Physical Preparation
**PRESENTATION PREPARATION**

- **Warm-Up**
  - Then & Now

- **1st Period**
  - LONG TERM Physical Failure + Success Solutions

- **2nd Period**
  - SHORT TERM Physical Failure + Success Solutions

- **3rd Period**
  - Prepare to Act

- **OT**
  - Q & A
Warm-Up
LEARNING OUTCOMES

1. Recognize obstacles to optimal physical preparation
2. Recognize solutions to optimal physical preparation
3. Understand hockey’s specific Critical Performance Variables (CPV) and Critical Fitness variables (CFV)
4. Identify characteristics of ideal support staff
5. Determine ideal resources/equipment required
6. Able to deliver quality warm-up and recovery sessions
7. Understand how to maintain or improve coaching staff’s physical preparation
• Task 1 - Assess the obstacles to optimal physical preparation that are most relevant to you. Following the presentation, coaches describe what obstacles to physical preparation and most prevalent and why.

• Task 2 - Determine how you will measure your team’s needs for physical preparation. Coaches will identify what CFV will be measured and with what tests. Also indicate how you will quantify any other processes you will use to optimize physical preparation.

• Task 3 - Write your goals and plan for your personal physical development. Coaches will create their own fitness program that describes the frequency, duration and exercises. Indicate what your fitness goals are.

• Task 4 - Observe a warm-up and/or a recovery session. Coaches will observe a group or team of players performing either a warm-up or recovery session.

• Post Task: Task 1 - Demonstrate and/or describe your in-season physical preparation program. Coaches will share their plans for warm-up, recovery, improving CFV, injury reduction and management of support staff. Observation of activity may include: team warm-up, off-ice training or recovery session.
“This is how I did it.”

“This is how other sports do it.”

“Hard work will cover all the bases.”
Dear Jim:

We will start our Training Camp on Friday, September 7th at Peterborough, Ontario.

All players are to report to the Empress Hotel, Friday morning the 7th. Physical examinations will start at 9:00 AM through to noon. Dinner will be at 1:00 PM. After dinner all players will report to the trainers at the arena at 2:30 PM and draw their equipment and go for a skate.

Golf will be a must in the Training Camp schedule. Be sure to bring along your golfing equipment. Arrangements have been completed for the use of the Kawartha Golf Club during Training Camp.

I expect you to report in good condition and not more than 7 lbs over your playing weight, with a minimum of being able to do:

20 push ups
20 sit ups
30 knee bends

The competition for spots on the club should be highly contested this year. We have a good crop of rookies and they will get every opportunity to make the club. So, let's be ready for the competition and not sorry.

We had a few injuries last year so the better your condition, I believe, the less injuries we will receive.

See you in September and let's make this another profitable year with a big playoff split.

Yours sincerely,

G. Imlach
General Manager

Name of the Toronto Maple Leaf Hockey Club

Corner of Carlton and Church Streets
Telephone Empire 8-1641
“There’s nothing like getting on the end of a shovel to get you in shape…(and) try to cut out smoking…”
A few minutes a day with the weights keeps you in off-season shape.
As you can see, conditioning is more complex than windsprints, a 10-minute skate and eight hours of sleep the night before a game. So much more complex, in fact, that being physically, mentally and emotionally prepared to play hockey cannot be accomplished in the space of an hour a week. An hour a day, perhaps, but not an hour a week. So let’s put to rest, once and for all, that myth about playing yourself into shape. It can be done but it’s a lengthy and inefficient process. And while we are at it, let’s dispense with another myth: that exercise is boring and joyless. Getting into shape, preparing yourself physically, mentally and emotionally to play hockey, need not be as dreary a prospect as pushups and situps and no smoking make it sound. Look at the faces of the kids working out on these pages. Some of them are Canadian. Some are Soviet. Some are Swedish. You will notice that all of them are having fun. Exercise can be fun. Conditioning can be fun—if you want it to be.
WHY DOES FASTEST GAME ON EARTH GET FASTER SO SLOWLY?

“This is how I did it.”

“This is how other sports do it.”

“Hard work will cover all the bases.”
DO “OTHER” SPORTS TRAIN ON ICE?
WHY DOES FASTEST GAME ON EARTH GET FASTER SO SLOWLY?

