



2015

SUMMER MARATHON



Photos courtesy of Chad Marek, www.endurancephoto.com



WELCOME TO CARA'S 2015 SUMMER MARATHON TRAINING PROGRAM

CARA is dedicated to expanding, motivating, supporting and celebrating the running community of Chicagoland. We want to connect you to resources that enable you to run—farther, faster, better, for life.

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Thank you for putting your faith in CARA to guide you on your running journey. By signing up for our marathon training program, you are making a big commitment that requires hard work, sacrifice and discipline. Training for a 26.2 mile race is not easy and at times, you will be pushed to your limits. However, what you gain in return is worth any struggles along the way. Soon you will find yourself surrounded by new friends and the miles will float by beneath you.

During this program, you will learn from experts in the running field about essential topics such as; nutrition, proper stretching and injury prevention, proper running gear and footwear, strength training and more.

On the weekend group runs, you will have CPR Certified pace group leaders who will support you along the running routes.

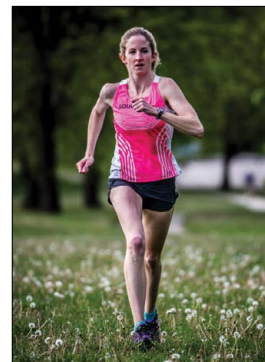
In this booklet you will find:

- Training schedules for 18 weeks
- Training Tips
- Injury Prevention Information
- Ready to Run 20 Miler Information
- Hydration Information

The CARA staff is always ready to help you with any questions or concerns you have during the next 18 weeks. Please call me at (312) 666.9836 ext. 13 or e-mail me at megan@cararuns.org anytime and I will be here to help you.

RUN STRONG AND TRAIN SMART!

Megan Sullivan
CARA TRAINING PROGRAM MANAGER
USATF CERTIFIED COACH



WEEKEND TRAINING RUNS

Hover over locations for map.

LOCATIONS & TIMES

CHICAGO-BEVERLY

Saturdays 6:30 a.m.

Running Excels,
10328 S. Western Ave.

SITE COORDINATORS

Jim Pacente, (708) 542.2852,
excel@runningexcels.com
Beverly Lynch, (708) 670.6174,
excel@runningexcels.com

CHICAGO - LAKESHORE EAST

Saturdays 6:00 a.m.

Subway - Lakeshore East,
333 E. Benton Place

SITE COORDINATORS

Betsy Balgooyen Keller, (312) 282.3180,
bbalgooyen@hotmail.com
Greg McCormick, (312) 933.8933,
gregmccor@yahoo.com

CHICAGO - HYDE PARK

Saturdays 6:00 a.m.

LaRabida Hospital, Southeast parking lot

SITE COORDINATOR

Valerie Tyler, (312) 415.5366,
tylervalerie@yahoo.com

CHICAGO - MONTROSE BEACH

Exit Lake Shore Drive at Montrose, head east (all the way to the lake). Montrose changes names to Simonds Drive near here. Follow Montrose/Simonds as it bends left (north). The group gathers due east of the Montrose Hill by the brick concession building. Meet on the right side of the building facing lake.

Saturdays 6:00 a.m.

SITE COORDINATORS

Emily Zaran, (734) 755.6245,
zaranemi@gmail.com
Kim Maves, (262) 349-3672,
kim.maves@gmail.com
John Biggs, (773) 526-1839,
john_biggs_1999@yahoo.co.uk

Saturdays 6:30 a.m.

SITE COORDINATORS

Bob Belusko, (708) 220.8598,
rbelusko@gmail.com
Tom Moran, (773) 592.2468,
tmoran@rubloff.com

Sundays 6:30 a.m.

SITE COORDINATOR

Darren DeMatoff, (312) 656.3988,
ddematoff@yahoo.com

DARIEN - WATERFALL GLEN

Saturdays 7:00 a.m.

Trailhead lot on Cass Avenue, South of I-55

SITE COORDINATOR

Jim Murphy, (312) 933.2685,
jfmurphy7@comcast.net

LAKE ZURICH -

LAKE ZURICH HIGH SCHOOL

Saturdays, 7:00 a.m.

Lower Parking Lot, 300 Church Street

SITE COORDINATOR

Beth Onines, (847) 209.8843,
beth@illinoisruns.org

LIBERTYVILLE -

OLD SCHOOL FOREST PRESERVE

Saturdays 6:45 a.m.

Shelter C parking lot, off of St. Mary's
Road in Libertyville

SITE COORDINATOR

Bill Pierce, (847) 971.5595,
bill.pierce@comcast.net

NILES - BUNKER HILL FOREST

PRESERVE, GROVE 4

Saturdays, 7:00 a.m.

SITE COORDINATOR

Keith Kijek, (773) 366.1021,
kijek@mindspring.com

OAK FOREST - YANKEE WOODS

Saturdays, 6:50 a.m.

Picnic Area on Central Avenue between
163rd and 167th

SITE COORDINATOR

Joe Werner, (708) 429.9598,
gokarts@juno.com,
www.yankeerunners.com

SCHAUMBURG - BUSSE WOODS

Saturdays, 6:45 a.m.

Busse Woods, Enter Forest Preserve on
Higgins, just east of 53.

SITE COORDINATORS

Joe Carey, (608) 792.0755,
eoicarey@gmail.com
Emily Bergadon, (847) 951-1922
eberga1@gmail.com
Maira Herbert, (847) 254-6269
Maira.Herbert@nielsen.com

Sundays, 7:00 a.m.

SITE COORDINATOR

Beth Onines, (847) 209.8843,
beth@illinoisruns.org

WHEATON

Saturdays, 6:45 a.m.

Peet's Coffee, 390 W. Front Street,
Wheaton

SITE COORDINATOR

Jim Laubsted, (630) 854.2549,
jim@laubsted.com

MID-WEEK TRAINING RUNS

Hover over locations for map.

CHICAGO - WEST LOOP

Tuesdays, 6:00 p.m.

Live Grit, 1010 W. Monroe

CHICAGO - LINCOLN PARK

Wednesdays, 6:00 p.m.

Equinox Lincoln Park, 1750 N. Clark

CHICAGO - LINCOLN PARK

Workouts with Coach Leach

Tuesdays, 6:30 p.m.

Meet at CARA board or Wilson Track

Wednesdays, 6:00 a.m.

Meet at CARA board

DARIEN

Wednesdays, 6:00 p.m.

Oak Brook Park District, 1450 Forest Gate Road in Oak Brook; meet under flag pole

LIBERTYVILLE

Thursdays, 6:00 p.m.

Runners Edge, Libertyville
524 N. Milwaukee Ave.

NILES

Tuesdays, 6:00 p.m.

Bunker Hill Forest preserve, Grove 4
(1.5 mile marker)

OAK FOREST

Mondays, 6:00 p.m.

Running for Kicks, 127th & Harlem,
Palos Heights

Wednesdays, 6:00 p.m.

Speed Work Chicago Christian High School, Route 83 between Ridgeland and Harlem

SCHAUMBURG

Wednesdays 6:00 p.m.

Speed Work Harper College Track,
1200 W. Algonquin Rd., Palatine

WHEATON

Tuesdays, 6:00 p.m.

Speed Work Dick Ponds Athletics,
2775 Maple Avenue, Lisle

Thursdays, 6:30 p.m.

