

# Facial pressure injuries and skin issues from PPE



With increased facial personal protective equipment (PPE) use across Western Health, in particular, the newer cupped P2/N95 respirator masks specifically for longer periods of time, there is a risk some staff may experience changes to their skin including pressure injuries. Many of these skin issues can be prevented and managed following principles of skin care and pressure injury management.

## Possible Skin Complications

The most common skin complications from extended mask and glove use are:

- Increased dryness around the nose and hands
- New or more acne under any of the mask area
- Friction and rubbing usually on the nose, ears, lips and chin from surgical masks moving
- Moisture, pressure, discomfort and swelling to the face from P2/N95 masks

Less common, but more serious skin issues include:

- Pressure injuries to the bridge of nose, ears and cheekbone
- Contact dermatitis (irritant or allergic) to hands and face
- Flare up of existing skin conditions
- Pressure Urticaria (red itchy welts)

## Skin Injury Prevention

There are many important steps that can be undertaken at home and work to reduce skin damage risks as listed in Table 1. It is important to make these part of your daily routine to prevent skin damage from extended mask use or other PPE. Increased humidity to your skin under PPE may require a change in your general skin care regime, including with facial shaving.

Table 1:

At Work	At Home
<ul style="list-style-type: none"><li>• Half an hour before your shift, apply a facial and hand moisturiser to allow time to be absorbed before applying PPE</li><li>• Do not wear makeup as it can impact on fit seal check and exacerbate skin issues</li><li>• Ensure the mask is the correct size and fit without over-tightening.</li><li>• If you unable to obtain a correct fit or have any discomfort under the PPE - discuss with your line manager or PPE Champion about alternative brands /models/sizes.</li><li>• Take regular breaks for drinks so as not to become dehydrated, this also gives your skin a break to relieve pressure and hydrates skin.</li><li>• Every 2-4 hours, and at the end of your shift, remove the mask in a safe area with hand hygiene and inspect your face for redness or irritation.</li></ul>	<ul style="list-style-type: none"><li>• Keep up your regular hygiene / skin care routine including the use of pH balanced products and regular moisturiser (with products you prefer, ideally fragrance free).</li><li>• Lighter lotion based regimes are generally better however this will depend on your baseline skin type.<ul style="list-style-type: none"><li>- Oily skin /Hot weather: use gel based</li><li>- Normal or combination skin: Lotion based</li><li>- Dry skin: cream based</li></ul></li><li>• Avoid toners, high percentage alpha hydroxyl acids, retinoids, chemical peels or physical exfoliators as these can cause further skin irritation in those with sensitive skin or compromised skin barriers.</li><li>• Be aware that your regular regime may need altering to account for changes to your skin from the increased humidity under masks.</li><li>• An effective way to hydrate your skin is to drink more water so as to ensure good hydration plus good nutrition</li></ul>

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Table 2: Skin Care Guide with Extended PPE Use

	Before work	Before donning PPE	Whilst donning PPE	Every 2-4 hours	At the end of the shift
<b>Skin Protection</b>	Perform regular hygiene/skin care regime	Use provided hand moisturiser 3-4 times per shift		Moisturise hands/face regularly	Perform regular hygiene/skin care regime
<b>Use of Appropriate PPE</b>			Ensure that your mask is the correct size and fit without overtightening	Remove mask, inspect your face for redness, irritation and pain	Remove PPE, inspect your face for redness, irritation and pain
<b>Use of Barrier between Skin and PPE with surgical mask</b>		Consider the use of Cavilon barrier cream to the regions of face in contact with PPE. (see approved products)	*when wearing a surgical mask the application of a dressing between the bony prominences of the face (nasal bridge, cheek bones or ears), or the use of hydrocolloid seal can improve comfort and reduce friction and movement of the mask		
<b>Use of Barrier between Skin and PPE with P2/N95</b>		Consider the use of Cavilon barrier film to the regions of face in contact with PPE	<b>*Barrier dressings are not appropriate under P2/N95 masks as they can compromise the fit seal of the mask</b>		



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## PPE fit:

- Follow the correct technique in donning or putting on the relevant masks
- When ensuring a surgical mask fit, ideally none of the protective dressings should be visible or interfere with the function of the surgical mask,
- Protective dressings should not be used with P2/N95 masks as will impair ability to create a fit seal with fit check
- If you are unable to obtain a safe fit check or have any discomfort under the P2/N95 mask - discuss with your line manager about alternative masks and sizes
- Check your mask in a mirror or ask a colleague to check the fit of you mask
- Seek advice from the PPE Team or PPE Champion if ongoing issues with your PPE
- Review the escalation process on the microsite for issues with fit checking

