from regular clothing.
- Work in a cool, humid room rather than a hot, dry area.
- Avoid working when tired or after eating a heavy meal.
- Know the generic terms for both the medications and the materials being used. Medications can compound the effects of certain hazardous substances.

Adequate ventilation. Proper ventilation, necessary in any environment, is a prime safety concern in a shop or studio. In some settings, exhaust ventilation systems should be installed to remove fumes and particles quickly and continuously. If the work setting is part of a home or other facility, ventilation of fumes should be carefully monitored so these areas are not polluted.

Recommended procedures for proper ventilation include the following:

- Open the windows or doors to provide cross-ventilation for low-level toxic substances such as turpentine.
- Install an exhaust fan to speed air exchange when using more toxic solvents, such as lacquers.
- Use a spray booth with an outside exhaust system when using aerosol sprays.

- Arrange work area so that fumes, mists and sprays are carried away from, not towards, the face.

Factors that influence harmful effects. Dr. Bertram W. Carnow says that amateur crafts people and artists, as well as industrial workers, tend to ignore danger signals. All of these individuals must learn about the character of art media and become aware of their total environment — what Carnow calls "the total body burden." The body may be able to tolerate one source of contamination, such as lead inhaled from occasional exposure to auto exhaust. However, as other contaminants, such as smoking or exposure to certain art materials containing lead, are added to the "body burden," the body is at greater risk of lead poisoning.

Age is another factor to be considered, as one study suggested elderly people are at greater risk of harmful effects from hazardous materials than younger and middle-aged adults. Special care should also be given to very young children. Pregnant women and all women of child-bearing age need to learn about the potential hazards.

Summary

Attention to health and safety in the visual arts and crafts is necessary, as more time is spent with materials and processes that have been linked to health problems. The common ways toxic substances enter the body are through ingestion, inhalation and skin contact. All symptoms or distress should be monitored medically, especially if they result from contact with a material used in arts or crafts.

Prevention of harmful effects can be aided through the uncomplicated procedures recommended for general work place safety, personal hygiene, good housekeeping, adequate ventilation and a thorough knowledge of all aspects of the chosen media. The greatest problems in prevention are a lack of recognition of the problem and difficulty in determining the nature of the materials available for art and craft work.

Factors influencing the impact on the individual are age, general health and the total environment, including the frequency, duration and degree of exposure to a range of pollutants.

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