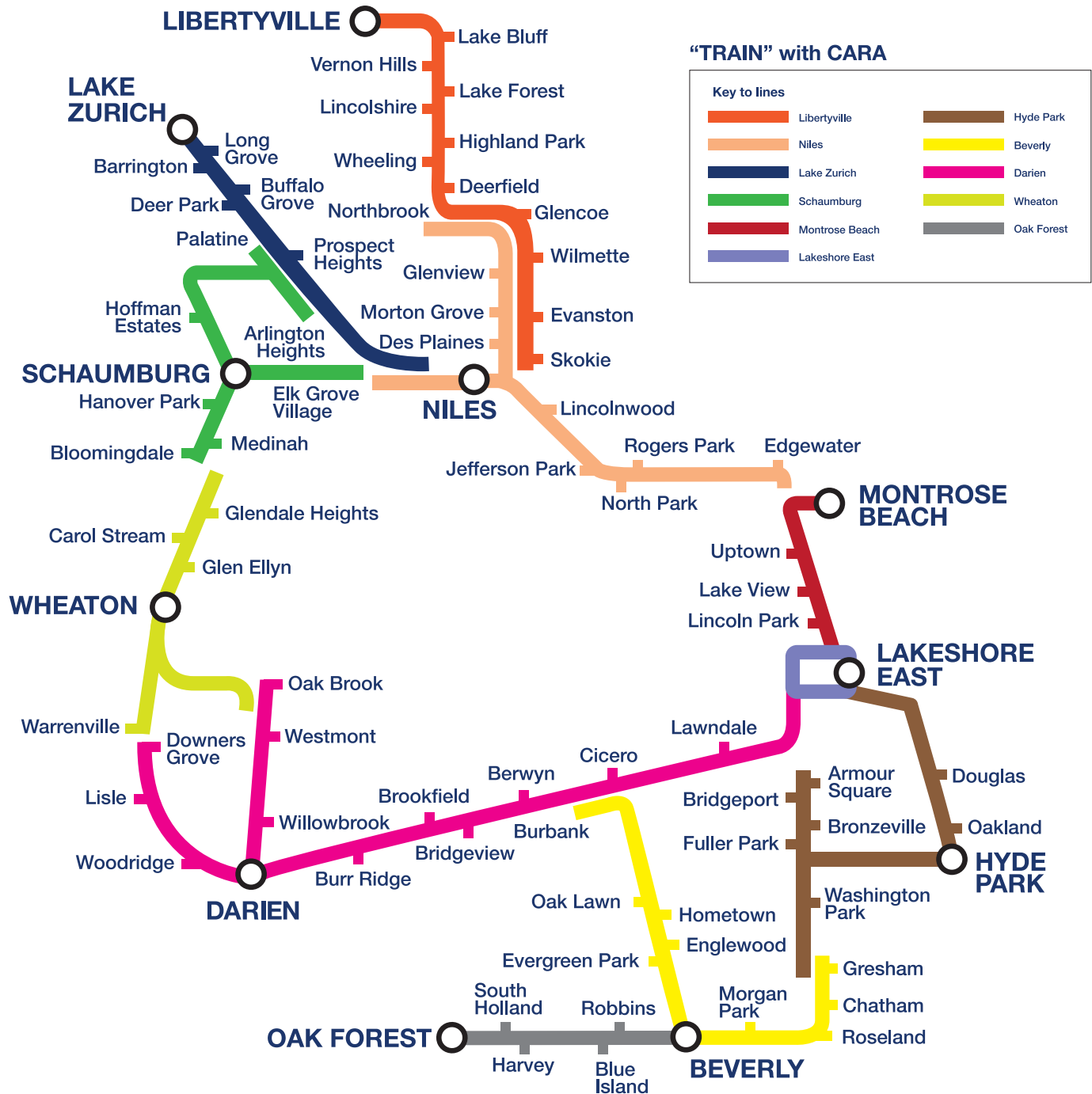
Mid-week/Tempo Runs Road Runner Sports, 2555 W. 75th Street, Naperville

PARKING AND DIRECTIONS

For specific instructions on parking, available transportation, and directions to the weekend runs, call the CARA office at 312.666.9836 Monday-Friday between 9 a.m. and 5 p.m. After hours, please contact the appropriate Site Coordinator.

CHICAGO AREA RUNNERS ASSOCIATION

2015 SUMMER MARATHON TRAINING





THE UNIVERSITY OF CHICAGO MEDICINE

Orthopaedics Center

The University of Chicago Medicine Orthopaedics Center offers a full and attractive spectrum of non-surgical and surgical clinical services – preventive, primary and complex. Some of our latest additions include hip preservation and cartilage restoration, spine care, bone infection care and a fragility fracture prevention and treatment program.

As the official hospital of CARA, we are happy to be a part of CARA's mission to connect runners to resources that enable them to run—farther, faster, better, for life.

For a quick recovery, with little or no pain, turn to the Best Minds in Sports Medicine. To make an appointment with any of our physicians, please call UCM Connect at 1.888.824.0200. For more information about the services offered, visit us at uchospitals.edu/ortho.

NUTRITIONAL CONSIDERATIONS FOR RUNNERS

Nutritional Considerations for Training and Sports Competition by Ryan Hudson, MD, Non-Operative Sports Medicine Specialist, The University of Chicago Medicine Orthopaedics Center

As a runner, your overall diet is not only important to your health, but can also greatly impact your performance. Runners need to remember to maintain good nutrition habits before, during and after their runs. Some things to consider are your pre-workout meal, your glycemic index, eating during exercise and a high fat versus low fat diet.

PRE-WORKOUT MEAL

Aerobic performance depends on glycogen stores in the body (carbohydrates); it's what fuels our muscles. These stores become depleted during sleep and other periods of fasting. That is why eating a pre-workout meal is vital to fueling your run. The key components of the pre-workout meal are carbs and hydration. The best timing is 3 hours prior to working out to give time to digest, absorb and store energy. But, if you can't allow 3 hours before exercise, it's especially important to avoid foods high in fat, fiber and protein because they digest slowly and remain in the digestive tract longer.

GLYCEMIC INDEX

The Glycemic index is a means to measure how carbohydrates affect blood sugar levels. Prior to exercising, it is best to

eat carbohydrates with moderate to low glycemic index (i.e. whole wheat toast or oatmeal.) This is to avoid a rebound hypoglycemic (low blood sugar) event that can be caused by an insulin surge associated with high glycemic foods. However, eating foods with high glycemic index is not always bad. In fact, during the energy starved state of the body after intense exercise, the best way to replenish glycogen stores is with foods that have a higher glycemic index. Examples of high glycemic foods are a banana or white bread.

EATING DURING EXERCISE

High intensity aerobic exercise for 1 hour will deplete glycogen energy stores by about 55% and after 2 hours of vigorous exercise our glycogen stores are practically gone. Consuming about 60 grams of liquid or solid carbohydrates each hour of exercise has been shown to benefit performance for endurance events. Both our energy needs and fluid requirements can simply be met by drinking 1-2 oz per hour of a drink that contains between 4-8% concentration of carbohydrates (most sports drinks or gels).

HIGH FAT VS. LOW FAT DIET

Studies show that runners perform much better eating diets with carbohydrates. While recently there have been some very popular high protein and high fat diets, a balanced diet that includes carbohydrates will give you the best performance advantage.