“This is how I did it.”

“This is how other sports do it.”

“Hard work will cover all the bases.”
“Our biggest weakness is fitness.”

“The sooner our players get the resources to improve physically the better.”

“We are catching-up but Canada is still behind Europeans’ fitness.”

“It’s too late to prepare at competition.”

“FIT players = GMP”
Past Performance

Less Smokes and Gravy
Hard Work

Future Performance

Smart Work
Smart Work
Hard Work

Past Glass = Half Full
Now Glass = Twice as Big!
Start of 1st
PHYSICAL FAILURE: LONG TERM

- Deconditioning
- Fatigue
- Poor Nutrition
- Injuries

HOCKEYCANADA.ca
TASK 1
PHYSICAL FAILURE: INJURIES

1. 3x more in exhibition/preseason
2. 42% in 3rd period
3. 47% in final 5 minutes of periods
4. 3x more for least fit players
**PHYSICAL FAILURE: INJURIES**

**Where do injuries most often occur?**
- 42% - head and face
- 27% - upper body
- 31% - lower body

**Who gets injured?**
- Goalie 4%
- Defense 33%
- Forwards 63%

**What are the most common injuries?**
*(Junior A stats, 16-20 yrs)*
- Sprains/subluxations 38%
- Contusions 30%
- Lacerations 19%
- Fractures 7%
- Tendinitis 3%
- Stingers 3%

[Source: http://www.injuryresearch.bc.ca/Publications/FactSheets/IceHockey%20fact%20sheet.pdf]
1. Conduct *Functional Movement Screens*
   Team Doctor, AT or outsource
2. Flexibility ≠ Safety  (Stiffness ↑ Performance)
3. Stability + Strength
4. Ensure Progressive increases to any movements (even ‘conditioning’ skates)
5. Minimize sitting
6. Free not Runners
PHYSICAL FAILURE: DECONDITIONING

In Season reduction in:

1. Cardiovascular
   - >10% (some research shows improved....WHY?)
2. Strength
   - 22-45%

Note: Game time avg ~12 minutes
PHYSICAL SUCCESS: MAXIMIZE CFV

1. CFV = Critical Fitness Variables
2. Know the CPV first (Critical Performance Variables)
3. Measure
4. Monitor
5. Provide Resources: Space + Program
PHYSICAL SUCCESS: RBR MODEL

On-Ice Sprint + Jumps + Balance + Agility
+COD + Reaction Time

Squat + Bench + Chins + Expl. Push-Ups

Beep Test + Multi-Jump + On-Ice Reed Repeat
TASK 2
### 2009 NHL Draft Combine: Bench Press 150lb

<table>
<thead>
<tr>
<th>Position</th>
<th>Player Name</th>
<th>Team</th>
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<tbody>
<tr>
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<td>10.7</td>
<td>This year's averages</td>
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<tr>
<td>18</td>
<td>JORDAN SZWARZ</td>
<td>SAGINAW (OHL)</td>
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<td>RYAN O'REILLY</td>
<td>ERIE (OHL)</td>
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<td>CARL KLINGBERG</td>
<td>FROLUNDA JR. (SWE-JR.)</td>
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<td>17</td>
<td>KYLE PALMIERI</td>
<td>USA U-18 (USDP)</td>
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<td>16</td>
<td>EVANDER KANE</td>
<td>VANCOUVER (WHL)</td>
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<td>TAYLOR DOHERTY</td>
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<td>EDINA HIGH (HIGH-MN)</td>
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## 2009 NHL Draft Combine: CMJ Peak Power

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<td>8717.0</td>
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<td>6544.0</td>
<td><strong>STEFAN ELLIOTT</strong></td>
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</table>
RBR REPORT:

Race
4.3

Battle
3.5

Recover
2.9
ONLINE DATA EXAMPLE

www.RaceBattleRecover.com
Below is your RBR score comparing you against athletes from your latest camp. Click on the "Outcome View" or "Solutions" tabs to get a more detailed look into your strengths and weaknesses as well as exercises to improve.

