

Thanks

- Jim Setters and the IIHF
- Coach Jack Parker and all of our assistant coaches and former players who have helped me develop my thought process and allowed me to execute it.



New Website



2010



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Our Development Problem in North America

- Apathy- we see what goes on at the youth levels and as the leaders of our sport we do nothing. We need to be vocal in our opposition to a “games” model and to early specialization. We know it doesn’t work, we just don’t acknowledge it’s effect on college hockey.
- Ex- my 10 yr old played more games than BU.



Solution

- We need the most influential people in hockey (those in this room) screaming every chance they get that this is wrong.
- Hockey entrepreneurs market hard. They market development, exposure and fear.
- Fear that your child will be left behind.



- *"As a youth, Messier didn't remember leaving Edmonton to attend tournaments and lamented how somehow "we cannibalized youth sports with tournaments and travel and families making huge commitments . . . Tournaments have gone from a weekend thing to an every weekend thing, and from Saturday and Sunday to where they've got to be there Thursday . . . It disrupts the family life. There's something to be said about the Sunday barbecue . . . We're putting too much emphasis on it at too early an age."Less than 17 percent of first-round picks make it to the NHL, so if you start looking at the numbers, you're missing the whole objective. That's where we've gotten off the beaten path."*
- Lester Patrick himself had this to say about pond hockey:, *"uncontaminated by adults and unspoiled by the egos of elders"*
- To read the entire article you can go to: <http://www.newsday.com/sports/hockey/rangers/messier-richter-receive-lester-patrick-awards-1.1539194>



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In USA Hockey's Own Words

- “We have an over abundance of above average players with very few truly elite players at the very highest levels (NHL)”
- Our influx of elite players in the 80's and 90's was an influx of athletes, not hockey players.
- Source- USA Hockey Long-Term Athlete Development From Pond to Podium - High-Performance Program



The Backward Model in the US

- The best way to develop average players
- Early specialization- late generalization
- 80 games seasons in youth hockey and then prep school for high school
- When we should be a generalist we are a specialist.
When we should be specializing or narrowing focus, we broaden.



Jack Blatherwick was Right in the 80's

- Jack took exercise science and applied it to hockey.
- The result was guys like Lance Pitlick and Tom Chorske moving on to the NHL.
- Guys now jump on the gimmicks
- The Russian Box, the Skating Treadmill etc.
- It's about lower body strength and power, not gimmicks.
- Don't buy stuff. Get a good strength and conditioning coach and let him do his job.



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USNTDP

- 10 years 152 players drafted
- 40 players currently in the NHL
- Specialization and training as opposed to forced generalization



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How Does This Happen?

- Training!



Development is Like Farming

- There is no such thing as speed farming.
- Development takes time and the right combination of ingredients, just like crops.
- Can you speed farm?



Summer?

- Training or tryouts?
- In the US and Canada summer became “exposure time”.
- Go to as many camps and tournaments as possible to be “seen”.
- No one trains to get better any more they simply go from place to place trying to show how good they are.
- I work hard to convince parents to limit “exposure” opportunities but, the “experts” always have another “\$opportunity\$”.



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Practice or Play?

How You Impact the Game

Player	Shifts	IceTime	PT	PR	PA	SA	Touch
Sakic,J	27	15:25	1:19	21	21	7	44
Modano	28	19:47	:58	17	22	4	44
Amonte	22	12:51	:46	11	4	5	33
Key							
PT	Possession time						
PR	Passes received						
PA	Pass attempts						
SA	Shots attempted						
Touch	Puck touches						
Game notes							
Canada wins Gold, USA takes sliver. Sakic has 2 goals and two assists and was MVP. Amonte had 1 goal on 3 shots on net, Modano had 1 assist.							

Look at the ice times of the worlds best. Sakic averaged 34 seconds per shift. Amonte's average shift was thirty two seconds. Modano's were slightly longer. This was some of the most intense hockey in history. An average of one minute of possession in a sixty minute game?



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European or Canadian Model

- The number of Canadian Major Junior players in the NHL has decreased by almost 50% in the last twenty years. ((Current USAH Stats 50% Canadian, 20 American, 25 European) The Major Junior number may be lower based on US College Canadians.
- These players are consistently replaced by Europeans and Collegians (some American, some Canadian) produced by 40 game seasons and rigorous off-seasons focused on strength and speed.
- Would Coke copy Pepsi if Pepsi had lost half it's market share?



