

Monthly Safety Notice

July 2019

National Baromedical Services, Inc.

Monoplace Chamber Patient Fire Risks And Mitigation

Background

Two categories of patient-specific items that can increase risk of fire are summarized as:

1. Items, material and products employed as part of patient medical management.
2. Personal items, materials and products electively used by patients and unrelated to any medical condition.

The Issue

1. Those that are medically indicated

Common examples include wound dressings, dressings related to various invasive procedures/devices and access ports, other surgical adhesives, and skin prep products.

Where any of the above includes alcohol, sufficient time should be allowed for it to fully evaporate (flash off). There are no firm 'interval' guidelines, but as evaporation occurs within minutes it would be reasonable to wait for one hour. However, the Hyperbaric Safety Director and Hyperbaric Physician may elect to shorten this period, based upon medical necessity.

Where any of the above involve hydrocarbon (oil-based) substances, then the *November 2012 Safety Notice* continues to provide useful guidance. As noted, where no part of the impregnated primary dressing (or its hydrocarbon component) is exposed beyond the secondary dressing, treatment can proceed. If there is exposed primary dressing, it should be covered with a dry cotton hand towel. Use a dry regular cotton towel if the hand towel provides insufficient coverage. There is no reason to dampen the towel, and in some cases, doing so may be contraindicated. Another option would be to determine if the dressing could be removed prior to treatment without adverse effect.

If an Unna boot or total contact cast is in place, it should be covered with a dry cotton towel or a dry cotton pillowcase. This is simply to protect the chamber's acrylic tube from impact damage. Again, there is no reason to dampen the towel/pillowcase. If the Unna boot is secured with elastic bandage and metal clips, the bandage should be removed and replaced post-treatment. Likewise, Velcro securing devices should be removed. If impractical to remove (involving a large circumferential abdominal dressing for instance), the Velcro should be unfastened if it does not represent undue threat of surgical dehiscence. Otherwise, it will be a Hyperbaric Safety Director-Hyperbaric Physician decision whether to proceed with treatment. While Unna boot and contact cast drying times vary from one to several hours, it is reasonable to wait 24 hours before treatment. Again, this period can be shortened if the Hyperbaric Safety Director and Hyperbaric Physician agree.

In general, incontinence garments are allowed to remain in place. Check to remove Velcro type diaper tabs and re-secure with plastic tape. As products change, always check manufacturers for new product information.

2. Personal grooming and beauty products

Common grooming and beauty products include synthetic and natural hair replacement/extensions (involving various attachment methods), hair sprays and other hair grooming products, eyelash extensions (glue), nail polish/nail polish remover, acrylic nail extensions (glue and polish), skin lotions, face moisturizers and body oils/fragrances.

Hair grooming products should be avoided, particularly hair sprays or hair grease. Grooming products pose a hydrocarbon contamination threat; hair sprays largely represent a static accumulation/discharge threat. Should a patient urgently present for HBO treatment with hair grooming products in place, cover the hair with a water dampened (to lessen potential for static discharge) cotton towel. Advise the patient not to continue using these products during their subsequent treatment course.

For hair replacement/extensions; covering the hair in a damp towel as above is only necessary if synthetic material is used.

If the replacement/extensions have been bonded or fused, there needs to be sufficient time allowed for the adhesive material to cure and off-gas its flammable element. While there will be differences in the rate various adhesives will off-gas, it seems reasonable to wait a minimum of 24 hours before initiating elective hyperbaric treatments. Should it be considered necessary to treat within this period, and upon approval by the

Hyperbaric Safety Director and Hyperbaric Physician, covering the hair with a damp towel would be prudent.

Patients should be instructed not to apply nail extensions, nail polish or polish remover the day of and preceding their treatment.

Patients should be instructed not to apply beauty products, skin lotions or body oils the day of and preceding their treatment.

Bottom Line



Fuel + Oxygen + Ignition = Fire. The "Fire Triangle"

All items and materials entering the chamber are essentially flammable, including the patient. Therefore, everything entering the 100% oxygen-filled chamber carries with it some level of risk, so must be carefully evaluated and managed to mitigate risk of ignition. A balance must be achieved between maintaining safety and respecting the medical needs, comfort and privacy of the patient.