VOLUME 1 · HOCKEY

3RD EDITION

INTRODUCING THE

RECOVERY MANUAL

UPDATED & EXPANDED

Seven tips for recovery. Supported by science, used in professional hockey, ready to start tonight.

MAGNUS ÅGREN

People. Purpose. Performance.

magnusagren.com

PICTURE THIS

THE HALF SECOND NOBODY SAW

Third period. Second game in three nights. The puck goes into the corner and you go after it, and for half a second your legs do not answer. Nobody in the building sees it. You do.

That half second was not lost tonight. It was lost yesterday: on the bus, at the dinner you skipped, in the hour you spent replaying a shift at two in the morning with the phone in your hand.

Hockey has a silent protagonist. It never makes the scoresheet, and it decides who is still skating in the big moments. It is recovery.

YOU DON'T GET BETTER WHEN YOU TRAIN. YOU GET BETTER WHEN YOU RECOVER FROM IT.

This manual gives you seven tips, each with five things to do. Read one tonight. Start one tomorrow. That is the whole plan.

BEFORE THE TIPS

RECOVERY IS BIGGER THAN YOUR LEGS

Ask a player what recovery is and you get a list of things done to muscle: ice, a roller, a massage gun. That is one tank in four.

A game drains four tanks. You are ready when all four are back, and the slowest one sets the time.

BODY

MUSCLE · FORCE · SORENESS

Some of the force in your legs was still 9 to 11% down the day after a game. [3]

FUEL

GLYCOGEN · FLUID

Up to 53% of muscle glycogen gone, and about a litre more sweated than drunk. [2, 4]

HEAD

FOCUS · DECISIONS · EMOTION

A tired mind makes the same work feel harder. [42]

LIFE

SLEEP · STRESS · PEOPLE

People under more life stress got their strength back more slowly. [25]

The international consensus on recovery says it in calmer words: recovery is physical and psychological, and life outside the rink counts. [1]

A RESTED HEAD IS RECOVERY TOO

A calm mind does not rebuild a muscle fibre any faster. It changes how you sleep, how hard tomorrow feels and what you bring to the rink. Tips 5, 6 and 7 are about that half of the job.

TABLE OF CONTENTS

01 PRIORITIZE SLEEP 6

02 OPTIMIZE NUTRITION AND HYDRATION 8

03 IMPLEMENT ACTIVE RECOVERY 10

04 UTILIZE COLD THERAPY 12

05 STRESS MANAGEMENT 14

06 RECOVER THE MIND NEW 16

07 TRUST YOUR ROUTINE NEW 18

+5 BONUS TIPS 20
Binaural beats, infrared sauna, dry needling, red light, creatine

48 THE 48 HOURS AFTER A GAME NEW 21
Then the morning check, your checklist and the evidence at a glance

HOW TO READ THE LABELS

STRONG consensus statements or several consistent reviews. MODERATE a meta-analysis shows a small to moderate benefit. LIMITED few, small or mixed studies. NOT SUPPORTED no benefit, or a possible cost. FROM PRACTICE experience, not a trial.

The labels are the author's reading of the research, for the outcome named in each item. A label describes the average result in trials. Tip #7 explains why a method can still be right for one player. Small numbers point to the reference list at the back.

KNOW YOUR OPPONENT

WHAT A GAME TAKES OUT

You cannot recover from something you have not measured. Three studies on elite junior hockey players did the measuring.

53%
less muscle glycogen after a simulated game in 30 under-20 national-team players. [2]

3.2 L
of sweat lost in one junior game, against 2.1 L drunk. [4]

38 h
before glycogen was back at pregame level after a training game. [3]

FUEL	Glycogen fell by 53% in the simulated game and by 31% in a training game, and came back on day two, not day one. [2,3]
FLUID	Players arrived hydrated, had drinks on the bench and still finished 1.3% lighter on average. Drinking by feel did not keep up. [4]
FORCE	Maximal strength dropped 11% and was back the next day. Force at low stimulation frequency dropped 29% and was still 9 to 11% down a day later. [3]
SPEED	Repeated-sprint ability fell about 3%, with roughly 10% fewer accelerations and decelerations late in the game. [2]

WHAT IT MEANS FOR YOU

You can feel fine the day after a game and still be short on fuel and force. Feeling fine is not the measure. Two games in two nights means starting the second one in deficit, so the first hour after the buzzer matters.

