

PREVENTING INJURY IN BMX RIDING, SKATEBOARDING AND IN-LINE SKATING

Figures released by the Victorian Injury Surveillance and Applied Research System (VISAR) indicate that each year in Victoria there are at least five deaths, approximately 6,500 hospital admissions and 30,000 emergency department presentations due to sport and active recreation injury. It is little wonder then that many Councils in Victoria are developing risk management plans to reduce the risk at Council sport and skate facilities.

Sports at risk

Providing challenge in active play is an essential ingredient of adolescent development and sports participation involves the acceptance of some level of risk of injury in order to receive the benefits of participation.

BMX and skate activities provide opportunities for young people to learn through risk and challenge as well as to engage in constructive social and physical activity. There is a perception of a high level of risk associated with these activities, however in comparison to other sports there are relatively few injuries.

While a lack of participation and exposure data (hours spent playing and training) prevents identification of sports and active recreation activities with greatest chance of injury, the sports with highest numbers of hospital presentations are: Australian rules football, basketball, soccer, netball and cricket. Active recreation activities that rank highest are bicycle riding, playground equipment related injury, motor/trail/mini-bike riding, skating, skateboarding and horse riding. As the table below indicates skateboarding/ in-line skating ranked seventh in terms of presentations to hospital emergency departments between 1999-2001.

Sport and active recreation injuries (hospital emergency department presentations) – 1999-2001

SPORT/ RECREATION ACTIVITY	NUMBER	PROPORTION (%)
1 Australian football	8863	22.0
2 Bicycle riding	5905	14.7
3 Basketball	3539	8.8
4 Soccer	2595	6.4
5 Playing on play equipment	2403	6.0
6 Netball	2397	6.0
7 Skateboarding/in-line skating	2036	5.1
8 Cricket	1968	4.9
9 Motor/trail/mini-bike riding	1794	4.5
10 Horse riding	1366	3.4
Other	7505	18.2
TOTAL	40281	100.0

Source: Victorian Emergency Minimum Dataset, 1999-2001, (3 years)

Skate injury summary

The tables (right) provide details of injuries from in-line skating, skateboarding and BMX riding. While injuries from in-line skating have decreased over the three year period from January 2003 to December 2005, injuries from skateboarding and BMX have increased.

	INJURY TO SKATEBOARDERS, IN-LINE SKATERS AND BMX RIDERS (VEMD January 2003- December 2005)		
	IN-LINE SKATING	SKATEBOARD	BMX
2003	421	857	113
2004	408	967	140
2005	393	1151	132
TOTAL	1222	2975	385

Fractures are the reason for the majority of emergency department presentations with most injuries occurring to either the wrist or forearm. Upper body injuries are by far the most common injuries from in-line skating and skateboarding, however BMX riders suffer more lower body and head, face and neck injuries.

There are more injuries in children in the 0-14 year age group than other age groups. This may be attributable to higher participation in this age group. While more males are injured in skateboarding (89%) and BMX riding (95%), females make up the majority of injured in-line skaters (54%).

NATURE OF MAIN INJURIES	NATURE OF INJURIES TO SKATEBOARDERS, IN-LINE SKATERS AND BMX RIDERS (VEMD January 2003- December 2005)		
	IN-LINE SKATING	SKATEBOARD	BMX
Fracture	651 (53%)	1195 (40%)	122 (32%)
Sprain/strain	293 (23%)	712 (24%)	58 (15%)
Open wound	68 (5.5%)	313 (10.5%)	60 (15%)
BODY REGION OF MAIN INJURIES			
Wrist	446 (36%)	641 (21%)	31 (8%)
Forearm	238 (19%)	337 (11%)	17 (4%)
Ankle	67 (5%)	387 (13%)	22 (6%)
Elbow	86 (7%)	260 (9%)	29 (7.5%)
Upper body	924 (75%)	1699 (57%)	59 (15%)
Lower body	179 (15%)	787 (26%)	189 (49%)
Head/face/neck	70 (6%)	306 (10%)	71 (18%)
AGE GROUPS OF INJURED (years)			
0-14	872 (72%)	1528 (52%)	182 (47%)
15-29	222 (18%)	1267 (42%)	170 (44%)
30+	128 (10%)	180 (6%)	33 (9%)
GENDER OF INJURED			
Male	564 (46%)	2636 (89%)	365 (95%)
Female	652 (54%)	331 (11%)	18 (5%)
PLACE WHERE INJURY OCCURRED			
Place for recreation	297 (24%)	673 (23%)	152 (39%)
Home	334 (27%)	679 (23%)	43 (11%)
Road/street/ highway	256 (21%)	720 (24%)	53 (14%)
EXTERNAL CAUSE OF INJURY			
Fall up to 1 metre	1017 (88%)	2379 (80%)	138 (36%)
Fall over 1 metre	50 (4%)	133 (4%)	28 (7%)
Collision with object	60 (5%)	185 (6%)	10 (10%)

Source: Information detailed in this Leisure Insights is from data collected in accordance with the Victorian Emergency Minimum Dataset (VEMD) by the Victorian Injury Surveillance and Applied Research System (VISAR). The VEMD is an ongoing surveillance database of injury presentations to 37 Victorian public hospital emergency departments, representing all 24 hour public hospital emergency departments in the state.