**RACE SCORE**

![Race Score](image)

**BATTLE SCORE**

![Battle Score](image)

**RECOVER SCORE**

![Recover Score](image)
The outcome view breaks down your RBR scores into specific trainable areas. In this view you can see all of the secondary components that make up the main RBR scores and how you rank in each of them. It gives a more in depth look into your strengths and weaknesses to help guide you in your selection of training material.
**Speed**

**Lower Power**

Squat Jump

**Agility**

**Lower Quickness**
# Coach Bubble Breaker Report:

<table>
<thead>
<tr>
<th>Player Name</th>
<th>Race</th>
<th>Battle</th>
<th>Recovery</th>
<th>Overall</th>
<th>Potential</th>
<th>Total</th>
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<td>5</td>
<td></td>
<td>3.7</td>
<td>3</td>
<td>6.7</td>
</tr>
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</table>

5 = Top 20%
1 = Bottom 20%

Race/Battle/Recovery scores based on average ranks for ‘Outcome’ results that contribute to each factor.
Potential Score is based on the inverse development scores (low scores means more potential to improve)
1. Short sessions (15-45’)
2. Part of warm-up
   a. Balance, Quickness, Power
3. After Games
4. Create and post team standards
5. Post individual scores
PHYSICAL FAILURE: FATIGUE

1. Are they tired? (Day off??)
2. Are they ‘less smart’? (Videofest??)
3. Are they out of shape? (Pucks away...gear up on the bus??)
Recovery = 21 beats
$HR_{\text{Max}} - HR_{30\text{ sec}} = 182 - 161$
416 kCal
## PHYSICAL FAILURE: 20%

<table>
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<tr>
<th>Name</th>
<th>Max</th>
<th>Avg</th>
<th>Kcal</th>
<th>Load</th>
<th>30s Drop 1</th>
<th>30s Drop 2</th>
<th>30s Drop 3</th>
<th>Avg Drop</th>
<th>W/U Max</th>
<th>W/U % of Max</th>
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<tbody>
<tr>
<td>Player 1</td>
<td>182</td>
<td>148</td>
<td>416</td>
<td>65</td>
<td>17</td>
<td>13</td>
<td>21</td>
<td>17</td>
<td>181</td>
<td>99</td>
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<tr>
<td>Player 2</td>
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<td>148</td>
<td>474</td>
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<td>480</td>
<td>63</td>
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<td>17</td>
<td>16</td>
<td>17</td>
<td>157</td>
<td>84</td>
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<tr>
<td>Player 4</td>
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<td>101</td>
<td>162</td>
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<td>9</td>
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<td></td>
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<td>57</td>
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<td>Player 8</td>
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<td>AVG</td>
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<td>19</td>
<td>23</td>
<td>24</td>
<td>162</td>
<td>87</td>
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</tbody>
</table>
PHYSICAL SUCCESS: REDUCE FATIGUE

1. Breath (bench, room, ON THE ICE) +36%
2. Increase ability to recover (Fitness + Posture + Breath)
3. Implement Recovery program after games AND practices
   a. Flush + Stretch + Contrast Temperature
4. Monitor
   a. Effort (HR systems i.e. Polar Team²) and attitude
   b. ?? Who will tell you your training sessions are too easy??
5. Prepare and treat potential illness immediately
6. Sleep: Early to bed, pre CHO, Nap 20-65’
### 2009 NHL Draft Combine: VO₂ Max

<table>
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<th>Sc</th>
<th>Player</th>
<th>Club</th>
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<td>68.9</td>
<td><strong>SAMI VATANEN</strong></td>
<td>JYP JR. (FINLAND-JR.)</td>
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<td>68.7</td>
<td><strong>OLIVER EKMAN-LARSSON</strong></td>
<td>LEKSAND (SWEDEN-2)</td>
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<td>OKOTOKS (AJHL)</td>
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<td><strong>CODY EAKIN</strong></td>
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<td>LETHBRIDGE (WHL)</td>
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<td><strong>TYSON BARRIE</strong></td>
<td>KELOWNA (WHL)</td>
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<td><strong>MATTHEW HACKETT</strong></td>
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<td><strong>TIM ERIXON</strong></td>
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<td><strong>JORDAN CARON</strong></td>
<td>RIMOUSKI (QMJHL)</td>
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</table>
PHYSICAL FAILURE: POOR NUTRITION

