

About Haddon's Matrix

The Haddon Matrix was developed by William Haddon in 1970. Haddon took the Epidemiological Triangle - a model developed to understand how infectious disease spreads - and applied it to the issue of road safety. He also added a time dimension (pre-event, event and post-event). The Haddon Matrix is a useful tool for brainstorming a broad list of risk factors - and opportunities for intervention - for any injury issue.

Fig.1 The Epidemiological Triangle applied to injury



Fig.2 The Haddon Matrix

	Host (injured person)	Agent (what injures them)	Environment (Context)	
			Physical	Social
Pre-Event	Will an event with the possibility to cause injury occur? What factors influence this?			
Event	Will an injury occur? How severe will the injury be? What factors influence this?			
Post-event	What will the outcome of the injury be? What factors influence this?			

Haddon Matrix Example 1: Child & Medication Poisoning

Factors listed here are suggestions. This is not an exhaustive list.

	Host Preschool Child	Agent Medication	Environment	
			Physical	Social
Pre-Event Will the poisoning occur?	<ul style="list-style-type: none"> • Age • Gender • Dexterity to open packaging • Tendency toward risk-taking • Perception of the difference between candy and medication 	<ul style="list-style-type: none"> • Type of medication • Amount of medication available • Amount of medication consumed 	<ul style="list-style-type: none"> • Where medication is stored • Type of container 	<ul style="list-style-type: none"> • Parental attitudes toward safety and supervision • Parental knowledge of efficacy of child-resistant packaging • Parental knowledge about poisoning • Manufacturer packaging
Event Will injury occur as a result of the poisoning?	<ul style="list-style-type: none"> • Age • Health of child • Size of child • Whether child has taken other medicine 	<ul style="list-style-type: none"> • Type of medication • Amount consumed • Tablets coated/uncoated (affects absorption rate) 	<ul style="list-style-type: none"> • Poison centre in area • Parents know poison centre number to call • Go directly to ED or not • Length of time the child is unattended 	<ul style="list-style-type: none"> • Recognition that poisoning has occurred • Proximity of supervision • Parental perception of supervision • Knowledge of what to do in emergency situation
Post-event What will the outcome be?	<ul style="list-style-type: none"> • Age • Health of child • Size of child • Amount of medication consumed 	<ul style="list-style-type: none"> • Did level of medication in bloodstream remain at toxic levels after initial assessment and treatment? • Some medications harmful for children with just 1 pill 	<ul style="list-style-type: none"> • Proximity of medical care • EMS response time • Access to phone • Access to acute care • Medical staff knowledge of how to treat child poisoning 	<ul style="list-style-type: none"> • Support for poison centre • Toll-free help-line • Public awareness • Access to poison centre via 911

Adapted from the *Canadian Injury Prevention Curriculum*

Haddon Matrix Example 2: Youth Workplace

Answers listed here are suggestions. This is not an exhaustive list.

	Host 19 year-old worker	Agent Hydraulic lift/ Concrete floor	Environment	
			Physical	Social
Pre-Event Will a fall occur?	<ul style="list-style-type: none"> • Worker's knowledge of appropriate safety procedures in workplace • Worker's experience operating equipment • Use of protective equipment • Risk perception and judgment 	<ul style="list-style-type: none"> • Height of work surface • Barriers on to minimize risk of falling • Condition of equipment 	<ul style="list-style-type: none"> • Height of storage shelves • Type of floor surface • Width of aisles • Items in close proximity that can be grabbed to prevent falling 	<ul style="list-style-type: none"> • Occupational Health and Safety legislation • Compliance with legislation with regard to employee training • Enforcement of legislation • Employer attitudes toward safety practices • Worker attitudes toward safety in workplace • Level of complacency in workplace to unsafe work practices
Event Will injury occur as a result of the fall?	<ul style="list-style-type: none"> • Health of worker • Wearing protective equipment 	<ul style="list-style-type: none"> • Height of work surface • Safety harness used 	<ul style="list-style-type: none"> • Type of floor surface • Objects nearby to break fall 	<ul style="list-style-type: none"> • Capacity of fellow employees to provide aid once worker starts to fall
Post-event What will the outcome be?	<ul style="list-style-type: none"> • Health of worker • Nature and severity of injury 	<ul style="list-style-type: none"> • Ease of access for emergency personnel to respond 	<ul style="list-style-type: none"> • Proximity of medical care • EMS response time • Access to phone • Access to acute care and rehabilitation services 	<ul style="list-style-type: none"> • Support for trauma systems • Adequate training for EMS personnel • Support for rehabilitation and re-integration • Knowledge of co-workers in first aid • Workers Compensation Board support

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