OTHER SUPPORTERS



MARATHON (NOVICE)

WEEK	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
6/8 - 6/14	REST	3 MI.	3 MI.	3 MI.	REST	6 MI.	CROSS
6/15 - 6/21	REST	3 MI.	3 MI.	3 MI.	REST	7 MI.	CROSS
6/22 - 6/28	REST	3 MI.	4 MI.	3 MI.	REST	5 MI.	CROSS
6/29 - 7/5	REST	3 MI.	4 MI.	3 MI.	REST	9 MI.	CROSS
7/6 - 7/12	REST	3 MI.	5 MI.	3 MI.	REST	10 MI.	CROSS
7/13 - 7/19	REST	3 MI.	5 MI.	3 MI.	REST	7 MI.	CROSS
7/20 - 7/26	REST	3 MI.	6 MI.	3 MI.	REST	12 MI.	CROSS
7/27 - 8/2	REST	3 MI.	6 MI.	3 MI.	REST	13 MI.	CROSS
8/3 - 8/9	REST	3 MI.	7 MI.	4 MI.	REST	10 MI.	CROSS
8/10 - 8/16	REST	3 MI.	7 MI.	4 MI.	REST	15 MI.	CROSS
8/17 - 8/23	REST	4 MI.	8 MI.	4 MI.	REST	16 MI.	CROSS
8/24 - 8/30	REST	4 MI.	8 MI.	5 MI.	REST	12 MI.	CROSS
8/31 - 9/6	REST	4 MI.	9 MI.	5 MI.	REST	18 MI.	CROSS
9/7 - 9/13	REST	5 MI.	9 MI.	5 MI.	REST	14 MI.	CROSS
9/14 - 9/20	REST	5 MI.	10 MI.	REST	5 MI.	REST	READY TO RUN 20 MILER
9/21 - 9/27	REST	5 MI.	8 MI.	4 MI.	REST	12 MI.	CROSS
9/28 - 10/4	REST	4 MI.	6 MI.	3 MI.	REST	8 MI.	CROSS
10/5 - 10/11	REST	3 MI.	4 MI.	2 MI.	REST	REST	RACE!

Tuesday or Wednesday runs can be replaced with speed work.

Note: While these plans have been proven effective, it is important to listen to your body. If you are tired or hurt, please reduce mileage and call NovaCare's 24-Hour Injury Prevention Hotline. It is better to step back for a few days then to push through and risk injury or burn out. Eighteen weeks is a long training period and we want you to enjoy each step of the way! Don't worry about your mileage, just call the CARA Office and we can help get you back on track!

MARATHON (INTERMEDIATE)

WEEK	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
6/8 - 6/14	3 MI.	5 MI.	4 MI.	3 MI. TEMPO	REST	8 MI.	CROSS
6/15 - 6/21	3 MI.	5 MI.	4 MI.	3 MI. MP	REST	9 MI.	CROSS
6/22 - 6/28	3 MI.	5 MI.	4 MI.	3 MI. TEMPO	REST	6 MI.	CROSS
6/29 - 7/5	3 MI.	6 MI.	4 MI.	4 MI. TEMPO	REST	11 MI.	CROSS
7/6 - 7/12	4 MI.	6 MI.	5 MI.	4 MI. MP	REST	12 MI.	CROSS
7/13 - 7/19	4 MI.	5 MI.	5 MI.	6 MI. EASY	REST	9 MI.	CROSS
7/20 - 7/26	4 MI.	7 MI.	5 MI.	5 MI. TEMPO	REST	12 MI.	CROSS
7/27 - 8/2	4 MI.	7 MI.	5 MI.	5 MI. MP	REST	15 MI.	CROSS
8/3 - 8/9	5 MI.	5 MI.	6 MI.	7 MI. EASY	REST	11 MI.	CROSS
8/10 - 8/16	5 MI.	8 MI.	6 MI.	6 MI. TEMPO	REST	17 MI.	CROSS
8/17 - 8/23	5 MI.	8 MI.	6 MI.	7 MI. MP	REST	18 MI.	CROSS
8/24 - 8/30	5 MI.	5 MI.	6 MI.	8 MI. EASY	REST	13 MI.	CROSS
8/31 - 9/6	5 MI.	8 MI.	7 MI.	5 MI. EASY	REST	20 MI.	CROSS
9/7 - 9/13	6 MI.	5 MI.	7 MI.	8 MI. TEMPO	REST	14 MI.	CROSS
9/14 - 9/20	6 MI.	8 MI.	7 MI.	5 MI. MP	REST	REST	READY TO RUN 20 MILER
9/21 - 9/27	6 MI.	6 MI.	5 MI.	4 MI. EASY	REST	12 MI.	CROSS
9/28 - 10/4	4 MI.	5 MI.	4 MI.	3 MI. EASY	REST	8 MI.	CROSS
10/5 - 10/11	3 MI.	4 MI.	OFF	2 MI. EASY	REST	REST	RACE!

For runs done at tempo and marathon pace, please warm-up and cool down for one to two miles before and after. Speed work/track work may be substituted for Tuesday or Wednesday runs.

SUPPORTING STORES

CARA would like to extend a special thanks to our supporting retailers. All of these locations help out with mid-week runs, speed training or hydration for the long runs. Be sure to stop by our sponsor and partner stores and stock up on all your running needs! We couldn't do this without them!



MARATHON (ADVANCED)

If you are unsure of pacing info, we recommend using [McMillan Pace Calculator](#) or contacting Training Program Manager, Meg Sullivan.

WEEK	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
6/8 - 6/14	6 MI. EASY	2 MI. WU, 4X3:00 HARD, 3:00 EASY*	6 MI. RECOVERY	2 MI. WU, 3 MI. MP, 1 MI. CD	REST	8 MI.	4 MI. RECOVERY
6/15 - 6/21	6 MI. EASY	2 MI. WU, 3 MI. TEMPO, 2 MI. CD	6 MI. RECOVERY	6 MI. EASY	REST	10 MI.	4 MI. RECOVERY
6/22 - 6/28	6 MI. EASY	2 MI. WU, 5X800M W/ 2 MIN. REST, 2 MI. CD, 4 MI. PM	6 MI. RECOVERY	2 MI. WU, 4 MI. MP, 1 MI. CD	REST	9 MI.	4 MI. RECOVERY
6/29 - 7/5	7 MI. EASY	2 MI. WU, 4X4:00 HARD, 3:00 EASY, 2 MI. CD	6 MI. RECOVERY	2 MI. WU, 4 MI. MP, 2 MI. CD	REST	13 MI.	5 MI. RECOVERY
7/6 - 7/12	8 MI. EASY	2 MI. WU, 4 MI. TEMPO, 2 MI. CD	6 MI. RECOVERY	8 MI. EASY	REST	14 MI.	6 MI. RECOVERY
7/13 - 7/19	8 MI. EASY	2 MI. WU, 6X800M W/ 1:30 MIN. REST, 2 MI. CD, 4 MI. PM	6 MI. RECOVERY	8 MI. EASY, 4 MI. PM	REST	10 MI.	6 MI. RECOVERY
7/20 - 7/26	8 MI. EASY	2 MI. WU, 5X1 MI. W/ 2 MIN. REST, 2 MI. CD	6 MI. RECOVERY	2 MI. WU, 5 MI. MP, 2 MI. CD	REST	16 MI.	6 MI. RECOVERY
7/27 - 8/2	8 MI. EASY, 4 MI. PM	2 MI. WU, 5 MI. TEMPO, 2 MI. CD	6 MI. RECOVERY	8 MI. EASY	REST	18 MI.	6 MI. RECOVERY
8/3 - 8/9	8 MI. EASY, 4 MI. PM	9 MI. W/ LAST 4 MI. @ MP	6 MI. RECOVERY	2 MI. WU, 6 MI. MP, 2 MI. CD	REST	12 MI.	7 MI. RECOVERY
8/10 - 8/16	9 MI. EASY	2 MI. WU, 5X1 MI. W/ 1:30 MIN. REST, 2 MI. CD	7 MI. RECOVERY	2 MI. WU, 8 MI. MP, 2 MI. CD	REST	19 MI.	7 MI. RECOVERY
8/17 - 8/23	8 MI. EASY, 4 MI. PM	2 MI. WU, 8 MI. TEMPO, 2 MI. CD	8 MI. RECOVERY	10 MI. EASY	REST	20 MI.	8 MI. RECOVERY
8/24 - 8/30	8 MI. EASY	2 MI. WU, 8X800M W/ 1:30 MIN. REST, 2 MI. CD, 4 MI. PM	6 MI. RECOVERY	2 MI. WU, 6 MI. MP, 2 MI. CD	REST	13 MI.	8 MI. RECOVERY
8/31 - 9/6	8 MI. EASY	2 MI. WU, 10 MI. MP, 2 MI. CD	6 MI. EASY, 4 MI. PM	8 MI. EASY	REST	22 MI.	8 MI. RECOVERY
9/7 - 9/13	8 MI. EASY	2 MI. WU, 10X800M W/ 1:00 MIN. REST, 2 MI. CD	6 MI. EASY	10 MI. EASY	REST	14 MI.	8 MI. RECOVERY
9/14 - 9/20	8 MI. EASY, 4 MI. PM	10 MI.	6 MI. RECOVERY	2 MI. WU, 6 MI. MP, 2 MI. CD	8 MI.	REST	READY TO RUN 20 MILER
9/21 - 9/27	8 MI. EASY, 4 MI. PM	2 MI. WU, 6X1 MI. W/ 1:30 MIN. REST, 2 MI. CD	6 MI. EASY	2 MI. WU, 6 MI. MP, 2 MI. CD	OFF	12 MI.	8 MI. RECOVERY
9/28 - 10/4	8 MI. EASY	2 MI. WU, 4 MI. TEMPO, 2 MI. CD	6 MI. RECOVERY	6 MI. EASY	OFF	10 MI.	REST
10/5 - 10/11	3 MI. EASY	5 MI. W/ LAST 2 AT MP	4 MI. EASY	REST	3 MI. W/ STRIDES	REST	RACE

