

# **GECO** **2012**

**Fractures**  
**de l'apophyse**  
**latérale du talus et**  
**pathologie du snowboard**

**J. Vernois**

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# Fréquence

Fracture peu fréquente

0.1% à 0.85% / toutes fractures

3% à 10% / fractures du talus

Santavirta S, Seitsalo S, Kiviluoto O, et al. Fractures of the talus. J Trauma. 1984;24:986-989

Diagnostic méconnu: entorse

Chan GM, Yoshida D. Fracture of the lateral process of the talus associated with snowboarding. Ann Emerg Med. 2003;41:854-858

# Fréquence

Fréquence > Snowboarder

2.3% / 3213 blessures en snowboard

15 x > population

Kirkpatrick et al's study

Progression du snowboard

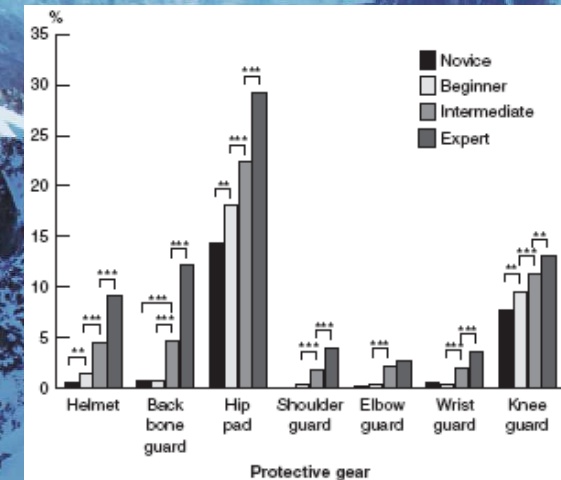
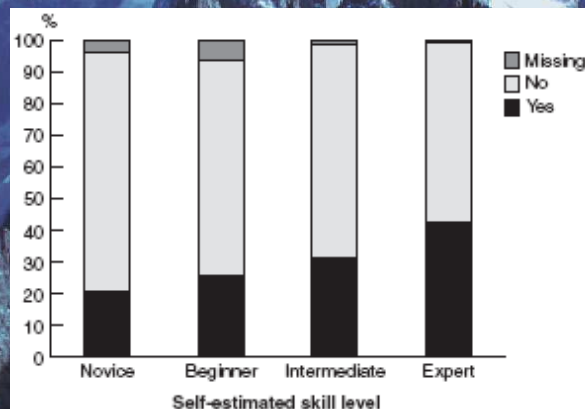
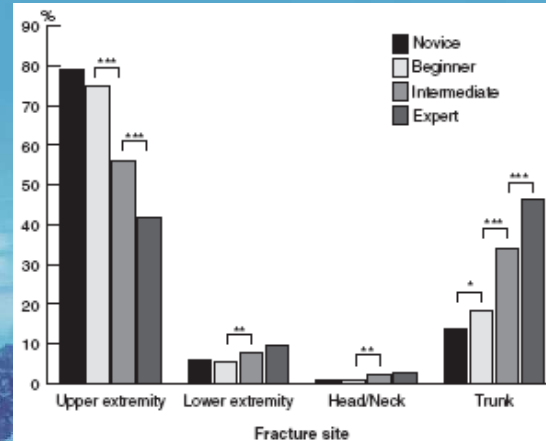
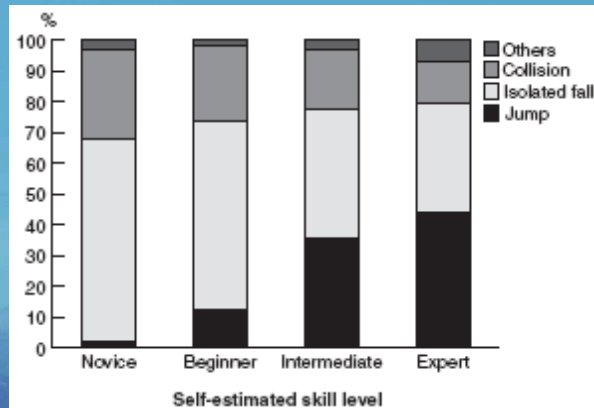
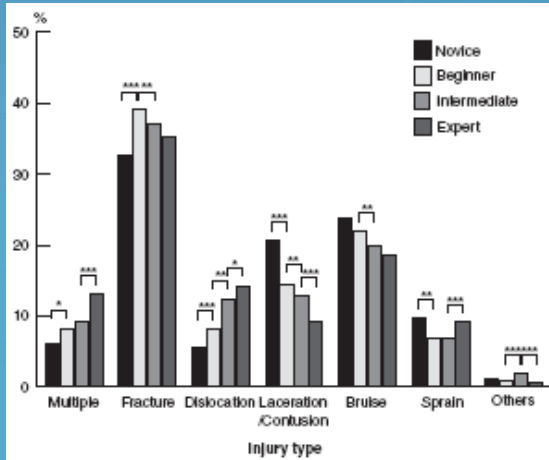
55% entre 1995 et 2000

