**Title:** COMPARISON OF INFERTILE MEN WITH LOW AND HIGH SEMINAL REACTIVE OXYGEN SPECIES (ROS)

1Center for Reproductive Medicine, Glickman Urological & Kidney Institute and Ob-Gyn and Women's Health Institute, Cleveland Clinic 9500 Euclid Avenue, Desk A19.1 Cleveland, Ohio, United States, 44195.

**Objective:** Levels of ROS <250 relative light units (RLU)/sec/X 10^6 sperm (RLU) seen in our lab for healthy men appear to be physiological. We compared semen parameters, total antioxidant level (TAC) and DNA fragmentation in infertile men with seminal ROS >250 to those men with ROS <250.

**Design:** Prospective clinical study.

**Materials and Methods:** ROS, TAC and sperm DNA fragmentation were measured in seminal ejaculates of 101 infertile men. ROS/TAC score was derived by principal components. Patients were divided into group 1: ROS <250 and group 2: ROS >250 RLU.

**Results:** Semen parameters, TAC, DNA fragmentation and ROS/TAC score in infertile men with low vs. high seminal ROS are shown in the table.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Group 1 (56.4%)</th>
<th>Group 2 (43.6%)</th>
<th>P value</th>
<th>OR (95%CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sperm concentration</td>
<td>47.9 (19.4-105.9)</td>
<td>13.5 (4.8-35.5)</td>
<td>0.002</td>
<td>0.85 (0.76-0.94)</td>
</tr>
<tr>
<td>Sperm motility (%)</td>
<td>66.5 (48-78.8)</td>
<td>43 (19.5-66.3)</td>
<td>0.002</td>
<td>0.77 (0.65-0.91)</td>
</tr>
</tbody>
</table>
Conclusions: Infertile men with higher seminal ROS levels also have higher sperm DNA fragmentation. Patients with high ROS levels should be evaluated for DNA damage.

Support: None.

Author: Rakesh K Sharma, Ph.D.¹
Member #: 00840850
Phone: 1-216-444-9485  Cell Phone: Fax: 1-216-636-3118  E-mail: agarwaa@ccf.org

Yes - Neither I nor my spouse/partner have a commercial or financial interest or relationship with manufacturers of pharmaceuticals, laboratory supplies and/or medical devices.

Author: Reda Z Mahfouz, MD¹
Member #: 00840850
Phone: 1-216-444-9485  Cell Phone: Fax: 1-216-636-3118  E-mail: agarwaa@ccf.org

Yes - Neither I nor my spouse/partner have a commercial or financial interest or relationship with manufacturers of pharmaceuticals, laboratory supplies and/or medical devices.

Author: Edmund Sabanegh, MD¹
Member #: 00840850
Phone: 1-216-444-9485  Cell Phone: Fax: 1-636-3118  E-mail: agarwaa@ccf.org

Yes - Neither I nor my spouse/partner have a commercial or financial interest or relationship with manufacturers of pharmaceuticals, laboratory supplies and/or medical devices.

Author: Vaishali Kale¹
Member #: 00840850
Phone: 1-216-444-9485  Cell Phone: Fax: 1-216-636-3118  E-mail: agarwaa2@ccf.org

Yes - Neither I nor my spouse/partner have a commercial or financial interest or relationship with manufacturers of pharmaceuticals, laboratory supplies and/or medical devices.

Author: Sajal Gupta¹
Member #: 00840850
Phone: 1-216-444-9485  Cell Phone: Fax: 1-216-636-3118  E-mail: agarwaa2@ccf.org

Yes - Neither I nor my spouse/partner have a commercial or financial interest or relationship with manufacturers of pharmaceuticals, laboratory supplies and/or medical devices.
Yes - Neither I nor my spouse/partner have a commercial or financial interest or relationship with manufacturers of pharmaceuticals, laboratory supplies and/or medical devices.

Author: Ashok Agarwal, Ph.D.¹
Member #: 
Phone: 1-216-444-9485  Cell Phone:  Fax: 1-216-636-3118  E-mail: agarwaa@ccf.org

Yes - Neither I nor my spouse/partner have a commercial or financial interest or relationship with manufacturers of pharmaceuticals, laboratory supplies and/or medical devices.