When you see PM in the training schedule, it indicates a second run for the day, which should be done in the evening. You will do one run in the morning and one at night

* WU=warm up, CD=cool down, PM=double run, MP=marathon pace

PROGRAM EVENTS



READY TO RUN 20 MILER

On September 20th, join us for the 8th annual Ready to Run 20 Miler! This year, CARA expects more than 4000 runners to take on the challenge of running the entire Chicago lakefront path from “top to bottom.”

DATE

Sunday, September 20

START TIME

6:30 a.m. first wave start. See below for information on wave start times

LOCATION

Start is staged at Foster Avenue and Lake Shore Drive

COURSE INFORMATION

The course is a point-to-point course which starts at Foster Avenue and runs north to Hollywood before turning south to follow the entire Chicago Lakefront path, finishing at Jackson Park.

WAVE START

Runners will step off according to pace in groups of 50 runners at a time, spaced one minute apart. The faster runners (7:00 minute/mile and faster) will start first, and be followed by subsequent groups (7:30 minute/mile, then 8:00 minute/mile, etc.) This event is NOT a race, but a training event. Runners will be led by pace group leaders to maintain a steady pace for the length of the run. Pace time should be selected at registration for proper wave group assignment. Wave start time will be out at packet pickup.

AID STATIONS

The course includes 10 fully supported aid stations, approximately every two miles. Ice Mountain water and Gatorade will be served at all stations, with additional nutrition available later in the course.

TRANSPORTATION FROM FINISH

Buses will leave Jackson Park every 30 minutes, beginning at 9:00 a.m., to transport runners back to Foster Avenue Parking lot.

GEAR CHECK

Runners will be able to drop their gear at the start, by 6:30 a.m., and retrieve their gear bag at the finish line.

FINISH LINE CELEBRATION

After running 20 miles, you should celebrate! After finishing, runners will be greeted by live music, post-run snacks and beverages! Jackson Park has a beautiful picnic area where runners can congregate to stretch, refuel and dance if you want to!

RUNNER PREMIUMS

All finishers are winners and receive a one of a technical t-shirt proclaiming that they are finishers of the Ready to Run 20 Miler.

ADDITIONAL INFORMATION

The Ready to Run 20 Miler is included in the price your Marathon Training Program registration fee. (Must be a current CARA member to take advantage of this) This event takes the place of CARA's regular weekend long runs.

MARATHON CHECK LIST

BEFORE/DURING RACE

- ☐ Race E-mail Confirmation
- ☐ Race Bib/Timing Chip/Race Belt
- ☐ Racing/Running Shoes
- ☐ Warm Up Clothes for Corral (tossable)
- ☐ Sports Bra/Race Singlet
- ☐ Socks
- ☐ Watch/GPS/Heart Rate Monitor
- ☐ Energy Gels/Bars
- ☐ Hydration Belt/Water Bottle
- ☐ Visor/Hat
- ☐ Sunglasses
- ☐ Gloves/Arm Warmers
- ☐ Race Number/Race Belt
- ☐ Body Glide
- ☐ If Allowed, Charged MP3 Player
- ☐ Sunscreen

POST RACE

- ☐ Gear Check Bag
- ☐ Post Race Clothes
- ☐ Compression Apparel/Socks
- ☐ Change of Shoes/Flip Flops
- ☐ Recover Drink/Recovery Bar
- ☐ Advil
- ☐ Post Race Baby Wipes
- ☐ Predetermined Meet Up Spot
- ☐ Socks

** Additional Tip: The arrival of warm weather brings with it the malady of chafing. Balms, such as Body Glide or Run Guard, may become your summer friend. Anywhere skin meets fabric or skin meets skin can become a site of soreness. You can help prevent the friction that causes chafing by applying before your run. Body Glide/Run Guard is not oil based like Vaseline. Thus, it's mess free and kind to your tech fabrics.*

CARA POLICIES

CARA ID SHOE TAG

Along with this packet, you received an ID tag to be worn on your running shoe. This must be worn at all times during your weekend training runs. If this is lost or misplaced, you must contact the CARA office for another one. **The replacement ID shoe tag will cost \$50.** Your group leaders will be checking to see that these IDs are being worn. Please don't lose it!

WEATHER POLICY

We will run in the rain, but will not run if lightning is present. If the run has not started, we will wait a reasonable amount of time to determine if the bad weather will pass, or if the run should be cancelled. If lightning occurs during a run, seek shelter, such as an underpass or building. Stay away from open areas or trees.

We will run in hot weather. However, the pace will be slower and there will be more frequent stops at aid stations on those runs. If the heat is severe, the run distance may be shortened.

Be alert for signs of heat related illnesses (light headedness, cramps, headache, chills, lack of sweat, red complexion). If any symptoms occur, notify your group leader immediately. It may be necessary to quit running for that day.

HOW TO DETERMINE IF A RUN IS CANCELED

If a Saturday group run is canceled by 4 p.m. on Friday, we will notify participants by e-mail. We will also post this information on our Facebook page.

In the case of a run begin canceled after business hours on Friday, we will:

- Post a cancellation notice on our Facebook page
- Leave a special voice mail on our phone system. This message can be accessed by dialing (312) 666.9836 ext. 16.