TIP #1

1

PRIORITIZE SLEEP

The bus pulls in at 01:40. You are in bed by 02:15, wide awake, the game still running behind your eyes. Practice is at ten.

Everything else in this manual is a smaller version of what a full night gives you for free.

APPROACH YOUR SLEEP AS YOU WOULD APPROACH A GAME. WITH INTENT!

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PRIORITIZE SLEEP

01 SLEEP DURATION STRONG

Elite athletes commonly sleep under seven hours a night. The expert consensus recommends a personal target over a single figure such as seven to nine hours. [5]

> **Find the amount after which you wake without an alarm and train well. Then protect it like ice time.**

02 SLEEP QUALITY FROM PRACTICE

Cool, dark, quiet. Blackout curtains or an eye mask, earplugs if the hotel is loud, the phone outside the room.

> **Pack the mask and the earplugs with your skates.**

03 SLEEP TIMING FROM PRACTICE

The same wake time seven days a week, within 30 minutes, and ten minutes of daylight in the first hour. The morning sets the clock that decides when you get sleepy at night.

04 AVOID SLEEP DISRUPTIONS STRONG

400 mg of caffeine taken six hours before bed still cut sleep by more than an hour, and the people in the study did not notice. [46] Elite footballers reported about two and a half hours less sleep after night matches than after day matches. [48]

> **Last caffeine eight hours before bed. After a late game: eat, shower, lights low, bed when sleepy.**

05 NAPPING MODERATE

Studies in athletes support naps of 20 to 90 minutes between 13:00 and 16:00. [47]

> **Twenty to thirty minutes after lunch, finished by 15:00, on the day after a short night.**

Want the whole night? The full sleep protocol, with a 14-night scorecard, is in the companion book **Built Overnight**. Free at magnusagren.com.

TIP #2

2

OPTIMIZE NUTRITION AND HYDRATION

The room after a win is loud. Music on, sticks being taped for tomorrow, and the food on the table mostly untouched.

Up to half the fuel in your legs is gone and you are about a litre short on fluid. The next game started ten minutes ago.

HYDRATION AND NUTRITION ARE AS IMPORTANT AS YOUR EQUIPMENT!

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OPTIMIZE NUTRITION AND HYDRATION

01 HYDRATION STRONG

Weigh in before and after ice time. For each kilogram lost, drink 1.25 to 1.5 L with sodium over the following hours. [6] Junior players who drank by feel finished short. [4]

> **1.2 kg lighter after the game: 1.5 to 1.8 L, with salted food or an electrolyte drink.**

02 NUTRIENT TIMING STRONG

When the next hard session is less than eight hours away, the joint position statement gives 1.0 to 1.2 g of carbohydrate per kg per hour for the first four hours. [6] With a game the next evening the same start still makes sense: glycogen took more than a day to return in the hockey data. [3]

> **85 kg player: 85 to 100 g of carbohydrate in the first hour. Rice or pasta, plus fruit, juice or a recovery drink.**

03 PROTEIN INTAKE STRONG

0.25 to 0.3 g per kg soon after exercise. [6] Your daily target, the per-meal dose and the pre-sleep feeding are worked out in Built Overnight.

04 MICRONUTRIENTS ~~NOT SUPPORTED~~

From the plate, not from pills. A Cochrane review of 50 studies found that antioxidant supplements do not reduce soreness to a degree that matters. [8] In an 11-week trial, 1,000 mg of vitamin C with 235 mg of vitamin E a day blunted markers of training adaptation. [7]

> **Fruit and vegetables at every meal. Leave the high-dose C and E on the shelf.**

05 SUPPLEMENTATION MODERATE

Creatine may improve recovery from intense training; 3 to 5 g a day is the usual dose. [9, 11] Tart cherry and curcumin showed small to moderate effects on soreness. [10, 40] Vitamin D helps when a blood test shows it is low. [11] Omega-3 reduced soreness by too little to matter. [41]

> **Batch-tested products only if you play under anti-doping rules.**

TIP #3

3

IMPLEMENT ACTIVE RECOVERY

The morning after. You come down the stairs sideways and every instinct says couch.