National Sporting Goods Association

# Fréquence

## Skill Level-Specific Differences in Snowboarding-Related Injuries

Hiroyasu Ogawa,<sup>\*†</sup> MD, Hiroshi Sumi,<sup>‡</sup> MD, Yasuhiko Sumi,<sup>§</sup> MD, PhD,  
 and Katsuji Shimizu,<sup>†</sup> MD, DMSc  
 From the <sup>†</sup>Department of Orthopaedic Surgery, Gifu University, Graduate School of Medicine, Gifu, Japan, and the Departments of <sup>‡</sup>Orthopaedic Surgery and <sup>§</sup>Neurosurgery, Sumi Memorial Hospital, Gifu, Japan



# Fréquence



## Injury Patterns With Snowboarding

PETER C. FERRERA, MD,\* DENNIS P. McKENNA, MD,\*  
 ELIZABETH A. GILMAN, BS†

**TABLE.** Major Injury Patterns Among 71 Snowboarders

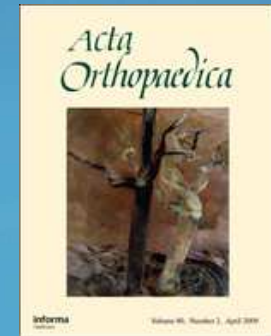
Injury Pattern	Number of Injuries
Contusions	26 (occurring in 18 patients)
Extremity fractures	
Wrist	11 (1 patient with bilateral fracture)
Elbow	3
Ankle	2
Hand	2
Tibial plateau	1
Sprains/strains	9
Dislocations	
Hip	1
Elbow	1
Acromioclavicular joint	1
Vertebral fractures	
Lumbar	4
Thoracic	3
Transverse process	1
Spinal cord injury	
Spinal cord concussion	1
Paraplegia	1
Central nervous system	
Closed head injury	6
Intracerebral hemorrhage	5
Subdural hemorrhage	3
Skull fracture	1
Intraabdominal injury	
Splenic laceration	3
Liver laceration	3
Renal laceration	3
Intrathoracic	
Pneumothorax	1
Rib fractures	1
Clavicle fracture	1
Pelvic fracture	
Acetabular	1
Pubic ramus	1

# Fréquence

	Snowboard	Ski
Poignet	16 %	3 %
Genou	10 %	39 %
Cheville	9 %	3 %

# Mécanisme

dorsiflexion + inversion



## FRACTURE OF THE LATERAL PROCESS OF THE TALUS

*Supination-Dorsal Flexion Fracture*

By

O. FJELDBORG



Figure 6.



Figure 7.



Figure 8.