## Protectives Dressings/Barrier Products:

When choosing an appropriate protective dressing, ensure that:

- It does not cause trauma or 'skin stripping' on removal
- All adhesive dressings are removed last with Convatec ConvaCare adhesive remover wipe
- Is able to sit 'flat' on the skin without wrinkles or distortion
- It does not interfere with usual skin care and does not last past the duration of the shift
- If products under surgical mask become moist, contaminated or start to lift, they are removed and replaced immediately

## P2/N95 Respirator Masks

Protective dressings are **NOT** to be used on the face under P2/N95 respirator masks as they may impair the seal and not provide protection

- With these respirator masks, dressings may only be used on or at the back of the ear
- Any amount of time where you can remove the mask away from the clinical space will assist with pressure relief and allow your skin to have a break

See Table 3 for the different protective barriers and dressings with the relevant masks.

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**Table 3 Protective Barriers and Dressings**

	Product name		Purpose	Surgical mask compatible	P2/N95 compatible	Order details
1	Cavilon Barrier Cream		Barrier/emollient containing dimethicone for reducing moisture loss. Apply a very thin film to clean, dry skin before applying mask.	Yes	Yes	Code #3392G (box 12)
2	Cavilon barrier wipe		Barrier to nose, face that can reduce moisture damage to skin and irritation. Apply barrier film <b>avoiding</b> eyes. Wait 90 sec before donning mask. Apply no more than once a day	Yes	Yes	Code #420789 (box 30)
3	Conva Care Adhesive Barrier Wipe		Adhesive remover to assist with of adhesive from dressings and Cavilon barrier film residue at end of shift with final doffing of mask.	Yes	Yes	Code #37443 (box 100)
4	Duoderm hydrocolloid Extra thin		Anchors mask to prevent movement and friction, can reduce face-shield, glasses from fogging and behind ear pressure	Yes	No	Code #187900
5	Mepilex lite (10x10cm)		Can assist with friction, shear across the nose and face from the mask and straps	Yes	No	Code #284100 (box 5)
6	Ear savers		To hold the ear loops of surgical mask off the back of ear. Hold ear saver on the back of head and loop on the elastic straps from the surgical mask.	Yes	No	PPE Team

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## Pressure Injury Risk

Staff should check their skin for signs of pressure injury every 2-4 hours or earlier if noting any pain, itching or discomfort

- If persistent redness of pain exists over a bony prominence (for more than 30 minutes post removing mask) - this is a pressure injury
- If itching, diffuse rash this is likely contact dermatitis, but can also be a flare of pre-existing facial eczema, rosacea or seborrheic dermatitis
- Pressure urticaria – this occurs due to pressure from masks and causes skin redness and swelling at pressure areas. Avoid tying masks too tightly (whilst ensuring good fit with P2/N95) and/or take antihistamines ( e.g. fexofenadine, cetirizine or loratadine) before mask wearing

## Occupational Skin Breakdown Risk

### Contact Dermatitis:

Can occur with mask wearing due to increased temperature, moisture and friction. This can be irritant or allergic contact dermatitis. The most common is IRRITANT.

- Irritant contact dermatitis can be treated with: regular emollients and low strength topical steroids e.g. Hydrocortisone cream or ointment (0.5% and 1% can be sourced from a pharmacy without a prescription)
- Allergic contact dermatitis: has been reported with mask wearing but is rare. Allergy is reported to Isocyanates (Chinese N95), rubber chemicals in the elastic components of mask (Chinese mask), and formaldehyde (in polypropylene mask in Belgium). If allergic contact dermatitis is suspected, please PPE team for alternative mask options or follow the P2/N95 Fit Check escalation process.

### Acne (Maskne)

- Reduce use of occlusive skin care products
- Use a gentle cleanser but consider ones that contain salicylic acid or anti-bacterial agents e.g. benzyl peroxide.
- Avoid makeup under mask
- Please contact your local GP for assistance or a referral to a dermatologist if severe flares occur. These cases typically require prescription products.