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The Road to the Elite Level Needs to Go Right Through the Weightroom

- To compete against the best players in the world and to absorb the highest speed collisions in sports you must be strong. The physics have changed. We have much larger bodies moving at much higher rates of speed.
- Chara 6'9" 255 lbs.
- Ovechkin 6'2" 233 lbs.
- Thornton 6'4" 230 lbs.
- Bryzgalov 6'3" 210



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6'9" 255 less than 5% bodyfat



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Top Scorers- 2003

- Forsberg #1- Sweden
- Naslund #2- Sweden
- Hejduk #4- Czech
- Demitra #6- Slovakia
- Heatley #9- Univ of Wisconsin
- Modano #10- Minnesota HS
- Palffy #11- Slovakia
- Fedorov #12- Russian
- Kariya #13- U Maine
- Hossa #14 – Slovakia
- Mogilny #15 – Russian
- 15 out top 20 European or Collegiate or 75%



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Leading Scorers 2007-08

- | | | |
|----|-------------------|---|
| 1. | Ovechkin- Russia | 8 Alfredson- Swe |
| 2. | Kovalchuk- Russia | 9-Heatly- US College |
| 3. | Iginla- Can | 10- Gaborik- Slov |
| 4. | Malkin- Russia | 11- Nash- Can |
| 5. | Zetterberg- Swiz | 12- Staal- Can |
| 6. | Boyes- Can | 13- Sharp- US College |
| 7. | LeCavalier-Can | 6 European, 5 Can, 2 Collegiate, 0 Americans. |



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Why A Recent European Decrease?

- My theory is that agents began to bring elite younger Europeans over to the Major Junior Leagues in search of more games (better development?). The net result is that they are killing the goose that laid the golden eggs.
- The key to European development was in the “less is more” theory.
- There is research that supports leaving Europeans in Europe to develop.



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IIHF Study on Europeans Going to North America

- Pg 2 paragraph 1
- “A European player of top talent (graded 3+ and above) is normally good enough to step directly onto an NHL roster. The player, and his future NHL club, profits from polishing his skills in his European club before moving to the NHL.”
- Bottom line, the elite Europeans all developed in Europe



Early Specialization?

- An accident or on purpose
- Cause and effect
- Maria Sharapova, Tiger Woods?
- A complete disaster in the US and probably Canada
- Figure skating, gymnastics? Early specialization is necessitated by physics.



Strength and Conditioning -When to Start

- 12-13 seems to be the right age
- It's not a question of physiology, it's a question of psychology.



The Best Training for Kids? (U-12)

- None!
- Play multiple sports
- Every great athlete I have coached was a good multi-sport athlete
- Don't say "but what if he/ she wants to do it?"
- That means you aren't listening
- Adult values don't work in youth development



Why is Strength and Conditioning Important?

- Skill may improve 10-20%
- Strength and conditioning maximizes skill
- Strength can help to “reduce” the 51% number.



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What's the Difference?

- Size and Speed!
- Size and speed are often limiting factors.
- The difference between an elite and sub-elite players will most often come down to skating and or size.
- To skate better you need to get stronger, not just practice skating. It's a physics thing.



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The Right Work

- “Enough power-related work must be done during the early years (ages 13 to 17) to:
 - - Maintain genetically determined levels of white or power related muscle fiber.
 - - Promote the shift of transitional or intermediate fiber to white, power related muscle fiber.’ 1
- Francis further states “endurance work must be carefully limited to light - light/medium volumes to prevent the conversion of transitional or intermediate muscle fiber to red, endurance muscle fiber.’ 2



Athlete Selection- The Inverse of NHL Theory

- Francis notes that 'young athletes who do not achieve high levels of oxygen uptake during a treadmill test but who perform well over 10 to 40 meter sprints probably have inherited a high proportion of white power related muscle fiber.'
- An athlete selection system- do a vertical jump then run a mile. The kids you want jump high and die in the mile.
- Conditioning is easy to improve, speed takes years.



We Shouldn't Be Having This Conversation

- Things like VO₂ and lactate are irrelevant. We have known this for 20 years. Jack Blatherwick told us this in the eighties.
- Every time I hear of another college team bringing in Lance Armstrong's coach or some exercise physiologist I celebrate. It's great for BU but, it stinks for hockey in general.



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What You Do Need to Improve

- Power- olympic lifts and plyometrics (improve skating speed) 1990 Sports Festival Example, BU skaters
- Strength- single leg strength (improved skating), upper body strength (injury reduction, collision tolerance)
- Specific Strength- improved patterns of force production
- *Specific* Conditioning- we have it backwards. We try to develop specific strength programs and general conditioning.



Power- 60x3

QuickTime™ and a
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are needed to see this picture.



