Long-term vital measurements from subcutaneous data logger implantation in rhesus macaques (*macaca mulatta*)

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**BACKGROUND**

- DST milli-HRT ACT
  - Data logger
  - Implanted subcutaneously
  - Less invasive procedure
  - [www.star-odd.com](http://www.star-odd.com) (Gardabaer, Iceland)

**SUBJECTS**

- Used in single or group housed NHP
  - Males & females
  - Aged 8 – 28 years
  - Weighing 4kgs – 16kgs

**SURGICAL PLACEMENT**

- ≥ 8-month battery life
- Customized measurement frequency
- Heart Rate
- Temperature
- Activity level

**DATA OUTPUT**

- Table 2: Extrapolated data shown via Star-Oddi application software, Mercury
- Table 3: Heart rate (bpm) and temperature (°F) data over 5-hour period

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**Table 1: Pros and cons of subcutaneous data logger implants**

<table>
<thead>
<tr>
<th>Pros</th>
<th>Cons</th>
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<tr>
<td>Loggers are reusable</td>
<td>Challenging to set parameters, requires experience</td>
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<tr>
<td>Sterilized at low temp</td>
<td>Data obtained only after surgical removal</td>
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<tr>
<td>Quality Interval (QI) ratings</td>
<td>No maintenance required while active</td>
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<td>Programming options almost unlimited (interval &amp; duration)</td>
<td>Volume of activity data can be overwhelming</td>
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<tr>
<td>No maintenance required while active</td>
<td>Battery life correlated to volume of data</td>
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**Figures**

1. DST milli-HRT ACT data logger
2. A 3cm incision made on left lateral side of dorsal plane (implant close to heart)
3. Blunt dissection to create a pocket below the layer of SQ adipose tissue
4. Insert DST milli-HRT ACT data logger
5. Two layers 3-0 PDS in a simple continuous pattern used to close the SQ tissue & skin