1. **Purpose – context for development of the protocol**

The purpose of this protocol is to help staff and students in PC1 and PC2 laboratories of the Faculty of Medicine and CCIA select the most appropriate safety eyewear suited to the task undertaken. Details are provided for the available measures to protect the eyes and face from potential hazards in the laboratories. It is the intention of Faculty of Medicine and CCIA to ensure all persons are protected while working in its facilities.

2. **Scope – to which positions/groups does the protocol apply**

This protocol applies to all Medicine and CCIA laboratories where staff and students may be potentially exposed to risks to their health and safety.

3. **Definitions and acronyms used**

CCIA: Children’s Cancer Institute Australia for Medical Research

Competent person: refers to a person with a combination of appropriate knowledge, skills and experience to carry out the laboratory tasks and techniques whilst following best practice safety guidelines.

4. **Protocol statement**

4.1 **Requirements**

- All hazardous laboratory tasks must be covered by a risk management process and safe work procedure (SWP). The highest level risk controls such as elimination, substitution and engineering solutions should be implemented before consideration is given to PPE.
- Supervisors must train workers on the appropriate eye protection for the task and ensure that sufficient eye protection is available for all workers under their responsibility.
- Laboratory spill kits should contain eye protection relevant to the hazards in the area and be readily available.
- Prescription glasses are not safety glasses [goggles should be worn over prescription glasses OR prescription safety glasses should be purchased (can use the school of optometry)].
- Contact lenses may pose additional risks e.g. the lens may fuse to the eye or chemical may get trapped behind the lens thus increasing damage until full irrigation occurs.

The following statements are from AS2243.3

- Appropriate eye protection shall be used to protect eyes from contaminated or hazardous materials or from ultraviolet light.
- Protective eyewear shall be worn unless a documented risk assessment can justify a lesser requirement.

4.2 **Available eye protection**

- Safety eyewear (must meet Australian Standards AS/NZS 1336: Recommended practices for occupation eye protection, and the requirements in AS/NZS 2243.3 Safety in laboratories Section 10: Chemicals, PPE and special equipment must also be met)
4.3 Selection of safety eyewear

Within laboratories eye protection i.e. safety glasses, safety goggles or face shield must be worn at all times, unless it is documented that they are not needed. (This is a requirement of AS2243: Safety in laboratories – Microbiological safety and containment).

Potential hazards of the task, such as exposure to UV radiation, cryogenics, biological substance or chemical substance must first be identified from the SWP and/or risk management forms. Suitable safety eyewear for the activity is chosen from the below table. Consider fogging/perspiration possibilities.

<table>
<thead>
<tr>
<th>Hazard type</th>
<th>Examples of hazard</th>
<th>Common tasks</th>
<th>Suitable Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impact</td>
<td>Flying objects such as large chips, fragments, particles and dirt</td>
<td>Operation of machinery with moving parts or pressurised systems</td>
<td>Safety glasses or goggles - Primary protectors intended to shield the eyes from a variety of impact hazards</td>
</tr>
<tr>
<td>Ultraviolet light (UV) radiation</td>
<td>Burns to skin and eyes</td>
<td>Using a UV light box in the laboratory</td>
<td>Face shield - Primary protectors intended to protect the entire face against exposure to UV light Safety glasses or goggles - Secondary protectors may also be necessary depending on the work - refer to other relevant hazard type eg. Biological material</td>
</tr>
<tr>
<td>Cryogenics</td>
<td>Splash of liquid into eyes or face</td>
<td>Retrieving or storing samples in liquid nitrogen tanks or decanting liquid nitrogen</td>
<td>Face shield - Primary protectors intended to protect the entire face against exposure to cryogenics Safety glasses or goggles - Secondary protectors may also be necessary inside the face shield as extra protection for the eyes, depending on the specific task</td>
</tr>
<tr>
<td>Biological material – low risk</td>
<td>Splash of liquid biologicals (volumes too small to drip or run into the eye)</td>
<td>Handling small volumes of biologicals in a laboratory such as RNA, DNA or protein</td>
<td>Safety glasses - Primary protectors intended to shield the eyes against minor liquid splash</td>
</tr>
<tr>
<td>Biological material – high risk</td>
<td>Splash of liquid biological into eyes. All work with, PC2, GMOs or Category A infectious substances.</td>
<td>Handling biologicals in a laboratory such as GMOs, cell lines, blood or tissues</td>
<td>Safety goggles - Primary protectors intended to shield the eyes against liquid splash and aerosols Face shield - Secondary protectors to protect the entire face against exposure to liquid where necessary (such as Category A infectious substances)</td>
</tr>
<tr>
<td>Chemicals – low risk or low volume</td>
<td>Splash from low risk chemical solutions and buffers (refer to Safety Data Sheets and ChemAlert)</td>
<td>Handling chemicals in a laboratory such as solutions and buffers that pose minimal risk to eye upon contact</td>
<td>Safety glasses - Primary protectors intended to shield the eyes against minor liquid splash</td>
</tr>
</tbody>
</table>
## Choice of protection

<table>
<thead>
<tr>
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<th>Examples of hazard</th>
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<th>Suitable Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemicals – high risk or high volume</td>
<td>Splashes, fumes, vapours/mists from corrosive, toxic or other chemicals that are harmful to the eyes</td>
<td>Decanting chemicals handling chemicals in a laboratory</td>
<td><strong>Fume hood with sash down</strong> - should always be used where possible for flammables, corrosives, toxics or anything that could implode/explose or rupture</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Safety goggles</strong> - Primary protectors intended to shield the eyes against liquid or chemical splash, irritating mists, vapours, and fumes</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Face shield</strong> - Secondary protectors intended to protect the entire face against exposure to chemical hazards (e.g. where larger volumes are used such as &gt;0.5 L unless RA determines otherwise)</td>
</tr>
<tr>
<td>Lasers</td>
<td>Damage to eyes</td>
<td>Working in a room where laser machinery is being repaired by service technicians</td>
<td><strong>Laser safety glasses</strong> - Primary protectors intended to protect the eyes against exposure to laser light</td>
</tr>
</tbody>
</table>

### 4.4 Care/Maintenance of eye protection

Eye protection must be stored in a clean, readily accessible place and protected from possible scratches/scrapes (e.g. in a bag inside a drawer). Eye protection should be cleaned regularly and must be stored away from hazards to prevent contamination.

Eye protection should be inspected regularly and if any defects are found they should be taken out of use and either repaired or disposed of.

If contamination occurs disinfect immediately with a disinfectant suitable for the material. If contamination is extensive then they should be disposed of.

Prescription lenses safety glasses should be replaced every 2 years.

### 5. Roles and responsibilities

#### Workers:
- Must wear eye protection where required by a SWP or risk management forms.
- Must regularly clean and inspect their eye protection
- Must ensure that eye protection is stored appropriately

#### Supervisors:
- Ensure that risk assessment and SWP determines the correct eye protection for the activity and/or tasks carried out by workers.
- Induct and train workers on the wearing and selection of appropriate eye protection
- Ensure that eye protection is available for all workers that require it