*Figure 6. Fracture of the lateral process of the talus, stage 1 (fissure).*

*Figure 7. Fracture of the lateral process of the talus, stage 2 (fracture with displacement of the lateral process of the talus).*

*Figure 8. Fracture of the lateral process of the talus, stage 3 (with sub-talar dislocation).*



# Mécanisme

dorsiflexion + inversion

dorsiflexion, axial impaction, éversion et  
rotation externe

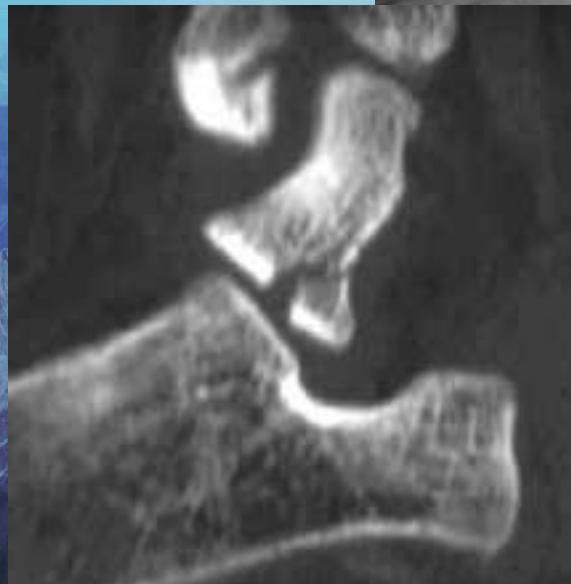
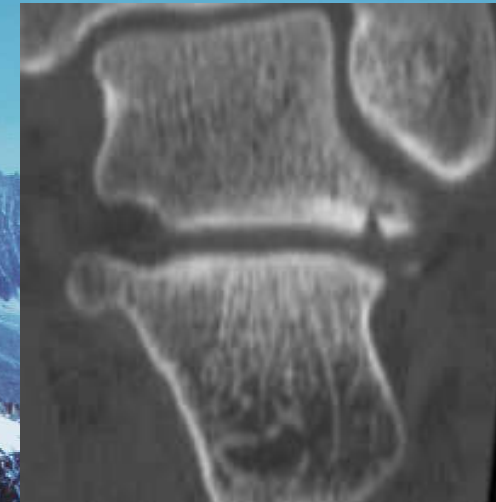
Boon AJ, Smith J, Zobitz ME, et al. Snowboarder's talus fracture. Mechanism of injury. *Am J Sports Med.* 2001;29:333–338.  
Funk JR, Srinivasan SC, Crandall JR. Snowboarder's talus fractures experimentally produced by eversion and dorsiflexion.  
*Am J Sports Med.* 2003;31:921–928.

Choc direct  
Fracture de stress

# Diagnostic

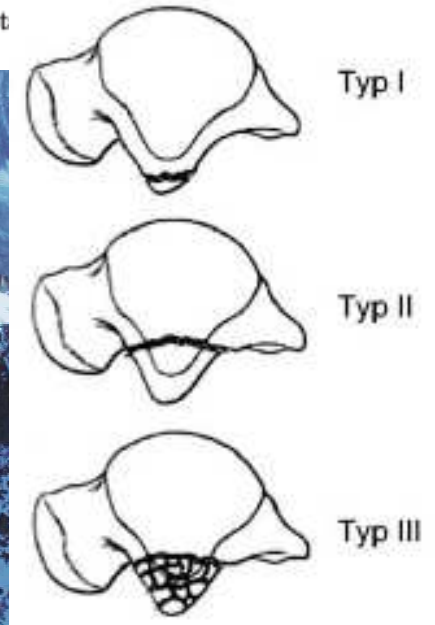
Imaging of fractures of the lateral process of the talus, a frequently missed diagnosis

Florent Bonvin<sup>a</sup>, Xavier Montet<sup>a</sup>, Michele Copercini<sup>a</sup>, Carlo Martinoli<sup>b</sup>,  
Stefano Bianchi<sup>a,\*</sup>