1. Too low:
   1. Protein = less repair
   2. B Vitamins = less repair and less energy production
   3. Minerals = reduced growth, immune system

2. Too big = energy spikes

3. Inappropriate fuel sources = low energy
PHYSICAL SUCCESS: STARCH+ YOUR ENGINES

1. Frequency 6-8 (pre/post game/practice)
2. Quantity
   a. >2000 kCal/game (during game)
3. Quality (PRO + CHO)
4. Timing (home vs. road)
5. Planning
6. Monitor
   a. Weight + www.fitday.com
7. Tricks:
   a. Continental Breakfast + Snack
   b. Salad vs. veggies
   c. Negotiate $ and portion size
   d. Careful selection of protein shake contents
1st Intermission
PHYSICAL FAILURE: SHORT TERM

- Dehydration
- Low Carbs
- Under Activated
- Over Stretched
PHYSICAL FAILURE: $\text{H}_2\text{O} + \text{CHO}$

1. 2% loss in water = 30% loss in performance (3.6lb for 180 pounder)
2. Low CHO can reduce recovery 20%-50%
1. Urine colour = clear
2. Weight loss for games AND practices minimal
3. Sip water throughout game
4. Add CHO pre-game and between periods
5. Replace kCal within 30 minutes after game AND practice
PHYSICAL FAILURE: WARM-UP

1. What % better would be worth your attention?
2. How long will it take for your team to ‘find their legs’?
1. Individual and Team
2. Mental + Placebo Component
3. Ice is most important (proximal)
4. Intensity ~100% of game = early legs
5. Off-ice warm-up too early = wasted
6. Specificity: Range, Speed, Force, Movements
7. Minimize static stretches
1. Individual and Team
2. Mental + Placebo Component
3. Ice is most important (proximal)
4. Intensity ~100% of game = early legs
5. Off-ice warm-up too early = wasted
6. Specificity: Range, Speed, Force, Movements
7. Minimize static stretches
COMPLETE TASK 2
2nd Intermission
**EQUIPMENT LIST**

- Load = weights, sandbags, kegs, lumber
- Distance = benches, steps, chairs
- Explosive = powerballs, bungies
- Ideal:
  
  Squat Rack, Pulley (functional), free weights, Power Balls

- Recall Sweden/Moscow!
1. Understand HOCKEY
2. AT vs. Kin vs. specialist vs. Jim Guy
3. Understand ‘job description’ of players
4. Communicate as team
5. Continuing education
6. Communicate specific to audience
7. Maintain “Man Games Lost” Data
8. Gender issues
COACHES’ PHYSICAL PREPARATION

1. You are way to ^%^*(^%^$%^ busy...

2. BUT:
   a. Leadership
   b. Staff-Team Build
   c. Clear Head, Leadership
   d. Brain Growth: BDNF (Brain Derived Neutrophic Factor)
   e. Stress Reduction
COACHES’ PHYSICAL PREPARATION

1. With players Or while players are around rink
2. 3 days/week
3. 5’warm-up + 10’ circuit + 5’ bike
4. Post game/practice
5. Eat like a winner
PHYSICAL SUCCESS: COACH FIT
TASK 3
1. Assess meaningfully (CFV, fatigue, effort, weight etc.)
2. Compare to your standards (post standards and results)
3. Plan and comply with scheduled time for PP
4. Plan and comply with quality and consistent session warm-up
5. Plan and comply with quality and consistent session recovery
6. Manage support staff (define Hz and type of reports to coach)
7. Participate in your own PP
8. Include PP on-ice
9. Positive attitude associated with PP (vs. punishment)
10. Enable your players to be self directed
PARTNERS IN COACH EDUCATION

The National Coaching Certification Program is a collaborative program of the Government of Canada, provincial/territorial governments, national/provincial/territorial sport organizations, and the Coaching Association of Canada.
How to be a better coach

Learn to listen, especially to the athletes – they are excellent teachers.

Help each athlete develop all of their capacities: physical, mental/emotional, and social.

Take a stand against doping and cheating in sport.

Thirst for knowledge attend coaching courses, get certified, stay up to date.

Brought to you by
the Coaching Association of Canada www.coach.ca
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