This is where habit and evidence are furthest apart, so here is the honest version: most of these methods change how you feel more than how you perform. On a day when feeling ready is half the job, that still counts.

ENGAGE IN ACTIVE RECOVERY TO BE READY TO PLAY THE BIG MOMENTS!

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IMPLEMENT ACTIVE RECOVERY

01 LOW-INTENSITY EXERCISE LIMITED

An easy spin clears lactate from the blood faster and does little for next-day performance. [13] A pooled analysis of 99 studies did find less soreness with active recovery. [12]

> **Ten to twenty minutes of easy cycling or walking the day after a game. Keep it short.**

02 FOAM ROLLING LIMITED

Rolling after exercise gave a small reduction in muscle pain and little else. The evidence supports it more as a warm-up than as a recovery method. [14]

> **Roll before the session if it helps you move. Afterwards it is optional.**

03 STRETCHING LIMITED

Stretching after exercise does not speed strength recovery or reduce soreness. [15] Stretching training does appear to improve the balance of the nervous system. [36] So stretch to come down, and for range: slow, wave-like, into the stretch on the exhale and out on the inhale, as taught in the Stretch to Win method.

> **Ten minutes before bed. Easy, never into pain. The breath sets the pace.**

04 YOGA MODERATE

A meta-analysis of 17 randomised trials of yoga and tai chi found lower perceived stress and a shift toward the calming branch of the nervous system. The participants were not athletes. [35] Yoga stays in this manual for the head and the nervous system, not for muscle repair.

> **Twenty to thirty quiet minutes on a day off. Slow styles, long exhales.**

05 MASSAGE THERAPY MODERATE

The most effective single method for soreness and perceived fatigue in a pooled analysis. [12] A separate meta-analysis found no improvement in strength, jump, sprint or endurance. [16]

> **Book it when soreness is what stands between you and the next session.**

TIP #4

4

UTILIZE COLD THERAPY

Ten degrees. The first thirty seconds are an argument with yourself.

Cold water is the most studied recovery method in sport and the one most often used at the wrong time. After a game it helps. After every gym session it takes back part of what you lifted for.

USE COLD THERAPY TO BE READY WHEN YOU PUT YOUR SKATES ON!

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UTILIZE COLD THERAPY

01 ICE BATHS MODERATE

Across 52 studies, cold water after high-intensity exercise improved power, soreness and perceived recovery 24 hours later. [17] A 2026 umbrella review favours 10 to 15 minutes at 10 to 15 °C, found that jump and power can dip in the first hours afterwards, and rates the certainty as low. [18, 20]

> **Ten to fifteen minutes at 10 to 15 °C after a game when the next one is within 48 hours.**

02 WHEN TO SKIP THE COLD MODERATE

Regular cold-water immersion after resistance training reduces the strength gains the training was meant to produce. [19, 20]

> **No cold after lifting, and none in the off-season strength block. Not in the hours before you go on the ice.**

03 CONTRAST THERAPY MODERATE

Alternating cold and warm water beat passive rest for soreness and strength loss in 18 trials, all with a high risk of bias. It was no better than cold water, compression or active recovery. [21]

04 COMPRESSION THERAPY MODERATE

A meta-analysis of 23 studies found a small overall benefit, largest for strength recovery 2 to 8 hours and more than 24 hours after exercise. [23]

> **On after the game and on the bus or plane. Low cost, no downside found.**

05 CRYOTHERAPY CHAMBERS AND INFRARED SAUNA LIMITED

A Cochrane review found four small trials on whole-body cryotherapy and judged the evidence insufficient. [22] One trial in 16 basketball players found less soreness and better jump recovery after 20 minutes of infrared sauna. [24]

> **Extras. Use them when the basics already hold.**

TIP #5

5

STRESS MANAGEMENT

Contract year. A newborn at home. An exam on Thursday. A coach who has stopped talking to you.

