

# Facial Injury and Respiratory Protective Equipment

Guidance

## Purpose

This guidance has been developed to provide information to be used in the prevention of damage to skin due to use of personal protective equipment (PPE). Mechanical forces can cause pressure injuries in workers wearing PPE, specifically P2/N95 respirators, face shields and goggles, for prolonged periods.

## Scope

This guidance document applies to all Queensland Health healthcare settings and situations where there is a risk for infectious disease transmission. It is designed to inform local policies and to support local decision-making using a risk management framework. The guidance document incorporates reasonable and proactive precautionary measures.

Compliance with this guideline is not mandatory, but sound reasoning must exist for departing from the recommended principles within a guideline.

## Background

This document has been adapted from the Victoria State Government Department of Health [Factsheet: Extended P2/n95 respirator and eye protection use – preventing facial injury during COVID-19.](#)

P2/N95 respirators are recommended for healthcare workers caring for patients with suspected or confirmed COVID-19 infection, and other airborne transmitted infections. To be effective in preventing infection, P2/N95 respirators require a firm seal. They must be correctly fit tested prior to use and fit-checked by the user each time the respirator is donned.

P2/N95 respirators have a high risk for skin injury due to requirements for a firm fit. Skin injury can occur as a result of friction and the accumulation of moisture under the mask. Skin excessively moisturised by sweat and humidity is susceptible to irritation, while dry skin may become inflamed by cracks and fissures. P2/N95 respirators may also trap heat, causing greater humidity and increasing skin fragility. In addition, skin conditions such as rosacea, dermatitis, atopic eczema, dry and chapped lips, and acne can be exacerbated by the heat and sweating which occurs when wearing PPE.

There are three primary factors that can both influence and impact on prevention of these types of pressure injuries:

- intensity of pressure (and shear)
- duration of pressure (and shear)
- tissue tolerance of the individual (including the effects of friction and moisture on tissue tolerance).

# Responsibilities

## Responsibility of the employer

- Ensure fit testing is undertaken for workers requiring respiratory protection.
- Provide PPE
- Ensure workers are provided with appropriate education and training in the use of PPE, including undertaking fit checking, as well as in the prevention of facial injuries when required to wear respirators and other PPE.
- Appropriately monitor workers wearing PPE for correct use and for injury.
- Take immediate action if workers report discomfort or skin injuries arising from PPE use.

## Responsibility of the wearer

- Ensure own personal safety by fit checking when putting a P2/N95 respirator on. When there is prolonged use of a P2/N95 respirator perform repeat fit checks throughout the course of wear time/work shift.
- Only use a P2/N95 respirator that has been successfully fit tested
- Immediately report and document discomfort or skin injury arising from PPE to their supervisor.
- Seek a medical assessment and appropriate specialist referral if required (e.g. to a Dermatologist) if allergic reaction to wearing PPE is suspected.
- Ensure that, if a thin dressing is placed between the skin and P2/N95 respirators, it does not interfere with the function of the respirator.
- Check manufacturer instructions for further details.

## Guidance to prevent injury

- Only use the required PPE for each clinical situation.
- Wherever possible, remove PPE every 2 to 4 hours for up to 15 minutes and align with break times.
- Consider use of liquid skin sealants/protectants on skin surfaces that will be in contact with PPE.
- Apply moisturisers/barrier creams/skin sealants/protectants at least 30 minutes before PPE wearing and allow to fully dry before applying PPE.
  - Use of any compound that could enhance slippage and affect the function of the PPE is not recommended.
- Trial different types or brands of PPE as appropriate, for example, if pressure from goggles is the main problem, switch to a face shield.

Maintain good skin care practices at home and at work:

- Keep up regular hygiene / skin care routine including the use of pH balanced products and regular moisturiser (with products you prefer, ideally fragrance free).
- Moisturise regularly using moisturising lotions/creams or barrier cream, use lip balm and avoid fragranced products.
- Lighter lotion-based regimes are generally better however this will depend on your baseline skin type:
  - Oily skin /Hot weather: gel based
  - Normal or combination skin: Lotion based
  - Dry skin: cream based
- Avoid wearing makeup.
- 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.

