

Time/Dose Effects in Acute Radiation Syndrome - Acute Clinical Effects of Single-Dose Exposure of Whole-Body Irradiation

Symptoms/Signs for Dose Range 3.0 to 5.3 Gy in Free Air

Symptoms/Signs	Hours						Days							Weeks															
	4	8	12	16	20	24	2	3	4	5	6	7	2	3	4	5	6	7											
Nausea																													
Vomiting (retching)																													
Anorexia													60%																
Diarrhea (cramps)													40-60%																
Fatigue	60-90%																												
Weakness	60-90%																												
Hypotension																													
Dizziness																													
Disorientation																													
Bleeding													(a) 0-50%																
Fever													(b)																
Infection													(c) 10-80%																
Ulceration													(d) 30%																
Fluid loss/electrolyte imbalance																													
Headache																													
Fainting																													
Prostration																													
Death	<5 - 50%																												
<p>Severity Scale</p> <table border="0"> <tr> <td></td> <td>mild to moderate</td> <td></td> <td>moderate to severe</td> </tr> <tr> <td></td> <td>unspecified or mild</td> <td></td> <td>moderate</td> </tr> <tr> <td></td> <td></td> <td></td> <td>severe</td> </tr> </table> <p>Colors used to improve visualization only.</p>																			mild to moderate		moderate to severe		unspecified or mild		moderate				severe
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			severe																										
<p>Management and Treatment</p> <p>Performance:</p> <ul style="list-style-type: none"> DT:PD from 3 hours until death or recovery. UT:PD from 4 to 40 hours and from 2 weeks until death or recovery. <p>Hospitalization Percentage/Duration</p> <ul style="list-style-type: none"> At 2 to 5 weeks medical care for 10 to 80%. At low end of range less than 10% deaths. At high end, death may occur for more than 50%. Survivors return to duty. <p>Therapy</p> <ul style="list-style-type: none"> Blood transfusion, antibiotics, rest. Treatment with antiemetics 																													
<p>(a) Moderate drop in platelets: from $3 \times 10^5 / \text{mm}^3$ to $0.8-0.1 \times 10^5 / \text{mm}^3$</p> <p>(b) Moderate drop in granulocytes: from $6 \times 10^3 / \text{mm}^3$ to $2.0-0.5 \times 10^3 / \text{mm}^3$</p> <p>(c) Moderate to severe drop in lymphocytes: from $3 \times 10^3 / \text{mm}^3$ to $1.0-0.4 \times 10^3 / \text{mm}^3$</p> <p>(d) Epilation.</p> <p>CI = Combat Ineffective (less than 25% performance) PD = Performance Degraded (25-75% performance) DT = Demanding Task UT = Undemanding Task</p>																													

Adapted from NATO Handbook on the Medical Aspects of NBC Defensive Operations AMedP-6(B), Chapter 6, General Medical Effects of Nuclear Weapons: Diagnosis, Treatment, and Prognosis, 1 February, 1996.