None of it is on the training plan and all of it is on the bill. Your body does not keep separate accounts for training stress and life stress.

MANAGE YOUR STRESS TO BE GAME READY!

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STRESS MANAGEMENT

01 COUNT LIFE AS LOAD MODERATE

In a study of 31 students, those reporting higher life stress recovered maximal force more slowly over the four days after a heavy leg session, and felt more fatigue and soreness. [25]

> **A heavy week outside the rink is a week for more recovery, not less. Tell the staff.**

02 BREATHING TECHNIQUES MODERATE

A meta-analysis found that slow breathing raises vagally mediated heart rate variability, a marker of the calming branch of the nervous system, during the practice, straight after and after weeks of training. [26] The label is for winding down.

> **Five to ten minutes at about six breaths a minute, longer out than in. After the game or before bed.**

03 MINDFULNESS MEDITATION LIMITED

Nine trials in athletes showed improved psychological and physiological markers, and better performance in precision sports. The authors asked for more and better trials. [27]

> **A few minutes a day, guided or not, if you find it hard to switch off.**

04 MUSCLE RELAXATION AND VISUALIZATION FROM PRACTICE

Listed in earlier editions as recovery methods. This edition makes no evidence claim for them. If either one already helps you come down, keep it.

05 THE SAME LAST HOUR FROM PRACTICE

One or two quiet things before bed, the same ones every night, lights low. The repetition is the signal.

> **Choose your two tonight.**

TIP #6 NEW

6

RECOVER THE MIND

You are home. Showered, fed, legs up. And still on the ice: the turnover in the second, the look from the bench, the clip that will be in tomorrow's video.

The body left the rink two hours ago. The head is still out there taking shifts.

THE HEAD PLAYS EVERY SHIFT TOO. GIVE IT AN OFF-SWITCH!

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RECOVER THE MIND

01 MENTAL FATIGUE IS REAL FATIGUE MODERATE

A review of 11 studies found that mental fatigue reduced endurance performance, mainly because the same work felt harder. Maximal strength and power were not affected. [42]

> **Go easy on the head before you need the legs: long video, hard conversations and hours on a screen draw from the same account.**

02 SWITCH OFF LIMITED

Researchers who interviewed a university field hockey squad found that rest was more than not training. A key part was not thinking about the sport. [43] Among 161 recreational athletes, those who detached mentally from their sport reported fewer injuries and more mental energy. A survey, so an association and not proof. [44]

> **Pick the point where hockey is over for the day. After the shower works.**

03 THE FORGOTTEN SESSION FROM PRACTICE

Sport psychologists have called rest "the forgotten session". [45] Treat it as one: a time, a place, a length, written in the week like the gym.

04 PEOPLE AND PLACES FROM PRACTICE

The research on recovery experiences names more than switching off: relaxing, getting better at something else, and choosing for yourself what to do with the time. [44]

> **Dinner with people who do not ask about the game. A walk outside. Something you are learning that is not hockey.**

05 FEEL IT, THEN PARK IT FROM PRACTICE

A bad game deserves ten honest minutes. It does not deserve the night.

> **Write down one thing to keep and one thing to fix. Close the book.**

WHY THIS IS IN A RECOVERY MANUAL

A calm head does not rebuild muscle any faster. It changes the rest: lower life stress went with a faster return of strength, [25] and a tired mind makes the same work feel harder. [42]

TIP #7 NEW

7

TRUST YOUR ROUTINE

Every room has one. Left skate first. The same playlist. The tub of something a teammate swears by.

Science spent years trying to explain these away and ended up measuring them. If you think it works, part of it does. And when it hurts less, you move better.

IF YOU BELIEVE IN IT AND IT DOES NO HARM, KEEP IT!