WITHDRAWAL FROM THE PROGRAM

If you are considering withdrawing from the program, notify your Group Leader. If you do withdraw, please contact the CARA office and indicate the reason for dropping withdrawal: injury, busy schedule, moving, etc. Your comments and feedback are helpful to us in improving the program. Sorry, but there will be no registration fee refunds or rebates after the programs have started.

QUESTIONS

We encourage runners to ask questions about their training schedules or possible injuries. It is important to identify injuries early, seek help and advice, and treat progressively. Contact the 24-Hour Injury Prevention Hotline (1-866-TRY-NOVA) with any injury related questions. Rest is often the best treatment for an injury and runners may have to revise their training schedules and goals should an injury occur. It is important to be flexible and willing to customize your training schedule to your particular needs. If you have any questions, please contact Training Program Manager, Meg Sullivan at megan@cararuns.org or (312) 666.9836.

LONG RUN GUIDELINES

Runners will be divided into pace groups based on their marathon training goal. Depending on the numbers and abilities of runners, there may be a pace group for each half-minute increment from 7:00 minutes per mile to 12:00 minutes per mile for the program. Because of our large numbers, there may also be several separate groups for a specific pace. To facilitate and speed up the aid stations, every attempt will be made to limit the size of each group to 15 runners or less. Each pace group will be led by a volunteer CARA Group Leader.

RUNNER INFORMATION

INADEQUATE BASE OR LONG RUN

All runners in the CARA training program should have been running regularly for at least one year and have a training base of at least 20-25 miles per week with a weekly long run of at least 6 miles. In spite of our attempts to screen participants, some runners may begin the program inadequately prepared. Attempts to increase weekly mileage or long runs too quickly may cause injury.

PACE

First time marathoners should be running at a relaxed training pace. If you are breathing hard or having trouble talking, you are running the long run too fast. Switch to a slower pace group on the next run. Please do not run ahead of your pace group, this throws off the pace for the group. If they are too slow for you then run with the next faster group. Runners are welcome to switch pace groups at any time. It may take several weeks to find the right pace and group to fit your needs.

Group Leaders will try to maintain a consistent pace. If they err, hopefully it will be slower, rather than faster, than the target pace. The target pace can vary by 10 seconds. The long run pace is supposed to be slow and comfortable.

Wear a running watch. A watch that records split times is ideal. Practice monitoring your splits in preparation for your race. Stop your watch during the water breaks. This time should not be included in your pace calculation. Runners should not be concerned about time lost at water stops.

GATORADE AND WATER STOPS

Water and Gatorade will be available at the training start area and at regular intervals as distance increases.

RUNNING IN THE HEAT

One of the biggest challenges a runner faces is running in heat. Running in heat can lead to dehydration and heat illness. As with running in the cold, the apparent temperature consists of the air temperature combined with another environmental measurement, in this case relative humidity. While running, the body produces excess heat which leaves the body and is dissipated into the environment. When the apparent temperature begins to reach core body temperature, the body has a harder

time dissipating the heat, and the risk of heat illness increases. The mechanism by which the body dissipates heat into the environment is evaporation of sweat. As we sweat more in the heat, the body requires increased replacement of fluids and electrolytes. Avoiding dehydration by taking in appropriate fluids while running in the heat is paramount in the prevention of heat illness and to allow for maximum performance. Acclimatization of the body to hot and humid environments can help avoid heat illness.

Heat illness can range from heat cramps, when the body loses enough fluid and electrolytes to cause muscle cramps and pain, to heat stroke, which is a life threatening condition resulting from the failure of the thermoregulatory mechanism of the body.

In addition to adequate hydration, consider running earlier or later in the day and wearing clothing that facilitates the dissipation of sweat from your body and blocks harmful UV rays as strategies for avoiding heat illness and dehydration.

LEVEL OF RISK	EARLY ALERT SYSTEM (EAS) FLAG COLOR	RECOMMENDATIONS
LOW (WBGT <65)	GREEN	HAVE FUN!
MODERATE (WBGT 65.1-72.9)	YELLOW	HIGH RISK RUNNERS (CHILDREN/DIABETES/THYROID DISORDERS/INFECTION/ OTHER MEDICAL CONDITIONS) SHOULD CONSIDER NOT RUNNING
HIGH (WBGT 73-81.9)	RED	HIGH RISK RUNNERS SHOULD NOT RUN SLOW PACE BY :30 PER MILE OR RUN HALF THE DISTANCE IN THE MORNING AND THE OTHER HALF LATER IN THE DAY OR THE FOLLOWING DAY
VERY HIGH (WBGT >82)	BLACK	CONSIDER CANCELLING EVENT OR POSTPONING RUN TOWARD EVENING OR VERY EARLY MORNING

Site Coordinators will be reviewing temperature and humidity on our long runs and advising runners using the EAS flagging system. This is the same system the Bank of America Chicago Marathon (and most races) use.

CROSS TRAINING

Why cross train? Cross training can help prevent injuries and alleviate the stress of current ones. An injured runner can choose from a wide array of cross training activities which will work muscle groups, tax cardiovascular capacity and provide a welcome respite from the pounding of the pavement. There’s also the matter of diversion. Running is supposed to be fun. A second (or third) sport can alleviate monotony and inject a little joy into training. We recommend choosing an activity that is not weight bearing to complement running (i.e. cycling, elliptical, or swimming).

RUNNING FORM

The better the form, the more efficient the runner. The more efficient the runner, the faster he or she can go with less effort and energy. But recommending changes to a runner’s lower body form can cause even more problems since the alterations may be too unnatural. It is best to concentrate on the upper body form.

The upper body ultimately affects what runners do from the waist down. Improper upper body movement during running results in improper leg lift. The biggest form problem is improper use of the shoulders and arms. The shoulders are too high, the arms too low or too high and too much arm cross over while running.

Advice – Run tall with a long neck. Pull elbows back far enough to see a “triangle of light” between your arms and your upper body. Good posture and pump your arms.

SAFETY TIPS WHEN RUNNING ON YOUR OWN:

1. Always carry the following items:
 - Personal identification
 - Pertinent medical information
 - Money for a phone call or public transportation.
2. Run in safe zones: running trails, sidewalks, or roadways with wide shoulders.
3. Run with a partner.
4. Run in daylight and wear brightly colored clothing.
5. If you must run in the dark, be sure it is a well-lit area and that you wear reflective and/or light clothing and use lights and reflectors.
6. Run in populated areas.
7. Obey traffic laws. Yield the right of way to anything that is larger and/or faster than you (cars, bikes, rollerbladers, etc.).
8. Watch for cross traffic at streets, alleys, and crosswalks. Run behind stopped vehicles.
9. Consider carrying a whistle and/or protective spray to ward off unwelcome people and/or dogs.
10. Be alert to danger sounds. Headphones will not be allowed on group training runs. If you choose to wear headphones (and you really shouldn't), keep the volume low enough to hear vehicular and people traffic around you.
11. Wear sunscreen, sunglasses, hat
12. Running in the rain can be fun, but do not run if lightning is present.

PATH ETIQUETTE

****Very important for high traffic paths such as Lincoln Park!**

Please follow these rules to help protect you and others!

- Slower runners should stay to the far right side of the path. Faster or passing runners should be on the left and announce that you are passing.
- When running with partners, **never run more than two abreast**. Be sure to leave enough room for others using the path.
- Do not stop in the middle of the path or block traffic. Be sure to pull off to the side if you need to rest or when you stop for water. Be alert!
- Before crossing the path or moving towards the center, look behind you for oncoming traffic.

