Abstract: A large fluctuation in autonomic function is one of the most important characteristics of REM sleep. Arterial blood pressure (AP) increases during the transition from non-REM to REM sleep, showing phasic surges during REM sleep. REM-associated AP changes involve 1) a long-term recovery process after surgery, 2) circadian rhythm, 3) relationships with ambient temperature. REM-associated AP changes are mediated by sympathetic nerves, buffered by baroreflex, abolished in decerebrated cats, and related to hippocampal theta activity in rats. Furthermore, the midbrain dopaminergic system has been recently found to be involved in increases in REM-associated AP. J. Med. Invest. 46: 11-17, 1999

Keywords: REM sleep, blood pressure, dopamine
Blood pressure during REM sleep

<table>
<thead>
<tr>
<th></th>
<th>non-REM</th>
<th>REM</th>
<th>wake</th>
</tr>
</thead>
<tbody>
<tr>
<td>HR (beats/min)</td>
<td>300</td>
<td>400</td>
<td>500</td>
</tr>
<tr>
<td>AP (mmHg)</td>
<td>150</td>
<td>100</td>
<td>50</td>
</tr>
<tr>
<td>EMG</td>
<td></td>
<td></td>
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<tr>
<td>EEG</td>
<td></td>
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</tr>
</tbody>
</table>

REM-on

REM-off

Aminergic (REM-off)

Cholinergic (REM-on)
B-1. Long-term changes in recovery process from surgery

B-2. Circadian rhythm

B-3. Effect of ambient temperature

C-1. The role of the sympathetic nerve and baroreflex
C-2. The role of forebrain structure

C-3. Midbrain dopaminergic neurons and AP change during REM sleep

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![Graphs of HR, AP, EMG, EEG for Vehicle and 6-OHDA conditions]
Blood pressure during REM sleep

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