

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

Symptoms/Signs for Dose Range 5.3 to 8.3 Gy in Free Air

	Hours						Days							Weeks						
Symptoms/Signs	4	8	12	16	20	24	2	3	4	5	6	7	2	3	4	5	6	7		
Nausea							90-100%							60-100%						
Vomiting (retching)							80-100%							60-100%						
Anorexia							100%							100%						
Diarrhea (cramps)							60-100%													
Fatigue	90-100%																			
Weakness	90-100%																			
Hypotension																				
Dizziness							60%													
Disorientation							60%													
Bleeding							(a) 50-100%													
Fever							(b) 60-100%													
Infection							(c) 60-100%													
Ulceration							(d) 50%													
Fluid loss/electrolyte imbalance							40%							(e) 30%						
Headache							50%							50%						
Fainting														50%						
Prostration														60%						
Death														50-90%						
Severity Scale																			Colors used to improve visualization only.	
Management and Treatment																				
Performance: ◦ DT:PD from 2 hours to 2 weeks; CI from 3 weeks until death. ◦ UT:PD from 2 hours to 2 days and from 7 days to 4 weeks; CI from 4 weeks until death.																				
Hospitalization Percentage/Duration ◦ At 10 days to 3 weeks: medical care for 50 to 100%. ◦ At low end range death may occur for more than 30% at 6 weeks ◦ At high end death may occur for 99% at 3 1/2 weeks.																				
Therapy ◦ Blood transfusion, antibiotics, rest, antiemetic treatment ◦ Some fluid replacement and electrolyte therapy may be required																				
(a) Severe drop in platelets: from $3 \times 10^5 / \text{mm}^3$ to $0.1 \times 10^5 - 0 / \text{mm}^3$ (b) Severe drop in granulocytes: from $6 \times 10^3 / \text{mm}^3$ to $0.5 \times 10^3 - 0 / \text{mm}^3$ (c) Severe drop in lymphocytes: from $3 \times 10^3 / \text{mm}^3$ to $0.4 - 0.1 \times 10^3 / \text{mm}^3$ (d) Epilation. (e) Mild intestinal damage.																			CI = Combat Ineffective (less than 25% performance) PD = Performance Degraded (25-75% performance) DT = Demanding Task UT = Undemanding Task	

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.