- Be aware that regular skin care regimes may need altering to account for changes to skin from the increased humidity under PPE.
- An effective way to hydrate skin is to drink more water

## Use of a dressing

- A thin hydrocolloid dressing (e.g. DuoDERM® or 3M™ Tegaderm™ Hydrocolloid Dressing) or a foam dressing (Mepilex® Lite) may be placed on facial pressure areas caused by PPE.
- if dressings are to be used under P2/N95 respirators, fit testing must be repeated with the dressing in place.
- Some adhesives may be irritating for some people – seek treatment if symptoms of contact dermatitis occur.
- Instructions for applying a dressing:
  - Clean hands and apply no-sting barrier film wipe (e.g. Cavilon™) to facial areas where the dressing will be applied. Allow to dry before applying the dressing.
  - Cut the thin dressing into strips for the nasal bridge, cheek bones and behind ears depending on which areas require dressing.
  - Do not stack multiple dressings as pressure may increase.
  - As skin dressings may be contaminated, perform hand hygiene after removing dressings.
  - All adhesive dressings should be removed with an adhesive removal wipe (for example, Convacare® Adhesive Remover Wipes) to avoid excessive skin stripping or trauma.
  - If using a foam dressing, ensure the outer layer is non-permeable, and use careful precision when applying the dressing to the nasal crease to avoid wrinkles and gaps.
  - Porous dressings may allow transfer of fluids or microorganisms on to the skin and are therefore not recommended.

## Treating facial injuries from PPE

- Treat abrasions with topical moisturisers, lighter silicone-based product, or liquid skin protectants/sealants.
- Thin hydrocolloidal occlusive dressings may be used to protect open wounds if they do not interfere with the mask seal.
- Out of the work environment, compresses with gauze (3–4 layers thick) soaked in cold water/normal saline may be applied to the skin for 20 minutes.
- Staff with severe irritant contact dermatitis should consult a medical professional.
- Staff who develop a pressure injury may either need to be trialled with a different types or brands of PPE, including fit testing for different P2/N95 respirators, or potentially be re-deployed to a different area which does not necessitate prolonged use of PPE.
- Where there is difficulty managing a pressure-related skin injury, further options will need to be discussed with the line manager, an infection prevention and control consultant, or an occupational health medical practitioner, general practitioner or dermatologist if required.

## Supporting documents

- Queensland Health: [Fit Testing of Particulate Filtration Respirators \(PFR or P2/N95 respirators\) in respiratory protection programs Guidance Document 30 March 2021](#)

## References

- Victoria, Department of Health Factsheet: Extended P2/N95 respirator and eye protection use - preventing facial injury during COVID-19 Retrieved from: [Extended P2/N95 respirator and eye protection use - preventing facial injury during coronavirus \(COVID-19\) | health.vic.gov.au](#)
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- Western Health: Facial pressure injuries and skin issues from PPE. Retrieved from:  
<https://coronavirus.wh.org.au/wp-content/uploads/2020/09/PPE-Facial-Pressure-Injuries-and-Skin-Issues-from-PPE-V1.1-26.09.2020.pdf> wh.org.au

## Review

This guidance will be reviewed as new information becomes available.

## Version Control

Version	Date	Comments
V0.1-v0.3	12 November 2021 – 19 January 2022	New Document prepared by PPE Working group Consultation with: Statewide Infection Clinical Network, Safety and Wellbeing
V1.0	19 January 2022	Endorsed by PPE Working Group

## Document approval details

### Endorsement

PPE Working Group 19 January 2022

COVID-19 System Response Group 25 January 2022

### Document custodian

PPE Working Group, Working Group of the COVID-19 Health System Response Advisory Group (CRG).

### Approval officer

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