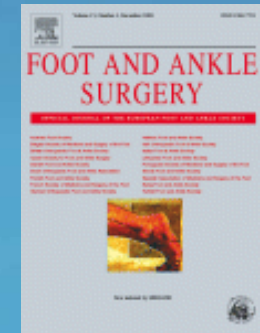


**Table 1** Three classification systems of lateral talar process fractures

	Hawkins	McCroory-Bladin		Funk
Type 1	Simple fracture: talofibular articular surface to the posterior talocalcaneal articular surface	Chip fracture: does not extend to the talofibular joint	Type A	Avulsion: extraarticular ligament avulsion of the tip of the lateral process
Type 2	Comminuted: involving both fibular and posterior calcaneal articular surface	Single large fragment: involves both the subtalar and talofibular joints	Type B1	Simple fracture: disruption of the posterior talocalcaneal joint, but not the talofibular joint
Type 3	Chip fracture: does not extend to the talofibular articular surface	Comminuted: involves the entire lateral process	Type B2	Comminuted: disruption of the posterior talocalcaneal joint, but not the talofibular joint
			Type C1	Simple fracture: complete fracture involving both the posterior talocalcaneal and talofibular articular surfaces
			Type C2	Comminuted: complete fracture involving both the posterior talocalcaneal and t articular surfaces



# Le traitement



## The management and outcome of lateral process fracture of the talus

A. Perera FRCS, J.F. Baker MRCSEd\*, D.F. Lui MRCSI, M.M. Stephens FRCSI

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Series	Patients	Age	Male	Female	Operative	Non-operative	FU months
Perera (Table 2)	4	40	1	3		4	8
Mukherjee et al. [1]	13	40	9	4	9	4	14
Leibner et al. [2]	2	10	1	1	1	1	9
Heckman and McLean [3]	9	28	5	4	4	5	15
Ketunnen et al. [4]	1	40	1		1		24
Cantrell and Tarquinio [5]	1	75		1	1		12
Tucker et al. [6]	2	25		2		2	9
Hawkins [7]	13	28	13			13	26
Mills and Horne [8]	9	34	7	2		9	28
Fjeldborg [9]	3	60	2	1	1	2	14
Whitby and Barrington [10]	3	32	2	1	1	2	
Noble and Royle [11]	1	20	1			1	2
Mallon et al. [12]	1	27	1		1		12
Ebraheim et al. [13]	7	32	2	5	6	1	
Inokuchi et al. [14]	13	37	8	5	5	8	
Barnett and Teasdall [15]	1	21	1		1		2.5
Chan and Yoshida [16]	1	39	1			1	12
Sharma [17]	1	27		1		1	1.5
Parsons [18]	1	37	1			1	23
Bonvin et al. [19]	3	27	1	2	1	2	1
Valderrabano et al. [20]	20	29	12	8	14	6	42
<b>Total</b>	<b>109</b>	<b>30.5</b>	<b>69 (63%)</b>	<b>40 (37%)</b>	<b>46 (42%)</b>	<b>63 (58%)</b>	<b>20</b>

Type I	Reduction + fixation
Type II	Excision
Type III	?

## Fractures of the lateral process of the talus

S. Inokuchi, N. Usami

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The Foot (1996) 6, 188-192  
 © 1996 Pearson Professional Ltd

**Table 1**—Fractures of the lateral process of the talus (ORIF: open reduction and internal fixation)

Case no	Initials	Age	Sex	Fracture type	Cause	Treatment
1	NM	37	Male	Avulsion	Motorcycle	ORIF (screw)
2	KO	19	Female	Avulsion	Fall from a height	Conservative
3	TI	33	Male	Intra-articular	Motorcycle	ORIF (screw)
4	KS	39	Female	Intra-articular	Fall from bicycle	Conservative
5	RT	22	Male	Intra-articular	Motorcycle	ORIF (screw)
6	KS	59	Female	Intra-articular	Object fall	ORIF (screw)
7	TM	36	Male	Intra-articular	Motorcycle	ORIF (screw+K-wire)
8	OT	53	Male	Intra-articular	Fall from stairs	Conservative
9	TI	45	Male	Avulsion	Fall from a height	Conservative
10	MF	46	Male	Avulsion	Fall from stairs	Conservative
11	NA	21	Female	Avulsion	Fall from stairs	Conservative
12	SN	61	Female	Avulsion	Strain	Conservative
13	NA	23	Male	Intra-articular	Snowboarding	Conservative

Fractures et séquelles de fractures de l'apophyse latérale du talus. Étude rétrospective à propos de 44 cas