Place where injury occurs

Since 2003 more injuries are occurred at 'Places of recreation/athletic sports areas' than on 'Roads/streets/highways' for in-line skating, skateboarding and BMX riding, and there has been a decline in the proportion of injuries occurring at 'Home'. This could be attributed to an increase in the numbers of purpose built facilities being provided. The number of injuries appear to reflect population increases and small changes in participation: a growth in BMX riding, relatively stable participation in skateboarding and a decline in in-line skating.

DETAILS: PLACE WHERE INJURY OCCURRED

PLACE INJURY OCCURRED	IN 2003	% INJURIES	IN 2004	% INJURIES	IN 2005	% INJURIES
IN-LINE SKATING						
Home	129	30.6	111	27.2	94	23.9
Place of recreation/athletics sport area	132	31.4	132	32.4	136	34.6
Road/street/highway	84	20.0	90	22.1	82	20.9
TOTAL INJURIES	421		408		393	
SKATEBOARD						
Home	211	24.6	227	23.5	241	20.9
Place of recreation/athletics sport area	274	32.0	303	31.3	447	38.8
Road/street/highway	205	23.9	249	25.7	266	23.1
TOTAL INJURIES	857		967		1151	
BMX						
Home	21	18.6	11	7.9	11	8.3
Place of recreation/athletics sport area	62	54.9	83	59.3	78	59.1
Road/street/highway	10	8.8	28	20.0	15	11.4
TOTAL INJURIES	113		140		132	

Injury prevention

In comparison with other sports there are relatively few injuries attributed to in-line skating, skateboard and BMX riding accidents that require hospital treatment.

There are also relatively few insurance claims made associated with skate parks.

An analysis of injuries indicates that while in-line skating, skateboarding and BMX riding are fewer than other major sports (ie Australian football, Bicycle riding and Basketball) preventative measures could reduce injuries and should be directed towards wrist, forearm, ankle and elbow fractures, strains and sprains. While protective measures, such as the wearing of wristguards, helmets, knee and elbow pads can help prevent such injuries, so too can a well designed and managed facility.

Whilst collisions cause only a fraction of injuries, issues such as accidents from overcrowding, conflicts with pedestrians and irresponsible behaviour can be reduced through appropriate management and design of facilities.

Staff at @leisure have 25 years of experience in planning and managing facilities for skateboarding, in-line skating and BMX. Please contact us if we can help.

External injury cause

It appears that external cause of injury to in-line skaters, skateboarders and BMX riders are consistently due to falls, with trends not fluctuating greatly across the three-year period. Similarly collisions seem to account for similar percentages of the injuries and hence causes of injury within each sport do not appear to be due to any significant changes or issues within any of the sports.

DETAILS: CAUSE OF INJURIES

PLACE INJURY OCCURRED	IN 2003	% INJURIES	IN 2004	% INJURIES	IN 2005	% INJURIES
IN-LINE SKATING						
Falls (up to and over 1 metre)	369	87.6	353	86.5	345	87.8
Struck by collision (with person or object)	30	7.1	30	7.4	21	5.3
SKATEBOARD						
Falls (up to and over 1 metre)	731	85.3	811	83.9	970	84.3
Struck by collision (with person or object)	59	6.9	76	7.9	86	7.5
BMX						
Falls (up to and over 1 metre)	50	44.2	58	41.4	58	43.9
Struck by collision (with person or object)	1	0.9	7	5.0	4	3.0



By putting in place some very simple checks and balances, management can:

- reduce accidents in skate parks
- encourage greater use of facilities to provide greater returns in terms of investment and participation and acceptance of these sports, and
- keep insurance premiums down.

A few things can help:

- A management plan for your skate and BMX facilities
- An agreed system for identifying, recording, evaluating, rectifying and signing off on risk issues in skate and BMX facilities
- An assessment of the condition of older facilities
- Opportunities for young riders to develop skills, and minimise chances of injury and conflicts with other uses.