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TRUST YOUR ROUTINE

01 THE PLACEBO THAT MATCHED THE ICE BATH MODERATE

Thirty men did hard intervals, then sat in cold water, neutral water, or neutral water presented as an effective recovery treatment. Leg strength and ratings of readiness, pain and vigour held up as well with the placebo as with the cold, and better than with nothing. [32]

02 BELIEF WORKS BOTH WAYS MODERATE

Across 32 studies and 1,513 participants, placebo treatments improved sports performance by a small to moderate amount. Expecting a method to fail, or to harm, lowered performance by about as much. [33]

> **Careful what you tell a teammate about a routine that works for them.**

03 FEELING RECOVERED COUNTS LIMITED

In 12 rugby players, how highly each player rated the recovery treatment was related to sprint performance 24 hours later. [34]

04 WHEN PAIN IS THE LIMIT MODERATE

Less pain makes the next session possible. Massage is the best single method for soreness. [12] Acupuncture lowered soreness in six randomised trials, [37] and dry needling was generally positive for pain and stiffness across 24 studies. [29] Massage guns ease stiffness in the short term. [38, 39]

> **Not a massage gun in the last five minutes before explosive work.**

05 DRAW THE LINE FROM PRACTICE

Less pain is not the same as restored muscle: fuel and force still took a day or two to return. [3] Keep the routine until it costs adaptation, sleep or money, or stands in for food and fluid.

> **Belief does not refill glycogen. Eat first.**

EXTRAS

5 BONUS TIPS TO HELP RECOVERY

For the player whose sleep, food and fluid already hold. None of these replaces a tip. Each one is graded the same way.

01 BINAURAL BEATS LIMITED

A meta-analysis of 22 studies found a medium effect on anxiety and pain perception. There are no data on physical recovery. [30]

> **Harmless with headphones on the bus if it calms you.**

02 INFRARED SAUNA LIMITED

One crossover trial in 16 basketball players: 20 minutes after a strength and jump session reduced soreness and the drop in explosive performance. [24] A reason to try it, not to rely on it.

03 DRY NEEDLING MODERATE

A review of 24 studies in 580 athletes: generally positive for pain and stiffness, little effect on performance. [29] The label is for pain.

> **With a qualified therapist, when a sore spot is what limits you.**

04 RED LIGHT THERAPY LIMITED

Some effect on fatigue and performance, mostly when applied before exercise. The evidence quality ranges from very low to moderate. [28]

05 CREATINE MODERATE

The best-supported supplement on this page. It may improve recovery from intense training, at 3 to 5 g a day. [9, 11]

> **Daily, batch-tested, with a meal.**

NEW · THE PLAN

THE 48 HOURS AFTER A GAME

The tips only work as a sequence. This is the order for a night game with the next game two days later.

GAME NIGHT

THE FIRST HOURS

- Weigh in and start drinking: 1.25 to 1.5 L per kg lost. [6]
- Eat within the hour: carbohydrate and protein together. [6]
- Cold water 10 to 15 minutes if the next game is within 48 hours. [20]
- Compression on for the trip home. [23]
- Decide that hockey is over for today.
- Five minutes of slow breathing, lights low, bed when sleepy.

DAY ONE

STILL IN DEFICIT

- Wake close to the usual time. Nap after lunch.
- Carbohydrate at every meal. Glycogen is not back yet. [3]
- Move easily for 10 to 20 minutes.
- Hold the heavy and high-speed work. Force is still down. [3]
- Massage if soreness is the limit. [12]
- An evening with people, not screens. Yoga or wave stretching before bed.

DAY TWO

READY AGAIN

- Check the morning score against your normal.
- Train or play as planned. Fuel and force had recovered by now in the hockey data. [3]
- Pre-game meal three to four hours before the puck drops. No cold water in the hours before the game. [20]

NEW · THE PLAN

WHEN THE SCHEDULE IS NOT KIND

BACK-TO-BACK GAMES

With under 24 hours between games there is no time to restore everything. Priority goes to what can be moved in that window: carbohydrate every hour for the first four, fluid by the scale, cold water, and as much sleep as the schedule allows. Easy movement and massage come after those.