Fractures of the lateral process of the talus. Retrospective study of 44 cases

E. Sariali\*, J.-F. Lelièvre, Y. Catonné





C. Camathias  
V. Valderrabano  
G. Pagenstert  
T. Perren  
N. Friederich  
B. Hintermann

## Die Fraktur des Processus lateralis tali (Snowboarder's Foot)

Eine Übersicht



# Lateral process fracture of talus treated with open reduction and internal fixation

A. El Mrini <sup>a,b,\*</sup>, A.R. Haddoun <sup>a</sup>, J.F. Kouvalchouk <sup>a</sup>



The Foot 17 (2007) 111-112



# Chirurgie précoce meilleurs résultats

## Suggested management plan.

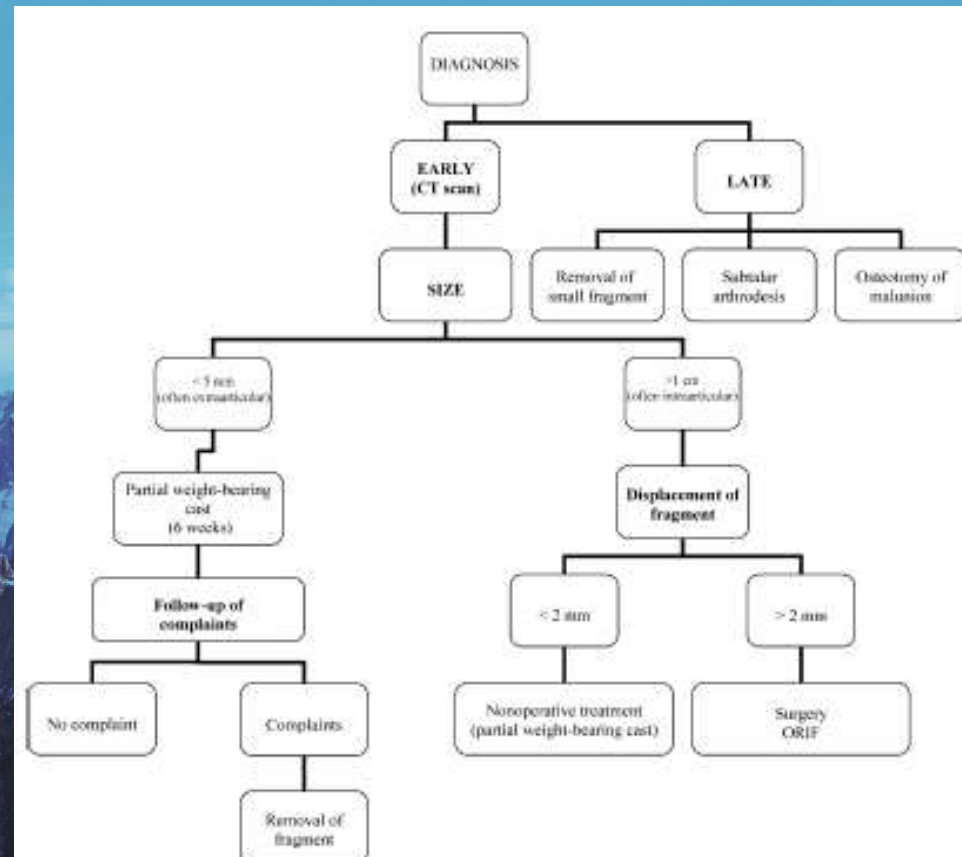
Class	Fracture	Displacement mm	Management
I	Simple	>2	ORIF + Cast, NWB 3 weeks; mobilise ankle NWB after 3 weeks.
		<2	Cast NWB 6 weeks, close observation for displacement
II	Comminuted		Excision + Cast NWB 3 weeks
III	Chip		Cast (±reduction) 4 weeks NWB then 2 weeks WB

Key: ORIF: open reduction, internal fixation; NWB: non-weight bearing; WB: weight bearing.

## Fractures of the lateral process of the talus. A report of seven operated cases

R. Maes\*, M. Delmi, S. Dojcinovic, R. Peter, P. Hoffmeyer

Foot and Ankle Surgery 10 (2004) 131–133



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