

*Consideration of FORCE

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* A little bit of physics

$$E = \left(\frac{1}{2}M\right) \times V^2$$

E = Kinetic Energy (joules)

M = Mass (weight) (Kilograms)

V = Velocity (speed) (meters/second)

$$*E = \left(\frac{1}{2}M\right) \times V^2$$

V = Velocity (speed)

is the **most important**
consideration

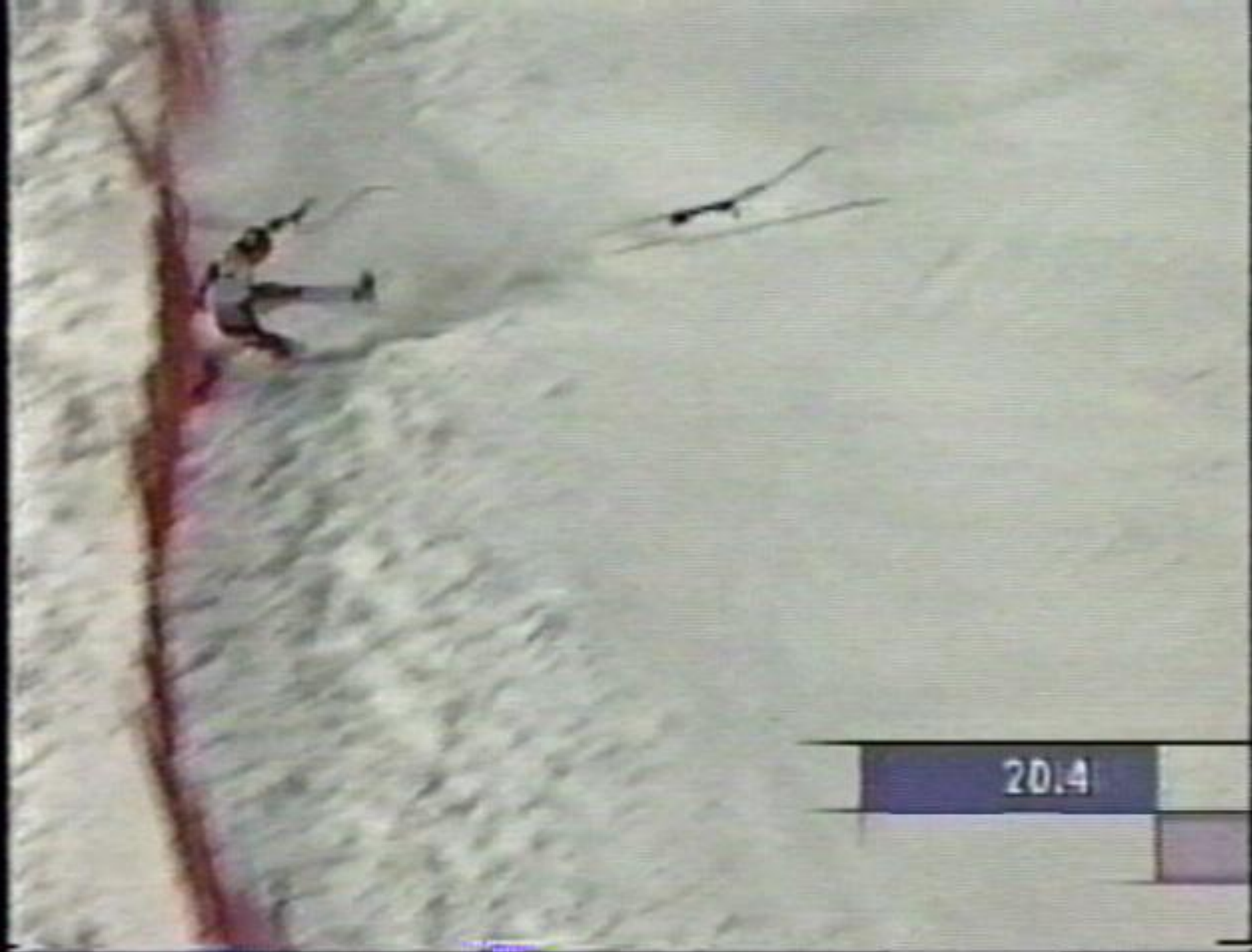
+ 25% increase in speed

+ 100% increase in Energy

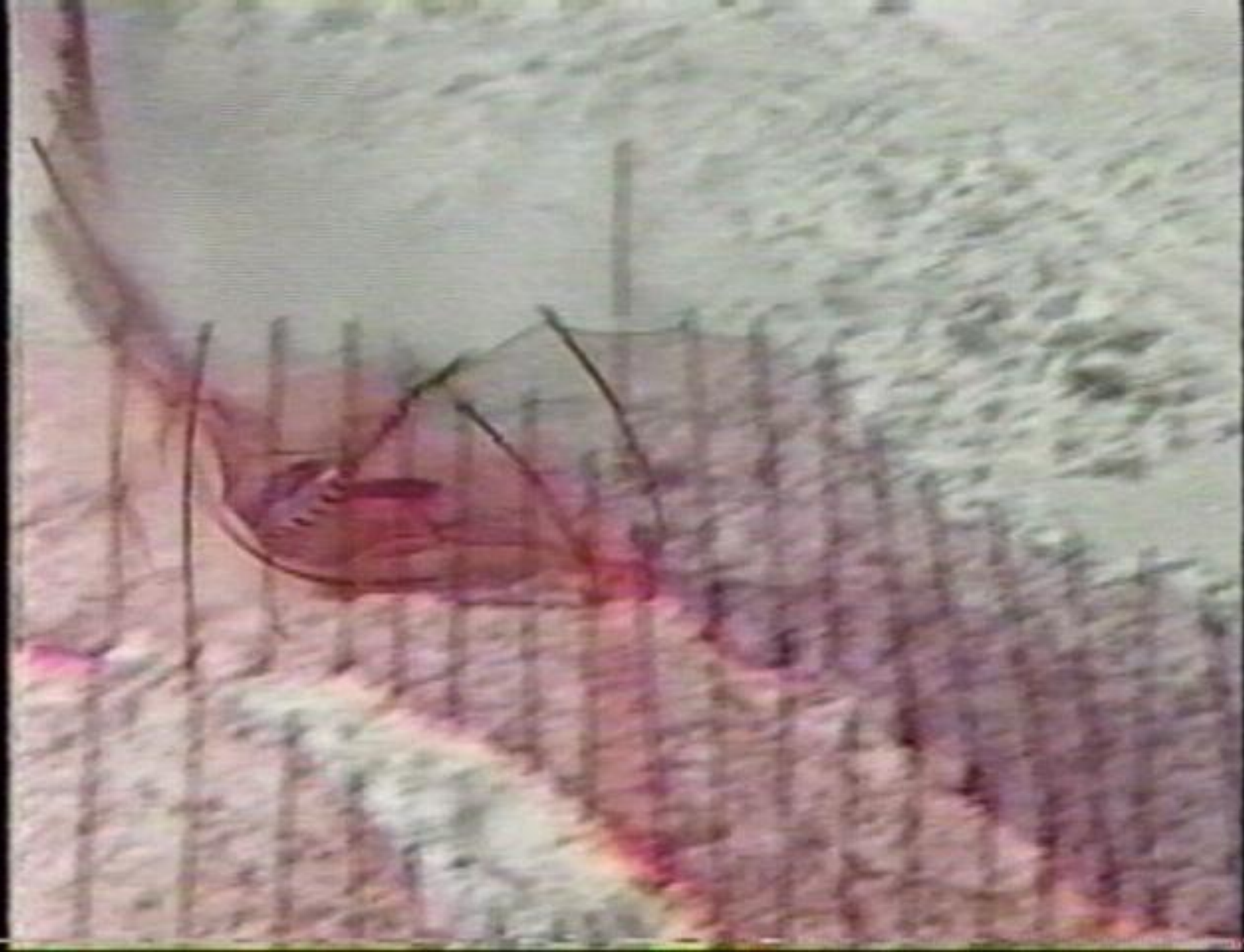


Skiing is a Risky

















In RUGBY Forces have steadily increased

SPEED

WEIGHT



100 m in 12sec

1km in 120sec

30 km per hour

A COMBINED IMPACT OF 60 KPH

*What does this mean?

