Brain Death, Vegetative State, Minimally Conscious State: 
The Ethics of Disordered Consciousness

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“Consciousness is a being such that in its being its being is constantly in question insofar as this being is a being other than itself.”

—Jean Paul Sartre

*Being and Nothingness*
“Consciousness is wakefulness plus awareness”
Wakefulness: Reticular Activating System (RAS)
Consciousness

more

Less

“Locked-In”

Normal

Consciousness

less

more
Consciousness

Normal

Comatose

not awake
not aware

 Consciousness

less

more
Brain Death:
- Irreversible loss of all clinical functions
  - Comatose
  - No brainstem function

Consciousness:
- Comatose
- Not awake
- Not aware
- Normal
- More
- Less
Consciousness

More

Less

Comatose

Vegetative

Not awake

Not aware

Awake

Not aware

Normal

Consciousness
Consciousness

- Comatose
- Vegetative
- Minimally Conscious
- Normal

Not awake
Not aware
Awake
Aware

Less
More
Recent Developments

- Some vegetative patients may not be truly vegetative.
- Techniques to detect consciousness are evolving.
Willful Modulation of Brain Activity in Disorders of Consciousness


Subjects

54 patients with severe disorders of consciousness

– 23 VS, 31 MCS
– Ages 15-87
– <1 month – 309 months since ictus
– Mixture of TBI and anoxic injury, a few strokes

## 5 patients:

<table>
<thead>
<tr>
<th>Age</th>
<th>Sex</th>
<th>State</th>
<th>Mechanism</th>
<th>Time since injury</th>
</tr>
</thead>
<tbody>
<tr>
<td>23</td>
<td>F</td>
<td>Vegetative</td>
<td>Traumatic</td>
<td>6 months</td>
</tr>
<tr>
<td>22</td>
<td>F</td>
<td>Vegetative</td>
<td>Traumatic</td>
<td>22 months</td>
</tr>
<tr>
<td>22</td>
<td>M</td>
<td>Vegetative</td>
<td>Traumatic</td>
<td>60.8 months</td>
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<tr>
<td>27</td>
<td>M</td>
<td>MCS</td>
<td>Traumatic</td>
<td>1.3 months</td>
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<tr>
<td>46</td>
<td>M</td>
<td>Vegetative</td>
<td>Traumatic</td>
<td>2 months</td>
</tr>
</tbody>
</table>

*Monti, et al. NEJM 2010;362(7).*
Decision making for patients with disordered consciousness

- Comatose: not awake, not aware
- Vegetative: awake, not aware
- Minimally Conscious: awake, aware
- Normal: more

Brain Dead

Consciousness

less → normal → more
Terminating life-sustaining therapy in patients with disordered consciousness

The competent patient has the right to refuse any unwanted intervention, life-sustaining or not.

When one becomes incompetent, one does not lose this right.
Helpful Questions

• What conditions would the patient think were acceptable/unacceptable?
• What is the most likely outcome?
• What is the range of possible outcomes?
• What are the worst/best possible outcomes?
  – what would life be like?
  – how likely is it?
  – how long will it take?
  – what will life be like in the meantime?
Addressing Misconceptions:

• Withdrawal of hydration and nutrition is not the same as starving someone to death
• Withdrawal of hydration and nutrition is not a painful / uncomfortable way to die
• If withdrawal of hydration and nutrition were painful or uncomfortable, this would not be an argument against withdrawing
Unhelpful distinctions

- Artificial vs. natural
- Ordinary vs. extraordinary
- Causing to die vs. allowing to die
- Withholding vs. withdrawing
- What counts as life? What is personhood?
- PVS vs. MCS
Disorders of consciousness

Brain Dead

not awake not aware

Comatose

awake not aware

Vegetative

awake aware

Minimally Conscious

Locked-In /

Normal

Consciousness

less

more
Indicators of Poor Outcome

- Loss of grey-white differentiation on CT
- EEG nonreactive / burst suppression / GPEDs on flat background
- Myoclonic status epilepticus
- High NSE levels
- Absent or extensor motor resp > 72 h
- Absent brainstem reflexes > 72 h (T normal)
- Absent SSEP > 72 h
- Widespread restricted diffusion on MRI > 48 h