GEAR

SHOES

A good pair of running shoes is essential for prevention of injuries. There are many good training shoes on the market but many runners are unsure about what to shop for. Today there is a shoe for every type of runner. We recommend you shop at a store that specializes in running shoes and has experienced sales help. Frequent shoe problems include:

WRONG TYPE OF SHOE

- Stiffness may cause Achilles problems
- Pronators may need a shoe with more support
- Supinators may require extra cushioning
- Heavier runners may need extra support

WRONG SIZE

- Too small can cause blackened or loosened toe nails
- Too large may cause blisters
- Recommended fit is one thumbnail between the big toe and the end of the shoe.
- A good running shoe should feel too long but never too wide

WORN OUT

- Depending on the individual, shoe life expectancy is 350 to 450 miles

NEW SHOES

- You may have to get used to a pair of new shoes but you shouldn't have to break them in
- Use a pair that you have used for a while on your long runs
- Alternate between two or more pairs if possible
- Do not use a new pair of shoes on race day. Run the half marathon in shoes that have been tested on a long training run.

ORTHOTICS

(Inserts that fit into your shoe and help improve your running gait)

Not all runners need orthotics. If a problem persists, consider seeing a reputable podiatrist or orthopedic surgeon for a proper evaluation. There have been instances when runners have been fitted with orthotics that they didn't need, or were inappropriate for them. We recommend you get a second opinion.

INJURY PREVENTION & TREATMENT CHECKLIST

Getting to the starting line injury free should be your primary goal. This Checklist may help you avoid an injury and achieve that goal. Warning signs such as fatigue, muscle soreness, loss of appetite and insomnia precede most major injuries, and often indicate that training loads have become too heavy. These symptoms usually improve after sufficient rest. By paying attention to minor injuries, such as nagging aches and pains, most major injuries can usually be avoided.

OVERUSE/OVERTRAINING

One of the most common causes of injuries is overuse. Runners who push their bodies too far, too fast, develop overuse injuries. The most common causes are:

- Too much mileage
- Increasing mileage (long run or weekly) too quickly
- Too much hill work or speed work
- Too many races
- Not enough rest days
- Running the long run too fast

If you identify one of these areas as a possible problem, we recommend that you decrease your mileage and slow down your pace.

RUNNING SURFACES

Many injuries are related to the type of surface used in training. Hard ones like cement jar the legs, causing muscle soreness and foot, tendon and joint injuries. Runners who train on residential streets take a greater pounding because of concrete and curb hopping. We recommend that you try to find softer surfaces on which to train: parks, paths, forest preserve trails, golf courses, infields of tracks and dirt roads.

STRETCHING

Flexibility is often overlooked as a cause of injury. Proper stretching is key to injury prevention and performance enhancement. Benefits of stretching include:

- Minimize abnormal stresses to joints and soft tissue
- Prepare muscle for the demands of activity
- Promote circulation
- Maintain normal range of motion of a joint
- Increase mental and physical relaxation
- Reduce muscular tension/soreness
- Enhance kinesthetic and proprioceptive awareness

HOW TO STRETCH

Static stretching involves reaching to the farthest point and holding that position for a period of time no less than 20-30 seconds. Static stretching is the most beneficial and safest means of promoting flexibility. Dynamic stretching is another way to warm up your muscles and achieve flexibility to your muscles before your run. Other benefits are:

1. Requires very little energy expenditure
2. Permits a semi-permanent change in muscle length
3. Can promote muscular relaxation

Ballistic stretching involves bobbing, bouncing and rebounding types of movements and is not recommended. It can cause severe soreness, injury, and increases muscular tension.

WHEN TO STRETCH

Stretching can be done before a workout, but only after a warm up. Never stretch as a warm up. We recommend Dynamic stretching as a warm up. The goal of stretching at this time is for comfort during the run. After a proper cool down—when breathing and heart rate have returned

to normal, it is advised to stretch again. The goal at this time is to improve flexibility. This is a good time to stretch because the muscles are warm and pliable. Also, stretching at this time flushes lactic acid from the muscles, leaving you well prepared for your next run. Proper stretching at this time prevents muscle soreness and promotes long-term flexibility.

STRENGTH BUILDING EXERCISES

Muscle groups work in opposing pairs. Running stresses certain muscle groups without strengthening the opposite muscle. Muscle imbalance results, leading to injuries. Strengthening the opposing muscle groups may alleviate the imbalance. For example, crunches can be done to strengthen abdominal muscles, which may alleviate lower back pain.

Building upper body strength can benefit runners in the later stages of the marathon or half-marathon since arm motion will be improved. Runners are not advised to “pump up” their bodies with heavy weights, but weight training with moderate weights and numerous repetitions is often recommended.

PROGRESSIVE TREATMENT

Many runners develop injuries at some time or another, but with proper treatment these problems will not interfere with long range goals. A common cause of serious injury is neglecting minor problems. A runner must listen to his or her body and take appropriate steps when injuries develop.

Treatment for an injury should be recommended in the following order. If any injury does not respond to a treatment or a change in training regimen, the next level of treatment should be sought.

Continued on next page

Continued from previous page

- Rest, Ice, Compression, Elevation
- Aspirin or Ibuprofen to prevent inflammation, not to mask pain
- Massage Therapy
- Podiatrist
- Physical Therapist
- Sports Medicine Physician
- Orthopedic Surgeon

INJURY HOTLINE

If you have questions or concerns regarding the prevention and treatment of common sports-related injuries or conditions, please call the NovaCare Rehabilitation Hotline at **866-TRY-NOVA (866-879-6682)**.

Please leave a detailed message, including a convenient time you can be reached and your call will be return within 24 hours.

Always consult with your physician or other qualified health care provider before embarking on a new treatment, diet, or fitness program. Brought to you by NovaCare Rehabilitation.



Facebook.com/NovaCareChicago



DYNAMIC WARM-UP

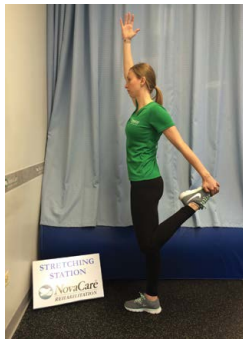
DRILLS SHOULD BE DONE 1-2 MINUTES EACH (5-10 MIN WARM-UP) BEFORE YOUR RUN.



KNEE TO CHEST WALK

Stretches back, gluteals, and piriformis

- Hug knee as you walk with alternating steps



QUAD REACH WALK

Stretches quad and hip flexor

- Grab left ankle with left hand and bring your heel towards your gluteals
- Raise opposite arm
- Alternate steps.



RUSSIAN WALK

Stretches hamstrings.

