

### SLED PUSHING & PULLING

#### TO ENHANCE SPEED CAPABILITY

Reference: Cahill et al. SCJ J 2019. *Designed by eVLM SportScience*

**HOW?**

Heavier type sled load training likely improved the initial acceleration phase where high horizontal forces are required

Light to moderate loading (<20% body mass) will likely improve the maximal velocity phase due to low horizontal force and higher velocity requirements

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**PUSHING OR PULLING?**

If arms drive is thought important, then sled pulling offers a 'vertical' advantage to the athlete (instead of sled pushing)

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### SLED PUSHING & PULLING

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**ANNUAL PERIODIZED PLAN**

Heavier loads could be used in pre-season phases, developing maximum strength capacity

Moderate to lighter loads closer to competition to develop power

Loading should be prioritised on the percentage reduction in velocity for each athlete rather than a set percentage of body mass

<10% high-speed technique  
<35% speed-strength  
50% power  
>65% strength-speed

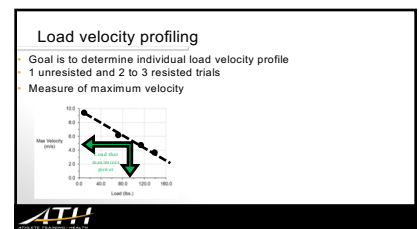
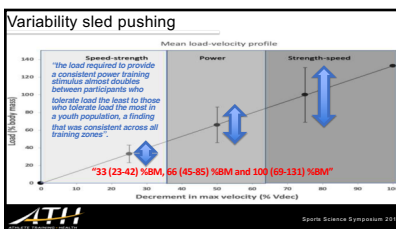
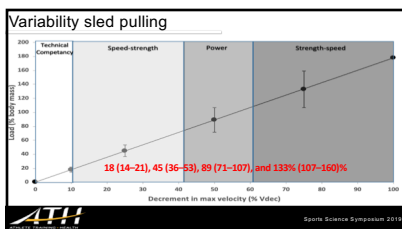
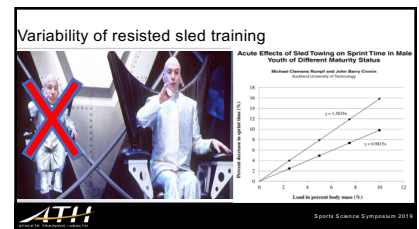
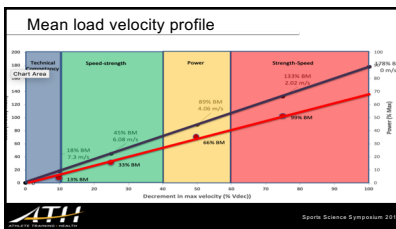
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### Prescription of load

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Any volunteers

UV profile AUT Sprint.xls

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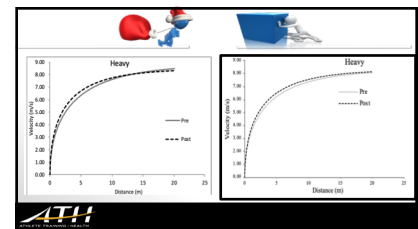
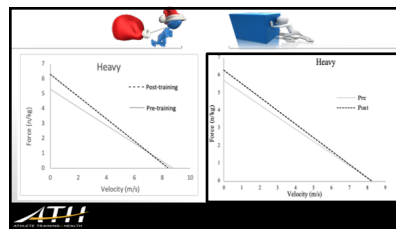
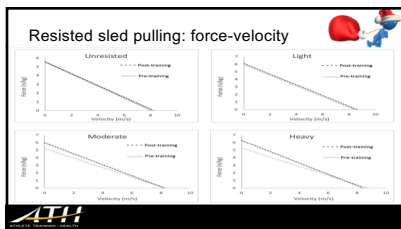
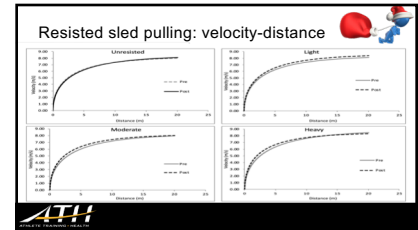
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To push or to pull – that is the question.

**HEAVY? LIGHT?**

- Effectiveness
- Velocity distance profile
- Force velocity profile

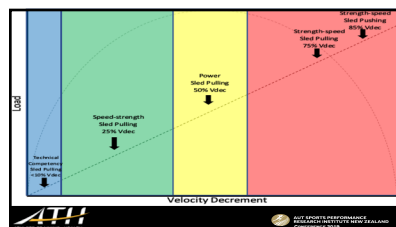
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Part 3 – Training considerations and guidelines

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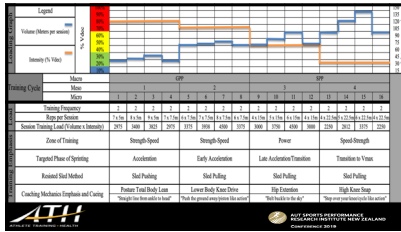
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Targeted Adaptation	Technical competency	Speed-strength	Power	Strength-speed
	<10% 1RM	25% 1RM	50% 1RM	75-85% 1RM
	Add a resistive stimulus without affecting mechanics	Increase force production capability during transition to Vmax	Increase force production capability during late acceleration	Increase force production capability during initial acceleration
	Not applicable due to use of the arms	Total body horizontal strength with transition to Vmax emphasis	Total body horizontal strength with late acceleration emphasis	Total body horizontal strength with initial acceleration emphasis
Training time based on stage of maturity	Greater synergy between training stimulus and age-related neural development of proprioception	Greater synergy between training stimulus and maturity-related neural and structural development of post-PHV youth		

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
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### Training considerations and guidelines



**Apply MORE FORCE**  
(relative to body mass)



**Apply FORCE FASTER**  
(max rate of force application)



**Apply force in optimal DIRECTION**

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### Questions





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