OFF-SEASON AND STRENGTH BLOCKS

The aim changes from being ready tomorrow to adapting over weeks. Skip cold water after lifting and skip high-dose antioxidants, since both can reduce the adaptation the training is for. [7, 19] Sleep, food and fluid stay exactly as they are.

A HEAVY WEEK OFF THE ICE

Exams, a move, a contract, a sick child. Count it as load. [25] Drop an extra, keep the basics, add ten minutes of breathing or stretching in the evening and say it out loud to the staff.

THE ORDER NEVER CHANGES

Sleep, food and fluid first. Then the head. Then the methods. Then the extras. A device cannot make up for a missed meal or a short night.

The sequence and the timings without a reference number are the author's practice, not study results.

NEW · THE CHECK

IS IT WORKING?

A review of 56 studies found that simple self-reported measures tracked training load more sensitively and consistently than blood markers or heart-rate measures. [31] Your own five answers each morning are a serious tool.

SLEEP	How well did I sleep?	1 2 3 4 5
ENERGY	How fresh do I feel?	1 2 3 4 5
SORENESS	How do my legs feel?	1 2 3 4 5
STRESS	How loaded is my head?	1 2 3 4 5
MOOD	How do I feel about today?	1 2 3 4 5

Score each from 1 (worst) to 5 (best) before breakfast. Total 5 to 25. The number matters less than the change from your own normal.

THREE LOW MORNINGS IN A ROW

Talk to the staff and look at your checklist on the next page. Two of the five questions are about your head. That is on purpose.

FOR THE STAFF

The sheet works for a whole team when it is collected, not policed. One player's trend over three weeks says more than one morning's comparison between players.

PRINT THIS PAGE

YOUR CHECKLIST

Month: _____ **Week:** _____

TASKS · TICK WHEN DONE	SU	MO	TU	WE	TH	FR	SA
1 Weighed before and after ice, fluid replaced							
2 Carbohydrate and protein within the hour							
3 Easy movement, 10–20 minutes							
4 Cold water (in season, close games only)							
5 Slow breathing or wave stretching, 5–10 min							
6 Hockey switched off for the evening							
7 Time in bed protected							
Game G · practice P · gym S · off –							
Morning check, total 5–25							

READING THE WEEK

Look across, not down. A falling morning score under rows that are mostly ticked points to load or life stress. A falling score under empty rows points to the basics. Fix rows 1, 2 and 7 first.

THE EVIDENCE AT A GLANCE

METHOD	EVIDENCE	USE IT
Sleep	STRONG	Every night
Carbohydrate, fluid, protein	STRONG	After every game and hard session
Cold-water immersion	MODERATE	In season, close games. Not after lifting
Compression garments	MODERATE	Post-game hours and travel
Massage	MODERATE	When soreness is the limit
Acupuncture, dry needling	MODERATE	When pain is the limit
Contrast water	MODERATE	An alternative to cold water
Tart cherry, curcumin, creatine	MODERATE	Congested periods; creatine daily
Yoga, slow breathing	MODERATE	To wind down
Breath-led stretching	LIMITED	To wind down, and for range
Switching off, mental rest	LIMITED	Every evening
Sparing the head before games	LIMITED	Game days and heavy weeks
Mindfulness	LIMITED	If switching off is hard
Easy movement, cool-down	LIMITED	Optional, keep it short
Foam rolling, massage guns	LIMITED	Before sessions, not right before explosive work
Infrared sauna	LIMITED	Extra, when basics hold
Red light, binaural beats	LIMITED	Not a priority
Whole-body cryotherapy	LIMITED	Not a priority
Omega-3	LIMITED	Not for recovery
Stretching to speed recovery	~~NOT SUPPORTED~~	Stretch for range and calm instead
High-dose vitamin C and E	~~NOT SUPPORTED~~	Avoid. Eat fruit and vegetables

Each label applies to what the method is used for here: soreness, readiness or winding down. The labels are the author's reading of the reviews cited in the tips.

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