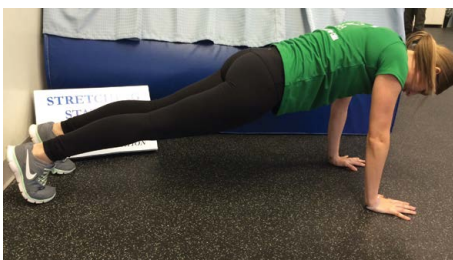
- March forward while kicking leg straight up towards your hands



CROSS-OVER RUSSIAN WALK

Stretches IT band

- Same as Russian Walk, but kick leg out across body and touch foot with opposite hand

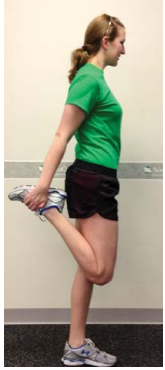


INCH WORM

Stretches calves and hamstrings

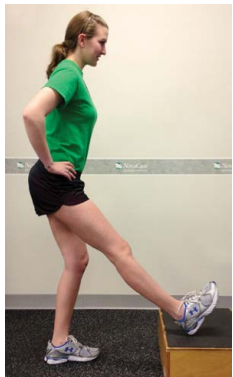
- Start off in push up position
- Walk feet towards your hands (pike position), then walk hands out back to push up position

COOL DOWN STRETCHES



QUAD STRETCH

- Perform this stretch by bringing the heel of one foot up towards buttock
- Knee should point towards the ground and stand tall with tight abdominals
- Standing leg should be slightly bent
- Stretch should be felt in the front of the thigh
- Hold stretch 20 seconds and repeat 3 times



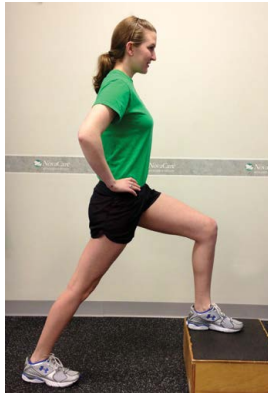
HAMSTRING STRETCH

- Perform this stretch by placing heel on an object about 16 inches off the ground on a low bench or stair step
- Keeping abdominals tight, lean forward keeping back straight
- Exercise should be felt on back of thigh
- Hold stretch for 20 seconds



CALF STRETCH

- Perform Gastroc stretch by placing hands up against wall
- Bring one leg behind the other into a lunge position
- Be sure back leg is straight with heel on the floor
- Lean into wall until stretch is felt in calf
- Hold stretch for 20 seconds and repeat 3 times
- To stretch Soleus muscle change back leg so there is a slight bend, keeping heel on the floor
- The stretch should be felt closer to the heel (Plantar-surface of foot)
- Hold stretch for 20 seconds and repeat 3 times



HIP FLEXOR STRETCH

- Perform stretch by placing foot up on a bench or stair-step
- Place hands over head and rotate up and away from standing leg
- Bring hips forward and away from standing leg until a stretch is felt on front of hip
- Hold stretch for 20 seconds and repeat 3 times



ILIOTIBIAL BAND/IT BAND STRETCH

- Perform IT band stretch by standing parallel to wall
- With right hand on wall, put left foot in front of the right foot so heel of left foot is against toe of right
- Then lean upper body away from object while pushing right hip towards wall
- Stretch should be felt over outside of right hip
- Hold stretch for 20 seconds and repeat 3 times

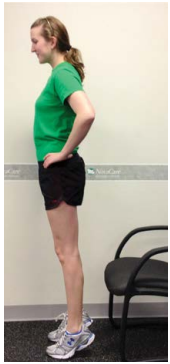


PIRIFORMIS (FIGURE 4) STRETCH

- Lay on back with right knee bent and left ankle resting on knee
- Pull left knee towards right shoulder until stretch felt in left buttocks
- Repeat with other leg
- Hold stretch for 20-30 seconds and repeat 3 times

RUNNING SPECIFIC EXERCISES

THESE EXERCISES SHOULD BE PERFORMED 2-3X/WEEK TO PREVENT INJURIES AND ENHANCE RUNNING TECHNIQUE AND EFFICIENCY.



CHAIR SQUAT WITH CALF RAISE

- Stand in front of chair
- Squat backward as if preparing to sit into chair, then return to standing*
- Once standing, perform calf raise by standing on tip toes
- Repeat 15 times/set; 3 sets/session

* During squat, focus on sitting back and allow minimal-to-no translation forward of knees, and keep trunk upright. To decrease difficulty, tap buttock onto chair, then return to standing.



CUP PICK UPS

- Stand on one leg between last two cups
- Rotating from hips, turn to face first cup
- Bend from waist, using back leg as a pendulum, to pick up cup
- Stand up straight and rotate back to a neutral position
- Repeat steps two and three to place the cup back in original spot
- Do this same sequence for all of cups, and repeat 3-5 times in each spot



THE BRIDGE

- This is a strengthening exercise for back, hamstring, quads, calves and gluteal muscles
- With knees bent and feet flat against floor, begin by contracting abdominal muscles to stabilize back, hips and pelvis
- Then lift hips up off the floor into a bridge so body forms one straight line from shoulders to knees
- Do not attempt to go higher than this position and do not allow your back to arch
- Beginners: Perform 3 sets of 8-10 repetitions



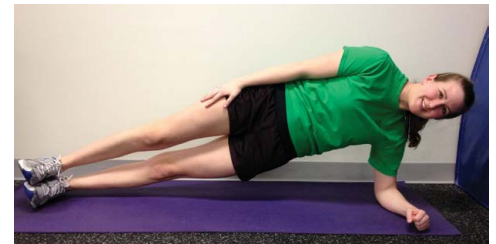
ADVANCE SINGLE LEG BRIDGES

- With legs bent, lift buttocks off floor
- Slowly extend right knee while keeping stomach tight
- Slowly lower buttocks back to ground while keeping right knee extended straight out
- Repeat on opposite side
- Repeat 10-15 times/set; 3 sets/session



ROSE WALL SLIDES

- Lay with back against the wall with both hips and shoulders "stacked"
- Raise top leg in an arc position
- Hold for approximately two seconds at the top of arc, and then lower leg back down
- Repeat sequence with opposite leg
- Repeat 10 times/set; 3 sets/session



SIDE PLANK

- With foot on ground, feet together, elbow and forearm on ground, push up into a side plank position
- Hold this position for 20-60 seconds
- Repeat 3 times on each side

Note: Modify by performing on knees instead of toes

Questions? If you have questions or concerns regarding the prevention and treatment of common running injuries, call the NovaCare Rehabilitation Injury Hotline, 866-TRY-NOVA. Visit us online: www.novacare.com/chicagoland.htm

WHY WORRY ABOUT SWEAT?

BY MONIQUE RYAN, MS, RD, CSSD, LDN

EXCERPT FROM SPORTS NUTRITION FOR ENDURANCE ATHLETES (VELOPRESS 2012)

When you train, heat is a major by-product of your working muscles. As this heat builds up, your body temperature rises. Water then acts as a coolant to keep the body from overheating. During exercise, sweating is the body's primary mechanism for getting rid of excess heat. Sweat losses can easily reach anywhere from 16 to 32 ounces (500–960 ml) and sometimes even 48 ounces (1.5 L) or more per hour depending on environmental conditions, exercise intensity, and the sweat rate of the individual athlete. Sweat losses can reach over 64 ounces (approximately 2 L) or more per hour in some runners, especially during hot-weather training.

HYDRATION AND FUELING STRATEGIES DURING TRAINING

Even when you start training well fueled, you can significantly drain your fluid stores, carbohydrates, and even electrolytes during moderate- to high-intensity training and during very prolonged training sessions. That's why consuming adequate fluid, carbohydrates, and electrolytes during training runs and races is beneficial to your performance. This practice brings you several benefits, such as:

- Delays and minimizes dehydration.
- Maintains blood glucose levels.
- Offsets muscle and liver glycogen depletion.
- Provides fuel for your brain.
- Offsets electrolyte losses, particularly sodium.