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Power 135 x5

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- Males 80-90 kilos should clean 100 kilos x 5



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Power- the Link of Strength to Speed

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Core Power- Harder Shots

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Colin Wilson- NHL First Round Pick

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Luke Popko- Boston University

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Mike Grier- Buffalo Sabres

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Tricia Dunn - 3 Time Olympian

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16 Yr Old HS Female- 6 mo. Post Op ACL

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Chinup- 150 lb Female +45lbs

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Male - 300 w/ 45 lbs

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Specific Strength

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Specific Conditioning

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Gibala Study

- Journal of Physiology, "Short Term Sprint Interval Versus Traditional Endurance Training: Similar Initial Adaptations in Human Skeletal Muscle and Exercise Performance Sept 2006, Vol 575 Issue 3



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Study Specifics

- Comparison of twenty minutes of interval training (30 sec sprint/ 4 min rest) with 90-120 minutes in the “heartrate zone”.



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Results

- Same improvement in oxygen utilization.
- 1 hour a week versus 4.5 to 6 hours a week?



Full Reference

- Training and Conditioning Magazine- Bulletin Board Dec 2006 Vol XVI, #9
- Journal of Physiology, "Short Term Sprint Interval Versus Traditional Endurance Training: Similar Initial Adaptations in Human Skeletal Muscle and Exercise Performance Sept 2006, Vol 575 Issue 3
- To view full text go to jp.physoc.org/cgi/content/full/575/3/901



ABSTRACT

Effects of moderate-intensity endurance and high-intensity intermittent training on anaerobic capacity and VO₂max.

Tabata I, Nishimura K, Kouzaki M, Hirai Y, Ogita F, Miyachi M, Yamamoto K.

Department of Physiology and Biomechanics, National Institute of Fitness and Sports, Kagoshima Prefecture, Japan.

This study consists of two training experiments using a mechanically braked cycle ergometer. First, the effect of 6 wk of moderate-intensity endurance training (intensity: 70% of maximal oxygen uptake (VO₂max), 60 min.d⁻¹, 5 d.wk⁻¹) on the anaerobic capacity (the maximal accumulated oxygen deficit) and VO₂max was evaluated. After the training, the anaerobic capacity did not increase significantly ($P > 0.10$), while VO₂max increased from 53 +/- 5 ml.kg⁻¹ min⁻¹ to 58 +/- 3 ml.kg⁻¹.min⁻¹ ($P < 0.01$) (mean +/- SD). Second, to quantify the effect of high-intensity intermittent training on energy release, seven subjects performed an intermittent training exercise 5 d.wk⁻¹ for 6 wk. The exhaustive intermittent training consisted of seven to eight sets of 20-s exercise at an intensity of about 170% of VO₂max with a 10-s rest between each bout. After the training period, VO₂max increased by 7 ml.kg⁻¹.min⁻¹, while the anaerobic capacity increased by 28%. In conclusion, this study showed that moderate-intensity aerobic training that improves the maximal aerobic power does not change anaerobic capacity and that adequate high-intensity intermittent training may improve both anaerobic and aerobic energy supplying systems significantly, probably through imposing intensive stimuli on both systems.

Aerobic Intervals?

- If the heartrate is maintained above the theoretical 60% then the entire session is both aerobic and anaerobic.
- This is why we do no “conventional” aerobic training.
- Our aerobic work is a by-product of our anaerobic work.



Rest to Work Ex. - Well Conditioned

- When using HR response, the whole picture changes. Initial recovery is rapid and shorter.
- Rest to work ratios may be less than 1-1.



Well Conditioned Sample- HR Method

- Interval 1- Work 60 sec rest 45
- Interval 2- Work 60 sec rest 60 sec
- Interval 3- Work 60 sec rest 75 sec
- Interval 4- Work 60 sec rest 90 sec
- In a conventional 2-1, time based program rest would have been too long for the first three intervals rendering them potentially less effective.



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Specific Power

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Sled Crossover

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Drive Sled

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Specificity?

- Very little position specific training. Hockey is a team sport.
- Position specific training should be done outside of the team strength and conditioning environment.
- To respect you goalie you need to train with your goalie.



No Gimmicks

- No skating treadmills
- No Russian Boxes
- No magic formulas
- Just hard and consistent work.



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Work on the Basics

- Learn to squat
- Learn to Olympic lift
- Learn to do push-ups, pull-ups, rows etc.



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If You Think You Have a Better Idea

- Please look at the evidence
- Ask the number one question!
- Has the guy talking ever done this?
- Theory is just that.





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Thank you!

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