APPENDIX IB: RODENT MONITORING SHEET/RECORD GUIDELINES - These signs should be monitored for “experimental monitoring” (daily routine facility monitoring occurs in addition). Experimental monitoring can be delegated to facility staff (see policy).

Monitoring sheets and humane endpoints are approved on a per protocol basis. The frequency of monitoring MUST increase with risk of deterioration and severity of clinical signs.

Important: more than one column or several columns may apply to each study and additional monitoring requirements may apply.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Experimental Autoimmune Encephalomyelitis</th>
<th>Irradiation</th>
<th>Sub-cutaneous Tumour studies</th>
<th>Internal (Orthotropic, systemic lymphoreticular) or Metastatic Tumours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Every other day until clinical weakness (EAE score = 2, see “other” below for example) is observed/expected, then daily until EAE signs in remission for 4 days.</td>
<td>Once within 24 hours of irradiation. If strain and dose are already established then monitoring every other day may suffice between 7 to 14 days, otherwise every day. After 3 weeks facility monitoring is sufficient. Observation and scoring of posture (degree of hunching), eye appearance (degree of eye openness) and activity level has been used to track deterioration and resolution of clinical signs and to predict death(^1).</td>
<td>Weekly until tumour palpable, then at time of tumour measurements.</td>
<td>Weekly until clinical signs appear or imaging, blood/serum biomarkers/palpation confirm tumour development. Daily as approaching endpoint or if tumours grow rapidly. Monitor abdominal distension for models resulting in ascites.</td>
</tr>
<tr>
<td>Activity</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Posture and Gait</td>
<td></td>
<td></td>
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<tr>
<td>Body Weight</td>
<td>Prior to treatment, then daily once clinical weakness (EAE score = 2) is observed/expected and until EAE signs in remission for 4 days.</td>
<td>Once tumour is palpable and then at time of tumour measurements.</td>
<td></td>
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<tr>
<td>Hydration</td>
<td>Daily once clinical weakness (EAE score</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Temperature</strong></th>
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<tr>
<td><strong>Respiration</strong></td>
<td>Daily if and when risk of metastases to lung.</td>
<td>Daily if and when risk of metastases to lung. Breathing rate is useful.</td>
</tr>
<tr>
<td><strong>Elimination</strong></td>
<td>Check bladder and bowel function daily once clinical weakness (EAE score = 2) is observed/expected. Express bladder 2-3 times daily, if required. Monitor for penile prolapse. Continue until EAE signs in remission for 4 days.</td>
<td>During first 14 days, Monitor for diarrhea.</td>
</tr>
<tr>
<td><strong>Neurological Signs</strong></td>
<td>Every other day until clinical weakness (EAE score = 2) is observed/expected, then daily until EAE signs in remission for 4 days.</td>
<td>For nervous system tumour or risk of metastases to nervous system. When assessing general clinical signs monitor for: head tilt, circling, ataxia, seizures, &amp; altered behavior.</td>
</tr>
<tr>
<td><strong>SKIN Incision, Wound, injection or sampling site</strong></td>
<td>Daily to every other day for infection/ulceration at injection sites until ulcer heals. Daily for urine scald &amp; penile prolapse once clinical weakness (EAE score = 2) is observed/expected and until EAE signs in remission for 4 days.</td>
<td>If using radiation as therapy, monitor condition of skin and local area of irradiation.</td>
</tr>
<tr>
<td><strong>Tumour</strong></td>
<td>Weekly tumour measurement (size, weight and volume). Note tumour weight is calculated as % of actual body weight (minus tumour). Visual assessment at time of measuring (ulceration, impairment of mobility, self-mutilation).</td>
<td>Observe and estimate size weekly by imaging, blood/serum biomarkers/palpation (if palpable). Daily as approaching endpoint or if tumours grow rapidly.</td>
</tr>
</tbody>
</table>
| Other | Example of Grading System for Typical EAE Score:  
| 0 - Normal mouse  
| 0.5 – Partially limp tail  
| 1 – Paralyzed tail  
| 2 – Loss of coordinated movement; Hind limb paresis  
| 2.5 - One hind limb paralyzed  
| 3 - Both hind limbs paralyzed  
| 3.5 – Hind limbs paralyzed; weakness in forelimbs  
| 4 - Forelimbs limb paralyzed  
| 5 - Moribund state, humane endpoint or death. | Example of Scoring System (0-3):  
| Posture - 0 = normal  
| 1 = slightly hunched, 2= moderately hunched, 3 = severely hunched  
| Eye appearance – 0 = >75% open, 1 = 50-75% open, 2 = 25-49% open, 3 = <25%  
| Activity – 0=normal, 1 = slightly reduced activity or mild gait abnormality, 2=moving slowly or severely altered gait, 3 = reluctant to move (3-4 steps only), or no movement. | Increase frequency as tumour approaches endpoint.  
| Note: Monitoring will depend on tumour type and body systems affected. For unfamiliar tumours, pilot studies are recommended to determine patterns of local and metastatic growth and associated adverse effects. |

| Pain Assessment | Pain is not expected unless scald or prolapse develops. Neuropathic pain is a possibility. | Pain is not expected unless bone marrow injections are done. | Daily as endpoint approaches or animal is showing signs of pain. | Daily as endpoint approaches or animal is showing signs of pain. |

| Nursing care depends on health assessment and scientific goals of study | Once EAE score reaches a score of 2 or higher: soft bedding, long sipper tubes or gel water replacement on cage floor and/or fluid replacement (SQ fluids) and food on cage bottom. Topical treatment of injection site reactions (e.g. topical antibiotic at injection time) or urine scald. Remove huts and give extra nesting if animals unable to ambulate well. House with well animal for benefits of thermoregulation. | Potential for gastrointestinal and tooth damage. Ensure animals can access clean water: long sipper tubes, or give daily water supplement (gel water replacement and/or SQ fluids) and soft food on cage floor. Use sterile environment. Antibiotics can prolong life and decrease mortality. | Consider humane endpoints and affects on study data instead of extending an animal's life using nursing care. Nutritional, hydration and other support may help in some cases. | Consider humane endpoints and affects on study data instead of extending an animal's life using nursing care. Nutritional, hydration and other support may help in some cases. |

| Humane endpoints specific to | Paralysis of all 4 limbs for up to 24 hours (Hourly monitoring must be provided during that time). | Irradiated mice can suffer from acute irradiation sickness between 7 to 14 (to 22) days. | Pain that cannot be relieved by analgesia. Ascites where burden exceeds 10% | Humane endpoints specific to model and referenced in the literature. Ensure typical |

See reference list for other scoring systems.  
## References

**EAE:**


Care of EAE Mice UCLA website [http://ora.research.ucla.edu/OARO/Pages/ARC-policies/EAE-mice.aspx](http://ora.research.ucla.edu/OARO/Pages/ARC-policies/EAE-mice.aspx)


**Irradiation:**


**Tumors:**


