

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

## Symptoms/Signs for Dose Range 15.0 to 30.0 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													100%												
Vomiting (retching)													100%												
Anorexia													100%												
Diarrhea (cramps)	20%																		100%						
Fatigue													100%												
Weakness													100%												
Hypotension													100%												
Dizziness													100%												
Disorientation													100%												
Bleeding													(a) 100%												
Fever							45-50% (b) 100%																		
Infection													(c) 100%												
Ulceration													100%												
Fluid loss/electrolyte imbalance													(d) 100%												
Headache													100%												
Fainting													80%												
Prostration													80%												
Death													(e) 100%												
<p><b>Severity Scale</b></p> <p> mild to moderate       moderate to severe</p> <p> unspecified or mild       moderate       severe</p> <p>      Colors used to improve visualization only.</p>																									
<p align="center"><b>Management and Treatment</b></p> <p><b>Performance:</b></p> <ul style="list-style-type: none"> <li>DT:PD 1 to 2 hours; CI 4 hours to 3 days; PD 3 to 4 days; CI 4 days to death.</li> <li>UT:PD 1 to 7 hours; CI 7 to 25 hours; PD 25 hours to 4.5 days; CI 4.5 days to death.</li> </ul> <p><b>Hospitalization Percentage/Duration</b></p> <ul style="list-style-type: none"> <li>3 to 4 days medical care for 100%.</li> <li>100% deaths at 5 to 10 days.</li> </ul> <p><b>Therapy</b></p> <ul style="list-style-type: none"> <li>Maintenance of electrolyte balance, supportive treatment.</li> </ul>																									
<p>(a) Platelet count drops to zero.      CI = Combat Ineffective (less than 25% performance)</p> <p>(b) Granulocyte count drops to zero.      PD = Performance Degraded (25-75% performance)</p> <p>(c) Lymphocyte count drops to zero.      DT = Demanding Task</p> <p>(d) Severe intestinal damage.      UT = Undemanding Task</p> <p>(e) Renal failure.</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.