Other skin conditions that can flare with mask wearing. Please discuss with your GP the need for referral to a Dermatologist:

- Rosacea
- Seborrheic dermatitis
- Atopic dermatitis

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## Hand Care:

- Moisturise hands as often as possible (at least 3 times a shift, before meal breaks and at the end of a shift). Regularly use moisturiser at home and protect hands with gloves for any wet work such as washing dishes or hand washing.
- All wards/areas have WH endorsed moisturiser available for staff.
- Staff who have skin conditions such as weeping dermatitis or contact dermatitis, report it as an occupational health and safety (OH&S) incident on Riskman.
- Seek consultation with Infection Prevention
- Cover cuts and abrasions with a water resistant occlusive dressing
- Do not wear hand and wrist jewellery, nail polish or enhanced nails as these are associated with increased bacterial carriage. They also limit effective hand hygiene to elbow.
- Keep nails neatly clipped and avoid biting nails.

## Escalation

Continue above described preventative measures, checking your skin and providing relief from the mask every 2-4 hours or earlier if needed. Avoid rubbing any areas of skin damage, regardless of the cause as this will exacerbate the issue.

<p><b>Unable to get a good fit of P2/N95 mask</b></p>	<p><b>Discuss with your line manager about alternative brands/models of PPE and refer to the Fit check escalation process.</b></p>
<p><b>You experience pain with P2/N95 mask and/or persistent redness to bony prominences after removal. This is a pressure injury (redness that lasts &gt;30 minutes and does not go white when pressed).</b></p>	<ul style="list-style-type: none"> <li>• Remove the mask and discuss with your line manager</li> <li>• Allow your skin to recover for a minimum of 30 minutes.</li> <li>• Replace your mask with a new one ensuring a good fit without overtightening</li> <li>• If the pain/redness returns contact the PPE Team for alternative P2/N95 mask or PPE Champion following the escalation process</li> <li>• If the pain/redness persists with an alternative P2/N95 contact the Wound Care Nurse Consultants to assess for pressure injury damage</li> <li>• Complete a Riskman noting an OH&amp;S incident (pressure injury)</li> <li>• If you experience a Pressure Injury Stage 2 (blistering or breaks in skin integrity) or above please discuss options with your line manager.</li> <li>• Wound Care can be contacted for advice on products for your injury</li> </ul>
<p><b>You experience itching, burning or diffuse rash from mask or gloves. This is likely contact dermatitis.</b></p>	<ul style="list-style-type: none"> <li>• Remove the mask or gloves and discuss with your line manager</li> <li>• Consider alternative brands or models of mask – seek advice from PPE Champion or PPE team on alternative masks</li> <li>• Inform Infection Prevention for hand skin issues</li> <li>• Inform OH&amp;S for facial skin issues</li> <li>• Complete a Riskman noting an OH&amp;S incident (contact dermatitis)</li> <li>• Use dermatological emollients and/or low strength topical steroids</li> <li>• Seek GP advice if no improvement</li> <li>• May require a Dermatological review</li> </ul>

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## Trouble shooting/FAQs:

- **P2/N95 masks and bi-focal and multi-focal glasses:** some models of P2/N95 cupped masks (hard-shell style) can affect where glasses fit on the bridge of your nose. This can affect the function of the glasses. Seek advice from the PPE Champion or PPE team for alternative mask such as the flat pack cupped P2/N95 mask if wearing bi-focal or multi-focal glasses.
- **Using a hydro-colloid under a surgical mask:** generally a hydrocolloid dressing is not advised under surgical masks. This is for 2 reasons; hydrocolloids have a strong adhesive which when removed can cause stripping of the epithelial layer, repeated removal can increase the risk of trauma, pain, and infection. Dressings under a P2/N95 mask can interfere with the fit/seal and is an unsafe practice. Dressings can also cause the mask to slip over time. Wearers may over-tighten the mask to overcome the effect of the dressing increasing pressure. At times when a hydrocolloid is used under a surgical mask please remove using an adhesive remover wipe. Ensure strict hand hygiene and avoid any contact with eyes. Remove away from the eyes (with eyes closed) to prevent any cross transmission to either eyes or nose.
- Using tape under mask across nose bridge: removing such tapes can cause stripping of the epithelial layer, repeated removal can increase the risk of trauma, pain, and infection

## Other support:

- PPE Champions
- PPE Team
- Infection Prevention– 83456113 – select appropriate option for relevant hospital site
- Wound CNC team: 0401 683 770
- OH&S enquiries: Sunshine 8345 1911 Footscray 8345 7762

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**Acknowledgement document source Royal Melbourne Hospital and Barwon Health**