Event Type	Km/h	Equivalent Drop	
Slalom:	50	3 floors	10 _m
Giant Slalom:	80	7 floors	25 _m
Super - G:	100	11 floors	40 _m
Downhill:	130	18 floors	66 _m

Variables Correlating Positively with Cervical Spine Injury

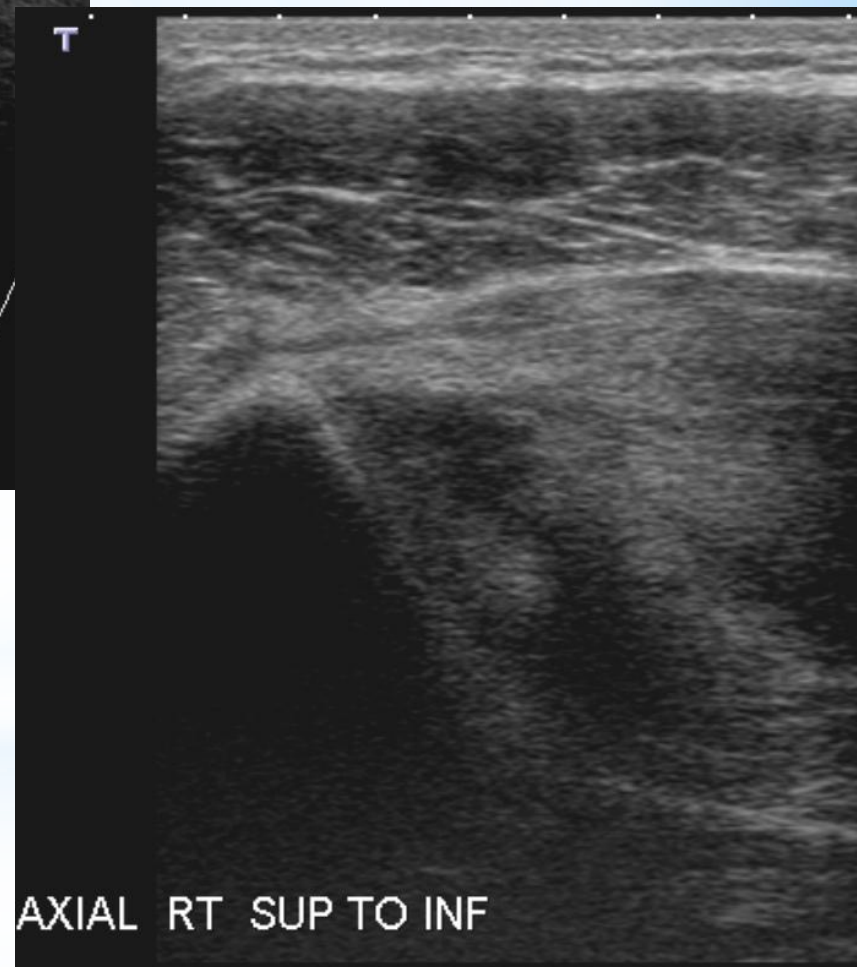
<u>Variable</u>	<u>p Value</u>
• head trauma	.37
• neck pain	.14
• headache	.31
• loss of consciousness	.382
• fall of more than 10 feet	.083



• Jacobs & Schwartz. Ann Emerg Med 15: 44-49. 1986



HIT by shoulder of 120 KG PROP in Training



*LINES OF FORCE

*DIRECTION

*VECTORS