It is important to gauge your sweat losses during various types of runs in a number of environmental conditions. Athletes cannot train themselves to adapt to or tolerate dehydration. Preventing or minimizing it as much as possible is therefore essential. Just as sweat rates vary greatly among runners, however, there is also much variability in efforts to replace fluids during exercise. Ideally, runners should try to match their

fluid intake to their fluid losses; most runners fall short of this goal, however, replacing only 50 to 80 percent of their fluid losses during their training sessions even under the best of conditions. Even if you do make a strong effort to match your fluid losses, your gastrointestinal system can only absorb a certain volume of fluid per hour. Practical considerations, however, may be the main obstacle to adequate fluid replacement during exercise. Consuming the recommended amounts can be challenging because of the logistics of obtaining fluid when training and competing, limited opportunities to drink, taste preferences, and GI tolerances.

When you regularly train in the heat, your body does adapt, or acclimatize. As your conditioning improves, your sweat rate increases and there is greater blood flow to your muscles and skin. Your heart is able to pump more blood, and sweating begins at a lower core body temperature. Your core temperature will not rise as quickly or increase to as high a level when you are in an acclimatized state. Thus, when you are acclimatized you actually sweat more, not less. It is best if your skills at hydrating during exercising keep pace with your adaptation to heat so that you are adept at replacing these increased fluid losses.

ESTIMATE YOUR SWEAT LOSSES

Refer to the chart “Estimating Your Sweat Losses” for guidelines on estimating your fluid losses during training and gauging your efforts to rehydrate. Once you have come up with the best fluid strategies for the various types of training sessions that you engage in, it is up to you to make the most of your opportunities to drink during training. Regardless of your fluid-replacement strategies, you are more likely to consume fluids that taste good and are the proper temperature for your training conditions.

Not only do you need to focus on how much fluid to consume, you should also be aware of the most optimal and appropriate fluid choices for training in various environments and conditions. Commercial sports drinks are often used by runners not only because of their flavor but also because they provide fuel and electrolytes in the form of carbohydrates and sodium chloride.

FUEL REQUIREMENTS DURING EXERCISE

Due to the sheer length of many endurance sport workouts, and the high-intensity, intermittent nature of speed and interval training, fuel replacement can be an important consideration. Carbohydrates consumed during training can maintain blood glucose levels and provide fuel to glycogen-depleted muscles. In addition, carbohydrate consumption during interval training may allow your body to store glucose in the muscle fibers during the time those fibers are at rest. For example, as you exercise at low intensity between hard efforts, the muscle fibers that fuel the high-intensity efforts can be replenished.

Your brain can also benefit from carbohydrate intake during long, intense training sessions, as consuming only water can result in lowered blood glucose levels. Because your brain counts on glucose for fuel, lowered blood glucose can have some negative effects on your central nervous system. Having adequate blood glucose to fuel your brain helps you maintain the high level of skill required by your endurance sport. Carbohydrate intake can prevent or reverse symptoms of glucose deprivation such as fatigue, perception of increased effort, and poor coordination. Carbohydrates are thought to prevent the increase in brain serotonin levels that can occur during prolonged exercise. Serotonin produces feelings of drowsiness and fatigue and is helpful at bedtime, but not in the middle of a work-

Continued on next page

out when you want to make the most of the time available to reach your fitness goals.

ESTIMATING YOUR SWEAT LOSSES

This technique for estimating sweat losses is fairly accurate, especially in warm-weather training. Use it to check your sweat losses for various types of runs, whether indoors or out, to better estimate fluid needs.

- Check your weight on the scale before and after running. Both weigh-ins should be done in the nude, and after training be sure to towel dry to eliminate most of the sweat on your body. Then, calculate your weight loss from the exercise session by subtracting the post-training weight from the pre-training weight. For example, an athlete who started a two workout session at 160 pounds and ended it at 158 pounds has experienced a two-pound loss of water weight during training. This is not the final answer, however, because the runner may have taken in fluids by drinking during your workout or lost fluids through urination. To account for these factors, follow the steps outlined below.
- Keep track of the amount of fluid that you consumed during a training session. Fifteen ounces of fluid weigh about one pound. You can also weigh the bottle before and after your training session to determine the actual weight of the fluid you consumed during training. You can use a graduated bottle during these workouts for more precise calculations.

EXAMPLE

1. Weight before training: 165 lb.

Weight after training: 164 lb.

Total weight loss: 1 lb. = 15 oz. fluid

2. Consumed 30 oz. fluid during 1-hour bike ride.

30 oz. fluid

Let's say the hypothetical runner mentioned above consumed 60 ounces of fluid during a two-hour run, and this fluid weighed or was the equivalent of four pounds.

- Add the amount of weight lost to the amount of fluid consumed. For example, the runner who had a two-pound weight loss during training and drank four pounds of fluid during training would add two and four. Since two plus four equals six, this means he lost six pounds of fluid.
- Record any urine volume that occurred between the weigh-ins and subtract this number (translated into pounds or kilograms) from the result obtained in step three.
- Divide the weight of total fluid lost by the exercise time. For example, six pounds, or 90 ounces of fluid, divided by two hours equals 45 ounces per hour for sweat losses.

This procedure can be translated into a formula:

Sweat rate = (body weight pre-training - body weight post-training + fluid ingestion - urine volume) ÷ exercise time

Sweat rates in athletes can vary from 24 ounces, or three cups, of fluid per hour to 80 ounces, or 10 cups or more.

Please use the calculator below to estimate sweat losses.

Extracted from Sports Nutrition for Endurance Athletes, 3rd edition, by Monique Ryan, MS, RD, LDN, www.velopress.com, 2012

3. Add fluid lost and fluid consumed.

15 oz. + 30 oz. = 45 oz.

4. Divide total sum of weight loss by hours of training.

45 oz. ÷ 1 hour of training =

45 oz. per hour for sweat losses

SWEAT LOSS CALCULATOR

1 CHECK WEIGHT* BEFORE AND AFTER TRAINING TO CALCULATE WEIGHT LOSS.

WEIGHT BEFORE WEIGHT AFTER

AMOUNT OF WEIGHT LOST OZ.

TIME PERIOD (1 HOUR IS PREFERABLE)

*CHECK WEIGHT WITHOUT CLOTHING, IF POSSIBLE.

2 CONVERT AMOUNT OF WEIGHT LOSS TO OZ. (ML) OF FLUID.

E.G., A 2 LB. WEIGHT LOSS = 30 OZ. OF FLUID

OZ. OF FLUID LOST

3 RECORD AMOUNT OF FLUID CONSUMED DURING TRAINING SESSION.

E.G., SQUEEZE BOTTLES ARE 20-24 OZ.

FLUID LOST + FLUID CONSUMED = OZ. OF FLUID CONSUMED

4 ADD AMOUNT OF FLUID LOST AND FLUID CONSUMED.

OZ. OF FLUID CONSUMED OZ.

5 DIVIDE TOTAL OZ. OF WEIGHT LOSS BY NUMBER OF HOURS OF TRAINING TO DETERMINE AMOUNT OF OZ. LOST IN SWEAT PER HOUR.

TOTAL FLUID LOST ÷ HOURS OF TRAINING = FLUID LOSSES IN OZ. PER HOUR

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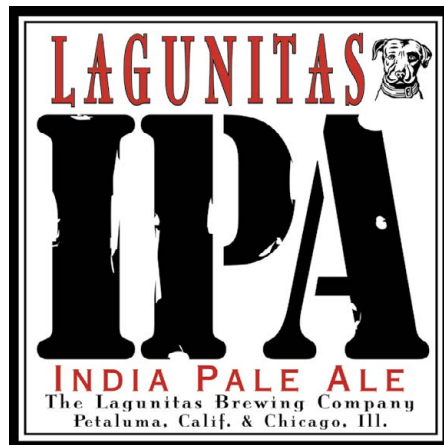


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